



Radiation Site Cleanup Regulations:

Technical Support Document
For The Development Of
Radionuclide Cleanup Levels
For Soil

Review Draft

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Errata to the Draft TSD

This file presents an errata to the draft Technical Support Document (TSD), *Technical Support Document for the Development of Radionuclide Cleanup Levels for Soil*, EPA 402-R-96-011 A: Main Report. Included are corrections for typographical errors and other types of errors or modifications made to the text of the draft TSD by ORIA. Many of these errors and corrections were originally listed in an initial errata sheet and subsequent mark-up submitted by ORIA to the EPA Science Advisory Board (SAB) during and shortly after SAB's review of the draft TSD.

Errata (Page numbers refer to the September 1994 draft TSD.)

Page I-6, line 22 should read: "EPA is conducting its technical analysis in three separate...."

Page I-8: Asterisks should be on boxes 11 and 12, not on 7 and 8.

Page 1-5, top of page: Delete third bullet from the top of the page, and the indentation.

Page 2-8, second paragraph, last line should read: "...considered moderately conservative, perhaps typical of a fairly average suburbanite, rather than applicable to the RME individual of the rural residential scenario."

Page 2-58, paragraph beginning middle of page, line 2:

" $[\text{Inv}(0) \times e^{-DF^3(t-T)}]$ " should read " $[\text{Inv}(0) \times e^{-DF^3 \times t}]$ ";

lines 5 and 6 should read: "..., and the factor $e^{-\lambda T}$ describes the decay of the radionuclide over the source-to-aquifer transport time, T; and that the...."

Pages 2-59 to 2-61, Section 2.2.5, the term "RSC" refers to average radionuclide soil concentration, rather than the target level.

Page 3-1, point number 1, line 5, should read "...comparisons also assist in the selection of a model for use in estimating the risks to individuals..."

Page 3-85: Half-life of U-238 is 4.5×10^9 years.

Page 3-88, line 11: Here and throughout the text, the word "concentration" refers to picocuries of contaminant per gram of soil, per liter of water, etc.

Page 3-89, line 3, should read: "...100 year time period..."

Page 4-3, line 12, sentence should end with a period.

Page 4-6 and 4-7. Footnote for Table 4-1 appears on page 4-8 and should appear on pages 4-6 and 4-7 also. In addition, there should be only a single check mark for functional category 1 for mills, category 6 for "NRC licensed/other government", category 7 for "radiochemical /analytical" and "sealed source manufacturing."

Page 4-9, third paragraph, and elsewhere, "g-ray" should read "gamma ray."

Page 4-25, footnote. "CCDF" means "complementary cumulative density function."

Pages 4-33, 4-40, etc.: Delete box containing "Total Contaminated Volume = ... m**3."

Page 4-41, see attached table of distribution parameters for Reference Site II.

Page 4-45, line 9 should read: "...being the total number of samples analyzed for that nuclide. The average background..."

Page 4-59, line 19 should read: "...cumulative contaminated volume is linear in the logarithm of the level of the of U-238..."

Page 4-69, first paragraph, line 10 refers to a free-release limit for cesium. This sentence should read: "(This is slightly larger than the area contaminated by Cs-137 in excess of the present NRC guidance and technical precedent, as discussed for Reference Site V, which is also 15 pCi/g.)"

Page 4-75, see attached table of distribution parameters for Reference Site IX.

Page 4-94, see attached table of distribution parameters for Reference Sites XVIII.

Pages 6-7 and 6-8, Table caption should read: "Reference Site Residential Scenario Risk Factors (Cancer Incidence Risk per pCi/g) over 1,000 Years."

Page 6-13, Table caption should read: "Reference Site Residential Scenario Risk Factors (Cancer Incidence Risk per pCi/g) over 1,000 Years, Assuming Only One Radionuclide Present at the Site. (See footnote, Page 6-6)."

Page 6-15, Paragraph 2 should begin: "In addition to the uncertainty in the estimate..."

Page 6-88, line 4 and below: Replace "AF2" with "AF4."

Enclosure 5: Revised and Supplementary Data Tables

There are two parts to the revised and supplementary data tables. Part 1 contains a revised version of Table 4-6 and a replacement table for Tables 6-2a and 6-2b of the draft TSD. Part 2 contains supplementary data tables for Appendix M of the draft TSD.

Part 1. Revised Draft TSD Data Tables

The first table of Part 1 is a revised version of Table 4-6 of the draft TSD, which reflects the change in the area of Reference Site X. As described in Section 4.4.3 of the draft TSD, Reference Site X was originally constructed to represent a single WMU at Paducah. In order to represent the entire site, the area was increased in later analyses.

The second table of Part 1 replaces Tables 6-2a and 6-2b of the draft TSD. Risk and dose factors for the commercial/industrial occupancy scenario were added. In addition, the table has been updated to reflect the currently-used dose and risk factors. The factors for Reference Site X were changed due to the revised characterization of this site, as discussed above. In other cases, some clerical errors were corrected and other modeling refinements were incorporated. Except for Reference Site X, none of the changes had any significant impact on the analyses.

Revised Draft TSD Table 4-6. Characteristics of Contamination at Reference Sites^a

Reference Site	Contaminated Area (m ²)	Chemical Elements	K _d ^b	Contaminated Zone Thickness (m)
I	2.26E+07	Cs	280	0.05
II-1/II-6	3.96E+06	Ac Pa Pb Ra Th U	2400 2700 550 9100 5800 1,600	0.50
II-7	1.11E+07	Ac Pa Pb Ra Th U	2400 2700 550 9100 5800 1,600	0.05
III	1.81E+07	Cs	1,900	0.05
IV	5.90E+05	Ac Pa Pb Ra Th U	794 330 150 165 1500 330	0.108
V	1.12E+07	Cs	500 ^c	0.05
VI	6.70E+06	Cs Ac Pa Pb Ra Th U	10,000 ^d 2400 2700 550 9100 5800 1,600	0.05
VII	3.70E+08	Pu Am Cs	550 1,900 280	0.06
IX	4.00E+06	Pu Am	10,000 ^e 112,000 ^e	0.05
X	2.36E+05	Tc Ac Pa Pb Ra Th U	0.1 450 550 270 500 3200 35	0.305 1.83

Reference Site	Contaminated Area (m ²)	Chemical Elements	K _d ^b	Contaminated Zone Thickness (m)
XII	1.90E+04	Pu Am	550 1,900	0.9
XIII	4.19E+04	Ac Pa Pb Ra Th U	104 182 469 502 21,909 89	.08
XVI	7.00E+03	Co Cs	447 894	0.15
XVIII	3.30E+03	Cs Sr	894 21	0.15
XX	2.00E+04	Ac Pa Pb Ra Th U	104 182 469 502 21,909 89	1.0/0.36 ^f
XXI	1.38E+04	Ra Th	502 21,909	2.50
XXII	3.70E+05	Ac Pa Pb Ra Th U	450 550 270 500 3200 35	2.0
a	Selected values discussed in the text, except where otherwise noted (ANL 93b, DOE 93a).			
b	RESRAD 5.0 default values based on soil type, DOE 93a, p. 32-38, unless otherwise noted.			
c	RAE 91, p. 3-63. Original reference is Lo 87.			
d	ORNL 88.			
e	Han 80, p. 152.			
f	See text			

Replacement Table for Tables 6a and 6b of the Draft TSD:
 Normalized Maximum Risk and Dose Factors for RME Individuals During First 1,000 Years

Ref. Site	Nuclide	Normalized Lifetime Risk of Cancer (Risk per pCi/g)				Normalized Dose Rate (mrem/y per pCi/g)			
		Residential		Commercial		Residential		Commercial	
		Radon	No Radon	Radon	No Radon	Radon	No Radon	Radon	No Radon
I	Cs-137	2.66E-05	2.66E-05	7.80E-06	7.80E-06	1.23E+00	1.23E+00	4.41E-01	4.41E-01
II-1/6	Pb-210	9.26E-06	9.26E-06	7.83E-08	7.83E-08	1.59E+00	1.59E+00	1.58E-02	1.58E-02
	Ra-226	3.12E-04	1.92E-04	9.25E-05	5.54E-05	2.49E+01	8.98E+00	8.80E+00	2.96E+00
	Th-230	2.63E-05	2.06E-05	7.77E-06	6.00E-06	1.92E+00	1.12E+00	6.54E-01	3.64E-01
	Ra-228	1.66E-04	1.66E-04	4.91E-05	4.91E-05	8.31E+00	8.31E+00	2.81E+00	2.81E+00
	Th-228	1.82E-04	1.82E-04	5.62E-05	5.62E-05	8.57E+00	8.57E+00	3.18E+00	3.18E+00
	Th-232	2.75E-04	2.75E-04	8.20E-05	8.20E-05	1.43E+01	1.43E+01	4.92E+00	4.92E+00
	U-234	4.52E-07	4.52E-07	7.85E-08	7.85E-08	7.49E-02	7.49E-02	1.93E-02	1.93E-02
	U-235	7.51E-06	7.51E-06	2.26E-06	2.26E-06	5.32E-01	5.32E-01	1.89E-01	1.89E-01
	U-238	2.03E-06	2.03E-06	5.37E-07	5.37E-07	1.35E-01	1.35E-01	4.19E-02	4.19E-02
II-7	U-234	1.27E-07	1.27E-07	2.63E-08	2.63E-08	2.24E-02	2.24E-02	6.53E-03	6.53E-03
	U-235	4.60E-06	4.60E-06	1.41E-06	1.41E-06	3.13E-01	3.13E-01	1.15E-01	1.15E-01
	U-238	8.32E-07	8.32E-07	2.38E-07	2.38E-07	5.06E-02	5.06E-02	1.71E-02	1.71E-02
III	Cs-137	2.66E-05	2.66E-05	7.80E-06	7.80E-06	1.23E+00	1.23E+00	4.41E-01	4.41E-01
IV	U-234	2.74E-07	2.74E-07	5.64E-08	5.64E-08	4.80E-02	4.80E-02	1.39E-02	1.39E-02
	U-235	6.52E-06	6.52E-06	1.99E-06	1.99E-06	4.52E-01	4.52E-01	1.64E-01	1.64E-01
	U-238	1.41E-06	1.41E-06	3.94E-07	3.94E-07	9.23E-02	9.23E-02	3.06E-02	3.06E-02
V	Cs-137	2.66E-05	2.66E-05	7.80E-06	7.80E-06	1.23E+00	1.23E+00	4.41E-01	4.41E-01
VI	Cs-137	2.66E-05	2.66E-05	7.80E-06	7.80E-06	1.23E+00	1.23E+00	4.41E-01	4.41E-01
	U-234	1.27E-07	1.27E-07	2.62E-08	2.62E-08	2.24E-02	2.24E-02	6.52E-03	6.52E-03
	U-235	4.60E-06	4.60E-06	1.41E-06	1.41E-06	3.13E-01	3.13E-01	1.15E-01	1.15E-01
	U-238	8.32E-07	8.32E-07	2.38E-07	2.38E-07	5.06E-02	5.06E-02	1.71E-02	1.71E-02
VII	Pu-239	1.96E-07	1.96E-07	4.75E-08	4.75E-08	1.12E-01	1.12E-01	3.24E-02	3.24E-02
	Am-241	2.88E-07	2.88E-07	7.64E-08	7.64E-08	1.31E-01	1.31E-01	4.01E-02	4.01E-02
	Cs-137	3.03E-05	3.03E-05	8.87E-06	8.87E-06	1.40E+00	1.40E+00	5.01E-01	5.01E-01
IX	Pu-239	1.63E-07	1.63E-07	3.95E-08	3.95E-08	9.29E-02	9.29E-02	2.70E-02	2.70E-02
	Am-241	2.48E-07	2.48E-07	6.63E-08	6.63E-08	1.10E-01	1.10E-01	3.40E-02	3.40E-02
X	Tc-99	3.43E-05	3.43E-05	1.24E-05	1.24E-05	5.13E-01	5.13E-01	2.23E-01	2.23E-01
	U-238	4.08E-05	4.08E-05	1.56E-05	1.56E-05	3.09E+00	3.09E+00	1.42E+00	1.42E+00
	U-234	2.73E-05	2.73E-05	1.05E-05	1.05E-05	3.20E+00	3.20E+00	1.47E+00	1.47E+00
XII	Pu-239	6.61E-07	6.61E-07	1.16E-07	1.16E-07	3.77E-01	3.77E-01	7.93E-02	7.93E-02
	Am-241	7.87E-07	7.87E-07	1.52E-07	1.52E-07	4.06E-01	4.06E-01	8.99E-02	8.99E-02
XIII A	U-238	1.17E-06	1.17E-06	3.30E-07	3.30E-07	7.35E-02	7.35E-02	2.45E-02	2.45E-02
	U-235	5.84E-06	5.84E-06	1.79E-06	1.79E-06	4.01E-01	4.01E-01	1.46E-01	1.46E-01
	U-234	2.02E-07	2.02E-07	4.14E-08	4.14E-08	3.54E-02	3.54E-02	1.02E-02	1.02E-02
XIII B	U-238	1.17E-06	1.17E-06	3.30E-07	3.30E-07	7.35E-02	7.35E-02	2.45E-02	2.45E-02
	U-235	5.84E-06	5.84E-06	1.79E-06	1.79E-06	4.01E-01	4.01E-01	1.46E-01	1.46E-01
	U-234	2.02E-07	2.02E-07	4.14E-08	4.14E-08	3.54E-02	3.54E-02	1.02E-02	1.02E-02

Replacement Table for Tables 6a and 6b of the Draft TSD (Continued)

Ref. Site	Nuclide	Normalized Lifetime Risk of Cancer (Risk per pCi/g)				Normalized Dose Rate (mrem/y per pCi/g)			
		Residential		Commercial		Residential		Commercial	
		Radon	No Radon	Radon	No Radon	Radon	No Radon	Radon	No Radon
XIIIC	U-238	1.17E-06	1.17E-06	3.30E-07	3.30E-07	7.35E-02	7.35E-02	2.45E-02	2.45E-02
	U-235	5.84E-06	5.84E-06	1.79E-06	1.79E-06	4.01E-01	4.01E-01	1.46E-01	1.46E-01
	U-234	2.02E-07	2.02E-07	4.14E-08	4.14E-08	3.54E-02	3.54E-02	1.02E-02	1.02E-02
XVIA	Co-60	2.03E-04	2.03E-04	6.27E-05	6.27E-05	9.32E+00	9.32E+00	3.46E+00	3.46E+00
	Cs-137	4.83E-05	4.83E-05	1.44E-05	1.44E-05	2.23E+00	2.23E+00	8.11E-01	8.11E-01
XVIB	Co-60	2.03E-04	2.03E-04	6.27E-05	6.27E-05	9.32E+00	9.32E+00	3.46E+00	3.46E+00
	Cs-137	4.83E-05	4.83E-05	1.44E-05	1.44E-05	2.23E+00	2.23E+00	8.11E-01	8.11E-01
XVIC	Co-60	2.03E-04	2.03E-04	6.27E-05	6.27E-05	9.32E+00	9.32E+00	3.46E+00	3.46E+00
	Cs-137	4.83E-05	4.83E-05	1.44E-05	1.44E-05	2.23E+00	2.23E+00	8.11E-01	8.11E-01
XVIII A	Cs-137	4.73E-05	4.73E-05	1.44E-05	1.44E-05	2.21E+00	2.21E+00	8.11E-01	8.11E-01
	Sr-90	4.39E-06	4.39E-06	3.79E-09	3.79E-09	2.60E-01	2.60E-01	4.27E-04	4.27E-04
XVIII B	Cs-137	4.73E-05	4.73E-05	1.44E-05	1.44E-05	2.21E+00	2.21E+00	8.11E-01	8.11E-01
	Sr-90	4.39E-06	4.39E-06	3.79E-09	3.79E-09	2.60E-01	2.60E-01	4.27E-04	4.27E-04
XVIII C	Cs-137	4.73E-05	4.73E-05	1.44E-05	1.44E-05	2.21E+00	2.21E+00	8.11E-01	8.11E-01
	Sr-90	4.39E-06	4.39E-06	3.79E-09	3.79E-09	2.60E-01	2.60E-01	4.27E-04	4.27E-04
XXA	U-234	5.28E-07	5.28E-07	7.71E-08	7.71E-08	8.34E-02	8.34E-02	1.89E-02	1.89E-02
	U-235	7.59E-06	7.59E-06	2.26E-06	2.26E-06	5.38E-01	5.38E-01	1.89E-01	1.89E-01
	U-238	2.15E-06	2.15E-06	5.36E-07	5.36E-07	1.43E-01	1.43E-01	4.16E-02	4.16E-02
XXB	U-234	5.28E-07	5.28E-07	7.71E-08	7.71E-08	8.34E-02	8.34E-02	1.89E-02	1.89E-02
	U-235	7.59E-06	7.59E-06	2.26E-06	2.26E-06	5.38E-01	5.38E-01	1.89E-01	1.89E-01
	U-238	2.15E-06	2.15E-06	5.36E-07	5.36E-07	1.43E-01	1.43E-01	4.16E-02	4.16E-02
XXC	U-234	5.28E-07	5.28E-07	7.71E-08	7.71E-08	8.34E-02	8.34E-02	1.89E-02	1.89E-02
	U-235	7.59E-06	7.59E-06	2.26E-06	2.26E-06	5.38E-01	5.38E-01	1.89E-01	1.89E-01
	U-238	2.15E-06	2.15E-06	5.36E-07	5.36E-07	1.43E-01	1.43E-01	4.16E-02	4.16E-02
XXIA	Ra-228	1.05E-04	1.05E-04	2.70E-05	2.70E-05	5.98E+00	5.98E+00	1.58E+00	1.58E+00
	Th-228	1.67E-04	1.67E-04	5.17E-05	5.17E-05	7.04E+00	7.04E+00	2.61E+00	2.61E+00
	Th-232	3.55E-07	3.55E-07	9.31E-08	9.31E-08	7.12E-01	7.12E-01	2.29E-01	2.29E-01
XXIB	Ra-228	1.05E-04	1.05E-04	2.70E-05	2.70E-05	5.98E+00	5.98E+00	1.58E+00	1.58E+00
	Th-228	1.67E-04	1.67E-04	5.17E-05	5.17E-05	7.04E+00	7.04E+00	2.61E+00	2.61E+00
	Th-232	3.55E-07	3.55E-07	9.31E-08	9.31E-08	7.12E-01	7.12E-01	2.29E-01	2.29E-01
XXIC	Ra-228	1.05E-04	1.05E-04	2.70E-05	2.70E-05	5.98E+00	5.98E+00	1.58E+00	1.58E+00
	Th-228	1.67E-04	1.67E-04	5.17E-05	5.17E-05	7.04E+00	7.04E+00	2.61E+00	2.61E+00
	Th-232	3.55E-07	3.55E-07	9.31E-08	9.31E-08	7.12E-01	7.12E-01	2.29E-01	2.29E-01
XXII	Ra-226	1.14E-03	2.03E-04	3.44E-04	5.58E-05	1.35E+02	9.78E+00	4.90E+01	2.99E+00
	Th-232	3.63E-07	3.62E-07	9.50E-08	9.50E-08	7.28E-01	7.28E-01	2.33E-01	2.33E-01
	Th-228	1.74E-04	1.67E-04	5.37E-05	5.17E-05	7.63E+00	7.04E+00	2.83E+00	2.61E+00
	U-234	2.37E-05	2.36E-05	9.28E-06	9.21E-06	2.78E+00	2.76E+00	1.30E+00	1.29E+00
	U-235	2.70E-05	2.70E-05	1.03E-05	1.03E-05	2.90E+00	2.90E+00	1.33E+00	1.33E+00
	U-238	3.52E-05	3.52E-05	1.38E-05	1.38E-05	2.67E+00	2.67E+00	1.25E+00	1.25E+00
	Pb-210	1.50E-05	1.50E-05	7.82E-08	7.82E-08	2.58E+00	2.58E+00	1.58E-02	1.58E-02
	Ra-228	1.06E-04	1.06E-04	2.70E-05	2.70E-05	6.13E+00	6.15E+00	1.58E+00	1.58E+00

Part 2. Supplementary Tables of Potential Impacts Averted

This part supplements the tables provided in Appendix M of the draft TSD. The Appendix M tables present estimates of cleanup volumes and potential radiological impacts averted (e.g., individual doses, population doses, worker doses, total cancers and fatal cancers) at reference sites as a result of site remediation to alternative dose-based cleanup criteria. They also provide estimates of radioactivity that would be removed in achieving alternative dose-based cleanup goals. These tables present estimates for cases with and without consideration of indoor radon. For the "with radon" case, the quantity of soil requiring remediation is slightly greater than that of the "without radon" case. The number of potential health impacts averted following cleanup is slightly greater for the "with radon" case. This part supplements the estimates presented in the tables provided in Appendix M of the draft TSD by assessing those cases in which the indoor radon pathway is excluded from the assessment of doses to the RME individual, but is included in the calculation of cumulative collective impacts—cancer morbidity and mortality among future populations occupying the site after cleanup.

Four sets of tables are provided in this part, as follows:

Table 1. Cleanup Volumes: Residential Occupancy

Table 2. Cleanup Volumes: Commercial Occupancy

Table 3. Total Cancers Averted if site is released for Residential Occupancy

Table 4. Total Cancers Averted if site is released for Commercial Occupancy

Table 5. Fatal Cancers Averted if site is released for Residential Occupancy

Table 6. Fatal Cancers Averted if site is released for Commercial Occupancy

Table 7. Maximum Residual Concentration: Residential Occupancy

Table 8. Maximum Residual Concentration: Commercial Occupancy

Tables 1 and 2 present the cleanup volumes as functions of alternative dose-based cleanup goals. As the cleanup goals become more restrictive, the volume of soil requiring remediation to achieve the cleanup goals increases. Tables 3 to 6 present the time integrated cumulative population impacts averted by cleanup. Tables 7 and 8 present the maximum residual radionuclide concentration at the sites following remediation.

As is shown in the above list of titles, there are four pairs of tables. In each pair, one table is based on cleanup assuming that the site will be released for unrestricted use, while the second table is based on the assumption that the site will be released with restrictions on future use. The first case is modeled by the residential agrarian scenario (called "residential" for short), while the second is represented by the commercial/industrial scenario ("commercial" for short). Since the radiation exposure of a person residing on a radioactively contaminated site would be higher than that of an individual who only works on such a site, the dose factors (annual dose per unit

specific activity in the soil) based on residential occupancy assumptions are higher than those for commercial occupancy. Consequently, more soil must be remediated and more radioactivity removed for a given site to be released for residential use. As a result, the cumulative collective impacts averted are greater in such a case. (The calculation of impacts on future populations assumes that any occupancy restrictions imposed at the time a site is released will be eventually forgotten or ignored, and all sites will revert to residential use.)

The results are provided for three future time periods of interest: 100, 1,000 and 10,000 years. As the time periods of interest increase, the impacts averted increase because the impacts are integrated over longer time periods. The cleanup volumes can also vary with time, since the dose factor is the maximum dose rate during a given period. The dose rates from some nuclides may peak at some time in the future due to buildup of daughter products or travel time to an underground water supply. In all cases studied in the present analysis, the peak dose rate occurred during the first 1,000 years, and in most cases during the first 100 years. Consequently, the maximum residual concentrations, and hence the cleanup volumes, are little affected by the alternative time periods of interest.

Lastly, all the analyses were based on the assumption that, for the three reference sites indicated in the tables, cleanup is assumed not to begin until 30 years from now in order to allow some radioactive decay of the shorter-lived radionuclides. This leads to a reduction of the concentrations at the time of cleanup, resulting in a reduction in the volume of soil requiring remediation as well as of the impacts averted.

Table 1
 07-21-95 5:22p--30-y delay for Reference Sites I, III and V.
 CLEANUP VOLUMES (m*3)--Indoor radon pathway excluded from RME health effects

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.35E+6	2.35E+6	2.35E+6	1.03E+6	1.03E+6	1.03E+6	7.18E+5	7.18E+5	7.18E+5	4.08E+5	4.08E+5	4.08E+5	2.87E+5	2.87E+5	2.87E+5
II	1.74E+6	1.76E+6	1.76E+6	1.30E+6	1.31E+6	1.31E+6	1.11E+6	1.12E+6	1.12E+6	9.44E+5	9.50E+5	9.50E+5	9.19E+5	9.35E+5	9.35E+5
III	8.28E+5	8.28E+5	8.28E+5	7.45E+5	7.45E+5	7.45E+5	6.53E+5	6.53E+5	6.53E+5	3.86E+5	3.86E+5	3.86E+5	2.28E+5	2.28E+5	2.28E+5
IV	2.34E+5	2.34E+5	2.34E+5	1.19E+5	1.19E+5	1.19E+5	8.91E+4	8.91E+4	8.91E+4	5.63E+4	5.63E+4	5.63E+4	4.54E+4	4.54E+4	4.54E+4
V	1.22E+7	1.22E+7	1.22E+7	9.03E+6	9.03E+6	9.03E+6	7.66E+6	7.66E+6	7.66E+6	5.51E+6	5.51E+6	5.51E+6	4.50E+6	4.50E+6	4.50E+6
VI	5.03E+5	5.03E+5	5.03E+5	3.90E+5	3.90E+5	3.90E+5	3.42E+5	3.42E+5	3.42E+5	2.66E+5	2.66E+5	2.66E+5	2.31E+5	2.31E+5	2.31E+5
VII	5.90E+7	5.90E+7	5.90E+7	4.02E+7	4.02E+7	4.02E+7	2.63E+7	2.63E+7	2.63E+7	1.34E+7	1.34E+7	1.34E+7	9.81E+6	9.81E+6	9.81E+6
IX	3.66E+5	3.66E+5	3.66E+5	1.73E+5	1.73E+5	1.73E+5	1.12E+5	1.12E+5	1.12E+5	5.07E+4	5.07E+4	5.07E+4	3.26E+4	3.26E+4	3.26E+4
X	7.77E+5	8.00E+5	8.00E+5	6.54E+5	7.92E+5	7.92E+5	5.47E+5	7.81E+5	7.81E+5	3.80E+5	7.40E+5	7.40E+5	2.97E+5	6.97E+5	6.97E+5
XII	1.34E+4	1.34E+4	1.34E+4	7.43E+3	7.43E+3	7.43E+3	4.67E+3	4.67E+3	4.67E+3	2.24E+3	2.24E+3	2.24E+3	1.71E+3	1.71E+3	1.71E+3
XIIIA	2.15E+3	2.15E+3	2.15E+3	8.80E+2	8.80E+2	8.80E+2	3.72E+2	3.72E+2	3.72E+2	5.32E+1	5.32E+1	5.32E+1	.00E+0	.00E+0	.00E+0
XIIIB	2.15E+3	2.15E+3	2.15E+3	8.80E+2	8.80E+2	8.80E+2	3.72E+2	3.72E+2	3.72E+2	5.32E+1	5.32E+1	5.32E+1	.00E+0	.00E+0	.00E+0
XIIIC	2.15E+3	2.15E+3	2.15E+3	8.80E+2	8.80E+2	8.80E+2	3.72E+2	3.72E+2	3.72E+2	5.32E+1	5.32E+1	5.32E+1	.00E+0	.00E+0	.00E+0
XVIA	1.21E+3	1.21E+3	1.21E+3	1.10E+3	1.10E+3	1.10E+3	1.06E+3	1.06E+3	1.06E+3	9.78E+2	9.78E+2	9.78E+2	9.34E+2	9.34E+2	9.34E+2
XVIB	1.21E+3	1.21E+3	1.21E+3	1.10E+3	1.10E+3	1.10E+3	1.06E+3	1.06E+3	1.06E+3	9.78E+2	9.78E+2	9.78E+2	9.34E+2	9.34E+2	9.34E+2
XVIC	1.21E+3	1.21E+3	1.21E+3	1.10E+3	1.10E+3	1.10E+3	1.06E+3	1.06E+3	1.06E+3	9.78E+2	9.78E+2	9.78E+2	9.34E+2	9.34E+2	9.34E+2
XVIIIA	5.92E+2	5.92E+2	5.92E+2	5.88E+2	5.88E+2	5.88E+2	5.86E+2	5.86E+2	5.86E+2	5.82E+2	5.82E+2	5.82E+2	5.80E+2	5.80E+2	5.80E+2
XVIIIB	5.92E+2	5.92E+2	5.92E+2	5.88E+2	5.88E+2	5.88E+2	5.86E+2	5.86E+2	5.86E+2	5.82E+2	5.82E+2	5.82E+2	5.80E+2	5.80E+2	5.80E+2
XVIIIC	5.92E+2	5.92E+2	5.92E+2	5.88E+2	5.88E+2	5.88E+2	5.86E+2	5.86E+2	5.86E+2	5.82E+2	5.82E+2	5.82E+2	5.80E+2	5.80E+2	5.80E+2
XXA	4.94E+5	4.94E+5	4.94E+5	1.14E+5	1.14E+5	1.14E+5	5.98E+4	5.98E+4	5.98E+4	2.13E+4	2.13E+4	2.13E+4	1.18E+4	1.18E+4	1.18E+4
XXB	4.94E+5	4.94E+5	4.94E+5	1.14E+5	1.14E+5	1.14E+5	5.98E+4	5.98E+4	5.98E+4	2.13E+4	2.13E+4	2.13E+4	1.18E+4	1.18E+4	1.18E+4
XXC	4.94E+5	4.94E+5	4.94E+5	1.14E+5	1.14E+5	1.14E+5	5.98E+4	5.98E+4	5.98E+4	2.13E+4	2.13E+4	2.13E+4	1.18E+4	1.18E+4	1.18E+4
XXIA	3.44E+4	3.44E+4	3.44E+4	3.42E+4	3.42E+4	3.42E+4	3.39E+4	3.39E+4	3.39E+4	3.28E+4	3.28E+4	3.28E+4	3.18E+4	3.18E+4	3.18E+4
XXIB	3.44E+4	3.44E+4	3.44E+4	3.42E+4	3.42E+4	3.42E+4	3.39E+4	3.39E+4	3.39E+4	3.28E+4	3.28E+4	3.28E+4	3.18E+4	3.18E+4	3.18E+4
XXIC	3.44E+4	3.44E+4	3.44E+4	3.42E+4	3.42E+4	3.42E+4	3.39E+4	3.39E+4	3.39E+4	3.28E+4	3.28E+4	3.28E+4	3.18E+4	3.18E+4	3.18E+4
XXII	2.29E+6	2.29E+6	2.29E+6	1.84E+6	1.84E+6	1.84E+6	1.64E+6	1.64E+6	1.64E+6	1.33E+6	1.34E+6	1.34E+6	1.19E+6	1.21E+6	1.21E+6
DOE	1.05E+8	1.05E+8	1.05E+8	7.49E+7	7.50E+7	7.50E+7	5.64E+7	5.66E+7	5.66E+7	3.64E+7	3.69E+7	3.69E+7	2.96E+7	3.02E+7	3.02E+7
DOD	3.16E+4	3.16E+4	3.16E+4	1.49E+4	1.49E+4	1.49E+4	7.84E+3	7.84E+3	7.84E+3	2.69E+3	2.69E+3	2.69E+3	1.71E+3	1.71E+3	1.71E+3
NRC	7.87E+6	7.87E+6	7.87E+6	2.53E+6	2.53E+6	2.53E+6	1.75E+6	1.75E+6	1.75E+6	1.18E+6	1.18E+6	1.18E+6	1.02E+6	1.02E+6	1.02E+6
Total	1.13E+8	1.13E+8	1.13E+8	7.74E+7	7.76E+7	7.76E+7	5.81E+7	5.84E+7	5.84E+7	3.76E+7	3.81E+7	3.81E+7	3.06E+7	3.12E+7	3.12E+7

Table 1 Continued
 07-21-95 5:22p--30-y delay for Reference Sites I, III and V. R.S. I based on 1978 aerial survey
 CLEANUP VOLUMES (m*3)--Indoor radon pathway excluded from RME health effects

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.73E+5	1.73E+5	1.73E+5	1.28E+5	1.28E+5	1.28E+5	8.77E+4	8.77E+4	8.77E+4	3.83E+4	3.83E+4	3.83E+4	2.63E+4	2.63E+4	2.63E+4
II	8.63E+5	9.00E+5	9.00E+5	8.19E+5	8.67E+5	8.67E+5	7.94E+5	8.12E+5	8.12E+5	7.63E+5	7.73E+5	7.73E+5	7.51E+5	7.60E+5	7.60E+5
III	1.43E+5	1.43E+5	1.43E+5	1.07E+5	1.07E+5	1.07E+5	5.96E+4	5.96E+4	5.96E+4	5.86E+3	5.86E+3	5.86E+3	3.98E+3	3.98E+3	3.98E+3
IV	3.42E+4	3.42E+4	3.42E+4	3.03E+4	3.03E+4	3.03E+4	2.54E+4	2.54E+4	2.54E+4	1.49E+4	1.49E+4	1.49E+4	1.22E+4	1.22E+4	1.22E+4
V	3.44E+6	3.44E+6	3.44E+6	2.87E+6	2.87E+6	2.87E+6	2.14E+6	2.14E+6	2.14E+6	8.07E+5	8.07E+5	8.07E+5	7.01E+5	7.01E+5	7.01E+5
VI	1.85E+5	1.85E+5	1.85E+5	1.59E+5	1.59E+5	1.59E+5	1.35E+5	1.35E+5	1.35E+5	8.82E+4	8.82E+4	8.82E+4	7.62E+4	7.62E+4	7.62E+4
VII	6.63E+6	6.63E+6	6.63E+6	5.18E+6	5.18E+6	5.18E+6	2.84E+6	2.84E+6	2.84E+6	4.88E+5	4.88E+5	4.88E+5	3.26E+5	3.26E+5	3.26E+5
IX	1.74E+4	1.74E+4	1.74E+4	1.06E+4	1.06E+4	1.06E+4	6.22E+3	6.22E+3	6.22E+3	1.34E+3	1.34E+3	1.34E+3	7.55E+2	7.55E+2	7.55E+2
X	2.14E+5	5.94E+5	5.94E+5	1.77E+5	5.09E+5	5.09E+5	1.40E+5	3.88E+5	3.88E+5	7.71E+4	1.51E+5	1.51E+5	6.26E+4	1.16E+5	1.16E+5
XII	1.65E+3	1.65E+3	1.65E+3	1.61E+3	1.61E+3	1.61E+3	1.57E+3	1.57E+3	1.57E+3	1.28E+3	1.28E+3	1.28E+3	1.17E+3	1.17E+3	1.17E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	8.70E+2	8.70E+2	8.70E+2	7.93E+2	7.93E+2	7.93E+2	6.92E+2	6.92E+2	6.92E+2	5.65E+2	5.65E+2	5.65E+2	5.34E+2	5.34E+2	5.34E+2
XVIB	8.70E+2	8.70E+2	8.70E+2	7.93E+2	7.93E+2	7.93E+2	6.92E+2	6.92E+2	6.92E+2	5.65E+2	5.65E+2	5.65E+2	5.34E+2	5.34E+2	5.34E+2
XVIC	8.70E+2	8.70E+2	8.70E+2	7.93E+2	7.93E+2	7.93E+2	6.92E+2	6.92E+2	6.92E+2	5.65E+2	5.65E+2	5.65E+2	5.34E+2	5.34E+2	5.34E+2
XVIIIA	5.55E+2	5.55E+2	5.55E+2	5.36E+2	5.36E+2	5.36E+2	5.13E+2	5.13E+2	5.13E+2	4.00E+2	4.00E+2	4.00E+2	3.65E+2	3.65E+2	3.65E+2
XVIIIB	5.55E+2	5.55E+2	5.55E+2	5.36E+2	5.36E+2	5.36E+2	5.13E+2	5.13E+2	5.13E+2	4.00E+2	4.00E+2	4.00E+2	3.65E+2	3.65E+2	3.65E+2
XVIIIC	5.55E+2	5.55E+2	5.55E+2	5.36E+2	5.36E+2	5.36E+2	5.13E+2	5.13E+2	5.13E+2	4.00E+2	4.00E+2	4.00E+2	3.65E+2	3.65E+2	3.65E+2
XXA	3.17E+3	3.17E+3	3.17E+3	5.48E+2	5.48E+2	5.48E+2	1.10E+2	1.10E+2	1.10E+2	4.19E+1	4.19E+1	4.19E+1	3.25E+1	3.25E+1	3.25E+1
XXB	3.17E+3	3.17E+3	3.17E+3	5.48E+2	5.48E+2	5.48E+2	1.10E+2	1.10E+2	1.10E+2	4.19E+1	4.19E+1	4.19E+1	3.25E+1	3.25E+1	3.25E+1
XXC	3.17E+3	3.17E+3	3.17E+3	5.48E+2	5.48E+2	5.48E+2	1.10E+2	1.10E+2	1.10E+2	4.19E+1	4.19E+1	4.19E+1	3.25E+1	3.25E+1	3.25E+1
XXIA	2.85E+4	2.85E+4	2.85E+4	2.64E+4	2.64E+4	2.64E+4	2.38E+4	2.38E+4	2.38E+4	1.82E+4	1.82E+4	1.82E+4	1.57E+4	1.57E+4	1.57E+4
XXIB	2.85E+4	2.85E+4	2.85E+4	2.64E+4	2.64E+4	2.64E+4	2.38E+4	2.38E+4	2.38E+4	1.82E+4	1.82E+4	1.82E+4	1.57E+4	1.57E+4	1.57E+4
XXIC	2.85E+4	2.85E+4	2.85E+4	2.64E+4	2.64E+4	2.64E+4	2.38E+4	2.38E+4	2.38E+4	1.82E+4	1.82E+4	1.82E+4	1.57E+4	1.57E+4	1.57E+4
XXII	1.02E+6	1.06E+6	1.06E+6	9.06E+5	9.89E+5	9.89E+5	8.13E+5	8.40E+5	8.40E+5	5.48E+5	5.85E+5	5.85E+5	5.30E+5	5.42E+5	5.42E+5
DOE	2.27E+7	2.35E+7	2.35E+7	1.92E+7	2.02E+7	2.02E+7	1.48E+7	1.53E+7	1.53E+7	7.99E+6	8.33E+6	8.33E+6	7.28E+6	7.43E+6	7.43E+6
DOD	1.65E+3	1.65E+3	1.65E+3	1.61E+3	1.61E+3	1.61E+3	1.57E+3	1.57E+3	1.57E+3	1.28E+3	1.28E+3	1.28E+3	1.17E+3	1.17E+3	1.17E+3
NRC	8.15E+5	8.15E+5	8.15E+5	7.22E+5	7.22E+5	7.22E+5	6.44E+5	6.44E+5	6.44E+5	4.97E+5	4.97E+5	4.97E+5	4.35E+5	4.35E+5	4.35E+5
Total	2.36E+7	2.43E+7	2.43E+7	1.99E+7	2.09E+7	2.09E+7	1.54E+7	1.59E+7	1.59E+7	8.49E+6	8.83E+6	8.83E+6	7.71E+6	7.87E+6	7.87E+6

Table 2
 07-21-95 5:22p--30-y delay for Reference Sites I, III and V. R.S. I based on 1978 aerial survey
 CLEANUP VOLUMES (m*3)--Indoor radon pathway excluded from RME health effects

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.39E+6	1.39E+6	1.39E+6	6.05E+5	6.05E+5	6.05E+5	4.23E+5	4.23E+5	4.23E+5	1.97E+5	1.97E+5	1.97E+5	1.35E+5	1.35E+5	1.35E+5
II	1.44E+6	1.45E+6	1.45E+6	9.85E+5	9.87E+5	9.87E+5	9.40E+5	9.48E+5	9.48E+5	8.65E+5	9.03E+5	9.03E+5	8.11E+5	8.62E+5	8.62E+5
III	7.90E+5	7.90E+5	7.90E+5	5.89E+5	5.89E+5	5.89E+5	4.08E+5	4.08E+5	4.08E+5	1.58E+5	1.58E+5	1.58E+5	1.14E+5	1.14E+5	1.14E+5
IV	1.46E+5	1.46E+5	1.46E+5	7.42E+4	7.42E+4	7.42E+4	5.55E+4	5.55E+4	5.55E+4	3.51E+4	3.51E+4	3.51E+4	3.00E+4	3.00E+4	3.00E+4
V	1.02E+7	1.02E+7	1.02E+7	7.01E+6	7.01E+6	7.01E+6	5.65E+6	5.65E+6	5.65E+6	3.69E+6	3.69E+6	3.69E+6	2.97E+6	2.97E+6	2.97E+6
VI	4.31E+5	4.31E+5	4.31E+5	3.19E+5	3.19E+5	3.19E+5	2.71E+5	2.71E+5	2.71E+5	1.97E+5	1.97E+5	1.97E+5	1.63E+5	1.63E+5	1.63E+5
VII	5.07E+7	5.07E+7	5.07E+7	1.89E+7	1.89E+7	1.89E+7	1.24E+7	1.24E+7	1.24E+7	6.61E+6	6.61E+6	6.61E+6	4.67E+6	4.67E+6	4.67E+6
IX	2.10E+5	2.10E+5	2.10E+5	7.84E+4	7.84E+4	7.84E+4	4.62E+4	4.62E+4	4.62E+4	1.70E+4	1.70E+4	1.70E+4	8.75E+3	8.75E+3	8.75E+3
X	7.94E+5	7.98E+5	7.98E+5	7.59E+5	7.79E+5	7.79E+5	7.18E+5	7.56E+5	7.57E+5	5.54E+5	6.63E+5	6.65E+5	4.42E+5	5.78E+5	5.81E+5
XII	7.73E+3	7.73E+3	7.73E+3	2.63E+3	2.63E+3	2.63E+3	1.71E+3	1.71E+3	1.71E+3	1.62E+3	1.62E+3	1.62E+3	1.57E+3	1.57E+3	1.57E+3
XIIIA	1.33E+3	1.33E+3	1.33E+3	3.30E+2	3.30E+2	3.30E+2	1.34E+2	1.34E+2	1.34E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.33E+3	1.33E+3	1.33E+3	3.30E+2	3.30E+2	3.30E+2	1.34E+2	1.34E+2	1.34E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.33E+3	1.33E+3	1.33E+3	3.30E+2	3.30E+2	3.30E+2	1.34E+2	1.34E+2	1.34E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.15E+3	1.15E+3	1.15E+3	1.03E+3	1.03E+3	1.03E+3	9.87E+2	9.87E+2	9.87E+2	8.93E+2	8.93E+2	8.93E+2	8.14E+2	8.14E+2	8.14E+2
XVIB	1.15E+3	1.15E+3	1.15E+3	1.03E+3	1.03E+3	1.03E+3	9.87E+2	9.87E+2	9.87E+2	8.93E+2	8.93E+2	8.93E+2	8.14E+2	8.14E+2	8.14E+2
XVIC	1.15E+3	1.15E+3	1.15E+3	1.03E+3	1.03E+3	1.03E+3	9.87E+2	9.87E+2	9.87E+2	8.93E+2	8.93E+2	8.93E+2	8.14E+2	8.14E+2	8.14E+2
XVIIIA	5.90E+2	5.90E+2	5.90E+2	5.84E+2	5.84E+2	5.84E+2	5.81E+2	5.81E+2	5.81E+2	5.59E+2	5.59E+2	5.59E+2	5.36E+2	5.36E+2	5.36E+2
XVIIIB	5.90E+2	5.90E+2	5.90E+2	5.84E+2	5.84E+2	5.84E+2	5.81E+2	5.81E+2	5.81E+2	5.59E+2	5.59E+2	5.59E+2	5.36E+2	5.36E+2	5.36E+2
XVIIIC	5.90E+2	5.90E+2	5.90E+2	5.84E+2	5.84E+2	5.84E+2	5.81E+2	5.81E+2	5.81E+2	5.59E+2	5.59E+2	5.59E+2	5.36E+2	5.36E+2	5.36E+2
XXA	1.45E+5	1.45E+5	1.45E+5	3.21E+4	3.21E+4	3.21E+4	1.58E+4	1.58E+4	1.58E+4	1.69E+3	1.69E+3	1.69E+3	1.72E+2	1.72E+2	1.72E+2
XXB	1.45E+5	1.45E+5	1.45E+5	3.21E+4	3.21E+4	3.21E+4	1.58E+4	1.58E+4	1.58E+4	1.69E+3	1.69E+3	1.69E+3	1.72E+2	1.72E+2	1.72E+2
XXC	1.45E+5	1.45E+5	1.45E+5	3.21E+4	3.21E+4	3.21E+4	1.58E+4	1.58E+4	1.58E+4	1.69E+3	1.69E+3	1.69E+3	1.72E+2	1.72E+2	1.72E+2
XXIA	3.43E+4	3.43E+4	3.43E+4	3.36E+4	3.36E+4	3.36E+4	3.28E+4	3.28E+4	3.28E+4	2.88E+4	2.88E+4	2.88E+4	2.62E+4	2.62E+4	2.62E+4
XXIB	3.43E+4	3.43E+4	3.43E+4	3.36E+4	3.36E+4	3.36E+4	3.28E+4	3.28E+4	3.28E+4	2.88E+4	2.88E+4	2.88E+4	2.62E+4	2.62E+4	2.62E+4
XXIC	3.43E+4	3.43E+4	3.43E+4	3.36E+4	3.36E+4	3.36E+4	3.28E+4	3.28E+4	3.28E+4	2.88E+4	2.88E+4	2.88E+4	2.62E+4	2.62E+4	2.62E+4
XXII	1.96E+6	1.96E+6	1.96E+6	1.50E+6	1.51E+6	1.51E+6	1.31E+6	1.32E+6	1.32E+6	1.03E+6	1.09E+6	1.09E+6	8.95E+5	1.00E+6	1.00E+6
DOE	8.90E+7	8.90E+7	8.90E+7	4.67E+7	4.68E+7	4.68E+7	3.59E+7	3.60E+7	3.60E+7	2.38E+7	2.43E+7	2.43E+7	1.91E+7	2.00E+7	2.00E+7
DOD	1.90E+4	1.90E+4	1.90E+4	5.44E+3	5.44E+3	5.44E+3	2.85E+3	2.85E+3	2.85E+3	1.62E+3	1.62E+3	1.62E+3	1.57E+3	1.57E+3	1.57E+3
NRC	2.96E+6	2.96E+6	2.96E+6	1.36E+6	1.36E+6	1.36E+6	1.10E+6	1.10E+6	1.10E+6	8.05E+5	8.05E+5	8.05E+5	7.15E+5	7.15E+5	7.15E+5
Total	9.20E+7	9.20E+7	9.20E+7	4.81E+7	4.81E+7	4.81E+7	3.70E+7	3.71E+7	3.71E+7	2.46E+7	2.51E+7	2.51E+7	1.98E+7	2.08E+7	2.08E+7

Table 2 Continued
 07-21-95 5:22p--30-y delay for Reference Sites I, III and V. R.S. I based on 1978 aerial survey
 CLEANUP VOLUMES (m*3)--Indoor radon pathway excluded from RME health effects

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.09E+4	8.09E+4	8.09E+4	6.14E+4	6.14E+4	6.14E+4	4.21E+4	4.21E+4	4.21E+4	1.00E+4	1.00E+4	1.00E+4	6.90E+3	6.90E+3	6.90E+3
II	7.89E+5	7.97E+5	7.97E+5	7.78E+5	7.88E+5	7.88E+5	7.60E+5	7.70E+5	7.70E+5	6.94E+5	7.02E+5	7.02E+5	6.67E+5	6.75E+5	6.75E+5
III	5.04E+4	5.04E+4	5.04E+4	2.23E+4	2.23E+4	2.23E+4	6.33E+3	6.33E+3	6.33E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IV	2.34E+4	2.34E+4	2.34E+4	1.95E+4	1.95E+4	1.95E+4	1.46E+4	1.46E+4	1.46E+4	4.09E+3	4.09E+3	4.09E+3	1.33E+3	1.33E+3	1.33E+3
V	1.99E+6	1.99E+6	1.99E+6	1.42E+6	1.42E+6	1.42E+6	8.33E+5	8.33E+5	8.33E+5	4.30E+5	4.30E+5	4.30E+5	3.24E+5	3.24E+5	3.24E+5
VI	1.30E+5	1.30E+5	1.30E+5	1.13E+5	1.13E+5	1.13E+5	9.07E+4	9.07E+4	9.07E+4	4.94E+4	4.94E+4	4.94E+4	4.26E+4	4.26E+4	4.26E+4
VII	1.92E+6	1.92E+6	1.92E+6	9.44E+5	9.44E+5	9.44E+5	4.27E+5	4.27E+5	4.27E+5	1.27E+4	1.27E+4	1.27E+4	.00E+0	.00E+0	.00E+0
IX	4.19E+3	4.19E+3	4.19E+3	2.11E+3	2.11E+3	2.11E+3	1.08E+3	1.08E+3	1.08E+3	9.24E+1	9.24E+1	9.24E+1	.00E+0	.00E+0	.00E+0
X	2.81E+5	4.20E+5	4.24E+5	2.02E+5	3.21E+5	3.24E+5	1.35E+5	2.03E+5	2.06E+5	5.36E+4	7.28E+4	7.33E+4	3.98E+4	5.26E+4	5.31E+4
XII	1.49E+3	1.49E+3	1.49E+3	1.31E+3	1.31E+3	1.31E+3	1.11E+3	1.11E+3	1.11E+3	7.75E+2	7.75E+2	7.75E+2	7.15E+2	7.15E+2	7.15E+2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	6.77E+2	6.77E+2	6.77E+2	6.27E+2	6.27E+2	6.27E+2	5.76E+2	5.76E+2	5.76E+2	3.95E+2	3.95E+2	3.95E+2	3.38E+2	3.38E+2	3.38E+2
XVIB	6.77E+2	6.77E+2	6.77E+2	6.27E+2	6.27E+2	6.27E+2	5.76E+2	5.76E+2	5.76E+2	3.95E+2	3.95E+2	3.95E+2	3.38E+2	3.38E+2	3.38E+2
XVIC	6.77E+2	6.77E+2	6.77E+2	6.27E+2	6.27E+2	6.27E+2	5.76E+2	5.76E+2	5.76E+2	3.95E+2	3.95E+2	3.95E+2	3.38E+2	3.38E+2	3.38E+2
XVIIIA	5.04E+2	5.04E+2	5.04E+2	4.62E+2	4.62E+2	4.62E+2	3.99E+2	3.99E+2	3.99E+2	2.61E+2	2.61E+2	2.61E+2	2.25E+2	2.25E+2	2.25E+2
XVIIIB	5.04E+2	5.04E+2	5.04E+2	4.62E+2	4.62E+2	4.62E+2	3.99E+2	3.99E+2	3.99E+2	2.61E+2	2.61E+2	2.61E+2	2.25E+2	2.25E+2	2.25E+2
XVIIIC	5.04E+2	5.04E+2	5.04E+2	4.62E+2	4.62E+2	4.62E+2	3.99E+2	3.99E+2	3.99E+2	2.61E+2	2.61E+2	2.61E+2	2.25E+2	2.25E+2	2.25E+2
XXA	7.46E+1	7.46E+1	7.46E+1	5.22E+1	5.22E+1	5.22E+1	3.33E+1	3.33E+1	3.33E+1	1.32E+1	1.32E+1	1.32E+1	9.84E+0	9.84E+0	9.84E+0
XXB	7.46E+1	7.46E+1	7.46E+1	5.22E+1	5.22E+1	5.22E+1	3.33E+1	3.33E+1	3.33E+1	1.32E+1	1.32E+1	1.32E+1	9.84E+0	9.84E+0	9.84E+0
XXC	7.46E+1	7.46E+1	7.46E+1	5.22E+1	5.22E+1	5.22E+1	3.33E+1	3.33E+1	3.33E+1	1.32E+1	1.32E+1	1.32E+1	9.84E+0	9.84E+0	9.84E+0
XXIA	2.27E+4	2.27E+4	2.27E+4	2.06E+4	2.06E+4	2.06E+4	1.80E+4	1.80E+4	1.80E+4	8.32E+3	8.32E+3	8.32E+3	6.50E+3	6.50E+3	6.50E+3
XXIB	2.27E+4	2.27E+4	2.27E+4	2.06E+4	2.06E+4	2.06E+4	1.80E+4	1.80E+4	1.80E+4	8.32E+3	8.32E+3	8.32E+3	6.50E+3	6.50E+3	6.50E+3
XXIC	2.27E+4	2.27E+4	2.27E+4	2.06E+4	2.06E+4	2.06E+4	1.80E+4	1.80E+4	1.80E+4	8.32E+3	8.32E+3	8.32E+3	6.50E+3	6.50E+3	6.50E+3
XXII	7.89E+5	8.22E+5	8.22E+5	6.68E+5	7.43E+5	7.43E+5	5.45E+5	5.88E+5	5.88E+5	4.74E+5	4.88E+5	4.88E+5	3.82E+5	4.66E+5	4.66E+5
DOE	1.36E+7	1.40E+7	1.40E+7	1.06E+7	1.13E+7	1.13E+7	8.05E+6	8.43E+6	8.44E+6	5.60E+6	5.72E+6	5.72E+6	4.65E+6	5.25E+6	5.25E+6
DOD	1.49E+3	1.49E+3	1.49E+3	1.31E+3	1.31E+3	1.31E+3	1.11E+3	1.11E+3	1.11E+3	7.75E+2	7.75E+2	7.75E+2	7.15E+2	7.15E+2	7.15E+2
NRC	6.17E+5	6.17E+5	6.17E+5	5.62E+5	5.62E+5	5.62E+5	4.95E+5	4.95E+5	4.95E+5	2.49E+5	2.49E+5	2.49E+5	2.00E+5	2.00E+5	2.00E+5
Total	1.42E+7	1.46E+7	1.46E+7	1.12E+7	1.19E+7	1.19E+7	8.55E+6	8.93E+6	8.93E+6	5.85E+6	5.97E+6	5.97E+6	4.85E+6	5.45E+6	5.45E+6

Table 3

REASONABLE SCENARIO: Site Specific Population and Agriculture - With Radon.- 07-21-95 5:22p

30-y delay for Reference Sites I, III and V. R.S. I based on 1978 aerial survey

POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded from RME health effects, included in population impacts

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.65E-1	6.17E-1	6.17E-1	5.53E-1	6.04E-1	6.04E-1	5.45E-1	5.95E-1	5.95E-1	5.23E-1	5.71E-1	5.71E-1	5.04E-1	5.51E-1	5.51E-1
II	1.85E+2	1.80E+3	1.42E+4	1.85E+2	1.80E+3	1.42E+4	1.85E+2	1.80E+3	1.42E+4	1.85E+2	1.80E+3	1.42E+4	1.85E+2	1.80E+3	1.42E+4
III	2.46E-1	2.73E-1	2.73E-1	2.45E-1	2.72E-1	2.72E-1	2.42E-1	2.69E-1	2.69E-1	2.21E-1	2.45E-1	2.45E-1	1.95E-1	2.17E-1	2.17E-1
IV	4.31E-1	2.51E+0	9.88E+0	4.27E-1	2.49E+0	9.81E+0	4.25E-1	2.47E+0	9.75E+0	4.18E-1	2.43E+0	9.59E+0	4.13E-1	2.40E+0	9.47E+0
V	1.48E+1	1.62E+1	1.62E+1	1.48E+1	1.61E+1	1.61E+1	1.47E+1	1.61E+1	1.61E+1	1.46E+1	1.59E+1	1.59E+1	1.44E+1	1.57E+1	1.57E+1
VI	1.74E+1	1.18E+2	1.12E+3	1.74E+1	1.18E+2	1.12E+3	1.74E+1	1.18E+2	1.12E+3	1.74E+1	1.18E+2	1.12E+3	1.73E+1	1.18E+2	1.12E+3
VII	2.68E+0	1.87E+1	1.22E+2	2.62E+0	1.82E+1	1.19E+2	2.54E+0	1.75E+1	1.15E+2	2.34E+0	1.60E+1	1.04E+2	2.22E+0	1.50E+1	9.78E+1
IX	5.37E-2	4.63E-1	2.87E+0	5.10E-2	4.40E-1	2.72E+0	4.84E-2	4.18E-1	2.58E+0	4.21E-2	3.63E-1	2.25E+0	3.78E-2	3.26E-1	2.02E+0
X	1.56E+0	5.13E+0	5.81E+0	1.56E+0	5.13E+0	5.81E+0	1.56E+0	5.13E+0	5.81E+0	1.55E+0	5.12E+0	5.80E+0	1.55E+0	5.10E+0	5.77E+0
XII	2.99E-2	9.31E-2	9.60E-2	2.99E-2	9.31E-2	9.60E-2	2.99E-2	9.31E-2	9.60E-2	2.98E-2	9.31E-2	9.59E-2	2.98E-2	9.31E-2	9.59E-2
XIIIA	2.62E-4	1.58E-3	4.32E-3	2.10E-4	1.27E-3	3.47E-3	1.47E-4	8.84E-4	2.42E-3	2.89E-5	1.74E-4	4.77E-4	.00E+0	.00E+0	.00E+0
XIIIB	2.34E-4	1.04E-3	2.02E-3	1.88E-4	8.32E-4	1.62E-3	1.31E-4	5.81E-4	1.13E-3	2.58E-5	1.15E-4	2.23E-4	.00E+0	.00E+0	.00E+0
XIIIC	1.94E-4	5.64E-4	1.07E-2	1.56E-4	4.53E-4	8.55E-3	1.09E-4	3.16E-4	5.97E-3	2.14E-5	6.23E-5	1.18E-3	.00E+0	.00E+0	.00E+0
XVIA	3.31E-3	3.50E-3	3.50E-3	3.31E-3	3.50E-3	3.50E-3	3.31E-3	3.50E-3	3.50E-3	3.31E-3	3.50E-3	3.50E-3	3.31E-3	3.50E-3	3.50E-3
XVIB	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.46E-3	3.46E-3
XVIC	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2
XVIIIC	3.85E-2	4.22E-2	4.22E-2	3.85E-2	4.22E-2	4.22E-2	3.85E-2	4.22E-2	4.22E-2	3.85E-2	4.22E-2	4.22E-2	3.85E-2	4.22E-2	4.22E-2
XXA	2.15E-2	1.66E-1	2.13E+0	1.62E-2	1.26E-1	1.62E+0	1.38E-2	1.06E-1	1.37E+0	9.58E-3	7.41E-2	9.53E-1	7.22E-3	5.58E-2	7.18E-1
XXB	2.03E-2	1.18E-1	1.19E+0	1.54E-2	8.95E-2	9.02E-1	1.30E-2	7.58E-2	7.65E-1	9.07E-3	5.28E-2	5.32E-1	6.84E-3	3.98E-2	4.01E-1
XXC	1.83E-2	6.71E-2	1.83E+0	1.38E-2	5.08E-2	1.38E+0	1.17E-2	4.30E-2	1.17E+0	8.16E-3	2.99E-2	8.15E-1	6.15E-3	2.26E-2	6.14E-1
XXIA	1.19E-1	1.18E+0	1.11E+1	1.19E-1	1.18E+0	1.11E+1	1.19E-1	1.18E+0	1.11E+1	1.19E-1	1.18E+0	1.11E+1	1.19E-1	1.18E+0	1.11E+1
XXIB	1.19E-1	1.17E+0	1.01E+1	1.19E-1	1.17E+0	1.01E+1	1.19E-1	1.17E+0	1.01E+1	1.19E-1	1.17E+0	1.01E+1	1.18E-1	1.16E+0	1.01E+1
XXIC	1.17E-1	1.12E+0	8.14E+0	1.17E-1	1.12E+0	8.14E+0	1.17E-1	1.12E+0	8.14E+0	1.17E-1	1.12E+0	8.14E+0	1.17E-1	1.12E+0	8.13E+0
XXII	8.32E+0	7.48E+1	1.75E+2	8.32E+0	7.47E+1	1.75E+2	8.31E+0	7.47E+1	1.75E+2	8.29E+0	7.45E+1	1.75E+2	8.27E+0	7.44E+1	1.74E+2
DOE	6.57E+2	5.03E+3	4.10E+4	6.57E+2	5.02E+3	4.10E+4	6.57E+2	5.02E+3	4.10E+4	6.56E+2	5.02E+3	4.09E+4	6.55E+2	5.02E+3	4.09E+4
DOD	3.18E-2	1.02E-1	1.44E-1	3.14E-2	1.00E-1	1.35E-1	3.10E-2	9.82E-2	1.23E-1	3.01E-2	9.41E-2	1.01E-1	2.98E-2	9.31E-2	9.59E-2
NRC	5.77E+0	3.03E+1	2.42E+2	5.71E+0	2.99E+1	2.36E+2	5.67E+0	2.97E+1	2.34E+2	5.62E+0	2.94E+1	2.29E+2	5.59E+0	2.92E+1	2.26E+2
Total	6.63E+2	5.06E+3	4.12E+4	6.63E+2	5.05E+3	4.12E+4	6.62E+2	5.05E+3	4.12E+4	6.61E+2	5.05E+3	4.12E+4	6.61E+2	5.05E+3	4.12E+4

Table 3 Continued

REASONABLE SCENARIO: Site Specific Population and Agriculture - With Radon.- 07-21-95 5:22p

30-y delay for Reference Sites I, III and V. R.S. I based on 1978 aerial survey

POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded from RME health effects, included in population impacts

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.73E-1	5.16E-1	5.16E-1	4.51E-1	4.92E-1	4.92E-1	4.20E-1	4.58E-1	4.58E-1	3.32E-1	3.63E-1	3.63E-1	2.91E-1	3.18E-1	3.18E-1
II	1.85E+2	1.80E+3	1.42E+4	1.85E+2	1.79E+3	1.42E+4	1.85E+2	1.79E+3	1.41E+4	1.85E+2	1.79E+3	1.40E+4	1.84E+2	1.79E+3	1.40E+4
III	1.72E-1	1.91E-1	1.91E-1	1.53E-1	1.70E-1	1.70E-1	1.15E-1	1.27E-1	1.27E-1	2.97E-2	3.30E-2	3.30E-2	2.29E-2	2.54E-2	2.54E-2
IV	4.03E-1	2.35E+0	9.25E+0	3.97E-1	2.31E+0	9.12E+0	3.86E-1	2.25E+0	8.85E+0	3.27E-1	1.91E+0	7.51E+0	2.98E-1	1.74E+0	6.84E+0
V	1.41E+1	1.54E+1	1.54E+1	1.38E+1	1.51E+1	1.51E+1	1.33E+1	1.45E+1	1.45E+1	1.11E+1	1.21E+1	1.21E+1	1.07E+1	1.17E+1	1.17E+1
VI	1.73E+1	1.17E+2	1.12E+3	1.73E+1	1.17E+2	1.12E+3	1.72E+1	1.17E+2	1.11E+3	1.69E+1	1.16E+2	1.11E+3	1.67E+1	1.15E+2	1.10E+3
VII	2.03E+0	1.35E+1	8.78E+1	1.87E+0	1.24E+1	8.05E+1	1.45E+0	9.61E+0	6.25E+1	6.09E-1	4.08E+0	2.66E+1	4.82E-1	3.24E+0	2.11E+1
IX	3.16E-2	2.72E-1	1.69E+0	2.65E-2	2.29E-1	1.42E+0	2.17E-2	1.87E-1	1.16E+0	1.02E-2	8.76E-2	5.42E-1	7.12E-3	6.14E-2	3.80E-1
X	1.53E+0	5.01E+0	5.67E+0	1.52E+0	4.89E+0	5.52E+0	1.51E+0	4.62E+0	5.20E+0	1.45E+0	3.53E+0	3.92E+0	1.42E+0	3.25E+0	3.59E+0
XII	2.98E-2	9.31E-2	9.59E-2	2.98E-2	9.31E-2	9.59E-2	2.98E-2	9.30E-2	9.59E-2	2.98E-2	9.29E-2	9.58E-2	2.98E-2	9.28E-2	9.57E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.49E-3	3.49E-3	3.29E-3	3.48E-3	3.48E-3	3.26E-3	3.45E-3	3.45E-3	3.25E-3	3.44E-3	3.44E-3
XVIB	3.27E-3	3.45E-3	3.45E-3	3.26E-3	3.45E-3	3.45E-3	3.25E-3	3.44E-3	3.44E-3	3.23E-3	3.41E-3	3.41E-3	3.21E-3	3.40E-3	3.40E-3
XVIC	3.20E-3	3.36E-3	3.36E-3	3.19E-3	3.36E-3	3.36E-3	3.18E-3	3.34E-3	3.34E-3	3.15E-3	3.32E-3	3.32E-3	3.14E-3	3.30E-3	3.30E-3
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.02E-2	4.44E-2	4.44E-2	3.97E-2	4.39E-2	4.39E-2	3.94E-2	4.36E-2	4.36E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.95E-2	4.38E-2	4.38E-2	3.95E-2	4.37E-2	4.37E-2	3.90E-2	4.32E-2	4.32E-2	3.87E-2	4.29E-2	4.29E-2
XVIIIC	3.85E-2	4.22E-2	4.22E-2	3.85E-2	4.22E-2	4.22E-2	3.84E-2	4.21E-2	4.21E-2	3.80E-2	4.16E-2	4.16E-2	3.77E-2	4.13E-2	4.13E-2
XXA	3.43E-3	2.65E-2	3.41E-1	1.42E-3	1.10E-2	1.41E-1	9.22E-4	7.13E-3	9.19E-2	7.36E-4	5.69E-3	7.34E-2	6.83E-4	5.28E-3	6.81E-2
XXB	3.25E-3	1.89E-2	1.91E-1	1.34E-3	7.81E-3	7.89E-2	8.73E-4	5.08E-3	5.13E-2	6.97E-4	4.06E-3	4.10E-2	6.47E-4	3.77E-3	3.80E-2
XXC	2.92E-3	1.07E-2	2.92E-1	1.21E-3	4.43E-3	1.21E-1	7.86E-4	2.88E-3	7.86E-2	6.27E-4	2.30E-3	6.27E-2	5.82E-4	2.14E-3	5.82E-2
XXIA	1.19E-1	1.18E+0	1.11E+1	1.19E-1	1.18E+0	1.10E+1	1.18E-1	1.17E+0	1.10E+1	1.14E-1	1.13E+0	1.06E+1	1.11E-1	1.10E+0	1.04E+1
XXIB	1.18E-1	1.16E+0	1.00E+1	1.18E-1	1.16E+0	1.00E+1	1.17E-1	1.15E+0	9.94E+0	1.14E-1	1.12E+0	9.65E+0	1.11E-1	1.09E+0	9.39E+0
XXIC	1.16E-1	1.12E+0	8.11E+0	1.16E-1	1.12E+0	8.09E+0	1.15E-1	1.11E+0	8.04E+0	1.12E-1	1.08E+0	7.80E+0	1.09E-1	1.05E+0	7.59E+0
XXII	8.22E+0	7.41E+1	1.73E+2	8.18E+0	7.38E+1	1.73E+2	8.12E+0	7.31E+1	1.71E+2	7.68E+0	6.99E+1	1.64E+2	7.62E+0	6.89E+1	1.61E+2
DOE	6.53E+2	5.01E+3	4.09E+4	6.51E+2	5.00E+3	4.08E+4	6.49E+2	4.99E+3	4.07E+4	6.35E+2	4.93E+3	4.03E+4	6.31E+2	4.90E+3	4.01E+4
DOD	2.98E-2	9.31E-2	9.59E-2	2.98E-2	9.31E-2	9.59E-2	2.98E-2	9.30E-2	9.59E-2	2.98E-2	9.29E-2	9.58E-2	2.98E-2	9.28E-2	9.57E-2
NRC	5.53E+0	2.88E+1	2.21E+2	5.49E+0	2.86E+1	2.18E+2	5.47E+0	2.84E+1	2.16E+2	5.35E+0	2.76E+1	2.10E+2	5.27E+0	2.69E+1	2.04E+2
Total	6.59E+2	5.04E+3	4.11E+4	6.57E+2	5.03E+3	4.11E+4	6.54E+2	5.02E+3	4.09E+4	6.41E+2	4.96E+3	4.05E+4	6.36E+2	4.93E+3	4.03E+4

Table 4

REASONABLE SCENARIO: Site Specific Population and Agriculture - With Radon.- 07-21-95 5:22p

30-y delay for Reference Sites I, III and V. R.S. I based on 1978 aerial survey

POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded from RME health effects, included in population impacts

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.59E-1	6.10E-1	6.10E-1	5.39E-1	5.89E-1	5.89E-1	5.25E-1	5.73E-1	5.73E-1	4.81E-1	5.26E-1	5.26E-1	4.55E-1	4.97E-1	4.97E-1
II	1.85E+2	1.80E+3	1.42E+4	1.85E+2	1.80E+3	1.42E+4	1.85E+2	1.80E+3	1.42E+4	1.85E+2	1.80E+3	1.42E+4	1.85E+2	1.79E+3	1.42E+4
III	2.46E-1	2.73E-1	2.73E-1	2.39E-1	2.65E-1	2.65E-1	2.24E-1	2.48E-1	2.48E-1	1.78E-1	1.97E-1	1.97E-1	1.57E-1	1.75E-1	1.75E-1
IV	4.29E-1	2.50E+0	9.84E+0	4.23E-1	2.46E+0	9.70E+0	4.18E-1	2.43E+0	9.58E+0	4.04E-1	2.35E+0	9.27E+0	3.97E-1	2.31E+0	9.11E+0
V	1.48E+1	1.61E+1	1.61E+1	1.47E+1	1.60E+1	1.60E+1	1.46E+1	1.59E+1	1.59E+1	1.42E+1	1.55E+1	1.55E+1	1.39E+1	1.52E+1	1.52E+1
VI	1.74E+1	1.18E+2	1.12E+3	1.74E+1	1.18E+2	1.12E+3	1.74E+1	1.18E+2	1.12E+3	1.73E+1	1.18E+2	1.12E+3	1.73E+1	1.17E+2	1.12E+3
VII	2.66E+0	1.85E+1	1.21E+2	2.45E+0	1.68E+1	1.10E+2	2.31E+0	1.57E+1	1.03E+2	2.03E+0	1.35E+1	8.78E+1	1.79E+0	1.19E+1	7.72E+1
IX	5.19E-2	4.48E-1	2.77E+0	4.57E-2	3.95E-1	2.44E+0	4.12E-2	3.56E-1	2.20E+0	3.14E-2	2.71E-1	1.67E+0	2.48E-2	2.14E-1	1.32E+0
X	1.56E+0	5.13E+0	5.81E+0	1.56E+0	5.13E+0	5.81E+0	1.56E+0	5.13E+0	5.80E+0	1.56E+0	5.08E+0	5.75E+0	1.56E+0	4.99E+0	5.65E+0
XII	2.99E-2	9.31E-2	9.60E-2	2.98E-2	9.31E-2	9.59E-2	2.98E-2	9.31E-2	9.59E-2	2.98E-2	9.31E-2	9.59E-2	2.98E-2	9.30E-2	9.59E-2
XIIIA	2.38E-4	1.44E-3	3.93E-3	1.39E-4	8.38E-4	2.30E-3	6.81E-5	4.11E-4	1.12E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.13E-4	9.44E-4	1.84E-3	1.24E-4	5.51E-4	1.07E-3	6.09E-5	2.70E-4	5.25E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.77E-4	5.14E-4	9.71E-3	1.03E-4	3.00E-4	5.67E-3	5.05E-5	1.47E-4	2.77E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.31E-3	3.50E-3	3.50E-3	3.31E-3	3.50E-3	3.50E-3	3.31E-3	3.50E-3	3.50E-3	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.49E-3	3.49E-3
XVIB	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.45E-3	3.45E-3
XVIC	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2
XVIIIC	3.85E-2	4.22E-2	4.22E-2	3.85E-2	4.22E-2	4.22E-2	3.85E-2	4.22E-2	4.22E-2	3.85E-2	4.22E-2	4.22E-2	3.85E-2	4.22E-2	4.22E-2
XXA	1.71E-2	1.32E-1	1.70E+0	1.13E-2	8.72E-2	1.12E+0	8.35E-3	6.46E-2	8.31E-1	2.38E-3	1.84E-2	2.37E-1	1.01E-3	7.79E-3	1.00E-1
XXB	1.62E-2	9.43E-2	9.51E-1	1.07E-2	6.21E-2	6.27E-1	7.91E-3	4.60E-2	4.64E-1	2.26E-3	1.31E-2	1.33E-1	9.54E-4	5.55E-3	5.60E-2
XXC	1.46E-2	5.35E-2	1.46E+0	9.61E-3	3.53E-2	9.60E-1	7.12E-3	2.61E-2	7.11E-1	2.03E-3	7.45E-3	2.03E-1	8.58E-4	3.15E-3	8.57E-2
XXIA	1.19E-1	1.18E+0	1.11E+1	1.19E-1	1.18E+0	1.11E+1	1.19E-1	1.18E+0	1.11E+1	1.19E-1	1.18E+0	1.11E+1	1.19E-1	1.18E+0	1.10E+1
XXIB	1.19E-1	1.17E+0	1.01E+1	1.19E-1	1.17E+0	1.01E+1	1.19E-1	1.17E+0	1.01E+1	1.18E-1	1.16E+0	1.00E+1	1.18E-1	1.16E+0	1.00E+1
XXIC	1.17E-1	1.12E+0	8.14E+0	1.17E-1	1.12E+0	8.14E+0	1.17E-1	1.12E+0	8.14E+0	1.16E-1	1.12E+0	8.11E+0	1.16E-1	1.12E+0	8.08E+0
XXII	8.32E+0	7.47E+1	1.75E+2	8.31E+0	7.46E+1	1.75E+2	8.29E+0	7.45E+1	1.74E+2	8.23E+0	7.41E+1	1.74E+2	8.17E+0	7.39E+1	1.73E+2
DOE	6.57E+2	5.03E+3	4.10E+4	6.56E+2	5.02E+3	4.10E+4	6.56E+2	5.02E+3	4.09E+4	6.54E+2	5.01E+3	4.09E+4	6.52E+2	5.00E+3	4.08E+4
DOD	3.16E-2	1.01E-1	1.40E-1	3.09E-2	9.79E-2	1.22E-1	3.03E-2	9.54E-2	1.08E-1	2.98E-2	9.31E-2	9.59E-2	2.98E-2	9.30E-2	9.59E-2
NRC	5.72E+0	2.99E+1	2.37E+2	5.64E+0	2.95E+1	2.31E+2	5.60E+0	2.93E+1	2.27E+2	5.52E+0	2.87E+1	2.20E+2	5.49E+0	2.85E+1	2.18E+2
Total	6.63E+2	5.06E+3	4.12E+4	6.62E+2	5.05E+3	4.12E+4	6.61E+2	5.05E+3	4.12E+4	6.59E+2	5.04E+3	4.11E+4	6.57E+2	5.03E+3	4.10E+4

Table 4 Continued

REASONABLE SCENARIO: Site Specific Population and Agriculture - With Radon.- 07-21-95 5:22p

30-y delay for Reference Sites I, III and V. R.S. I based on 1978 aerial survey

POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded from RME health effects, included in population impacts

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.13E-1	4.51E-1	4.51E-1	3.86E-1	4.22E-1	4.22E-1	3.43E-1	3.75E-1	3.75E-1	2.01E-1	2.19E-1	2.19E-1	1.71E-1	1.87E-1	1.87E-1
II	1.85E+2	1.79E+3	1.41E+4	1.85E+2	1.79E+3	1.41E+4	1.85E+2	1.79E+3	1.40E+4	1.83E+2	1.77E+3	1.38E+4	1.82E+2	1.76E+3	1.37E+4
III	1.05E-1	1.16E-1	1.16E-1	6.48E-2	7.19E-2	7.19E-2	3.11E-2	3.46E-2	3.46E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IV	3.79E-1	2.21E+0	8.69E+0	3.61E-1	2.10E+0	8.28E+0	3.25E-1	1.89E+0	7.45E+0	1.44E-1	8.38E-1	3.30E+0	5.37E-2	3.12E-1	1.23E+0
V	1.31E+1	1.43E+1	1.43E+1	1.23E+1	1.35E+1	1.35E+1	1.11E+1	1.22E+1	1.22E+1	9.10E+0	9.93E+0	9.93E+0	8.08E+0	8.82E+0	8.82E+0
VI	1.72E+1	1.17E+2	1.11E+3	1.71E+1	1.17E+2	1.11E+3	1.69E+1	1.16E+2	1.11E+3	1.61E+1	1.13E+2	1.08E+3	1.59E+1	1.11E+2	1.06E+3
VII	1.21E+0	8.03E+0	5.22E+1	8.57E-1	5.71E+0	3.71E+1	5.65E-1	3.79E+0	2.47E+1	3.30E-2	1.87E-1	1.18E+0	.00E+0	.00E+0	.00E+0
IX	1.81E-2	1.56E-1	9.66E-1	1.31E-2	1.13E-1	6.97E-1	8.92E-3	7.70E-2	4.76E-1	1.62E-3	1.40E-2	8.65E-2	.00E+0	.00E+0	.00E+0
X	1.55E+0	4.70E+0	5.31E+0	1.53E+0	4.40E+0	4.96E+0	1.51E+0	3.87E+0	4.33E+0	1.40E+0	2.81E+0	3.08E+0	1.35E+0	2.53E+0	2.75E+0
XII	2.98E-2	9.30E-2	9.59E-2	2.98E-2	9.29E-2	9.58E-2	2.97E-2	9.27E-2	9.56E-2	2.95E-2	9.21E-2	9.49E-2	2.95E-2	9.19E-2	9.47E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.29E-3	3.48E-3	3.48E-3	3.28E-3	3.47E-3	3.47E-3	3.26E-3	3.46E-3	3.46E-3	3.14E-3	3.33E-3	3.33E-3	3.07E-3	3.26E-3	3.26E-3
XVIB	3.25E-3	3.44E-3	3.44E-3	3.24E-3	3.43E-3	3.43E-3	3.23E-3	3.41E-3	3.41E-3	3.11E-3	3.29E-3	3.29E-3	3.04E-3	3.22E-3	3.22E-3
XVIC	3.18E-3	3.34E-3	3.34E-3	3.17E-3	3.33E-3	3.33E-3	3.16E-3	3.32E-3	3.32E-3	3.04E-3	3.20E-3	3.20E-3	2.97E-3	3.13E-3	3.13E-3
XVIIIA	4.02E-2	4.44E-2	4.44E-2	4.00E-2	4.43E-2	4.43E-2	3.97E-2	4.39E-2	4.39E-2	3.79E-2	4.19E-2	4.19E-2	3.70E-2	4.09E-2	4.09E-2
XVIIIB	3.95E-2	4.37E-2	4.37E-2	3.93E-2	4.35E-2	4.35E-2	3.90E-2	4.32E-2	4.32E-2	3.72E-2	4.12E-2	4.12E-2	3.64E-2	4.03E-2	4.03E-2
XVIIIC	3.84E-2	4.21E-2	4.21E-2	3.83E-2	4.19E-2	4.19E-2	3.79E-2	4.16E-2	4.16E-2	3.62E-2	3.97E-2	3.97E-2	3.54E-2	3.88E-2	3.88E-2
XXA	8.50E-4	6.58E-3	8.47E-2	7.80E-4	6.04E-3	7.78E-2	6.88E-4	5.33E-3	6.86E-2	4.76E-4	3.69E-3	4.76E-2	4.02E-4	3.11E-3	4.02E-2
XXB	8.05E-4	4.69E-3	4.73E-2	7.40E-4	4.30E-3	4.35E-2	6.52E-4	3.79E-3	3.83E-2	4.51E-4	2.63E-3	2.66E-2	3.81E-4	2.22E-3	2.25E-2
XXC	7.24E-4	2.66E-3	7.24E-2	6.65E-4	2.44E-3	6.65E-2	5.86E-4	2.15E-3	5.87E-2	4.06E-4	1.49E-3	4.06E-2	3.43E-4	1.26E-3	3.43E-2
XXIA	1.17E-1	1.17E+0	1.09E+1	1.16E-1	1.15E+0	1.08E+1	1.14E-1	1.13E+0	1.06E+1	9.60E-2	9.52E-1	8.93E+0	8.93E-2	8.86E-1	8.31E+0
XXIB	1.17E-1	1.15E+0	9.90E+0	1.16E-1	1.14E+0	9.81E+0	1.13E-1	1.12E+0	9.63E+0	9.53E-2	9.37E-1	8.09E+0	8.87E-2	8.72E-1	7.53E+0
XXIC	1.15E-1	1.11E+0	8.01E+0	1.14E-1	1.10E+0	7.93E+0	1.12E-1	1.07E+0	7.79E+0	9.37E-2	9.03E-1	6.54E+0	8.72E-2	8.41E-1	6.09E+0
XXII	8.10E+0	7.30E+1	1.71E+2	7.94E+0	7.23E+1	1.69E+2	7.67E+0	7.00E+1	1.64E+2	7.33E+0	6.69E+1	1.57E+2	6.58E+0	6.56E+1	1.54E+2
DOE	6.48E+2	4.99E+3	4.07E+4	6.43E+2	4.97E+3	4.06E+4	6.36E+2	4.93E+3	4.03E+4	6.11E+2	4.80E+3	3.93E+4	5.98E+2	4.75E+3	3.89E+4
DOD	2.98E-2	9.30E-2	9.59E-2	2.98E-2	9.29E-2	9.58E-2	2.97E-2	9.27E-2	9.56E-2	2.95E-2	9.21E-2	9.49E-2	2.95E-2	9.19E-2	9.47E-2
NRC	5.45E+0	2.83E+1	2.16E+2	5.42E+0	2.80E+1	2.14E+2	5.35E+0	2.75E+1	2.10E+2	4.82E+0	2.35E+1	1.76E+2	4.61E+0	2.20E+1	1.64E+2
Total	6.53E+2	5.01E+3	4.09E+4	6.49E+2	5.00E+3	4.08E+4	6.41E+2	4.96E+3	4.06E+4	6.16E+2	4.83E+3	3.95E+4	6.02E+2	4.78E+3	3.91E+4

Table 5

REASONABLE SCENARIO: Site Specific Population and Agriculture - With Radon.- 07-21-95 5:22p

30-y delay for Reference Sites I, III and V. R.S. I based on 1978 aerial survey

POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded from RME health effects, included in population impacts

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	3.74E-1	4.09E-1	4.09E-1	3.66E-1	4.00E-1	4.00E-1	3.61E-1	3.94E-1	3.94E-1	3.47E-1	3.79E-1	3.79E-1	3.34E-1	3.65E-1	3.65E-1
II	1.49E+2	1.45E+3	1.20E+4	1.49E+2	1.45E+3	1.20E+4	1.49E+2	1.45E+3	1.20E+4	1.49E+2	1.45E+3	1.20E+4	1.49E+2	1.44E+3	1.20E+4
III	1.63E-1	1.81E-1	1.81E-1	1.62E-1	1.80E-1	1.80E-1	1.61E-1	1.78E-1	1.78E-1	1.46E-1	1.63E-1	1.63E-1	1.29E-1	1.44E-1	1.44E-1
IV	2.79E-1	1.59E+0	7.67E+0	2.77E-1	1.57E+0	7.62E+0	2.75E-1	1.56E+0	7.57E+0	2.71E-1	1.54E+0	7.45E+0	2.67E-1	1.52E+0	7.36E+0
V	9.81E+0	1.07E+1	1.07E+1	9.79E+0	1.07E+1	1.07E+1	9.77E+0	1.06E+1	1.06E+1	9.66E+0	1.05E+1	1.05E+1	9.56E+0	1.04E+1	1.04E+1
VI	1.19E+1	8.05E+1	8.34E+2	1.19E+1	8.05E+1	8.34E+2	1.19E+1	8.05E+1	8.34E+2	1.19E+1	8.05E+1	8.34E+2	1.19E+1	8.05E+1	8.34E+2
VII	2.19E+0	1.57E+1	1.04E+2	2.14E+0	1.53E+1	1.01E+2	2.07E+0	1.47E+1	9.76E+1	1.91E+0	1.34E+1	8.88E+1	1.80E+0	1.26E+1	8.33E+1
IX	4.74E-2	4.13E-1	2.57E+0	4.50E-2	3.92E-1	2.44E+0	4.28E-2	3.72E-1	2.32E+0	3.72E-2	3.23E-1	2.01E+0	3.34E-2	2.91E-1	1.81E+0
X	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.21E+0	3.67E+0	1.01E+0	3.20E+0	3.65E+0
XII	2.66E-2	8.25E-2	8.50E-2	2.66E-2	8.25E-2	8.50E-2	2.66E-2	8.25E-2	8.50E-2	2.66E-2	8.24E-2	8.49E-2	2.66E-2	8.24E-2	8.49E-2
XIIIA	1.70E-4	9.98E-4	2.94E-3	1.37E-4	8.01E-4	2.36E-3	9.55E-5	5.60E-4	1.65E-3	1.88E-5	1.10E-4	3.25E-4	.00E+0	.00E+0	.00E+0
XIIIB	1.51E-4	6.49E-4	1.42E-3	1.21E-4	5.21E-4	1.14E-3	8.46E-5	3.64E-4	7.95E-4	1.67E-5	7.17E-5	1.57E-4	.00E+0	.00E+0	.00E+0
XIIIC	1.24E-4	3.52E-4	6.58E-3	9.97E-5	2.82E-4	5.28E-3	6.96E-5	1.97E-4	3.69E-3	1.37E-5	3.89E-5	7.27E-4	.00E+0	.00E+0	.00E+0
XVIA	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.31E-3	2.31E-3
XVIB	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3
XVIC	2.12E-3	2.22E-3	2.22E-3	2.12E-3	2.22E-3	2.22E-3	2.12E-3	2.22E-3	2.22E-3	2.12E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3
XVIIIA	2.66E-2	2.95E-2	2.95E-2	2.66E-2	2.95E-2	2.95E-2	2.66E-2	2.95E-2	2.95E-2	2.66E-2	2.95E-2	2.95E-2	2.66E-2	2.95E-2	2.95E-2
XVIIIB	2.62E-2	2.89E-2	2.89E-2	2.62E-2	2.89E-2	2.89E-2	2.62E-2	2.89E-2	2.89E-2	2.62E-2	2.89E-2	2.89E-2	2.62E-2	2.89E-2	2.89E-2
XVIIIC	2.53E-2	2.78E-2	2.78E-2	2.53E-2	2.78E-2	2.78E-2	2.53E-2	2.78E-2	2.78E-2	2.53E-2	2.78E-2	2.78E-2	2.53E-2	2.78E-2	2.78E-2
XXA	1.35E-2	1.05E-1	1.72E+0	1.02E-2	7.91E-2	1.30E+0	8.67E-3	6.71E-2	1.10E+0	6.04E-3	4.67E-2	7.66E-1	4.55E-3	3.52E-2	5.78E-1
XXB	1.27E-2	7.41E-2	9.91E-1	9.65E-3	5.61E-2	7.50E-1	8.18E-3	4.76E-2	6.36E-1	5.69E-3	3.31E-2	4.42E-1	4.29E-3	2.49E-2	3.33E-1
XXC	1.14E-2	4.25E-2	1.26E+0	8.61E-3	3.22E-2	9.55E-1	7.29E-3	2.72E-2	8.09E-1	5.08E-3	1.90E-2	5.63E-1	3.82E-3	1.43E-2	4.24E-1
XXIA	7.90E-2	7.84E-1	7.35E+0	7.90E-2	7.84E-1	7.35E+0	7.90E-2	7.84E-1	7.35E+0	7.89E-2	7.84E-1	7.34E+0	7.89E-2	7.83E-1	7.34E+0
XXIB	7.84E-2	7.71E-1	6.65E+0	7.84E-2	7.71E-1	6.65E+0	7.84E-2	7.71E-1	6.65E+0	7.83E-2	7.71E-1	6.65E+0	7.83E-2	7.70E-1	6.64E+0
XXIC	7.72E-2	7.43E-1	5.38E+0	7.72E-2	7.43E-1	5.38E+0	7.72E-2	7.43E-1	5.38E+0	7.72E-2	7.43E-1	5.38E+0	7.71E-2	7.43E-1	5.38E+0
XXII	6.28E+0	5.52E+1	1.32E+2	6.28E+0	5.51E+1	1.32E+2	6.27E+0	5.51E+1	1.32E+2	6.26E+0	5.50E+1	1.32E+2	6.24E+0	5.49E+1	1.31E+2
DOE	4.77E+2	3.69E+3	3.19E+4	4.77E+2	3.68E+3	3.19E+4	4.77E+2	3.68E+3	3.19E+4	4.76E+2	3.68E+3	3.19E+4	4.75E+2	3.68E+3	3.19E+4
DOD	2.78E-2	8.82E-2	1.16E-1	2.76E-2	8.70E-2	1.10E-1	2.73E-2	8.57E-2	1.02E-1	2.67E-2	8.31E-2	8.83E-2	2.66E-2	8.24E-2	8.49E-2
NRC	3.81E+0	2.00E+1	1.63E+2	3.76E+0	1.97E+1	1.58E+2	3.74E+0	1.96E+1	1.56E+2	3.71E+0	1.94E+1	1.52E+2	3.69E+0	1.93E+1	1.50E+2
Total	4.81E+2	3.71E+3	3.21E+4	4.81E+2	3.70E+3	3.21E+4	4.80E+2	3.70E+3	3.21E+4	4.80E+2	3.70E+3	3.21E+4	4.79E+2	3.70E+3	3.21E+4

Table 5 Continued

REASONABLE SCENARIO: Site Specific Population and Agriculture - With Radon.- 07-21-95 5:22p

30-y delay for Reference Sites I, III and V. R.S. I based on 1978 aerial survey

POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded from RME health effects, included in population impacts

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	3.13E-1	3.42E-1	3.42E-1	2.99E-1	3.26E-1	3.26E-1	2.78E-1	3.04E-1	3.04E-1	2.20E-1	2.41E-1	2.41E-1	1.93E-1	2.11E-1	2.11E-1
II	1.48E+2	1.44E+3	1.20E+4	1.48E+2	1.44E+3	1.19E+4	1.48E+2	1.44E+3	1.19E+4	1.48E+2	1.44E+3	1.18E+4	1.48E+2	1.44E+3	1.18E+4
III	1.14E-1	1.27E-1	1.27E-1	1.02E-1	1.13E-1	1.13E-1	7.60E-2	8.44E-2	8.44E-2	1.97E-2	2.19E-2	2.19E-2	1.52E-2	1.69E-2	1.69E-2
IV	2.61E-1	1.48E+0	7.18E+0	2.57E-1	1.46E+0	7.08E+0	2.50E-1	1.42E+0	6.87E+0	2.12E-1	1.21E+0	5.83E+0	1.93E-1	1.10E+0	5.31E+0
V	9.36E+0	1.02E+1	1.02E+1	9.18E+0	9.99E+0	9.99E+0	8.80E+0	9.58E+0	9.58E+0	7.33E+0	7.98E+0	7.98E+0	7.09E+0	7.71E+0	7.71E+0
VI	1.19E+1	8.04E+1	8.33E+2	1.19E+1	8.03E+1	8.33E+2	1.18E+1	8.02E+1	8.32E+2	1.16E+1	7.95E+1	8.25E+2	1.15E+1	7.90E+1	8.21E+2
VII	1.64E+0	1.13E+1	7.48E+1	1.51E+0	1.04E+1	6.85E+1	1.18E+0	8.08E+0	5.33E+1	4.94E-1	3.43E+0	2.26E+1	3.91E-1	2.72E+0	1.80E+1
IX	2.79E-2	2.43E-1	1.51E+0	2.34E-2	2.04E-1	1.27E+0	1.91E-2	1.66E-1	1.04E+0	8.97E-3	7.80E-2	4.86E-1	6.29E-3	5.47E-2	3.41E-1
X	1.01E+0	3.14E+0	3.58E+0	9.99E-1	3.07E+0	3.49E+0	9.89E-1	2.90E+0	3.29E+0	9.49E-1	2.23E+0	2.49E+0	9.30E-1	2.06E+0	2.29E+0
XII	2.66E-2	8.24E-2	8.49E-2	2.65E-2	8.24E-2	8.49E-2	2.65E-2	8.24E-2	8.49E-2	2.65E-2	8.23E-2	8.48E-2	2.65E-2	8.22E-2	8.47E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.31E-3	2.31E-3	2.17E-3	2.30E-3	2.30E-3	2.15E-3	2.28E-3	2.28E-3	2.14E-3	2.27E-3	2.27E-3
XVIB	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.15E-3	2.27E-3	2.27E-3	2.13E-3	2.25E-3	2.25E-3	2.12E-3	2.24E-3	2.24E-3
XVIC	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.10E-3	2.21E-3	2.21E-3	2.09E-3	2.19E-3	2.19E-3	2.08E-3	2.18E-3	2.18E-3
XVIIIA	2.66E-2	2.95E-2	2.95E-2	2.66E-2	2.94E-2	2.94E-2	2.66E-2	2.94E-2	2.94E-2	2.62E-2	2.90E-2	2.90E-2	2.60E-2	2.88E-2	2.88E-2
XVIIIB	2.62E-2	2.89E-2	2.89E-2	2.62E-2	2.89E-2	2.89E-2	2.62E-2	2.89E-2	2.89E-2	2.58E-2	2.85E-2	2.85E-2	2.56E-2	2.83E-2	2.83E-2
XVIIIC	2.53E-2	2.78E-2	2.78E-2	2.53E-2	2.78E-2	2.78E-2	2.53E-2	2.77E-2	2.77E-2	2.50E-2	2.74E-2	2.74E-2	2.48E-2	2.72E-2	2.72E-2
XXA	2.16E-3	1.67E-2	2.74E-1	8.93E-4	6.91E-3	1.14E-1	5.81E-4	4.49E-3	7.39E-2	4.64E-4	3.59E-3	5.90E-2	4.30E-4	3.33E-3	5.48E-2
XXB	2.04E-3	1.19E-2	1.58E-1	8.42E-4	4.90E-3	6.56E-2	5.48E-4	3.19E-3	4.27E-2	4.37E-4	2.55E-3	3.41E-2	4.06E-4	2.36E-3	3.16E-2
XXC	1.82E-3	6.79E-3	2.02E-1	7.51E-4	2.81E-3	8.34E-2	4.89E-4	1.83E-3	5.43E-2	3.90E-4	1.46E-3	4.33E-2	3.62E-4	1.35E-3	4.02E-2
XXIA	7.87E-2	7.81E-1	7.32E+0	7.85E-2	7.79E-1	7.30E+0	7.80E-2	7.74E-1	7.25E+0	7.57E-2	7.51E-1	7.04E+0	7.37E-2	7.31E-1	6.85E+0
XXIB	7.81E-2	7.68E-1	6.62E+0	7.79E-2	7.66E-1	6.61E+0	7.74E-2	7.61E-1	6.57E+0	7.51E-2	7.39E-1	6.37E+0	7.31E-2	7.19E-1	6.20E+0
XXIC	7.69E-2	7.41E-1	5.36E+0	7.67E-2	7.39E-1	5.35E+0	7.62E-2	7.34E-1	5.32E+0	7.40E-2	7.12E-1	5.16E+0	7.20E-2	6.93E-1	5.02E+0
XXII	6.21E+0	5.46E+1	1.31E+2	6.17E+0	5.45E+1	1.30E+2	6.13E+0	5.39E+1	1.29E+2	5.79E+0	5.16E+1	1.23E+2	5.75E+0	5.08E+1	1.22E+2
DOE	4.74E+2	3.67E+3	3.19E+4	4.73E+2	3.67E+3	3.18E+4	4.71E+2	3.66E+3	3.17E+4	4.62E+2	3.61E+3	3.14E+4	4.58E+2	3.60E+3	3.13E+4
DOD	2.66E-2	8.24E-2	8.49E-2	2.65E-2	8.24E-2	8.49E-2	2.65E-2	8.24E-2	8.49E-2	2.65E-2	8.23E-2	8.48E-2	2.65E-2	8.22E-2	8.47E-2
NRC	3.65E+0	1.91E+1	1.47E+2	3.63E+0	1.89E+1	1.44E+2	3.61E+0	1.88E+1	1.43E+2	3.54E+0	1.83E+1	1.39E+2	3.48E+0	1.78E+1	1.35E+2
Total	4.78E+2	3.69E+3	3.20E+4	4.77E+2	3.69E+3	3.20E+4	4.75E+2	3.68E+3	3.19E+4	4.65E+2	3.63E+3	3.16E+4	4.62E+2	3.61E+3	3.14E+4

Table 6

REASONABLE SCENARIO: Site Specific Population and Agriculture - With Radon.- 07-21-95 5:22p

30-y delay for Reference Sites I, III and V. R.S. I based on 1978 aerial survey

POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded from RME health effects, included in population impacts

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	3.70E-1	4.04E-1	4.04E-1	3.57E-1	3.90E-1	3.90E-1	3.48E-1	3.80E-1	3.80E-1	3.19E-1	3.48E-1	3.48E-1	3.01E-1	3.29E-1	3.29E-1
II	1.49E+2	1.45E+3	1.20E+4	1.49E+2	1.45E+3	1.20E+4	1.49E+2	1.45E+3	1.20E+4	1.48E+2	1.44E+3	1.20E+4	1.48E+2	1.44E+3	1.19E+4
III	1.63E-1	1.81E-1	1.81E-1	1.58E-1	1.76E-1	1.76E-1	1.48E-1	1.65E-1	1.65E-1	1.18E-1	1.31E-1	1.31E-1	1.04E-1	1.16E-1	1.16E-1
IV	2.78E-1	1.58E+0	7.64E+0	2.74E-1	1.56E+0	7.53E+0	2.71E-1	1.54E+0	7.44E+0	2.62E-1	1.49E+0	7.20E+0	2.57E-1	1.46E+0	7.07E+0
V	9.80E+0	1.07E+1	1.07E+1	9.75E+0	1.06E+1	1.06E+1	9.67E+0	1.05E+1	1.05E+1	9.42E+0	1.03E+1	1.03E+1	9.21E+0	1.00E+1	1.00E+1
VI	1.19E+1	8.05E+1	8.34E+2	1.19E+1	8.05E+1	8.34E+2	1.19E+1	8.05E+1	8.34E+2	1.19E+1	8.04E+1	8.33E+2	1.19E+1	8.04E+1	8.33E+2
VII	2.17E+0	1.56E+1	1.03E+2	2.00E+0	1.42E+1	9.38E+1	1.88E+0	1.32E+1	8.75E+1	1.64E+0	1.13E+1	7.48E+1	1.45E+0	9.97E+0	6.58E+1
IX	4.58E-2	3.99E-1	2.48E+0	4.04E-2	3.51E-1	2.19E+0	3.64E-2	3.17E-1	1.97E+0	2.77E-2	2.41E-1	1.50E+0	2.19E-2	1.91E-1	1.19E+0
X	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.18E+0	3.63E+0	1.02E+0	3.13E+0	3.57E+0
XII	2.66E-2	8.25E-2	8.50E-2	2.66E-2	8.25E-2	8.49E-2	2.66E-2	8.24E-2	8.49E-2	2.65E-2	8.24E-2	8.49E-2	2.65E-2	8.24E-2	8.49E-2
XIIIA	1.55E-4	9.09E-4	2.68E-3	9.06E-5	5.31E-4	1.56E-3	4.44E-5	2.60E-4	7.66E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.38E-4	5.92E-4	1.29E-3	8.03E-5	3.45E-4	7.54E-4	3.93E-5	1.69E-4	3.69E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.13E-4	3.20E-4	6.00E-3	6.60E-5	1.87E-4	3.50E-3	3.23E-5	9.16E-5	1.71E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.31E-3	2.31E-3
XVIB	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3
XVIC	2.12E-3	2.22E-3	2.22E-3	2.12E-3	2.22E-3	2.22E-3	2.12E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3
XVIIIA	2.66E-2	2.95E-2	2.95E-2	2.66E-2	2.95E-2	2.95E-2	2.66E-2	2.95E-2	2.95E-2	2.66E-2	2.95E-2	2.95E-2	2.66E-2	2.94E-2	2.94E-2
XVIIIB	2.62E-2	2.89E-2	2.89E-2	2.62E-2	2.89E-2	2.89E-2	2.62E-2	2.89E-2	2.89E-2	2.62E-2	2.89E-2	2.89E-2	2.62E-2	2.89E-2	2.89E-2
XVIIIC	2.53E-2	2.78E-2	2.78E-2	2.53E-2	2.78E-2	2.78E-2	2.53E-2	2.78E-2	2.78E-2	2.53E-2	2.78E-2	2.78E-2	2.53E-2	2.78E-2	2.78E-2
XXA	1.08E-2	8.34E-2	1.37E+0	7.11E-3	5.50E-2	9.03E-1	5.26E-3	4.07E-2	6.68E-1	1.50E-3	1.16E-2	1.91E-1	6.34E-4	4.90E-3	8.07E-2
XXB	1.02E-2	5.92E-2	7.90E-1	6.70E-3	3.90E-2	5.21E-1	4.96E-3	2.89E-2	3.86E-1	1.42E-3	8.24E-3	1.10E-1	5.98E-4	3.48E-3	4.66E-2
XXC	9.07E-3	3.39E-2	1.01E+0	5.98E-3	2.23E-2	6.63E-1	4.43E-3	1.65E-2	4.91E-1	1.26E-3	4.72E-3	1.40E-1	5.33E-4	1.99E-3	5.92E-2
XXIA	7.90E-2	7.84E-1	7.35E+0	7.90E-2	7.84E-1	7.34E+0	7.89E-2	7.84E-1	7.34E+0	7.87E-2	7.81E-1	7.32E+0	7.84E-2	7.79E-1	7.30E+0
XXIB	7.84E-2	7.71E-1	6.65E+0	7.84E-2	7.71E-1	6.65E+0	7.83E-2	7.71E-1	6.65E+0	7.81E-2	7.69E-1	6.63E+0	7.76E-2	7.66E-1	6.60E+0
XXIC	7.72E-2	7.43E-1	5.38E+0	7.72E-2	7.43E-1	5.38E+0	7.72E-2	7.43E-1	5.38E+0	7.69E-2	7.41E-1	5.37E+0	7.66E-2	7.38E-1	5.35E+0
XXII	6.28E+0	5.52E+1	1.32E+2	6.27E+0	5.51E+1	1.32E+2	6.26E+0	5.50E+1	1.32E+2	6.21E+0	5.47E+1	1.31E+2	6.17E+0	5.45E+1	1.31E+2
DOE	4.77E+2	3.69E+3	3.19E+4	4.76E+2	3.68E+3	3.19E+4	4.76E+2	3.68E+3	3.19E+4	4.74E+2	3.67E+3	3.19E+4	4.73E+2	3.67E+3	3.18E+4
DOD	2.77E-2	8.77E-2	1.13E-1	2.72E-2	8.55E-2	1.01E-1	2.69E-2	8.39E-2	9.30E-2	2.65E-2	8.24E-2	8.49E-2	2.65E-2	8.24E-2	8.49E-2
NRC	3.77E+0	1.98E+1	1.59E+2	3.72E+0	1.95E+1	1.54E+2	3.70E+0	1.93E+1	1.51E+2	3.64E+0	1.90E+1	1.46E+2	3.63E+0	1.89E+1	1.44E+2
Total	4.81E+2	3.71E+3	3.21E+4	4.80E+2	3.70E+3	3.21E+4	4.80E+2	3.70E+3	3.21E+4	4.78E+2	3.69E+3	3.20E+4	4.77E+2	3.69E+3	3.20E+4

Table 6 Continued

REASONABLE SCENARIO: Site Specific Population and Agriculture - With Radon.- 07-21-95 5:22p
 30-y delay for Reference Sites I, III and V. R.S. I based on 1978 aerial survey

POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded from RME health effects, included in population impacts

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.73E-1	2.99E-1	2.99E-1	2.56E-1	2.80E-1	2.80E-1	2.28E-1	2.49E-1	2.49E-1	1.33E-1	1.45E-1	1.45E-1	1.13E-1	1.24E-1	1.24E-1
II	1.48E+2	1.44E+3	1.19E+4	1.48E+2	1.44E+3	1.18E+4	1.48E+2	1.44E+3	1.18E+4	1.47E+2	1.43E+3	1.16E+4	1.46E+2	1.42E+3	1.15E+4
III	6.92E-2	7.69E-2	7.69E-2	4.29E-2	4.77E-2	4.77E-2	2.06E-2	2.29E-2	2.29E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IV	2.45E-1	1.39E+0	6.75E+0	2.34E-1	1.33E+0	6.43E+0	2.10E-1	1.20E+0	5.78E+0	9.33E-2	5.30E-1	2.57E+0	3.48E-2	1.98E-1	9.56E-1
V	8.70E+0	9.47E+0	9.47E+0	8.18E+0	8.90E+0	8.90E+0	7.38E+0	8.03E+0	8.03E+0	6.03E+0	6.57E+0	6.57E+0	5.36E+0	5.83E+0	5.83E+0
VI	1.18E+1	8.02E+1	8.32E+2	1.18E+1	8.00E+1	8.30E+2	1.16E+1	7.95E+1	8.26E+2	1.11E+1	7.71E+1	8.02E+2	1.09E+1	7.62E+1	7.94E+2
VII	9.80E-1	6.74E+0	4.45E+1	6.94E-1	4.80E+0	3.16E+1	4.58E-1	3.19E+0	2.10E+1	2.59E-2	1.56E-1	1.00E+0	.00E+0	.00E+0	.00E+0
IX	1.60E-2	1.39E-1	8.65E-1	1.15E-2	1.00E-1	6.24E-1	7.88E-3	6.86E-2	4.27E-1	1.43E-3	1.24E-2	7.75E-2	.00E+0	.00E+0	.00E+0
X	1.01E+0	2.95E+0	3.36E+0	1.00E+0	2.77E+0	3.14E+0	9.87E-1	2.44E+0	2.75E+0	9.16E-1	1.78E+0	1.96E+0	8.87E-1	1.61E+0	1.76E+0
XII	2.65E-2	8.24E-2	8.49E-2	2.65E-2	8.23E-2	8.48E-2	2.65E-2	8.22E-2	8.46E-2	2.63E-2	8.16E-2	8.40E-2	2.62E-2	8.14E-2	8.38E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	2.17E-3	2.30E-3	2.30E-3	2.16E-3	2.29E-3	2.29E-3	2.15E-3	2.28E-3	2.28E-3	2.07E-3	2.20E-3	2.20E-3	2.03E-3	2.15E-3	2.15E-3
XVIB	2.15E-3	2.27E-3	2.27E-3	2.14E-3	2.26E-3	2.26E-3	2.13E-3	2.25E-3	2.25E-3	2.05E-3	2.17E-3	2.17E-3	2.01E-3	2.13E-3	2.13E-3
XVIC	2.10E-3	2.21E-3	2.21E-3	2.10E-3	2.20E-3	2.20E-3	2.09E-3	2.19E-3	2.19E-3	2.01E-3	2.11E-3	2.11E-3	1.96E-3	2.07E-3	2.07E-3
XVIIIA	2.65E-2	2.94E-2	2.94E-2	2.64E-2	2.93E-2	2.93E-2	2.62E-2	2.90E-2	2.90E-2	2.50E-2	2.77E-2	2.77E-2	2.45E-2	2.71E-2	2.71E-2
XVIIIB	2.62E-2	2.88E-2	2.88E-2	2.61E-2	2.87E-2	2.87E-2	2.58E-2	2.85E-2	2.85E-2	2.47E-2	2.72E-2	2.72E-2	2.41E-2	2.66E-2	2.66E-2
XVIIIC	2.53E-2	2.77E-2	2.77E-2	2.52E-2	2.76E-2	2.76E-2	2.50E-2	2.74E-2	2.74E-2	2.38E-2	2.61E-2	2.61E-2	2.33E-2	2.55E-2	2.55E-2
XXA	5.35E-4	4.14E-3	6.82E-2	4.92E-4	3.80E-3	6.26E-2	4.33E-4	3.35E-3	5.52E-2	3.00E-4	2.32E-3	3.83E-2	2.53E-4	1.96E-3	3.23E-2
XXB	5.05E-4	2.94E-3	3.93E-2	4.64E-4	2.70E-3	3.61E-2	4.09E-4	2.38E-3	3.19E-2	2.83E-4	1.65E-3	2.21E-2	2.39E-4	1.39E-3	1.87E-2
XXC	4.50E-4	1.68E-3	5.00E-2	4.14E-4	1.55E-3	4.60E-2	3.65E-4	1.36E-3	4.05E-2	2.52E-4	9.44E-4	2.81E-2	2.13E-4	7.98E-4	2.37E-2
XXIA	7.77E-2	7.71E-1	7.23E+0	7.70E-2	7.64E-1	7.16E+0	7.56E-2	7.50E-1	7.03E+0	6.35E-2	6.30E-1	5.91E+0	5.91E-2	5.87E-1	5.50E+0
XXIB	7.71E-2	7.59E-1	6.54E+0	7.64E-2	7.52E-1	6.48E+0	7.50E-2	7.38E-1	6.36E+0	6.30E-2	6.20E-1	5.35E+0	5.86E-2	5.77E-1	4.97E+0
XXIC	7.59E-2	7.32E-1	5.30E+0	7.52E-2	7.25E-1	5.25E+0	7.38E-2	7.11E-1	5.15E+0	6.20E-2	5.98E-1	4.33E+0	5.77E-2	5.56E-1	4.03E+0
XXII	6.11E+0	5.39E+1	1.29E+2	5.99E+0	5.33E+1	1.28E+2	5.78E+0	5.16E+1	1.24E+2	5.54E+0	4.93E+1	1.18E+2	4.98E+0	4.84E+1	1.16E+2
DOE	4.70E+2	3.65E+3	3.17E+4	4.67E+2	3.64E+3	3.16E+4	4.62E+2	3.62E+3	3.14E+4	4.45E+2	3.53E+3	3.06E+4	4.35E+2	3.49E+3	3.03E+4
DOD	2.65E-2	8.24E-2	8.49E-2	2.65E-2	8.23E-2	8.48E-2	2.65E-2	8.22E-2	8.46E-2	2.63E-2	8.16E-2	8.40E-2	2.62E-2	8.14E-2	8.38E-2
NRC	3.60E+0	1.87E+1	1.43E+2	3.58E+0	1.85E+1	1.41E+2	3.53E+0	1.82E+1	1.39E+2	3.19E+0	1.55E+1	1.17E+2	3.05E+0	1.46E+1	1.09E+2
Total	4.74E+2	3.67E+3	3.18E+4	4.71E+2	3.66E+3	3.18E+4	4.66E+2	3.64E+3	3.16E+4	4.48E+2	3.54E+3	3.08E+4	4.38E+2	3.51E+3	3.04E+4

Table 7
 07-21-95 5:22p--30-y delay for Reference Sites I, III and V. R.S. I based on 1978 aerial survey
 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway excluded from RME health effects

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		.10			.50			1.00			3.00			5.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	8.13E-2	8.13E-2	8.13E-2	4.07E-1	4.07E-1	4.07E-1	8.13E-1	8.13E-1	8.13E-1	2.44E+0	2.44E+0	2.44E+0	4.06E+0	4.06E+0	4.06E+0
II-1	Ra-226	8.97E-3	8.63E-3	8.63E-3	3.80E-2	3.69E-2	3.69E-2	7.05E-2	6.85E-2	6.85E-2	9.08E-2	9.04E-2	9.04E-2	9.16E-2	9.08E-2	9.08E-2
	Th-230	6.89E-3	6.63E-3	6.63E-3	2.92E-2	2.84E-2	2.84E-2	5.42E-2	5.26E-2	5.26E-2	3.19E+0	1.54E+0	1.54E+0	6.87E+0	3.32E+0	3.32E+0
	Ra-228	.00E+0	.00E+0	.00E+0	2.65E-3	2.51E-3	2.51E-3	7.21E-3	6.93E-3	6.93E-3	1.00E-2	1.00E-2	1.00E-2	1.02E-2	1.01E-2	1.01E-2
	Th-232	.00E+0	.00E+0	.00E+0	1.44E-3	1.32E-3	1.32E-3	5.30E-3	5.06E-3	5.06E-3	7.70E-3	7.65E-3	7.65E-3	7.79E-3	7.70E-3	7.70E-3
	U-234	6.35E-3	6.10E-3	6.10E-3	2.68E-2	2.61E-2	2.61E-2	4.99E-2	4.85E-2	4.85E-2	6.42E-2	6.40E-2	6.40E-2	6.48E-2	6.43E-2	6.43E-2
	U-235	.00E+0	.00E+0	.00E+0	2.44E-4	1.95E-4	1.95E-4	1.78E-3	1.68E-3	1.68E-3	2.73E-3	2.72E-3	2.72E-3	2.77E-3	2.73E-3	2.73E-3
	U-238	7.07E-3	6.80E-3	6.80E-3	2.99E-2	2.91E-2	2.91E-2	5.56E-2	5.40E-2	5.40E-2	7.16E-2	7.13E-2	7.13E-2	7.22E-2	7.16E-2	7.16E-2
II-2	Ra-226	9.19E-4	8.35E-4	8.35E-4	4.01E-3	3.93E-3	3.93E-3	6.25E-3	6.14E-3	6.14E-3	1.15E-2	1.15E-2	1.15E-2	1.16E-2	1.15E-2	1.15E-2
	Th-230	1.14E-2	1.09E-2	1.09E-2	3.12E-2	3.06E-2	3.06E-2	4.55E-2	4.48E-2	4.48E-2	8.36E-1	4.09E-1	4.09E-1	4.44E+0	2.17E+0	2.17E+0
	Ra-228	5.69E-3	5.34E-3	5.34E-3	1.87E-2	1.83E-2	1.83E-2	2.81E-2	2.76E-2	2.76E-2	5.02E-2	5.01E-2	5.01E-2	5.04E-2	5.02E-2	5.02E-2
	Th-232	.00E+0	.00E+0	.00E+0	8.18E-3	7.86E-3	7.86E-3	1.66E-2	1.62E-2	1.62E-2	3.64E-2	3.64E-2	3.64E-2	3.66E-2	3.65E-2	3.65E-2
	U-234	3.02E-2	2.88E-2	2.88E-2	1.63E-1	1.30E-1	1.30E-1	9.77E-1	9.24E-1	9.24E-1	3.81E+0	3.81E+0	3.81E+0	3.85E+0	3.82E+0	3.82E+0
	U-235	.00E+0	.00E+0	.00E+0	1.58E-3	1.38E-3	1.38E-3	5.60E-2	5.19E-2	5.19E-2	2.59E-1	2.58E-1	2.58E-1	2.61E-1	2.60E-1	2.60E-1
	U-238	3.53E-2	3.36E-2	3.36E-2	4.26E-1	3.92E-1	3.92E-1	1.40E+0	1.35E+0	1.35E+0	4.80E+0	4.79E+0	4.79E+0	4.84E+0	4.81E+0	4.81E+0
II-3	Ra-226	.00E+0	.00E+0	.00E+0	2.56E-3	2.47E-3	2.47E-3	4.94E-3	4.85E-3	4.85E-3	1.67E-2	6.88E-3	6.88E-3	9.07E-2	5.71E-2	5.71E-2
	Th-230	5.82E-3	5.65E-3	5.65E-3	2.51E-2	2.44E-2	2.44E-2	4.27E-2	4.20E-2	4.20E-2	1.18E+0	8.87E-1	8.87E-1	2.04E+0	1.63E+0	1.63E+0
	Ra-228	3.14E-3	3.05E-3	3.05E-3	1.35E-2	1.32E-2	1.32E-2	2.31E-2	2.27E-2	2.27E-2	3.19E-2	3.08E-2	3.08E-2	3.47E-2	3.34E-2	3.34E-2
	Th-232	2.25E-3	2.16E-3	2.16E-3	1.26E-2	1.22E-2	1.22E-2	2.21E-2	2.17E-2	2.17E-2	3.10E-2	2.99E-2	2.99E-2	3.37E-2	3.25E-2	3.25E-2
	U-234	1.04E-2	1.01E-2	1.01E-2	4.48E-2	4.36E-2	4.36E-2	7.64E-2	7.52E-2	7.52E-2	2.44E+0	1.86E+0	1.86E+0	4.26E+0	3.36E+0	3.36E+0
	U-235	6.98E-4	6.70E-4	6.70E-4	3.91E-3	3.80E-3	3.80E-3	2.56E-1	2.37E-1	2.37E-1	1.20E+0	1.02E+0	1.02E+0	1.74E+0	1.49E+0	1.49E+0
	U-238	1.03E-2	9.97E-3	9.97E-3	4.43E-2	4.30E-2	4.30E-2	7.55E-2	7.42E-2	7.42E-2	2.15E+0	1.61E+0	1.61E+0	3.87E+0	3.01E+0	3.01E+0
II-4	Ra-226	1.54E-3	1.46E-3	1.46E-3	5.78E-3	5.70E-3	5.70E-3	5.89E-3	5.83E-3	5.83E-3	6.36E-3	6.05E-3	6.05E-3	6.86E-3	6.28E-3	6.28E-3
	Th-230	1.30E-2	1.23E-2	1.23E-2	8.81E-2	4.80E-2	4.80E-2	9.93E-1	4.85E-1	4.85E-1	4.59E+0	2.25E+0	2.25E+0	8.17E+0	4.01E+0	4.01E+0
	Ra-228	2.19E-3	2.02E-3	2.02E-3	1.13E-2	1.11E-2	1.11E-2	1.15E-2	1.14E-2	1.14E-2	1.25E-2	1.19E-2	1.19E-2	1.44E-2	1.24E-2	1.24E-2
	Th-232	2.49E-3	2.30E-3	2.30E-3	1.28E-2	1.26E-2	1.26E-2	1.31E-2	1.30E-2	1.30E-2	1.43E-2	1.35E-2	1.35E-2	1.55E-2	1.41E-2	1.41E-2
	U-234	1.55E-2	1.47E-2	1.47E-2	5.82E-2	5.74E-2	5.74E-2	5.94E-2	5.87E-2	5.87E-2	2.44E-1	1.06E-1	1.06E-1	4.67E-1	2.08E-1	2.08E-1
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	3.40E-5	5.69E-6	5.69E-6	2.34E-4	1.02E-4	1.02E-4	4.48E-4	2.00E-4	2.00E-4
	U-238	8.24E-3	7.82E-3	7.82E-3	3.09E-2	3.05E-2	3.05E-2	3.15E-2	3.12E-2	3.12E-2	3.40E-2	3.24E-2	3.24E-2	3.67E-2	3.36E-2	3.36E-2
II-5	Ra-226	1.04E-3	1.04E-3	1.04E-3	2.03E-2	2.02E-2	2.02E-2	4.14E-2	4.12E-2	4.12E-2	1.53E-1	1.53E-1	1.53E-1	3.35E-1	3.35E-1	3.35E-1
	Th-230	1.46E-4	1.45E-4	1.45E-4	4.24E-3	4.22E-3	4.22E-3	8.70E-3	8.66E-3	8.66E-3	1.25E-2	1.25E-2	1.25E-2	1.26E-2	1.26E-2	1.26E-2
	Ra-228	.00E+0	.00E+0	.00E+0	3.98E-4	3.58E-4	3.58E-4	8.51E-3	8.43E-3	8.43E-3	1.54E-2	1.54E-2	1.54E-2	1.56E-2	1.56E-2	1.56E-2
	Th-232	4.40E-3	4.40E-3	4.40E-3	1.28E-2	1.27E-2	1.27E-2	2.19E-2	2.18E-2	2.18E-2	2.96E-2	2.96E-2	2.96E-2	2.99E-2	2.99E-2	2.99E-2
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	1.11E-4	1.09E-4	1.09E-4	4.42E-4	4.39E-4	4.39E-4	7.23E-4	7.23E-4	7.23E-4	7.31E-4	7.31E-4	7.31E-4
	U-238	1.87E-4	1.86E-4	1.86E-4	5.43E-3	5.40E-3	5.40E-3	1.12E-2	1.11E-2	1.11E-2	1.60E-2	1.60E-2	1.60E-2	1.61E-2	1.61E-2	1.61E-2

Table 7 Continued
 07-21-95 5:22p--30-y delay for Reference Sites I, III and V. R.S. I based on 1978 aerial survey
 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway excluded from RME health effects

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		.10			.50			1.00			3.00			5.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
II-6	Ra-226	.00E+0	.00E+0	.00E+0	2.12E-2	2.02E-2	2.02E-2	4.49E-2	4.37E-2	4.37E-2	6.79E-2	6.70E-2	6.70E-2	7.19E-2	6.94E-2	6.94E-2
	Th-230	1.72E-2	1.61E-2	1.61E-2	3.13E-2	3.07E-2	3.07E-2	4.71E-2	4.63E-2	4.63E-2	1.15E+0	6.66E-1	6.66E-1	3.80E+0	2.15E+0	2.15E+0
	Ra-228	.00E+0	.00E+0	.00E+0	6.41E-3	6.07E-3	6.07E-3	1.52E-2	1.48E-2	1.48E-2	2.38E-2	2.35E-2	2.35E-2	2.52E-2	2.43E-2	2.43E-2
	Th-232	2.28E-3	2.00E-3	2.00E-3	6.00E-3	5.84E-3	5.84E-3	1.02E-2	9.96E-3	9.96E-3	1.42E-2	1.41E-2	1.41E-2	1.49E-2	1.45E-2	1.45E-2
	U-234	2.11E-2	1.98E-2	1.98E-2	3.81E-2	3.73E-2	3.73E-2	5.70E-2	5.61E-2	5.61E-2	1.14E+1	1.01E+1	1.01E+1	1.77E+1	1.38E+1	1.38E+1
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-238	2.86E-2	2.69E-2	2.69E-2	5.15E-2	5.05E-2	5.05E-2	3.60E-1	3.30E-1	3.30E-1	1.22E+0	1.18E+0	1.18E+0	1.41E+0	1.29E+0	1.29E+0
II-7	U-234	1.14E+0	1.14E+0	1.14E+0	5.70E+0	5.70E+0	5.70E+0	1.14E+1	1.14E+1	1.14E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1
	U-235	5.36E-2	5.36E-2	5.36E-2	2.68E-1	2.68E-1	2.68E-1	5.36E-1	5.36E-1	5.36E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1
	U-238	1.14E+0	1.14E+0	1.14E+0	5.70E+0	5.70E+0	5.70E+0	1.14E+1	1.14E+1	1.14E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1
III	Cs-137	8.13E-2	8.13E-2	8.13E-2	4.07E-1	4.07E-1	4.07E-1	8.13E-1	8.13E-1	8.13E-1	2.44E+0	2.44E+0	2.44E+0	4.07E+0	4.07E+0	4.07E+0
IV	U-234	6.20E-1	6.20E-1	6.20E-1	3.09E+0	3.09E+0	3.09E+0	6.19E+0	6.19E+0	6.19E+0	1.86E+1	1.86E+1	1.86E+1	3.10E+1	3.10E+1	3.10E+1
	U-235	2.91E-2	2.91E-2	2.91E-2	1.45E-1	1.45E-1	1.45E-1	2.91E-1	2.91E-1	2.91E-1	8.73E-1	8.73E-1	8.73E-1	1.45E+0	1.45E+0	1.45E+0
	U-238	6.20E-1	6.20E-1	6.20E-1	3.09E+0	3.09E+0	3.09E+0	6.19E+0	6.19E+0	6.19E+0	1.86E+1	1.86E+1	1.86E+1	3.10E+1	3.10E+1	3.10E+1
V	Cs-137	8.13E-2	8.13E-2	8.13E-2	4.07E-1	4.07E-1	4.07E-1	8.13E-1	8.13E-1	8.13E-1	2.44E+0	2.44E+0	2.44E+0	4.07E+0	4.07E+0	4.07E+0
VI	Cs-137	8.12E-2	8.12E-2	8.12E-2	4.06E-1	4.06E-1	4.06E-1	8.11E-1	8.11E-1	8.11E-1	2.41E+0	2.41E+0	2.41E+0	3.98E+0	3.98E+0	3.98E+0
	U-234	1.09E-4	1.09E-4	1.09E-4	4.93E-3	4.93E-3	4.93E-3	2.54E-2	2.54E-2	2.54E-2	3.37E-1	3.37E-1	3.37E-1	1.10E+0	1.10E+0	1.10E+0
	U-235	5.11E-6	5.11E-6	5.11E-6	2.32E-4	2.32E-4	2.32E-4	1.19E-3	1.19E-3	1.19E-3	1.58E-2	1.58E-2	1.58E-2	5.19E-2	5.19E-2	5.19E-2
	U-238	1.09E-4	1.09E-4	1.09E-4	4.93E-3	4.93E-3	4.93E-3	2.54E-2	2.54E-2	2.54E-2	3.37E-1	3.37E-1	3.37E-1	1.10E+0	1.10E+0	1.10E+0
VII	Pu-239	2.00E+0	2.00E+0	2.00E+0	3.73E+0	3.73E+0	3.73E+0	7.46E+0	7.46E+0	7.46E+0	2.24E+1	2.24E+1	2.24E+1	3.73E+1	3.73E+1	3.73E+1
	Am-241	3.30E-1	3.30E-1	3.30E-1	6.23E-1	6.23E-1	6.23E-1	1.26E+0	1.26E+0	1.26E+0	3.77E+0	3.77E+0	3.77E+0	6.25E+0	6.25E+0	6.25E+0
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	
IX	Pu-239	8.99E-1	8.99E-1	8.99E-1	4.49E+0	4.49E+0	4.49E+0	8.99E+0	8.99E+0	8.99E+0	2.70E+1	2.70E+1	2.70E+1	4.50E+1	4.50E+1	4.50E+1
	Am-241	1.50E-1	1.50E-1	1.50E-1	7.49E-1	7.49E-1	7.49E-1	1.50E+0	1.50E+0	1.50E+0	4.50E+0	4.50E+0	4.50E+0	7.49E+0	7.49E+0	7.49E+0
X	Tc-99	1.14E-1	7.28E-2	7.28E-2	5.01E-1	8.59E-2	8.59E-2	1.09E+0	1.06E-1	1.06E-1	4.18E+0	2.38E-1	2.38E-1	7.47E+0	3.80E-1	3.80E-1
	U-238	1.81E-1	9.96E-3	9.96E-3	1.07E+0	7.25E-2	7.25E-2	1.92E+0	1.50E-1	1.50E-1	3.77E+0	4.58E-1	4.58E-1	5.12E+0	7.64E-1	7.64E-1
	U-234	1.81E-1	9.96E-3	9.96E-3	1.07E+0	7.25E-2	7.25E-2	1.92E+0	1.50E-1	1.50E-1	3.77E+0	4.58E-1	4.58E-1	5.12E+0	7.64E-1	7.64E-1
XII	Pu-239	2.25E-1	2.25E-1	2.25E-1	1.13E+0	1.13E+0	1.13E+0	2.25E+0	2.25E+0	2.25E+0	6.75E+0	6.75E+0	6.75E+0	1.12E+1	1.12E+1	1.12E+1
	Am-241	3.75E-2	3.75E-2	3.75E-2	1.88E-1	1.88E-1	1.88E-1	3.75E-1	3.75E-1	3.75E-1	1.12E+0	1.12E+0	1.12E+0	1.87E+0	1.87E+0	1.87E+0
XIIIA	U-238	1.20E+0	1.20E+0	1.20E+0	6.00E+0	6.00E+0	6.00E+0	1.20E+1	1.20E+1	1.20E+1	3.60E+1	3.60E+1	3.60E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	1.92E-2	1.92E-2	1.92E-2	9.70E-2	9.70E-2	9.70E-2	1.98E-1	1.98E-1	1.98E-1	5.84E-1	5.84E-1	5.84E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	1.13E-1	1.13E-1	1.13E-1	5.62E-1	5.62E-1	5.62E-1	1.12E+0	1.12E+0	1.12E+0	3.37E+0	3.37E+0	3.37E+0	3.69E+0	3.69E+0	3.69E+0
XIIIB	U-238	1.20E+0	1.20E+0	1.20E+0	6.00E+0	6.00E+0	6.00E+0	1.20E+1	1.20E+1	1.20E+1	3.60E+1	3.60E+1	3.60E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	1.92E-2	1.92E-2	1.92E-2	9.70E-2	9.70E-2	9.70E-2	1.98E-1	1.98E-1	1.98E-1	5.84E-1	5.84E-1	5.84E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	1.13E-1	1.13E-1	1.13E-1	5.62E-1	5.62E-1	5.62E-1	1.12E+0	1.12E+0	1.12E+0	3.37E+0	3.37E+0	3.37E+0	3.69E+0	3.69E+0	3.69E+0

Table 7 Continued
 07-21-95 5:22p--30-y delay for Reference Sites I, III and V. R.S. I based on 1978 aerial survey
 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway excluded from RME health effects

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		.10			.50			1.00			3.00			5.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	1.20E+0	1.20E+0	1.20E+0	6.00E+0	6.00E+0	6.00E+0	1.20E+1	1.20E+1	1.20E+1	3.60E+1	3.60E+1	3.60E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	1.92E-2	1.92E-2	1.92E-2	9.70E-2	9.70E-2	9.70E-2	1.98E-1	1.98E-1	1.98E-1	5.84E-1	5.84E-1	5.84E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	1.13E-1	1.13E-1	1.13E-1	5.62E-1	5.62E-1	5.62E-1	1.12E+0	1.12E+0	1.12E+0	3.37E+0	3.37E+0	3.37E+0	3.69E+0	3.69E+0	3.69E+0
XVIA	Co-60	1.07E-2	1.07E-2	1.07E-2	5.36E-2	5.36E-2	5.36E-2	1.07E-1	1.07E-1	1.07E-1	3.22E-1	3.22E-1	3.22E-1	5.36E-1	5.36E-1	5.36E-1
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIB	Co-60	1.07E-2	1.07E-2	1.07E-2	5.36E-2	5.36E-2	5.36E-2	1.07E-1	1.07E-1	1.07E-1	3.22E-1	3.22E-1	3.22E-1	5.36E-1	5.36E-1	5.36E-1
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIC	Co-60	1.07E-2	1.07E-2	1.07E-2	5.36E-2	5.36E-2	5.36E-2	1.07E-1	1.07E-1	1.07E-1	3.22E-1	3.22E-1	3.22E-1	5.36E-1	5.36E-1	5.36E-1
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIII A	Cs-137	4.05E-2	4.05E-2	4.05E-2	2.02E-1	2.02E-1	2.02E-1	4.05E-1	4.05E-1	4.05E-1	1.21E+0	1.21E+0	1.21E+0	2.02E+0	2.02E+0	2.02E+0
	Sr-90	4.05E-2	4.05E-2	4.05E-2	2.02E-1	2.02E-1	2.02E-1	4.05E-1	4.05E-1	4.05E-1	1.21E+0	1.21E+0	1.21E+0	2.02E+0	2.02E+0	2.02E+0
XVIII B	Cs-137	4.05E-2	4.05E-2	4.05E-2	2.02E-1	2.02E-1	2.02E-1	4.05E-1	4.05E-1	4.05E-1	1.21E+0	1.21E+0	1.21E+0	2.02E+0	2.02E+0	2.02E+0
	Sr-90	4.05E-2	4.05E-2	4.05E-2	2.02E-1	2.02E-1	2.02E-1	4.05E-1	4.05E-1	4.05E-1	1.21E+0	1.21E+0	1.21E+0	2.02E+0	2.02E+0	2.02E+0
XVIII C	Cs-137	4.05E-2	4.05E-2	4.05E-2	2.02E-1	2.02E-1	2.02E-1	4.05E-1	4.05E-1	4.05E-1	1.21E+0	1.21E+0	1.21E+0	2.02E+0	2.02E+0	2.02E+0
	Sr-90	4.05E-2	4.05E-2	4.05E-2	2.02E-1	2.02E-1	2.02E-1	4.05E-1	4.05E-1	4.05E-1	1.21E+0	1.21E+0	1.21E+0	2.02E+0	2.02E+0	2.02E+0
XXA	U-234	8.30E-1	8.30E-1	8.30E-1	3.97E+0	3.97E+0	3.97E+0	7.93E+0	7.93E+0	7.93E+0	2.38E+1	2.38E+1	2.38E+1	3.97E+1	3.97E+1	3.97E+1
	U-235	2.79E-2	2.79E-2	2.79E-2	1.34E-1	1.34E-1	1.34E-1	2.67E-1	2.67E-1	2.67E-1	8.01E-1	8.01E-1	8.01E-1	1.34E+0	1.34E+0	1.34E+0
	U-238	1.42E-1	1.42E-1	1.42E-1	6.80E-1	6.80E-1	6.80E-1	1.36E+0	1.36E+0	1.36E+0	4.08E+0	4.08E+0	4.08E+0	6.80E+0	6.80E+0	6.80E+0
XXB	U-234	8.30E-1	8.30E-1	8.30E-1	3.97E+0	3.97E+0	3.97E+0	7.93E+0	7.93E+0	7.93E+0	2.38E+1	2.38E+1	2.38E+1	3.97E+1	3.97E+1	3.97E+1
	U-235	2.79E-2	2.79E-2	2.79E-2	1.34E-1	1.34E-1	1.34E-1	2.67E-1	2.67E-1	2.67E-1	8.01E-1	8.01E-1	8.01E-1	1.34E+0	1.34E+0	1.34E+0
	U-238	1.42E-1	1.42E-1	1.42E-1	6.80E-1	6.80E-1	6.80E-1	1.36E+0	1.36E+0	1.36E+0	4.08E+0	4.08E+0	4.08E+0	6.80E+0	6.80E+0	6.80E+0
XXC	U-234	8.30E-1	8.30E-1	8.30E-1	3.97E+0	3.97E+0	3.97E+0	7.93E+0	7.93E+0	7.93E+0	2.38E+1	2.38E+1	2.38E+1	3.97E+1	3.97E+1	3.97E+1
	U-235	2.79E-2	2.79E-2	2.79E-2	1.34E-1	1.34E-1	1.34E-1	2.67E-1	2.67E-1	2.67E-1	8.01E-1	8.01E-1	8.01E-1	1.34E+0	1.34E+0	1.34E+0
	U-238	1.42E-1	1.42E-1	1.42E-1	6.80E-1	6.80E-1	6.80E-1	1.36E+0	1.36E+0	1.36E+0	4.08E+0	4.08E+0	4.08E+0	6.80E+0	6.80E+0	6.80E+0
XXIA	Th-232	7.28E-3	7.28E-3	7.28E-3	3.64E-2	3.64E-2	3.64E-2	7.29E-2	7.29E-2	7.29E-2	2.18E-1	2.18E-1	2.18E-1	3.64E-1	3.64E-1	3.64E-1
XXIB	Th-232	7.28E-3	7.28E-3	7.28E-3	3.64E-2	3.64E-2	3.64E-2	7.29E-2	7.29E-2	7.29E-2	2.18E-1	2.18E-1	2.18E-1	3.64E-1	3.64E-1	3.64E-1
XXIC	Th-232	7.28E-3	7.28E-3	7.28E-3	3.64E-2	3.64E-2	3.64E-2	7.29E-2	7.29E-2	7.29E-2	2.18E-1	2.18E-1	2.18E-1	3.64E-1	3.64E-1	3.64E-1
XXII	Ra-226	1.24E-3	1.24E-3	1.24E-3	6.15E-3	6.15E-3	6.15E-3	1.23E-2	1.22E-2	1.22E-2	3.63E-2	3.53E-2	3.53E-2	5.94E-2	5.56E-2	5.56E-2
	Th-232	6.09E-3	6.09E-3	6.09E-3	3.05E-2	3.04E-2	3.04E-2	6.09E-2	6.07E-2	6.07E-2	1.81E-1	1.76E-1	1.76E-1	2.96E-1	2.77E-1	2.77E-1
	U-234	6.84E-7	6.85E-7	6.85E-7	9.48E-5	9.46E-5	9.46E-5	7.91E-4	7.83E-4	7.83E-4	2.23E-2	2.04E-2	2.04E-2	1.01E-1	8.21E-2	8.21E-2
	U-235	3.22E-8	3.22E-8	3.22E-8	4.46E-6	4.45E-6	4.45E-6	3.72E-5	3.68E-5	3.68E-5	1.05E-3	9.61E-4	9.61E-4	4.73E-3	3.86E-3	3.86E-3
	U-238	6.84E-7	6.85E-7	6.85E-7	9.48E-5	9.46E-5	9.46E-5	7.91E-4	7.83E-4	7.83E-4	2.23E-2	2.04E-2	2.04E-2	1.01E-1	8.21E-2	8.21E-2

Table 7 Continued
 07-21-95 5:22p--30-y delay for Reference Sites I, III and V. R.S. I based on 1978 aerial survey
 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway excluded from RME health effects

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	8.13E+0	8.13E+0	8.13E+0	1.22E+1	1.22E+1	1.22E+1	2.03E+1	2.03E+1	2.03E+1	6.10E+1	6.10E+1	6.10E+1	8.13E+1	8.13E+1	8.13E+1
II-1	Ra-226	1.93E-1	9.17E-2	9.17E-2	6.45E-1	9.25E-2	9.25E-2	1.55E+0	7.81E-1	7.81E-1	6.03E+0	5.06E+0	5.06E+0	8.24E+0	7.11E+0	7.11E+0
	Th-230	1.41E+1	7.78E+0	7.78E+0	1.45E+1	1.22E+1	1.22E+1	1.54E+1	1.47E+1	1.47E+1	2.03E+1	1.89E+1	1.89E+1	2.32E+1	2.19E+1	2.19E+1
	Ra-228	1.03E-2	1.02E-2	1.02E-2	1.03E-2	1.03E-2	1.03E-2	1.04E-2	1.03E-2	1.03E-2	1.05E-2	1.04E-2	1.04E-2	1.05E-2	1.05E-2	1.05E-2
	Th-232	7.93E-3	7.81E-3	7.81E-3	7.94E-3	7.90E-3	7.90E-3	7.96E-3	7.94E-3	7.94E-3	8.06E-3	8.03E-3	8.03E-3	8.12E-3	8.09E-3	8.09E-3
	U-234	6.56E-2	6.49E-2	6.49E-2	6.57E-2	6.54E-2	6.54E-2	6.58E-2	6.57E-2	6.57E-2	6.64E-2	6.62E-2	6.62E-2	6.67E-2	6.66E-2	6.66E-2
	U-235	2.83E-3	2.78E-3	2.78E-3	2.83E-3	2.81E-3	2.81E-3	2.84E-3	2.83E-3	2.83E-3	2.88E-3	2.86E-3	2.86E-3	2.90E-3	2.89E-3	2.89E-3
	U-238	7.67E-2	7.23E-2	7.23E-2	7.81E-2	7.29E-2	7.29E-2	8.12E-2	7.85E-2	7.85E-2	1.01E-1	9.49E-2	9.49E-2	1.15E-1	1.08E-1	1.08E-1
II-2	Ra-226	1.17E-2	1.16E-2	1.16E-2	1.18E-2	1.17E-2	1.17E-2	1.20E-2	1.18E-2	1.18E-2	1.26E-2	1.22E-2	1.22E-2	1.29E-2	1.24E-2	1.24E-2
	Th-230	1.35E+1	6.58E+0	6.58E+0	2.25E+1	1.10E+1	1.10E+1	3.55E+1	1.99E+1	1.99E+1	7.80E+1	5.28E+1	5.28E+1	9.97E+1	6.69E+1	6.69E+1
	Ra-228	5.09E-2	5.05E-2	5.05E-2	5.15E-2	5.08E-2	5.08E-2	3.95E-1	5.13E-2	5.13E-2	3.59E+0	1.59E+0	1.59E+0	5.16E+0	2.66E+0	2.66E+0
	Th-232	3.71E-2	3.68E-2	3.68E-2	3.76E-2	3.70E-2	3.70E-2	3.83E-2	3.75E-2	3.75E-2	4.06E-2	3.92E-2	3.92E-2	4.18E-2	4.00E-2	4.00E-2
	U-234	3.93E+0	3.87E+0	3.87E+0	4.02E+0	3.91E+0	3.91E+0	4.14E+0	3.99E+0	3.99E+0	4.58E+0	4.30E+0	4.30E+0	4.82E+0	4.45E+0	4.45E+0
	U-235	2.66E-1	2.62E-1	2.62E-1	2.71E-1	2.65E-1	2.65E-1	2.78E-1	2.70E-1	2.70E-1	3.04E-1	2.88E-1	2.88E-1	3.19E-1	2.97E-1	2.97E-1
	U-238	4.95E+0	4.87E+0	4.87E+0	5.05E+0	4.92E+0	4.92E+0	5.20E+0	5.02E+0	5.02E+0	5.71E+0	5.39E+0	5.39E+0	5.99E+0	5.57E+0	5.57E+0
II-3	Ra-226	1.63E-1	1.42E-1	1.42E-1	2.13E-1	1.91E-1	1.91E-1	2.90E-1	2.68E-1	2.68E-1	4.92E-1	4.73E-1	4.73E-1	5.47E-1	5.28E-1	5.28E-1
	Th-230	3.15E+0	2.80E+0	2.80E+0	4.18E+0	3.71E+0	3.71E+0	6.15E+0	5.55E+0	5.55E+0	1.40E+1	1.29E+1	1.29E+1	1.77E+1	1.63E+1	1.63E+1
	Ra-228	3.74E-2	3.66E-2	3.66E-2	3.93E-2	3.85E-2	3.85E-2	4.22E-2	4.14E-2	4.14E-2	4.99E-2	4.92E-2	4.92E-2	1.05E-1	5.13E-2	5.13E-2
	Th-232	3.64E-2	3.56E-2	3.56E-2	3.83E-2	3.75E-2	3.75E-2	4.13E-2	4.04E-2	4.04E-2	4.49E-1	3.17E-1	3.17E-1	8.82E-1	7.11E-1	7.11E-1
	U-234	6.81E+0	5.97E+0	5.97E+0	9.19E+0	8.10E+0	8.10E+0	1.54E+1	1.34E+1	1.34E+1	4.25E+1	3.93E+1	3.93E+1	5.27E+1	4.90E+1	4.90E+1
	U-235	2.39E+0	2.19E+0	2.19E+0	2.91E+0	2.68E+0	2.68E+0	4.11E+0	3.61E+0	3.61E+0	1.08E+1	1.00E+1	1.00E+1	1.32E+1	1.23E+1	1.23E+1
	U-238	6.22E+0	5.46E+0	5.46E+0	8.44E+0	7.43E+0	7.43E+0	1.40E+1	1.21E+1	1.21E+1	4.04E+1	3.73E+1	3.73E+1	5.06E+1	4.69E+1	4.69E+1
II-4	Ra-226	7.88E-3	6.89E-3	6.89E-3	8.62E-3	7.48E-3	7.48E-3	1.01E-2	8.52E-3	8.52E-3	3.71E-1	1.62E-1	1.62E-1	5.57E-1	3.28E-1	3.28E-1
	Th-230	1.46E+1	8.39E+0	8.39E+0	1.89E+1	1.23E+1	1.23E+1	2.72E+1	1.84E+1	1.84E+1	5.49E+1	4.30E+1	4.30E+1	6.56E+1	5.24E+1	5.24E+1
	Ra-228	1.16E-1	1.71E-2	1.71E-2	1.88E-1	7.58E-2	7.58E-2	3.31E-1	1.79E-1	1.79E-1	1.06E+0	6.95E-1	6.95E-1	1.41E+0	9.80E-1	9.80E-1
	Th-232	2.45E-2	1.55E-2	1.55E-2	1.15E-1	1.70E-2	1.70E-2	3.04E-1	1.03E-1	1.03E-1	1.37E+0	8.15E-1	8.15E-1	1.94E+0	1.25E+0	1.25E+0
	U-234	1.08E+0	4.82E-1	4.82E-1	1.61E+0	8.41E-1	8.41E-1	2.91E+0	1.54E+0	1.54E+0	1.74E+1	8.27E+0	8.27E+0	3.26E+1	1.52E+1	1.52E+1
	U-235	8.84E-4	4.61E-4	4.61E-4	1.20E-3	7.12E-4	7.12E-4	1.82E-3	1.16E-3	1.16E-3	1.72E-1	3.31E-2	3.31E-2	4.15E-1	1.34E-1	1.34E-1
	U-238	4.21E-2	3.69E-2	3.69E-2	4.61E-2	4.00E-2	4.00E-2	5.38E-2	4.56E-2	4.56E-2	3.94E+0	1.09E+0	1.09E+0	9.01E+0	3.17E+0	3.17E+0
II-5	Ra-226	7.91E-1	7.91E-1	7.91E-1	1.25E+0	1.25E+0	1.25E+0	2.16E+0	2.16E+0	2.16E+0	6.50E+0	6.50E+0	6.50E+0	8.59E+0	8.59E+0	8.59E+0
	Th-230	1.28E-2	1.28E-2	1.28E-2	1.31E-2	1.31E-2	1.31E-2	1.35E-2	1.35E-2	1.35E-2	1.61E-2	1.61E-2	1.61E-2	1.74E-2	1.74E-2	1.74E-2
	Ra-228	1.60E-2	1.60E-2	1.60E-2	1.65E-2	1.65E-2	1.65E-2	1.73E-2	1.73E-2	1.73E-2	2.20E-2	2.20E-2	2.20E-2	6.28E-2	6.27E-2	6.27E-2
	Th-232	3.03E-2	3.03E-2	3.03E-2	3.08E-2	3.08E-2	3.08E-2	3.18E-2	3.18E-2	3.18E-2	1.86E-1	1.86E-1	1.86E-1	2.93E-1	2.93E-1	2.93E-1
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	7.48E-4	7.48E-4	7.48E-4	7.67E-4	7.67E-4	7.67E-4	8.02E-4	8.02E-4	8.02E-4	9.93E-4	9.93E-4	9.93E-4	1.09E-3	1.09E-3	1.09E-3
	U-238	1.64E-2	1.64E-2	1.64E-2	1.68E-2	1.68E-2	1.68E-2	1.74E-2	1.74E-2	1.74E-2	2.07E-2	2.07E-2	2.07E-2	2.23E-2	2.23E-2	2.23E-2

Table 7 Continued
 07-21-95 5:22p--30-y delay for Reference Sites I, III and V. R.S. I based on 1978 aerial survey
 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway excluded from RME health effects

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0
XVIA	Co-60	1.05E+0	1.05E+0	1.05E+0	1.54E+0	1.54E+0	1.54E+0	2.54E+0	2.54E+0	2.54E+0	7.74E+0	7.74E+0	7.74E+0	1.03E+1	1.03E+1	1.03E+1
	Cs-137	8.46E-2	8.46E-2	8.46E-2	2.97E-1	2.97E-1	2.97E-1	5.99E-1	5.99E-1	5.99E-1	1.28E+0	1.28E+0	1.28E+0	1.59E+0	1.59E+0	1.59E+0
XVIB	Co-60	1.05E+0	1.05E+0	1.05E+0	1.54E+0	1.54E+0	1.54E+0	2.54E+0	2.54E+0	2.54E+0	7.74E+0	7.74E+0	7.74E+0	1.03E+1	1.03E+1	1.03E+1
	Cs-137	8.46E-2	8.46E-2	8.46E-2	2.97E-1	2.97E-1	2.97E-1	5.99E-1	5.99E-1	5.99E-1	1.28E+0	1.28E+0	1.28E+0	1.59E+0	1.59E+0	1.59E+0
XVIC	Co-60	1.05E+0	1.05E+0	1.05E+0	1.54E+0	1.54E+0	1.54E+0	2.54E+0	2.54E+0	2.54E+0	7.74E+0	7.74E+0	7.74E+0	1.03E+1	1.03E+1	1.03E+1
	Cs-137	8.46E-2	8.46E-2	8.46E-2	2.97E-1	2.97E-1	2.97E-1	5.99E-1	5.99E-1	5.99E-1	1.28E+0	1.28E+0	1.28E+0	1.59E+0	1.59E+0	1.59E+0
XVIII A	Cs-137	4.05E+0	4.05E+0	4.05E+0	6.07E+0	6.07E+0	6.07E+0	1.01E+1	1.01E+1	1.01E+1	3.04E+1	3.04E+1	3.04E+1	4.05E+1	4.05E+1	4.05E+1
	Sr-90	4.05E+0	4.05E+0	4.05E+0	6.07E+0	6.07E+0	6.07E+0	1.01E+1	1.01E+1	1.01E+1	3.04E+1	3.04E+1	3.04E+1	4.05E+1	4.05E+1	4.05E+1
XVIII B	Cs-137	4.05E+0	4.05E+0	4.05E+0	6.07E+0	6.07E+0	6.07E+0	1.01E+1	1.01E+1	1.01E+1	3.04E+1	3.04E+1	3.04E+1	4.05E+1	4.05E+1	4.05E+1
	Sr-90	4.05E+0	4.05E+0	4.05E+0	6.07E+0	6.07E+0	6.07E+0	1.01E+1	1.01E+1	1.01E+1	3.04E+1	3.04E+1	3.04E+1	4.05E+1	4.05E+1	4.05E+1
XVIII C	Cs-137	4.05E+0	4.05E+0	4.05E+0	6.07E+0	6.07E+0	6.07E+0	1.01E+1	1.01E+1	1.01E+1	3.04E+1	3.04E+1	3.04E+1	4.05E+1	4.05E+1	4.05E+1
	Sr-90	4.05E+0	4.05E+0	4.05E+0	6.07E+0	6.07E+0	6.07E+0	1.01E+1	1.01E+1	1.01E+1	3.04E+1	3.04E+1	3.04E+1	4.05E+1	4.05E+1	4.05E+1
XXA	U-234	7.93E+1	7.93E+1	7.93E+1	1.19E+2	1.19E+2	1.19E+2	1.98E+2	1.98E+2	1.98E+2	5.95E+2	5.95E+2	5.95E+2	7.93E+2	7.93E+2	7.93E+2
	U-235	2.67E+0	2.67E+0	2.67E+0	4.01E+0	4.01E+0	4.01E+0	6.68E+0	6.68E+0	6.68E+0	2.00E+1	2.00E+1	2.00E+1	2.67E+1	2.67E+1	2.67E+1
	U-238	1.36E+1	1.36E+1	1.36E+1	2.04E+1	2.04E+1	2.04E+1	3.40E+1	3.40E+1	3.40E+1	1.02E+2	1.02E+2	1.02E+2	1.36E+2	1.36E+2	1.36E+2
XXB	U-234	7.93E+1	7.93E+1	7.93E+1	1.19E+2	1.19E+2	1.19E+2	1.98E+2	1.98E+2	1.98E+2	5.95E+2	5.95E+2	5.95E+2	7.93E+2	7.93E+2	7.93E+2
	U-235	2.67E+0	2.67E+0	2.67E+0	4.01E+0	4.01E+0	4.01E+0	6.68E+0	6.68E+0	6.68E+0	2.00E+1	2.00E+1	2.00E+1	2.67E+1	2.67E+1	2.67E+1
	U-238	1.36E+1	1.36E+1	1.36E+1	2.04E+1	2.04E+1	2.04E+1	3.40E+1	3.40E+1	3.40E+1	1.02E+2	1.02E+2	1.02E+2	1.36E+2	1.36E+2	1.36E+2
XXC	U-234	7.93E+1	7.93E+1	7.93E+1	1.19E+2	1.19E+2	1.19E+2	1.98E+2	1.98E+2	1.98E+2	5.95E+2	5.95E+2	5.95E+2	7.93E+2	7.93E+2	7.93E+2
	U-235	2.67E+0	2.67E+0	2.67E+0	4.01E+0	4.01E+0	4.01E+0	6.68E+0	6.68E+0	6.68E+0	2.00E+1	2.00E+1	2.00E+1	2.67E+1	2.67E+1	2.67E+1
	U-238	1.36E+1	1.36E+1	1.36E+1	2.04E+1	2.04E+1	2.04E+1	3.40E+1	3.40E+1	3.40E+1	1.02E+2	1.02E+2	1.02E+2	1.36E+2	1.36E+2	1.36E+2
XXIA	Th-232	7.28E-1	7.28E-1	7.28E-1	1.09E+0	1.09E+0	1.09E+0	1.82E+0	1.82E+0	1.82E+0	5.46E+0	5.46E+0	5.46E+0	7.28E+0	7.28E+0	7.28E+0
XXIB	Th-232	7.28E-1	7.28E-1	7.28E-1	1.09E+0	1.09E+0	1.09E+0	1.82E+0	1.82E+0	1.82E+0	5.46E+0	5.46E+0	5.46E+0	7.28E+0	7.28E+0	7.28E+0
XXIC	Th-232	7.28E-1	7.28E-1	7.28E-1	1.09E+0	1.09E+0	1.09E+0	1.82E+0	1.82E+0	1.82E+0	5.46E+0	5.46E+0	5.46E+0	7.28E+0	7.28E+0	7.28E+0
XXII	Ra-226	1.10E-1	9.39E-2	9.39E-2	1.63E-1	1.21E-1	1.21E-1	2.26E-1	2.05E-1	2.05E-1	9.53E-1	7.65E-1	7.65E-1	1.05E+0	9.86E-1	9.86E-1
	Th-232	5.52E-1	4.70E-1	4.70E-1	8.16E-1	6.07E-1	6.07E-1	1.46E+0	1.09E+0	1.09E+0	4.13E+0	3.61E+0	3.61E+0	5.76E+0	4.59E+0	4.59E+0
	U-234	6.77E-1	4.13E-1	4.13E-1	1.15E+0	9.07E-1	9.07E-1	1.37E+0	1.30E+0	1.30E+0	4.07E+0	2.75E+0	2.75E+0	4.85E+0	4.30E+0	4.30E+0
	U-235	3.18E-2	1.94E-2	1.94E-2	5.41E-2	4.26E-2	4.26E-2	6.45E-2	6.13E-2	6.13E-2	1.91E-1	1.29E-1	1.29E-1	2.28E-1	2.02E-1	2.02E-1
	U-238	6.77E-1	4.13E-1	4.13E-1	1.15E+0	9.07E-1	9.07E-1	1.37E+0	1.30E+0	1.30E+0	4.07E+0	2.75E+0	2.75E+0	4.85E+0	4.30E+0	4.30E+0

Table 8
 07-21-95 5:22p--30-y delay for Reference Sites I, III and V. R.S. I based on 1978 aerial survey
 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway excluded from RME health effects, included in population impacts

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		.10			.50			1.00			3.00			5.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	2.27E-1	2.27E-1	2.27E-1	1.13E+0	1.13E+0	1.13E+0	2.27E+0	2.27E+0	2.27E+0	6.81E+0	6.81E+0	6.81E+0	1.13E+1	1.13E+1	1.13E+1
II-1	Ra-226	2.78E-2	2.69E-2	2.69E-2	9.04E-2	9.03E-2	9.03E-2	9.09E-2	9.05E-2	9.05E-2	1.64E-1	9.16E-2	9.16E-2	8.04E-1	9.26E-2	9.26E-2
	Th-230	2.13E-2	2.07E-2	2.07E-2	7.18E-1	3.36E-1	3.36E-1	3.64E+0	1.71E+0	1.71E+0	1.41E+1	7.19E+0	7.19E+0	1.47E+1	1.27E+1	1.27E+1
	Ra-228	1.23E-3	1.11E-3	1.11E-3	9.99E-3	9.98E-3	9.98E-3	1.01E-2	1.00E-2	1.00E-2	1.03E-2	1.02E-2	1.02E-2	1.03E-2	1.03E-2	1.03E-2
	Th-232	2.43E-4	1.40E-4	1.40E-4	7.64E-3	7.64E-3	7.64E-3	7.71E-3	7.66E-3	7.66E-3	7.93E-3	7.79E-3	7.79E-3	7.94E-3	7.90E-3	7.90E-3
	U-234	1.97E-2	1.90E-2	1.90E-2	6.39E-2	6.39E-2	6.39E-2	6.43E-2	6.40E-2	6.40E-2	6.56E-2	6.48E-2	6.48E-2	6.57E-2	6.55E-2	6.55E-2
	U-235	.00E+0	.00E+0	.00E+0	2.71E-3	2.71E-3	2.71E-3	2.74E-3	2.72E-3	2.72E-3	2.83E-3	2.77E-3	2.77E-3	2.83E-3	2.81E-3	2.81E-3
	U-238	2.19E-2	2.12E-2	2.12E-2	7.12E-2	7.12E-2	7.12E-2	7.17E-2	7.13E-2	7.13E-2	7.66E-2	7.22E-2	7.22E-2	7.86E-2	7.30E-2	7.30E-2
II-2	Ra-226	2.83E-3	2.72E-3	2.72E-3	8.33E-3	8.20E-3	8.20E-3	1.15E-2	1.15E-2	1.15E-2	1.17E-2	1.16E-2	1.16E-2	1.18E-2	1.17E-2	1.17E-2
	Th-230	2.36E-2	2.29E-2	2.29E-2	5.88E-2	5.79E-2	5.79E-2	9.79E-1	4.64E-1	4.64E-1	1.24E+1	5.89E+0	5.89E+0	2.39E+1	1.13E+1	1.13E+1
	Ra-228	1.37E-2	1.33E-2	1.33E-2	3.68E-2	3.63E-2	3.63E-2	5.02E-2	5.01E-2	5.01E-2	5.09E-2	5.05E-2	5.05E-2	5.15E-2	5.08E-2	5.08E-2
	Th-232	3.70E-3	3.32E-3	3.32E-3	2.44E-2	2.40E-2	2.40E-2	3.65E-2	3.64E-2	3.64E-2	3.71E-2	3.67E-2	3.67E-2	3.77E-2	3.70E-2	3.70E-2
	U-234	6.25E-2	6.08E-2	6.08E-2	1.96E+0	1.89E+0	1.89E+0	3.81E+0	3.81E+0	3.81E+0	3.92E+0	3.86E+0	3.86E+0	4.03E+0	3.91E+0	3.91E+0
	U-235	.00E+0	.00E+0	.00E+0	1.31E-1	1.26E-1	1.26E-1	2.59E-1	2.59E-1	2.59E-1	2.66E-1	2.62E-1	2.62E-1	2.72E-1	2.65E-1	2.65E-1
	U-238	7.30E-2	7.10E-2	7.10E-2	2.57E+0	2.49E+0	2.49E+0	4.80E+0	4.79E+0	4.79E+0	4.94E+0	4.86E+0	4.86E+0	5.07E+0	4.92E+0	4.92E+0
II-3	Ra-226	1.19E-3	1.13E-3	1.13E-3	5.98E-3	5.90E-3	5.90E-3	1.77E-2	6.87E-3	6.87E-3	1.52E-1	1.32E-1	1.32E-1	2.12E-1	1.91E-1	1.91E-1
	Th-230	1.49E-2	1.45E-2	1.45E-2	1.68E-1	1.18E-1	1.18E-1	1.19E+0	8.81E-1	8.81E-1	2.96E+0	2.65E+0	2.65E+0	4.15E+0	3.71E+0	3.71E+0
	Ra-228	8.03E-3	7.82E-3	7.82E-3	2.72E-2	2.69E-2	2.69E-2	3.20E-2	3.08E-2	3.08E-2	3.70E-2	3.62E-2	3.62E-2	3.92E-2	3.84E-2	3.84E-2
	Th-232	7.14E-3	6.92E-3	6.92E-3	2.63E-2	2.60E-2	2.60E-2	3.10E-2	2.98E-2	2.98E-2	3.60E-2	3.53E-2	3.53E-2	3.83E-2	3.75E-2	3.75E-2
	U-234	2.66E-2	2.59E-2	2.59E-2	5.40E-1	4.69E-1	4.69E-1	2.46E+0	1.85E+0	1.85E+0	6.35E+0	5.62E+0	5.62E+0	9.13E+0	8.08E+0	8.08E+0
	U-235	2.21E-3	2.15E-3	2.15E-3	5.52E-1	5.21E-1	5.21E-1	1.21E+0	1.01E+0	1.01E+0	2.29E+0	2.11E+0	2.11E+0	2.90E+0	2.68E+0	2.68E+0
	U-238	2.63E-2	2.56E-2	2.56E-2	4.07E-1	3.28E-1	3.28E-1	2.17E+0	1.60E+0	1.60E+0	5.81E+0	5.13E+0	5.13E+0	8.39E+0	7.41E+0	7.41E+0
II-4	Ra-226	3.73E-3	3.54E-3	3.54E-3	6.02E-3	5.89E-3	5.89E-3	6.40E-3	6.06E-3	6.06E-3	7.78E-3	6.80E-3	6.80E-3	8.68E-3	7.52E-3	7.52E-3
	Th-230	3.15E-2	2.99E-2	2.99E-2	1.99E+0	9.42E-1	9.42E-1	4.85E+0	2.30E+0	2.30E+0	1.40E+1	7.72E+0	7.72E+0	1.92E+1	1.26E+1	1.26E+1
	Ra-228	6.89E-3	6.49E-3	6.49E-3	1.18E-2	1.15E-2	1.15E-2	1.26E-2	1.19E-2	1.19E-2	1.06E-1	1.35E-1	1.35E-1	1.94E-1	7.99E-2	7.99E-2
	Th-232	7.84E-3	7.38E-3	7.38E-3	1.34E-2	1.31E-2	1.31E-2	1.43E-2	1.35E-2	1.35E-2	1.77E-2	1.53E-2	1.53E-2	1.23E-1	1.71E-2	1.71E-2
	U-234	3.76E-2	3.57E-2	3.57E-2	8.84E-2	5.93E-2	5.93E-2	2.62E-1	1.09E-1	1.09E-1	1.01E+0	4.36E-1	4.36E-1	1.66E+0	8.63E-1	8.63E-1
	U-235	.00E+0	.00E+0	.00E+0	8.81E-5	3.11E-5	3.11E-5	2.50E-4	1.05E-4	1.05E-4	8.40E-4	4.21E-4	4.21E-4	1.23E-3	7.30E-4	7.30E-4
	U-238	2.00E-2	1.90E-2	1.90E-2	3.22E-2	3.15E-2	3.15E-2	3.42E-2	3.24E-2	3.24E-2	4.16E-2	3.64E-2	3.64E-2	4.64E-2	4.02E-2	4.02E-2
II-5	Ra-226	1.11E-2	1.11E-2	1.11E-2	5.65E-2	5.64E-2	5.64E-2	1.69E-1	1.69E-1	1.69E-1	8.09E-1	8.08E-1	8.08E-1	1.45E+0	1.45E+0	1.45E+0
	Th-230	2.28E-3	2.27E-3	2.27E-3	1.19E-2	1.19E-2	1.19E-2	1.25E-2	1.25E-2	1.25E-2	1.28E-2	1.28E-2	1.28E-2	1.32E-2	1.32E-2	1.32E-2
	Ra-228	.00E+0	.00E+0	.00E+0	1.43E-2	1.43E-2	1.43E-2	1.54E-2	1.54E-2	1.54E-2	1.60E-2	1.60E-2	1.60E-2	1.66E-2	1.66E-2	1.66E-2
	Th-232	8.77E-3	8.74E-3	8.74E-3	2.85E-2	2.84E-2	2.84E-2	2.97E-2	2.96E-2	2.96E-2	3.04E-2	3.04E-2	3.04E-2	3.11E-2	3.11E-2	3.11E-2
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	6.80E-4	6.80E-4	6.80E-4	7.23E-4	7.23E-4	7.23E-4	7.49E-4	7.49E-4	7.49E-4	7.74E-4	7.74E-4	7.74E-4
	U-238	2.93E-3	2.91E-3	2.91E-3	1.53E-2	1.52E-2	1.52E-2	1.60E-2	1.60E-2	1.60E-2	1.64E-2	1.64E-2	1.64E-2	1.69E-2	1.69E-2	1.69E-2

Table 8 Continued
 07-21-95 5:22p--30-y delay for Reference Sites I, III and V. R.S. I based on 1978 aerial survey
 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway excluded from RME health effects

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		.10			.50			1.00			3.00			5.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	3.11E+0	3.11E+0	3.11E+0	1.56E+1	1.56E+1	1.56E+1	3.11E+1	3.11E+1	3.11E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	5.01E-2	5.01E-2	5.01E-2	2.49E-1	2.49E-1	2.49E-1	5.04E-1	5.04E-1	5.04E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	2.91E-1	2.91E-1	2.91E-1	1.46E+0	1.46E+0	1.46E+0	2.91E+0	2.91E+0	2.91E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0
XVIA	Co-60	2.89E-2	2.89E-2	2.89E-2	1.45E-1	1.45E-1	1.45E-1	2.89E-1	2.89E-1	2.89E-1	8.62E-1	8.62E-1	8.62E-1	1.39E+0	1.39E+0	1.39E+0
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	2.44E-2	2.44E-2	2.44E-2	2.38E-1	2.38E-1	2.38E-1
XVIB	Co-60	2.89E-2	2.89E-2	2.89E-2	1.45E-1	1.45E-1	1.45E-1	2.89E-1	2.89E-1	2.89E-1	8.62E-1	8.62E-1	8.62E-1	1.39E+0	1.39E+0	1.39E+0
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	2.44E-2	2.44E-2	2.44E-2	2.38E-1	2.38E-1	2.38E-1
XVIC	Co-60	2.89E-2	2.89E-2	2.89E-2	1.45E-1	1.45E-1	1.45E-1	2.89E-1	2.89E-1	2.89E-1	8.62E-1	8.62E-1	8.62E-1	1.39E+0	1.39E+0	1.39E+0
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	2.44E-2	2.44E-2	2.44E-2	2.38E-1	2.38E-1	2.38E-1
XVIII A	Cs-137	1.23E-1	1.23E-1	1.23E-1	6.16E-1	6.16E-1	6.16E-1	1.23E+0	1.23E+0	1.23E+0	3.70E+0	3.70E+0	3.70E+0	6.16E+0	6.16E+0	6.16E+0
	Sr-90	1.23E-1	1.23E-1	1.23E-1	6.16E-1	6.16E-1	6.16E-1	1.23E+0	1.23E+0	1.23E+0	3.70E+0	3.70E+0	3.70E+0	6.16E+0	6.16E+0	6.16E+0
XVIII B	Cs-137	1.23E-1	1.23E-1	1.23E-1	6.16E-1	6.16E-1	6.16E-1	1.23E+0	1.23E+0	1.23E+0	3.70E+0	3.70E+0	3.70E+0	6.16E+0	6.16E+0	6.16E+0
	Sr-90	1.23E-1	1.23E-1	1.23E-1	6.16E-1	6.16E-1	6.16E-1	1.23E+0	1.23E+0	1.23E+0	3.70E+0	3.70E+0	3.70E+0	6.16E+0	6.16E+0	6.16E+0
XVIII C	Cs-137	1.23E-1	1.23E-1	1.23E-1	6.16E-1	6.16E-1	6.16E-1	1.23E+0	1.23E+0	1.23E+0	3.70E+0	3.70E+0	3.70E+0	6.16E+0	6.16E+0	6.16E+0
	Sr-90	1.23E-1	1.23E-1	1.23E-1	6.16E-1	6.16E-1	6.16E-1	1.23E+0	1.23E+0	1.23E+0	3.70E+0	3.70E+0	3.70E+0	6.16E+0	6.16E+0	6.16E+0
XXA	U-234	3.09E+0	3.09E+0	3.09E+0	1.54E+1	1.54E+1	1.54E+1	3.09E+1	3.09E+1	3.09E+1	9.26E+1	9.26E+1	9.26E+1	1.54E+2	1.54E+2	1.54E+2
	U-235	1.04E-1	1.04E-1	1.04E-1	5.19E-1	5.19E-1	5.19E-1	1.04E+0	1.04E+0	1.04E+0	3.12E+0	3.12E+0	3.12E+0	5.20E+0	5.20E+0	5.20E+0
	U-238	5.30E-1	5.30E-1	5.30E-1	2.64E+0	2.64E+0	2.64E+0	5.29E+0	5.29E+0	5.29E+0	1.59E+1	1.59E+1	1.59E+1	2.65E+1	2.65E+1	2.65E+1
XXB	U-234	3.09E+0	3.09E+0	3.09E+0	1.54E+1	1.54E+1	1.54E+1	3.09E+1	3.09E+1	3.09E+1	9.26E+1	9.26E+1	9.26E+1	1.54E+2	1.54E+2	1.54E+2
	U-235	1.04E-1	1.04E-1	1.04E-1	5.19E-1	5.19E-1	5.19E-1	1.04E+0	1.04E+0	1.04E+0	3.12E+0	3.12E+0	3.12E+0	5.20E+0	5.20E+0	5.20E+0
	U-238	5.30E-1	5.30E-1	5.30E-1	2.64E+0	2.64E+0	2.64E+0	5.29E+0	5.29E+0	5.29E+0	1.59E+1	1.59E+1	1.59E+1	2.65E+1	2.65E+1	2.65E+1
XXC	U-234	3.09E+0	3.09E+0	3.09E+0	1.54E+1	1.54E+1	1.54E+1	3.09E+1	3.09E+1	3.09E+1	9.26E+1	9.26E+1	9.26E+1	1.54E+2	1.54E+2	1.54E+2
	U-235	1.04E-1	1.04E-1	1.04E-1	5.19E-1	5.19E-1	5.19E-1	1.04E+0	1.04E+0	1.04E+0	3.12E+0	3.12E+0	3.12E+0	5.20E+0	5.20E+0	5.20E+0
	U-238	5.30E-1	5.30E-1	5.30E-1	2.64E+0	2.64E+0	2.64E+0	5.29E+0	5.29E+0	5.29E+0	1.59E+1	1.59E+1	1.59E+1	2.65E+1	2.65E+1	2.65E+1
XXIA	Th-232	2.26E-2	2.26E-2	2.26E-2	1.13E-1	1.13E-1	1.13E-1	2.26E-1	2.26E-1	2.26E-1	6.79E-1	6.79E-1	6.79E-1	1.13E+0	1.13E+0	1.13E+0
XXIB	Th-232	2.26E-2	2.26E-2	2.26E-2	1.13E-1	1.13E-1	1.13E-1	2.26E-1	2.26E-1	2.26E-1	6.79E-1	6.79E-1	6.79E-1	1.13E+0	1.13E+0	1.13E+0
XXIC	Th-232	2.26E-2	2.26E-2	2.26E-2	1.13E-1	1.13E-1	1.13E-1	2.26E-1	2.26E-1	2.26E-1	6.79E-1	6.79E-1	6.79E-1	1.13E+0	1.13E+0	1.13E+0
XXII	Ra-226	4.02E-3	4.02E-3	4.02E-3	1.99E-2	1.97E-2	1.97E-2	3.92E-2	3.74E-2	3.74E-2	1.05E-1	8.64E-2	8.64E-2	1.69E-1	1.16E-1	1.16E-1
	Th-232	1.99E-2	1.99E-2	1.99E-2	9.90E-2	9.77E-2	9.77E-2	1.95E-1	1.86E-1	1.86E-1	5.24E-1	4.32E-1	4.32E-1	8.47E-1	5.82E-1	5.82E-1
	U-234	2.57E-5	2.56E-5	2.56E-5	3.51E-3	3.37E-3	3.37E-3	2.82E-2	2.43E-2	2.43E-2	5.79E-1	3.19E-1	3.19E-1	1.17E+0	7.97E-1	7.97E-1
	U-235	1.21E-6	1.20E-6	1.20E-6	1.65E-4	1.58E-4	1.58E-4	1.32E-3	1.14E-3	1.14E-3	2.72E-2	1.50E-2	1.50E-2	5.52E-2	3.75E-2	3.75E-2
	U-238	2.57E-5	2.56E-5	2.56E-5	3.51E-3	3.37E-3	3.37E-3	2.82E-2	2.43E-2	2.43E-2	5.79E-1	3.19E-1	3.19E-1	1.17E+0	7.97E-1	7.97E-1

Table 8 Continued
 07-21-95 5:22p--30-y delay for Reference Sites I, III and V. R.S. I based on 1978 aerial survey
 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway excluded from RME health effects

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	2.27E+1	2.27E+1	2.27E+1	3.40E+1	3.40E+1	3.40E+1	5.67E+1	5.67E+1	5.67E+1	1.70E+2	1.70E+2	1.70E+2	2.27E+2	2.27E+2	2.27E+2
II-1	Ra-226	2.40E+0	1.45E+0	1.45E+0	4.00E+0	2.98E+0	2.98E+0	7.11E+0	5.90E+0	5.90E+0	2.30E+1	2.08E+1	2.08E+1	3.10E+1	2.83E+1	2.83E+1
	Th-230	1.62E+1	1.53E+1	1.53E+1	1.75E+1	1.65E+1	1.65E+1	2.19E+1	2.01E+1	2.01E+1	3.77E+1	3.57E+1	3.57E+1	4.51E+1	4.26E+1	4.26E+1
	Ra-228	1.04E-2	1.04E-2	1.04E-2	1.04E-2	1.04E-2	1.04E-2	1.05E-2	1.05E-2	1.05E-2	1.09E-2	1.08E-2	1.08E-2	1.11E-2	1.10E-2	1.10E-2
	Th-232	7.97E-3	7.96E-3	7.96E-3	8.00E-3	7.98E-3	7.98E-3	8.09E-3	8.05E-3	8.05E-3	8.42E-3	8.37E-3	8.37E-3	8.58E-3	8.52E-3	8.52E-3
	U-234	6.59E-2	6.58E-2	6.58E-2	6.60E-2	6.59E-2	6.59E-2	6.66E-2	6.64E-2	6.64E-2	6.85E-2	6.83E-2	6.83E-2	6.95E-2	6.92E-2	6.92E-2
	U-235	2.84E-3	2.84E-3	2.84E-3	2.85E-3	2.85E-3	2.85E-3	2.89E-3	2.87E-3	2.87E-3	3.02E-3	3.00E-3	3.00E-3	3.08E-3	3.06E-3	3.06E-3
	U-238	8.41E-2	8.08E-2	8.08E-2	8.90E-2	8.53E-2	8.53E-2	1.08E-1	1.00E-1	1.00E-1	1.91E-1	1.80E-1	1.80E-1	2.36E-1	2.20E-1	2.20E-1
II-2	Ra-226	1.21E-2	1.19E-2	1.19E-2	1.23E-2	1.20E-2	1.20E-2	1.26E-2	1.22E-2	1.22E-2	1.43E-2	1.35E-2	1.35E-2	1.50E-2	1.40E-2	1.40E-2
	Th-230	4.16E+1	2.49E+1	2.49E+1	5.45E+1	3.58E+1	3.58E+1	7.97E+1	5.36E+1	5.36E+1	1.87E+2	1.37E+2	1.37E+2	2.36E+2	1.71E+2	1.71E+2
	Ra-228	7.35E-1	5.16E-2	5.16E-2	1.72E+0	4.08E-1	4.08E-1	3.71E+0	1.65E+0	1.65E+0	1.15E+1	7.84E+0	7.84E+0	1.49E+1	1.03E+1	1.03E+1
	Th-232	3.86E-2	3.77E-2	3.77E-2	3.93E-2	3.83E-2	3.83E-2	4.07E-2	3.92E-2	3.92E-2	1.98E+0	4.50E-1	4.50E-1	3.35E+0	1.52E+0	1.52E+0
	U-234	4.19E+0	4.04E+0	4.04E+0	4.32E+0	4.14E+0	4.14E+0	4.60E+0	4.31E+0	4.31E+0	5.85E+0	5.26E+0	5.26E+0	6.47E+0	5.66E+0	5.66E+0
	U-235	2.82E-1	2.72E-1	2.72E-1	2.89E-1	2.78E-1	2.78E-1	3.06E-1	2.89E-1	2.89E-1	3.82E-1	3.45E-1	3.45E-1	4.21E-1	3.70E-1	3.70E-1
	U-238	5.27E+0	5.08E+0	5.08E+0	5.41E+0	5.20E+0	5.20E+0	5.73E+0	5.40E+0	5.40E+0	7.22E+0	6.49E+0	6.49E+0	7.99E+0	6.98E+0	6.98E+0
II-3	Ra-226	3.18E-1	2.96E-1	2.96E-1	3.95E-1	3.71E-1	3.71E-1	4.85E-1	4.67E-1	4.67E-1	7.16E-1	6.99E-1	6.99E-1	7.79E-1	7.63E-1	7.63E-1
	Th-230	6.96E+0	6.30E+0	6.30E+0	9.49E+0	8.66E+0	8.66E+0	1.36E+1	1.25E+1	1.25E+1	3.11E+1	2.95E+1	2.95E+1	3.67E+1	3.52E+1	3.52E+1
	Ra-228	4.33E-2	4.24E-2	4.24E-2	4.62E-2	4.53E-2	4.53E-2	4.97E-2	4.90E-2	4.90E-2	1.41E+0	1.22E+0	1.22E+0	2.19E+0	1.97E+0	1.97E+0
	Th-232	4.23E-2	4.15E-2	4.15E-2	4.52E-2	4.43E-2	4.43E-2	3.97E-1	2.82E-1	2.82E-1	2.91E+0	2.61E+0	2.61E+0	4.16E+0	3.81E+0	3.81E+0
	U-234	1.81E+1	1.59E+1	1.59E+1	2.74E+1	2.42E+1	2.42E+1	4.13E+1	3.83E+1	3.83E+1	1.17E+2	1.06E+2	1.06E+2	1.57E+2	1.46E+2	1.46E+2
	U-235	4.80E+0	4.23E+0	4.23E+0	7.10E+0	6.33E+0	6.33E+0	1.05E+1	9.78E+0	9.78E+0	2.18E+1	2.08E+1	2.08E+1	2.52E+1	2.43E+1	2.43E+1
	U-238	1.66E+1	1.45E+1	1.45E+1	2.56E+1	2.25E+1	2.25E+1	3.93E+1	3.63E+1	3.63E+1	1.09E+2	9.93E+1	9.93E+1	1.49E+2	1.38E+2	1.38E+2
II-4	Ra-226	1.08E-2	9.05E-3	9.05E-3	1.22E-1	1.05E-2	1.05E-2	3.77E-1	1.64E-1	1.64E-1	1.29E+0	1.01E+0	1.01E+0	1.61E+0	1.34E+0	1.34E+0
	Th-230	3.17E+1	2.14E+1	2.14E+1	4.08E+1	2.98E+1	2.98E+1	5.52E+1	4.32E+1	4.32E+1	1.08E+2	9.20E+1	9.20E+1	1.18E+2	1.11E+2	1.11E+2
	Ra-228	4.08E-1	2.30E-1	2.30E-1	6.28E-1	3.75E-1	3.75E-1	1.07E+0	6.99E-1	6.99E-1	2.94E+0	2.34E+0	2.34E+0	3.72E+0	3.05E+0	3.05E+0
	Th-232	4.06E-1	1.70E-1	1.70E-1	7.11E-1	3.62E-1	3.62E-1	1.38E+0	8.22E-1	8.22E-1	4.74E+0	3.57E+0	3.57E+0	6.32E+0	4.95E+0	4.95E+0
	U-234	3.77E+0	1.97E+0	1.97E+0	7.00E+0	3.39E+0	3.39E+0	1.77E+1	8.35E+0	8.35E+0	2.04E+2	1.05E+2	1.05E+2	3.45E+2	2.23E+2	2.23E+2
	U-235	2.15E-3	1.38E-3	1.38E-3	1.61E-2	2.01E-3	2.01E-3	1.77E-1	3.40E-2	3.40E-2	3.93E+0	2.00E+0	2.00E+0	8.75E+0	4.56E+0	4.56E+0
	U-238	5.79E-2	4.84E-2	4.84E-2	7.68E-1	5.62E-2	5.62E-2	4.04E+0	1.12E+0	1.12E+0	8.08E+1	4.17E+1	4.17E+1	1.93E+2	9.31E+1	9.31E+1
II-5	Ra-226	3.05E+0	3.05E+0	3.05E+0	4.56E+0	4.56E+0	4.56E+0	7.51E+0	7.51E+0	7.51E+0	2.04E+1	2.04E+1	2.04E+1	2.63E+1	2.63E+1	2.63E+1
	Th-230	1.40E-2	1.40E-2	1.40E-2	1.49E-2	1.49E-2	1.49E-2	1.67E-2	1.67E-2	1.67E-2	2.68E-2	2.68E-2	2.68E-2	3.18E-2	3.18E-2	3.18E-2
	Ra-228	1.82E-2	1.82E-2	1.82E-2	1.98E-2	1.98E-2	1.98E-2	2.31E-2	2.31E-2	2.31E-2	8.77E-1	8.77E-1	8.77E-1	1.42E+0	1.42E+0	1.42E+0
	Th-232	3.28E-2	3.28E-2	3.28E-2	8.15E-2	8.14E-2	8.14E-2	2.32E-1	2.32E-1	2.32E-1	1.40E+0	1.40E+0	1.40E+0	2.16E+0	2.16E+0	2.16E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	8.37E-4	8.37E-4	8.37E-4	9.05E-4	9.05E-4	9.05E-4	1.04E-3	1.04E-3	1.04E-3	1.79E-3	1.79E-3	1.79E-3	2.16E-3	2.16E-3	2.16E-3
	U-238	1.80E-2	1.80E-2	1.80E-2	1.91E-2	1.91E-2	1.91E-2	2.14E-2	2.14E-2	2.14E-2	3.44E-2	3.44E-2	3.44E-2	4.08E-2	4.08E-2	4.08E-2

Table 8 Continued
 07-21-95 5:22p--30-y delay for Reference Sites I, III and V. R.S. I based on 1978 aerial survey
 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway excluded from RME health effects

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0
XVIA	Co-60	2.74E+0	2.74E+0	2.74E+0	4.13E+0	4.13E+0	4.13E+0	6.95E+0	6.95E+0	6.95E+0	2.08E+1	2.08E+1	2.08E+1	2.77E+1	2.77E+1	2.77E+1
	Cs-137	6.52E-1	6.52E-1	6.52E-1	8.68E-1	8.68E-1	8.68E-1	1.19E+0	1.19E+0	1.19E+0	3.68E+0	3.68E+0	3.68E+0	5.12E+0	5.12E+0	5.12E+0
XVIB	Co-60	2.74E+0	2.74E+0	2.74E+0	4.13E+0	4.13E+0	4.13E+0	6.95E+0	6.95E+0	6.95E+0	2.08E+1	2.08E+1	2.08E+1	2.77E+1	2.77E+1	2.77E+1
	Cs-137	6.52E-1	6.52E-1	6.52E-1	8.68E-1	8.68E-1	8.68E-1	1.19E+0	1.19E+0	1.19E+0	3.68E+0	3.68E+0	3.68E+0	5.12E+0	5.12E+0	5.12E+0
XVIC	Co-60	2.74E+0	2.74E+0	2.74E+0	4.13E+0	4.13E+0	4.13E+0	6.95E+0	6.95E+0	6.95E+0	2.08E+1	2.08E+1	2.08E+1	2.77E+1	2.77E+1	2.77E+1
	Cs-137	6.52E-1	6.52E-1	6.52E-1	8.68E-1	8.68E-1	8.68E-1	1.19E+0	1.19E+0	1.19E+0	3.68E+0	3.68E+0	3.68E+0	5.12E+0	5.12E+0	5.12E+0
XVIII A	Cs-137	1.23E+1	1.23E+1	1.23E+1	1.85E+1	1.85E+1	1.85E+1	3.08E+1	3.08E+1	3.08E+1	9.24E+1	9.24E+1	9.24E+1	1.23E+2	1.23E+2	1.23E+2
	Sr-90	1.23E+1	1.23E+1	1.23E+1	1.85E+1	1.85E+1	1.85E+1	3.08E+1	3.08E+1	3.08E+1	9.24E+1	9.24E+1	9.24E+1	1.23E+2	1.23E+2	1.23E+2
XVIII B	Cs-137	1.23E+1	1.23E+1	1.23E+1	1.85E+1	1.85E+1	1.85E+1	3.08E+1	3.08E+1	3.08E+1	9.24E+1	9.24E+1	9.24E+1	1.23E+2	1.23E+2	1.23E+2
	Sr-90	1.23E+1	1.23E+1	1.23E+1	1.85E+1	1.85E+1	1.85E+1	3.08E+1	3.08E+1	3.08E+1	9.24E+1	9.24E+1	9.24E+1	1.23E+2	1.23E+2	1.23E+2
XVIII C	Cs-137	1.23E+1	1.23E+1	1.23E+1	1.85E+1	1.85E+1	1.85E+1	3.08E+1	3.08E+1	3.08E+1	9.24E+1	9.24E+1	9.24E+1	1.23E+2	1.23E+2	1.23E+2
	Sr-90	1.23E+1	1.23E+1	1.23E+1	1.85E+1	1.85E+1	1.85E+1	3.08E+1	3.08E+1	3.08E+1	9.24E+1	9.24E+1	9.24E+1	1.23E+2	1.23E+2	1.23E+2
XXA	U-234	3.09E+2	3.09E+2	3.09E+2	4.63E+2	4.63E+2	4.63E+2	7.72E+2	7.72E+2	7.72E+2	2.33E+3	2.33E+3	2.33E+3	3.12E+3	3.12E+3	3.12E+3
	U-235	1.04E+1	1.04E+1	1.04E+1	1.56E+1	1.56E+1	1.56E+1	2.60E+1	2.60E+1	2.60E+1	7.58E+1	7.58E+1	7.58E+1	9.86E+1	9.86E+1	9.86E+1
	U-238	5.29E+1	5.29E+1	5.29E+1	7.94E+1	7.94E+1	7.94E+1	1.32E+2	1.32E+2	1.32E+2	3.99E+2	3.99E+2	3.99E+2	5.36E+2	5.36E+2	5.36E+2
XXB	U-234	3.09E+2	3.09E+2	3.09E+2	4.63E+2	4.63E+2	4.63E+2	7.72E+2	7.72E+2	7.72E+2	2.33E+3	2.33E+3	2.33E+3	3.12E+3	3.12E+3	3.12E+3
	U-235	1.04E+1	1.04E+1	1.04E+1	1.56E+1	1.56E+1	1.56E+1	2.60E+1	2.60E+1	2.60E+1	7.58E+1	7.58E+1	7.58E+1	9.86E+1	9.86E+1	9.86E+1
	U-238	5.29E+1	5.29E+1	5.29E+1	7.94E+1	7.94E+1	7.94E+1	1.32E+2	1.32E+2	1.32E+2	3.99E+2	3.99E+2	3.99E+2	5.36E+2	5.36E+2	5.36E+2
XXC	U-234	3.09E+2	3.09E+2	3.09E+2	4.63E+2	4.63E+2	4.63E+2	7.72E+2	7.72E+2	7.72E+2	2.33E+3	2.33E+3	2.33E+3	3.12E+3	3.12E+3	3.12E+3
	U-235	1.04E+1	1.04E+1	1.04E+1	1.56E+1	1.56E+1	1.56E+1	2.60E+1	2.60E+1	2.60E+1	7.58E+1	7.58E+1	7.58E+1	9.86E+1	9.86E+1	9.86E+1
	U-238	5.29E+1	5.29E+1	5.29E+1	7.94E+1	7.94E+1	7.94E+1	1.32E+2	1.32E+2	1.32E+2	3.99E+2	3.99E+2	3.99E+2	5.36E+2	5.36E+2	5.36E+2
XXIA	Th-232	2.26E+0	2.26E+0	2.26E+0	3.39E+0	3.39E+0	3.39E+0	5.66E+0	5.66E+0	5.66E+0	1.70E+1	1.70E+1	1.70E+1	2.26E+1	2.26E+1	2.26E+1
XXIB	Th-232	2.26E+0	2.26E+0	2.26E+0	3.39E+0	3.39E+0	3.39E+0	5.66E+0	5.66E+0	5.66E+0	1.70E+1	1.70E+1	1.70E+1	2.26E+1	2.26E+1	2.26E+1
XXIC	Th-232	2.26E+0	2.26E+0	2.26E+0	3.39E+0	3.39E+0	3.39E+0	5.66E+0	5.66E+0	5.66E+0	1.70E+1	1.70E+1	1.70E+1	2.26E+1	2.26E+1	2.26E+1
XXII	Ra-226	2.45E-1	2.18E-1	2.18E-1	4.66E-1	3.12E-1	3.12E-1	9.72E-1	7.51E-1	7.51E-1	1.39E+0	1.29E+0	1.29E+0	2.20E+0	1.44E+0	1.44E+0
	Th-232	1.89E+0	1.32E+0	1.32E+0	2.82E+0	2.26E+0	2.26E+0	4.39E+0	3.58E+0	3.58E+0	1.48E+1	1.18E+1	1.18E+1	1.86E+1	1.61E+1	1.61E+1
	U-234	1.44E+0	1.35E+0	1.35E+0	1.80E+0	1.57E+0	1.57E+0	4.20E+0	2.66E+0	2.66E+0	8.56E+0	7.30E+0	7.30E+0	1.74E+1	9.47E+0	9.47E+0
	U-235	6.75E-2	6.33E-2	6.33E-2	8.48E-2	7.36E-2	7.36E-2	1.98E-1	1.25E-1	1.25E-1	4.02E-1	3.43E-1	3.43E-1	8.18E-1	4.45E-1	4.45E-1
	U-238	1.44E+0	1.35E+0	1.35E+0	1.80E+0	1.57E+0	1.57E+0	4.20E+0	2.66E+0	2.66E+0	8.56E+0	7.30E+0	7.30E+0	1.74E+1	9.47E+0	9.47E+0

NOTICE

The information provided in this draft document is intended for internal review and comment by the U.S. Environmental Protection Agency (EPA) only; it does not represent final EPA policy, action, or guidance. The data, analyses, and conclusions presented in this report are preliminary findings which are subject to revision without notice during the EPA review process. Do not quote from, or reproduce parts of, this report.

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Introduction

The U.S. Environmental Protection Agency (EPA) is proposing regulations that set standards for radiation doses received by members of the public as a result of radionuclide contamination on sites under the control of a Federal Agency, and on sites licensed by the Nuclear Regulatory Commission (NRC) or an NRC Agreement State, that are to be released from those licenses or control. The proposed rule will ensure that such sites are cleaned up to a level that is protective of human health and the environment before they are released for public use. This document describes parts of the technical analysis being undertaken in support of those regulations.

EPA is separately developing regulations that will address the disposal of radioactive waste generated during site remediation, and will explore the feasibility of additional regulations that deal with the recycle or reuse of equipment and materials after cleanup.

Background

The total number of sites contaminated with radionuclides in the United States is in the thousands. Contaminated sites range in size from corners of laboratories to sprawling nuclear weapons facilities covering many square miles of land. The contamination extends to all environmental media, as well as to onsite buildings and equipment.

EPA's proposed regulations will set forth clear standards for the remediation of sites contaminated with radionuclides and for the release of those sites for use by members of the public. The regulations will utilize the authority granted to the EPA under the Atomic Energy Act (AEA), and will apply to sites and facilities under the control of the Federal Government or licensed by the NRC or any of its Agreement States.

EPA's *Issues Paper on Radiation Site Cleanup Regulations* (EPA 93a) presents an overview of the major policy issues, options, and preliminary analyses relevant to the development of the proposed rule. Specifically, the *Issues Paper* describes the scope of the cleanup problem, summarizes the statutory authorities available to EPA for developing the regulations, and discusses the advantages and disadvantages of various regulatory approaches.

Technical Analysis Supporting the Rule

The cleanup regulations will benefit society by reducing the number of potential adverse health effects among the people living or working on or near a site following the cleanup of its radioactive contamination. The magnitude of that benefit will depend on the cleanup level selected. At the same time, implementation of the regulations will impose costs on the nation. These costs, too, will depend on the cleanup level selected, and will include not only the economic costs of remediation, but also the public health and ecological impacts of the remediation effort itself.

In support of this rulemaking, EPA is conducting a comprehensive technical analysis aimed at developing the information that will be used to assess these benefits and costs. The analysis in the present report will determine how the health impacts and volumes of soil to be remediated vary as functions of the possible cleanup level. (The cleanup standard will specify one specific dose or risk value, and this is termed "the cleanup level" in this report.) As such, this technical analytical process will require answers to the following critical questions:

- At typical or representative sites, what are the radiation doses and risks to an individual resulting from exposure, via all environmental pathways, to unit concentrations of radionuclides in site soil—*i.e.*, what is the risk or dose per picocurie/gram (pCi/g) for each radionuclide present?
- Conversely, what radionuclide soil concentrations, in units of pCi/g, would have to be achieved in order to meet various possible individual dose or risk cleanup levels?
- At typical or representative sites, how much soil contains radioactivity in excess of any given radionuclide soil concentration (RSC)? That is, what volumes of soil would require remediation (*e.g.*, excavation and/or processing) to ensure that RSCs on-site after cleanup meets various possible cleanup levels?
- How many potential radiogenic cancers, and cancer deaths, would be averted by remediating the soil to RSCs corresponding to various individual risk levels? (These are population rather than individual effects.)

- How many radiogenic health effects might eventually occur among remediation workers and the general public because of the remediation process itself? (Non-radiogenic health effects are considered elsewhere, not in the present report.)

Reference Sites Clearly it is not possible, in this rulemaking process, to answer these questions accurately for each of the thousands of sites in the U.S. known to be contaminated, nor is it necessary to do so.

EPA is performing, rather, a detailed analysis of the remediation of a small set of relatively simple but quasi-realistic "reference" sites that are intended to represent the range of conditions found among real contaminated sites. Each reference site was created partially, but *not completely*, out of information available on one or more real sites. Thus *theset of* reference sites, *taken as a whole*, is intended to cover the universe of actual sites, and the potential current- and future-exposure scenarios, in such a manner that the assessment of remediation costs and benefits for the reference sites is supportive of the cleanup rulemaking. In creating the reference sites, EPA has had to rely extensively on available data on real sites that it, and other Federal agencies, have collected. There is much uncertainty about the nature and extent of contamination at many real contaminated sites, however, and on their hydrogeological and meteorological characteristics, which influence the mobility and dispersion of radionuclides. Since some of the site characterization information required for the present analysis simply does not exist for the real sites, it has been necessary to generate it by extrapolation of available data and by other indirect means described in Chapter 4.

In the creation of reference sites, moreover, certain attributes of the real sites upon which they are partially based have intentionally been simplified. In the analysis of Reference Site I, for example, which is intended to resemble the Hanford Reservation, to some extent, no account was taken of the tank farms and their immediate vicinities. It is assumed, based on reports of the Department of Energy (DOE), that so widely and highly contaminated areas are not likely to be cleaned up and released for public use in the foreseeable future; while of great significance to EPA's radioactive waste disposal rule, also currently under development, the tank farms are felt to lie outside the scope of the site cleanup regulation. For the purposes of the present analysis, it is therefore simply proposed that the major waste disposal areas will be stabilized and/or remediated in an adequately protective manner.

Finally, this analysis greatly simplifies the determination of future land use scenarios and population densities. In particular, simple, reasonable, conservative assumptions on the future utilization of the sites following cleanup have been made.

It must therefore be emphasized that the parameters defining a reference site do not fully coincide with those that would characterize the real site(s) upon which it is based. It would be misleading to assert that any reference site provides an accurate and complete description of the corresponding real site(s). In particular, predicted health impacts and volumes of soil to be remediated refer only to the reference site itself, and must not be used in an attempt to predict future impacts at the vastly more complex real site upon which it is based.

Modeling Individual Risk Estimates of doses and risks to individuals and populations depend on the pathway modeling tools and assumptions used in their calculation, including possible exposure scenarios. Based on consideration of current land use and demographics near some of the sites subject to this rule, two specific scenarios have been considered in the assessment of individual risks at the reference sites: For the *Rural Residential* scenario, people living on-site consume some vegetables, milk, meat, and fish produced there. For the *Commercial/Industrial* scenario, workers spend 2000 hours per year on-site and eat nothing produced there.

EPA has evaluated the suitability of more than two dozen multimedia pathway models and computer codes for analysis of the reference sites. Guided by this evaluation, EPA has employed primarily one of these models—RESRAD 5.19—to estimate individual risk factors. (A "risk factor" is the lifetime risk to individuals resulting from exposure to a unit concentration of a radionuclide in soil (i.e., lifetime risk per pCi/g). Once a risk factor for a radionuclide is determined for a site, the radionuclide soil concentration corresponding to a given risk-based cleanup level can be derived by dividing the cleanup level by the risk factor—i.e., $\text{pCi/g} = (\text{risk})/(\text{risk per pCi/g})$. Because risk factors depend on site-specific parameters, such as the depth of the aquifer and the distribution coefficients (K_d), risk factors must be calculated separately for each reference site.)

To assist in assessing the reliability of such estimates, EPA has compared the results from RESRAD with those from two other models, an updated version of RAGS/HHEM Part B [*Risk Assessment Guidance for Superfund - Human Health Evaluation Manual (Part B)*] (EPA 91a) and PRESTO-CPG, in the calculation of risks to individuals at a simple "generic"

test site; has carried out sensitivity analyses on the generic test site with RESRAD to determine how the results change when the values of certain critical parameters are varied; and has performed a preliminary probabilistic Monte Carlo analysis on the generic test site using updated RAGS/HHEM equations to estimate the degree of uncertainty in the results. In addition, the Agency has performed an extensive qualitative uncertainty analysis on the parameter values used in the modeling of the reference sites, as will be discussed in Chapter 6.

Estimating Numbers of Health Effects in Populations EPA has quantified the radiogenic health impacts in populations that result from achieving alternative individual risk levels—*i.e.*, the numbers of cancers and cancer fatalities averted. The Agency has developed a simple, high-end population health effects model, built on equations similar to those of the updated RAGS/HHEM Part B model, for application to the reference sites.

Several land-use scenarios are assumed for the modeling of health effects in populations at the reference sites, and these fall into two general classes: Between 10 and 300 people per square kilometer inhabit an *Agricultural* site, and all the food they grow is consumed locally (that is, on-site and by near-by communities). The population density ranges from 10/km² to more than 1,000/km² at a *Suburban* site, and no food is produced locally. The calculations track population doses and adverse health effects averted over periods of 100, 1000, and 10,000 years.

Estimating Volumes Of Soil To Be Remediated An important determinant of the costs of cleaning up a site to various possible risk levels is the volumes of soil to be remediated in the process. The present analysis estimates such cleanup volumes for each reference site by combining two kinds of information: risk factors (risk per pCi/g) obtained from site-specific modeling, and pre-cleanup soil volume vs. contaminant concentration relationships derived from published reports on the corresponding real site(s).

A challenging aspect of this analysis has been the extraction of soil volume vs. contaminant concentration information from the available site documents, especially when multiple radionuclides are present. Methods developed for this purpose are described in detail in Chapter 4.

Implementation Once a cleanup level has been established, it is necessary to translate it into quantities that can guide the remediation of real sites. Generic tables of limiting soil concentrations and computer codes for site-specific modeling are two forms that such guidance might take, and these will be available at the time that the final rule is published.

At any site undergoing remediation, compliance with the cleanup level must be demonstrated, in a scientifically rigorous and legally defensible manner, with appropriate radiation detection instruments and techniques. Various kinds of field and laboratory equipment differ in inherent sensitivity and specificity, and these differences are affected by the presence of background radioactivity from naturally occurring and manmade radionuclides. The technical analysis will evaluate issues related to radiation detection capability, to the relationship between measurement and background radioactivity, and to the feasibility of detecting site contamination over background.

As implementation guidance, EPA will provide site owners/operators with procedure manuals for conducting field surveys and for collecting samples for laboratory analysis. EPA is cooperating with the U.S. Department of Energy (DOE), the U.S. Department of Defense (DOD), and the NRC in the development of a MultiAgency Radiological Site Inspection Manual (MARSIM) that describes standard field and sampling procedures. EPA will also provide guidance on standard operating procedures and quality-assurance guidelines for radiochemical analyses.

Scope of EPA's Cleanup Standards Regulatory Development Technical Analysis, And Overview of This Report

EPA is conducting its technical analysis in five separate but related areas to support the development of cleanup standards for sites contaminated with radioactivity. These areas address:

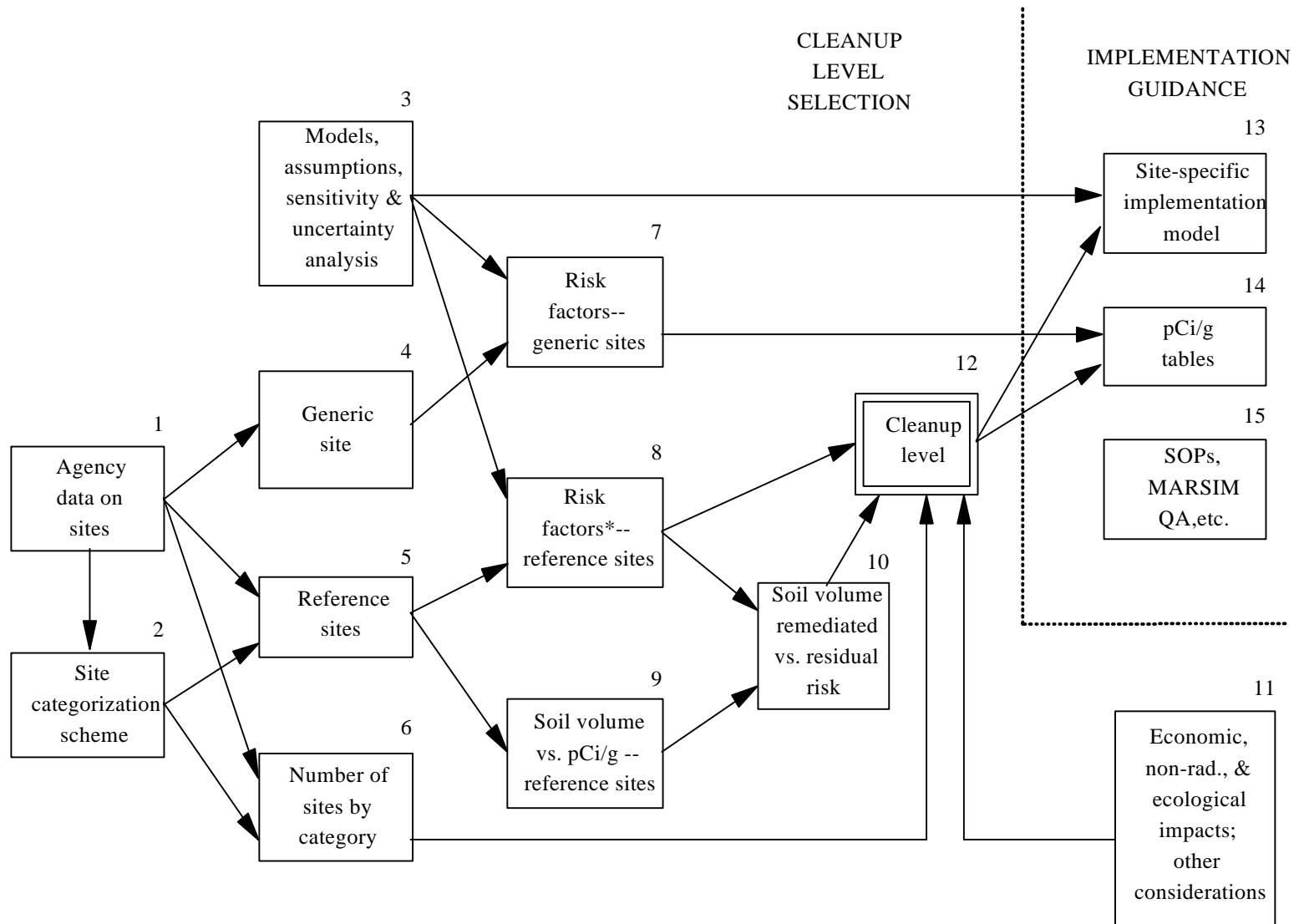
- (1) Soils;
- (2) Aquifers; and
- (3) Structures.

The current report is limited in scope to analyses supporting the development of soil cleanup standards (*i.e.*, item (1) above). It is important to clarify that this report is concerned with

residual levels of radioactivity in the soil following cleanup. The report deals with the radioactivity in waste storage areas and burial grounds only to the extent that they have contaminated the surrounding soils. That is, it is limited to the analysis of areas, away from permanent waste disposal areas, where the soil has been contaminated as a result of spills, local fallout, overflow contamination, runoff from nearby sources of radioactive waste and/or windblown depositions.

The five questions posed early in this Introduction suggest the types of information needed to assess the potential doses and risks to individuals, numbers of health effects, and costs as a function of various alternative cleanup levels. The technical analysis being undertaken to answer those five questions is summarized below, and the headings correspond to the chapters of this technical report. Figure I is a flow diagram indicating the steps in the process, and the "Item" numbers in the text below correspond to the Figure I block numbers. Items noted with an asterisk (*) are not within the scope of this report, but will be addressed in the Background Information Document (BID) or Regulatory Impact Analysis (RIA) supporting the rulemaking.

Figure I. Flow of Work



1. Magnitude of the Cleanup Problem—What's out there
 - Determine nature and extent of the site contamination problem.
 - Compile and review existing data characterizing real contaminated sites. (Item 1)
 - Establish a scheme for partitioning the universe of real contaminated sites into broad functional categories. (Item 2)
 - Estimate the number of real sites in each category. (Item 6)
 - Estimate the total volume of soil that may fall within the scope of this rule.

2. Environmental Pathway Models—selecting the risk assessment tools (Item 3)
 - Characterize the exposure pathways; Tabulate default parameters, distributions, and assumptions for: Rural Residential and Commercial/Industrial land-use scenarios
 - Develop pathway model selection criteria.
 - Test and compare available models; select multi-media pathway model(s) to estimate doses and risks to individuals at the reference sites.
 - Develop a simple, high end population model for application to the reference sites.

¹ Items noted with an asterisk (*) are not within the scope of this report, but will be addressed in the Background Information Document (BID) or Regulatory Impact Analysis (RIA) supporting the rule-making.

Chapter

Description

3. Assessment of Modeling Parameters and Capabilities—Developing and testing the risk assessment tools (Item 4)

- Construct a generic test site for testing the pathway model(s) for individual and population doses and risks. The site is "generic" in the sense that it employs base-case parameters selected to provide reasonable (but conservative) estimates.
- With RESRAD, generate tables of risk factors for the generic test site. (Item 7)
- Compare the analysis of the generic test site using RESRAD with analyses by using other models, RAGS/HHEM and PRESTO-CPG. Assess the sensitive pathways and parameters, and compare the degree of conservatism of the three.
- Perform a sensitivity analysis of RESRAD using the generic test site. Parameters to be varied are radionuclide, site dimensions, thickness of layer of contamination, depth of aquifer, infiltration rate, and distribution coefficient (K_d).
- Perform a preliminary Monte Carlo uncertainty analysis using the updated RAGS/HHEM Part B model.
- The generic test site may be employed later in generating soil concentration limit tables for use in implementation of the rule.

4. Creation of Reference Sites—Preparation for analysis of health effects and volumes of soil undergoing remediation

- Drawing from the data characterizing the source, environmental, and demographic characteristics of actual sites (Item 1), and the site categorization scheme (Item 2), develop a limited number of reference sites that, as a set, together represent the universe of real sites in all categories (Item 5). Descriptions of the reference sites include
 - typical radiological source terms, hydrogeology, etc.
 - volumes of soil at different levels of contamination
- Estimate the number of sites in each category—*i.e.*, the number of sites to be represented by each reference site. (Item 6)
- Develop a site-weighting system, so that results from the analysis of the set of reference sites can be extrapolated to the universe of all real contaminated sites.

Chapter

Description

5. Analysis of Reference Sites—Analysis of health effects and support for analysis of volumes of soil undergoing remediation
 - Develop risk factors for each of the reference sites. (Item 8)
 - From site specific information, develop soil volume vs. contamination concentration curves for each reference site (indicating the volumes of soil contaminated to various degrees of radioactivity, in pCi/g, at the site); extrapolate to lower soil concentrations, if necessary. (Item 9)
 - For each reference site determine, as a function of individual risk (or dose) level, the volume of soil requiring remediation (Item 10).
 - For each reference site determine, as a function of individual risk (or dose) level, the number of potential radiogenic cancers averted among the general public, and the number of potential radiogenic cancers that would be induced among remediation workers. (Non-radiogenic health effects among remediation workers and others are considered elsewhere, not in this Report).
 - Making use of the above information, and of other input (Item 11)*, a cleanup level (risk or dose level) will be selected. (Item 12)*
6. Uncertainty Analysis—How reliable are the results of the analysis of the reference sites?
7. Implementation—Selecting final soil concentrations and demonstrating compliance
 - Translate cleanup level (dose or risk) into something measurable in the field or laboratory (Items 13, 14)
 - Provide means of demonstrating that field and laboratory measurements are appropriately and being performed properly (e.g., MARSIM) (Item 15).

1. Magnitude of the Cleanup Problem

This section describes the magnitude of the overall cleanup problem. It characterizes the general types and numbers of sites contaminated with radioactive materials as well as the estimated volumes of contaminated soil. It surveys sites that include the U.S. Department of Energy (DOE) weapons complex and research facilities, the U.S. Department of Defense (DOD) installations and bases, sites licensed by the U.S. Nuclear Regulatory Commission (NRC) and its Agreement States, other sites controlled by States, sites under the authority of other Federal agencies, and EPA Superfund National Priorities List (NPL) sites. It does not, however, include all "potential" sites where radioactive materials are known to have been used in the past or where they are currently used, unless it is also known that there have been accidental or intentional releases at such sites which have allowed soils, aquifers, surface waters, and/or structures to become contaminated.

1.1 NUMBERS OF SITES

A critical issue in determining the number of contaminated sites is the definition of *site*. For example, some programs use the term *site* to refer to specific localized areas of contamination at a facility, while other programs equate *site* with an entire *facility*. These terms are often used inconsistently, and overlap in meaning, even within the same program or agency. Other commonly used terms include *release*, *facility*, *installation*, *base*, *area of concern*, *study area*, *operable unit*, *waste area grouping*, *solid waste management unit*, and *waste unit*.

For the purpose of counting sites, this report has adopted the following definition for identifying sites that are known to be contaminated with radioactivity in the United States and that may fall within the scope of the cleanup rulemaking:

A "*site*" is any installation, facility, or discrete, physically separate parcel of land, or any building or structure, or any body of ground water or surface water, that is known to be contaminated with radionuclides in concentrations greater than those naturally occurring. When a portion of such an entity is contaminated, the entire entity is considered a "*site*." For example, the Hanford Reservation, which has many contaminated buildings, discrete release sites, and ground water contamination, is considered a single "*site*."

Tables 1-1 and 1-2 present an overview of the number of sites known to be contaminated with radioactivity, indicating a total number of about 5,000 sites. Included are sites that are: on EPA's National Priorities List (NPL); under the authority of various Federal agencies (predominantly DOE and DOD); licensed by the NRC and NRC Agreement States; and under the control of individual states. The majority of these sites are two types of NRC/Agreement State licensees: 3,471 research and development facilities and 930 sealed source manufacturers, according to recent NRC estimates (NRC 94). The largest and most severely contaminated sites are those of the DOE weapon production complex. It should be clear from the introduction of this report that the proposed rule does not apply to all of the sites counted in Tables 1-1 and 1-2.

Table 1-1 INVENTORY BY AGENCY OF SITES THAT ARE KNOWN TO BE CONTAMINATED WITH RADIOACTIVITY: TOTALS

AGENCY	DEPARTMENT	NUMBER OF SITES	NUMBER OF NPL SITES
Department of Energy		96	19(25*)
Department of Defense	Army	68	10
	Navy/Marine	9	4
	Air Force	69	14
	Air National Guard	1	1
Other Federal Agencies		2	1
Federal Total		245	49(55*)
NPL Non-Federal		21	21
NRC/Agreement States		4676	-
Other State Sites		-	-
TOTAL		4942	70(76*)

* Including additional areas listed under NPL.

**Table 1-2 INVENTORY OF SITES THAT ARE KNOWN TO BE
CONTAMINATED WITH RADIOACTIVITY**

AGENCY	SITE NAME	SITE/LOCATION COUNT
FEDERAL SITES		
DOE SITES: Major Sites	Fernald ¹ †	1
	Hanford ² †	1
	INEL ³ †	1
	Mound ⁴ †	1
	Nevada Test Site ⁵	1
	Oak Ridge Reservation ⁶ †	1
	Paducah ⁷ †	1
	Pantex ⁸ †	1
	Portsmouth ⁹	1
	Rocky Flats ¹⁰ †	1
	Savannah River ¹¹ †	1
	Weldon Spring ¹² †	1
	National Laboratories	Argonne ¹³
Brookhaven ¹⁴ †		1
Fermi ¹⁵		1
Lawrence Berkeley ¹⁶		1
Lawrence Livermore ¹⁷ †		1
Los Alamos ¹⁸		1
Sandia ¹⁹		1
Other Sites	FUSRAP Sites ²⁰	30
	UMTRAP Sites ²¹	14
	Other DOE Sites ²²	33
DOD SITES: Major Site	Aberdeen Proving Ground ²³	1
Other Sites	Sites with Burial Areas ²⁴	79
	Sites with Accident Contamination ²⁵	1
	Sites with DU Contamination ²⁶	15
	Other DoD Sites ²⁷	51
OTHER FEDERAL SITES:	USDA Fremont National Forest ²⁸ †p	1
	GSA Watertown Arsenal ²⁹	1
NON-FEDERAL SITES		
NPL SITES:	Municipal Landfills ³⁰	3
	Radium Sites ³¹	7
	Other Non-Federal NPL Sites ³²	11
NRC/AGREEMENT STATES SITES:	Nuclear Power Plants ³³	125
	Test and Research Reactors ³⁴	63
	Other Fuel Cycle Facilities ³⁵	65
	Rare Earth Extraction Facilities ³⁶	22
	Byproduct Material Facilities ³⁷	4401
OTHER STATE SITES:	- ³⁸	-
TOTAL		4942

† - NPL Listed †p - NPL Proposed

Footnotes 1-38 in this table can be found in Appendix A of this Technical Support Document.

1.2 MAJOR CLEANUP PROGRAMS

It simplifies the process of determining the magnitude of the cleanup problem to group contaminated sites according to their responsible agency or remediation program. For many of them, cleanup programs have already been established. The following is an overview of the major cleanup programs in the United States. Since it is broadest in scope, the overview begins with EPA's Superfund Program.

1.2.1 Superfund Program

In 1980, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) launched the Superfund Program to clean up hazardous waste sites that threaten human health or the environment. To implement CERCLA, the EPA also promulgated the revised National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR part 300, pursuant to CERCLA section 105 and Executive Order 12316. The NCP sets forth the procedures and guidelines needed to respond under CERCLA to releases and threatened releases of hazardous substances, pollutants, or contaminants. The Superfund Amendments and Reauthorization Act of 1986 (SARA) was enacted on October 17, 1986.

CERCLA section 105(a)(8)(A) requires that the NCP include "criteria for determining priorities among releases or threatened releases throughout the United States for the purpose of taking remedial action." Three processes for listing sites on the NPL are included in the NCP: (1) Under 40 CFR 300.425(c)(1), a site may be included on the NPL if it scores 28.50 or greater on the Hazard Ranking System (HRS), which EPA promulgated as Appendix A of 40 CFR part 300 (This is the most common route by which federal sites are placed on the NPL); (2) 40 CFR 300.425(c)(2) requires that, to the extent practicable, the NPL include within the 100 highest priorities, one site designated by each State representing the greatest danger to public health, welfare, or the environment among known sites in the State (i.e., each State may designate a single site as its top priority, regardless of the HRS score); (3) 40 CFR 300.425(c)(3) allows certain sites to be listed whether or not they score above 28.50, if they meet all of the following conditions:

- The Agency for Toxic Substances and Disease Registry (ATSDR) of the U.S. Public Health Service has issued a health advisory that recommends dissociation of individuals from the release.

- EPA determines that the release poses a significant threat to public health.
- EPA anticipates that it will be more cost-effective to use its remedial authority (available only at NPL sites) than to use its removal authority to respond to the release.
- By EPA policy, the Superfund Program does not enter NRC - Licensed Sites onto the NPL (48 CFR 40661, Sept. 8, 1993)

EPA maintains a database (called CERCLIS) of all reported potentially hazardous releases to the environment. Of over 37,000 entries in CERCLIS, 1231 are listed NPL sites, and 76 of these are radioactively contaminated. Many of the 76 radiation sites, however, were actually listed because of their chemically-hazardous contamination rather than their radioactivity contamination.

The primary purpose of the NPL is to identify, for States and the public, facilities, sites, or releases that warrant remedial actions. The NPL also serves to notify the public of sites that EPA believes warrant further investigation.

1.2.2 Formerly Utilized Sites Remedial Action Program (FUSRAP)

The FUSRAP program was initiated in 1974 by the Atomic Energy Commission (AEC), the predecessor of the U.S. Department of Energy. The purpose of this program is to identify, evaluate, and if necessary, decontaminate (to current applicable standards) sites, or apply controls at sites, that were previously used by the AEC or its predecessor, the Manhattan Engineering District (MED). The MED and the AEC conducted several programs during the 1940s and 1950s that involved research, processing, and production of uranium and thorium, and the storage of residues. The facilities where this work was accomplished were decommissioned and decontaminated to meet the health and safety guidelines in use at that time. However, due to the emergence of more stringent health and safety standards, it has become necessary to reassess the need for, and to conduct, remedial action at many of these sites. Preliminary information on the radiological conditions at most of the sites is known from radiological surveys or characterization activities conducted at the sites. Also, from the more recent radiological surveys, it has become known that several private properties (called "vicinity properties") adjacent to many of these sites are contaminated from the processing operations carried out for MED/AEC and require remediation.

Currently, there are 46 sites in 14 states included in FUSRAP, with most of these sites requiring some form of remedial action. To date, fourteen sites have completed remedial actions. Four other sites are on the NPL for remediation.

The FUSRAP program objectives include the disposal or stabilization of the waste and certification of the sites remediated for use without radiological restrictions. All work accomplished under the program must be in accordance with all applicable Federal, State, and local laws. Remediation action at the sites must satisfy the requirements of the National Environmental Policy Act (NEPA) and CERCLA, as amended by SARA.

1.2.3 Uranium Mill Tailings Remedial Action Program (UMTRAP)

The mission of the UMTRAP is explicitly stated and directed in the Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978 (Public Law 95-604, 42 USC 7901). Title I of the Act authorizes DOE to undertake remedial actions at designated inactive uranium processing sites and associated "vicinity properties" containing uranium mill tailings and other residual radioactive materials derived from the processing site. The purpose of the remedial actions is to stabilize and control uranium mill tailing piles and other residual radioactive materials in a safe and environmentally sound manner to minimize radiation health hazards to the public.

Currently, there are 24 designated inactive uranium processing sites in the Program. Remediation work has been completed at ten of these sites. There are other uranium mill tailing sites, subject to Title II of the UMTRCA, that are licensed by the Nuclear Regulatory Commission and Agreement States.

Remedial actions undertaken by DOE pursuant to the Act are to be accomplished in cooperation with the affected states and Indian tribes within whose boundaries designated uranium processing sites are located, and with the concurrence of the Nuclear Regulatory Commission. Such remedial actions are to be performed in accordance with the standards promulgated by the EPA (40 CFR Part 192) and with applicable Federal and state laws. Because these sites are covered under the UMTRCA, they will not be subject to EPA's clean-up rule currently under development.

1.2.4 Defense Environmental Restoration Program (DERP)

DERP was established in 1984 to promote and coordinate efforts for the evaluation and cleanup of contamination at DOD installations. The program includes the Installation Restoration Program (IRP), where potential contamination at DOD installations and formerly owned or used properties is investigated, and as necessary, site cleanups are conducted.

SARA provides authority for the Secretary of Defense to conduct the DERP Program in consultation with the EPA. In so doing, the Secretary of Defense conducts the program within the overall framework of SARA and CERCLA.

The IRP Program conforms to the requirements of the NCP. EPA guidelines are applied in conducting the investigations and remedial actions within the program. The order in which DOD conducts IRP activities is based on a policy assigning the highest priorities to sites that represent the greatest potential public health and environmental hazards.

The Base Closure and Realignment Acts of 1988, 1991, and 1993 identified over 100 military bases for closure. The total number of base realignments and closures (commonly called BRAC's) may eventually exceed that number. It is not known at present how many of these bases are contaminated with radioactivity. Considerable investigation, and in certain cases remediation, may be required before properties at the closed bases can be transferred from DOD or used for other purposes (DOD 92).

1.2.5 Site Decommissioning Management Plan (SDMP)

The former Atomic Energy Commission (AEC), and the now Nuclear Regulatory Commission (NRC) have terminated approximately 33,000 material licenses during the past four decades. Most of these terminated material licensee sites contain no significant amounts of radioactive contamination that would require remedial actions. As part of the license termination process, licensees are required to decontaminate and decommission their facilities by reducing or removing residual radioactivity in land, groundwater, buildings, and equipment to criteria levels that allow the property to be released for unrestricted use. Sites are inspected by NRC inspectors to verify the absence of excess residual contamination before a license is terminated.

NRC decommissioning requirements and practices have been repeatedly and critically reviewed by the General Accounting Office (GAO). A December 21, 1989 Commission briefing, concerning strategies for decommissioning licensed sites, resulted in the issuance of a Staff Requirements Memorandum dated January 31, 1990, which directed the staff to develop a detailed list of contaminated, currently licensed, sites. The staff responded by creating the SDMP, which was forwarded to the Commission in March 1990.

At present, 47 sites with radioactive contamination are included in the Program. Many of these sites have either been closed down or are in the process of being closed down. The sites have buildings, former waste disposal areas, piles of tailings, groundwater, and soil contaminated with low levels of uranium and/or thorium (source material) and/or other radionuclides.

A combination of health and safety and program management issues is used as the basis to prioritize NRC efforts to review contaminated sites. The first priority is public health and safety. Although known contamination at SDMP sites is generally stabilized or under control, and not currently causing significant adverse effects on public health and safety, all sites will require remedial cleanup efforts before the licenses can be terminated and the sites released for unrestricted use (NRC 92a).

1.3 SITES GROUPED ACCORDING TO RESPONSIBLE AGENCIES/PROGRAMS

Some contaminated sites have already been described in the context of existing federal cleanup programs. This section expands the discussion to cover *all* known sites contaminated with radioactivity, again by responsible agency.

In Tables 1-1 and 1-2, contaminated sites have been put into four general groups: Federal facility sites; NRC licensees; non-Federal NPL sites; and sites under State control. (Additional information on sites can be found in Appendix A of this report.)

1.3.1 Federal Facility Sites

Federal sites are owned or operated by, or are under the authority of Federal agencies. Included are military bases, national research laboratories, weapons complexes, and radioactive materials production sites. The largest sites known to be contaminated are DOE

sites, a number of which are listed on the NPL. At many non-DOE Federal sites, the use of radioactive materials are licensed by NRC. As of September 1992, Federal agencies held 299 NRC licenses for non-sealed sources. The number of sites where radioactive material is present is substantially higher, however, since the Air Force, Navy, and the Department of Agriculture each have a single broad, multi-site, multi-regional research and development NRC materials license. In addition, other federal agencies possess or control some radioactive materials that do not require NRC licenses. These include some radioactive material related to nuclear weapons, nuclear reactors, and naturally occurring radioactive material.

Department of Energy

DOE is responsible for cleaning up 96 contaminated sites in 34 states and territories (DOE 94a). These sites include major weapons facilities, nuclear material production plants, national laboratories, FUSRAP sites, UMTRAP sites, and other surplus sites. Contamination ranges from small, slightly contaminated laboratory rooms to large, complex, highly contaminated processing plants, as well as surrounding contaminated lands. In addition to sites that are government owned, DOE has responsibility for some sites that were formerly used in government operations or for the benefit of the government. For example, the Maywood site was an AEC-licensed commercial facility used to process, manufacture, and distribute radioactive materials, and large quantities of radioactive wastes were buried onsite. Active sites are under the DOE Waste Operations Program, and inactive or surplus sites are under the DOE Environmental Restoration Program. Waste management includes treatment, storage, and disposal of high-level, low-level, transuranic, chemically hazardous, mixed, and solid sanitary wastes. The Environmental Restoration Program includes remedial actions and decontamination and decommissioning. Remedial actions are concerned primarily with all aspects of the assessment and cleanup of inactive sites. Decontamination and decommissioning activities focus primarily on the safe caretaking of surplus nuclear facilities until they are decontaminated for reuse or demolished and completely removed. Many problems addressed in environmental restoration are the result of past waste management practices that were considered acceptable at the time, but do not meet today's more stringent standards for protection of human health and the environment. DOE's contaminated sites include uranium mines and mills, nuclear materials production facilities, weapons production and testing sites, national laboratories, and waste disposal sites.

Most of the sites in the DOE ER Program are large, complex, and multi-functional facilities. Because of their size and complexity, the DOE sites are subdivided into smaller, more manageable units based primarily on geographic location and function. These major facilities represent most of the soil volume that falls within the scope of EPA's proposed radiation site cleanup regulations.

DOE has 19 large and multi-functional facilities, including nuclear material, fuel fabrication, and weapons assembly plants, and national laboratories. Radioactive contamination is often widespread at these complexes. At the Hanford Site, for example, approximately 1,500 waste units have been identified as potentially requiring some degree of remediation. Most of these units were contaminated by onsite storage or soil disposal of low-level radioactive and chemical waste, resulting primarily from the production and chemical processing of plutonium. The waste units, ranging from a few square feet to 1,800 acres in area, have been grouped into 78 operable units. These units have been further organized into four large aggregate areas based primarily on their geographic location. Similar situations occur at other large DOE facilities.

Four of the 19 major DOE sites were devoted primarily to the production of nuclear fuels: Fernald, Portsmouth, Paducah, and the K-25 Plant at the Oak Ridge Reservation. Cleanup recently began at Fernald under the Fernald Environmental Management Project (FEMP). This plant was used to process uranium from 1953 to 1989. Contaminated materials located at FEMP in 1990 included 122,100 drum equivalents of low-level waste, 1,100 metric tons (MT) of thorium compounds, and 8,800 MT of radium-bearing residues. Contaminated soils and groundwater are also present.

DOE's weapons production and testing sites handle nuclear weapons from the design and testing phases to the full production phase. These test sites all have localized subsurface contamination, and some have surface contamination with hazardous and mixed wastes related to drilling mud disposal pits.

Many DOE facilities are devoted to basic physical and scientific research. These facilities include Fermi National Accelerator Laboratory, Princeton Plasma Physics Laboratory, and Stanford Linear Accelerator Center.

There are many waste burial repositories within the DOE complex. They include major waste disposal locations such as those at Hanford, Oak Ridge, Savannah River, Idaho National Engineering Laboratory, Los Alamos National Laboratory, Fernald, and the Nevada Test Site. Smaller quantities of wastes are also buried at the Ames Laboratory, Brookhaven National Laboratory, Sandia National Laboratory-Albuquerque, Lawrence Livermore National Laboratory, Paducah, and Portsmouth. Designated waste repositories are not considered sites, unless they have leaks or otherwise do not meet current standards.

Lastly, there are a small number of miscellaneous DOE facilities with specific functions, including the West Valley Demonstration Project, where fuel reprocessing was conducted and a variety of radioactive wastes are stored.

Department of Defense

According to DOD's Installation Restoration Program (IRP), there are 1,877 installations of varying sizes with over 17,500 potential hazardous waste releases (Baca 92). Only a few of these are currently known to have radioactivity contamination. When these sites become more fully characterized, the number of known sites will most likely change. DOD sites vary widely in function and size. They include hospitals, laboratories, proving grounds, bombing and gunnery practice ranges, missile launch sites, weapons manufacturing and storage facilities, and reactors. Most radioactive material handled at military sites results from research and development, testing of military munitions, and testing and operation of military reactors. DOD sites may contain small enclosed radiation sources such as radium and tritium instruments, larger sources such as research reactors contaminated with fission products, and dispersed sources such as laboratory waste storage areas and test ranges contaminated with depleted uranium.

Depleted uranium shells and small munitions have been fired at 12 testing ranges. In addition, there are four other sites involved in processing and storing depleted uranium.

DOD nuclear power reactors produce electricity and heat, and test and research reactors were used in nuclear weapons development and to perform other physical and medical research. Six power reactors were used to service remote installations and have been dismantled or shut down. Fifteen test and research reactors have been dismantled or shut down. Residual radioactivity at the non-operating reactors consists primarily of activation products.

Radioactive wastes from nuclear ships include low-level radioactive waste, mixed low-level radioactive and chemically hazardous waste, defueled reactor compartments, and spent naval reactor fuel. These radioactive wastes are either disposed of at NRC licensed commercial disposal sites or buried in DOE-owned disposal facilities.

The national defense stockpile (a reserve of strategic ores for the production of fuel and weapons material) contains about 3,000 tons of thorium nitrate and about 16,000 tons of zirconium-bearing ore containing 0.3 to 0.4% uranium and thorium. The primary cleanup concerns are soil and equipment contaminated with radium, uranium, and thorium.

1.3.2 NRC Licensees

The NRC and its Agreement States currently manage about 22,000 licenses for the production and handling of radioactive materials (NRC 93). (For the purpose of this report, EPA uses NRC's site count estimates.) About one third of these are NRC licensees, while the remainder are licensed by Agreement States under Section 274 of the AEA. Licensees include nuclear power plants (licensed only by NRC) universities, medical institutions, radioactive source manufacturers, and companies that use radioisotopes for industrial purposes.

NRC's Generic Environmental Impact Statement (GEIS) indicates that about 75 percent of NRC's 7,000 licensees use either sealed radioactive sources or small amounts of short-lived radioactive materials, this percentage is applicable to the Agreement State licensees, as well. Activities at these facilities are not likely to result in significant radioactive contamination that would need to be cleaned up, because the radionuclides generally remain contained in sealed encasements and cause little (if any) contamination, and/or because the radionuclides decay rapidly to non-radioactive elements, often in hours or days. A small number of licensees (*e.g.*, radioactive source manufacturers, radiopharmaceutical producers, and radioactive ore processors) conduct operations that could result in substantial radioactive contamination in a facility.

NRC has issued thousands of byproduct material licenses. The byproduct material at sites subject to this rule are materials made radioactive by exposure to radiation during the process of producing or utilizing enriched uranium or plutonium. These licensees are involved in a variety of activities, including research, materials testing, chemical production, drug

research, clinical testing, mineral exploration and processing, and basic and applied research in various scientific disciplines. In the GEIS, NRC estimated site counts only for two types of byproduct material licensees, sealed source manufacturers (930) and research and development facilities (3471). These NRC counts of byproduct material licenses include those administered by Agreement States.

By the end of 1992, there were 109 nuclear power reactors operating in the United States. (Though several reactors may operate at a single power generating station, for the purposes of this report, each reactor is considered to be a separate site). There are 72 pressurized water reactors and 37 boiling water reactors. Since 1964, a total of 16 nuclear power plants have been taken out of operations.

There are 47 nuclear reactors (with operating licenses) that are used for research and testing purposes. In addition, the operating licenses of 8 facilities have been changed to possession only and 10 other reactors are currently planning or undergoing decommissioning.

In addition to reactors, there are various kinds of other facilities that make up what is called the uranium fuel cycle. They include Uranium Ore Milling Sites, Uranium Hexafluoride Production Plants, Fuel Fabrication Plants, and Dry Spent Fuel Storage Facilities.

A rare earth or metals ore processor is a facility (not part of the fuel cycle), that refines raw ore materials to recover rare metals such as tantalum and niobium. These ores may contain appreciable concentrations of naturally occurring radionuclides, such as uranium and thorium, which may be concentrated in the waste tailings from the refining process. There are 22 rare earth extraction facilities in the U.S.

1.3.3 Non-Federal National Priorities List (NPL) Sites

There are 75 final and 1 proposed NPL sites with radioactive contamination. Of these, 25 are DOE sites, 29 are DOD sites, 1 is a Department of Agriculture site, and 21 are non-Federal sites. The EPA has assumed lead responsibility for the 21 non-Federal sites. Although these sites are on the NPL, many were put on the list for hazardous chemical contamination rather than their radioactive contamination. Additional information concerning these sites can be found in EPA's draft report, *Known Radioactively Contaminated Sites in the United States - Draft*.

1.3.4 Sites Under State Control

While some states have NRC Agreement State authority over AEA materials, all states may exercise control over radionuclides not covered by the AEA, such as naturally occurring and accelerator-produced radioactive materials (NARM). These state sites and facilities are included for the sake of completeness in this description of the universe of sites containing or contaminated with radioactive materials. It is important that they are included in this discussion because they represent potentially a very large volume of soil containing elevated levels of radionuclides.

Sites where naturally occurring radioactive materials (NORM) may possibly be concentrated include mines, mineral extraction sites, sites involved with oil and gas drilling, and geothermal energy production sites. NORM is also often found in ash from coal burning power plants, and in abrasive blasting materials from coal slags.

According to the Conference of Radiation Control Program Directors' (CRCPD) statistics, there are approximately 9,000 state controlled sites in the U.S. It is not known what fraction of these are actually contaminated with radioactive material.

1.4 FUNCTIONAL CATEGORIES

To model the universe of radioactively contaminated sites, and estimate volumes of contaminated soil resulting from cleanup, it is necessary to create a set of quasi-realistic reference sites that represent the universe of sites. To facilitate this process a site categorization scheme was developed which groups sites and facilities into functional categories. Working together with representatives of DOE, DOD, and NRC, EPA assembled the functional categorization scheme. Eighteen categories were constructed to cover the range of sites contaminated with radioactive materials. These 18 categories are generally consistent with various types of DOE, DOD, and NRC-regulated facilities described in Section 1.3. It is intended that the complete set of reference sites, corresponding to each category, will represent the full range of actual sites that fall within the scope of the rule. The functional categories and reference sites are fully described in Chapter 4 of this report.

1.5 VOLUME OF SOIL CONTAMINATED WITH RADIOACTIVITY

The volume of soil contaminated with radioactivity is not known with any degree of certainty and will not be known until cleanup criteria are defined and the sites are remediated. Nevertheless, based on preliminary information provided in DOE's Integrated Data Base

(DOE 94b), NRC's Generic Environmental Impact Statement (GEIS, NRC 94), and ongoing EPA studies (EPA 93b), it is estimated that approximately 3.7×10^7 m³ of contaminated soil are located at Federal facilities and NRC-licensed sites that fall within the scope of this rule.

Table 1-3 presents a rough estimate of the volumes of radioactively-contaminated soil at various sites. These estimates are based primarily on information reported in DOE's Integrated Data Base (DOE 94b) and NRC's Generic Environmental Impact Statement (NRC 94).

TABLE 1-3 ESTIMATED RADIOACTIVELY-CONTAMINATED SOIL VOLUME

AGENCY	SITE NAME	SITE COUNT	DOE IDB SOIL VOLUME	NRC GEIS/ EPA- ESTIMATED SOIL VOLUME	ACCOUNTED SOIL VOLUME	NOTES
DOE Major	Fernald	1	1.7E6		1.7E6	
Facilities	Hanford	1	3.86E6		3.86E6	
	Idaho	1	6.6E5		6.6E5	
	Mound	1	1.57E5		1.57E5	
	Nevada Test Site	1	1.4E7*		1.4E7	
	Oak Ridge Reservation	1	4.6E5		4.6E5	
	Paducah	1	7.2E4		7.2E4	
	Pantex	1	0		0	
	Portsmouth	1	1E4		1E4	
	Rocky Flats	1	2.7E5		2.7E5	
	Savannah River	1	3.6E6		3.6E6	
	Weldon Spring	1	4.9E5		4.9E5	
DOE National	Argonne	1	2.7E4		2.7E4	
Laboratories	Brookhaven	1	2.6E4		2.6E4	
	Fermi	1	0		0	
	Lawrence Berkeley	1	0		0	
	Lawrence Livermore	1	0		0	
	Los Alamos	1	9.6E6		9.6E6	
	Sandia	1	6.7E4		6.7E4	
Other DOE Sites	FUSRAP Sites	30	1.79E6		1.79E6	
	UMTRAP Sites	14	(3.42E7)		-	Not counted in total
	Other DOE Sites	33	1.2E5		1.2E5	
DoD Sites	Aberdeen Proving Ground	1		3.19E3	3.19E3	EPA estimated volume
	Sites with Burial Areas	79		-	-	
	Site w/Accident Contamination	1		1.76E4	1.76E4	EPA estimated volume
	Sites with DU Contamination	15		-	-	
	Other DoD Sites	51		-	-	
Other Federal	USDA Fremont National Forest	1		-	-	
Sites	GSA Watertown Arsenal	1		-	-	
Non-Federal	Municipal Landfills	3		-	-	
NPL Sites	Radium Sites	7		-	-	
	Other Non-Federal NPL Sites	11		-	-	
NRC/Agreement	Nuclear Power Plants	125		1.38E3	1.38E3	
States Sites	Test and Research Reactors	63		1.76E3	1.76E3	
	Other Fuel Cycle Facilities	65		1.24E4	1.24E4	
	Rare Earth Extraction Facilities	22		2.86E3	2.86E3	
	Byproduct Material Facilities	4401		1.23E5	1.23E5	
Other State Sites	-	-		-	-	
TOTAL		4942			3.72E7m³*	

Legend: IDB - Integrated Data Base

GEIS - Generic Environment Impact Statement

* The actual soil volume used for NTS in EPA's analysis is $2.2 \times 10^7 \text{ m}^3$ (DOE 93d). This leads to a total soil volume of $4.52 \times 10^7 \text{ m}^3$ used in the analysis.

2. Selection/Development of Exposure Scenarios and Models

This chapter describes the general exposure scenarios and mathematical models EPA used in support of the development of the soil cleanup rule to assess radiation doses and risks to individuals and populations at sites with residual radioactivity contamination.

Section 2.1 describes the exposure scenarios EPA developed to model radiation doses and risks to individuals assuming reasonable maximum exposure (RME) conditions—defined in Section 2.1.2—for three different post-cleanup land use scenarios: rural residential, commercial/industrial, and suburban. For each of these scenarios, Section 2.1 defines principal soil exposure pathways and key exposure parameters. This section also discusses the selection and evaluation of three different fate and transport models (i.e., RESRAD, RAGS/HHEM, and PRESTO) used in the dose and risk calculations.

Section 2.2 describes population exposures by discussing the scenarios and assumptions used to estimate the potential total number of radiation-induced fatal and nonfatal cancers in a given population group exposed to various specific residual radionuclide soil concentrations. (The population exposure scenarios and assumptions presented in this section differ somewhat from those discussed in Section 2.1 for individual dose and risk modeling.) Two general population scenarios are considered. The first scenario is used to evaluate radiation doses and risks for populations with densities ranging from 10 to 300 people per square kilometer, assuming that individuals in these populations consume locally grown produce. The second scenario is used to evaluate radiation doses and risks assuming that population densities range from 10 to more than 1,000 people per square kilometer, and that the populace does not consume locally grown produce. Both scenarios assess potential human health impacts over 100-, 1,000-, and 10,000-year time periods.

Chapter 3 provides the standardized default input parameter values assumed for modeling doses and risks to RME individuals, along with a detailed comparison of the pathway model structures and dose and risk estimates. Later, in Chapter 5, the rural residential and commercial/industrial scenarios—the most conservative and least conservative exposure scenarios, respectively—and the reference radiation site data discussed in Chapter 4 are used to estimate human health impacts averted and volumes of contaminated soil requiring remediation at various target risk levels.

2.1 EXPOSURE SCENARIOS AND MODELS FOR CALCULATING RADIATION DOSE AND RISK TO INDIVIDUALS

Cleanup regulations for contaminated soil should account for potential radiation doses and risks to individuals from all significant exposure pathways. This section presents the exposure pathways, scenarios, and models used to determine these doses and risks. Following a general discussion of exposure pathways and scenarios in Section 2.1.1, Section 2.1.2 reviews EPA's current standardized exposure scenarios, pathways, and assumptions. Section 2.1.3 presents the exposure scenarios and models assumed for calculations in this document. The selection and evaluation of three different multi-media pathway models are discussed in Sections 2.1.3 through 2.1.6.

2.1.1 Background

An exposure pathway describes the course a hazardous substance takes through the environment from a source of contamination to a human or ecological receptor. Modeling the transport of a contaminant via an exposure pathway means defining: (1) the nature, extent and location of the contaminant source or sources, (2) actual or potential mechanisms of release, migration, and fate in the environment, (3) a medium or media through which the contaminant is transported or in which the contaminant remains, (4) points of possible receptor contact with the contaminated medium, and (5) an exposure route (e.g., ingestion) or routes at the point of contact. An exposure pathway is "complete" when all of these components exist and are defined as completely as possible, i.e., when the path of the hazardous substance from the source to the receptor is uninterrupted and can be documented by measured or modeled contaminant concentrations at the exposure point locations. Conversely, "incomplete" exposure pathways lack at least one of these components. The primary objective of an exposure pathway analysis is to identify all significant (i.e., complete and incomplete) exposure pathways and to provide quantitative estimates of contaminant concentrations in all affected media for all likely exposure routes. One or several exposure pathways may exist for any given source of contamination, and the presence or absence of an exposure pathway is highly dependent upon several site-specific conditions, including current and future land use, site lithology, hydrogeology, and local population density and location, among others.

Human health risk assessment combines information from the exposure pathways analysis—on contaminated media concentrations and exposure pathways—with exposure

factors and toxicity criteria to estimate contaminant intakes and adverse health risks to individuals and populations. Exposure factors include: (1) intake rates for specific exposure routes (e.g., inhalation) or for specific exposure pathways (e.g., ingestion of drinking water), (2) exposure rates (i.e., exposure times, frequencies and duration), and (3) modifying factors (e.g., shielding factors for external exposure). Toxicity criteria are numerical estimates of the possible adverse health effect that might be expected in an individual following exposure to a unit concentration of a specific contaminant via a specific exposure route, such as inhalation, ingestion, or dermal contact. Exposure factors are generally site-specific, depending on the habits and activities of the local population both on- and offsite. However, many of the exposure factors and factor values used in the assessment of one site often have similar applications and values at other sites. Thus, these factors often are assigned standardized or default values. In general, toxicity criteria are usually default values.

Exposure scenarios are combinations of exposure pathways and exposure assumptions that are used to evaluate site risks under different land-use classifications. Each scenario describes actual or potential contaminant releases, migration pathways, contaminated media, exposure point concentrations, and receptor characteristics for a specific land use and its assumed set of site conditions. The purpose of these scenarios is to ensure that every reasonable exposure pathway and assumption is considered and that all individual exposures and risks are assessed consistently and comprehensively.

2.1.2 EPA Superfund Exposure Scenarios

EPA's Superfund program currently defines exposure scenarios within the context of four land-use classifications: residential, commercial/industrial, agricultural, and recreational (EPA 89a; EPA 91a). Table 2-1 presents Agency definitions for each of these scenarios, along with their corresponding most commonly evaluated exposure pathways and standard default exposure factor values. General descriptions of these scenarios follow.

For each of these exposure scenarios, EPA applies the concept of "reasonable maximum exposure" (RME). EPA defines RME as "the maximum exposure that [any individual] is reasonably expected to [receive] at a site" (EPA 89a) or as the "high-end individual exposure." (EPA 91a). In both cases, EPA describes the RME concept as an approach which uses standardized exposure pathways and default exposure factor values to calculate maximum reasonable estimates of contaminant intake and risk for individuals in an exposed

Table 2-1. EPA Superfund Land Use Classifications and Standard Default Exposure Factors

Land Use Classification	Definition	Exposure Pathway ⁽²⁾	Daily Intake Rate	Exposure Frequency (days/year)	Exposure Duration (years)
Residential	Residential exposure scenarios and assumptions should be used whenever there are or may be occupied residences on or adjacent to the site. Under this land use, residents are expected to be in frequent, repeated contact with contaminated media. The contamination may be on the site itself or may have migrated from it. The assumptions in this case account for daily exposure over the long term and generally result in the highest potential exposures and risks.	Ingestion of potable water	2 liters	350	30
		Ingestion of soil and dust	200 mg(child) 100 mg(adult)	350	6 (child) 24 (adult)
		Inhalation of contaminants	20 m ³ (total) 15 m ³ (indoor)	350	30
Commercial/ Industrial	Under this type of land use, workers are exposed to contaminants within a commercial area or industrial site. These scenarios apply to those individuals who work on or near the site. Under this land use, workers are expected to be routinely exposed to contaminated media. Exposure may be lower than that under the residential scenarios, because it is generally assumed that exposure is limited to 8 hours a day for 250 days per year.	Ingestion of potable water	1 liter	250	25
		Ingestion of soil and dust	50 mg	250	25
		Inhalation of contaminants	20 m ³ (workday)	250	25
Agricultural	These scenarios address exposure to people who live on the property (i.e., the farm family) and agricultural workers. Assumptions made for worker exposures under the commercial/industrial land use may not be applicable to the agricultural workers due to differences in workday length, seasonal changes in work habits, and whether migrant workers are employed in the affected area. Finally, the farm family scenario should be evaluated only if it is known that such families reside in the area.	Ingestion of potable water	2 liters	350	30
		Ingestion of soil and dust	200 mg (child) 100 mg (adult)	350	6 (child) 24 (adult)
		Inhalation of contaminants	20 m ³ (total) 15 m ³ (indoor)	350	30
		Consumption of homegrown produce	42 g (fruit) 80 g (veg.)	350	30

Table 2-1 (Continued)

Land Use Classification	Definition	Exposure Pathway ⁽²⁾	Daily Intake Rate	Exposure Frequency (days/year)	Exposure Duration (years)
Recreational	<p>This land use addresses exposure to people who spend a limited amount of time at or near a site while playing, fishing, hunting, hiking, or engaging in other outdoor activities. This includes what is often described as the "trespasser" or "site visitor" scenario. Because not all sites provide the same opportunities, recreational scenarios must be developed on a site-specific basis. In the case of trespassers, current exposures are likely to be higher at inactive sites than at active sites because there is generally little supervision of abandoned facilities. At most active sites, security patrols and normal maintenance of barriers such as fences tend to limit (if not entirely prevent) trespassing. When modeling potential future exposures in the baseline risk assessment, however, existing fences should not be considered a deterrent to future site access. Recreational exposure should account for hunting and fishing seasons where appropriate, but should not disregard local reports of species taken illegally. Other activities should also be scaled according to the amount of time they could actually occur; for children and teenagers, the length of the school year can provide a helpful limit when evaluating the frequency and duration of certain outdoor exposures.</p>	<p>Consumption of locally caught fish.</p> <p>(Additional pathways are developed on a site-specific basis.)</p>	54 g	350	30

Footnotes: (1) Factors presented are those that should generally be used to assess exposures associated with a designated land use. Site-specific data may warrant deviation from these values; however use of alternate values should be justified and documented in the risk assessment report.

(2) Listed pathways may not be relevant for all sites, and other exposure pathways may need to be evaluated due to site conditions.

Source: "Standard Default Exposure Factors," EPA OSWER Directive 9285.6-03, March 25, 1991.

population. These individual intake and risk estimates are referred to as "maximum" or "high-end," because they often involve the use of upper-bound (90th or 95th percentile) values as defaults for exposure equations and calculations.

The purpose of the RME approach is to provide estimates of individual intake and risk that are protective and reasonable—not the worst case possible. EPA developed the RME concept and standardized exposure scenarios and assumptions (discussed in the next two sections) to: (1) reduce unwarranted variability in the assumptions used in baseline risk assessments to characterize potentially exposed populations, and (2) achieve consistency in evaluating site risks and setting cleanup goals at CERCLA sites. Although the Agency does not consider the use of RME exposure assumptions to be overly conservative, it does recognize that exposure conditions at specific sites can and often do differ from the generic case. For this reason, EPA encourages the use of site-specific scenarios and exposure factors to estimate intakes and risks, provided that these assumptions can be justified and documented (EPA 89a).

2.1.2.1 EPA Superfund Residential Exposure Scenario

EPA evaluates residential exposure scenarios whenever there are homes on or near a contaminated site, or whenever future residential development is a reasonable expectation, considering local zoning laws, land-use trends, and site suitability. Five exposure pathways are evaluated routinely under this scenario to assess risks from radionuclides in soil (EPA 91a):

- Direct external radiation from photon-emitting radionuclides in the soil;
- Inhalation of resuspended contaminated dust;
- Inhalation of radon and radon decay products (only when radium is present in soil);
- Ingestion of contaminated drinking water; and
- Ingestion of contaminated soil.

Two additional pathways—consumption of contaminated home-grown produce and fish—are also considered at some residential sites, but only when site-specific circumstances warrant inclusion.

2.1.2.2 EPA Superfund Commercial/Industrial Exposure Scenarios

EPA evaluates occupational exposure scenarios whenever the land use is, or is expected to be, commercial or industrial. These scenarios typically assess adult worker exposures that assume an exposure occurs at the workplace during an 8-hour work day, 5 days per week, 50 weeks per year, for 25 years. Exposure pathways considered under this scenario are identical to those evaluated for residential exposures, with the omission of pathways for consumption of home-grown produce and fish. As shown in Table 2-1, values for exposure factors and intake rates assumed for commercial/industrial exposures are generally less than those assumed for residential exposures.

2.1.2.3 EPA Superfund Agricultural Exposure Scenario

EPA evaluates agricultural exposure scenarios whenever individuals live or work in contaminated areas zoned for farming activities, such as a growing crops or raising livestock. Under this scenario, EPA assumes that farm family members are exposed through the same five principal pathways evaluated for individuals under the residential setting, plus the mandatory inclusion of the plant pathway (i.e., consumption of home-grown produce). EPA also considers additional pathways for the ingestion of contaminated beef and dairy products, but only when such pathways are valid for the site conditions and lifestyles of the onsite populations.

2.1.2.4 EPA Superfund Recreational Exposure Scenarios.

Under the recreational exposure scenario, EPA includes pathways for consumption of locally caught fish—both for subsistence and recreation—and for dermal exposures that might occur during swimming and wading. Fish pathways are evaluated only when there is access to a contaminated water body large enough to produce a consistent supply of edible-sized fish over the anticipated exposure period. Pathways for assessing exposures during swimming and wading are currently being re-evaluated by EPA, along with other potential recreational exposure pathways, such as hunting and dirtbiking.

2.1.3 Exposure Scenarios Used in the Proposed Soil Cleanup Rule Analysis to Calculate Radiation Doses and Risks

Two principal soil exposure scenarios were developed by EPA to evaluate radiation doses and radiation-induced cancer risks at the reference radiation sites: *rural residential* and *commercial/industrial*. These scenarios are discussed below and outlined in Table 2-2. They were selected because they address plausible land use and exposure situations anticipated after cleanup at sites subject to the proposed rule. They are also generally consistent and compatible with the corresponding Superfund land-use scenarios discussed in Section 2.1.2, and reflect the rural and commercial/industrial settings at many of the Federal and NRC-licensed sites subject to the proposed regulations soil cleanup regulations. Later, in Chapter 5, the rural residential and commercial/industrial scenarios—which generally represent the most conservative and least conservative exposure scenarios, respectively—are combined with the reference radiation site data discussed in Chapter 4 to estimate human health impacts averted and volumes of contaminated soil requiring remediation at various target risk levels.

A third soil exposure scenario—the *suburban* scenario—was also used to evaluate radiation doses and risks to individuals. The suburban scenario considers three fewer exposure pathways (i.e., meat, milk and fish) compared to the rural residential scenario. Also, the suburban scenario assumes that individuals ingest slightly less contaminated home-grown produce and inhale substantially less resuspended contaminated dust than individuals ingest or inhale under either the rural residential or the commercial/industrial scenarios. Thus, the suburban scenario represents a land use assumption that falls between the rural residential and commercial/industrial cases, and results in dose and risk estimates that may be considered moderately conservative, rather than overly conservative.

Standardized default input parameter values for these scenarios are presented in Chapter 3, along with a comparison pathway model structures and dose and risk estimates.

2.1.3.1 Rural residential Exposure Scenario Assumed for Radiation Dose and Risk Calculations

The rural residential exposure scenario assumed for radiation dose and risk calculations addresses long-term risks to individuals expected to live on a site in a rural area after cleanup.

Table 2-2. Exposure Pathways Assumed for Radiation Dose and Risk Calculations

Exposure Pathways	Rural Residential Exposure Scenario	Commercial/Industrial Exposure Scenario	Suburban Exposure Scenario
1. External radiation exposure	Yes	Yes	Yes
2. Inhalation of resuspended soil and dust	Yes	Yes	Yes
3. Inhalation of radon and radon decay products from soil containing radium	Yes (if radium is present)	Yes (if radium is present)	Yes (if radium is present)
4. Incidental ingestion of soil	Yes	Yes	Yes
5. Ingestion of drinking water	Yes	Yes	Yes
6. Ingestion of home grown produce	Yes	No	Yes
7. Ingestion of meat (i.e., beef)	Yes	No	No
8. Ingestion of milk	Yes	No	No
9. Ingestion of locally caught fish	Yes	No	No
10. Dermal	No*	No*	No*
11. Volatilization	No*	No*	No*

* Some models account indirectly for dermal exposure to tritiated water or C-14 in organic compounds. (See Section 2.1.7.)

Under this scenario, individuals are assumed to live onsite and to be exposed chronically—both indoors and outdoors—to residual concentrations of radionuclides in soil through all the exposure pathways listed in Table 2-2. This scenario is based primarily on Superfund's standardized agricultural scenario and exposure pathways, except that the residents are not assumed to be full-time agricultural workers. Instead, it is assumed that these individuals work primarily off site and engage only in light farming and recreational activities onsite. Furthermore, it is assumed that 50% of the locally grown produce, meat, milk, and fish that these individuals consume are assumed to come from the site and are contaminated (see Chapter 3).

Under the rural residential scenario, a total of nine exposure pathways are evaluated:

- External radiation exposure from photon-emitting radionuclides in soil;
- Inhalation of resuspended soil and dust containing radionuclides;
- Inhalation of radon (Rn-222 and Rn-220) and radon decay products from soil containing radium (Ra-226 and Ra-224);
- Incidental ingestion of soil containing radionuclides;
- Ingestion of drinking water containing radionuclides transported from soil to potable groundwater sources;
- Ingestion of home-grown produce (fruits and vegetables) contaminated with radionuclides taken up from soil;
- Ingestion of meat (beef) containing radionuclides taken up by cows grazing on contaminated plants (fodder);
- Ingestion of milk containing radionuclides taken up by cows grazing on contaminated plants (fodder); and
- Ingestion of locally caught fish containing radionuclides.

EPA selected this scenario and combination of exposure pathways to compute relatively conservative (i.e., stringent) post-cleanup dose and risk estimates for a future resident in a rural area.

2.1.3.2 Commercial/Industrial Exposure Scenario Assumed for Radiation Dose and Risk Calculations

The commercial/industrial exposure scenario used in the radiation dose and risk calculations is identical to the one defined by Superfund (see Section 2.1.2.2). This scenario addresses long-term exposures and risks to commercial or industrial workers exposed daily to residual levels of radionuclides in soil during an average 8-hour workday onsite, both indoors and outdoors. This scenario does not consider exposures to site remediation workers or construction workers, nor does it address risks to workers from contaminated structures or building materials. Exposures that occur during cleanup are addressed in Section 5.3.

Under the commercial/industrial exposure scenario, a total of five pathways are evaluated:

- External radiation exposure from photon-emitting radionuclides in soil;
- Inhalation of resuspended soil and dust-containing radionuclides;
- Inhalation of radon (Rn-222 and Rn-220) and radon decay products from soil containing radium (Ra-226 and Ra-224);
- Incidental ingestion of soil containing radionuclides; and
- Ingestion of drinking water containing radionuclides transported from soil to potable groundwater sources.

EPA selected the commercial/industrial scenario and associated exposure pathways to compute the risks to workers assuming RME conditions for the workplace. In general, for sites with identical radionuclide soil concentrations, exposures and risks to onsite workers will generally be less than those for residents of rural and suburban areas, because worker exposures are limited to working hours and do not include contributions from ingestion of home-grown produce or locally caught fish. As a result, risks and doses for workers are expected to be consistently lower than those for individuals assuming suburban or rural residential exposures.

2.1.3.3 Suburban Exposure Scenario Assumed for Radiation Dose and Risk Calculations

The suburban exposure scenario assumed for radiation dose and risk calculations addresses long-term risks to individuals expected to live on a site that has no active control measures designed to limit exposure after remediation. This scenario assumes that individuals live onsite and are exposed chronically, both indoors and outdoors, to residual concentrations of radionuclides in soil through a reasonable (but not maximum) number of exposure pathways. This scenario is based primarily on Superfund's standardized residential scenario and exposure pathways—defined in Section 2.1.2.1—with one modification: Ingestion of homegrown produce is also included. As a result, a total of six exposure pathways are evaluated under the suburban exposure:

- External radiation exposure from photon-emitting radionuclides in soil;
- Inhalation of resuspended soil and dust containing radionuclides;
- Inhalation of radon (Rn-222 and Rn-220) and radon decay products from soil containing radium (Ra-226 and Ra-224);
- Incidental ingestion of soil containing radionuclides;
- Ingestion of drinking water containing radionuclides transported from soil to potable groundwater sources; and
- Ingestion of home-grown produce (fruits and vegetables) contaminated with radionuclides taken up from soil.

EPA selected this scenario and combination of exposure pathways to compute the risk to an individual assuming reasonable maximum exposure (RME) conditions that would result in moderately conservative radiation dose and risk estimates.

2.1.3.4 Exposure Scenarios Assumed by the DOE and the NRC

In general, the Department of Energy (DOE) and the Nuclear Regulatory Commission (NRC) consider similar land-use scenarios in the remediation of actual sites (DOE 93a; NRC 92b). However, in some cases, DOE or NRC may evaluate additional exposure scenarios and pathways that are not based on any specific land-use consideration—such as the intruder exposure scenario—or may apply different default values for exposure factors and intake

rates than those currently recommended by EPA. (Appendix B compares EPA, DOE, and NRC default exposure factor values.) It should be noted, however, that all three agencies strongly recommend the use of site-specific data for modeling doses and risks, but only when the data are available and meet appropriate data quality objectives and data usability requirements.

2.1.4 Basic Soil Exposure Pathway Models

Radionuclide contamination in soil can enter the human body from any combination of the following five general media/pathways:

- The atmosphere (inhalation of suspended dust)
- Surface water (ingestion of surface water contaminated by runoff or leachate)
- Groundwater (ingestion of groundwater contaminated by leachate)
- Soil (direct ingestion of contaminated soil)
- Biota (ingestion of food items contaminated by root uptake, deposition, irrigation)

In addition, radioactive contamination in any media can result in direct external radiation exposure. Models that include all of these pathways are often called "multimedia."

A broad range of multimedia models and computer codes were reviewed to identify those models and codes that meet the modelling needs for this rulemaking. The following describes the model evaluation process and the models selected for use in support of the rulemaking.

2.1.5 Model Evaluation/Selection Criteria

Five criteria were identified for evaluating and selecting pathway models for use in model calculations. These require that pathway models be:

- Capable of addressing multiple exposure pathways and risks from radionuclides in soil, including:
 - External radiation exposure
 - Soil ingestion
 - Plant, meat, and milk ingestion
 - Inhalation of volatiles and fugitive dusts
 - Migration of radionuclides to groundwater
 - Ingestion of contaminated drinking water

- Validated, peer-reviewed, or generally accepted by radiation risk assessors (with preference given to EPA-approved or accepted methods).
- User-friendly with a manageable number of input parameters requiring minimal or modest amounts of site data.
- Computer encoded or amenable to simple hand calculations.
- Currently in use or planned for use at radiation sites (all models identified for evaluation were considered to be currently in use).

2.1.6 Pathway Models/Codes Evaluated

EPA has examined a number of models for use in estimating human health risks associated with radioactive materials present in soils. Table 2-3 presents a list of potential candidate multimedia models/codes with a brief description of representative ways in which each of the listed codes are used. The list was prepared through:

- Analysis of code survey data and reports (EPA 88a; EPA 88b; EPA 89a; EPA 89b; EPA 91a; EPA 93c)
- Use of the EPA Integrated Model Evaluation System (IMES) and the Environmental Models Library (EML)
- Discussions with project staff.
- Review of scientific and vendor literature

In developing this initial list of codes, no attempt was made to determine "*a priori*" the degree to which these models could be appropriately applied to sites contaminated with radioactive materials. Table 2-4 presents the evaluation of representative pathway models against the listed criteria. A "✓" indicates that the evaluation criterion is included in the model, while the absence of a "✓" indicates that the information was not available from the referenced sources.

2.1.7 Pathway Models Selected

Based on the evaluation criteria, EPA tentatively selected DOE's RESRAD computer code (version 5.19) to model individual risks at reference radiation sites. Two additional

Table 2-3. Examples of Code Usage

Code Name	Description of Representative Usage
ARCL	Evaluates decommissioning alternatives by using a site-specific radiation scenario/exposure pathway analysis to determine the acceptable concentrations of residual radioactive contaminants.
DECHEM	Determines acceptable concentrations of chemicals in soil after cleanup of Uranium Mill Tailings Remedial Action Project sites.
DITTY	Determines the collective dose from long-term nuclear waste disposal sites resulting from groundwater pathways.
DOSES	Estimates long-term dose to man from buried waste.
GENII	Used to estimate potential radiation doses to humans from radionuclides in the environment.
GENII-S	Developed for use in performance assessment for the Waste Isolation Pilot Plant at Sandia National Laboratories.
GEOTOX	Evaluates health risks due to the presence of TNT, RDX and benzene present in military explosives residuals.
GWSCREEN	Developed for assessment of groundwater pathway from leaching of radioactive and nonradioactive substances from surface or buried sources.
MEPAS	A risk computation system developed for hazard ranking applications.
MILDOS	Computes environmental radiation doses from uranium recovery operations.
MILDOS-AREA	Provides improved capability for handling large area sources and updates the dosimetry calculations.
MULTIMED	EPA Toxicity Characteristic Final Rule.
NUREG 0707	Estimates site-specific limits for allowable residual contamination.
NUREG CR/5512	Provides generic and site-specific guidance of radiation doses for exposures to residual radioactive contamination after the decommissioning of facilities licensed by the NRC.
NUTRAN	Calculates the consequences of groundwater releases of radioactivity from a waste repository.
ONSITE/MAXI1	NRC review of license applications for onsite disposal of radioactive wastes.
PATH	Used to implement residual radioactive material guidelines during decommissioning.
PATH1	Models the physical and biological processes that result in the transport of radionuclides through the Earth's surface environment and eventual human exposure to these radionuclides.

Table 2-3 (Continued)

Code Name	Description of Representative Usage
PATHRAE (EPA)	Maximum annual effective dose equivalent to a critical population group and to offsite populations at risk from the land disposal of radioactive wastes.
PC GEMS	Used to evaluate the spread of toxic chemicals released to air, soil, surface water, and groundwater.
PRESTO-EPA	Simulates transport of low-level radioactive waste material from a shallow trench site and assesses human risks associated with such transport. This model was modified and added to create the PRESTO family of models.
PRESTO-EPA-BRC	Modified version of PRESTO-EPA-POP. Additions to this model include estimation of radionuclide transport and exposure to workers and visitors, population exposures from incinerator releases, worker and visitor gamma exposures, and onsite farming.
PRESTO-EPA-CPG	Max. whole body dose to critical population groups from land disposal of low-level radioactive waste by shallow and deep methods.
PRESTO-EPA-POP	Cum. population health effects to local and regional basin populations from low-level waste disposal by shallow land methods.
PRESTO-EPA-DEEP	Cum. population health effects to local and regional populations from land disposal of low-level radioactive wastes by deep methods.
PRESTO-II	Evaluation of possible health effects from shallow-land and waste disposal trenches.
RAGS/HHEM	Assists Superfund personnel to develop preliminary remediation goals at CERCLA sites.
RESRAD	An analytical methodology recommended by the Department of Energy in its guidelines for allowable concentrations of residual radioactive material in soil encompassed by the Formerly Utilized Sites Remedial Action Program (FUSRAP) and Surplus Facilities Management Program.
RISKPRO	Used to evaluate the spread of toxic chemicals released to air, soil, surface water, and groundwater. RISKPRO was adapted from PCGEMS.
SARAH2	Core equations developed in support of the EPA "Land Disposal Banning Rule."
UDAD	Estimates potential radiation exposure to individuals and to the general population in the vicinity of a uranium processing facility.
UTM-TOX	A multi-media model which links an atmospheric transport model with a surface water model.

Table 2-4. Pathway Model Evaluation

Model Name	Exposure Pathways						Validated/ Peer- Reviewed	Site Data Required	Available Computer Code
	External Exposure	Soil Ingestion	Plant, Meat, Milk Ingestion	Inhalation		Ground Water/Leach Model			
				Particulates	Radon				
DECHEM			✓			✓		✓	
GENII	✓		✓	✓	✓		✓	Moderate	✓
GENII-S	✓		✓	✓	✓			Moderate	✓
GEOTOX						✓			✓
GWScreen			✓	✓		✓			✓
RAGS/HHEM	✓	✓		✓	✓ ²		✓	Minimal	
RAGS/HHEM Modified ¹	✓	✓	✓	✓	✓	✓		Minimal	
MEPAS	✓	✓	✓	✓	?	✓	✓	Extensive	✓
MILDOS-AREA				✓					✓
MMSOILS			✓	✓		✓			✓
MULTMED				✓		✓	✓		✓
NUREG 5512	✓	✓	✓	✓		✓		Moderate	
ONSITE/MAXII	✓		✓	✓		✓	✓		✓

Table 2-4 (Continued)

Model Name	Exposure Pathways						Validated/ Peer- Reviewed	Site Data Required	Available Computer Code
	External Exposure	Soil Ingestion	Plant, Meat, Milk Ingestion	Inhalation		Ground Water/Leach Model			
				Particulates	Radon				
PATH1			✓	✓		✓	Minimal	✓	
PATHRAE	✓		✓	✓	✓	✓	Moderate	✓	
PRESTO-EPA-CPG	✓	✓	✓	✓		✓	Moderate	✓	
PRESTO-EPA-POP	✓	✓	✓	✓		✓	Moderate	✓	
PRESTO-II	✓		✓	✓		✓	Moderate	✓	
RESRAD	✓	✓	✓	✓	✓	✓	Moderate	✓	
RISKPRO	✓	✓		✓				✓	
SARAH2						✓		✓	

- 1 The RAGS-HHEM Part B equations were modified to include recommendations from *Draft Guidance for Soil Screening Level Framework* (EPA 94).
- 2 The RAGS-HHEM Part B equation for inhalation of radon only accounts for outdoor radon. The modified equation accounts for indoor radon as well.

models—PRESTO and RAGS/HHEM—are being studied and employed for related purposes (discussed below). EPA's PRESTO-CPG, and a code based upon an expanded version of EPA's RAGS/HHEM Part B (modified for consistency with the Agency's *Draft Guidance for Soil Screening Level Framework* (EPA 94). These three pathway models were considered because they meet the majority of the evaluation criteria. Table 2-5 compares each of the three models by pathway.

The RESRAD computer code was developed to implement DOE requirements for residual radioactive material. RESRAD calculates doses and risks to an onsite individual. This is a multimedia model which incorporates a number of media-specific sub-models, all of which were chosen for their reliability and general conservatism. Pathway analysis is performed in four stages: source analysis, environmental transport analysis, dose/response analysis, and scenario analysis. Additional information on the RESRAD computer code is available in the *Manual for Implementing Residual Radioactive Material Guidelines Using RESRAD, Version 5.0* (DOE 93a).

EPA developed the PRESTO family of computer codes to assist in the development of standards for the disposal of low-level radioactive waste. PRESTO-EPA-CPG predicts the maximum individual dose resulting from the multiple pathway migration of radionuclides from low-level waste disposal facilities. EPA's Science Advisory Board reviewed this computerized-exposure model in 1985 as part of their review of the proposed Low-Level Waste Rule (EPA 88a). A moderate amount of site-specific data is required to run the model. Additional information on the PRESTO family of codes is available in: (1) *Low-Level and NARM Radioactive Wastes, Model Documentation, PRESTO-EPA-CPG* (EPA 87), and (2) *Modifications to the PRESTO-CPG Code to Facilitate the Analysis of Soil Contamination Sites* (RAE 94).

EPA's Office of Radiation and Indoor Air (ORIA) modified the RAGS/HHEM Part B model (EPA 91a) primarily to address the recommendations provided in EPA's *Draft Guidance for Soil Screening Level Framework* (EPA 94). Modifications were also made to Part B to account for:

- Inhalation of radon and particulates to include indoor radon exposure
- Migration to groundwater (i.e. drinking water pathway)
- Plant, meat, milk, and fish ingestion.

Table 2-5. Comparison of Pathway Models

Pathway	Parameter	Pathway Model		
		RAGS/HHEM	PRESTO	RESRAD
General	Converts radionuclide concentration in soil to risk using slope factors.	✓	✓	✓
	Corrects radionuclide concentration in soil for primary radionuclide decay, and ingrowth and decay of daughter radionuclides.		✓	✓
	Corrects radionuclide concentration in soil for environmental transport (i.e., leaching, atmospheric transport, surface and groundwater transport).		✓	✓
External	Corrects for indoor and outdoor exposure.	✓		✓
	Corrects for exposure time and frequency. ¹	✓		✓
	Corrects for exposure duration. ¹	✓	✓	
	Includes a gamma shielding factor for indoor exposure.	✓		✓
Inhalation of Soil and Dust	Includes an air/soil concentration factor to estimate soil particle resuspension.	✓		✓
	Calculates soil particle resuspension based on wind velocity and mechanical factors (i.e., digging, plowing, etc.).		✓	
	Corrects for dilution of suspended particles based on site area.			✓
	Corrects for cover material and depth of contamination.		✓	✓
	Corrects for exposure time and frequency.	✓		✓
	Corrects for exposure duration.	✓	✓	
Inhalation of Radon ²	Calculates radon exposure indoors and outdoors based on volatilization factors for Rn-222 and Rn-220.	✓		
	Calculates radon exposure outdoors based on Rn-222 and Rn-220 flux at the soil surface.			✓
	Calculates radon exposure indoors based on Rn-222 and Rn-220 flux through the building floor and radon in household water, corrected for radon removal by air exchange and radioactive decay.			✓
	User input human inhalation rate.	✓		✓
	Corrects for exposure time and frequency.	✓		✓
	Corrects for exposure duration.	✓		
Soil Ingestion	User input human ingestion rate.	✓	✓	✓

Table 2-5 (Continued)

Pathway	Parameter	Pathway Model		
		RAGS/HHEM	PRESTO	RESRAD
Soil Ingestion (Continued)	Corrects for fraction of play or work area included in the contaminated zone.			✓
	Corrects for inert cover material and depth of contamination.			✓
	Corrects for exposure time.			✓
	Corrects for exposure frequency.	✓		✓
	Corrects for exposure duration.	✓	✓	
Water Ingestion	User input human ingestion rate.	✓	✓	✓
	Calculates radionuclide concentration in pore water based on radionuclide specific distribution coefficients.	✓	✓	✓
	Calculates radionuclide concentration in groundwater based on user input dilution factor.	✓		
	Calculates radionuclide concentration in groundwater based on pore water concentration, transport retardation factor based on distribution coefficients, leach rate based on infiltration factors (i.e., precipitation and irrigation rates, soil porosity, etc.), and a calculated dilution factor.		✓	✓
	Groundwater dilution factor based on dispersion plume, aquifer flow rate, and groundwater usage.		✓	
	Groundwater dilution factor based on site surface area, infiltration rate, and groundwater usage.			✓
	Corrects for transport retardation using distribution coefficients.		✓	✓
	Corrects for leach rate based on infiltration factors.		✓	✓
	Corrects for surface runoff.		✓	
	Calculates radionuclide concentration in surface water (i.e., stream or pond) based on pore water concentration and surface water dilution factor.	✓	✓	✓
	Surface water dilution factor based on area of contaminated zone and area of watershed.	✓		✓
	Surface water dilution factor based on infiltration rate and stream flow rate.		✓	
	Corrects for exposure duration.	✓	✓	
	Uses separate distribution coefficients for surface soil, contaminated material, unsaturated zone, and saturated zone.		✓	

Table 2-5 (Continued)

Pathway	Parameter	Pathway Model		
		RAGS/HHEM	PRESTO	RESRAD
Water Ingestion (Continued)	Contains option for using solubility of waste instead of distribution coefficients for leach rate calculations.		✓	
Ingestion of Produce ³	User input human ingestion rates.	✓	✓	✓
	Calculates the radionuclide concentration in plants based on radionuclide specific soil/plant transfer factors.	✓	✓	✓
	Calculates the radionuclide concentration in plants based on atmospheric deposition.		✓	✓
	Calculates radionuclide concentration in plants based on rural residential productivity, plant exposure time during growing season, the radionuclide removal rate (weathering), and the time interval between harvest and consumption.		✓	
	Corrects the radionuclide concentration in leafy vegetables based on the vegetative fraction of the plant.		✓	
	Corrects the radionuclide concentration in fruits and non-leafy vegetables based on the reproductive fraction of the plant.		✓	
	Calculates the radionuclide concentration in plants based on ditch and overhead (spray) irrigation.			✓
	Calculates the radionuclide concentration in pasture grass and animal fodder for the meat and milk ingestion pathways.		✓	✓
	Corrects for exposure duration.	✓	✓	
	Includes a separate calculation for tritium and carbon-14 based on air/plant transfer factors.		✓	
Ingestion of Meat	Includes a separate calculation for tritium and carbon-14 based on specific activity and distribution of hydrogen and carbon in the environment.			✓
	User input human ingestion rates.	✓	✓	✓
	Calculates the radionuclide concentration in meat based on radionuclide specific plant/meat transfer factors, soil/plant transfer/factors, and the fodder intake rate for livestock.	✓	✓	✓
	Calculates the radionuclide concentration in meat based on intake of contaminated water by livestock.		✓	✓
	Calculates the radionuclide concentration in meat based on intake of contaminated soil by livestock.			✓

Table 2-5 (Continued)

Pathway	Parameter	Pathway Model		
		RAGS/HHEM	PRESTO	RESRAD
Ingestion of Meat (Continued)	Corrects for the time interval between slaughter and consumption.		✓	
	Corrects for exposure duration.	✓	✓	
Ingestion of Milk	User input human ingestion rates.	✓	✓	✓
	Calculates the radionuclide concentration in milk based on radionuclide specific plant/milk transfer factors, soil/plant transfer/factors, and the fodder intake rate for livestock.	✓	✓	✓
	Calculates the radionuclide concentration in milk based on intake of contaminated water by livestock.		✓	✓
	Calculates the radionuclide concentration in milk based on intake of contaminated soil by livestock.			✓
	Corrects for the time interval between milking and consumption.		✓	
	Corrects for exposure duration.	✓	✓	
Ingestion of Fish	User input human ingestion rates.	✓	✓	✓
	Calculates radionuclide concentration in fish based on radionuclide specific surface water/fish transfer factors.	✓	✓	✓
	Calculates radionuclide concentration in crustacea and mollusks based on radionuclide specific surface water/seafood transfer factors.			✓
	Corrects for exposure duration.	✓	✓	

- 1 Exposure time, frequency, and duration can be adjusted for suburban or commercial/industrial scenarios.
- 2 PRESTO currently provides no calculation of risk from radon inhalation.
- 3 Produce includes fruits, leafy vegetables, non-leafy vegetables, and/or grains.

The RAGS/HHEM model consists of a simple set of soil exposure pathway equations consisting of linear combinations of exposure and intake factors that are used to obtain radionuclide risk estimates and risk-based radionuclide soil concentrations corresponding to specified target risk levels. There are minimal data requirements for these equations and the results are generally limiting or bounding. Appendix C presents the modified RAGS/HHEM equations for the rural residential and commercial/industrial scenarios.

Four additional models come close to meeting the evaluation criteria and may require further consideration. These models are GENII, GENII-S, MEPAS, and NUREG/CR-5512. The GENII and GENII-S do not include groundwater models. MEPAS requires extensive site-specific data but is the only model reviewed that calculates risks from chemical sources as well as radioactive materials (the RESRAD code for calculating chemical risks, RESCHEM, should be available in 1995). MEPAS is also currently limited because it does not address onsite exposure pathways. The models described in NUREG/CR-5512 do not include a radon inhalation pathway and its coded version (D&D SCREEN) is not yet available, although the NRC is currently preparing the code for wide use in decommissioning activities.

The following subsections compares the similarities and differences between RESRAD, PRESTO, and RAGS/HHEM. To make the comparison as meaningful as possible, some features of RESRAD and PRESTO were not utilized for the generic test site calculations; these are specified below. Later, Section 3 compares the results calculated when the three models are applied to a generic test site and discusses differences among the three models.

2.1.7.1 Source Term

The contaminated zone is the below ground region within which radionuclides are present in above-background concentrations. It is sometimes referred to as the source term and serves as the starting point for all pathways.

The time dependence and leaching strength of the source term, or concentration of the radionuclide in water and soil, are calculated differently by the three models. The differences are critical, because all of the fate and transport calculations are based on the source term. *Decrease in radionuclide concentration in the contaminated zone leads to reduced direct exposure, resuspension exposure, etc., but may be accompanied by an increase of exposure via the groundwater pathway.*

The modified RAGS/HHEM model is the simplest and most conservative of the three models considered here. It does not include any corrections for radioactive decay or progeny ingrowth, nor does it provide for depletion of the radionuclide concentration in the contaminated soil by leaching or erosion. When ingrowth is expected to be of importance, the progeny are included at the outset. Accordingly, the contaminated zone is assumed to be a constant, non-depleting source of radioactivity for the calculations. This assumption provides an upper bound estimate of exposure from radionuclides in the soil. RAGS/HHEM assumes that adsorption is linear and can be described by the Freundlich equation, as is discussed in Section 2.1.7.2.

RESRAD 5.19 calculates a time-dependent source term that accounts for radioactive ingrowth, decay, and also leaching and erosion in the contaminated zone. In RESRAD, the release rates and concentrations are driven by three factors: infiltration rates, radionuclide-specific distribution coefficients, and source strength. The infiltration rate is used to determine the vertical groundwater velocity through the source term (i.e., infiltration rate is divided by the volumetric water content) (DOE 93a, pp. 198-201). The radionuclide velocity downward through and from the source term is then determined by adjusting the groundwater velocity by a retardation factor, derived from the radionuclide-specific distribution coefficient. The radionuclide migration rates are subsequently used in conjunction with the source-term thickness to determine the percentage of radionuclide that would be exiting from the base of the contaminated zone. Finally, this release rate is multiplied by the specific activity to calculate the release concentration.

Assumptions inherent within this approach include:

- Sorption (adsorption of radionuclide ions to soil particles) is linear in radionuclide concentration in water, totally reversible and instantaneous.
- Infiltration is uniform and at steady-state.
- All porosity is effective, that is, there are no dead-end pores, and all radioactivity (in curies) in the source term is being reached by the infiltrating water and are available for transport.

These assumptions, particularly the last one, result in very conservative leaching concentrations.

Radionuclides in RESRAD are divided into two groups for ingrowth and decay calculations: those with half-lives longer than six months (principal radionuclides) and those with half-lives of six months or less (associated radionuclides) (see Table 2-6).¹ RESRAD assumes that the associated radionuclides are in secular equilibrium with their principal radionuclide, and that the leach rates of the associated radionuclides are the same as the leach rates of their principal radionuclides (DOE 93a).

PRESTO-CPG, the third model in this comparison, also calculates a time-dependent source term in soil resulting from radioactive decay, infiltration and erosion in the contaminated zone. Currently, PRESTO does not calculate radioactive ingrowth while performing groundwater areal source calculations from a series of point sources.²

PRESTO has five options to calculate the leach rate; 1) total contact/retarded by sorption, 2) immersed fraction/retarded by sorption, 3) total contact/solubility limit, 4) immersed fraction/solubility limit, and 5) released fraction. The method that was selected for this investigation was the immersed fraction/retarded by sorption option, although the first option, total contact/retarded by sorption, would have proven equally useful.

In the immersed fraction/retarded by sorption option, the pore-water concentration is calculated by simply partitioning the radionuclide(s) among the water and soil phase according to their respective distribution coefficients (K_d). This pore-water concentration is then adjusted through multiplication by the relative hydraulic conductivity of the soil (i.e., infiltration (m/yr) divided by hydraulic conductivity (m/yr)).

The distinction between relative hydraulic conductivity and hydraulic conductivity is important for understanding the source-term release calculation. Hydraulic conductivity is

1 RESRAD Version 5.19 also allows calculations using principal radionuclides with half-lives longer than 30 days. Calculations using principal radionuclides with half-lives longer than six months were selected for these calculations because of the 1,000 year time frame. After one year, 25% of a radionuclide with a half-life of six months remains, while only 0.02% of a radionuclide with a half-life of 30 days remains.

2 A PRESTO-CPG code update that includes radioactive ingrowth will be available in Fall 1994.

Table 2-6. Principal and Associated Radionuclides*

Principal Radionuclide ^a		Associated Decay Chain ^b	Terminal Nuclide or Radionuclide ^c	
Nuclide	Half-life (yr)		Nuclide	Half-life (yr)
Ac-227+D	22	[Th-227 (98.6%, 19 d)] Fr-223 (1.4%, 22 min) Ra-223 (11 d) Rn-219 (4 s) Po-215 (2 ms) Pb-211 (36 min) Bi-211 (2 min) [Tl-207 (99.7%, 5 min)] Po-211 (0.3%, 0.5 s)]	Pb-207	*
Ag-108m+D	127	- ^d Ag-108 (9%, 2 min)	Pd-108 (91%) [Cd-108 (98%) Pd-108 (2%)]	* * *
Ag-110m+D	0.7	- Ag-110 (1%, 25 s)	Cd-110 (99%) [Cd-110 (99.7%) Pd-110 (0.3%)]	* * *
Am-241	432	-	Np-237	2.1 x 10 ⁶
Am-243+D	7.4 x 10 ³	Np-239 (2 d)	Pu-239	2.4 x 10 ⁴
Bi-207	38	-	Pb-207	*
C-14	5,730	-	N-14	*
Cd-109	1.3	-	Ag-109	*
Ce-144+D	0.8	[Pr-144 (9%, 17 min) Pr-144m (2%, 7 min)]	Nd-144	*
Cl-36	3.0 x 10 ⁵	-	S-36	*
Cm-243	28	-	Am-243 (0.2%) ^e	7.4 x 10 ³
Cm-244	18	-	Pu-240	6.6 x 10 ³
Cm-248	3.5 x 10 ⁵	-	Pu-244 (92%)	8.3 x 10 ⁷
Co-57	0.7	-	Fe-57	*
Co-60	5	-	Ni-60	*
Cs-134	2	-	Ba-134 (~100%)	*
Cs-135	3 x 10 ⁶	-	Ba-135	*
Cs-137+D	30	Ba-137m (95%, 3 min)	Ba-137	*

Table 2-6 (Continued)

Principal Radionuclide ^a		Associated Decay Chain ^b	Terminal Nuclide or Radionuclide ^c	
Nuclide	Half-life (yr)		Nuclide	Half-life (yr)
Eu-152	13	-	Sm-152 (72%) Gd-152 (28%)	* 1.1 x 10 ¹⁴
Eu-154	8	-	Gd-154 (~100%)	*
Eu-155	5	-	Gd-155	*
Fe-55	3	-	Mn-55	*
Gd-153	0.7	-	Eu-153	*
H-3	12	-	He-3	*
I-129	1.6 x 10 ⁷	-	Xe-129	*
K-40	1.3 x 10 ⁹	-	Ca-40 (89%) Ar-40 (11%)	* *
Mn-54	0.9	-	Cr-54	*
Na-22	3	-	Ne-22	*
Nb-94	2.0 x 10 ⁴	-	Mo-94	*
Ni-59	7.5 x 10 ⁴	-	Co-59	*
Ni-63	100	-	Cu-63	*
Np-237+D	2.1 x 10 ⁶	Pa-233 (27 d)	U-233	1.6 x 10 ⁵
Pa-231	3.3 x 10 ⁴	-	Ac-227	22
Pb-210+D	22	Bi-210 (5 d) Po-210 (138 d)	Pb-206	*
Pm-147	3	-	Sm-147	1.1 x 10 ¹¹
Pu-238	88	-	U-234	2.4 x 10 ⁵
Pu-239	2.4 x 10 ⁴	-	U-235	7 x 10 ⁸
Pu-240	6.5 x 10 ³	-	U-236	2.3 x 10 ⁶
Pu-241+D	14	[Am-241 (~100%, 432 y) U-237 (7 d)] ^e	Np-237	2.1 x 10 ⁶
Pu-242	3.8 x 10 ⁵	-	U-238	4.5 x 10 ⁹
Pu-244+D	8.3 x 10 ⁷	U-240 (~100%, 14 h) Np-240	Pu-240	6.5 x 10 ³

Table 2-6 (Continued)

Principal Radionuclide ^a		Associated Decay Chain ^b	Terminal Nuclide or Radionuclide ^c	
Nuclide	Half-life (yr)		Nuclide	Half-life (yr)
Ra-226+D	1.6 x 10 ³	Rn-222 (4 d) Po-218 (3 min) Pb-214 (~100%, 27 min) Bi-214 (20 min) Po-214 (~100%, 1 min)	Pb-210	22
Ra-228+D	8	Ac-228 (6 h)	Th-228	2
Ru-106+D	1	Rh-106 (30 s)	Pd-106	*
Sb-125+D	3	Te-125m (23%, 58 d)	Te-125	*
Sm-147	1.1 x 10 ¹¹	-	Nd-143	*
Sr-90+D	29	Y-90 (64 h)	Zr-90	*
Tc-99	2.1 x 10 ⁵	-	Ru-99	*
Th-228+D	2	Ra-224 (4 d) Rn-220 (56 s) Po-216 (0.2 s) Pb-212 11 h) Bi-212 (61 min) [Po-212 (64%, 0.3 μs) Tl-208 (36%, 3 min)]	Pb-208	*
Th-229+D	7.3 x 10 ³	Ra-225 (15 d) Ac-225 (10 d) Fr-221 (5 min) At-217 (32 ms) Bi-213 (46 min) [Po-213 (98%, 4 μs) Tl-209 (2%, 2 min)] Pd-209 (3 h)	Bi-209	*
Th-230	7.7 x 10 ⁴	-	Ra-226	1.6 x 10 ³
Th-232	1.4 x 10 ¹⁰	-	Ra-228	6
Tl-204	4	--	Pb-204 (97%) Hg-204 (3%)	* *
U-232	72	-	Th-228	2
U-233	1.6 x 10 ⁵	-	Th-229	7.3 x 10 ³
U-234	2.4 x 10 ⁵	-	Th-230	8 x 10 ⁴

Table 2-6 (Continued)

Principal Radionuclide ^a		Associated Decay Chain ^b	Terminal Nuclide or Radionuclide ^c	
Nuclide	Half-life (yr)		Nuclide	Half-life (yr)
U-235+D	7.0 x 10 ⁸	Th-231 (26 h)	Pa-231	3.4 x 10 ⁴
U-236	2.3 x 10 ⁶	-	Th-232	1.4 x 10 ¹⁰
U-238+D	4.5 x 10 ⁹	Th-234 (24 d) [Pa-234m (99.8%, 1 min) Pa-234 (0.2%, 7 h)]	U-234	2.4 x 10 ⁵
Zn-65	0.7	-	Cu-65	*

^a Radionuclides with half-lives greater than six months. "+D" designates principal radionuclides with associated decay chains.

^b The chain of decay products of a principal radionuclide extending to (but not including) the next principal radionuclide or a stable radionuclide. Half-lives are given in parentheses. Branches are indicated by square brackets with branching ratios in parentheses.

^c The principal radionuclide or stable nuclide that terminates an associated decay chain. Stable nuclides are indicated by an asterisk (*) in place of a half-life.

^d A hyphen indicates that there are no associated decay products.

^e The branching decay for Pu-241 and Cm-243 involves multiple principal radionuclides and associated radionuclides.

* Table adapted from: C. Yu, et al. (1994), "Manual for Implementing Residual Radioactive Materials Guidelines Using RESRAD, Version 5.0," Argonne National Laboratory (DOE 94a).

the measure of the soil's ability to transmit water when submitted to a hydraulic gradient. The relative hydraulic conductivity is dependent not only upon the intrinsic properties of the soil, but also upon the degree of soil saturation. A soil that is near complete saturation will have a high relative hydraulic conductivity, although its hydraulic conductivity may be quite low.

If the relative hydraulic conductivity of the soil is equal to unity, the soil would be fully saturated and the leachate would be released at full strength. Under site conditions where the hydraulic conductivity of the soil exceeds the infiltration rates (m/y) (i.e., relative hydraulic conductivity becomes smaller), there will be a corresponding decrease in the release concentrations. The rationale for this approach is that soils that tend to have high relative hydraulic conductivities (i.e., clays), will also allow for longer contact times between the infiltrating water and the contaminants. This increase in contact time will, in turn, enable more of the contamination to be dissolved into the pore water. The concentration in the water is subsequently multiplied by the infiltration rate and source area to obtain the mass flux leaving the source.

Assumptions inherent within this approach include:

- Sorption is a function of soil contact time which may be described using a relative permeability correction factor (e.g., infiltration divided by hydraulic conductivity).
- Infiltration is uniform and at steady-state; the code does allow infiltration rate to vary with time.

The impact that the relative permeability correction factor has on the leach rate is significant. In the base case analysis the infiltration rate was 0.5 m/y, whereas the hydraulic conductivity was 227 m/y. This results in a relative permeability factor of 0.002. Therefore, the release concentration would be 0.2% of the pore water concentration.

Figure 2-1 compares the relative effects of the different source-term release formulations in RESRAD, PRESTO, and RAGS/HHEM on the release concentrations. In this example, the time-variant radionuclide concentration in soil is shown for a K_d value of zero in a contaminated zone that is 2 m thick, as calculated by all three models. While 80% of the

radionuclide is leached from the contaminated zone in the first year using RESRAD, only 6% of the radionuclide concentration is leached using PRESTO. After ten years virtually all of the radionuclide has leached from the soil by RESRAD, while PRESTO indicates that less than half the radionuclide is lost from the soil. RAGS/HHEM indicates no change in soil concentration over time.

2.1.7.2 Groundwater Contamination.

The groundwater pathway is where most multimedia models differ, and this is certainly the case for the three models considered here. For all three models, relatively simple, generally conservative approaches are used since the primary purpose of the calculations employed in this report is to determine the radionuclide concentration in groundwater beneath or immediately downgradient and adjacent to the site. No attempt is made to model groundwater flow and transport in a complex setting or at a distance from the contaminated source.

RESRAD and PRESTO simulate flow and transport through the unsaturated zone in similar fashions. Both models assume the following:

- No dilution occurs in transit
- Radionuclides decay as a function of half-life
- Groundwater velocities are a function of infiltration rates, saturated hydraulic conductivities and soil texture

- Radionuclide velocities are a function of groundwater velocities and radionuclide-specific retardation factors

Radionuclides leaching from the contaminated zone is the source of groundwater contamination for all three models. RAGS/HHEM employs the simplest leaching model. The radionuclide concentration is calculated using the linear Freundlich equation and a dilution factor to account for dilution and attenuation in the unsaturated and saturated zone. The RAGS/HHEM equation takes the following form:

$$C_w = C_s / [(K_d + \theta S / \rho) \times DF]$$

where:

C _w	=	radionuclide concentration in groundwater (pCi/L)
C _s	=	radionuclide concentration in soil (pCi/kg)
K _d	=	radionuclide distribution coefficient (L/kg)
S	=	fraction of water content ($L_{\text{water}}/L_{\text{pore}}$)
θ	=	soil porosity ($L_{\text{pore}}/L_{\text{soil}}$)
ρ	=	bulk soil density (kg/L _{soil})
DF	=	dilution/attenuation factor

This is the basic approach recommended in EPA's *Draft Guidance for Soil Screening Level Framework* (EPA 94). It simply estimates the concentration of the radionuclide in the soil pore water using the distribution coefficient (K_d) and then applies a factor, DF, to account for dilution and attenuation between the source and downgradient well.

As discussed previously, RESRAD is conservative in estimating the leachate concentrations for each radionuclide, and allows high percentages of the radionuclides to reach the groundwater. That, in turn, results in conservative estimates of radionuclide concentrations in the groundwater.

In a similar fashion to RAGS/HHEM, RESRAD also uses a dilution factor. RESRAD, however, explicitly derives the dilution factor based on the volume of water in the contaminated plume, relative to the capture zone of the receptor well which is located at the edge of the source. The dimensions of the contaminated plume are defined geometrically by adding the vertical infiltration flux vector with the horizontal groundwater velocity vector over the length parallel to the aquifer flow (i.e., diameter of the circular contaminated area). The resolution of these two vectors will result in an interception point on the receptor well. If this point falls at the midpoint of the well, contaminant concentrations in the groundwater are reduced by 50%. If the interception point falls below the bottom of the well, no dilution is assumed.

The leachate concentrations calculated by PRESTO are based on contact time assumptions, which, under most circumstances, would allow smaller quantities of radionuclides to reach the groundwater each year. This lower leach rate has two effects on the groundwater concentration: an increase in relative loss through radioactive decay and a decrease in the quantity of each radionuclide added to the aquifer each year. The increase in time required to

maximize the radionuclide concentration in groundwater means that radionuclides with short half-lives relative to their K_d values will decay before they reach the groundwater.

Table 2-7 shows the concentration in groundwater for several K_d values. The contaminated infiltration water that contains the leached radionuclide is diluted into the water in the aquifer. This dilution factor is obtained by dividing the radionuclide concentration that reaches the well by the volume of water flowing through the cross-sectional area of the aquifer. The dilution factor for PRESTO can be set approximately equal to the dilution factor for RESRAD by setting the aquifer thickness equal to the well penetration depth.

Table 2-7 also shows the time of maximum groundwater concentration for each of the three models. Data in this table suggest that the concentration of radionuclides in groundwater is dependent on the K_d , and that the differences between the models become less as the K_d value increases. It should be noted that no radioactive decay correction has been applied to the groundwater concentration calculation, and that the K_d values do not correspond to any specific radionuclide.

2.1.7.3 Surface Water

The radionuclide concentration in surface water is handled differently for all three models. RESRAD assumes that the surface water is a pond, which dilutes the contaminated infiltration water as it moves from the contaminated zone into the volume of the pond. The dilution factor is based on the recharge area, or watershed, which is associated with the pond. The dilution factor is the area of the contaminated site divided by the area of the watershed.

PRESTO calculates the radionuclide concentration in a surface water body by factoring in (1) surface leaching and runoff and (2) subsurface flow leaching through the contaminated zone and dilution. PRESTO assumes that the surface water body is a stream. To account for the contribution of radionuclide contamination due to surface leaching and runoff, PRESTO dilutes the quantity of radionuclide leaching and running off into the stream by the annual stream flow at the point where the water is withdrawn. To account for the contribution from subsurface flow leaching through the contaminated zone, PRESTO dilutes the quantity of the radionuclide present in well water that is not used for other purposes (irrigation, drinking water, etc.) by the annual stream flow.

Table 2-7. Radionuclide Concentration in Groundwater (pCi/L)
Based on Distribution Coefficient (K_d)

K_d	RESRAD Version 5.19		PRESTO-CPG		RAGS/HHEM
	pCi/L	Time of Maximum Concentration	pCi/L	Time of Maximum Concentration	pCi/L
0	678	0.7	78.9	808	10,000
0.01	647	0.7	81.5	808	9,090
0.1	460	1	99.3	808	5,000
1	118	4	73.2	814	909
5	27.5	16	29.3	839	196
10	14.0	31	16.1	870	99

RAGS/HHEM uses a model based on leaching and defines a dilution factor based on surface area of the site compared to the recharge area similar to RESRAD.

2.1.7.4 Exposure to External Radiation

External radiation exposure to contaminated ground and the associated potential health risks are derived by each code using fundamentally similar models. Given the radionuclide concentration in soil, typically expressed in units of pCi/g, the radiation dose rate and cancers risks are derived using EPA approved dose conversion factors (DCFs) and slope factors (SFs). Dose conversion factors are expressed in terms of mrem/yr per pCi/g. Accordingly, the product of the radionuclide concentration in soil with the DCF for external exposure yield the dose rate to individuals standing on the contaminated soil, expressed in units of mrem/yr. In a similar manner, the product of the SF, which is expressed in units of lifetime risk of cancer/yr per pCi/g, with the radionuclide concentration in soil, yields the lifetime risk of cancer to individuals residing on the contaminated soil. The EPA-approved DCFs are presented in Federal Guidance Report No. 12 (EPA 93d) and the EPA-approved SFs are provided in the Health Effects Assessment Summary Tables (EPA 92b).

The primary differences between the three codes³ in modeling external exposure to contaminated soil lies in the manner in which the models account for the following five processes:

- (1) Radioactive decay and progeny ingrowth,
- (2) Correction factors for the geometry of the contaminated soil,
- (3) Depletion of the contaminated soil horizon by environmental processes, such as leaching and erosion,
- (4) Corrections for shielding by clean cover material, and
- (5) Adjustments for indoor occupancy and associated shielding effects.

The simplest model of the three considered here, RAGS/HHEM Part B, does not account for the first four processes. As a result, it effectively assumes that an individual is continually exposed to a non-depleting source term with a geometry that is an effectively infinite slab. The concept of an "infinite slab" means that the thickness of the contaminated zone and its aerial extent are so large that it effectively behaves as if it were infinite in its physical dimensions. In practice, soil contaminated to a depth greater than about 20 cm and with an aerial extent greater than about $1E4 \text{ m}^2$ will create a radiation field comparable to that of an infinite slab. For the purposes of this report, adjustments for clean cover are not needed since, in all cases, it is assumed that the contaminated soil extends to the surface. The fifth process is accounted for by the simple application of a shielding factor and indoor occupancy time adjustment.

PRESTO provides for radioactive decay and explicitly accounts for the geometry and depletion of the source and cover material, but its older versions do not provide for the ingrowth of progeny.

RESRAD provides for these five processes in order to derive a more realistic—and as such, a less conservative—estimate of the dose rate and risks from people located in areas with contaminated soil.

³ There are additional differences that are revealed in a close examination of the documentation and listing of the codes. However, these are not addressed in this overview comparison of the codes.

2.1.7.5 Inhalation of Dust

The calculation of the radiological doses and risks from the inhalation of dust at a site can be estimated from the radionuclide concentration in air of the respirable portion of airborne dust (pCi/m^3), the breathing rate (m^3/yr), exposure time (yr), and either a dose conversion factor (mrem/pCi inhaled) or an inhalation slope factor (lifetime risk of cancer/ pCi inhaled). The key to this calculation is determining the radionuclide concentration in airborne, respirable dust.

Radiological risk assessment models employ several alternative methods for evaluating the doses and risks from the inhalation of suspended dust, including empirically derived suspension rates, resuspension factors, and dust loadings. A suspension rate, in units of pCi/sec , is used to estimate the rate at which radioactivity becomes suspended in air and is used primarily as input to an atmospheric transport model for use in deriving offsite exposures. As a result, it is not entirely appropriate for the purposes of this report, where the main concern is onsite exposures. The resuspension factor is an empirically derived transport factor that relates the airborne contamination at a site (in units of pCi/m^3) to the near-surface contamination at the site (in units of pCi/m^2). This parameter is used primarily at sites where the contamination is surficial, such as that due to fallout. As such, it is of limited use at a site where the soil is contaminated at depth, as with most of the sites addressed in this report. The dust loading approach defines the airborne concentration of dust at a site (i.e., $\mu\text{g}/\text{m}^3$) and usually assumes that the radionuclide concentration in the dust is the same as that in the near-surface soil at the site. Often an enhancement or depletion factor is applied to account for the fact that, at some sites and for some radionuclides, the radionuclide concentration in the dust can be elevated (i.e., "enhanced") or diminished (i.e., "depleted") relative to the concentration in soil. Seh (Seh 84) and Pet (Pet 83) discuss this process in depth.

All three models employ the dust loading approach. Accordingly, the key issue is the selection of the most appropriate dust loading and enhancement or discrimination factor. Input parameters allow adjustments for indoor versus outdoor exposures and for time spent onsite. The main difference among the models is how each code treats the concentration of the radionuclides in soil (i.e., the source term) as a function of time, as described in Sections 2.1.7.1 and 2.1.7.2.

The processes by which H-3 and C-14 become airborne are different from those responsible for the suspension of particulates. As a result, most codes model exposure to these radionuclides differently. RESRAD includes special calculations for H-3 and C-14, where the radionuclide concentration in air is not dependent on the dust loading. H-3 is transferred to air by exhalation of water vapor from the ground and is diluted in air using a correction factor based on the absolute humidity. The final exposure is multiplied by 1.5 to account for absorption of water vapor through the skin. The concentration of C-14 in the air depends on the volatilization rate of carbon from the soil, the size and location of the source area, and meteorological dispersion conditions. For these calculations the volatilization rate replaces the dust loading in calculating the radionuclide concentration in air.

2.1.7.6 Inhalation of Radon

The inhalation of radon and its decay products is a major contributor to total exposure when radium isotopes are present in the soil. The methods used to derive the doses and risks from the inhalation of indoor radon involve modeling the buildup of radon and radon progeny indoors and then multiplying by an appropriate dose or risk conversion factor which relates airborne concentrations of radon progeny to dose and risk. Though there is considerable debate on the risk conversion factor for radon progeny, the Agency has adopted an approved value for use in risk assessments. Accordingly, the key to assessing the risk to indoor radon is the method used to model the buildup of radon indoors.

Generally, the most important contributor to indoor radon buildup is transport from soil to the home. RESRAD employs a diffusion model based on empirically derived constants to estimate the flux of radon into a home. Buildup is then based on the air turnover in the home and the decay rate of radon and its progeny. RESRAD also accounts for contributions from outdoor air and household use of water containing dissolved radon, but does not account for advective flow.

RAGS/HHEM (as modified by ORIA) does not explicitly model the transport and buildup of radon indoors. Instead, it employs an empirically determined relationship between the radon concentration indoors and the Ra-226 concentration in soil. RAGS/HHEM calculates radon concentration in air, both indoors and outdoors, assuming a simple relationship between the national average natural radium background concentration in soil, i.e., 1 pCi/g Ra-226 (NCRP 76), and the average natural ambient radon concentrations in outdoor and indoor,

i.e., 0.12 pCi/L (NCRP 76) and 1.25 pCi/L (EPA 92a), respectively. The RAGS/HHEM relationship assumes that the indoor and outdoor radon concentrations are directly proportional to the average Ra-226 concentration in the soil.

PRESTO-CPG does not include a pathway for inhalation of radon.

2.1.7.7 Ingestion of Soil

The calculation for the ingestion of soil is simply the total amount of contaminated soil ingested over the entire exposure duration multiplied by the slope factor. The three models differ only in the manner in which the activity is considered in the source term, as described in Section 2.1.7.1.

2.1.7.8 Ingestion of Plants

The doses or risks from the ingestion of contaminated plants are derived as the product of the radionuclide concentration in the edible portions of the vegetables (e.g., pCi/g), the ingestion rate of the vegetables by individuals (kg/yr), exposure time (yr), and the ingestion dose conversion factor (mrem/pCi ingested) or slope factor (risk/pCi). All three models include exposure from ingestion of contaminated vegetables. However, the models differ in the methods used to derive the radionuclide concentration in the vegetables as a function of time. In general, vegetables become contaminated through root uptake of radionuclides contained in the pore water of the soil in which plants are growing, uptake of contaminated irrigation water, soil deposition from splashing, and direct deposition of suspended contaminated soil. The contamination in the plant is removed by radioactive decay and food processing. Accordingly, the level of contamination is a function of the level of contamination in soil and in irrigation water, either of which can vary as a function of time, of the time between harvesting and ingestion, and of the type of food processing which can remove the contaminants. The doses and risks also depend on assumptions regarding the quantity of contaminated vegetables ingested.

RESRAD includes root uptake, irrigation (overhead or ditch), and air deposition as potential routes for contamination entering plants. Contaminated soil deposited on the leaves from precipitation or irrigation is assumed to have negligible impact, since air deposited soil or dust is usually washed off before the plants are consumed. RESRAD assumes that not all

ingested plants are grown on the contaminated site. An adjustment factor accounts for the area of the contaminated site, but with an upper bound assumption that no more than 50% of the vegetables consumed will come from the site. RESRAD also includes correction factors for radionuclide decay between harvest and consumption, and radionuclide removal due to weathering of the plants. There is a foliage to food correction factor of 0.1 applied to fruits and non-leafy vegetables (only 10% of the plant is consumed: See DOE 93a, page 183). There are additional corrections for length of the growing season, wet-weight crop yield, air deposition velocity of suspended particles, and fraction of contamination retained from air deposition and irrigation.

PRESTO includes root uptake, irrigation (overhead only), and air deposition as potential routes for contamination entering plants. Contaminated soil splashed onto plants by precipitation and irrigation is not modeled. PRESTO includes a correction factor for the fraction of consumed plants that are contaminated. In addition, PRESTO includes correction factors for radionuclide decay between harvest and consumption, and radionuclide removal due to weathering of the plants. The foliage to plant correction factor for fruits and non-leafy vegetables is included. The additional corrections listed for RESRAD are also included.

RAGS/HHEM considers only root uptake in estimating the radionuclide concentration in plants and it accounts for that uptake with a simple soil-to-plant transfer factor, $B_{iv} = (pCi/g)_{plant} / (pCi/g)_{soil}$. The decision to not include air deposition does not affect any radionuclides because the increase in concentration from this route is not significant. The decision to not include the irrigation pathway is only an issue when there is medium to heavy irrigation using contaminated water for a radionuclide with a long half-life, a low K_d value, and an insignificant contribution from external exposure.

RESRAD and PRESTO include special calculations for estimating concentrations of H-3 and C-14 in plants. These calculations assume that a state of equilibrium exists among the concentrations of H-3 and C-14 in all environmental media—air, water, food products, and body tissues. This assumption may be overly conservative for a radioactively contaminated site with a finite area, but may be applicable for an individual pathway, such as soil-to-plant pathway (DOE 93a). For these calculations, the H-3 concentration in the plant is assumed to be the same as that in the contaminated water to which the plant is exposed. Similarly, the C-14 specific activity in the plant (i.e., pCi/g of C-14 per gram of carbon in the plant) is the

same as that of the ambient CO₂. In addition, RESRAD assumes a deposition velocity of nearly 0 m/s for H-3 and C-14, while PRESTO uses 1 x 10⁻³ m/s, i.e., the deposition velocity applied to all radionuclides.

2.1.7.9 Ingestion of Meat and Milk

The models used to derive the doses and risks from the ingestion of meat and milk are similar to those used for vegetables; i.e., they involve the product of the radionuclide concentration in meat and milk, the ingestion rate, and the ingestion slope factors. Calculation of the levels of contamination in meat and milk are based on empirically-derived transfer factors expressed in units of pCi/kg of meat or milk per pCi/day of the radionuclide ingested by cattle and milk cows. The product of this transfer factor with the radionuclide activity in animal feed, pasture, water, and incidental soil ingested daily yields the steady state radionuclide concentration in meat and milk. Accordingly, the key to this calculation is the model used to determine the radionuclide concentrations in soil, feed, pasture, and drinking water (inhalation rarely affects the results). The specific activities in soil, feed, and pasture are modeled as described above, and the activity in drinking water is a function of the activity in ground and surface water. Ultimately, the activities in the feed, pasture, and water are functions of that in the soil. Accordingly, differences in the codes used to model the activity in soil as a function of time directly effects the results of vegetable, meat, and milk modeling.

All three models include calculations for estimating radionuclide concentrations in meat and milk and the lifetime risk from their ingestion. One assumes that the meat consumed for these scenarios is beef, but any type of meat (including game) can be modeled by putting in the appropriate transfer factor from plant to meat or from plant to milk.

RESRAD includes ingestion of plants, ingestion of soil, and ingestion of water as possible routes for radionuclide contamination of meat and milk. The radionuclide concentrations in these three media are calculated as described in previous sections. The radionuclide contamination in fodder is calculated using different corrections—for length of the growing season, wet-weight crop yield, and air deposition velocity of suspended particles—than those used for leafy vegetables, fruits, and non-leafy vegetables. The quantity of water and fodder ingested by milk cows is different from the quantities consumed by beef cattle.

PRESTO uses equations similar to RESRAD, but does not include ingestion of soil as a factor in calculating the radionuclide concentration in meat. PRESTO allows different quantities of water to be ingested by milk cows and beef cattle, but the amount of feed consumed by milk cows and beef cattle are the same.

RAGS/HHEM includes ingestion of plants, soil, and water for estimating radionuclide concentrations in meat and milk.

2.1.7.10 Ingestion of Water

The ingestion of water for these calculations has been limited to ingestion of groundwater. Both RESRAD and PRESTO allow for a user specified fraction of the drinking water to come from surface water for both humans and animals. The scenarios are limited to drinking groundwater because this is the most conservative estimate of risk calculated using RESRAD (i.e., For RESRAD, the radionuclide concentration in groundwater is always higher than the radionuclide concentration in surface water). PRESTO calculations show that radionuclides with high K_d values and long half-lives will have a surface water component from erosion in a shorter time period (within the 1,000 year modeling period) than the groundwater component. While human ingestion of surface water from a contaminated site is not considered a reasonable scenario in most instances, animal ingestion of surface water is a plausible scenario, and there may be increased risk from some radionuclides if surface water is used for watering animals and irrigation instead of groundwater.

The concentrations in groundwater are calculated differently for each model. For example, RAGS/HHEM uses a simple leaching model and a dilution/attenuation factor to calculate radionuclide concentrations in groundwater. Other major differences among the models for the groundwater pathway are discussed in the previous section on source terms.

2.1.7.11 Ingestion of Fish

RESRAD, PRESTO, and RAGS/HHEM address ingestion of fish contaminated with radionuclides. Because of the typically low radionuclide concentrations in surface water, as well as the small quantities of fish that are generally ingested by the average person, the fish ingestion contribution to dose and risk is usually small, with notable exceptions.

The radionuclide concentration in fish is dependent on the radionuclide concentration in surface water. The radionuclides are transferred from the water to the fish living in the water.

Ingestion of vegetation and other aquatic creatures as well as direct transfer from the contaminated water to the fish are assumed to be included in the water-to-fish transfer factor, and to account for bioconcentration effects. The radionuclide concentration in surface water is calculated differently for each model. These differences are discussed in the section on source terms (Section 2.1.2.1).

2.2 CUMULATIVE POPULATION IMPACTS

This section describes the models, scenarios, and assumptions used in this report to perform cumulative radiological impact assessments. The results of modeling the generic and reference sites to determine population impacts appear in Sections 3.6 and 5.2, respectively.

Simply estimating the risks to RME individuals prior to and following cleanup does not provide sufficient evaluation of a site's potential radiological impacts on public health. One must also derive the cumulative impacts to the population in the vicinity of the site. For example, suppose that a site is remediated such that the lifetime risk of cancer to an individual assuming RME conditions is less than 1×10^{-4} and this level of risk is considered protective of human health. Consider the situation in which there are one million people residing in the vicinity of the site and that the average risk to these individuals is 1×10^{-6} per person per year over 1,000 years. Although no individual is bearing a lifetime risk greater than 1×10^{-4} , the total number of potential cancers in the exposed population over the 1,000 years is $(1 \times 10^{-6}$ per person per year) \times (10^6 persons) \times (1000 years) = 1,000 cancers. A complete characterization of the potential radiological impacts of such a site, and the adequacy of site cleanup, must also address these types of cumulative health impacts.

2.2.1 Exposure Scenarios

A site and the surrounding area may be used for a variety of purposes. While the land-use patterns may be expected to change over time, the exposures may be expected to persist until the radionuclides at the site decay or are transported away from the environment most readily accessible to humans. For many sites, the radionuclides are depleted from the soil very slowly, creating the potential to cause exposures to nearby populations for many hundreds or thousands of years.⁴ Due to the long time periods involved, it is difficult to predict how the

⁴ Depletion of radionuclides from soil can include radioactive decay, leaching, and erosion. For relatively short-lived radionuclides, such as Cs-137, Sr-90, and Co-60 (half-lives of 30, 28, and 5.3 years, respectively), radioactive decay will remove the radionuclides from the environment relatively quickly. Radionuclides with low binding capabilities to soil, such as Tc-99, I-129, and tritium, will deplete rapidly due to leaching processes.

land may be used in the future. Accordingly, any estimate of population impacts, and of impacts averted as a result of cleanup, must postulate a broad range of future land-use scenarios, including scenarios that may currently seem inappropriate.

For the above reasons, a range of scenarios was selected for use in deriving the potential cumulative radiogenic cancers associated with contaminated soil at a site, including assumptions which result in upper bound estimates. Specifically, notwithstanding a site's current use, the analysis is based on the assumption that some day the site could be either heavily populated or used for farming—either way, the groundwater could be used extensively for domestic purposes. The specific population exposure pathways addressed therefore include:

- Direct radiation from living on contaminated soil
- Inhalation of suspended dust
- Ingestion of crops raised on contaminated soil
- Ingestion of contaminated groundwater
- Exposure to indoor radon progeny.

2.2.2 Rationale for Excluding Selected Pathways from the Population Impact Assessment

The exposure pathways explicitly addressed in the population impacts assessment models only address five pathways: direct radiation from contaminated soil, inhalation of suspended dust, ingestion of plants contaminated by root uptake, ingestion of groundwater, and indoor radon. The models do not explicitly include soil ingestion, meat and milk ingestion, or the ingestion of food items contaminated as a result of the irrigation pathways. These pathways were excluded because they do not significantly contribute to the population doses for the radionuclides and reference sites addressed in the report. Table 2-8 shows the relative contribution for each of the key radionuclides to risk at the generic site for all pathways.

Most other radionuclides found at many Federal facilities (primarily isotopes of uranium, thorium, radium, and plutonium) bind tenaciously to soil and therefore represent a potential source of exposure for long periods of time.

Table 2-8. Relative Pathway Contribution to Risk

Pathway	Fractional Contribution to Risk by Isotope				
	Cs-137+D ¹	Pu-239	Ra-226+D ¹	Th-230	U-238+D ¹
Water Independent Pathways					
External radiation*	0.87	0	0.12	0.09	0.01
Dust inhalation	0	0.59	0	0.02	0.01
Indoor radon	0	0	0.88	0.63	0
Plant ingestion	0.03	0.28	0.01	0.01	0
Meat ingestion	0.07	0.02	0	0	0
Milk ingestion	0.02	0	0	0	0
Soil ingestion	0	0.11	0	0	0
Water Dependent Pathways					
Water ingestion	0	0	0	0.22	0.94
Fish ingestion	0	0	0	0.01	0
Indoor radon	0	0	0	0.02	0
Plant ingestion	0	0	0	0.01	0.02
Meat ingestion	0	0	0	0	0
Milk ingestion	0	0	0	0	0.01
Total	1.0	1.0	1.0	1.0	1.0
Fraction Captured by Selected Pathways	0.9	0.87	1	0.97	0.96
Fraction Missed	0.1	0.13	0	0.03	0.04

* Bold pathways were included in the population impact assessment.

¹ Includes short-lived progeny.

The results reveal that, for these radionuclides—which are representative of the principal radionuclides modeled at the reference sites—the pathways included in the population dose

model capture between 87% and 100% of the risk. Consideration is being given to revising the population impact assessment models to account for soil ingestion because about 10% of the Pu-239 risk is due that pathway.

Contamination of crops by the deposition of resuspended particulates is not explicitly addressed in modeling the vegetable ingestion pathway. The following analysis demonstrates—for the radionuclides of primary concern at contaminated sites—contamination of crops by dust resuspension and deposition is not an important contributor to risk relative to the root uptake pathway.

The environmental transport factors (ETF) were calculated for eight radionuclides (Co-60, Sr-90, Cs-137, Ra-226, Th-232, U-238, and Pu-239) for root uptake and foliar deposition to compare the relative magnitudes of the ingestion of the radionuclides due to these two mechanisms of plant contamination. Calculations were made using the formulas and parameters specified in Appendix D of the users manual for RESRAD (DOE 93a). The results are expressed as the ratio ETF_2/ETF_1 , where the subscript 2 represents foliar deposition and the subscript 1 represents root uptake.

Table 2-9 lists the ETF ratios. Since the ETF_2 value is constant for non-gaseous radionuclides, the changes in the ratios are due to variations in root uptake for the listed radionuclides. The results of this comparison show that even with a large range of radionuclide root uptake values, including those with the smallest reported values, foliar deposition is not a significant contributor to the plant pathway.

Table 2-9. A List of ETF_2/ETF_1 for Eight Radionuclides

Radionuclide	Ratio
Co-60	8.6E-05
Sr-90	2.3E-05
Cs-137	1.7E-04
Ra-226	1.7E-04
Th-232	6.9E-03
U-238	2.8E-03
Pu-239	6.9E-03

2.2.3 Future Land Use Scenarios

Four future use demographic patterns are considered in deriving the long term impacts associated with radioactively contaminated soil: rural, intermediate, suburban, and "most likely". In the rural demographic setting, one assumes that the population density is 10 persons/km², with and without intensive farming. In the intermediate demographic setting, the population density is assumed to be 100 persons/km², with and without farming. In the suburban setting, the population density is assumed to be 1,000 persons/km², without farming. Finally, the "most likely" scenario for each reference site adopted the population density of the corresponding actual site upon which it was based, and rounded off to the nearest hundred/km². Farming was assumed for densities less than 300 persons/km².

These six scenarios capture the range of site conditions that may be anticipated over the next 1,000 years at most sites which may fall within the scope of the rulemaking. Appendix D presents a summary of demographic and agricultural information characterizing many of the sites that fall within the scope of the rulemaking. Table 2-10 summarizes the population density distribution at many of these sites. The population density scenarios of 10, 100, and 1,000 persons/km² generally envelop the actual conditions at these sites. Two sites, the Nevada Test Site and Maywood fall outside the envelop. The site specific analysis provided in Chapters 5 and 6 address these issues in greater detail.

2.2.4 Time Periods of Concern

Depending on the half-life of the radionuclide and its daughters, and the rate at which the radionuclides deplete from the site, the potential cumulative impacts of a site can extend over hundreds to thousands of years. In addition, notwithstanding the depletion rate of the radionuclide at a site, there is a degree of uncertainty associated with the appropriate time period over which the impacts should be integrated. As a result, cumulative impacts should be determined for three time periods: 100, 1,000, and 10,000 years.

The alternative pathways and time periods are explicitly addressed in order to support EPA's consideration of future land-use scenarios and time periods of interest for the rulemaking. A computer model was developed to facilitate the performance of the calculations. A detailed description of the model and the results of the analyses are provided in Appendix E. The following briefly describes the model through the use of example calculations.

Table 2-10. Population Density by County
Within a Circle of 80 Km Radius for DOE/DOD Sites

Site	Pop. Density Within 80 Km Radius (Ind/km ²)	County	1990 Population	Area (km ²)	Pop. Density by County (Ind/km ²)
Aberdeen ~20 km NE	-	Harford	182,132	1,160	157
Idaho	10	Bonneville	72,207	4,766	15
Hanford	23	Benton	112,560	4,442	25
Maywood	-	Bergen	825,380	614	1,344
Nevada Test	0.5	Nye	17,781	46,786	0.4
Oak Ridge	59	Knox	335,749	1,311	256
Paducah	35	McCracken	62,879	650	97
Portsmouth	58	Pike	24,249	1,147	21
Rocky Flats ~27 km NW	110	Boulder	225,339	1,922	117
Savannah River ~25 km NE	55	Aiken Barnwell	120,991 20,293	2,828 1,445	43 14
Weldon Spring ~40 km W	-	St.Charles	212,751	1,445	147

Note: The population density within an 80 km radius around a reference light water commercial power reactor is assumed to be 117±150 persons per km².

2.2.5 Model Description

The calculation methodology is based loosely on RAGS/HHEM. Furthermore, the model assumes that the cumulative population impacts are directly proportional to the total inventory of radioactivity at a site. Thus, for each site, results can be derived in terms of impacts per curie for each radionuclide, pathway, and time period of interest. Once the soil volume and its radionuclide content are determined for each site, it is a simple matter to determine the impacts caused by the site if the contaminated soil is left in place, or averted if all or a portion of the contaminated soil is remediated.

The assumption that impacts are directly proportional to the inventory is based on the fact that—as long as the population density and land use at the site and in the vicinity of the site is uniform—the time integrated cumulative population impacts are the same whether the activity is confined to a small area, (resulting in relatively large individual doses to a small population), or spread over a large area, (where the corresponding smaller doses are delivered to large populations).

The model is also based on the assumption that radionuclides are depleted from the soil only by radioactive decay and downward migration. The model does not address surface erosion or runoff. This effectively increases the residence time of the radionuclides in the soil at the site and thereby increases the time of integrated impacts for persons onsite. However, it neglects offsite impacts that may be associated with radionuclides transported offsite. The potential significance of this assumption is assessed as part of the sensitivity and uncertainty analysis for the reference sites analyzed in Section 6.

Appendix E describes in detail the method used to calculate the cumulative population impacts for each pathway. The methodology is illustrated in the remainder of the present chapter using a hypothetical site with a contaminated region of area 3×10^6 square meters. Our hypothetical site contains U-238 at an average concentration in soil of about 210 pCi/g, Th-230 (350 pCi/g), and Ra-226 (350 pCi/g). (These radionuclides are not assumed to be in secular equilibrium.) For each of the five pathways discussed in this simple example, however, we shall consider only the single radionuclide that dominates risk.

2.2.5.1 External Radiation

Individuals located on or near contaminated soil would receive doses of direct external radiation. The following illustrates the estimation of population cancer dose and risk due to external radiation from Ra-226 in soil.

For this example, the depth of contamination is assumed to extend from about 9 meters extending down to the water table. For the purpose of calculating the baseline external radiation dose and health impacts, we assumed that—at some time in the future—the site is occupied with a population density of 1,000 persons per km^2 , which is close to an urban population density. The population density in the vicinity of the site may be currently lower than this, but given the time period of concern, one can assume that the population density could increase to 1,000 persons per km^2 and remain at that level. Since the potential cumulative public health impacts are directly proportional to the assumed population density,

these impacts can be readily adjusted for alternative assumptions regarding population density.

The average Ra-226 concentration in the contaminated soil is 350 pCi/g (Natural background levels are about 1 pCi/g.) The Ra-226 in the soil generates several decay products which are relatively short-lived and are therefore assumed to be in equilibrium. This means that the specific activities of all decay products are the same as that of the parent. Hence, every time there is a decay of a Ra-226 atom, there is also a decay of each short-lived member of its decay chain. Individuals in the contaminated area are exposed externally to the gamma radiation emitted from the soil.

Due to the gradual depletion of the radioactivity in the soil—caused by radioactive decay and downward leaching of the contaminants—the rate of exposure slowly declines over time. The method used to estimate the dose to the population requires integration of the dose over t years; in this example 10,000 years is assumed. This is equivalent to calculating the dose imparted to a typical member of the population in year 1, in year 2, in year 3, etc. out to year 10,000, and then summing the doses. In each succeeding year, the dose is a little smaller due to depletion of the source. Since we assume there are 1,000 persons per km² at the site and the site is 3×10^6 m², 3,000 persons are exposed at any time. Hence, if the dose rate were 1 mrem/year per person for the first year, the cumulative population dose would be $(1 \text{ mrem/year}) \times (0.001 \text{ rem/mrem}) \times (3000 \text{ persons}) = 3 \text{ person-rem per year}$.

If the Ra-226 were extremely long lived and did not deplete from the soil significantly over 10,000 years, the integrated cumulative population dose over 10,000 years would be 30,000 person-rem. However, Ra-226 has a 1,600 year half-life and does leach from the soil, resulting in a gradual reduction in the annual individual dose rate. As a result, the 10,000 year integrated dose is somewhat less than 30,000 person-rem.

The population dose rate at time 0 can be estimated as follows:

$$\text{POP DOS}(0)_{\text{Ext}} = \text{RSC} \times \text{DCF}_{\text{Ext}} \times \text{SD} \times \text{A} \times \text{N}$$

where:

$$\text{POP DOS}(0)_{\text{Ext}} = \text{population dose rate from direct radiation (person rem/year) at time 0}$$

RSC	=	photon-emitting radionuclide soil concentration (pCi/g) at time of cleanup (t=0)
DCF _{Ext}	=	external dose conversion factor (mrem/yr per pCi/cm ³), assuming infinite thickness and depth of contamination; from: Federal Guidance Report No. 12 (EPA 93d)
SD	=	soil density (g/cm ³)
A	=	contaminated zone area (m ²)
N	=	assumed population density (persons per m ²)

Assuming RSC = 350 pCi/g, A= 3x10⁶ m² and N= 0.001 persons/m², and with DCF_{Ext} = 7.0 mrem/yr per pCi/cm³ (EPA 93d), the population dose rate at time 0 from Ra-226+D (radium and its short-lived progeny) in soil is:

$$\text{POPDOS}(0)_{\text{Ext}} = 1.2 \times 10^4 \text{ person-rem/yr}$$

This dose rate can be assumed a constant value over the first year due to the long half-life of Ra-226 and the slow rate at which it is depleted from the soil. Accordingly, the total number of potential cancers produced in the population in year 1 by external radiation, POP(0)_{Ext}, is then computed as the product of POPDOS(0)_{Ext} and EPA's dose-to-cancer incidence risk conversion factor of 6.2x10⁻⁴ cancers per person-rem (EPA 89a):

$$\text{POP}(0)_{\text{Ext}} = \text{POPDOS}(0)_{\text{Ext}} \times 6.2 \times 10^{-4} \text{ risk/rem}$$

For this example, POP(0)_{Ext} is seven total (fatal plus nonfatal) cancers for the first year of exposure. Note that with minor modification of the equation, [DCF_{Ext} x 6.2x10⁻⁴ risk/mrem] could be replaced with the external slope factor, SF_{Ext}. The derivation of the potential cancers derived in this report actually uses the July 1994 slope factors.

In successive years, the total number of expected cancers in any given year can be computed as:

$$\text{POP}(t)_{\text{Ext}} = \text{POP}(0)_{\text{Ext}} \times \exp^{-(\text{DF1} \times t)}$$

where:

POP(t) _{Ext}	=	population cancer rate at time t years
DF1	=	soil depletion coefficient (yr ⁻¹)

In this model, two processes are responsible for depletion: radioactive decay and downward leaching migration.

The soil depletion coefficient is defined as:

$$DF1 = [V / (MD \times R)] + \lambda$$

where:

V	=	rainwater infiltration velocity (m/yr)
R	=	retardation factor (unitless);
MD	=	soil mixing depth (m)
λ	=	radioactive decay constant (yr^{-1}). For Ra-226, the half-life is 1,600 years, and therefore $\lambda = 4.3 \times 10^{-4}$ per year.

The soil depletion coefficient may be thought of as the fraction of the radioactivity that is in the contaminated zone and contributes to the external radiation exposure but is depleted from the soil or undergoes radioactive decay per unit time.

The leaching component of DF1 may be obtained from a first order compartment model for the leaching of contaminant from the soil. Depletion by leaching may be visualized, for our example, as Ra-226 atoms mixing with rainwater to a soil depth MD, with some of that newly contaminated water percolating downward but being replaced by fresh rainwater. The velocity of the Ra-226 atoms through soil is much slower than that of the water because of the tendency of radium ions to bind to the soil. The retardation factor accounts for this process. Note that once the Ra-226 atoms are transported below about 15 cm, they are far enough below the surface to be shielded by the overlying soil, and therefore no longer contribute to the external dose.⁵

The retardation factor, R, is of standard form,

$$R = 1 + [SD \times K_d / \theta]$$

⁵ In this simple model, the decay products of Ra-226 are assumed to be in continual equilibrium and are depleted at the same rate as their parent. Such simplifications are applied with caution because radionuclides with long-lived decay products and high binding coefficients may continue to deliver external exposures long after the parent has been depleted from the surficial soil. Assuming full equilibrium at time zero is appropriate for Ra-226, even if it is not in fact the case at a given site, because its longer lived daughter, namely Pb-210 (half-life = 22 years), does not contribute significantly to external exposure. In addition, in light of the long integration period, assuming equilibrium at time zero does not invalidate the approach because, in a relatively short period of time compared to the integration period, Pb-210 will equilibrate.

where:

K_d	=	radionuclide- and soil-specific distribution coefficient (cm^3/g)
SD	=	soil density ($1.6 \text{ g}/\text{cm}^3$)
θ	=	volumetric water content (unitless)

For the Ra-226 example, $V = 1.5 \text{ m}/\text{yr}$, $R = 3,500$, $MD = 0.15 \text{ m}$ and $\lambda = 4.3 \times 10^{-4}$ per year. Therefore, $DF1 = 3.2 \times 10^{-3}/\text{yr}$.

To obtain $POP_{\text{Ext-TOT}}$, the total number of cancers expected in the population over an assumed exposure duration, $POP(t)_{\text{Ext}}$ is integrated over the exposure interval. The result of the integration process (assuming a 10,000 year exposure duration) is:

$$\begin{aligned} POP_{\text{Ext-TOT}} &= POP(0)_{\text{Ext}} \int e^{-(DF1 \times t)} dt \\ &= POP(0)_{\text{Ext}} \times [1 - e^{-(DF1 \times t)}] / DF1 \\ &= 2,250 \text{ cancers} \end{aligned}$$

2.2.5.2 Dust Inhalation

Individuals living onsite can receive internal exposure due to the inhalation of airborne dust contaminated with radionuclides. For this example, it is assumed that the risk for this exposure pathway is dominated by Th-230—initially at a concentration of 350 pCi/g—which becomes airborne due to wind erosion and mechanical processes.⁶

The equation used to derive the population cancer risk for the first year of exposure to Th-230 in inhaled dust is:

$$POP_{\text{Inh}} = RSC \times DL \times IR \times A \times SF \times N$$

where:

$$POP_{\text{Inh}} = \text{population cancers induced per year from inhalation of Th-230 in dust (cancers/yr)}$$

⁶ In this example, the decay products of Th-230, namely Ra-226 plus its decay products, are ignored. In our actual model, the Bateman equations were used to derive daughter ingrowth. An alternative approach is to assure that Ra-226 plus all its decay products are also present for integration periods of 1,000 and 10,000 years. For sites without Ra-226 at time zero, this tends to overestimate the 1,000-year integrated dose since Ra-226 will reach only about 35% equilibrium in 1,000 years. For 10,000 years, this assumption does not significantly overestimate the dose. For the 100-year integration case, Ra-226 ingrowth can be ignored since it will not grow in significantly over this time period.

RSC	=	radionuclide soil concentration (pCi/g)
DL	=	average annual dust loading ($\mu\text{g}/\text{m}^3$)
IR	=	inhalation rate (m^3/yr)
A	=	contaminated zone area (m^2)
SF _{inh}	=	inhalation cancer slope factor (cancer risk/pCi)
N	=	population density (persons/ m^2).

For the present example, the following assumptions were made: (1) the time-averaged airborne dust loading (DL) is $100 \mu\text{g}/\text{m}^3$, a typical value for outdoor dust loadings (NRC 92b); (2) dust is contaminated at the same level as the soil; (3) IR = $8,000 \text{ m}^3/\text{yr}$; (4) A = $3 \times 10^6 \text{ m}^2$; and (5) N = $0.001/\text{m}^2$. Substituting these values into the above equation, and using Th-230 SF_{inh} = 2.9×10^{-8} risk/pCi, yields:

$$\text{POP}_{\text{inh}} = 0.024 \text{ cancers committed due to the first year of exposure}$$

As with external radiation exposure, the radionuclide concentration in the soil slowly decreases, as do the exposure rate and associated cancer induction rate. For thorium, the soil depletion factor (DF2) is $1.1 \times 10^{-4}/\text{yr}$, assuming V = $1.5 \text{ m}/\text{yr}$, MD = 0.15 m , R = $100,000$ and $\lambda = 9.0 \times 10^{-6}$ per year.

The potential number of cancers in the population over 10,000 years is computed as:

$$\begin{aligned} \text{POP}_{\text{inh-TOT}} &= (0.024 \text{ cancers}/\text{yr} \times [1 - \exp^{-(\text{DF}2 \times t)}]) / \text{DF}2 \\ &= (0.024 \times [1 - 0.33]) / 1.1 \times 10^{-4} \\ &= 146 \text{ cancers} \end{aligned}$$

In this model, we assume that removal of radionuclides from surficial soil is by leachate migration and radioactive decay. Once the radionuclides are transported to below the mixing zone, we assume that they are no longer available for suspension.

2.2.5.3 Crop Ingestion.

The direct radiation and dust inhalation exposure scenarios are based on the premise that the site will eventually be heavily occupied. For many sites, a more likely scenario is that the sites will be used for agricultural purposes. Under this scenario, the population density is reduced to rural conditions, typically less than $10 \text{ persons per km}^2$, and the land is used to grow crops which are sold commercially.

In this scenario, we assume the site is used to grow vegetables and the productivity of the site is 0.716 kg/m² per year (EPA 89a). Accordingly, for the example site, which is 3x10⁶ m² in area, 2.15x10⁶ kg/yr of vegetables are produced. These vegetables are assumed to be contaminated with radionuclides as a result of root uptake from the contaminated soil. For our hypothetical site, the radionuclide of greatest concern is Ra-226.

The soil-to-plant transfer factor for Ra-226 is assumed to be 6.42x10⁻⁴ pCi/g fresh weight of vegetable per pCi/g dry weight of soil (EPA 89a). Accordingly, in the first year at the example site, the Ra-226 concentration in the crops is estimated to be 0.22 pCi/g—*i.e.*, (350) x (6.42x10⁻⁴). Assuming that all of the crops are consumed, the total numbers of potential cancers induced by the ingestion of vegetables is the product of the total number of pCi/yr ingested times the slope factor for Ra-226, as follows:

$$POP_{Ing} = RSC \times PR \times A \times Biv \times SF_{Ing}$$

where:

POP _{Ing}	=	population cancer induction rate (cancers per year) for the first year due to the ingestion of vegetables grown in contaminated soil
RSC	=	radionuclide soil concentration (pCi/g)
PR	=	production rate of vegetables (assumed to be 0.716 kg/m ² -yr)
A	=	contaminated zone area (m ²)
Biv	=	soil-to-plant transfer factor (dimensionless)
SF _{Ing}	=	ingestion cancer slope factor (cancers/pCi ingested). For Ra-226+D, the ingestion slope factor is 1.2x10 ⁻¹⁰ cancers per pCi ingested (EPA 92b)

Substituting values:

$$POP_{Ing} = 0.058 \text{ cancers for the first year of exposure}$$

And the 10,000-year integrated population risk is:

$$\begin{aligned} POP_{Ing-TOT} &= (0.058 \text{ cancers per year} \times [1 - \exp^{-[DF1 \times t]}]) / DF1 \\ &= (0.058 \text{ cancers per year}) / 9.1 \times 10^{-4} \text{ per year} \\ &= 64 \text{ cancers} \end{aligned}$$

The population density does not explicitly enter the calculation, but the number of people potentially affected is accounted for with the assumption that all the contaminated crop is consumed.

Consideration is given to including contamination and risks resulting from the use of contaminated groundwater for irrigation and foliar deposition from suspended dust. However, the analyses sketched in Section 2.2.2 reveals that, for the radionuclides of interest, the irrigation pathway and foliar deposition pathway are insignificant when compared to the root uptake and groundwater ingestion pathways.

2.2.5.4 Groundwater Ingestion

Radionuclides contained in the surficial soil will migrate downward until they reach an aquifer, where they are available as well water. Though the aquifer beneath a site may not be currently used as a drinking water supply, in light of the time periods of interest, and as long as the water is of adequate quality, it is appropriate to assume that the groundwater may be consumed at some time in the future.

The population impacts associated with the consumption of contaminated groundwater are modeled assuming that the radionuclides in the surficial soil are migrating downward at the velocity of the infiltrating rainwater—assumed to be 1.5 m/yr in this example—divided by the retardation factor for the radionuclide of interest. U-238 is the limiting radionuclide. Its retardation factor is assumed to be about 700, which means that the downward effective velocity is about 0.002 m/yr. The approximate time it takes for the contaminants to reach the aquifer depends simply on the thickness of the uncontaminated unsaturated zone. For example, if the uncontaminated unsaturated zone is 10 meters, the uranium would reach the aquifer in about $(10 \text{ m}) / (0.002 \text{ m/y}) = 5,000$ years. If the thickness of the uncontaminated unsaturated zone is only 1 meter, the uranium would reach the aquifer in about 500 years.

Once the radionuclides reach the aquifer, they are available to be withdrawn for domestic and agricultural purposes. The fraction of the contaminated groundwater that is withdrawn depends entirely on the site-specific conditions—which are difficult to predict far into the future. To ensure that the impacts are not underestimated, the analysis assumes that 50 percent of the groundwater in the region is withdrawn for domestic and agricultural purposes. (Hence, 50 percent of the radionuclide activity that reaches the aquifer is withdrawn). For the drinking water pathway, it is assumed that 1 percent of the withdrawn water is consumed (based on data provided in the Water Encyclopedia), (Van 90). Note, this approach to calculating the population impacts from groundwater consumption does not require specific consideration of the population density or the specific location or size of the exposed population.

The potential cancer induction rate, at time t, from the drinking of groundwater may be described by:

$$POP(t)_{GW} = \begin{cases} 0, & \text{for } t < T \\ Inv(0) \times e^{-DF3(t-T)} \times FR \times e^{-\lambda T} \times \\ & f1 \times f2 \times SF_{Ing}, & \text{for } t \geq T \end{cases}$$

where:

Inv(0)	=	inventory of contaminant at site at time t = 0 (pCi)
T	=	transit time from contaminated zone to water table
FR	=	fraction of inventory leached from contaminated zone each year
	=	V / (CD x R)
V	=	infiltration velocity of the rainwater
CD	=	thickness of the contaminated zone
R	=	retardation factor
DF3	=	[V / (CD x R)] + λ
f1	=	fraction of leachate withdrawn (0.5)
f2	=	fraction of withdrawn water consumed (0.01)
SF _{Ing}	=	ingestion slope factor (cancers/pCi ingested)
λ	=	radioactive decay constant (1/yr)

This assumes that at time t, the amount of radionuclide remaining in the contaminated layer, Inv(t), is given by [Inv(0) x e^{-DF3(t-T)}]; that the rate at which leachate leaves the contaminated zone at time t is [Inv(t) x FR]; that the rate at which leachate enters the aquifer at time t is [Inv(0) x FR x e^{-λT} x e^{-DF3(t-T)}], where the temporal shift (t-T) accounts for the delay between leaching of the contaminant and its entry into the aquifer, and the factor e^{-λt} describes the decay of the radionuclide over time; and that the contaminant is pumped out of the aquifer soon after it enters the aquifer.

For this example, the U-238 concentration in the soil is 210 pCi/g. The first step in deriving the impacts is determining the initial total inventory of U-238 in the soil at time t = 0, as follows:

$$\begin{aligned} Inv(0) &= (210 \text{ pCi/g})(3.0 \times 10^6 \text{ m}^2)(9 \text{ m})(1.6 \times 10^6 \text{ g per m}^3) \\ &= 9 \times 10^{15} \text{ pCi} \end{aligned}$$

For simplicity, the contaminated soil is assumed to extend down to the water table. As a result, the aquifer is contaminated at time zero.

Accordingly, the total amount of U-238 transported to the aquifer in the first year is $(9 \times 10^{15} \text{ pCi}) \times (2.4 \times 10^{-4} \text{ per year}) = 2.0 \times 10^{12} \text{ pCi}$. Assuming that one half of this water is withdrawn and 1 percent of that is consumed, the total amount of U-238 consumed is $1.0 \times 10^{10} \text{ pCi}$. Using a slope factor of 2.8×10^{-11} cancers per pCi ingested (EPA 92b), the total number of cancers associated with the ingestion of U-238 in groundwater in the first year is about 0.28. In each succeeding year, the quantity of U-238 available for consumption declines slightly due to depletion of the source by radioactive decay and leaching. The leach rate is 2.4×10^{-4} per year and the decay rate is 1.55×10^{-10} per year. Accordingly, the depletion rate (DF3) is the sum of the two, or 2.4×10^{-4} per year.

The total number of cancers over 10,000 years from groundwater ingestion is therefore estimated as follows:

$$\begin{aligned}
 \text{POP}_{\text{GW-TOT}} &= 0.28 \text{ per year} \times [1 - \exp^{-(\text{DF3} \times t)}] / 2.4 \times 10^{-4} \text{ per year} \\
 &= 0.28 \times 0.9 / 2.4 \times 10^{-4} \\
 &= 1,050 \text{ cancers}
 \end{aligned}$$

Though U-238 has a series of decay products, only the first two short-lived decay products are assumed to be present at time zero. This situation could occur at a depleted uranium site. The third daughter of U-238, U-234, has a half-life of 2.5×10^5 years and therefore does not grow in significantly, even over a 10,000 year integration period. As a result, U-234 and its decay products are ignored if it is known that they are not present initially at a site. If U-234 is present, it is treated as a separate radionuclide, which may or may not include its chain of decay products.

2.2.5.5 Indoor Radon

Individuals residing on contaminated property will be exposed to indoor radon and its progeny if the soil is contaminated with Ra-226. The method used to estimate the exposures and associated health impacts on the population from indoor radon is based on the approximation that, on average, the indoor radon concentration is 1.25 pCi/L per pCi/g of Ra-226 in soil. This is an empirical relationship observed to apply to Ra-226 naturally occurring in the environment (EPA 92a) and to typical homes.

The 1.25 pCi/L per pCi/g relationship translates to 4.62×10^{-5} lifetime risk of cancer per year per person per pCi/g of Ra-226 in soil. This assumes 98.3 pCi/L per WL, 0.5 equilibrium fraction, 51.56 WLM per year, an average indoor occupancy factor of 0.6 and a risk

coefficient of 2.36E-4 risk per WLM. The risk factor is based on the supporting documentation in the Radon Citizen's Guide and the occupancy factor is based on the Exposure Factors Handbook (EPA 89a).

The cancer induction rate will decline each succeeding year due to depletion of Ra-226 in soil by decay and leaching with a depletion rate of DF4.

The cancer rate, at time t, from indoor radon may be described by:

$$\text{POP}(t)_{\text{Rn}} = \text{RSC} \times e^{-(\text{DF4} \times t)} \times \text{AF} \times (4.62\text{E-}5 \text{ risk per pCi/g}) \times \text{A} \times \text{N}$$

where:

RSC	=	radionuclide soil concentration (pCi/g)
A	=	contaminated zone area (m ²)
N	=	population density (persons per m ²)
AF	=	foundation depth adjustment factor
DF4	=	[V / (ED x R) + λ]
V	=	rainwater infiltration velocity (assumed to be 1.5 m/yr)
ED	=	effective depth over which radon can diffuse into a home (m)
R	=	retardation factor (assumed to be 3,500 for Ra-226)
λ	=	radioactive decay constant (1/yr). For Ra-226, λ = 4.3x10 ⁻⁴ per year

ED, the effective depth over which radon can diffuse into a home, was assumed to be 5 meters. Diffusion analyses indicate that the nominal effective depth for radon diffusion in soil is about 4 to 5 meters (RAE 92). Once the top 5 meters of soil contamination is depleted, exposures to indoor radon cease. Note that if 1 m were used instead of 5 m, DF4 would increase from 5.1x10⁻⁴ to 8.6x10⁻⁴ per year, reducing the impacts by less than a factor of 2.

For sites where the thickness of the contamination is less than 5 meters, the Ra-226 concentration is reduced by dividing the actual thickness of the contaminated zone by 5. This was not necessary in this example because the thickness of the contaminated zone is greater than 5 meters.

The total exposed population is 3,000 people (i.e., 0.001 persons per m² multiplied by 3x10⁶ m²). In the first year, cancer induction due to indoor radon at the site is 49 cancers (i.e., 350

pCi/g multiplied by 4.62×10^{-5} cancers/year per pCi/g multiplied by 3,000 people). $DF4 = 8.8 \times 10^{-5} + 4.3 \times 10^{-4} = 5.1 \times 10^{-4}$ per year. Therefore, the total cumulative health impacts over 10,000 years from indoor radon inhalation at the example site is:

$$\begin{aligned} \text{POP}_{\text{Rn-TOT}} &= 49 \times [1 - \exp^{-(DF4 \times t)}] / 5.1 \times 10^{-4} \text{ per year} \\ &= 4.7 \times 10^4 \text{ cancers} \end{aligned}$$

2.2.5.6 Pathways Combined

The impacts from each pathway are summed except for the high population (suburban) scenario. In this case, the impacts from each pathway cannot be simply summed in order to determine the total impact from multiple pathways because a site cannot simultaneously have a high population density (1,000 persons per km^2) and also be used as a farm. The high population density scenario is based on the assumption that the site has a continuous resident population density of 1,000 persons per km^2 , which maximizes the impacts from direct radiation, dust inhalation, and indoor radon exposure, but no crops are grown in the contaminated soil. Presumably some individuals in a suburban setting have a backyard garden, but for the population as a whole, a large fraction of the fruits and vegetables are not obtained from backyard gardens. For this reason, the crop ingestion pathway is not included in the suburban scenario.

The farm scenario is based on the assumption that the site has a low population density of either 10 or 100 persons per km^2 but has a high crop production rate ($0.716 \text{ kg/m}^2\text{-yr}$). In both cases, the groundwater is assumed to be heavily used (i.e., 50% of the groundwater flow is used for domestic purposes). Table 2-11 summarizes the pathways included in the three demographic scenarios.

Table 2-11. Pathways Included in the Suburban and Rural Scenarios Used to Derive Cumulative Population Dose

Pathway	Suburban Scenario	Rural and Intermediate Demographic Scenarios
External radiation	Yes	Yes
Dust inhalation	Yes	Yes
Indoor radon	Yes	Yes
Plant ingestion (root uptake)	No	Yes
Plant ingestion (irrigation)*	No	No
Meat ingestion*	No	No
Milk ingestion*	No	No
Soil ingestion*	No	No
Water ingestion	Yes	Yes
Fish ingestion*	No	No

* These pathways were not explicitly included because the sensitivity analysis showed them to be insignificant contributors to the cumulative population impacts for the radionuclides of concern.

3. Assessment of Modeling Parameters and Capabilities

This chapter applies the models, exposure scenarios, and assumptions described in Chapter 2 to individuals and populations postulated to take residence at a hypothetical generic test site. Section 3.1 evaluates individual risks and Section 3.2 evaluates cumulative population impacts at the generic site. The evaluation of individual risks at the generic site is designed to:

1. Intercompare the doses and risks to individuals as derived using the three selected models (RESRAD, PRESTO, and RAGS/HHEM). The purpose of this intercomparison is to evaluate the performance of the models and gain insight into the advantages and limitations of each of the models. These comparisons are also used to select a model to evaluate the risks to individuals at the reference sites.
2. Evaluate the sensitivity of the results of the models to a range of alternative assumptions regarding specific characteristics of the generic site. The purpose of this evaluation is to identify those key site parameters which can significantly impact the results for specific radionuclides and pathways. This information is used to help ensure that the key site parameters are properly considered in the development of the reference sites (e.g., if the thickness of the contaminated zone or depth to aquifer is found to be especially important for a given radionuclide, these site parameters are given added attention at those reference sites that contain that radionuclide).
3. Evaluate the uncertainty in the risks per pCi/g for the individual exposed under RME conditions at the generic site. The purpose of this exercise is to assess the degree of conservatism inherent in the definition of the exposure scenarios provided in Chapter 2. As discussed in Chapter 2, the individual exposed under RME conditions is defined in terms of a set of occupancy factors, living and eating habits, and slope factors which result in conservative, but not unrealistic, doses and risks. This exercise will help to provide a level of assurance that the exposure scenarios have been properly defined.

The evaluation of the cumulative population impacts at the generic site is intended to evaluate the performance of the bounding population model for the radionuclides of interest at the reference sites. The population impact assessment model described in Section 2.2 employs a number of simplifying assumptions. Through the application of the model to the generic site, we are better able to determine whether the model and assumptions are reasonable and whether the model can be used with confidence to assess the potential cumulative population impacts at the reference sites.

3.1 GENERIC TEST SITE: INDIVIDUAL RISKS

3.1.1 Derivation of Generic Test Site Risk and Dose Factors

A risk factor is defined in terms of the assumed linear relationship between a given concentration of a radionuclide in soil at a site and the risk to individuals who may reside or work at the site. For each radionuclide and site, a risk factor is expressed in terms of lifetime risk of cancer incidence per pCi/g of the radionuclide in soil.

Dose factors define the relationship between a given concentration of a radionuclide in soil and the committed effective annual dose equivalent (CEDE) to individuals who may reside or work at the site. For each radionuclide, dose factors are expressed in terms of mrem/yr per pCi/g.

In this report, risk and dose factors are obtained for two conceptually different kinds of sites: a generic test site described by a standard set of default modeling parameters, and a group of "reference" sites intended to represent different categories of real sites. The present chapter considers risk factors for the generic test site—Chapters 4 and 5 of this report compute risk factors for the reference sites.

Three general exposure scenarios are considered for the generic test site: a rural residential scenario where the individual lives on the site and produces food on the site, a commercial/industrial scenario where an individual is on the site only during business hours, and a suburban scenario where an individual uses the site as a residence. These three scenarios and the exposure pathways used to describe them are discussed in Chapter 2. The first two scenarios, but not the third, are used in the analysis of reference sites in Chapters 4, 5, and 6.

Generic site risk factors were derived for 67 radionuclides for suburban, rural residential, and commercial scenarios. Tables 3-1 through 3-3 present the generic suburban, rural residential, and commercial/industrial site risk and dose factors calculated using RESRAD 5.19. Tables 3-4 through 3-6 present the risk and dose factors calculated using PRESTO-CPG, and Tables 3-7 through 3-9 present the risk and dose factors calculated using the modified RAGS/HHEM equations.

The risk factors identified in these tables take into account radiological effects only. Chemical toxicity, including the carcinogenic effects of chemicals and synergistic effects resulting from combined chemical and radiological exposure, must also be evaluated, to the extent that they are understood. Appendix F presents an evaluation of the combined effects of radiation and hazardous chemical exposure.

3.1.1.1 Findings Regarding Differences in the Exposure Scenarios.

Figure 3-1 shows the percentage of radionuclides dominated by each exposure pathway calculated using RESRAD (i.e., the percentage of radionuclides that have the highest risk associated with that pathway), using data in Tables 3-1 through 3-3. Figures 3-2 and 3-3 show the same information for PRESTO and RAGS/HHEM, respectively. The following comparative observations result:

- All Models: Approximately half of the radionuclides have external exposure as the dominant pathway in all three models.
- RESRAD: Risks associated with the majority of the remaining radionuclides are divided between plant and water ingestion for suburban and rural residential exposures. For commercial/industrial exposures the remaining radionuclides are dominated by the water ingestion and inhalation pathways.
- PRESTO: Risks associated with the majority of the remaining radionuclides are divided between plant and water ingestion for suburban and rural residential exposures. For commercial/industrial exposures the remaining radionuclides are dominated by the water ingestion, soil ingestion, and inhalation pathways.
- RAGS/HHEM: Risks associated with the majority of the remaining radionuclides are divided between water and plant ingestion for suburban and rural residential exposures. For commercial/industrial exposures the remaining radionuclides are dominated by the water ingestion pathway.

TABLE 3-1. RESRAD (Ver. 5.19) RISK FACTORS AND DOSE FACTORS FOR THE GENERIC SITE, ASSUMING RURAL RESIDENTIAL EXPOSURE*

Nuclide	Dose Rate				Percent Lifetime Risk per Pathway								
	Max Year	(mrem/yr) per pCi/g	Lifetime Risk per pCi/g	Lifetime Risk per mrem	External	Inhalation	Radon	Plant	Meat	Milk	Soil	Water	Fish
	Ac-227 +D	0	7	2.98E-05	1.50E-07	80	4	0	14	0	0	1	0
Ag-108m +D	0	6	1.60E-04	8.90E-07	93	0	0	2	0	5	0	0	0
Ag-110m +D	0	10	2.99E-04	9.67E-07	95	0	0	2	0	3	0	0	0
Am-241	0	1	1.11E-06	6.32E-08	11	29	0	50	1	0	8	0	0
Am-243 +D	0	1	8.06E-06	2.40E-07	88	4	0	7	0	0	1	0	0
Bi-207	0	5	1.48E-04	9.69E-07	98	0	0	1	0	0	0	0	0
C-14	0	4	1.10E-04	8.45E-07	0	0	0	54	32	14	0	0	0
Cd-109	0	0.3	9.38E-06	1.14E-06	0	0	0	91	2	7	0	0	0
Ce-144 +D	0	0.2	4.48E-06	9.03E-07	94	0	0	6	0	0	0	0	0
Cl-36	0	26	1.02E-03	1.33E-06	0	0	0	16	60	24	0	0	0
Cm-243	0	0.4	4.87E-06	4.18E-07	92	6	0	0	0	0	2	0	0
Cm-244	0	0.3	7.98E-07	9.31E-08	0	33	0	57	1	0	9	0	0
Cm-248	0	2	3.88E-06	6.49E-08	0	31	0	58	1	0	10	0	0
Co-57	0	0.3	6.25E-06	7.55E-07	89	0	0	5	6	1	0	0	0
Co-60	0	12	2.69E-04	7.41E-07	95	0	0	2	3	0	0	0	0
Cs-134	0	6	1.76E-04	9.19E-07	85	0	0	4	8	3	0	0	0
Cs-135	0	0.1	2.50E-06	1.08E-06	0	0	0	25	56	18	0	0	0
Cs-137 +D	0	3	7.30E-05	7.75E-07	76	0	0	6	13	4	0	0	0
Eu-152	0	5	1.08E-04	7.03E-07	100	0	0	0	0	0	0	0	0
Eu-154	0	6	1.23E-04	7.22E-07	100	0	0	0	0	0	0	0	0
Eu-155	0	0.1	1.68E-06	6.49E-07	98	0	0	1	1	0	0	0	0
Fe-55	0	0.0005	1.48E-08	1.04E-06	0	0	0	8	88	2	1	0	0
Gd-153	0	0.1	1.97E-06	5.95E-07	99	0	0	1	0	0	0	0	0
H-3	1	0.05	2.98E-06	2.07E-06	0	1	0	14	6	10	0	70	0
I-129	4	41	1.52E-03	1.25E-06	0	0	0	3	7	22	0	66	0
K-40	0	2	5.46E-05	1.07E-06	30	0	0	25	32	13	0	0	0
Mn-54	0	3	8.79E-05	9.41E-07	97	0	0	3	0	0	0	0	0
Na-22	0	8	2.24E-04	8.90E-07	94	0	0	1	4	2	0	0	0
Nb-94	0	7	1.65E-04	7.50E-07	100	0	0	0	0	0	0	0	0
Ni-59	0	0.002	1.12E-07	1.75E-06	0	0	0	32	12	56	0	0	0
Ni-63	0	0.01	3.50E-07	2.04E-06	0	0	0	32	12	56	0	0	0
Np-237 +D	17	96	1.92E-04	6.62E-08	4	0	0	7	2	0	0	87	0
Pa-231	364	30	3.47E-05	3.87E-08	42	3	0	13	3	0	1	39	0
Pb-210 +D	0	5	3.05E-05	1.94E-07	0	0	0	87	8	4	1	0	0
Pm-147	0	0.0003	2.43E-08	2.96E-06	1	1	0	63	31	0	4	0	0
Pu-238	0	0.5	9.94E-07	6.80E-08	0	34	0	54	3	0	9	0	0
Pu-239	0	1	9.58E-07	5.83E-08	0	35	0	54	3	0	9	0	0
Pu-240	0	1	9.58E-07	5.83E-08	0	35	0	54	3	0	9	0	0
Pu-241	68	0.02	3.25E-08	6.29E-08	11	29	0	50	1	0	8	0	0
Pu-242	0	1	9.22E-07	5.91E-08	0	35	0	53	3	0	9	0	0
Pu-244 +D	0	2	9.70E-05	1.94E-06	99	0	0	1	0	0	0	0	0
Ra-226 (+Rn)	11	131	1.11E-03	2.84E-07	16	0	79	4	0	0	0	0	0
Ra-226 (-Rn)	83	15	2.38E-04	5.17E-07	71	0	0	25	2	2	0	0	0
Ra-228 +D	2	10	1.78E-04	6.13E-07	82	0	1	14	1	1	0	0	0

TABLE 3-1. RESRAD (Ver. 5.19) RISK FACTORS AND DOSE FACTORS FOR THE GENERIC SITE, ASSUMING RURAL RESIDENTIAL EXPOSURE*

Nuclide	Dose Rate				Percent Lifetime Risk per Pathway								
	Max Year	(mrem/yr) per pCi/g	Lifetime Risk per pCi/g	Lifetime Risk per mrem	External	Inhalation	Radon	Plant	Meat	Milk	Soil	Water	Fish
	Ru-106 +D	0	1	2.46E-05	1.09E-06	79	0	0	18	3	0	0	0
Sb-125 +D	0	1	3.62E-05	8.25E-07	100	0	0	0	0	0	0	0	0
Sm-147	780	0.1	7.32E-07	1.84E-07	0	6	0	17	9	0	1	66	0
Sm-151	0	0.0001	7.84E-09	2.57E-06	0	1	0	63	31	0	4	0	0
Sr-90 +D	0	5	8.06E-05	5.64E-07	0	0	0	60	31	9	0	0	0
Tc-99	1	1	5.51E-05	2.23E-06	0	0	0	36	0	4	0	59	0
Th-228 +D	0	7	1.68E-04	7.91E-07	98	1	0	1	0	0	0	0	0
Th-229 +D	0	2	2.40E-05	3.58E-07	88	6	0	6	0	0	1	0	0
Th-230 (+Rn)	694	24	2.11E-04	2.89E-07	19	0	72	7	1	1	0	0	0
Th-230 (-Rn)	1,000	5	7.50E-05	5.00E-07	70	0	0	25	2	2	0	0	0
Th-232 (+Rn)	66	16	2.95E-04	6.09E-07	85	1	1	11	1	1	0	0	0
Th-Sep (+Rn)	691	40	4.92E-04	4.13E-07	57	0	32	9	1	1	0	0	0
Th-Sep (-Rn)	1,000	20	3.48E-04	5.85E-07	83	1	0	14	1	1	0	0	0
Th-Series (+Rn)	0	16	2.97E-04	6.09E-07	85	1	1	11	1	1	0	0	0
Th-Series (-Rn)	0	16	2.93E-04	6.14E-07	86	1	0	11	1	1	0	0	0
Tl-204	0	0.1	1.90E-06	1.06E-06	1	0	0	73	9	17	0	0	0
U-232	49	10	8.35E-05	2.93E-07	76	1	0	2	0	0	0	21	0
U-233	49	2	1.89E-05	2.77E-07	0	1	0	5	1	2	0	91	0
U-234	49	2	1.85E-05	2.83E-07	0	1	0	5	1	2	0	91	0
U-235 +D	49	2	2.41E-05	3.38E-07	17	1	0	4	0	2	0	76	0
U-236	49	2	1.75E-05	2.79E-07	0	1	0	5	1	2	0	91	0
U-238 +D	49	2	2.84E-05	4.42E-07	3	0	0	5	1	2	0	89	0
DU (+Rn)	49	2	3.04E-05	4.27E-07	3	0	0	5	1	2	0	89	0
DU (-Rn)	49	2	3.04E-05	4.27E-07	3	0	0	5	1	2	0	89	0
U-Sep (+Rn)	49	4	4.81E-05	3.61E-07	2	1	0	5	1	2	0	89	0
U-Sep (-Rn)	49	4	4.81E-05	3.61E-07	2	1	0	5	1	2	0	89	0
U-Series (+Rn)	49	138	1.17E-03	2.83E-07	15	0	74	6	0	0	0	4	0
U-Series (-Rn)	49	22	3.02E-04	4.59E-07	59	0	0	22	2	2	0	14	0
Zn-65	0	5	1.60E-04	1.14E-06	37	0	0	9	48	6	0	0	0
Mean				7.12E-07									
Median				6.02E-07									
Mode				#N/A									
Geometric Mean				4.70E-07									
Std. Dev.				6.12E-07									
Min.				3.87E-08									
Max.				2.96E-06									

* Modeling --- RESRAD Version 5.19 (August 1994)
 Assumptions: --- Generic site characteristics (10,000 m² area by 2 m deep contaminated zone; 2 m thick unsaturated zone)
 --- EPA's new 30-yr slope factors
 --- Updated base case Kd values.
 --- 30-yr exposure duration
 --- 1,000-yr time horizon for dose/risk calculations

TABLE 3-2. RESRAD (Ver. 5.19) RISK FACTORS AND DOSE FACTORS FOR THE GENERIC SITE, ASSUMING COMMERCIAL/INDUSTRIAL EXPOSURE*

Nuclide	Dose Rate				Percent Lifetime Risk per Pathway				
	Max	(mrem/yr)	Lifetime Risk	Lifetime Risk	External	Inhalation	Radon	Soil	Water
	Year	per pCi/g	per pCi/g	per mrem					
Ac-227 +D	0	1	7.86E-06	1.76E-07	95	5	0	0	0
Ag-108m +D	0	2	4.60E-05	7.17E-07	100	0	0	0	0
Ag-110m +D	0	4	8.84E-05	7.92E-07	100	0	0	0	0
Am-241	0	0.1	1.51E-07	5.65E-08	26	67	0	8	0
Am-243 +D	0	0.3	2.30E-06	2.66E-07	95	4	0	1	0
Bi-207	0	2	4.51E-05	8.01E-07	100	0	0	0	0
C-14	0	0.1	8.70E-09	4.81E-09	0	99	0	1	0
Cd-109	0	0.002	5.84E-09	8.49E-08	88	2	0	11	0
Ce-144 +D	0	0.1	1.31E-06	7.19E-07	100	0	0	0	0
Cl-36	6	0.1	3.40E-06	1.11E-06	0	0	0	0	100
Cm-243	0	0.1	1.50E-06	3.59E-07	93	6	0	1	0
Cm-244	0	0.04	9.34E-08	7.43E-08	0	89	0	11	0
Cm-248	0	0.3	4.31E-07	4.91E-08	0	89	0	11	0
Co-57	0	0.1	1.72E-06	5.90E-07	100	0	0	0	0
Co-60	0	4	7.91E-05	6.04E-07	100	0	0	0	0
Cs-134	0	2	4.65E-05	7.44E-07	100	0	0	0	0
Cs-135	1,000	0.001	3.43E-08	9.04E-07	0	0	0	1	99
Cs-137 +D	0	1	1.72E-05	5.94E-07	100	0	0	0	0
Eu-152	0	2	3.35E-05	5.85E-07	100	0	0	0	0
Eu-154	0	2	3.81E-05	6.01E-07	100	0	0	0	0
Eu-155	0	0.03	5.12E-07	5.34E-07	100	0	0	0	0
Fe-55	0	0.000002	3.05E-11	4.50E-07	0	11	0	89	0
Gd-153	0	0.04	6.05E-07	4.91E-07	100	0	0	0	0
H-3	1	0.02	7.87E-07	1.73E-06	0	2	0	0	98
I-129	4	13	4.20E-04	1.04E-06	0	0	0	0	100
K-40	0	0.2	5.12E-06	7.53E-07	100	0	0	0	0
Mn-54	0	1	2.65E-05	7.77E-07	100	0	0	0	0
Na-22	0	3	6.51E-05	7.30E-07	100	0	0	0	0
Nb-94	0	3	5.12E-05	6.24E-07	100	0	0	0	0
Ni-59	488	0.0001	3.28E-09	1.44E-06	0	0	0	0	100
Ni-63	488	0.00001	3.52E-10	1.69E-06	0	0	0	0	100
Np-237 +D	17	44	7.19E-05	5.49E-08	3	0	0	0	97
Pa-231	377	10	1.07E-05	3.66E-08	41	3	0	0	56
Pb-210 +D	0	0.02	7.77E-08	1.65E-07	2	24	0	75	0
Pm-147	0	0.00001	2.27E-10	8.16E-07	23	18	0	59	0
Pu-238	0	0.1	1.20E-07	5.61E-08	0	90	0	10	0
Pu-239	0	0.1	1.15E-07	4.89E-08	0	90	0	10	0
Pu-240	0	0.1	1.16E-07	4.89E-08	0	90	0	10	0
Pu-241	61	0.003	4.45E-09	5.55E-08	25	66	0	8	0
Pu-242	0	0.1	1.12E-07	5.01E-08	0	90	0	10	0
Pu-244 +D	0	1	2.99E-05	1.97E-06	100	0	0	0	0
Ra-226 (+Rn)	0	47	3.27E-04	2.34E-07	17	0	83	0	0
Ra-226 (-Rn)	0	3	5.58E-05	6.23E-07	100	0	0	0	0
Ra-228 +D	3	3	4.73E-05	6.15E-07	98	1	1	0	0

TABLE 3-2. RESRAD (Ver. 5.19) RISK FACTORS AND DOSE FACTORS FOR THE GENERIC SITE, ASSUMING COMMERCIAL/INDUSTRIAL EXPOSURE*

Nuclide	Dose Rate				Percent Lifetime Risk per Pathway				
	Max	Lifetime Risk	Lifetime Risk	per mrem	External	Inhalation	Radon	Soil	Water
	Year	(mrem/yr)	per pCi/g						
Ru-106 +D	0	0.3	6.05E-06	7.71E-07	100	0	0	0	0
Sb-125 +D	0	1	1.12E-05	6.85E-07	100	0	0	0	0
Sm-147	780	0.05	2.17E-07	1.52E-07	0	7	0	0	93
Sm-151	0	0.000005	6.19E-11	4.35E-07	4	26	0	70	0
Sr-90 +D	49	0.2	2.29E-06	4.70E-07	0	0	0	0	100
Tc-99	1	0.2	1.36E-05	1.86E-06	0	0	0	0	100
Th-228 +D	0	3	5.17E-05	6.61E-07	99	1	0	0	0
Th-229 +D	0	1	6.96E-06	3.28E-07	94	6	0	0	0
Th-230 (+Rn)	683	8	5.93E-05	2.41E-07	21	0	79	0	0
Th-230 (-Rn)	1,000	1	1.64E-05	5.95E-07	99	1	0	0	0
Th-232 (+Rn)	66	4	7.93E-05	5.89E-07	98	1	1	0	0
Th-Sep (+Rn)	681	13	1.36E-04	3.61E-07	64	0	35	0	0
Th-Sep (-Rn)	1,000	5	9.10E-05	5.95E-07	99	1	0	0	0
Th-Series (+Rn)	0	5	7.98E-05	5.89E-07	98	1	1	0	0
Th-Series (-Rn)	0	4	7.88E-05	5.95E-07	99	1	0	0	0
Tl-204	0	0.0004	7.60E-09	5.88E-07	98	0	0	2	0
U-232	49	4	2.71E-05	2.19E-07	72	1	0	0	27
U-233	49	1	7.21E-06	2.31E-07	0	1	0	0	99
U-234	49	1	7.09E-06	2.36E-07	0	1	0	0	99
U-235 +D	49	1	8.93E-06	2.80E-07	14	0	0	0	85
U-236	49	1	6.71E-06	2.32E-07	0	1	0	0	99
U-238 +D	49	1	1.08E-05	3.68E-07	3	0	0	0	97
DU (+Rn)	49	1	1.16E-05	3.56E-07	3	0	0	0	97
DU (-Rn)	49	1	1.16E-05	3.56E-07	3	0	0	0	97
U-Sep (+Rn)	49	2	1.83E-05	3.01E-07	2	0	0	0	98
U-Sep (-Rn)	49	2	1.83E-05	3.01E-07	2	0	0	0	98
U-Series (+Rn)	49	48	3.39E-04	2.37E-07	16	0	78	0	5
U-Series (-Rn)	49	5	7.38E-05	4.81E-07	75	0	0	0	24
Zn-65	0	1	1.86E-05	8.65E-07	100	0	0	0	0
				Mean	5.28E-07				
				Median	4.86E-07				
				Mode	#N/A				
				Geometric Mean	3.46E-07				
				Std. Dev.	4.29E-07				
				Min.	4.81E-09				
				Max.	1.97E-06				

* Modeling --- RESRAD Version 5.19 (August 1994)
 Assumptions: --- Generic site characteristics (10,000 m² area by 2 m deep contaminated zone; 2 m thick unsaturated zone)
 --- EPA's new 30-yr slope factors
 --- Updated base case Kd values.
 --- 25-yr exposure duration
 --- 1,000-yr time horizon for dose/risk calculations

TABLE 3-3. RESRAD (Ver. 5.19) RISK FACTORS AND DOSE FACTORS FOR THE GENERIC SITE, ASSUMING SUBURBAN EXPOSURE*

Nuclide	Dose Rate				Percent Lifetime Risk per Pathway					
	Max	(mrem/yr)	Lifetime Risk	Lifetime Risk	External	Inhalation	Radon	Plant	Soil	Water
	Year	per pCi/g	per pCi/g	per mrem						
Ac-227 +D	0	3	2.60E-05	3.28E-07	92	0	0	7	1	0
Ag-108m +D	0	6	1.50E-04	8.64E-07	99	0	0	1	0	0
Ag-110m +D	0	10	2.87E-04	9.53E-07	99	0	0	1	0	0
Am-241	0	0.2	4.43E-07	7.33E-08	28	1	0	51	21	0
Am-243 +D	0	1	7.38E-06	3.35E-07	96	0	0	3	1	0
Bi-207	0	5	1.46E-04	9.64E-07	99	0	0	1	0	0
C-14	0	1	2.24E-05	8.02E-07	0	0	0	100	0	0
Cd-109	0	0.1	3.47E-06	1.10E-06	0	0	0	99	0	0
Ce-144 +D	0	0.2	4.33E-06	8.80E-07	97	0	0	2	0	0
Cl-36	0	2	6.58E-05	1.33E-06	0	0	0	100	0	0
Cm-243	0	0.3	4.59E-06	5.53E-07	98	0	0	0	2	0
Cm-244	0	0.1	2.60E-07	9.51E-08	0	1	0	70	29	0
Cm-248	0	1	1.30E-06	6.87E-08	0	1	0	70	29	0
Co-57	0	0.3	5.67E-06	7.16E-07	98	0	0	2	0	0
Co-60	0	12	2.57E-04	7.28E-07	99	0	0	1	0	0
Cs-134	0	6	1.53E-04	8.96E-07	98	0	0	2	0	0
Cs-135	0	0.01	2.56E-07	1.08E-06	0	0	0	99	1	0
Cs-137 +D	0	3	5.73E-05	7.20E-07	97	0	0	3	0	0
Eu-152	0	5	1.08E-04	7.02E-07	100	0	0	0	0	0
Eu-154	0	6	1.23E-04	7.22E-07	100	0	0	0	0	0
Eu-155	0	0.1	1.66E-06	6.43E-07	100	0	0	0	0	0
Fe-55	0	0.00002	7.14E-10	9.54E-07	0	0	0	71	29	0
Gd-153	0	0.1	1.96E-06	5.91E-07	100	0	0	0	0	0
H-3	1	0.04	2.26E-06	2.07E-06	0	1	0	7	0	92
I-129	4	28	1.03E-03	1.25E-06	0	0	0	2	0	98
K-40	0	1	2.19E-05	9.55E-07	75	0	0	25	0	0
Mn-54	0	3	8.64E-05	9.36E-07	99	0	0	1	0	0
Na-22	0	8	2.11E-04	8.77E-07	100	0	0	0	0	0
Nb-94	0	7	1.65E-04	7.50E-07	100	0	0	0	0	0
Ni-59	0	0.0003	1.45E-08	1.73E-06	0	0	0	99	1	0
Ni-63	0	0.001	4.56E-08	2.04E-06	0	0	0	99	1	0
Np-237 +D	17	90	1.80E-04	6.64E-08	4	0	0	3	0	93
Pa-231	370	21	3.04E-05	4.80E-08	47	0	0	6	1	46
Pb-210 +D	0	2	1.11E-05	1.94E-07	0	0	0	96	4	0
Pm-147	0	0.0001	7.37E-09	2.93E-06	2	0	0	84	14	0
Pu-238	0	0.2	3.08E-07	6.82E-08	0	1	0	70	29	0
Pu-239	0	0.2	2.96E-07	5.81E-08	0	1	0	70	29	0
Pu-240	0	0.2	2.96E-07	5.80E-08	0	1	0	70	29	0
Pu-241	70	0.01	1.30E-08	7.31E-08	28	1	0	50	21	0
Pu-242	0	0.2	2.84E-07	5.84E-08	0	1	0	70	29	0
Pu-244 +D	0	1	9.63E-05	2.44E-06	100	0	0	0	0	0
Ra-226 (+Rn)	0	128	1.08E-03	2.82E-07	17	0	82	1	0	0
Ra-226 (-Rn)	64	10	1.96E-04	6.29E-07	88	0	0	12	0	0
Ra-228 +D	3	8	1.60E-04	6.89E-07	93	0	1	6	0	0

TABLE 3-3. RESRAD (Ver. 5.19) RISK FACTORS AND DOSE FACTORS FOR THE GENERIC SITE, ASSUMING SUBURBAN EXPOSURE*

Nuclide	Dose Rate				Percent Lifetime Risk per Pathway					
	Max	Lifetime Risk	Lifetime Risk	per mrem	External	Inhalation	Radon	Plant	Soil	Water
	Year	(mrem/yr)	per pCi/g							
Ru-106 +D	0	1	2.13E-05	9.85E-07	92	0	0	8	0	0
Sb-125 +D	0	1	3.61E-05	8.23E-07	100	0	0	0	0	0
Sm-147	781	0.1	5.44E-07	1.94E-07	0	0	0	10	1	89
Sm-151	0	0.00003	2.34E-09	2.83E-06	0	0	0	85	14	0
Sr-90 +D	0	1	1.95E-05	5.64E-07	0	0	0	100	0	0
Tc-99	1	1	4.08E-05	2.23E-06	0	0	0	20	0	80
Th-228 +D	0	7	1.66E-04	7.97E-07	100	0	0	0	0	0
Th-229 +D	0	1	2.18E-05	5.54E-07	96	0	0	2	1	0
Th-230 (+Rn)	688	23	1.99E-04	2.90E-07	20	0	77	3	0	0
Th-230 (-Rn)	1,000	3	6.05E-05	6.18E-07	87	0	0	13	0	0
Th-232 (+Rn)	67	13	2.68E-04	6.96E-07	94	0	1	5	0	0
Th-Sep (+Rn)	683	35	4.59E-04	4.33E-07	62	0	34	4	0	0
Th-Sep (-Rn)	1,000	15	3.12E-04	6.85E-07	93	0	0	7	0	0
Th-Series (+Rn)	0	13	2.68E-04	6.93E-07	94	0	1	5	0	0
Th-Series (-Rn)	0	13	2.65E-04	7.01E-07	95	0	0	5	0	0
Tl-204	0	0.02	5.84E-07	1.04E-06	4	0	0	96	0	0
U-232	49	9	8.13E-05	3.01E-07	78	0	0	1	0	21
U-233	49	2	1.77E-05	2.78E-07	0	0	0	3	0	97
U-234	49	2	1.74E-05	2.85E-07	0	0	0	3	0	97
U-235 +D	49	2	2.29E-05	3.42E-07	18	0	0	2	0	80
U-236	49	2	1.64E-05	2.80E-07	0	0	0	3	0	97
U-238 +D	49	2	2.67E-05	4.46E-07	3	0	0	2	0	94
DU (+Rn)	49	2	2.87E-05	4.31E-07	3	0	0	2	0	94
DU (-Rn)	49	2	2.87E-05	4.31E-07	3	0	0	2	0	94
U-Sep (+Rn)	49	4	4.52E-05	3.64E-07	2	0	0	3	0	95
U-Sep (-Rn)	49	4	4.52E-05	3.64E-07	2	0	0	3	0	95
U-Series (+Rn)	49	132	1.12E-03	2.84E-07	16	0	78	2	0	4
U-Series (-Rn)	49	15	2.50E-04	5.42E-07	72	0	0	11	0	17
Zn-65	0	2	6.56E-05	1.05E-06	91	0	0	8	0	0
Mean				7.33E-07						
Median				6.64E-07						
Mode				#N/A						
Geometric Mean				4.93E-07						
Std. Dev.				6.28E-07						
Min.				4.80E-08						
Max.				2.93E-06						

* Modeling --- RESRAD Version 5.19 (August 1994)
 Assumptions: --- Generic site characteristics (10,000 m² area by 2 m deep contaminated zone; 2 m thick unsaturated zone)
 --- EPA's new 30-yr slope factors
 --- Updated base case Kd values.
 --- 30-yr exposure duration
 --- 1,000-yr time horizon for dose/risk calculations

TABLE 3-4. PRESTO-CPG RISK FACTORS AND DOSE FACTORS FOR THE GENERIC SITE, ASSUMING RURAL RESIDENTIAL EXPOSURE*

Nuclide	Dose Rate				Percent Lifetime Risk per Pathway								
	Max	(mrem/yr)	Lifetime Risk	Lifetime Risk	External	Inhalation	Radon	Plant	Meat	Milk	Soil	Water	Fish
	Year	per pCi/g	per pCi/g	per mrem									
Ac-227 +D	1	6	3.04E-05	1.81E-07	79	4	0	14	0	0	3	0	0
Ag-108m +D	1	4	1.66E-04	8.33E-07	91	0	0	2	1	7	0	0	0
Ag-110m +D	1	3	1.08E-04	8.77E-07	93	0	0	2	0	5	0	0	0
Am-241	1	1	1.35E-06	6.44E-08	9	24	0	41	0	0	25	0	0
Am-243 +D	1	1	8.25E-06	2.60E-07	85	4	0	7	0	0	4	0	0
Bi-207	1	3	1.43E-04	9.15E-07	98	0	0	1	0	0	0	0	0
C-14	839	1	2.90E-05	8.46E-07	0	0	0	0	0	0	0	3	97
Cd-109	1	0.2	5.57E-06	1.00E-06	0	0	0	86	3	11	0	0	0
Ce-144 +D	1	0.05	1.84E-06	8.21E-07	92	0	0	6	0	0	2	0	0
Cl-36	1	35	1.39E-03	1.32E-06	0	0	0	12	60	29	0	0	0
Cm-243	1	1	5.00E-06	7.48E-07	86	6	0	10	0	0	6	0	0
Cm-244	1	0.3	9.81E-07	9.37E-08	0	26	0	46	0	0	28	0	0
Cm-248	806	2	5.02E-06	6.67E-08	0	24	0	48	0	0	28	0	0
Co-57	1	0.1	2.44E-06	6.67E-07	86	0	0	5	8	1	0	0	0
Co-60	1	7	2.34E-04	6.97E-07	94	0	0	2	3	1	0	0	0
Cs-134	1	3	1.32E-04	9.30E-07	84	0	0	4	9	4	0	0	0
Cs-135	262	0.1	2.88E-06	1.08E-06	0	0	0	22	56	22	0	0	1
Cs-137 +D	1	2	7.27E-05	6.90E-07	73	0	0	6	15	6	0	0	0
Eu-152	1	3	1.00E-04	6.67E-07	100	0	0	0	0	0	0	0	0
Eu-154	1	4	1.10E-04	6.79E-07	100	0	0	0	0	0	0	0	0
Eu-155	1	0.05	1.42E-06	6.06E-07	98	0	0	1	0	0	0	0	0
Fe-55	1	0.0001	3.34E-09	1.03E-06	0	0	0	30	51	1	18	0	0
Gd-153	1	0.03	6.77E-07	5.58E-07	99	0	0	1	0	0	0	0	0
H-3	2	0.0001	7.91E-09	2.06E-06	0	0	0	38	0	0	0	62	0
I-129	814	29	1.08E-03	1.24E-06	0	0	0	10	13	27	0	49	1
K-40	112	2	6.42E-05	9.42E-07	25	0	0	20	36	19	0	0	0
Mn-54	1	1	3.91E-05	9.05E-07	97	0	0	3	0	0	0	0	0
Na-22	1	5	1.74E-04	8.85E-07	92	0	0	1	4	3	0	0	0
Nb-94	1	5	1.60E-04	7.02E-07	100	0	0	0	0	0	0	0	0
Ni-59	1	0.003	1.41E-07	1.75E-06	0	0	0	25	11	64	0	0	0
Ni-63	1	0.01	4.28E-07	1.96E-06	0	0	0	26	11	63	0	0	0
Np-237 +D	839	101	1.91E-04	6.35E-08	1	0	0	16	3	0	0	79	1
Pa-231	806	14	4.97E-06	2.02E-08	14	6	0	46	20	0	3	10	0
Pb-210 +D	1	5	3.04E-05	1.90E-07	0	0	0	85	6	3	5	0	0
Pm-147	1	0.0002	1.72E-08	2.55E-06	1	1	0	70	12	0	17	0	0
Pu-238	1	1	1.21E-06	6.67E-08	0	29	0	44	0	0	27	0	0
Pu-239	44	1	1.20E-06	5.93E-08	0	28	0	44	0	0	27	0	0
Pu-240	1	1	1.20E-06	5.93E-08	0	28	0	44	0	0	27	0	0
Pu-241	1	0.01	9.85E-09	4.39E-06	0	15	0	53	0	0	31	0	0
Pu-242	428	1	1.13E-06	5.83E-08	0	28	0	44	0	0	26	0	1
Pu-244 +D	1	1	9.73E-05	2.00E-06	99	0	0	1	0	0	0	0	0
Ra-226 (+Rn)		NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Ra-226 (-Rn)	1	9	2.28E-04	6.74E-07	79	0	0	17	1	2	0	0	0
Ra-228 +D	1	6	1.12E-04	6.21E-07	68	0	0	26	2	3	0	0	0

TABLE 3-4. PRESTO-CPG RISK FACTORS AND DOSE FACTORS FOR THE GENERIC SITE, ASSUMING RURAL RESIDENTIAL EXPOSURE*

Nuclide	Dose Rate				Percent Lifetime Risk per Pathway								
	Max	(mrem/yr)	Lifetime Risk	Lifetime Risk									
	Year	per pCi/g	per pCi/g	per mrem	External	Inhalation	Radon	Plant	Meat	Milk	Soil	Water	Fish
Ru-106 +D	1	0.3	1.27E-05	9.65E-07	79	0	0	18	3	0	0	0	0
Sb-125 +D	1	1	2.71E-05	7.50E-07	99	0	0	0	0	0	0	0	0
Sm-147	187	0.1	3.36E-07	1.33E-07	0	23	0	54	10	0	13	0	0
Sm-151	1	0.0001	7.13E-09	2.00E-06	0	1	0	70	12	0	17	0	0
Sr-90 +D	1	5	9.11E-05	5.67E-07	0	0	0	52	35	13	0	0	0
Tc-99	2	0.5	3.30E-05	2.21E-06	0	0	0	88	1	11	0	0	0
Th-228 +D	1	3	1.12E-04	7.19E-07	98	1	0	1	0	0	0	0	0
Th-229 +D	1	2	2.35E-05	3.65E-07	85	6	0	6	0	0	3	0	0
Th-230	368	0.2	4.58E-07	7.78E-08	0	57	0	26	0	0	16	0	0
Th-232	806	1	4.69E-07	1.64E-08	0	62	0	23	0	0	14	0	1
Th-Sep (+Rn)		NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Th-Sep (-Rn)		NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Th-Series (+Rn)		NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Th-Series (-Rn)		NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Tl-204	1	0.1	1.85E-06	1.00E-06	1	0	0	65	11	23	0	0	0
U-232	1	0.5	1.70E-06	1.08E-07	0	51	0	36	1	3	9	0	0
U-233	902	2	2.14E-05	3.00E-07	0	0	0	16	1	3	0	79	0
U-234	902	3	2.14E-05	2.86E-07	0	0	0	16	1	3	0	79	0
U-235 +D	902	2	2.45E-05	3.33E-07	3	0	0	15	1	3	0	77	0
U-236	902	2	2.02E-05	2.83E-07	0	0	0	16	1	3	0	79	0
U-238 +D	902	2	3.26E-05	4.50E-07	1	0	0	16	1	3	0	80	0
DU (+Rn)		NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
DU (-Rn)		NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
U-Sep (+Rn)		NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
U-Sep (-Rn)		NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
U-Series (+Rn)		NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
U-Series (-Rn)		NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Zn-65	1	2	7.19E-05	1.10E-06	29	0	0	7	56	8	0	0	0
			Mean	7.95E-07									
			Median	6.90E-07									
			Mode	6.67E-08									
			Geometric Mean	4.59E-07									
			Std. Dev.	7.65E-07									
			Min.	1.64E-08									
			Max.	4.39E-06									

* Modeling --- PRESTO-CPG, SC&A Modifications, August, 1994

Assumptions: --- Generic site characteristics (10,000 m² area by 2 m deep contaminated zone; 2 m thick unsaturated zone)

--- EPA's new 30-yr slope factors

--- Updated base case K_d values

--- 30-yr exposure duration

--- 1,000-yr time horizon for dose/risk calculations

NC Not Calculated

Table 3-5. PRESTO-CPG RISK FACTORS AND DOSE FACTORS FOR THE GENERIC SITE, ASSUMING COMMERCIAL/INDUSTRIAL EXPOSURE*

Nuclide	Max Year	Dose Rate	Lifetime Risk	Lifetime Risk	Percent Lifetime Risk Per Pathway				
		(mrem/yr) per pCi/g	per pCi/g	per mrem	External	Inhalation	Radon	Soil	Water
Ac-227 +D	1	1	7.94E-06	1.81E-07	92	5	0	3	0
Ag-108m +D	1	2	4.50E-05	1.00E-06	100	0	0	0	0
Ag-110m +D	1	1	3.10E-05	1.11E-06	100	0	0	0	0
Am-241	1	0.1	2.22E-07	5.39E-08	17	45	0	38	0
Am-243 +D	1	0.3	2.39E-06	2.93E-07	92	4	0	4	0
Bi-207	1	1	4.40E-05	1.13E-06	100	0	0	0	0
C-14	491	0.02	3.20E-07	7.11E-07	0	0	0	0	100
Cd-109	1	0.001	5.36E-09	1.80E-07	52	1	0	47	0
Ce-144 +D	1	0.02	5.28E-07	1.03E-06	98	0	0	2	0
Cl-36	469	0.1	1.90E-06	1.09E-06	0	0	0	0	100
Cm-243	1	0.1	1.47E-06	3.62E-07	89	6	0	5	0
Cm-244	1	0.1	1.49E-07	7.63E-08	0	55	0	45	0
Cm-248	1	0.5	7.60E-07	5.39E-08	0	53	0	47	0
Co-57	1	0.03	6.60E-07	8.46E-07	100	0	0	0	0
Co-60	1	3	6.90E-05	8.85E-07	100	0	0	0	0
Cs-134	1	1	3.40E-05	1.13E-06	100	0	0	0	0
Cs-135	1	0.0001	2.42E-09	8.99E-07	0	1	0	99	0
Cs-137 +D	1	1	1.60E-05	8.21E-07	100	0	0	0	0
Eu-152	1	1	3.10E-05	8.61E-07	100	0	0	0	0
Eu-154	1	1	3.50E-05	8.97E-07	100	0	0	0	0
Eu-155	1	0.02	4.31E-07	7.55E-07	100	0	0	0	0
Fe-55	1	0.00001	1.53E-10	8.02E-07	0	2	0	98	0
Gd-153	1	0.01	2.10E-07	7.15E-07	100	0	0	0	0
H-3	4	0.00003	1.50E-09	1.67E-06	0	0	0	0	100
I-129	466	6	2.00E-04	1.04E-06	0	0	0	0	100
K-40	117	0.2	4.96E-06	1.09E-06	99	0	0	0	1
Mn-54	1	0.4	1.20E-05	1.14E-06	100	0	0	0	0
Na-22	1	2	5.10E-05	1.06E-06	100	0	0	0	0
Nb-94	1	2	4.90E-05	8.60E-07	100	0	0	0	0
Ni-59	1,000	0.00002	8.01E-10	1.43E-06	0	0	0	2	97
Ni-63	1	0.00001	3.36E-10	1.47E-06	0	2	0	98	0
Np-237 +D	491	30	4.94E-05	5.49E-08	1	0	0	0	99
Pa-231	743	1	3.84E-07	1.06E-08	22	10	0	3	65
Pb-210 +D	1	0.1	4.09E-07	1.61E-07	0	4	0	95	0
Pm-147	1	0.00001	7.92E-10	1.83E-06	5	4	0	91	0
Pu-238	1	0.1	1.90E-07	5.60E-08	0	58	0	42	0
Pu-239	1	0.1	1.90E-07	4.99E-08	0	58	0	42	0
Pu-240	1	0.1	1.90E-07	4.98E-08	0	58	0	42	0
Pu-241	1	0.002	1.25E-09	2.17E-08	0	38	0	62	0
Pu-242	1	0.1	1.76E-07	4.89E-08	0	57	0	43	0
Pu-244 +D	1	0.4	3.02E-05	2.40E-06	99	0	0	0	0
Ra-226 (+Rn)	NC	NC	NC	NC	NC	NC	NC	NC	NC
Ra-226 (-Rn)	1	2	5.52E-05	8.69E-07	100	0	0	0	0
Ra-228 +D	1	1	2.31E-05	7.91E-07	100	0	0	0	0

Table 3-5. PRESTO-CPG RISK FACTORS AND DOSE FACTORS FOR THE GENERIC SITE, ASSUMING COMMERCIAL/INDUSTRIAL EXPOSURE*

Nuclide	Max Year	Dose Rate	Lifetime Risk	Lifetime Risk	Percent Lifetime Risk Per Pathway				
		(mrem/yr) per pCi/g	per pCi/g	per mrem	External	Inhalation	Radon	Soil	Water
Ru-106 +D	1	0.1	3.11E-06	1.13E-06	100	0	0	0	0
Sb-125 +D	1	0.3	8.40E-06	9.66E-07	100	0	0	0	0
Sm-147	1	0.01	3.60E-08	9.84E-08	0	69	0	31	0
Sm-151	1	0.00001	3.19E-10	1.27E-06	1	5	0	94	0
Sr-90 +D	1	0.002	2.43E-08	4.30E-07	0	1	0	99	0
Tc-99	460	0.1	3.60E-06	1.85E-06	0	0	0	0	100
Th-228 +D	1	1	3.55E-05	9.55E-07	99	1	0	0	0
Th-229 +D	1	1	6.83E-06	3.59E-07	91	6	0	3	0
Th-230	1	0.1	1.01E-07	6.39E-08	0	82	0	18	0
Th-232	1	0.3	1.08E-07	1.36E-08	0	85	0	15	0
Th-Sep (+Rn)	NC	NC	NC	NC	NC	NC	NC	NC	NC
Th-Sep (-Rn)	NC	NC	NC	NC	NC	NC	NC	NC	NC
Th-Series (+Rn)	NC	NC	NC	NC	NC	NC	NC	NC	NC
Th-Series (-Rn)	NC	NC	NC	NC	NC	NC	NC	NC	NC
Tl-204	1	0.0003	6.90E-09	8.41E-07	87	0	0	13	0
U-232	1	0.1	3.17E-07	9.42E-08	0	88	0	12	0
U-233	554	1	5.41E-06	2.50E-07	0	0	0	0	100
U-234	554	1	5.31E-06	2.35E-07	0	0	0	0	100
U-235 +D	554	1	6.06E-06	2.74E-07	4	0	0	0	96
U-236	554	1	5.01E-06	2.31E-07	0	0	0	0	100
U-238 +D	554	1	7.97E-06	3.67E-07	1	0	0	0	99
DU (+Rn)	NC	NC	NC	NC	NC	NC	NC	NC	NC
DU (-Rn)	NC	NC	NC	NC	NC	NC	NC	NC	NC
U-Sep (+Rn)	NC	NC	NC	NC	NC	NC	NC	NC	NC
U-Sep (-Rn)	NC	NC	NC	NC	NC	NC	NC	NC	NC
U-Series (+Rn)	NC	NC	NC	NC	NC	NC	NC	NC	NC
U-Series (-Rn)	NC	NC	NC	NC	NC	NC	NC	NC	NC
Zn-65	1	0.2	6.50E-06	1.27E-06	100	0	0	0	0
				Mean	7.00E-07				
				Median	8.02E-07				
				Mode	#N/A				
				Geometric Mean	3.91E-07				
				Std. Dev.	5.53E-07				
				Min.	1.06E-08				
				Max.	2.40E-06				

* Modeling --- PRESTO-CPG, SC&A Modifications, August, 1994
 Assumptions: --- Generic site characteristics (10,000 m² area by 2 m deep contaminated zone; 2 m thick unsaturated zone)
 --- EPA's new 30-yr slope factors
 --- Updated base case K_d values
 --- 25-yr exposure duration
 --- 1,000-yr time horizon for dose/risk calculations
 NC Not Calculated

TABLE 3-6. PRESTO-CPG RISK FACTORS AND DOSE FACTORS FOR THE GENERIC SITE, ASSUMING SUBURBAN EXPOSURE*

Nuclide	Dose Rate				Percent Lifetime Risk per Pathway					
	Max Year	(mrem/yr) per pCi/g	Lifetime Risk per pCi/g	Lifetime Risk per mrem	External	Inhalation	Radon	Plant	Soil	Water
	Ac-227 +D	1	3	2.67E-05	1.81E-07	90	0	0	6	4
Ag-108m +D	1	4	1.51E-04	8.33E-07	99	0	0	1	0	0
Ag-110m +D	1	3	1.01E-04	8.77E-07	99	0	0	1	0	0
Am-241	1	0.3	6.83E-07	6.44E-08	18	0	0	32	50	0
Am-243 +D	1	1	7.58E-06	2.60E-07	92	0	0	3	5	0
Bi-207	1	3	1.41E-04	9.15E-07	99	0	0	1	0	0
C-14	839	0.04	9.80E-07	8.46E-07	0	0	0	0	0	100
Cd-109	1	0.1	1.92E-06	1.00E-06	0	0	0	99	1	0
Ce-144 +D	1	0.05	1.78E-06	8.21E-07	96	0	0	2	2	0
Cl-36	1	2	6.50E-05	1.32E-06	0	0	0	100	0	0
Cm-243	1	0.3	5.00E-06	7.48E-07	86	0	0	4	6	0
Cm-244	1	0.2	4.52E-07	9.37E-08	0	0	0	40	60	0
Cm-248	1	1	2.35E-06	6.67E-08	0	0	0	40	60	0
Co-57	1	0.1	2.15E-06	6.67E-07	98	0	0	2	0	0
Co-60	1	7	2.22E-04	6.97E-07	99	0	0	1	0	0
Cs-134	1	3	1.12E-04	9.30E-07	98	0	0	2	0	0
Cs-135	1	0.01	2.60E-07	1.08E-06	0	0	0	96	4	0
Cs-137 +D	1	2	5.48E-05	6.90E-07	97	0	0	3	0	0
Eu-152	1	3	1.00E-04	6.67E-07	100	0	0	0	0	0
Eu-154	1	4	1.10E-04	6.79E-07	100	0	0	0	0	0
Eu-155	1	0.05	1.41E-06	6.06E-07	99	0	0	0	0	0
Fe-55	1	0.00003	9.90E-10	1.03E-06	0	0	0	39	61	0
Gd-153	1	0.03	6.73E-07	5.58E-07	100	0	0	0	0	0
H-3	2	0.0001	6.20E-09	2.06E-06	0	0	0	21	0	79
I-129	814	16	5.95E-04	1.24E-06	0	0	0	11	0	89
K-40	113	1	2.14E-05	9.42E-07	75	0	0	25	0	1
Mn-54	1	1	3.84E-05	9.05E-07	99	0	0	1	0	0
Na-22	1	4	1.60E-04	8.85E-07	100	0	0	0	0	0
Nb-94	1	5	1.60E-04	7.02E-07	100	0	0	0	0	0
Ni-59	806	0.0003	1.46E-08	1.75E-06	0	0	0	96	3	1
Ni-63	1	0.001	4.54E-08	1.96E-06	0	0	0	97	3	0
Np-237 +D	839	90	1.70E-04	6.35E-08	1	0	0	11	0	88
Pa-231	806	5	2.29E-06	2.02E-08	31	0	0	41	6	22
Pb-210 +D	1	2	1.16E-05	1.90E-07	0	0	0	86	14	0
Pm-147	1	0.0001	7.73E-09	2.55E-06	2	0	0	61	38	0
Pu-238	1	0.3	5.33E-07	6.67E-08	0	0	0	39	60	0
Pu-239	1	0.3	5.33E-07	5.93E-08	0	0	0	39	60	0
Pu-240	1	0.3	5.33E-07	5.93E-08	0	0	0	39	60	0
Pu-241	1	0.005	5.11E-09	4.39E-06	0	0	0	39	61	0
Pu-242	1	0.3	5.03E-07	5.83E-08	0	0	0	40	60	0
Pu-244 +D	1	1	9.66E-05	2.00E-06	99	0	0	0	0	0
Ra-226 (+Rn)		NC	NC	NC	NC	NC	NC	NC	NC	NC
Ra-226 (-Rn)	1	7	1.97E-04	6.74E-07	92	0	0	8	0	0
Ra-228 +D	1	4	8.85E-05	6.21E-07	86	0	0	14	1	0

TABLE 3-6. PRESTO-CPG RISK FACTORS AND DOSE FACTORS FOR THE GENERIC SITE, ASSUMING SUBURBAN EXPOSURE*

Nuclide	Dose Rate				Percent Lifetime Risk per Pathway					
	Max Year	(mrem/yr) per pCi/g	Lifetime Risk per pCi/g	Lifetime Risk per mrem	External	Inhalation	Radon	Plant	Soil	Water
Ru-106 +D	1	0.3	1.10E-05	9.65E-07	91	0	0	8	0	0
Sb-125 +D	1	1	2.71E-05	7.50E-07	100	0	0	0	0	0
Sm-147	1	0.02	1.18E-07	1.33E-07	0	1	0	61	38	0
Sm-151	1	0.00004	3.21E-09	2.00E-06	0	0	0	62	37	0
Sr-90 +D	1	1	1.91E-05	5.67E-07	0	0	0	99	1	0
Tc-99	2	0.2	1.21E-05	2.21E-06	0	0	0	99	0	1
Th-228 +D	1	3	1.11E-04	7.19E-07	99	0	0	0	0	0
Th-229 +D	1	1	2.14E-05	3.65E-07	94	0	0	2	4	0
Th-230	1	0.04	1.27E-07	7.78E-08	1	2	0	39	59	0
Th-232	1	0.2	1.09E-07	1.64E-08	1	2	0	39	59	0
Th-Sep (+Rn)		NC	NC	NC	NC	NC	NC	NC	NC	NC
Th-Sep (-Rn)		NC	NC	NC	NC	NC	NC	NC	NC	NC
Th-Series (+Rn)		NC	NC	NC	NC	NC	NC	NC	NC	NC
Th-Series (-Rn)		NC	NC	NC	NC	NC	NC	NC	NC	NC
Tl-204	1	0.02	4.93E-07	1.00E-06	4	0	0	95	1	0
U-232	104	0.1	4.18E-07	1.08E-07	0	1	0	29	13	57
U-233	902	2	1.91E-05	3.00E-07	0	0	0	11	0	89
U-234	902	2	1.91E-05	2.86E-07	0	0	0	11	0	89
U-235 +D	902	2	2.21E-05	3.33E-07	4	0	0	10	0	86
U-236	902	2	1.80E-05	2.83E-07	0	0	0	11	0	89
U-238 +D	902	2	2.93E-05	4.50E-07	1	0	0	11	0	89
DU (+Rn)		NC	NC	NC	NC	NC	NC	NC	NC	NC
DU (-Rn)		NC	NC	NC	NC	NC	NC	NC	NC	NC
U-Sep (+Rn)		NC	NC	NC	NC	NC	NC	NC	NC	NC
U-Sep (-Rn)		NC	NC	NC	NC	NC	NC	NC	NC	NC
U-Series (+Rn)		NC	NC	NC	NC	NC	NC	NC	NC	NC
U-Series (-Rn)		NC	NC	NC	NC	NC	NC	NC	NC	NC
Zn-65	1	1	2.30E-05	1.10E-06	91	0	0	9	0	0
			Mean	7.95E-07						
			Median	6.90E-07						
			Mode	6.67E-08						
			Geometric Mean	4.59E-07						
			Std. Dev.	7.65E-07						
			Min.	1.64E-08						
			Max.	4.39E-06						

* Modeling --- PRESTO-CPG, SC&A Modifications, August, 1994

Assumptions: --- Generic site characteristics (10,000 m² area by 2 m deep contaminated zone; 2 m thick unsaturated zone)

--- EPA's new 30-yr slope factors

--- Updated base case K_d values

--- 30-yr exposure duration

--- 1,000-yr time horizon for dose/risk calculations

NC Not Calculated

TABLE 3-7. RAGS/HHEM PART B RISK FACTORS AND DOSE FACTORS FOR THE GENERIC SITE, ASSUMING RURAL RESIDENTIAL EXPOSURE*

Nuclide	Max Year	Dose Rate			Percent of Lifetime Risk Per Pathway								
		(mrem/yr)	Lifetime Risk per pCi/g	Lifetime Risk per mrem	External	Inhalation	Radon	Plant	Meat	Milk	Soil	Water	Fish
		per pCi/g	per pCi/g	per mrem									
Ac-227 +D	NA	11	3.85E-05	1.15E-07	63	3	0	11	0	0	3	19	0
Ag-108m +D	NA	4	1.60E-04	1.26E-06	92	0	0	2	0	5	0	0	0
Ag-110m +D	NA	7	2.94E-04	1.35E-06	94	0	0	2	0	4	0	0	0
Am-241	NA	1	1.66E-06	6.27E-08	7	20	0	33	1	0	21	18	0
Am-243 +D	NA	1	8.57E-06	2.29E-07	82	4	0	7	0	0	4	4	0
Bi-207	NA	4	1.47E-04	1.39E-06	98	0	0	1	0	0	0	0	0
C-14	NA	4	9.19E-05	8.42E-07	0	0	0	22	43	21	0	1	13
Cd-109	NA	0.3	1.02E-05	1.13E-06	0	0	0	82	2	8	0	7	0
Ce-144 +D	NA	0.1	4.71E-06	1.33E-06	87	0	0	5	0	0	2	6	0
Cl-36	NA	27	1.06E-03	1.32E-06	0	0	0	15	59	25	0	0	0
Cm-243	NA	0.6	5.76E-06	3.17E-07	78	5	0	1	0	0	5	2	0
Cm-244	NA	0.4	1.13E-06	9.47E-08	0	23	0	40	0	0	25	10	0
Cm-248	NA	3	5.65E-06	6.81E-08	0	22	0	41	0	0	26	11	0
Co-57	NA	0.2	6.40E-06	1.08E-06	86	0	0	5	7	1	0	1	0
Co-60	NA	9	2.72E-04	1.07E-06	94	0	0	2	3	1	0	0	0
Cs-134	NA	5	1.83E-04	1.29E-06	84	0	0	4	9	3	0	0	0
Cs-135	NA	0.1	2.77E-06	1.08E-06	0	0	0	23	53	20	0	2	1
Cs-137 +D	NA	2	7.41E-05	1.03E-06	74	0	0	6	14	5	0	1	0
Eu-152	NA	4	1.07E-04	1.01E-06	100	0	0	0	0	0	0	0	0
Eu-154	NA	4	1.22E-04	1.04E-06	100	0	0	0	0	0	0	0	0
Eu-155	NA	0.1	1.68E-06	9.35E-07	96	0	0	1	1	0	0	2	0
Fe-55	NA	0.001	3.09E-08	1.06E-06	0	0	0	4	65	2	3	25	2
Gd-153	NA	0.1	1.97E-06	8.58E-07	97	0	0	1	0	0	0	1	0
H-3	NA	0.2	1.30E-05	2.05E-06	0	0	0	10	19	51	0	21	0
I-129	NA	62	2.31E-03	1.24E-06	0	0	0	1	9	61	0	29	0
K-40	NA	2	6.37E-05	1.17E-06	25	0	0	21	31	18	0	4	1
Mn-54	NA	2	8.77E-05	1.35E-06	97	0	0	3	0	0	0	0	0
Na-22	NA	6	2.37E-04	1.28E-06	90	0	0	1	4	4	0	0	0
Nb-94	NA	5	1.59E-04	1.05E-06	100	0	0	0	0	0	0	0	0
Ni-59	NA	0.003	1.39E-07	1.76E-06	0	0	0	26	10	60	0	4	0
Ni-63	NA	0.007	4.26E-07	1.99E-06	0	0	0	26	10	60	0	4	0
Np-237 +D	NA	63	1.33E-04	7.00E-08	9	0	0	8	4	0	0	78	1
Pa-231	NA	21	7.19E-06	1.13E-08	10	4	0	31	24	0	2	29	0
Pb-210 +D	NA	8	4.35E-05	1.93E-07	0	0	0	61	6	4	4	23	2
Pm-147	NA	0.0006	5.63E-08	3.10E-06	0	0	0	27	18	0	7	47	0
Pu-238	NA	1	2.22E-06	6.76E-08	0	16	0	24	1	0	15	44	0
Pu-239	NA	1	2.19E-06	5.92E-08	0	15	0	24	1	0	15	44	0
Pu-240	NA	1	2.19E-06	5.92E-08	0	15	0	24	1	0	15	44	0
Pu-241	NA	0.02	2.05E-08	3.46E-08	0	8	0	3	0	0	16	48	0
Pu-242	NA	1	2.08E-06	5.91E-08	0	15	0	24	1	0	15	44	0
Pu-244 +D	NA	2	9.79E-05	1.68E-06	98	0	0	1	0	0	0	1	0
Ra-226 (+Rn)	NA	196	1.86E-03	3.16E-07	9	0	88	2	0	0	0	0	0
Ra-226 (-Rn)	NA	9	2.25E-04	8.12E-07	78	0	0	17	1	2	0	1	0
Ra-228 +D	NA	7	1.46E-04	6.99E-07	59	0	13	22	2	2	0	1	0

TABLE 3-7. RAGS/HHEM PART B RISK FACTORS AND DOSE FACTORS FOR THE GENERIC SITE, ASSUMING RURAL RESIDENTIAL EXPOSURE*

Nuclide	Dose Rate				Percent of Lifetime Risk Per Pathway								
	Max Year	(mrem/yr) per pCi/g	Lifetime Risk per pCi/g	Lifetime Risk per mrem	External	Inhalation	Radon	Plant	Meat	Milk	Soil	Water	Fish
	Ru-106 +D	NA	1	2.80E-05	1.65E-06	71	0	0	16	3	0	0	10
Sb-125 +D	NA	1	3.56E-05	1.17E-06	98	0	0	0	0	0	0	1	0
Sm-147	NA	0.1	7.36E-07	1.78E-07	0	11	0	25	16	0	6	42	0
Sm-151	NA	0.0002	1.81E-08	2.73E-06	0	0	0	27	18	0	7	47	0
Sr-90 +D	NA	6	1.01E-04	5.67E-07	0	0	0	48	29	12	0	11	0
Tc-99	NA	1	6.89E-05	2.22E-06	0	0	0	43	0	12	0	44	0
Th-228 +D	NA	5	1.85E-04	1.24E-06	87	1	11	0	0	0	0	0	0
Th-229 +D	NA	2	2.41E-05	3.80E-07	83	6	0	5	0	0	3	2	0
Th-230	NA	0.2	5.03E-07	8.69E-08	0	52	0	24	1	0	15	8	0
Th-232	NA	1	2.01E-05	6.85E-07	0	1	98	1	0	0	0	0	0
Th-Sep (+Rn)	NA	6	2.06E-04	1.12E-06	79	1	19	1	0	0	0	0	0
Th-Sep (-Rn)	NA	6	1.66E-04	9.04E-07	97	1	0	1	0	0	0	0	0
Th-Series (+Rn)	NA	13	3.52E-04	9.07E-07	70	1	17	10	1	1	0	1	0
Th-Series (-Rn)	NA	13	2.93E-04	7.55E-07	85	1	0	12	1	1	0	1	0
Tl-204	NA	0.1	3.72E-06	1.07E-06	1	0	0	37	6	15	0	10	32
U-232	NA	7	2.10E-05	9.33E-08	0	4	0	3	1	11	1	80	0
U-233	NA	0.2	1.27E-05	2.25E-06	0	2	0	3	2	11	1	82	0
U-234	NA	1	1.27E-05	2.82E-07	0	2	0	3	2	11	1	82	0
U-235 +D	NA	2	2.06E-05	3.91E-07	34	1	0	2	1	7	0	54	0
U-236	NA	1	1.20E-05	2.78E-07	0	2	0	3	2	11	1	82	0
U-238 +D	NA	1	2.01E-05	4.53E-07	7	1	0	3	1	10	1	76	0
DU (+Rn)	NA	2	2.07E-05	4.48E-07	8	1	0	3	1	10	1	76	0
DU (-Rn)	NA	2	2.07E-05	4.48E-07	8	1	0	3	1	10	1	76	0
U-Sep (+Rn)	NA	3	3.38E-05	3.68E-07	5	1	0	3	1	10	1	78	0
U-Sep (-Rn)	NA	3	3.38E-05	3.68E-07	5	1	0	3	1	10	1	78	0
U-Series (+Rn)	NA	209	1.94E-03	3.10E-07	9	0	84	3	0	0	0	2	0
U-Series (-Rn)	NA	22	3.05E-04	4.70E-07	59	0	0	22	2	3	1	13	0
Zn-65	NA	4	1.76E-04	1.31E-06	34	0	0	8	52	6	0	0	0
				Mean	8.63E-07								
				Median	8.81E-07								
				Mode	4.48E-07								
				Geometric Mean	5.27E-07								
				Std. Dev.	6.79E-07								
				Min.	1.13E-08								
				Max.	3.10E-06								

* Modeling --- RAGS/HHEM Part B Equations, SC&A Modifications, August, 1994
 Assumptions: --- Generic site characteristics (10,000 m² area by 2 m deep contaminated zone; 2 m thick unsaturated zone)
 --- EPA's new 30-yr slope factors
 --- Updated base case K_d values
 --- 30-yr exposure duration
 --- 1,000-yr time horizon for dose/risk calculations

Table 3-8. RAGS/HHEM PART B RISK FACTORS AND DOSE FACTORS FOR THE GENERIC SITE, ASSUMING COMMERCIAL/INDUSTRIAL EXPOSURE*

Nuclide	Max Year	Dose Rate	Lifetime Risk	Lifetime Risk	Percent Lifetime Risk Per Pathway				
		(mrem/yr) per pCi/g	per pCi/g	per mrem	External	Inhalation	Radon	Soil	Water
Ac-227 +D	NA	5	1.30E-05	1.06E-07	58	3	0	2	34
Ag-108m +D	NA	1	4.60E-05	1.24E-06	100	0	0	0	0
Ag-110m +D	NA	3	8.64E-05	1.34E-06	100	0	0	0	0
Am-241	NA	0.3	5.25E-07	6.26E-08	7	20	0	16	34
Am-243 +D	NA	0.5	2.69E-06	2.27E-07	82	4	0	3	7
Bi-207	NA	1	4.54E-05	1.39E-06	99	0	0	0	1
C-14	NA	0.02	4.35E-07	8.42E-07	0	0	0	0	100
Cd-109	NA	0.02	4.43E-07	1.05E-06	1	0	0	1	97
Ce-144 +D	NA	0.04	1.48E-06	1.33E-06	86	0	0	1	11
Cl-36	NA	0.1	3.10E-06	1.32E-06	0	0	0	0	100
Cm-243	NA	0.2	1.77E-06	3.29E-07	80	5	0	4	4
Cm-244	NA	0.1	3.24E-07	9.44E-08	0	27	0	21	22
Cm-248	NA	1	1.62E-06	6.77E-08	0	25	0	22	22
Co-57	NA	0.1	1.75E-06	1.02E-06	98	0	0	0	2
Co-60	NA	3	8.05E-05	1.06E-06	99	0	0	0	1
Cs-134	NA	1	4.85E-05	1.33E-06	99	0	0	0	1
Cs-135	NA	0.002	4.12E-08	1.08E+06	0	0	0	6	86
Cs-137 +D	NA	1	1.74E-05	1.02E-06	98	0	0	0	1
Eu-152	NA	1	3.34E-05	1.01E+06	100	0	0	0	0
Eu-154	NA	1	3.82E-05	1.04E-06	100	0	0	0	0
Eu-155	NA	0.02	5.25E-07	9.36E-07	96	0	0	0	3
Fe-55	NA	0.0002	4.98E-09	1.05E-06	0	0	0	3	91
Gd-153	NA	0.03	6.15E-07	8.58E-07	97	0	0	0	2
H-3	NA	0.03	1.61E-06	2.05E-06	0	0	0	0	100
I-129	NA	13	3.94E-04	1.24E-06	0	0	0	0	100
K-40	NA	0.2	6.68E-06	1.23E-06	75	0	0	0	25
Mn-54	NA	1	2.67E-05	1.35E-06	100	0	0	0	0
Na-22	NA	2	6.73E-05	1.30E-06	99	0	0	0	1
Nb-94	NA	2	4.98E-05	1.05E-06	100	0	0	0	0
Ni-59	NA	0.00007	3.19E-09	1.73E-06	0	0	0	1	92
Ni-63	NA	0.0002	9.78E-09	1.99E-06	0	0	0	3	92
Np-237 +D	NA	39	6.55E-05	6.78E-08	6	0	0	0	94
Pa-231	NA	6	1.65E-06	1.19E-08	14	6	0	1	75
Pb-210 +D	NA	1.0	6.97E-06	1.93E-07	0	0	0	6	86
Pm-147	NA	0.0002	1.81E-08	3.10E-06	0	0	0	4	87
Pu-238	NA	1	8.90E-07	6.76E-08	0	13	0	9	66
Pu-239	NA	1	8.80E-07	5.92E-08	0	13	0	9	66
Pu-240	NA	1	8.80E-07	5.92E-08	0	13	0	9	66
Pu-241	NA	0.01	8.35E-09	3.52E-08	0	6	0	9	70
Pu-242	NA	1.0	8.36E-07	5.91E-08	0	13	0	9	66
Pu-244 +D	NA	1.0	3.08E-05	1.45E-06	97	0	0	0	2
Ra-226 (+Rn)	NA	70	1.69E-03	9.75E-07	3	0	97	NC	0
Ra-226 (-Rn)	NA	2	5.67E-05	1.02E-06	97	0	0	0	2
Ra-228 +D	NA	1	3.40E-05	1.09E-06	79	0	17	0	3

Table 3-8. RAGS/HHEM PART B RISK FACTORS AND DOSE FACTORS FOR THE GENERIC SITE, ASSUMING COMMERCIAL/INDUSTRIAL EXPOSURE*

Nuclide	Max Year	Dose Rate (mrem/yr) per pCi/g	Lifetime Risk per pCi/g	Lifetime Risk per mrem	Percent Lifetime Risk Per Pathway				
					External	Inhalation	Radon	Soil	Water
Ru-106 +D	NA	0.2	7.78E-06	1.56E-06	79	0	0	1	21
Sb-125 +D	NA	0.4	1.12E-05	1.17E-06	98	0	0	0	2
Sm-147	NA	0.05	2.36E-07	1.78E-07	0	11	0	11	78
Sm-151	NA	0.00009	5.82E-09	2.73E-06	0	0	0	13	87
Sr-90 +D	NA	0.5	6.64E-06	5.67E-07	0	0	0	1	99
Tc-99	NA	0.3	1.81E-05	2.22E-06	0	0	0	0	100
Th-228 +D	NA	2	5.76E-05	1.24E-06	88	1	10	1	0
Th-229 +D	NA	1	7.46E-06	3.82E-07	84	6	0	7	3
Th-230	NA	0.1	1.52E-07	8.55E-08	0	55	0	29	15
Th-232	NA	0.4	6.05E-06	6.70E-07	0	2	97	1	0
Th-Sep (+Rn)	NA	2	6.38E-05	1.11E-06	79	1	18	1	0
Th-Sep (-Rn)	NA	2	5.20E-05	9.08E-07	97	1	0	1	0
Th-Series (+Rn)	NA	3	9.76E-05	1.13E-06	79	1	18	1	1
Th-Series (-Rn)	NA	3	7.99E-05	9.22E-07	97	1	0	1	2
Tl-204	NA	0.008	2.23E-07	1.07E-06	3	0	0	1	96
U-232	NA	4	1.03E-05	9.30E-08	0	3	0	1	96
U-233	NA	0.1	6.32E-06	2.46E-06	0	1	0	1	98
U-234	NA	1	6.29E-06	2.83E-07	0	1	0	1	98
U-235 +D	NA	1	8.94E-06	3.68E-07	24	1	0	1	74
U-236	NA	1	5.94E-06	2.79E-07	0	1	0	1	98
U-238 +D	NA	1	9.75E-06	4.48E-07	5	1	0	1	94
DU (+Rn)	NA	1	1.05E-05	4.33E-07	5	1	0	1	94
DU (-Rn)	NA	1	1.05E-05	4.33E-07	5	1	0	1	94
U-Sep (+Rn)	NA	2	1.65E-05	3.65E-07	4	1	0	1	95
U-Sep (-Rn)	NA	2	1.65E-05	3.65E-07	4	1	0	1	95
U-Series (+Rn)	NA	73	1.72E-03	9.37E-07	3	0	95	0	1
U-Series (-Rn)	NA	6	8.11E-05	5.35E-07	69	0	0	2	28
Zn-65	NA	1	1.87E-05	1.49E-06	99	0	0	0	1
				Mean	8.94E-07				
				Median	9.91E-07				
				Mode	4.33E-07				
				Geometric Mean	5.51E-07				
				Std. Dev.	6.77E-07				
				Min.	1.19E-08				
				Max.	3.10E-06				

* Modeling --- RAGS/HHEM Part B Equations, SC&A Modifications, August, 1994
 Assumptions: --- Generic site characteristics (10,000 m² area by 2 m deep contaminated zone; 2 m thick unsaturated zone)
 --- EPA's new 30-yr slope factors
 --- Updated base case K_d values
 --- 25-yr exposure duration
 --- 1,000-yr time horizon for dose/risk calculations

TABLE 3-9. RAGS/HHEM PART B RISK FACTORS AND DOSE FACTORS FOR THE GENERIC SITE, ASSUMING SUBURBAN EXPOSURE*

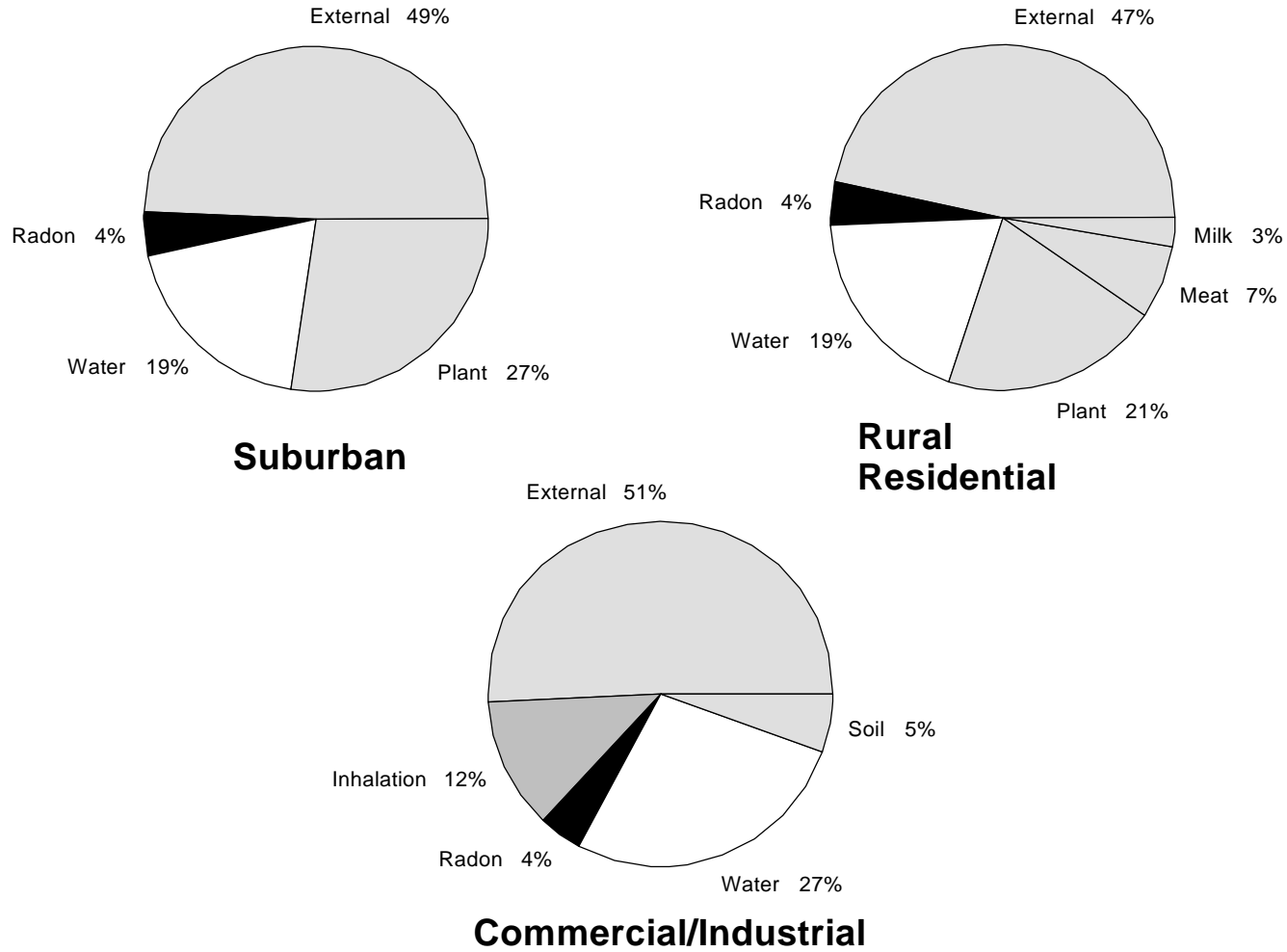
Nuclide	Dose Rate				Percent of Lifetime Risk Per Pathway					
	Max Year	(mrem/yr) per pCi/g	Lifetime Risk per pCi/g	Lifetime Risk per mrem	External	Inhalation	Radon	Plant	Soil	Water
	Ac-227 +D	NA	7	3.46E-05	1.64E-07	71	0	0	5	3
Ag-108m +D	NA	4	1.48E-04	1.24E-06	99	0	0	1	0	0
Ag-110m +D	NA	7	2.78E-04	1.34E-06	99	0	0	1	0	0
Am-241	NA	0.5	9.86E-07	6.62E-08	12	0	0	22	35	30
Am-243 +D	NA	1	7.90E-06	3.05E-07	89	0	0	3	4	4
Bi-207	NA	3	1.45E-04	1.39E-06	99	0	0	1	0	1
C-14	NA	0.3	8.70E-06	8.42E-07	0	0	0	92	0	8
Cd-109	NA	0.1	4.12E-06	1.11E-06	0	0	0	82	0	17
Ce-144 +D	NA	0.1	4.54E-06	1.30E-06	90	0	0	2	2	6
Cl-36	NA	2	7.00E-05	1.32E-06	0	0	0	93	0	7
Cm-243	NA	0.4	5.16E-06	4.43E-07	87	0	0	1	6	3
Cm-244	NA	0.2	5.85E-07	9.72E-08	0	0	0	31	48	20
Cm-248	NA	1	3.00E-06	7.16E-08	0	0	0	31	48	20
Co-57	NA	0.2	5.67E-06	1.03E-06	97	0	0	2	0	1
Co-60	NA	8	2.59E-04	1.06E-06	99	0	0	1	0	0
Cs-134	NA	4	1.57E-04	1.32E-06	98	0	0	2	0	0
Cs-135	NA	0.01	3.20E-07	1.08E-06	0	0	0	78	3	19
Cs-137 +D	NA	2	5.69E-05	1.02E-06	96	0	0	3	0	1
Eu-152	NA	4	1.07E-04	1.01E-06	100	0	0	0	0	0
Eu-154	NA	4	1.22E-04	1.04E-06	100	0	0	0	0	0
Eu-155	NA	0.1	1.66E-06	9.27E-07	97	0	0	0	0	2
Fe-55	NA	0.0003	8.86E-09	1.05E-06	0	0	0	6	9	86
Gd-153	NA	0.1	1.95E-06	8.52E-07	98	0	0	0	0	1
H-3	NA	0.1	3.22E-06	2.05E-06	0	0	0	16	0	84
I-129	NA	18	6.67E-04	1.24E-06	0	0	0	1	0	99
K-40	NA	1	2.41E-05	1.22E-06	66	0	0	22	0	12
Mn-54	NA	2	8.62E-05	1.35E-06	99	0	0	1	0	0
Na-22	NA	6	2.15E-04	1.30E-06	99	0	0	0	0	0
Nb-94	NA	5	1.59E-04	1.05E-06	100	0	0	0	0	0
Ni-59	NA	0.0004	1.98E-08	1.75E-06	0	0	0	73	2	25
Ni-63	NA	0.001	6.05E-08	1.99E-06	0	0	0	73	2	25
Np-237 +D	NA	56	1.20E-04	7.07E-08	10	0	0	3	0	86
Pa-231	NA	11	3.84E-06	1.21E-08	19	0	0	23	4	54
Pb-210 +D	NA	4	2.23E-05	1.93E-07	0	0	0	48	7	45
Pm-147	NA	0.0004	3.65E-08	3.14E-06	0	0	0	17	10	72
Pu-238	NA	1	1.52E-06	6.76E-08	0	0	0	14	21	65
Pu-239	NA	1	1.50E-06	5.92E-08	0	0	0	14	21	65
Pu-240	NA	1	1.50E-06	5.92E-08	0	0	0	14	21	65
Pu-241	NA	0.01	1.53E-08	3.78E-08	0	0	0	4	21	65
Pu-242	NA	1	1.43E-06	5.90E-08	0	0	0	14	21	65
Pu-244 +D	NA	2	9.72E-05	2.05E-06	98	0	0	0	0	1
Ra-226 (+Rn)	NA	194	1.83E-03	3.15E-07	10	0	89	1	0	0
Ra-226 (-Rn)	NA	7	1.95E-04	9.38E-07	91	0	0	8	0	1
Ra-228 +D	NA	4	1.21E-04	9.06E-07	71	0	16	11	0	1

TABLE 3-9. RAGS/HHEM PART B RISK FACTORS AND DOSE FACTORS FOR THE GENERIC SITE, ASSUMING SUBURBAN EXPOSURE*

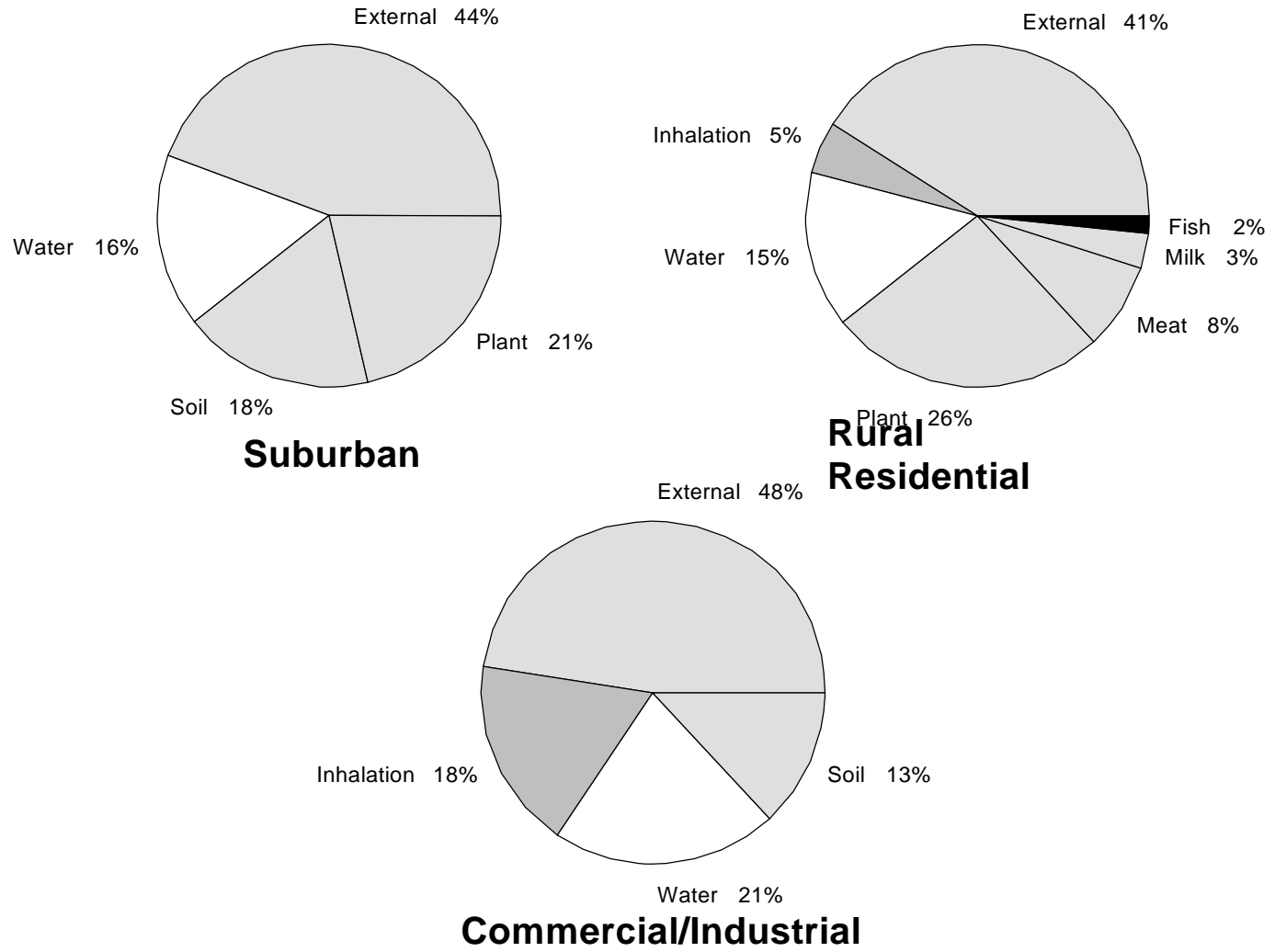
Nuclide	Max Year	Dose Rate			Percent of Lifetime Risk Per Pathway					
		(mrem/yr)	Lifetime Risk	Lifetime Risk	External	Inhalation	Radon	Plant	Soil	Water
		per pCi/g	per pCi/g	per mrem						
Ru-106 +D	NA	1	2.44E-05	1.54E-06	81	0	0	7	0	11
Sb-125 +D	NA	1	3.55E-05	1.17E-06	99	0	0	0	0	1
Sm-147	NA	0.1	4.28E-07	1.97E-07	0	0	0	17	10	72
Sm-151	NA	0.0001	1.17E-08	2.86E-06	0	0	0	17	10	73
Sr-90 +D	NA	2	3.07E-05	5.67E-07	0	0	0	64	0	36
Tc-99	NA	1	4.22E-05	2.22E-06	0	0	0	28	0	72
Th-228 +D	NA	5	1.83E-04	1.27E-06	89	0	11	0	0	0
Th-229 +D	NA	1	2.19E-05	6.19E-07	92	0	0	2	4	2
Th-230	NA	0.05	1.65E-07	1.10E-07	1	1	0	29	45	24
Th-232	NA	0.3	1.98E-05	2.54E-06	0	0	99	0	0	0
Th-Sep (+Rn)	NA	5	2.03E-04	1.32E-06	80	0	19	0	0	0
Th-Sep (-Rn)	NA	5	1.64E-04	1.06E-06	99	0	0	0	0	0
Th-Series (+Rn)	NA	10	3.23E-04	1.13E-06	77	0	18	4	0	1
Th-Series (-Rn)	NA	10	2.64E-04	9.27E-07	94	0	0	5	0	1
Tl-204	NA	0.03	9.47E-07	1.07E-06	2	0	0	59	0	38
U-232	NA	6	1.71E-05	9.25E-08	0	0	0	1	1	98
U-233	NA	0.1	1.06E-05	2.97E-06	0	0	0	1	1	98
U-234	NA	1	1.06E-05	2.86E-07	0	0	0	1	1	98
U-235 +D	NA	2	1.84E-05	4.07E-07	38	0	0	1	1	61
U-236	NA	1	1.00E-05	2.81E-07	0	0	0	1	1	98
U-238 +D	NA	1	1.72E-05	4.65E-07	9	0	0	1	1	89
DU (+Rn)	NA	1	1.77E-05	4.61E-07	9	0	0	1	1	89
DU (-Rn)	NA	1	1.77E-05	4.61E-07	9	0	0	1	1	89
U-Sep (+Rn)	NA	3	2.87E-05	3.76E-07	6	0	0	1	1	91
U-Sep (-Rn)	NA	3	2.87E-05	3.76E-07	6	0	0	1	1	91
U-Series (+Rn)	NA	201	1.89E-03	3.12E-07	10	0	87	1	0	2
U-Series (-Rn)	NA	14	2.48E-04	5.80E-07	72	0	0	11	1	16
Zn-65	NA	1	6.52E-05	1.46E-06	91	0	0	9	0	0
				Mean	9.31E-07					
				Median	9.72E-07					
				Mode	4.61E-07					
				Geometric Mean	5.69E-07					
				Std. Dev.	7.38E-07					
				Min.	1.21E-08					
				Max.	3.14E-06					

* Modeling --- RAGS/HHEM Part B Equations, SC&A Modifications, August, 1994
 Assumptions: --- Generic site characteristics (10,000 m² area by 2 m deep contaminated zone; 2 m thick unsaturated zone)
 --- EPA's new 30-yr slope factors
 --- Updated base case K_d values
 --- 30-yr exposure duration
 --- 1,000-yr time horizon for dose/risk calculations

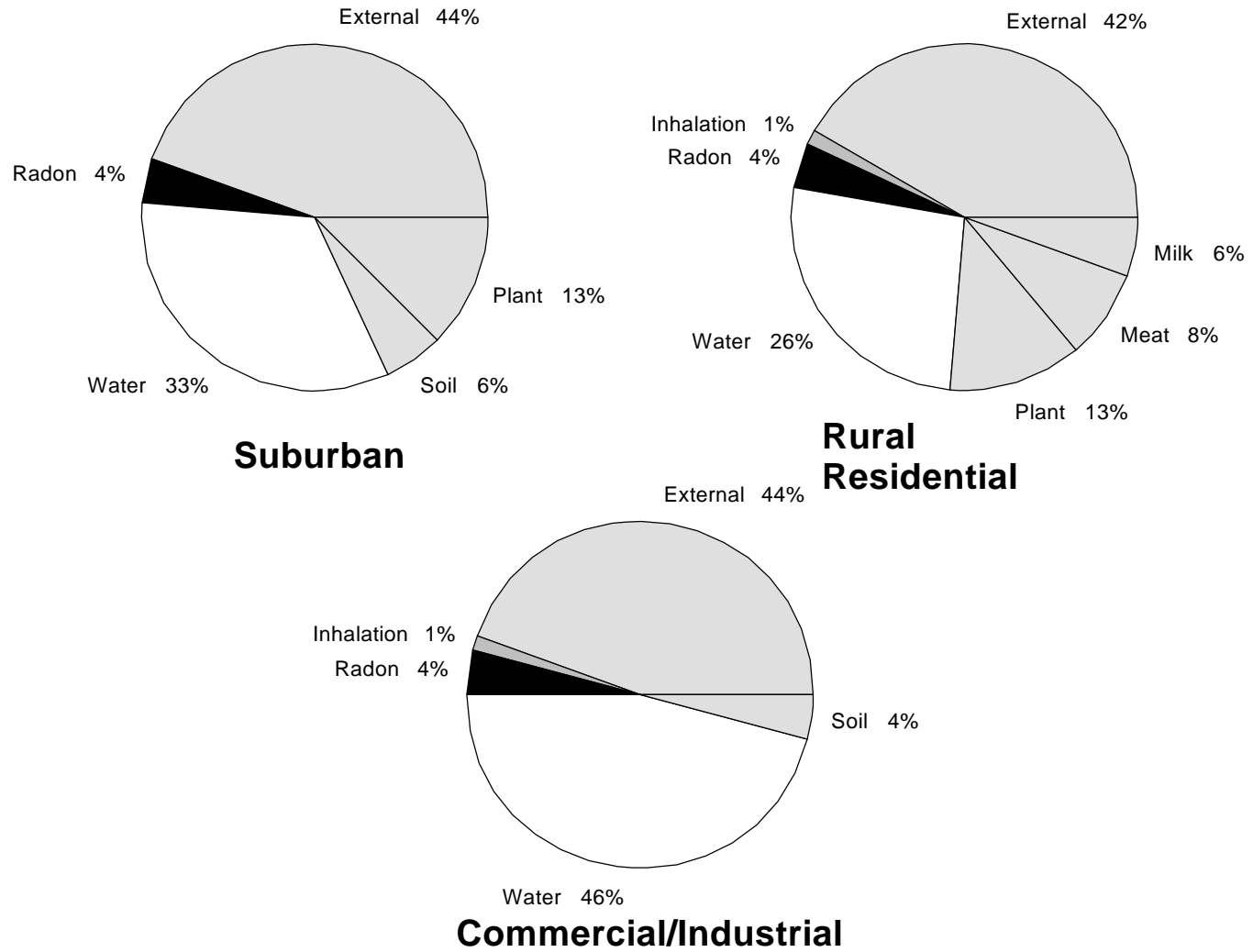
**Figure 3-1. Radionuclide Distribution by Dominant Pathway
RESRAD Version 5.19**



**Figure 3-2. Radionuclide Distribution by Dominant Pathway
PRESTO-CPG**



**Figure 3-3. Radionuclide Distribution by Dominant Pathway
RAGS/HHEM**



All three models demonstrate that the rural residential scenario is more conservative than the suburban or commercial/industrial scenarios. For example, Tables 3-1 through 3-3 for RESRAD calculations show that for Cs-137+D, the risk factor is: 7.3×10^{-5} for the rural residential scenario, 5.7×10^{-5} for the suburban scenario, and 1.7×10^{-5} for the commercial/industrial scenario.

Radionuclides dominated by external exposure to radiation, such as Cs-137+D, have less variation between scenarios than radionuclides dominated by ingestion and inhalation pathways, such as Pu-239. The RESRAD results show that the risk factor for Pu-239 is 9.6×10^{-7} for the rural residential scenario, 3.0×10^{-7} for the suburban scenario, and 1.2×10^{-7} for the commercial/industrial scenario.

3.1.1.2 Findings Regarding Differences Between the Three Models.

Several important differences among the three models were described in Chapter 2. The results of the generic test site calculations are compared in Table 3-10, which lists the risk factors obtained with each of the three models and provides a brief explanation of the differences.

The differences in the behaviors over time of the source terms of the three models are significant. The soil concentration at the beginning of the simulation is the same for all three. Thus, each model should give similar results for external exposure, inhalation, and soil, plant, meat, and milk ingestion for situations in which the maximum exposure occurs at the beginning of the simulation. Such is the case for 22 radionuclides.

Most of the differences in the results are caused by the differences in decay and ingrowth calculations. PRESTO does not provide initial results for the beginning of the simulation, but provides annual results starting at the end of the first year. The radionuclide decay in the first year causes changes in the results for eleven radionuclides (Ag-110m+D, Cd-109, Ce-144+D, Co-57, Eu-155, Gd-153, H-3, Mn-54, Na-22, Ru-106+D, and Sb-125+D). RESRAD includes ingrowth of principal radionuclides, and this affects the results for five radionuclides (Pa-231, Pu-241, Th-230, Th-232, and U-232). In addition, PRESTO decays H-3 and U-232 before they reach groundwater and calculates lower risk factors for these radionuclides, because of differences in the release submodel.

TABLE 3-10. COMPARISON OF MODEL RESULTS FOR THE GENERIC TEST SITE, ASSUMING RURAL RESIDENTIAL EXPOSURE*

Nuclide	Risk Factor			Explanation of Results
	RESRAD	PRESTO	RAGS/HHEM	
Ac-227 +D	2.98E-05	3.04E-05	3.85E-05	No difference
Ag-108m +D	1.60E-04	1.66E-04	1.60E-04	No difference
Ag-110m +D	2.99E-04	1.08E-04	2.94E-04	PRESTO results are slightly higher because of the short half-life of the radionuclide
Am-241	1.11E-06	1.35E-06	1.66E-06	RAGS/HHEM includes water ingestion, while PRESTO and RESRAD do not, RESRAD corrects soil ingestion for time indoors
Am-243 +D	8.06E-06	8.25E-06	8.57E-06	No difference
Bi-207	1.48E-04	1.43E-04	1.47E-04	No difference
C-14	1.10E-04	2.90E-05	9.19E-05	PRESTO depletes the source before the radionuclide reaches the fish, so there is only one dominant pathway. RESRAD uses a special calculation that maximizes C-14 concentration in plants. RAGS/HHEM maximizes all of these pathways
Cd-109	9.38E-06	5.57E-06	1.02E-05	PRESTO results are slightly higher because of the short half-life of the radionuclide
Ce-144 +D	4.48E-06	1.84E-06	4.71E-06	PRESTO results are slightly higher because of the short half-life of the radionuclide
Cl-36	1.02E-03	1.39E-03	1.06E-03	No difference
Cm-243	4.87E-06	5.00E-06	5.76E-06	RAGS/HHEM includes water ingestion, while PRESTO and RESRAD do not
Cm-244	7.98E-07	9.81E-07	1.13E-06	RAGS/HHEM includes water ingestion, while PRESTO and RESRAD do not, RESRAD corrects soil ingestion for time indoors
Cm-248	3.88E-06	5.02E-06	5.65E-06	RAGS/HHEM includes water ingestion, while PRESTO and RESRAD do not, RESRAD corrects soil ingestion for time indoors
Co-57	6.25E-06	2.44E-06	6.40E-06	PRESTO results are slightly higher because of the short half-life of the radionuclide
Co-60	2.69E-04	2.34E-04	2.72E-04	No difference
Cs-134	1.76E-04	1.32E-04	1.83E-04	No difference
Cs-135	2.50E-06	2.88E-06	2.77E-06	RESRAD and PRESTO include air deposition for radionuclide concentration in plants, PRESTO includes surface erosion as a route to fish ingestion.
Cs-137 +D	7.30E-05	7.27E-05	7.41E-05	No difference
Eu-152	1.08E-04	1.00E-04	1.07E-04	No difference
Eu-154	1.23E-04	1.10E-04	1.22E-04	No difference
Eu-155	1.68E-06	1.42E-06	1.68E-06	PRESTO results are slightly higher because of the short half-life of the radionuclide
Fe-55	1.48E-08	3.34E-09	3.09E-08	PRESTO does not include soil ingestion by cattle for radionuclide concentrations in meat
Gd-153	1.97E-06	6.77E-07	1.97E-06	PRESTO results are slightly higher because of the short half-life of the radionuclide
H-3	2.98E-06	7.91E-09	1.30E-05	RESRAD and PRESTO decay H-3 during transport, and PRESTO leaches radionuclides more slowly than RESRAD
I-129	1.52E-03	1.08E-03	2.31E-03	PRESTO leaches radionuclides more slowly than RESRAD
K-40	5.46E-05	6.42E-05	6.37E-05	No difference
Mn-54	8.79E-05	3.91E-05	8.77E-05	PRESTO results are slightly higher because of the short half-life of the radionuclide
Na-22	2.24E-04	1.74E-04	2.37E-04	PRESTO results are slightly higher because of the short half-life of the radionuclide
Nb-94	1.65E-04	1.60E-04	1.59E-04	No difference
Ni-59	1.12E-07	1.41E-07	1.39E-07	RAGS/HHEM includes water ingestion, PRESTO overcompensates for correction factor
Ni-63	3.50E-07	4.28E-07	4.26E-07	RAGS/HHEM includes water ingestion, PRESTO overcompensates for correction factor
Np-237 +D	1.92E-04	1.91E-04	1.33E-04	No difference
Pa-231	3.47E-05	4.97E-06	7.19E-06	PRESTO and RAGS/HHEM do not calculate ingrowth of Ac-227 +D, RAGS/HHEM includes water ingestion
Pb-210 +D	3.05E-05	3.04E-05	4.35E-05	No difference
Pm-147	2.43E-08	1.72E-08	5.63E-08	PRESTO does not include soil ingestion by cattle for radionuclide concentrations in meat
Pu-238	9.94E-07	1.21E-06	2.22E-06	RAGS/HHEM includes water ingestion, RESRAD corrects soil ingestion for time indoors
Pu-239	9.58E-07	1.20E-06	2.19E-06	RAGS/HHEM includes water ingestion, RESRAD corrects soil ingestion for time indoors
Pu-240	9.58E-07	1.20E-06	2.19E-06	RAGS/HHEM includes water ingestion, RESRAD corrects soil ingestion for time indoors
Pu-241	3.25E-08	9.85E-09	2.05E-08	PRESTO and RAGS/HHEM do not include ingrowth of Am-241, RAGS/HHEM includes water ingestion
Pu-242	9.22E-07	1.13E-06	2.08E-06	RAGS/HHEM includes water ingestion, RESRAD corrects soil ingestion for time indoors
Pu-244 +D	9.70E-05	9.73E-05	9.79E-05	No difference
Ra-226 (+Rn)	1.11E-03	NC	1.86E-03	PRESTO does not calculate exposure to radon

TABLE 3-10. COMPARISON OF MODEL RESULTS FOR THE GENERIC TEST SITE, ASSUMING RURAL RESIDENTIAL EXPOSURE*

Nuclide	Risk Factor			Explanation of Results
	RESRAD	PRESTO	RAGS/HHEM	
Ra-226 (-Rn)	2.38E-04	2.28E-04	2.25E-04	No difference
Ra-228 +D	1.78E-04	1.12E-04	1.46E-04	No difference
Ru-106 +D	2.46E-05	1.27E-05	2.80E-05	PRESTO results are slightly higher because of the short half-life of the radionuclide
Sb-125 +D	3.62E-05	2.71E-05	3.56E-05	PRESTO results are slightly higher because of the short half-life of the radionuclide
Sm-147	7.32E-07	3.36E-07	7.36E-07	PRESTO leaches radionuclides more slowly than RESRAD, and Sm-147 does not reach groundwater in 1000 years
Sm-151	7.84E-09	7.13E-09	1.81E-08	RAGS/HHEM includes water ingestion
Sr-90 +D	8.06E-05	9.11E-05	1.01E-04	No difference
Tc-99	5.51E-05	3.30E-05	6.89E-05	PRESTO leaches radionuclides more slowly than RESRAD
Th-228 +D	1.68E-04	1.12E-04	1.85E-04	No difference
Th-229 +D	2.40E-05	2.35E-05	2.41E-05	No difference
Th-230 (+Rn)	2.11E-04	4.58E-07	5.03E-07	PRESTO does not calculate exposure to radon, RAGS/HHEM does not include ingrowth of Ra-226 (+Rn)
Th-230 (-Rn)	7.50E-05	NC	NC	PRESTO and RAGS/HHEM were not used to perform this calculation
Th-232 (+Rn)	2.95E-04	4.69E-07	2.01E-05	PRESTO and RAGS/HHEM do not include ingrowth of Ra-228+D, PRESTO does not calculate exposure to radon
Th-Sep (+Rn)	4.92E-04	NC	2.06E-04	PRESTO does not calculate exposure to radon
Th-Sep (-Rn)	3.48E-04	NC	1.66E-04	PRESTO was not used to calculate exposures from combinations of radionuclides
Th-Series (+Rn)	2.97E-04	NC	3.52E-04	PRESTO does not calculate exposure to radon
Th-Series (-Rn)	2.93E-04	NC	2.93E-04	PRESTO was not used to calculate exposures from combinations of radionuclides
Tl-204	1.90E-06	1.85E-06	3.72E-06	RAGS/HHEM includes water ingestion
U-232	8.35E-05	1.70E-06	2.10E-05	PRESTO and RAGS/HHEM do not include ingrowth of Ra-228+D, PRESTO decays U-232 before it reaches groundwater
U-233	1.89E-05	2.14E-05	1.27E-05	RESRAD and PRESTO include irrigation pathways for calculating radionuclide concentrations in plants
U-234	1.85E-05	2.14E-05	1.27E-05	RESRAD and PRESTO include irrigation pathways for calculating radionuclide concentrations in plants
U-235 +D	2.41E-05	2.45E-05	2.06E-05	RESRAD and PRESTO include irrigation pathways for calculating radionuclide concentrations in plants
U-236	1.75E-05	2.02E-05	1.20E-05	RESRAD and PRESTO include irrigation pathways for calculating radionuclide concentrations in plants
U-238 +D	2.84E-05	3.26E-05	2.01E-05	RESRAD and PRESTO include irrigation pathways for calculating radionuclide concentrations in plants
DU (+Rn)	3.04E-05	NC	2.07E-05	PRESTO does not calculate exposure to radon
DU (-Rn)	3.04E-05	NC	2.07E-05	PRESTO was not used to calculate exposures from combinations of radionuclides
U-Sep (+Rn)	4.81E-05	NC	3.38E-05	PRESTO does not calculate exposure to radon
U-Sep (-Rn)	4.81E-05	NC	3.38E-05	PRESTO was not used to calculate exposures from combinations of radionuclides
U-Series (+Rn)	1.17E-03	NC	1.94E-03	PRESTO does not calculate exposure to radon
U-Series (-Rn)	3.02E-04	NC	3.05E-04	PRESTO was not used to calculate exposures from combinations of radionuclides
Zn-65	1.60E-04	7.19E-05	1.76E-04	No difference

NC Not Calculated

RAGS/HHEM does not consider the time required to transport radionuclides to groundwater. All radionuclides are instantly placed in groundwater at maximum concentration without accounting for transport time or radioactive decay. This means that radionuclides with high K_d values—that would normally not reach groundwater—have a water ingestion component added to the risk factor calculated by RAGS/HHEM. RAGS/HHEM calculates higher risk factors for ten radionuclides—Am-241, Cm-243, Cm-244, Cm-248, Pu-238, Pu-239, Pu-240, Pu-241, Pu-242, Sm-151, and Tl-204—because of this groundwater assumption.

PRESTO does not include a pathway for inhalation of radon, and was not used to calculate results for eight radionuclides and combinations.

RESRAD currently corrects for soil ingestion for time spent indoors (a filtration factor is included). This correction reduces the soil ingestion risk by a factor of four and causes differences in the results for seven radionuclides—Am-241, Cm-244, Cm-248, Pu-238, Pu-239, Pu-240, and Pu-242.

RESRAD and PRESTO include irrigation and air deposition of particulates as pathways for estimating radionuclide concentration in plants while RAGS/HHEM does not include these pathways. Cs-135 has a lower risk with RAGS/HHEM because of the lack of an air deposition component, and U-233, U-234, U-235+D, U-236, and U-238 have lower risk factors with RAGS/HHEM because of the lack of an irrigation pathway.

RESRAD and RAGS/HHEM include soil ingestion by cattle as a pathway for estimating radionuclide concentration in meat. PRESTO calculates a risk factor for Fe-55 almost five times lower than RESRAD because PRESTO does not include this pathway. PRESTO also calculates a risk factor for Sm-147 that is half the risk factor calculated using RESRAD for the same reason.

The calculation of the radionuclide concentration in groundwater is performed differently for the three models and the differences can influence the results. The most dramatic example of these differences is for H-3. The slow leaching of radionuclides from the soil by the PRESTO code results in the maximum concentration in groundwater occurring in year 808 of the simulation (see Table 2-5). H-3 has a twelve year half-life and decays long before the groundwater concentration is maximized. PRESTO calculates a risk factor of 7.9×10^{-9} based on the slow leaching and short half-life. RAGS/HHEM instantly maximizes the

concentration of H-3 in groundwater and calculates a risk factor of 1.3×10^{-5} —almost 1,600 times the risk calculated by PRESTO. RESRAD leaches H-3 from the soil quickly enough that it does not decay before it reaches groundwater. Because RESRAD also depletes the contaminated zone through evaporation, the risk factor calculated by RESRAD is 3.0×10^{-6} , which is four times smaller than RAGS/HHEM.

The difference in the leach rate for the models becomes smaller as the K_d becomes larger and the radionuclide half-lives become longer. H-3, with a K_d value of zero and a short half-life, is greatly influenced by the difference in leach rate. Results for I-129, with a K_d value of 1 and a long half-life, vary by less than a factor of three between the models. Np-237+D, with a K_d value of five and a long-half-life, shows almost no difference in the results of the three models. Tc-99 and Sm-147 are the only other radionuclides with results affected by the leach rate using base case K_d values.

The risk factors calculated by PRESTO for Ni-59 and Ni-63 are slightly higher than the risk factors calculated by RAGS/HHEM because of the correction factor which adjusts for the fraction of fodder that is contaminated. This correction factor is discussed in Chapter 2.

The difference in calculations for estimating radionuclide concentrations in surface water do not influence any of the results for the generic test site, but there is potential for increased exposure not included in the modeling. PRESTO includes erosion as a possible source of surface water contamination. While the contribution of this pathway is negligible for fish ingestion, as shown by the low percentage of lifetime risk in Tables 3-1 through 3-9, the presence of risk from fish ingestion for Pu-242 and Th-232 *without any risk from groundwater* is significant. This means when the surface water is contaminated, ingestion of surface water could increase the risk from ingestion of meat and milk. This increase in risk is estimated to be very small (less than 10%) and should not significantly change the results reported here.

The results calculated by the three models are similar for many of the radionuclides. The most significant changes are caused by the decay and ingrowth corrections, which at this time only RESRAD applies to all of the radionuclides. The most significant change for a single radionuclide is H-3, and this is caused by a combination of slow leach rate and short half-life for the PRESTO calculation. RESRAD was selected for performing the calculations for the reference sites because it calculates a more conservative result for H-3 and includes corrections for ingrowth and decay of principle radionuclides.

3.1.1.3 Sensitivity to Model User.

One of the major sources of uncertainty in the use of any model or computer code is the way the user applies the code. There is often uncertainty in interpreting the proper input parameters or understanding the code's user instructions. To study the potential importance of this source of uncertainty, five individual modelers independently applied RESRAD to the analysis of a real site to determine the RME. Four of the individuals obtained results within a factor of 4 of each other—however, one obtained results which differed by several hundred-fold from the others. The two primary reasons for these differences were misinterpretation of data characterizing the site and a misunderstanding of how to use RESRAD. In addition, an important source of uncertainty is the judgment and assumptions regarding the degree to which daughter radionuclides are present at time zero of the analysis. The results of this study underscore the importance of simplicity and user-friendliness in any site-specific implementation model, and the need for extreme care in interpreting the meaning of site-specific data.

3.1.2 Modeling Parameters

Table 3-11 lists the parameters used to model the generic test site and the values selected to represent the characteristics of this site using RESRAD Version 5.19. The parameter values used for the calculations were selected as realistic but conservative estimates of the conditions at the generic test site for each of the three scenarios. The parameters are divided into two groups: parameters describing the physical characteristics of the site and parameters describing the exposure to an individual living or working on the site. The parameter values used in the PRESTO calculations are listed in Appendix G along with an explanation of how these values relate to the RESRAD values. The parameter values used for the RAGS/HHEM calculations are listed in Appendix C with the modified RAGS/HHEM equations.

3.1.2.1 Physical Parameters Describing the Generic Test Site.

Figure 3-4 illustrates the primary physical characteristics of the generic test site used to derive the generic site risk factors. Variants on these characteristics are examined in the sensitivity analyses discussed in Section 3.1.3. The three hydrogeologic zones of interest are described as follows:

- Contaminated Zone: This zone is defined as an area of soil with radionuclide contamination extending from the surface to a selected depth. Each radionuclide considered is assumed to be uniformly distributed throughout this soil volume at a concentration of 1 pCi/g to begin the simulation. A unit value of 1 pCi/g was selected because all impacts are directly proportional to the radionuclide concentration in the soil.
- Unsaturated Zone: This zone is defined as soil extending from the bottom of the contaminated zone to the top of the aquifer. Because this soil is outside the contaminated area, it is assumed to be initially uncontaminated.
- Aquifer: This area represents a groundwater resource that is assumed to supply 100 percent of the daily drinking water intake for onsite residents (*i.e.*, 2 L/day) and half of the drinking water intake for workers (*i.e.*, 1 L/day). Also, the aquifer is assumed to be a source of water used to irrigate crops and feed livestock. A well is assumed to be constructed onsite at the down-gradient edge of the site. The aquifer is initially assumed to be uncontaminated.

Table 3-12 compares generic site (base case) and reference site characteristics (the reference sites, which are generally representative of actual U.S. sites with soil contamination, are described in Chapter 4). As shown in the table by the generic test site rankings—although reference sites vary widely in size and complexity—the generic test site appears to represent a reasonable base case, not a worst case, for most sites.

Table 3-11. Generic Test Site -- Base Case Analysis Values

RESRAD Version 5.01 Values			Base Case Analysis Values			Notes
RESRAD Menu	Parameter	RESRAD Default Value	Suburban	Rural Residential	Commercial/Industrial	
R02	Exposure Pathways					
	Pathway 1 -- External Gamma	Active	Active	Active	Active	<ul style="list-style-type: none"> Exposure pathways included in the generic test site analysis are generally consistent with those recommended by EPA for rural residential, suburban and commercial/industrial exposure scenarios. The selection of exposure scenarios is discussed in Section 2.1. For completeness, the generic test site analysis included four additional suburban exposure pathways: plant, meat, milk, and aquatic food ingestion.
	Pathway 2 -- Inhalation	Active	Active	Active	Active	
	Pathway 3 -- Plant Ingestion	Active	Active	Active	Suppressed	
	Pathway 4 -- Meat Ingestion	Active	Suppressed	Active	Suppressed	
	Pathway 5 -- Milk Ingestion	Active	Suppressed	Active	Suppressed	
	Pathway 6 -- Aquatic Foods	Active	Suppressed	Active	Suppressed	
	Pathway 7 -- Drinking Water	Active	Active	Active	Active	
	Pathway 8 -- Soil Ingestion	Active	Active	Active	Active	
	Pathway 9 -- Radon	Suppressed	Active	Active	Active	
R011	Contaminated Zone					
	Item 1: Area of Contaminated Zone	10,000 m ²	10,000 m ²	10,000 m ²	10,000 m ²	<ul style="list-style-type: none"> Values selected for items 1-3 are reasonable best estimates based on sensitivity analyses (Sections 3.1.1 and 3.3). Item 4 refers to DOE's current annual dose rate limit (i.e., 30 mrem/yr) for site restoration. Item 5 is a correction factor for elapsed time since burial.
	Item 2: Thickness of Contaminated Zone	2 m	2 m	2 m	2 m	
	Item 3: Length Parallel to Aquifer Flow	100 m	113 m	113 m	113 m	
	Item 4: Radiation Dose	30 mrem/yr	[Not applicable]	[Not applicable]	[Not applicable]	
	Item 5: Elapsed Time	0 yr	0 yr	0 yr	0 yr	

Table 3-11. (Continued)

RESRAD Version 5.01 Values			Base Case Analysis Values			Notes
RESRAD Menu	Parameter	RESRAD Default Value	Suburban	Rural Residential	Commercial/ Industrial	
R012	Initial Concentration					
	Item 1: Listed by Radionuclide	1 pCi/g	1 pCi/g	1 pCi/g	1 pCi/g	<ul style="list-style-type: none"> All 67 radionuclides listed in RESRAD 5.0 were included in the base case analysis, <u>except</u> Al-26, Au-195, Ca-41, Cf-252, Gd-152, and Ge-68, because published EPA cancer slope factor values were not available.
R013	Cover and Contaminated Zone Hydrological Data					
	Item 1: Cover Depth	0 m	0 m	0 m	0 m	<ul style="list-style-type: none"> The default value of 0 meters for item 1 means that a clean soil layer was <u>not</u> assumed as a cover for the contaminated zone. Default values were used for items 2, 3, 5 and 7-14 as reasonable best estimates based on sensitivity analyses and RESRAD guidance (DOE 93a, ANL 91). Alternate values were selected as conservative estimates for items 4 and 6 based on lithology (silty-loam) and RESRAD look-up tables (DOE 93a).
	Item 2: Density of Contaminated Zone	1.5 g/cm ³	1.5 g/cm ³	1.5 g/cm ³	1.5 g/cm ³	
	Item 3: Contaminated Zone Erosion Rate	0.001 m/yr	0.001 m/yr	0.001 m/yr	0.001 m/yr	
	Item 4: Contaminated Zone Total Porosity	0.4	0.485	0.485	0.485	
	Item 5: Contaminated Zone Effective Porosity	0.2	0.2	0.2	0.2	
	Item 6: Contaminated Zone Hydraulic Conductivity	10 m/yr	227 m/yr	227 m/yr	227 m/yr	
	Item 7: Contaminated Zone b parameter	5.3	5.3	5.3	5.3	
	Item 8: Evapotranspiration Coefficient	0.5	0.5	0.5	0.5	
	Item 9: Precipitation	1 m/yr	1 m/yr	1 m/yr	1 m/yr	
	Item 10: Irrigation Rate	0.2 m/yr	0.2 m/yr	0.2 m/yr	0.2 m/yr	
	Item 11: Irrigation Mode [overhead or ditch]	Overhead	Overhead	Overhead	Overhead	
	Item 12: Runoff Coefficient	0.2	0.2	0.2	0.2	
	Item 13: Watershed Area for Nearby Stream or Pond	1,000,000 m ²	1,000,000 m ²	1,000,000 m ²	1,000,000 m ²	
	Item 14: Accuracy for Water/Soil Computation	0.001	0.001	0.001	0.001	

Table 3-11. (Continued)

RESRAD Version 5.01 Values			Base Case Analysis Values			Notes
RESRAD Menu	Parameter	RESRAD Default Value	Suburban	Rural Residential	Commercial/Industrial	
R014	Saturated Zone Hydrological Data					
	Item 1: Density of Saturated Zone	1.5 g/cm ³	1.5 g/cm ³	1.5 g/cm ³	1.5 g/cm ³	<ul style="list-style-type: none"> • Default values were used for items 1, 3, 5, 9 and 10 as reasonable best estimates based on sensitivity analyses and RESRAD guidance (DOE 93a, ANL 91). • Alternate values were selected for items 2 and 4 based on lithology (sand) and RESRAD look-up tables (DOE 93). • Alternate values were selected for items 7 and 8 to minimize dilution in the aquifer.
	Item 2: Saturated Zone Total Porosity	0.4	0.395	0.395	0.395	
	Item 3: Saturated Zone Effective Porosity	0.2	0.2	0.2	0.2	
	Item 4: Saturated Zone Hydraulic Conductivity	100 m/yr	5,550 m/yr	5,550 m/yr	5,550 m/yr	
	Item 5: Saturated Zone Hydraulic Gradient	0.02	0.02	0.02	0.02	
	Item 6: Saturated Zone b Parameter	5.3	4.05	4.05	4.05	
	Item 7: Water Table Drop Rate	0.001 m/yr	0 m/yr	0 m/yr	0 m/yr	
	Item 8: Well Pump Intake Depth	10 m	3 m	3 m	3 m	
	Item 9: Non-Dispersion Model or Mass-Balance Model	Non-Dispersion	Non-Dispersion	Non-Dispersion	Non-Dispersion	
	Item 10: Well Pumping Model	250 m ³ /yr	250 m ³ /yr	250 m ³ /yr	250 m ³ /yr	

Table 3-11. (Continued)

RESRAD Version 5.01 Values			Base Case Analysis Values			Notes
RESRAD Menu	Parameter	RESRAD Default Value	Suburban	Rural Residential	Commercial/Industrial	
R015	Uncontaminated and Unsaturated Strata Hydrological Data					
	Item 1: Number of Unsaturated Strata	1	1	1	1	<ul style="list-style-type: none"> • Default values were used for items 1, 3, 5 and 6 as reasonable best estimates based on sensitivity analyses and RESRAD guidance (DOE 93a, ANL 91). • Alternate values were selected for items 4 and 7 based on lithology (silty-loam) and RESRAD look-up tables (DOE 93a). • An alternate value was selected for item 2 based on the characteristics of the reference sites (Section 3.1.1).
	Item 2: Thickness	4 m	2 m	2 m	2 m	
	Item 3: Soil Density	1.5 g/cm ³	1.5 g/cm ³	1.5 g/cm ³	1.5 g/cm ³	
	Item 4: Total Porosity	0.4	0.485	0.485	0.485	
	Item 5: Effective Porosity	0.2	0.2	0.2	0.2	
	Item 6: Soil Specific b Parameter	5.3	5.3	5.3	5.3	
	Item 7: Hydraulic Conductivity	10 m/yr	227 m/yr	227 m/yr	227 m/yr	
R016	Distribution Coefficient and Leach Rates					
	Item 1: Contaminated Zone K_d	(See note)	(See note)	(See note)	(See note)	<ul style="list-style-type: none"> • Refer to Table 3-13 for a listing of the radionuclide distribution coefficients (K_d values) used in the RESRAD generic test site base case calculations.
	Item 2: Uncontaminated Zone K_d	(See note)	(See note)	(See note)	(See note)	
	Item 3: Saturated Zone K_d	(See note)	(See note)	(See note)	(See note)	
	Item 4: Saturated Leach Rate	0	0	0	0	
	Item 5: Saturated Solubility	0	0	0	0	

Table 3-11. (Continued)

RESRAD Version 5.01 Values			Base Case Analysis Values			Notes
RESRAD Menu	Parameter	RESRAD Default Value	Suburban	Rural Residential	Commercial/Industrial	
R017	Inhalation and External Gamma Parameters					
	Item 1: Inhalation Rate	8,400 m ³ /yr	7,300 m ³ /yr	7,300 m ³ /yr	7,300 m ³ /yr	<ul style="list-style-type: none"> • Default values were used for items 3, 5A and 7 as reasonable best estimates based on sensitivity analyses. • Values selected for items 1 and 4 are based on EPA's OSWER Directive 9285.6-03, <i>Human Health Evaluation Manual, Supplemental Guidance: "Standard Default Exposure Factors"</i> (March 25, 1991). • The value selected for item 5B was taken from EPA's <i>Risk Assessment Guidance for Superfund: Volume I - Human Health Evaluation Manual, Part B</i>. • Values selected for items 6A and 6B are based on OSWER Directive 9285.6-03 and on EPA's <i>Exposure Factors Handbook</i>, EPA/600/8-89/043 (March 1989). • An alternate value was selected for item 2 for suburban exposures based on EPA's <i>Draft Guidance for Soil Screening Level Framework</i>, (July 1994).
	Item 2: Mass Loading for Inhalation	0.0002 g/m ³	0.0000015 g/m ³	0.0002 g/m ³	0.0002 g/m ³	
	Item 3: Dilution Length for Airborne Dust (inhalation)	3 m	3 m	3 m	3 m	
	Item 4: Exposure Duration	30 yr	30 yr	30 yr	25 yr	
	Item 5A: Shielding Factors - Inhalation	0.4	0.4	0.4	0.4	
	Item 5B: Shielding Factors - External	0.7	0.8	0.8	0.8	
	Item 6A: Time Factors - Indoors	0.5	0.6	0.6	0.22	
	Item 6B: Time Factors - Outdoors	0.25	0.02	0.02	0.01	
	Item 7: Shape Factor (external gamma)	1	1	1	1	

Table 3-11. (Continued)

RESRAD Version 5.01 Values			Base Case Analysis Values			Notes
RESRAD Menu	Parameter	RESRAD Default Value	Suburban	Rural Residential	Commercial/Industrial	
R018	Ingestion Pathway Data, Dietary Parameters					
	Item 1: Fruits, Vegetables and Grain Consumption	160 kg/yr	45.5 kg/yr	122.5 kg/yr	[Not applicable]	<ul style="list-style-type: none"> • Alternate values were selected for items 1-8 based on EPA, DOE, and NRC guidance. The selection of these values is discussed in Section 3.1.2. • Default values were used for items 9-14 (contamination factors) and the ingestion rates were modified to compensate for these corrections. • Items 3-6, 11 and 13 are not applicable to suburban exposure scenarios. • Items 1-7 and 9-14 are not applicable to commercial/industrial exposure scenarios.
	Item 2: Leafy Vegetables Consumption	14 kg/yr	9.1 kg/yr	13.3 kg/yr	[Not applicable]	
	Item 3: Milk Consumption	92 L/yr	[Not applicable]	184 L/yr	[Not applicable]	
	Item 4: Meat and Poultry Consumption	63 kg/yr	[Not applicable]	126 kg/yr	[Not applicable]	
	Item 5: Fish Consumption	5.4 kg/yr	[Not applicable]	4.6 kg/yr	[Not applicable]	
	Item 6: Other Seafood	0.9 kg/yr	[Not applicable]	0 kg/yr	[Not applicable]	
	Item 7: Soil Ingestion	36.5 g/yr	43.8 g/yr	43.8 g/yr	36.5 g/yr	
	Item 8: Drinking Water Intake	510 L/yr	730 L/yr	730 L/yr	365 L/yr	
	Item 9: Contamination Factor - Drinking Water	1	1	1	[Not applicable]	
	Item 10: Contamination Factor - Household Water	1	1	1	[Not applicable]	
	Item 11: Contamination Factor - Livestock Water	1	[Not applicable]	1	[Not applicable]	
	Item 12: Contamination Factor - Irrigation	1	1	1	[Not applicable]	
	Item 13: Contamination Factor - Aquatic Pond	0.5	[Not applicable]	0.5	[Not applicable]	
	Item 14: Contamination Factor - Plant Food, Meat, and Milk	RESRAD Calculated	RESRAD Calculated	RESRAD Calculated	[Not applicable]	

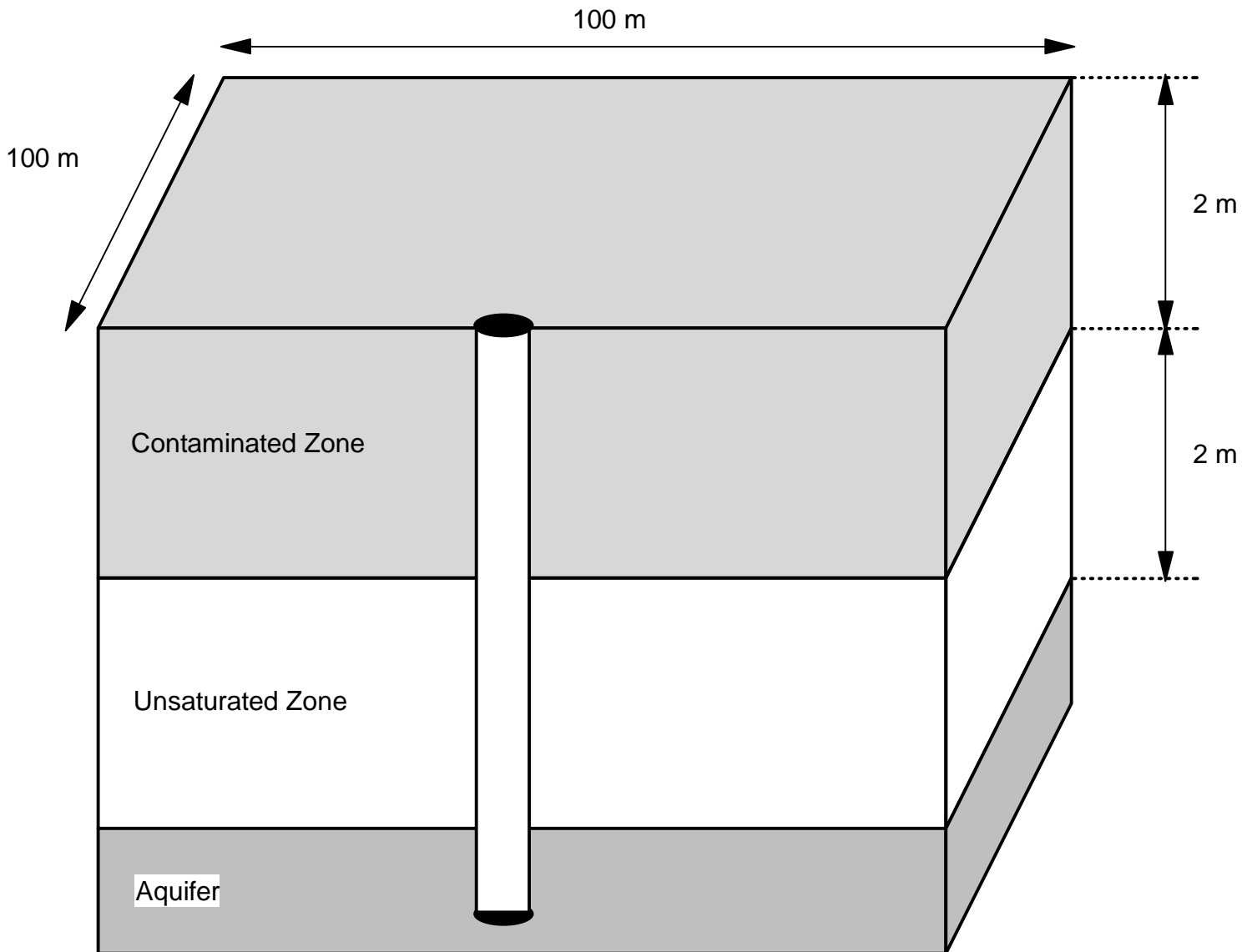
Table 3-11. (Continued)

RESRAD Version 5.01 Values			Base Case Analysis Values			Notes
RESRAD Menu	Parameter	RESRAD Default Value	Suburban	Rural Residential	Commercial/Industrial	
R019	Ingestion Pathway Data, Non-Dietary Parameters					
	Item 1: Livestock Fodder Intake for Meat	68 kg/yr	[Not applicable]	68 kg/yr	[Not applicable]	<ul style="list-style-type: none"> • Default values were used for items 1-12 as reasonable best estimates based on sensitivity analyses and RESRAD guidance (DOE 93a, ANL 91). • Items 1-5 and 11 are not applicable to suburban exposure scenarios. • Items 1-6, 8 and 11-12 are not applicable to commercial/industrial exposure scenarios.
	Item 2: Livestock Fodder Intake for Milk	55 kg/yr	[Not applicable]	55 kg/yr	[Not applicable]	
	Item 3: Livestock Water Intake for Meat	50 L/yr	[Not applicable]	50 L/yr	[Not applicable]	
	Item 4: Livestock Water Intake for Milk	160 L/yr	[Not applicable]	160 L/yr	[Not applicable]	
	Item 5: Livestock Intake of Soil	0.5 kg/d	[Not applicable]	0.5 kg/d	[Not applicable]	
	Item 6: Mass Loading for Soil Deposition	0.0001 g/m ³	0.0001 g/m ³	0.0001 g/m ³	[Not applicable]	
	Item 7: Depth of Soil Mixing Layer	0.15 m	0.15 m	0.15 m	0.15 m	
	Item 8: Depth of Roots	0.9 m	0.9 m	0.9 m	[Not applicable]	
	Item 9: Ground Fractional Usage - Drinking Water	1	1	1	1	
	Item 10: Ground Fractional Usage - Household Usage	1	1	1	1	
	Item 11: Ground Fractional Usage - Livestock Water	1	[Not applicable]	1	[Not applicable]	
	Item 12: Ground Fractional Usage - Irrigation	1	1	1	[Not applicable]	

Table 3-11. (Continued)

RESRAD Version 5.01 Values			Base Case Analysis Values			Notes
RESRAD Menu	Parameter	RESRAD Default Value	Suburban	Rural Residential	Commercial/ Industrial	
R021	Radon Parameters					<ul style="list-style-type: none"> • Default values were used for items 1-9 and 11-14 as reasonable best estimates based on sensitivity analyses and RESRAD guidance (DOE 93a, ANL 91). • An alternate value was selected for item 10 based on EPA modeling for radon exposures.
	Item 1: Cover Material Thickness	0 m	0 m	0 m	0 m	
	Item 2: Building Foundation Thickness	0.15 m	0.15 m	0.15 m	0.15 m	
	Item 3: Building Foundation Density	2.4 g/cm ³	2.4 g/cm ³	2.4 g/cm ³	2.4 g/cm ³	
	Item 4: Building Foundation Total Porosity	0.1	0.1	0.1	0.1	
	Item 5: Volumetric Water Content	0.03	0.03	0.03	0.03	
	Item 6: Effective Radon Diffusion Coefficient	0.0000003 m ² /s	0.0000003 m ² /s	0.0000003 m ² /s	0.0000003 m ² /s	
	Item 7: Contaminated Zone Radon Diffusion Coefficient	0.000002 m ² /s	0.000002 m ² /s	0.000002 m ² /s	0.000002 m ² /s	
	Item 8: Radon Vertical Dimension of Mixing	2 m	2 m	2 m	2 m	
	Item 9: Average Annual Wind Speed	2 m/s	2 m/s	2 m/s	2 m/s	
	Item 10: Building Air Exchange Rate	0.5 per hr	0.35 per hr	0.35 per hr	0.35 per hr	
	Item 11: Building Room Height	2.5 m	2.5 m	2.5 m	2.5 m	
	Item 12: Building Indoor Area Factor	0	0	0	0	
	Item 13: Foundation Depth Below Ground Surface	1 m	1 m	1 m	1 m	
	Item 14: Radon Emanation Coefficient, Rn-222	0.25	0.25	0.25	0.25	

Figure 3-4. Generic Test Site Characteristics



- Radionuclide Concentration = 1 pCi/g
- Pattern of Contamination = Uniformly Distributed Soil Source
- Contaminated Zone Area = 10,000 m²
- Contaminated Zone Thickness = 2 m
- Unsaturated Zone Thickness = 2 m
- Infiltration Rate = 0.5 m/yr
- Distribution Coefficients (K_d values) = Radionuclide Specific
- Well Pump Intake Depth = 3 m

Table 3-12. Comparison of Generic and Reference Site Characteristics

Parameter (units)	Generic Site Values	Reference Site Values*					Generic Site Ranking *
		Range		5th%	50th%	95th%	
		Min	Max				
Contaminated Zone Area (m ²)	10,000	3,300	5.9x10	6,260	4x10 ⁶	1.5x10 ⁹	14%
Contaminated Zone Thickness (m)	2	0.05	2.5	0.05	0.13	2.1	94%
Unsaturated Zone Thickness (m)	2	1	100	1.9	9.5	100	6%
Infiltration Rate (m/yr)	0.5	0	0.54	0.05	0.3	0.51	93%
K _a (cm ³ /g)	Radionuclide and site specific. See discussion in text.						

* Values are taken from Tables 4-6 and 4-7.

The 10,000 m² area of the contaminated zone was selected because it represents a site of sufficient size for residents to build a home, maintain a garden, and raise livestock in small numbers. In addition, one can assume that this size site would also permit industrial or commercial activities. A site of this size constitutes an effective infinite volume source for gamma-emitting radionuclides in soil when considering external radiation exposures. This represents a conservative case for estimating external radiation exposures and risks.

The values for the contaminated zone thickness, unsaturated zone thickness, and infiltration rate values were selected as conservative values at the 95th percentile based on the distributions listed in Table 3-12. Values describing the hydrogeologic properties of the site were selected from RESRAD look-up tables based on lithology. The contaminated and unsaturated zones are assumed to be silty-loam. This is a common soil type and allows the hydraulic conductivity to exceed the infiltration rate so that all of the water entering the contaminated zone will percolate through the soil and exit the bottom of the unsaturated zone into the aquifer. The aquifer is assumed to be sand with hydrogeologic properties able to supply a small community with water. The well is placed at a very shallow point in the aquifer, 3 m, to minimize the dilution of radionuclides in the aquifer. This provides a conservative estimate of exposures to groundwater.

The K_d values for each of the three hydrogeologic zones were assumed to be equal. This single K_d value simplified the conceptual model of the site and allowed this parameter to be included in the sensitivity analyses. The K_d values used in the base case analysis were selected as the lowest value reported in *Default Soil Solid/Liquid Partition Coefficients, K_d 's, for Four Major Soil Types: A Compendium*, published in Health Physics, October 1990, by Sheppard and Thibault. This is a comprehensive review of available K_d values and is the most recent reference located for this report. The article included calculations for estimating K_d values when literature values were not available.

Table 3-13 lists the K_d values used in the base case analysis. Also listed in the table are the lowest literature value cited, the median value determined for the four soil types evaluated by Sheppard and Thibault, the maximum value determined for the same four soil types, the maximum value cited in the literature, and the default K_d values provided by DOE (RESRAD guidance) and NRC (NUREG/CR-5512).

3.1.2.2 Exposure Parameters Describing the Generic Test Site.

The mathematical models, scenarios, and exposure pathways described in Chapter 2—in addition to requiring input parameters characterizing the environment and the environmental transport factors—require a broad array of input parameters and assumptions in order to derive the doses and risks to the individual exposed to RME conditions at the generic test site. These input parameters include:

- Inhalation and ingestion rates, including breathing rate and food and soil ingestion rates
- Factors relating radionuclide exposure or intake rates to potential health impacts, including dose and risk conversion factors and slope factors.

To the extent possible, standard default values for intake rates, exposure factors and modifying factors (*e.g.*, shielding correction factors) used in the pathway/risk model calculations were taken from the following EPA guidance documents and directives, listed in descending order of preference:

Table 3-13. Distribution Coefficients (K_d 's) Used in Generic Test Site Exposure and Risk Modeling

Element	Lowest Value Reported In Peer-Reviewed Literature (Ref. 1)	Proposed EPA Base Case	RESRAD Version 5.04 Default	NUREG/CR-5512 Default	Proposed EPA Median Value	Proposed EPA High-End Value	Highest Value Reported In Peer-Reviewed Literature (Ref. 1)	Basis for Proposed EPA Base Case*
Ac	240	240	20	420	1,000	2,900	2,900	R
Ag	2.7	90	0	90	150	15,000	33,000	E
Am	1	1,900	20	1,900	9,000	110,000	450,000	E
Bi	30	30	0	120	130	370	370	R
C	5	5	0	6.7	14	39	39	E
Cd	1.3	40	0	40	320	800	17,000	E
Ce	40	500	1,000	500	5,700	20,000	56,000	E
Cl	1.5	1.5	0.1	2	7	19	19	R
Cm	93	4,000	910	4,000	6,000	18,000	52,000	E
Co	0.07	60	1,000	60	780	1,300	14,000	E
Cs	0.2	270	1,000	270	1,100	4,600	145,000	E
Eu	240	240	580	240	1,000	2,900	2,900	R
Fe	1.4	170	1,000	160	410	800	6,000	E
Gd	240	240	580	240	1,000	2,900	2,900	R
H	0.04	0	0	0	15	42	42	M
I	0.04	1	0	1	3	25	370	E
K	16	16	5.5	18	71	200	200	R
Mn	0.2	50	200	50	170	750	77,000	E

Table 3-13. Distribution Coefficients (K_d 's) (continued)

Element	Lowest Value Reported In Peer-Reviewed Literature (Ref. 1)	Proposed EPA Base Case	RESRAD Version 5.04 Default	NUREG/CR-5512 Default	Proposed EPA Median Value	Proposed EPA High-End Value	Highest Value Reported In Peer-Reviewed Literature (Ref. 1)	Basis for Proposed EPA Base Case*
Na	44	44	10	76	190	540	540	R
Nb	110	110	0	160	480	1,300	1,300	E
Ni	60	150	1,000	400	530	1,100	4,700	E
Np	0.16	5	204	5	40	1,200	2,600	E
Pa	110	110	50	510	480	1,300	1,300	R
Pb	4.5	270	100	270	8,300	22,000	59,000	E
Pm	240	240	580	240	1,000	2,900	2,900	R
Pu	11	550	2,000	550	1,500	5,100	300,000	E
Ra	57	500	70	500	2,100	9,100	530,000	E
Ru	5	55	0	55	900	66,000	87,000	E
Sb	45	45	0	45	480	1,300	1,300	E
Sm	240	240	0	240	1,000	2,900	2,900	R
Sr	0.01	15	30	15	65	150	32,000	E
Tc	0.0029	0.1	0	0.1	0.6	1	340	E
Th	207	3,200	60,000	3,200	4,500	89,000	13,000,000	E
Tl	20	20	0	390	89	250	250	R
U	0.03	15	50	15	220	1,600	400,000	E
Zn	0.1	200	0	200	1,500	2,400	100,000	E

Table 3-13. Distribution Coefficients (K_d 's) (continued)

NOTES:

- R The base case value is calculated based on the plant-soil uptake factor using the method described by Sheppard and Thibault (Ref. 1). The coefficient for sand was used to calculate the base case K_d value.
- E The base case value is the minimum geometric mean K_d value based on lithology published by Sheppard and Thibault (Ref. 1).
- M The base case value is set equal to 0 as a conservative estimate based on the assumption that tritium is tritiated water and is mobile (Ref. 2 & 3).

REFERENCES:

- (1) Sheppard, M.I. and D.H. Thibault, 1990, *Default Soil Solid/Liquid Partition Coefficients, K_{ds} , for Four Major Soil Types: A Compendium*, Health Physics, **59**(4): 471-482.
- (2) Yu, C. et al., 1993, *Manual for Implementing Residual Radioactive Material Guidelines Using RESRAD, Version 5.0*, ANL/ES-160, DOE/CH/8901, Argonne National Laboratory, Argonne, IL. Note: Radionuclide K_d values are provided in: Yu, C. et al, 1993, *Data Collection Handbook to Support Modeling the Impacts of Radioactive Material in Soil*, ANL/EAIS-8, Argonne National Laboratory, Argonne, IL.
- (3) Kennedy, W.E. and D.L. Strenge, 1992, *Residual Radioactive Contamination From Decommissioning, Technical Basis for Translating Contamination Levels to Annual Total Effective Dose Equivalent - Final Report*, NUREG/CR-5512, PNL-7994, Vol. 1, Pacific Northwest Laboratory, prepared for the U.S. Nuclear Regulatory Agency.

- *Human Health Evaluation Manual, Supplemental Guidance: "Standard Default Exposure Factors,"* Office of Solid Waste and Emergency Response, OSWER Directive 9285.6-03, March 25, 1991 (EPA 91b).
- *Exposure Factors Handbook,* Office of Health and Environmental Assessment, EPA/600/8-89/043, March 1989 (EPA 89c).
- *Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part A, Baseline Risk Assessment),* EPA Office of Emergency and Remedial Response, EPA/540/1-89/002, 1989 (EPA 89a).
- *Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part B, Development of Risk-Based Preliminary Remediation Goals),* Interim Final, OERR Publication 9285.7-01B, October 1991 (EPA 91a).
- *Health Effects Assessment Summary Tables,* OHEA ECAO-CIN-821, March 1992 (EPA 92b).

In the absence of specific guidance from EPA, values were taken from the following DOE or NRC documents, in no specific order of preference.

- *Manual for Implementing Residual Radioactive Material Guidelines Using RESRAD, Version 5.0,* prepared by Argonne National Laboratory for the U.S. Department of Energy, September 1993 (Working Draft) (DOE 93a).
- *Data Collection Handbook to Support Modeling the Impacts of Radioactive Material in Soil,* ANL/EAIS-8, prepared by Argonne National Laboratory for the U.S. Department of Energy, April 1993 (ANL 93b).
- *Residual Radioactive Contamination From Decommissioning: Technical Basis for Translating Contamination Levels to Annual Total Effective Dose Equivalent,* prepared by W.E. Kennedy, Jr., and D.L. Strenge, Battelle Pacific Northwest Laboratory for the U.S. Nuclear Regulatory Commission, NUREG/CR-5512, October 1992 (Final Report) (NRC 92b).

Furthermore, in the absence of specific guidance from either EPA, DOE, or NRC, values were selected from a range of factors published in the open literature.

Exposure duration for the suburban and rural residential scenarios is set at 30 years and EPA's 1994 30-year cancer incidence slope factors were used for calculating the results. The exposure duration for commercial/industrial exposures is set at 25 years and uses the

same slope factors. RESRAD Version 5.19 default dose conversion factors were used for the dose calculations because dose conversion factors for several of the associated radionuclides were not included in Federal Guidance Numbers 11 and 12 (EPA 88c, EPA 93d). The values for exposure duration are taken from *HHEM Supplemental Guidance* (EPA 91b). Appendix B contains tables listing the slope factors and dose conversion factors used in these calculations.

External Gamma Radiation Parameters. The external shielding factor is the ratio of the external gamma radiation level indoors to the radiation level outdoors. The value of 0.8 was taken from *RAGS/HHEM, Part B* (EPA 91a). Values for the amount of time spent indoors and outdoors each day for an individual are taken from *HHEM Supplemental Guidance* (EPA 91a) and *Exposure Factors Handbook* (EPA 89c). The shape factor is used by RESRAD to correct for a non-circular shaped contaminated area on the basis of an ideally circular zone. The shape factor for a circle and for sites with an area greater than 1,200 m² is one. The generic test site for RESRAD is assumed to be a circle with an area of 10,000 m², thus the shape factor is one.

Inhalation Parameters. The inhalation rate is the volume of air inhaled by an individual in one year. The value of 7,300 m³/yr is taken from *HHEM Supplemental Guidance* (EPA 91b). The mass loading for inhalation is the quantity of contaminated dust contained in each m³ of air. The value of 1.5x10⁻⁶ g/m³ is taken from *Draft Guidance for Soil Screening Level Framework* (EPA 94) as a reasonable quantity for suburban exposures. A larger value of 2x10⁻⁴ g/m³ was selected for rural residential and commercial/industrial scenarios where larger quantities of dust may potentially be suspended in air. This value was selected from the *Data Collection Handbook* (ANL 93b). The shielding factor for inhalation is the ratio of quantity of dust in indoor air to the quantity of dust in outdoor air, and accounts for filtration of indoor air. The value of 0.4 was taken from the *Data Collection Handbook* (ANL 93b).

Ingestion Pathway Dietary Parameters. These parameters refer to the quantity of food consumed by an individual in one year. RESRAD divides food intake into eight groups:

- Fruits, non-leafy vegetables, and grains
- Leafy vegetables
- Milk

- Meat and poultry
- Fish
- Other seafood
- Soil
- Water

The value entered into the program is assumed to be the total quantity of that food group consumed each year. Contamination factors are applied to each group to correct for the fraction of food that is contaminated.

The RESRAD contamination factors for plants, meat, and milk obtained from the site are calculated internally by the program. For the base case analysis these correction factors all equal 0.5. The correction factor for fish is also set at 0.5, while the correction factor for water use (drinking, household, livestock, and irrigation) is set at one. This means 50% of the food consumed by an individual living on the site is contaminated and 100% of the water used by an individual on the site is contaminated.

The *Exposure Factors Handbook* (EPA 89c) lists the quantity of contaminated homegrown vegetables at 50 g/day typical and 80 g/day reasonable worst case. Contaminated fruit consumption is listed at 28 g/day typical and 42 g/day worst case. EPA does not break out leafy vegetables or grains as separate categories. A mean value of 40 g/day (\pm 40 g/day) for leafy vegetables can be calculated based on Table 2-9 in the *Exposure Factors Handbook* (EPA 89c). This table also indicates that about 26% of homegrown vegetables are leafy and 74% are non-leafy. DOE recommends a value of 38 g/day in the *Data Collection Handbook* (ANL 93b), with 50% of the leafy vegetables assumed to be contaminated. This gives a value of 19 g/day of contaminated leafy vegetables. The *Data Collection Handbook* (ANL 93b) also lists 53 g/day for contaminated grains.

EPA lists a typical contaminated milk consumption rate of 0.16 L/day, and a reasonable maximum rate of 0.23 L/day (EPA 89c). DOE recommends a slightly more conservative estimate of 0.25 L/day of contaminated milk in the *Data Collection Handbook* (ANL 93b).

The meat consumed by an individual living on the site is assumed to be beef. EPA estimates that 75 g/day is a reasonable worst case estimate for contaminated beef consumption (EPA 89c). The *Data Collection Handbook* recommends a higher value of 173 g/day to account for consumption of other types of meat as well as beef.

The fish obtained from the generic test site are assumed to be fresh water fish living in the surface water body on the site. The *Exposure Factors Handbook* lists a consumption rate of 6.5 g/day for non-marine fish consumption. DOE recommends a value of 7.5 g/day for contaminated fish consumption and 1.3 g/day for other seafood in the *Data Collection Handbook* (ANL 93b).

The *Exposure Factors Handbook* (EPA 89c) lists 2 L/day as a reasonable worst case for drinking water consumption. DOE recommends 1.4 L/day as a typical drinking water consumption rate in the *Data Collection Handbook* (ANL 93b).

EPA recommends a soil ingestion rate of 0.2 g/day for children up to 6 years of age, and a rate of 0.1 g/day for adults in the *Exposure Factors Handbook* (EPA 89c). Applying these recommendations for a 30 year exposure period (6 years at 0.2 g/day and 24 years at 0.1 g/day) a lifetime average soil consumption rate of 0.12 g/day is obtained.

Using the consumption rates listed above, annual intake values for the eight ingestion groups were calculated for input in the RESRAD calculations. Separate values are calculated for each exposure scenario.

For the suburban scenario, the fruit, vegetable, and grain ingestion rate was calculated assuming a residence with a small garden. Using EPA's values of 37 g/day (200 g/day ingested x 0.25 contaminated fraction x 0.74 non-leafy vegetable fraction) for non-leafy vegetables and 28 g/day for fruits, a value of 22.8 kg/year is calculated. Applying the DOE contamination factor of 0.5, a total ingestion rate of 45.6 kg/year is calculated. The leafy vegetable consumption rate of 9.2 kg/year is similarly calculated (200 g/day total ingested x 0.25 contaminated fraction x 0.26 leafy vegetable fraction/0.5 RESRAD contamination factor). There is no milk or meat produced on-site for the suburban scenario, so the ingestion rates are zero. There are no fish consumed on-site, thus seafood is not considered for this scenario. Soil ingestion is based on EPA's rate of 0.12 g/day, which is set at 43.8 g/yr. The water ingestion rate of 2 L/day is used to calculate the annual water ingestion rate of 730 L/yr.

The rural residential scenario assumes that the site is used to grow plants for food and raise cows for food and milk. A surface water body on the site serves as a supply of fresh-water fish. Fruit, non-leafy vegetable, and grain consumption assumes the reasonable worst case

values for vegetables and fruits recommended by EPA added to the DOE value for grains (80 g/day + 42 g/day + 53 g/day). A value of 122.5 kg/yr is calculated for total consumption of these plants. The leafy vegetable consumption rate is based on DOE's value of 19 g/day, which gives a total consumption rate of 13.3 kg/yr. Contaminated milk is obtained from the site, and DOE's value of 0.25 L/day was used to calculate a total consumption rate of 184 L/yr. The consumption rate for meat is similarly set at 126 kg/yr using DOE's recommended value of 173 g/day. EPA's value of 6.5 g/day for fresh water fish is used to calculate the total ingestion value of 4.6 kg/yr. No seafood was consumed in this scenario. The drinking water and soil ingestion rates are the same as the values used for the suburban scenario.

The commercial/industrial scenario assumes that an individual works on the site. As a commercial or industrial facility, no food or animals are raised on the site. The ingestion rates for plant, meat milk, and fish ingestion are all zero. The individual is assumed to spend half their waking hours on-site, so the drinking water rate and soil ingestion rate are set equal to half of EPA's recommended values, 1 L/day of water and 0.05 g/day of soil. These values are used to calculate the water ingestion rate of 250 L/yr (1 L/day x 250 days/yr) and the soil ingestion rate of 12.5 g/yr (0.05 g/day x 250 days/yr).

Ingestion Pathway Non-Dietary Parameters. There are several non-dietary parameters required for the RESRAD calculations. These parameters include ingestion parameters for animals and transfer factors for soil-to-plant, plant-to-meat, plant-to-milk, and surface water-to-fish. Currently EPA does not provide any guidance for these parameters. Values used in the RESRAD calculations were obtained from two sources:

- *Data Collection Handbook to Support Modeling the Impacts of Radioactive Material in Soil*, ANL/EAIS-8, prepared by Argonne National Laboratory for the U.S. Department of Energy, April 1993 (ANL 93b).
- *Manual for Implementing Residual Radioactive Guidelines Using RESRAD, Version 5.0*, Working Draft, ANL/EAD/LD-2, prepared by Argonne National Laboratory for the U.S. Department of Energy, September 1993 (DOE 93a).

The parameter values used for the RESRAD calculations are provided in Table 3-11.

3.1.3 Sensitivity Analysis

Sensitivity analyses were performed on key parameters that were used in model calculations to derive soil cleanup concentrations using RESRAD Version 5.19. These parameters included: (1) area of the contaminated zone, (2) thickness of the contaminated zone, (3) infiltration rate, (4) distribution coefficients (K_d values), and (5) thickness of the unsaturated zone. The purpose of these analyses was to determine the sensitivity of generic radionuclide-specific soil cleanup concentrations to variations in model input values.

3.1.3.1 Method

3.1.3.1.1 Modified Parameters and Parameter Values. Table 3-14 lists the parameters and corresponding input values that were varied for use in the sensitivity analyses. These parameters define key assumptions concerning specific characteristics of the generic test site that have a direct impact on the derivation of soil cleanup concentrations. To determine this impact, values for each parameter were varied from default values used in the base case analysis (see Figure 3-4) as follows:

- Area of the Contaminated Zone/Length Parallel to Aquifer Flow: Values were varied simultaneously in discrete pairs, with the value assigned for area ranging by factors of 100 times lower to 1,000 times higher than the default value of 10,000 m² used in the base-case calculations.
- Thickness of the Contaminated Zone: Values were varied by factors of 100 times lower to 1.5 times higher than the default value of 2 m used in the base-case calculations.
- Infiltration Rate: Values were varied by factors of 500 times lower to 4 times higher than the default value of 0.5 m/yr used in the base-case calculations.
- Distribution Coefficients: Values were varied for each radionuclide individually (see Table 3-13). In all cases, radionuclide-specific K_d values used in the sensitivity analyses were higher than those assigned as default values.
- Thickness of the Unsaturated Zone: Values were varied from 0 to 50 m. A default value of 2 m was used in the base-case calculations.

Table 3-14. Modified Parameters and Input Values Used in Sensitivity Analyses

Parameter	Base Case Values		Modified Values	
Area of Contaminated Zone (m ²) / Length Parallel to Aquifer Flow (m)	<u>Area</u> 10,000	<u>Length</u> 113	<u>Area</u> 100 1,000 100,000 1,000,000 10,000,000	<u>Length</u> 11 36 357 1,128 3,568
Thickness of the Contaminated Zone (m)	2		0.02 0.1 0.2 1 3	
Infiltration Rate (m/yr) (See the equation below)	0.5		0.001 0.025 0.1 1 2	
Distribution Coefficients (K _d : cm ³ /g)	(See Table 3-13)		(See Table 3-13)	
Unsaturated Zone Thickness (m)	2		0 0.5 1 10 100	

$$\text{Infiltration Rate (m/yr)} = (1 - \text{CE})[(1 - \text{CR})\text{PR} + \text{IRR}]$$

Where

- IR = Infiltration Rate (m/yr)
- CE = Evaporation Coefficient (unitless)
- CR = Runoff Coefficient (unitless)
- PR = Precipitation Rate (m/yr)
- IRR = Irrigation Rate (m/yr)

IR =	0.001	0.025	0.1	0.5	1	2
CE =	0.975	0.975	0.9	0.5	0.1	0
CR =	0.05	0.33	0	0.2	0.145	0
PR =	0.1	0.3	0.5	1	1.3	2
IRR =	1	0.8	0.5	0.2	0	0

Calculational Approach. Calculations were performed using the RESRAD Version 5.19 computer code assuming the rural residential exposure scenario. Consistent with this scenario, nine exposure pathways were evaluated:

- External radiation exposure from photon-emitting radionuclides in soil
- Inhalation of resuspended soil and dust containing radionuclides
- Inhalation of radon (Rn-222 and Rn-220) and radon decay products from soil containing radium (Ra-226 and Ra-224)
- Incidental ingestion of soil containing radionuclides
- Ingestion of drinking water containing radionuclides transported from soil to potable groundwater sources
- Ingestion of home-grown produce (*i.e.*, fruits and vegetables) contaminated with radionuclides taken up from soil
- Ingestion of meat (*i.e.*, beef) containing radionuclides taken up by cows grazing on contaminated plants (*i.e.*, fodder)
- Ingestion of milk containing radionuclides taken up by cows grazing on contaminated plants (*i.e.*, fodder)
- Ingestion of locally caught fish containing radionuclides

Input values for each selected parameter were varied individually and systematically over the ranges shown in Tables 3-13 and 3-14, while holding all other parameter values constant. With each variation in the parameter value and for each radionuclide considered, RESRAD calculated estimates of lifetime risk per pCi/g and soil concentrations (in pCi/g) corresponding to the year of maximum risk. This process was repeated iteratively in a series of runs for each radionuclide and each parameter. Including the base case calculations, 23 RESRAD runs were performed for each radionuclide, as follows:

- Six runs for contaminated zone area calculations (*i.e.*, at 100, 1,000, 10,000, 100,000, 1,000,000 and 10,000,000 m²), plus
- Six runs for the contaminated zone thickness calculations (*i.e.*, at 0.02, 0.1, 0.2, 1, 2 and 3 m), plus

- Six runs for the infiltration rate calculations (*i.e.*, at 0.001, 0.025, 0.1, 0.5, 1 and 2 m/yr), plus
- Five runs for the K_d calculations (at low-, base case, mid-1-, mid-2-, and high-end values), plus
- Five runs for the Unsaturated Zone Thickness calculations (*i.e.*, at 0, 1, 2, 10 and 100 m)

A total of 1,708 RESRAD runs were required to complete all sensitivity analyses for the 61 radionuclides considered in the calculations. To deal with this large number of runs, five computer programs (one each for the five parameters investigated) were written and used to automate the process of changing parameter values and re-running RESRAD calculations. These programs greatly reduced analysis times and facilitated data retrieval. However, numerous hand calculations and manual RESRAD runs were also made to ensure all automated calculations were performed correctly.

3.1.3.2 Results

The results of the sensitivity analyses for each of the five parameters appear in tabular form in Appendix H, and are summarized below. The results listed in the tables are calculated as radionuclide soil concentrations (RSCs) corresponding to a lifetime risk of 1×10^{-4} . The RSCs vary inversely with the risk factors.

Contaminated Zone Area. The results of sensitivity analyses on contaminated zone area and thickness are summarized in Table 3-15.

The table illustrates that risk factors vary depending on the assumptions made regarding the area of the contaminated zone. However, some general trends are observed when the data are considered as a whole. The results indicate that for most radionuclides:

- the RSC will increase by a factor of approximately 10 when the area of the contaminated zone decreases by a factor of 100 from the base case (*i.e.*, from 10,000 to 100 m²)

Table 3-15. RESRAD Parameter Sensitivity Analysis: Contaminated Zone Area

Nuclide	Base Case, Generic Site Radionuclide Soil Concentration (pCi/g) at a 1 x 10 ⁻⁴ Risk Level	Ratio of the Calculated Soil Concentration to the Base Case Soil Concentration as a Function of the Contaminated Zone Area (m ²)					
		100	1,000	10,000	100,000	1,000,000	10,000,000
Ac-227+D	3	2.04	1.05	1	1	1	1
Ag-108m +D	1	1.95	1.11	1	0.95	0.95	0.95
Ag-110m +D	0.3	1.90	1.09	1	0.97	0.97	0.97
Am-241	90	2.86	1.04	1	0.98	0.98	0.98
Am-243 +D	12	1.92	1.06	1	1	1	1
Bi-207	1	1.84	1.06	1	1	1	1
C-14	1	150.17	5.24	1	0.22	0.07	0.01
Cd-109	11	10.76	1.09	1	0.92	0.92	0.92
Ce-144 +D	22	1.92	1.06	1	1	1	1
Cl-36	0.1	41.08	4.11	1	0.54	0.54	0.54
Cm-243	21	1.80	1.06	1	1	1	1
Cm-244	125	3.03	1.03	1	0.99	0.98	0.98
Cm-248	26	3.16	1.03	1	0.99	0.98	0.98
Co-57	16	2.02	1.12	1	0.94	0.94	0.94
Co-60	0.4	1.91	1.09	1	0.97	0.97	0.97
Cs-134	1	2.11	1.17	1	0.90	0.90	0.90
Cs-135	40	30.55	3.06	1	0.57	0.57	0.22
Cs-137+D	1	2.35	1.26	1	0.85	0.85	0.85
Eu-152	1	1.82	1.06	1	1	1	1
Eu-154	1	1.82	1.06	1	1	1	1
Eu-155	60	1.84	1.06	1	0.99	0.99	0.99
Fe-55	6,761	51.53	5.28	1	0.53	0.53	0.53
Gd-153	51	1.84	1.06	1	1	1	1
H-3	34	11.12	2.68	1	0.40	0.28	0.27
I-129	0.1	14.27	4.03	1	0.28	0.17	0.11
K-40	2	5.11	1.73	1	0.69	0.41	0.08
Mn-54	1	1.86	1.06	1	1	1	1
Na-22	0.4	1.94	1.12	1	0.95	0.95	0.95
Nb-94	1	1.82	1.06	1	1	1	1
Ni-59	897	25.69	2.57	1	0.60	0.60	0.50
Ni-63	285	25.70	2.57	1	0.60	0.60	0.60
Np-237 +D	1	8.49	2.65	1	0.37	0.22	0.13
Pa-231	3	3.08	1.41	1	0.60	0.45	0.34
Pb-210 +D	3	10.97	1.11	1	0.90	0.90	0.90
Pm-147	4,120	12.74	1.40	1	0.76	0.76	0.76
Pu-238	101	2.97	1.05	1	0.97	NC	0.96
Pu-239	104	2.97	1.05	1	0.97	0.96	0.96
Pu-240	104	2.96	1.05	1	0.97	0.96	0.96
Pu-241 +D	3,076	2.86	1.04	1	0.98	0.97	0.97
Pu-242	108	2.96	1.05	1	0.97	0.96	0.96
Pu-244 +D	1	1.83	1.06	1	1	1	1
Ra-226 +D	0.1	1.52	1.02	1	0.97	0.90	0.74

Table 3-15. RESRAD Parameter Sensitivity Analysis: Contaminated Zone Area

Nuclide	Base Case, Generic Site Radionuclide Soil Concentration (pCi/g) at a 1×10^{-4} Risk Level	Ratio of the Calculated Soil Concentration to the Base Case Soil Concentration as a Function of the Contaminated Zone Area (m ²)					
		100	1,000	10,000	100,000	1,000,000	10,000,000
Ra-228 +D	1	2.08	1.08	1	0.98	0.96	0.91
Ru-106 +D	4	2.20	1.07	1	0.97	0.97	0.97
Sb-125 +D	3	1.82	1.06	1	1	1	1
Sm-147	137	9.00	2.11	1	0.58	0.55	0.37
Sm-151	12,752	13.11	1.40	1	0.76	0.76	0.76
Sr-90 +D	1	15.63	1.56	1	0.71	0.71	0.71
Tc-99	2	10.25	1.85	1	0.47	0.31	0.22
Th-228 +D	1	1.82	1.06	1	1	1	1
Th-229 +D	4	1.88	1.06	1	1	1	1
Th-230	0.5	1.60	1.03	1	0.96	0.89	0.72
Th-232	0.3	2.06	1.08	1	0.98	0.96	0.91
Tl-204	53	12.14	1.31	1	0.79	0.79	0.79
U-232	1	1.07	0.62	1	1.05	1.17	0.98
U-233	5	9.59	2.92	1	0.36	0.22	0.18
U-234	5	9.72	2.94	1	0.36	NC	0.18
U-235 +D	4	5.27	2.19	1	0.41	0.26	0.21
U-236	6	9.73	2.94	1	0.36	0.22	0.18
U-238 +D	4	8.59	2.78	1	0.37	0.23	0.18
Zn-65	1	4.55	2.03	1	0.65	0.65	0.65
Average Ratio =		9.59	1.66	1	0.80	0.78	0.73
Minimum Ratio =		1.07	0.62	1	0.22	0.07	0.01
Maximum Ratio =		150.17	5.28	1	1.05	1.17	1.00

Notes:

- (1) Sensitivity analyses were performed using the DOE RESRAD computer code (Version 5.19). See text for a discussion of these analyses and the assumptions used in the calculations.
- (2) The double-line column, containing ratio values equal to one, represents a comparison with the base case value. Shaded boxes indicate calculated radionuclide soil concentrations that do not differ from the base case concentration by more than 0.1%, i.e. three decimal places.
- (3) The following parameter values were assumed for the base case, generic site analysis:
 - *Contaminated Zone Area = 10,000m²;
 - *Contaminated Zone Thickness = 2 m;
 - *Infiltration Rate = 0.5 m/yr;
 - *Kd = radionuclide specific; and
 - *Uncontaminated, Unsaturated Zone Thickness = 2 m.

NC= Not calculated. RESRAD program error encountered during calculation.

- the RSC will increase by a factor of approximately 2 when the area decreases by a factor of 10 (*i.e.*, from 10,000 to 1,000 m²)
- the RSC will decrease slightly (by a factor of 0.8) when the area increases in size by a factor of 10 or 100 (*i.e.*, from 10,000 to 100,000 or 1,000,000 m²)
- the RSC will decrease slightly (by a factor of 0.7) when the area increases in size by a factor of 1,000 (*i.e.*, from 10,000 to 10,000,000 m²)

Contaminated Zone Thickness. The results of the sensitivity analyses on contaminated zone thickness are summarized in Table 3-16.

The table illustrates that the risk factors vary depending on the assumptions made regarding the area of the contaminated zone. However, some general trends are observed when the data are considered as a whole. The results indicate that for most radionuclides:

- the RSC will increase by a factor of approximately 100 when the thickness decreases by a factor of 100 from the base case (*i.e.*, from 2 to 0.02 m)
- the RSC will increase by a factor of approximately 6 when the thickness decreases by a factor of 20 from the base case (*i.e.*, from 2 to 0.1 m)
- the RSC will remain relatively constant when the thickness equals or exceeds 1 meter

Infiltration Rate. The results of sensitivity analyses on infiltration rate are provided in Table 3-17.

The results indicate that for most radionuclides:

- the RSC will increase by a factor of approximately 3 when the infiltration rate decreases by a factor of 500 from the base case (*i.e.*, from 0.5 to 0.001 m/yr)
- the RSC will increase by a factor of approximately 2 when the infiltration rate decreases by a factor of 20 from the base case (*i.e.*, from 0.5 to 0.025 m/yr)
- the RSC will remain relatively constant at infiltration rates above 0.1 m/yr.

Table 3-16. RESRAD Parameter Sensitivity Analysis: Contaminated Zone Thickness

Nuclide	Base Case, Generic Site Radionuclide Soil Concentration (pCi/g) at a 1×10^4 Risk Level	Ratio of the Calculated Soil Concentration to the Base Case Soil Concentration as a Function of the Contaminated Zone Thickness (m)					
		0.02	0.1	0.2	1	2	3
Ac-227+D	3	5.04	1.55	1.20	1	1	1
Ag-108m +D	1	4.74	1.47	1.14	1	1	1
Ag-110m +D	0.3	5.28	1.56	1.16	1	1	1
Am-241	90	9.29	2.39	1.64	1	1	1
Am-243 +D	12	3.48	1.27	1.08	1	1	1
Bi-207	1	4.56	1.42	1.10	1	1	1
C-14	1	44.90	8.98	4.49	1	1	1
Cd-109	11	42.93	8.75	4.42	1	1	1
Ce-144 +D	22	5.58	1.62	1.19	1	1	1
Cl-36	0.1	44.93	8.98	4.49	1	1	1
Cm-243	21	3.56	1.23	1.03	1	1	1
Cm-244	125	14.07	2.82	1.78	1	1	1
Cm-248	26	14.48	2.90	1.82	1	1	1
Co-57	16	3.27	1.26	1.11	1	1	1
Co-60	0.4	5.52	1.60	1.18	1	1	1
Cs-134	1	5.29	1.60	1.21	1	1	1
Cs-135	40	27.86	5.57	3.15	1	1	1
Cs-137+D	1	5.79	1.73	1.30	1	1	1
Eu-152	1	5.38	1.56	1.15	1	1	1
Eu-154	1	5.24	1.53	1.14	1	1	1
Eu-155	60	2.58	1.10	1.02	1	1	1
Fe-55	6,761	8.89	1.78	1.17	1	1	1
Gd-153	51	2.57	1.10	1.01	1	1	1
H-3	34	65.29	13.06	6.80	0.60	1	0.90
I-129	0.1	12.85	2.75	1.73	0.93	1	0.98
K-40	2	14.49	3.71	2.38	1	1	1
Mn-54	1	5.22	1.54	1.15	1	1	1
Na-22	0.4	5.37	1.58	1.17	1	1	1
Nb-94	1	4.81	1.45	1.11	1	1	1
Ni-59	897	29.70	5.94	3.31	1	1	1
Ni-63	285	29.71	5.94	3.31	1	1	1
Np-237 +D	1	13.35	2.87	1.82	0.91	1	0.97
Pa-231	3	37.17	7.68	4.58	0.70	1	0.88
Pb-210 +D	3	33.64	6.73	3.64	1	1	1
Pm-147	4,120	17.77	3.63	2.22	1	1	1
Pu-238	101	13.53	2.71	1.72	1	1	1
Pu-239	104	13.52	2.71	1.71	1	1	1
Pu-240	104	13.51	2.71	1.71	1	1	1
Pu-241 +D	3,076	55.76	4.20	1.89	0.99	1	1
Pu-242	108	13.48	2.70	1.71	1	1	1
Pu-244 +D	1	4.60	1.42	1.10	1	1	1
Ra-226 +D	0.1	33.44	9.34	6.62	0.22	1	0.96

Table 3-16. RESRAD Parameter Sensitivity Analysis: Contaminated Zone Thickness

Nuclide	Base Case, Generic Site Radionuclide Soil Concentration (pCi/g) at a 1×10^4 Risk Level	Ratio of the Calculated Soil Concentration to the Base Case Soil Concentration as a Function of the Contaminated Zone Thickness (m)					
		0.02	0.1	0.2	1	2	3
Ra-228 +D	1	7.93	1.97	1.36	1	1	1
Ru-106 +D	4	5.28	1.64	1.27	1	1	1
Sb-125 +D	3	4.27	1.36	1.08	1	1	1
Sm-147	137	28.77	5.75	3.62	0.74	1	0.92
Sm-151	12,752	18.25	3.67	2.23	1	1	1
Sr-90 +D	1	42.75	8.55	4.34	1	1	1
Tc-99	2	22.01	4.55	2.74	0.81	1	0.92
Th-228 +D	1	6.83	1.82	1.26	1	1	1
Th-229 +D	4	5.94	1.66	1.20	1	1	1
Th-230	0.5	5183.18	165.59	48.79	0.19	1	0.59
Th-232	0.3	22.65	2.59	1.52	0.99	1	1
Tl-204	53	34.01	7.80	4.15	1	1	1
U-232	1	53.43	2.03	1.08	0.68	1	0.87
U-233	5	13.02	2.79	1.75	0.93	1	0.97
U-234	5	12.97	2.78	1.75	0.93	1	0.97
U-235 +D	4	10.09	3.35	2.10	0.87	1	0.95
U-236	6	12.97	2.78	1.75	0.93	1	0.97
U-238 +D	4	13.35	2.86	1.80	0.92	1	0.97
Zn-65	1	10.84	3.01	2.06	1	1	1
Average Ratio =		101.66	5.11	2.88	0.94	1	0.98
Minimum Ratio =		2.57	1.10	1.01	0.19	1	0.59
Maximum Ratio =		5183.18	165.59	48.79	1.00	1	1.00

Notes:

- (1) Sensitivity analyses were performed using the DOE RESRAD computer code (Version 5.19). See text for a discussion of these analyses and the assumptions used in the calculations.
- (2) The double-line column, containing ratio values equal to one, represents a comparison with the base case value. Shaded boxes indicate calculated radionuclide soil concentrations that do not differ from the base case concentration by more than 0.1%, i.e., three decimal places.
- (3) The following parameter values were assumed for the base case, generic site analysis:
 - *Contaminated Zone Area = 10,000 m²;
 - *Contaminated Zone Thickness = 2 m;
 - *Infiltration Rate = 0.5 m/yr;
 - *Kd = radionuclide specific; and
 - *Uncontaminated, unsaturated Zone Thickness = 2 m.

Table 3-17. RESRAD Parameter Sensitivity Analysis: Infiltration Rate

Nuclide	Base Case, Generic Site Radionuclide Soil Concentration (pCi/g) at a 1 x 10 ⁴ Risk Level	Ratio of the Calculated Soil Concentration to the Base Case Soil Concentration as a Function of the Infiltration Rate (m/yr)					
		0.001	0.025	0.1	0.5	1.00	2
Ac-227+D	3	1	1	1	1	1	1
Ag-108m +D	1	1	1	1	1	1	1
Ag-110m +D	0.3	1	1	1	1	1	1
Am-241	90	1	1	1	1	1	1
Am-243 +D	12	1	1	1	1	1	1
Bi-207	1	1	1	1	1	1	1
C-14	1	1	1	1	1	1	1
Cd-109	11	1	1	1	1	1	1
Ce-144 +D	22	1	1	1	1	1	1
Cl-36	0.1	1	1	1	1	1	1
Cm-243	21	1	1	1	1	1	1
Cm-244	125	1	1	1	1	1	1
Cm-248	26	1	1	1	1	1	1
Co-57	16	1	1	1	1	1	1
Co-60	0.4	1	1	1	1	1	1
Cs-134	1	1	1	1	1	1	1
Cs-135	40	1	1	1	1	1	1
Cs-137+D	1	1	1	1	1	1	1
Eu-152	1	1	1	1	1	1	1
Eu-154	1	1	1	1	1	1	1
Eu-155	60	1	1	1	1	1	1
Fe-55	6,761	1	1	1	1	1	1
Gd-153	51	1	1	1	1	1	1
H-3	34	1.11	1.31	1.45	1	0.61	1.87
I-129	0.1	39.11	9.69	3.51	1	0.65	0.47
K-40	2	1	1	1	1	1	1
Mn-54	1	1	1	1	1	1	1
Na-22	0.4	1	1	1	1	1	1
Nb-94	1	1	1	1	1	1	1
Ni-59	897	1	1	1	1	1	1
Ni-63	285	1	1	1	1	1	1
Np-237 +D	1	8.07	6.95	3.39	1	0.59	0.42
Pa-231	3	1.02	1.03	1.07	1	0.79	0.67
Pb-210 +D	3	1	1	1	1	1	1
Pm-147	4,120	1	1	1	1	1	1
Pu-238	101	1	1	1	1	1	1
Pu-239	104	1	1	1	1	0.37	0.28
Pu-240	104	1	1	1	1	0.40	0.25
Pu-241 +D	3,076	0.99	0.99	0.99	1	1.01	1.02
Pu-242	108	1	1	1	1	0.36	0.27
Pu-244 +D	1	1	1.01	1	1	1.75	2.01
Ra-226 +D	0.1	1	1	1	1	1	1

Table 3-17. RESRAD Parameter Sensitivity Analysis: Infiltration Rate

Nuclide	Base Case, Generic Site Radionuclide Soil Concentration (pCi/g) at a 1×10^4 Risk Level	Ratio of the Calculated Soil Concentration to the Base Case Soil Concentration as a Function of the Infiltration Rate (m/yr)					
		0.001	0.025	0.1	0.5	1.00	2
Ra-228 +D	1	1	1	1	1	1	1
Ru-106 +D	4	1	1	1	1	1	1
Sb-125 +D	3	1	1	1	1	1	1
Sm-147	137	2.04	2.04	2.04	1	0.66	0.50
Sm-151	12,752	1	1	1	1	1	1
Sr-90 +D	1	1	1	1	1	1	1
Tc-99	2	1.73	1.73	1.73	1	0.73	0.57
Th-228 +D	1	1	1	1	1	1	1
Th-229 +D	4	1	1	1	1	1	1
Th-230	0.5	0.88	0.88	0.90	1	1.13	1.26
Th-232	0.3	0.99	0.99	1	1	1.01	1.01
Tl-204	53	1	1	1	1	1	1
U-232	1	0.54	0.55	0.55	1	0.76	0.66
U-233	5	6.59	6.26	3.74	1	0.57	0.41
U-234	5	11.35	7.76	3.95	1	0.57	0.40
U-235 +D	4	2.91	3.55	2.51	1	0.62	0.46
U-236	6	24.78	11.32	4.02	1	0.57	0.40
U-238 +D	4	11.46	8.50	3.66	1	0.58	0.41
Zn-65	1	1	1	1	1	1	1
Average Ratio =		2.62	1.80	1.32	1	0.91	0.91
Minimum Ratio =		0.54	0.55	0.55	1	0.36	0.25
Maximum Ratio =		39.11	11.32	4.02	1	1.75	2.01

Notes:

- (1) Sensitivity analyses were performed using the DOE RESRAD computer code (Version 5.19). See text for a discussion of these analyses and the assumptions used in the calculations.
- (2) The double-line column, containing ratio values equal to one, represents a comparison with the base case value. Shaded boxes indicate calculated radionuclide soil concentrations that do not differ from the base case concentration by more than 0.1%, i.e., three decimal places.
- (3) The following parameter values were assumed for the base case, generic site analysis:
 - *Contaminated Zone Area = 10,000 m²;
 - *Contaminated Zone Thickness = 2 m;
 - *Infiltration Rate = 0.5 m/yr;
 - *Kd = radionuclide specific; and
 - *Uncontaminated, unsaturated Zone Thickness = 2 m.

K_d Values. The results of the sensitivity analyses on K_d value are provided in Table 3-18. The results indicate that for most radionuclides:

- the RSC will decrease by a factor of about 0.7 when the K_d value varies from the base case to the low-end value
- the RSC will increase by a factor of about 8 from the low-end (base case) to the high-end K_d values, even though the K_d s for some radionuclides range over several orders of magnitude from the low- to high-end values.

Risk factors are only affected by K_d when contaminated groundwater contributes to the total risk. Radionuclides dominated by external exposure, such as Cs-137, never reach the groundwater so K_d has no effect on the cleanup concentration. Radionuclides with high K_d values, such as Ac-227+D (K_d values range from 240 to 2,900 cm^3/g), do not reach the groundwater in the time frames being investigated.

Radionuclides that are dominated by water dependent pathways, such as U-238, are affected by changes in K_d values. The risk factor for U-238 increases by a factor of 50 when the low-end K_d value is substituted into the calculations, and decreases by a factor of 11 when the high-end K_d value is substituted. For radionuclides with very low K_d values, such as H-3 and I-129, the affect is even more pronounced.

Radionuclides that have significant ingrowth of radon isotopes during the model's 1000 year time frame, such as Th-230 and U-232, are also affected by changes in K_d . Higher K_d values prevent the radium isotopes from migrating deeper into the soil, allowing the concentrations of Ra-226+D and Ra-228+D to increase to the point where indoor radon levels are the dominant exposure pathway.

Unsaturated Zone Thickness. The results of sensitivity analyses on unsaturated zone thickness are provided in Table 3-19. The results indicate that, on average, RSCs for most radionuclides remain relatively constant when the unsaturated zone thickness ranges from 0 to 50 m. Radionuclide risk factor calculations are generally insensitive to wide changes in the unsaturated zone thickness.

Table 3-18. RESRAD Parameter Sensitivity Analysis: Distribution Coefficient (Kd)

Nuclide	Base Case, Generic Site Radionuclide Soil Concentration (pCi/g) at a 1×10^{-4} Risk Level	Ratio of the Calculated Soil Concentration to the Base Case Soil Concentration as a Function of the Kd value:					Radionuclide-Specific Kd Value (mi/g):				
		Low	Base Case	Mid-1	Mid-2	High	Low	Base Case	Mid-1	Mid-2	High
Ac-227+D	3	1	1	1	1	1	240	240	1,000	2,900	2,900
Ag-108m +D	1	1	1	1	1	1	3	90	150	15,000	33,000
Ag-110m +D	0.3	1	1	1	1	1	3	90	150	15,000	33,000
Am-241	90	NC	1	1	1	1	1	1,900	9,000	110,000	450,000
Am-243 +D	12	0.01	1	1	1	1	1	1,900	9,000	110,000	450,000
Bi-207	1	1	1	1	1	1	30	30	130	370	370
C-14	1	1	1	1	1	1	5	5	14	39	39
Cd-109	11	1	1	1	1	1	1	40	320	800	17,000
Ce-144 +D	22	1	1	1	1	1	40	500	5,700	20,000	56,000
Cl-36	0.1	1	1	1	1	1	2	2	7	19	19
Cm-243	21	1	1	1	1	1	93	4,000	6,000	18,000	52,000
Cm-244	125	1	1	1	1	1	93	4,000	6,000	18,000	52,000
Cm-248	26	0.09	1	1	1	1	93	4,000	6,000	18,000	52,000
Co-57	16	0.42	1	1	1	1	0	60	780	1,300	14,000
Co-60	0.4	0.40	1	1	1	1	0	60	780	1,300	14,000
Cs-134	1	0.18	1	1	1	1	0	270	1,100	4,600	145,000
Cs-135	40	0.02	1	1	1	1	0	270	1,100	4,600	145,000
Cs-137+D	1	0.07	1	1	1	1	0	270	1,100	4,600	145,000
Eu-152	1	1	1	1	1	1	240	240	1,000	2,900	2,900
Eu-154	1	1	1	1	1	1	240	240	1,000	2,900	2,900
Eu-155	60	1	1	1	1	1	240	240	1,000	2,900	2,900
Fe-55	6,761	0.03	1	1	1	1	1	170	410	800	6,000
Gd-153	51	1	1	1	1	1	240	240	1,000	2,900	2,900
H-3	34	1.21	1	119.01	311.75	311.75	0	0	15	42	42
I-129	0.1	0.21	1	2.59	16.14	39.11	0	1	3	25	370
K-40	2	1	1	1	1	1	16	16	71	200	200
Mn-54	1	1	1	1	1	1	0	50	170	750	77,000
Na-22	0.4	1	1	1	1	1	44	44	190	540	540
Nb-94	1	1	1	1	1	1	110	110	480	1,300	1,300
Ni-59	897	1	1	1	1	1	60	150	530	1,100	4,700
Ni-63	285	1	1	1	1	1	60	150	530	1,100	4,700
Np-237 +D	1	0.08	1	5.22	8.07	8.07	0	5	40	1,200	2,600
Pa-231	3	1	1	1.07	1.04	1.04	110	110	480	1,300	1,300
Pb-210 +D	3	0.04	1	1	1	1	5	270	8,300	22,000	59,000
Pm-147	4,120	1	1	1	1	1	240	240	1,000	2,900	2,900
Pu-238	101	0.02	1	1	1	1	11	550	1,500	5,100	300,000
Pu-239	104	0.01	1	1	1	1	11	550	1,500	5,100	300,000
Pu-240	104	0.01	1	1	1	1	11	550	1,500	5,100	300,000
Pu-241 +D	3,076	0.01	1	0.99	0.99	0.99	11	550	1,500	5,100	300,000
Pu-242	108	NC	1	1	1	1	11	550	1,500	5,100	300,000
Pu-244 +D	1	0.66	1	1	1.01	1	11	550	1,500	5,100	300,000
Ra-226 +D	0.1	0.85	1	1	1	1	57	500	2,100	9,100	530,000

Table 3-18. RESRAD Parameter Sensitivity Analysis: Distribution Coefficient (Kd)

Nuclide	Base Case, Generic Site Radionuclide Soil Concentration (pCi/g) at a 1×10^{-4} Risk Level	Ratio of the Calculated Soil Concentration to the Base Case Soil Concentration as a Function of the Kd value:					Radionuclide-Specific Kd Value (mi/g):				
		Low	Base Case	Mid-1	Mid-2	High	Low	Base Case	Mid-1	Mid-2	High
Ra-228 +D	1	1.01	1	1	1	1	57	500	2,100	9,100	530,000
Ru-106 +D	4	1	1	1	1	1	5	55	900	66,000	87,000
Sb-125 +D	3	1	1	1	1	1	45	45	480	1,300	1,300
Sm-147	137	1	1	2.04	2.04	2.04	240	240	1,000	2,900	2,900
Sm-151	12,752	1	1	1	1	1	240	240	1,000	2,900	2,900
Sr-90 +D	1	0.05	1	1	1	1	0	15	65	150	32,000
Tc-99	2	0.77	1	1.73	1.73	1.73	0	0	1	1	340
Th-228 +D	1	1	1	1	1	1	207	3,200	4,500	89,000	13,000,000
Th-229 +D	4	1.02	1	1	1	1	207	3,200	4,500	89,000	13,000,000
Th-230	0.5	1.47	1	0.91	0.88	0.88	207	3,200	4,500	89,000	13,000,000
Th-232	0.3	1.05	1	1	0.99	0.99	207	3,200	4,500	89,000	13,000,000
Tl-204	53	1	1	1	1	1	20	20	89	250	250
U-232	1	0.04	1	0.55	0.54	0.54	0	15	220	1,600	400,000
U-233	5	0.02	1	6.62	6.91	6.47	0	15	220	1,600	400,000
U-234	5	0.02	1	8.06	11.85	11.18	0	15	220	1,600	400,000
U-235 +D	4	0.02	1	3.90	3.14	2.85	0	15	220	1,600	400,000
U-236	6	0.02	1	11.32	24.78	24.78	0	15	220	1,600	400,000
U-238 +D	4	NC	1	8.78	11.46	11.45	0	15	220	1,600	400,000
Zn-65	1	0.73	1	1	1	1	0	200	1,500	2,400	100,000
Average Ratio=		0.66	1	3.60	7.35	7.70	62	623	1,674	14,421	972,463
Minimum Ratio=		0.01	1	0.55	0.54	0.54	0	0	1	1	19
Maximum Ratio=		1.47	1	119	312	312	240	4,000	9,000	110,000	13,000,000

Notes:

- (1) Sensitivity analyses were performed using the DOE RESRAD computer code (Version 5.19). See text for a discussion of these analyses and the assumptions used in the calculations.
- (2) The double-line column, containing ratio values equal to one, represents a comparison with the base case value. Shaded boxes indicate calculated radionuclide soil concentrations that do not differ from the base case concentration by more than 0.1%, i.e., three decimal places.
- (3) The following parameter values were assumed for the base case, generic site analysis:
 - *Contaminated Zone Area = 10,000 m²;
 - *Contaminated Zone Thickness = 2 m;
 - *Infiltration Rate = 0.5 m/yr;
 - *Kd = radionuclide specific; and
 - *Uncontaminated, unsaturated Zone Thickness = 2 m.

NC = Not calculated. RESRAD program error encountered during calculation.

Table 3-19. RESRAD Parameter Sensitivity Analysis: Unsaturated Zone Thickness

Nuclide	Base Case, Generic Site Radionuclide Soil Concentration (pCi/g) at a 1×10^4 Risk Level	Ratio of the Calculated Soil Concentration to the Base Case Soil Concentration as a Function of the UnContaminated, Unsaturated Zone Thickness (m):					
		0	0.5	1	2	10	50
Ac-227+D	3	1	1	1	1	1	1
Ag-108m +D	1	1	1	1	1	1	1
Ag-110m +D	0.3	1	1	1	1	1	1
Am-241	90	1	1	1	1	1	1
Am-243 +D	12	1.05	1	1	1	1	1
Bi-207	1	1	1	1	1	1	1
C-14	1	1	1	1	1	1	1
Cd-109	11	1	1	1	1	1	1
Ce-144 +D	22	1	1	1	1	1	1
Cl-36	0.1	1	1	1	1	1	1
Cm-243	21	1	1	1	1	1	1
Cm-244	125	1	1	1	1	1	1
Cm-248	26	0.98	1	1	1	1	1
Co-57	16	1	1	1	1	1	1
Co-60	0.4	1	1	1	1	1	1
Cs-134	1	1	1	1	1	1	1
Cs-135	40	1	1	1	1	1	1
Cs-137+D	1	1	1	1	1	1	1
Eu-152	1	1	1	1	1	1	1
Eu-154	1	1	1	1	1	1	1
Eu-155	60	1	1	1	1	1	1
Fe-55	6,761	1	1	1	1	1	1
Gd-153	51	1	1	1	1	1	1
H-3	34	1.68	1.68	0.90	1	1.36	1.68
I-129	0.1	0.99	0.99	1	1	1.01	1.02
K-40	2	0.97	1	1	1	1	1
Mn-54	1	1	1	1	1	1	1
Na-22	0.4	1	1	1	1	1	1
Nb-94	1	1	1	1	1	1	1
Ni-59	897	1	1	1	1	1	1
Ni-63	285	1	1	1	1	1	1
Np-237 +D	1	0.96	0.97	0.98	1	1.06	1.08
Pa-231	3	0.67	0.83	0.88	1	1.23	1.23
Pb-210 +D	3	1	1	1	1	1	1
Pm-147	4,120	1	1	1	1	1	1
Pu-238	101	1	1	1	1	1	1
Pu-239	104	0.42	0.43	0.53	1	1	1
Pu-240	104	0.43	0.46	0.57	1	1	1
Pu-241 +D	3,076	0.96	1	1	1	1	1
Pu-242	108	0.41	0.43	0.51	1	1	1
Pu-244 +D	1	1.11	1.23	1.33	1	1	1
Ra-226 +D	0.1	1	1	1	1	1	1

Table 3-19. RESRAD Parameter Sensitivity Analysis: Unsaturated Zone Thickness

Nuclide	Base Case, Generic Site Radionuclide Soil Concentration (pCi/g) at a 1×10^4 Risk Level	Ratio of the Calculated Soil Concentration to the Base Case Soil Concentration as a Function of the UnContaminated, Unsaturated Zone Thickness (m):					
		0	0.5	1	2	10	50
Ra-228 +D	1	1	1	1	1	1	1
Ru-106 +D	4	1	1	1	1	1	1
Sb-125 +D	3	1	1	1	1	1	1
Sm-147	137	0.87	0.91	0.94	1	2.04	1.04
Sm-151	12,752	0.97	1	1	1	1	1
Sr-90 +D	1	1	1	1	1	1	1
Tc-99	2	0.86	0.89	0.93	1	1.73	1.73
Th-228 +D	1	1	1	1	1	1	1
Th-229 +D	4	1	1	1	1	1	1
Th-230	0.5	0.99	0.99	1	1	1	1
Th-232	0.3	1	1	1	1	1	1
Tl-204	53	1	1	1	1	1	1
U-232	1	0.51	0.59	0.71	1	0.59	0.59
U-233	5	0.99	0.99	1	1	1.02	1.75
U-234	5	0.99	0.99	0.99	1	1.02	1.76
U-235 +D	4	0.91	0.94	0.96	1	1.18	2.12
U-236	6	0.99	0.99	0.99	1	1.02	1.77
U-238 +D	4	0.97	0.98	0.99	1	1.04	1.81
Zn-65	1	1	1	1	1	1	1
	Average Ratio=	0.96	0.97	0.97	1	1.04	1.11
	Minimum Ratio=	0.41	0.43	0.51	1	0.59	0.59
	Maximum Ratio=	1.68	1.68	1.33	1	2.04	2.12

Notes:

- (1) Sensitivity analyses were performed using the DOE RESRAD computer code (Version 5.19). See text for a discussion of these analyses and the assumptions used in the calculations.
- (2) The double-line column, containing ratio values equal to one, represents a comparison with the base case value. Shaded boxes indicate calculated radionuclide soil concentrations that do not differ from the base case concentration by more than 0.1%, i.e., three decimal places.
- (3) The following parameter values were assumed for the base case, generic site analysis:
 - *Contaminated Zone Area = 10,000 m²;
 - *Contaminated Zone Thickness = 2 m;
 - *Infiltration Rate = 0.5 m/yr;
 - *Kd = radionuclide specific; and
 - *Uncontaminated, unsaturated Zone Thickness = 2 m.

Results by Radionuclide Type. The results of the RESRAD analyses (see Tables 3-15 through 3-19) suggest that the sensitivity of any given radionuclide to changes in site-specific parameter values can be predicted with a fair degree of specificity based on its dominant exposure pathway. The results also show that radionuclides with similar or identical dominant exposure pathways will respond in similar ways when certain model parameters are modified. In general, these findings suggest that each radionuclide can be sorted into one of four different pathway-dependent categories with common sensitivity characteristics. These categories are: (1) external exposure dependent, (2) water pathway independent, (3) water pathway dependent, and (4) radon pathway dependent. Table 3-20 presents distributions of radionuclides by dominant pathways. The sensitivity characteristics of the radionuclides in each category are described below. Graphs of the results for each individual radionuclide are presented in Appendix H.

External Exposure Pathway Dependent Radionuclides. With respect to parameter sensitivity, radionuclides that emit photon radiation of significant energy and abundance, such as Cs-137+D (see Figure 3-5), may be classified as external exposure pathway dependent. The largest percentage (approximately 45%) of all radionuclides evaluated fall into this group. For external exposure pathway dependent radionuclides:

- the RSC will increase by a factor of approximately 2 when the area of the contaminated zone decreases by a factor of 100 from the base case and decrease slightly by a factor of 0.98 when the area increases by a factor of 1,000 from the base case
- the RSC will increase by a factor of approximately 5 when the contaminated zone thickness decreases by a factor of 100 from the base case and remain constant when the thickness equals or exceeds one meter
- the RSC will remain constant when the infiltration rate is increased or decreased from the base case
- the RSC will remain constant for low-end, mid-range, and high-end distribution coefficients (K_d)
- the RSC will remain constant when the unsaturated zone thickness is increased or decreased from the base case

Table 3-20. Distribution of Radionuclides by Dominant Pathway

External Exposure	Water Pathway Independent	Water Pathway Dependent	Radon Inhalation
Ac-227+D	Am-241 ¹	H-3	Ra-226+D
Ag-108m+D	C-14 ¹	I-129	Th-230
Ag-110m+D	Cd-109 ¹	Np-237+D	
Am-243+D	Cl-36 ²	Sm-147	
Bi-207	Cm-244 ¹	Tc-99	
Ce-144+D	Cm-248 ¹	U-233	
Cm-243	Cs-135 ²	U-234	
Co-57	Fe-55 ²	U-235+D	
Co-60	K-40 ²	U-236	
Cs-134	Ni-59 ³	U-238+D	
Cs-137+D	Ni-63 ³		
Eu-152	Pb-210+D ¹		
Eu-154	Pm-147 ¹		
Eu-155	Pu-238 ¹		
Gd-153	Pu-239 ¹		
Mn-54	Pu-240 ¹		
Na-22	Pu-241 ¹		
Nb-94	Pu-242 ¹		
Pa-231	Sm-151 ¹		
Pu-244+D	Sr-90+D ¹		
Ra-228+D	Tl-204 ¹		
Ru-106+D	Zn-65 ²		
Sb-125+D			
Th-228+D			
Th-229+D			
Th-232			
U-232			
27	22	10	2

- 1 Plant ingestion
- 2 Meat ingestion
- 3 Milk ingestion

Figure 3-5. Cs-137

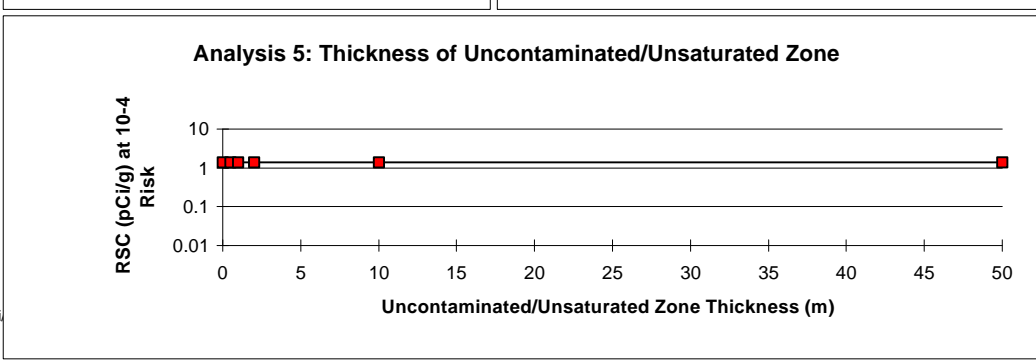
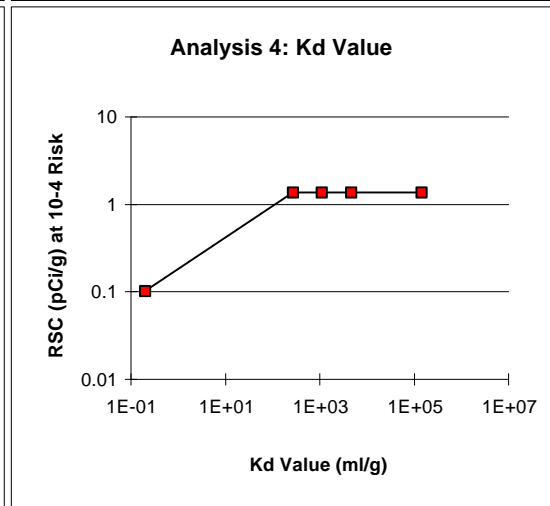
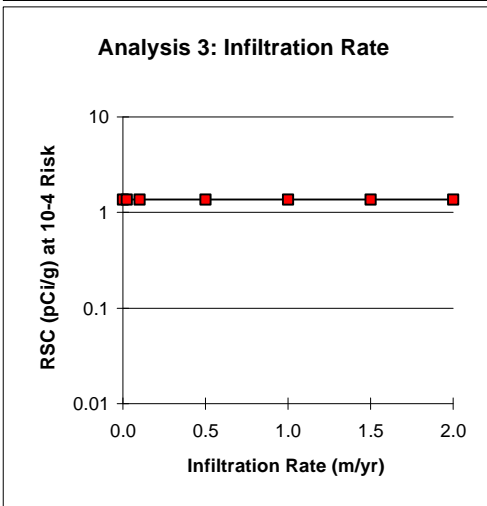
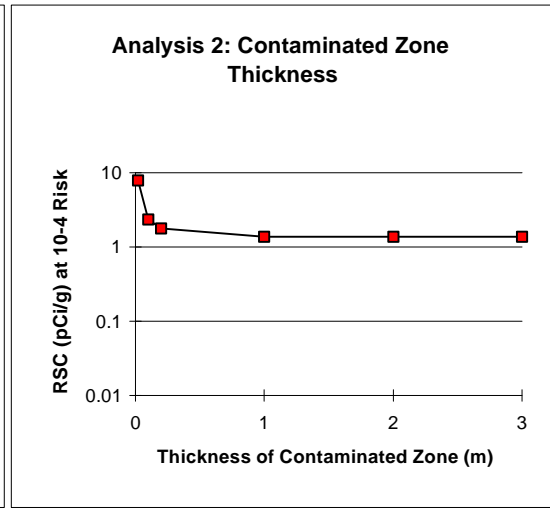
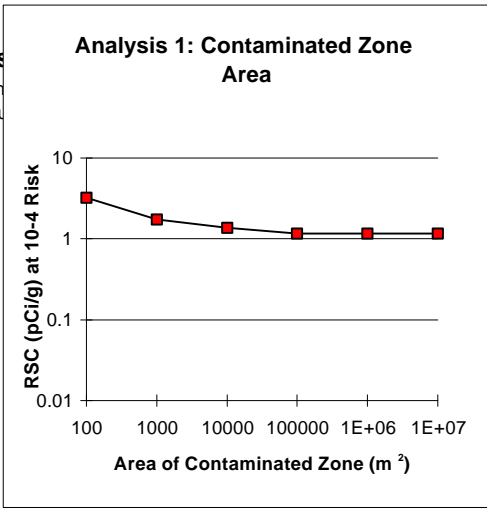
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 4.0) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	3.11E-05	3.2	0
	1E+03	5.81E-05	1.7	0
	1E+04	7.30E-05	1.4	0
	1E+05	8.60E-05	1.2	0
	1E+06	8.60E-05	1.2	0
	1E+07	8.60E-05	1.2	0
#2 Contaminated Zone Thickness (m)	0.02	1.26E-05	7.9	0
	0.1	4.22E-05	2.4	0
	0.2	5.62E-05	1.8	0
	1	7.30E-05	1.4	0
	2	7.30E-05	1.4	0
#3 Infiltration Rate (m/yr)	0.001	7.30E-05	1.4	0
	0.025	7.30E-05	1.4	0
	0.100	7.30E-05	1.4	0
	0.500	7.30E-05	1.4	0
	1	7.30E-05	1.4	0
#4 Distribution Coefficient (Kd) (ml/g)	1.5	7.30E-05	1.4	0
	2	7.30E-05	1.4	0
	0	9.86E-04	0.1	1
	270	7.30E-05	1.4	0
#5 Uncontaminated/Unsat. Zone Thickness (m)	1,100	7.30E-05	1.4	0
	4,600	7.30E-05	1.4	0
	145,000	7.30E-05	1.4	0
	0	7.30E-05	1.4	0
	1	7.30E-05	1.4	0
Unsat. Zone Thickness (m)	1	7.30E-05	1.4	0
	2	7.30E-05	1.4	0
	10	7.30E-05	1.4	0
	50	7.30E-05	1.4	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 270
 * Thickness of Uncontaminated Zone = 2 m
 * Well Depth Below Water Table = 3 m
 *RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10-4.



The results show photon-emitting radionuclides are generally unaffected by site-specific parameters, which directly impact the migration of radionuclides to groundwater, such as the infiltration rate, K_d value, and the thickness of the unsaturated zone—these are only slightly affected by the area of the contaminated zone. In general, the dose rates and risks posed by this group of radionuclides are maximized at time zero ($t = 0$).

Water Pathway Independent Radionuclides. Water pathway independent radionuclides are characterized as radionuclides with relatively high distribution coefficients (K_d values) which limit their rate of migration to groundwater. As a group, these radionuclides emit predominantly alpha or beta radiation with weak or no photon emissions. The sensitivity of plutonium-239 (see Figure 3-6) is typical of the response exhibited by many of the radionuclides in this category. On average for these radionuclides:

- the RSC will increase by a factor of approximately 20 when the area of the contaminated zone decreases by a factor of 100 from the base case, and decrease by a factor of 0.7 when the area increases by a factor of 1,000 from the base case
- the RSC will increase by a factor of approximately 25 when the contaminated zone thickness decreases by a factor of 100 from the base case and remain constant when the thickness equals or exceeds one meter
- the RSC will remain constant when the infiltration rate is increased or decreased relative to the base case
- the RSC will remain constant for low-end, mid-range, and high-end K_d values
- the RSC will decrease slightly by a factor of approximately 0.9 when there is no unsaturated zone, and remain constant when the unsaturated zone thickness is increased

These results show that water pathway independent radionuclides are generally more sensitive than external exposure pathway dependent radionuclides to changes in site-specific parameter values.

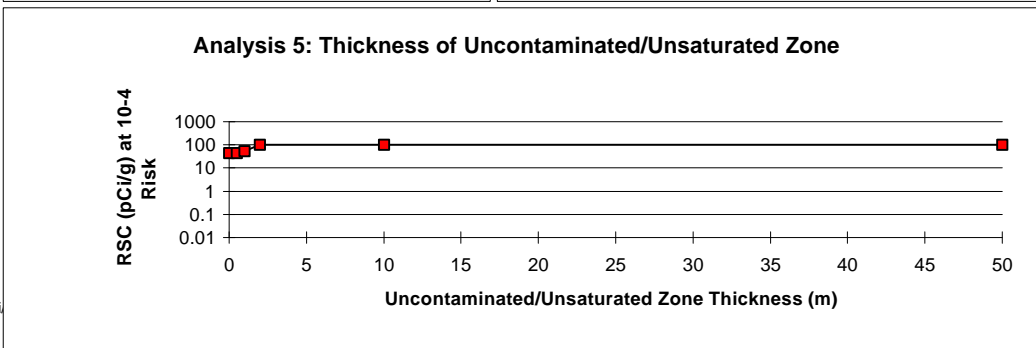
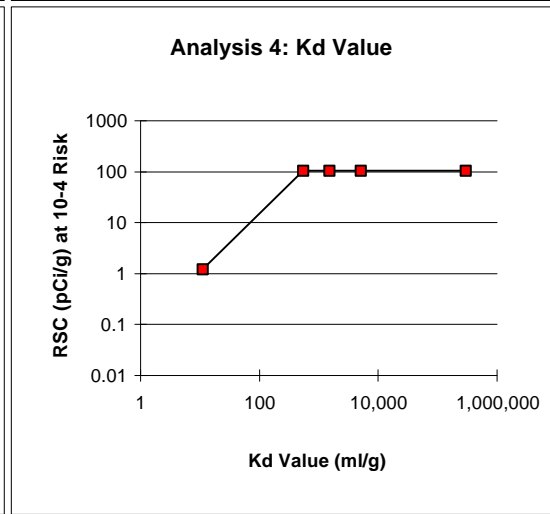
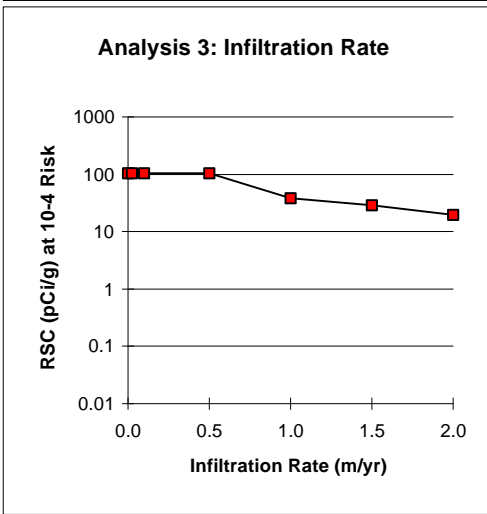
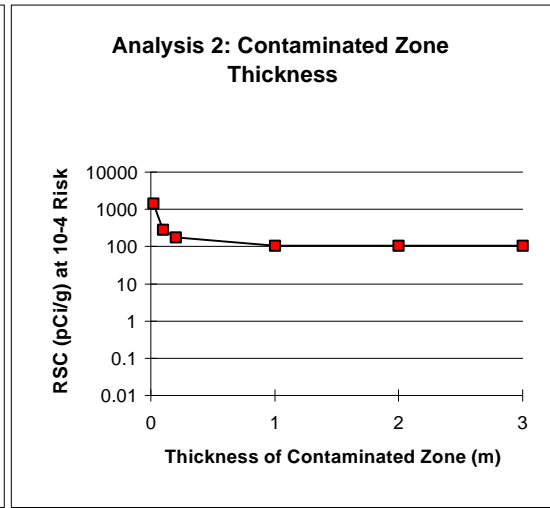
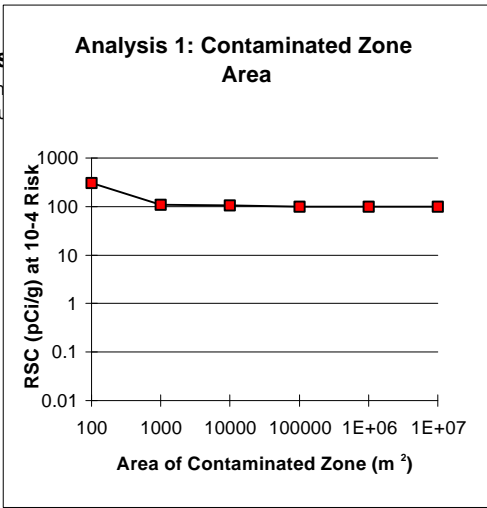
**Figure 3-6. Pu-239
RESRAD Parameter Sensitivity Analyses**

Performed using the DOE RESRAD computer code (Version 4.0) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	3.23E-07	309.6	0
	1E+03	9.13E-07	109.5	0
	1E+04	9.58E-07	104.4	0
	1E+05	9.92E-07	100.8	0
	1E+06	9.94E-07	100.6	0
	1E+07	9.95E-07	100.5	0
#2 Contaminated Zone Thickness (m)	0.02	7.08E-08	1411.6	0
	0.1	3.54E-07	282.6	0
	0.2	5.59E-07	178.9	0
	1	9.58E-07	104.4	0
	2	9.58E-07	104.4	0
#3 Infiltration Rate (m/yr)	0.001	9.58E-07	104.4	0
	0.025	9.58E-07	104.4	0
	0.100	9.58E-07	104.4	0
	0.500	9.58E-07	104.4	0
	1	2.58E-06	38.7	1,000
	1.5	3.46E-06	28.9	1,000
#4 Distribution Coefficient (Kd) (ml/g)	2	5.04E-06	19.8	766
	11	8.20E-05	1.2	36
	550	9.58E-07	104.4	0
	1,500	9.58E-07	104.4	0
	5,100	9.58E-07	104.4	0
#5 Uncontaminated Zone Thickness (m)	300,000	9.58E-07	104.4	0
	0	2.31E-06	43.4	426
	1	2.20E-06	45.4	766
	1	1.82E-06	54.8	1,000
	2	9.58E-07	104.4	0
	10	9.58E-07	104.4	0
	50	9.58E-07	104.4	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 550
 * Thickness of Uncontaminated Zone = 2 m
 * Well Depth Below Water Table = 3 m
 *RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



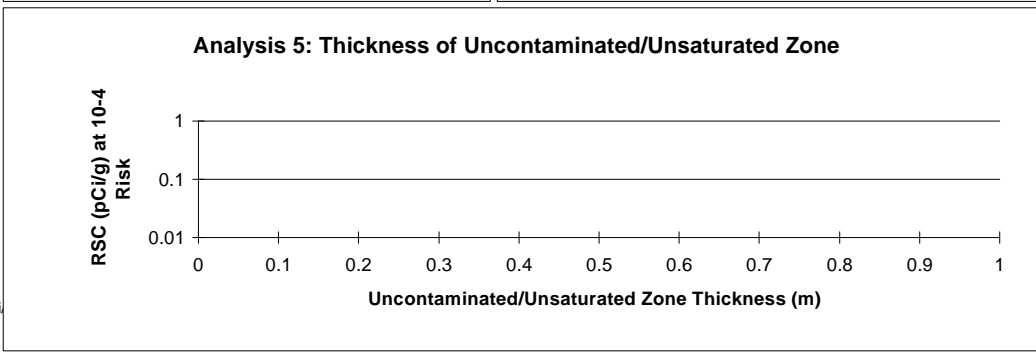
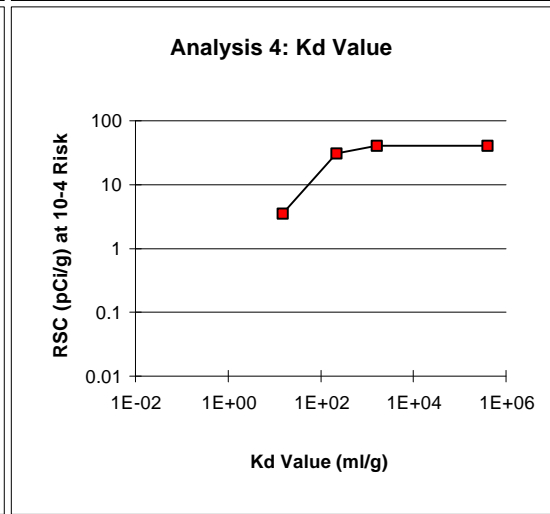
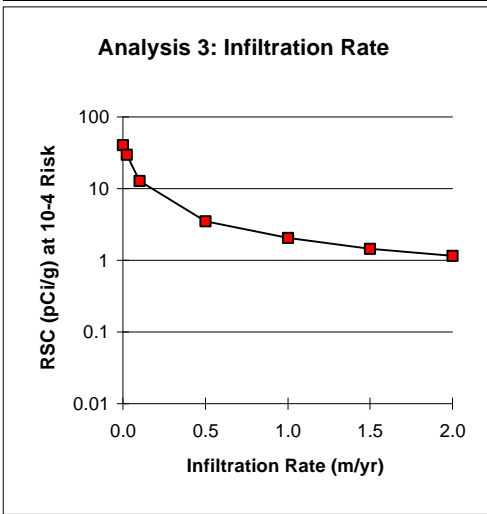
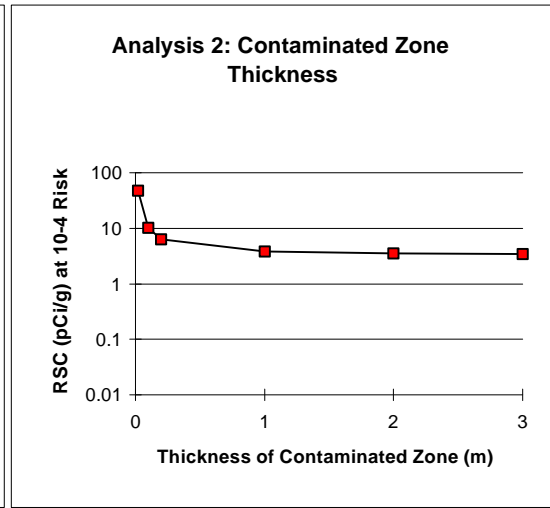
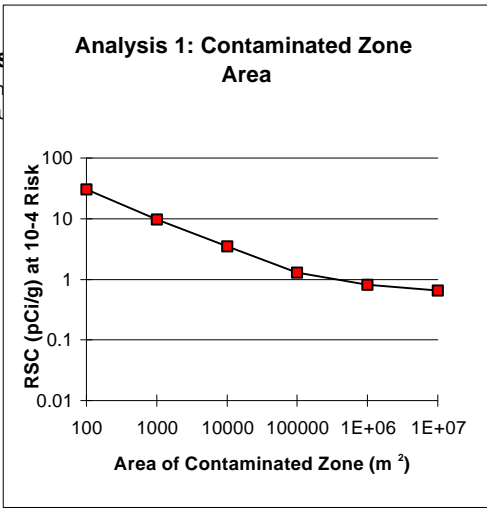
**Figure 3-7. U-238+D
RESRAD Parameter Sensitivity Analyses**

Performed using the DOE RESRAD computer code (Version 4.0) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	3.30E-06	30.3	39
	1E+03	1.02E-05	9.8	41
	1E+04	2.84E-05	3.5	49
	1E+05	7.71E-05	1.3	75
	1E+06	1.24E-04	0.8	107
	1E+07	1.55E-04	0.6	107
#2 Contaminated Zone Thickness (m)	0.02	2.12E-06	47.1	49
	0.1	9.91E-06	10.1	49
	0.2	1.58E-05	6.3	49
	1	2.60E-05	3.8	49
	2	2.84E-05	3.5	49
#3 Infiltration Rate (m/yr)	0.001	2.47E-06	40.4	0
	0.025	3.33E-06	30.0	762
	0.100	7.75E-06	12.9	200
	0.500	2.84E-05	3.5	49
	1	4.92E-05	2.0	31
#4 Distribution Coefficient (Kd) (ml/g)	1.5	6.86E-05	1.5	24
	2	8.57E-05	1.2	21
	0	NC	NC	NC
	15	2.84E-05	3.5	49
#5 Uncontaminated/Unsat. Zone Thickness (m)	220	3.23E-06	31.0	716
	1,600	2.47E-06	40.4	0
	400,000	2.48E-06	40.4	1,000
	0	2.91E-05	3.4	12
	1	2.89E-05	3.5	21
Unsat. Zone Thickness (m)	1	2.87E-05	3.5	31
	2	2.84E-05	3.5	49
	10	2.72E-05	3.7	200
	50	1.56E-05	6.4	1,000

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 15
 * Thickness of Uncontaminated Zone = 2 m
 * Well Depth Below Water Table = 3 m
 *RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10-4.



Water Pathway Dependent Radionuclides. Water pathway dependent radionuclides are radionuclides with relatively low distribution coefficients. Uranium-238+D (see Figure 3-7) is typical of many of the radionuclides in this group, and H-3 (see Figure 3-8) is a special case member of this group. On average for water pathway dependent radionuclides:

- the RSC will increase by a factor of approximately 10 when the area of the contaminated zone decreases by a factor of 100 from the base case, and decrease by a factor of approximately 0.2 when the area increases by a factor of 1,000 from the base case
- the RSC will increase by a factor of approximately 20 when the contaminated zone thickness decreases by a factor of 100 from the base case, and decrease slightly by a factor of 0.95 when the thickness increases by a factor of 3 from the base case
- the RSC will increase by a factor of approximately 11 when the infiltration rate decreases by a factor of 200, and decrease by a factor of 0.6 when the infiltration factor increases by a factor of 4 from the base case
- the RSC will increase by a factor of approximately 42 from the base case to the high-end K_d values, and decrease by a factor of 0.4 from the base case to the low-end K_d values
- the RSC will remain constant when there is no unsaturated zone and increase by a factor of approximately 2 when the unsaturated zone thickness increases by a factor of 25 from the base case.

In general, water pathway dependent radionuclides are significantly affected by site-specific characteristics. Site characteristics that delay the transfer of radionuclides to groundwater (*e.g.*, a thick contaminated zone, a thick unsaturated zone, large K_d values, and low infiltration rates) result in higher soil cleanup concentrations.

Conversely, site characteristics that enhance the transport of radionuclides to groundwater have the opposite effect. H-3 is very sensitive to changes in assumptions regarding the thickness of the contaminated zone.

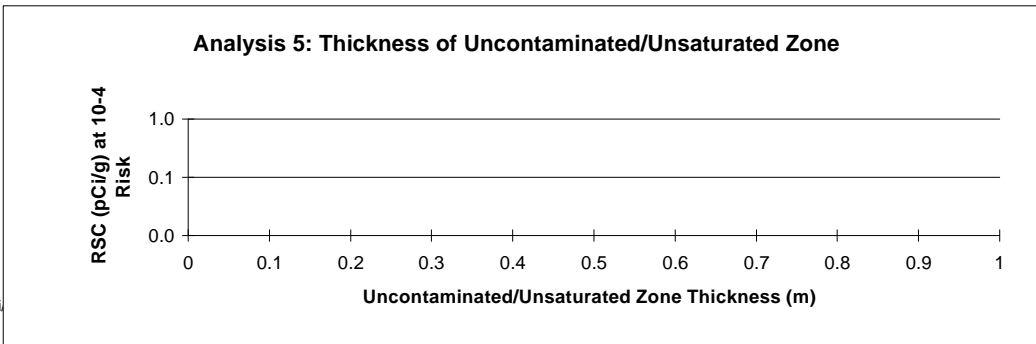
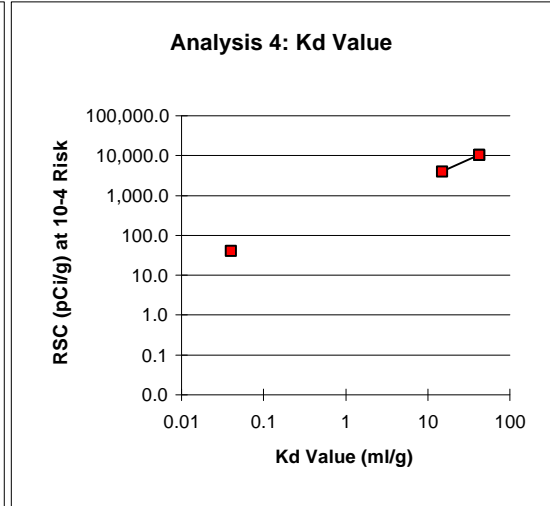
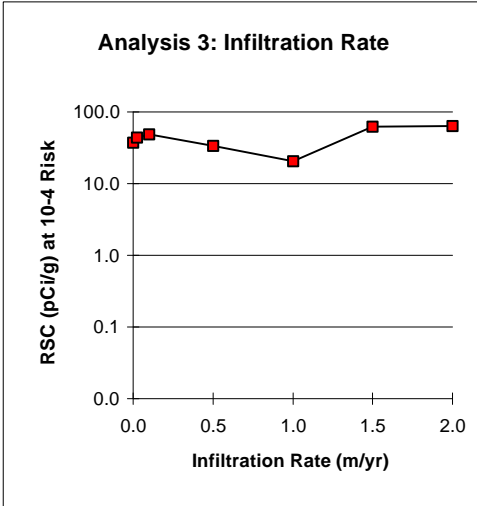
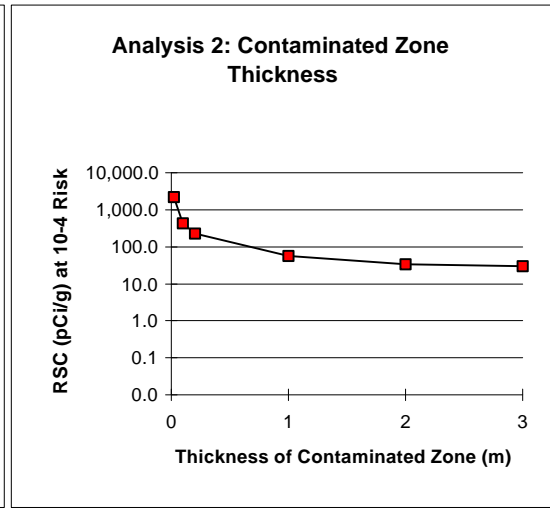
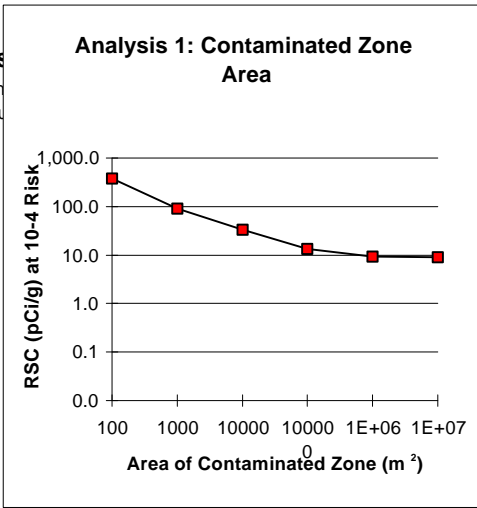
**Figure 3-8. H-3
RESRAD Parameter Sensitivity Analyses**

Performed using the DOE RESRAD computer code (Version 4.0) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	2.68E-07	373	1
	1E+03	1.11E-06	90	0
	1E+04	2.98E-06	34	1
	1E+05	7.43E-06	13	1
	1E+06	1.07E-05	9	2
	1E+07	1.10E-05	9	2
#2 Contaminated Zone Thickness (m)	0.02	4.56E-08	2,191	0
	0.1	2.28E-07	438	0
	0.2	4.38E-07	228	0
	1	1.78E-06	56	0
	2	2.98E-06	34	1
	3	3.30E-06	30	1
#3 Infiltration Rate (m/yr)	0.001	2.68E-06	37	0
	0.025	2.28E-06	44	0
	0.100	2.05E-06	49	0
	0.500	2.98E-06	34	1
	1	4.86E-06	21	0
	1.5	1.59E-06	63	0
#4 Distribution Coefficient (Kd) (ml/g)	0	2.47E-06	40	1
	15	2.50E-08	3,994	0
	42	9.56E-09	10,461	0
	42	9.56E-09	10,461	0
#5 Uncontaminated Zone Thickness (m)	0	1.78E-06	56	0
	1	1.78E-06	56	0
	1	3.30E-06	30	0
	2	2.98E-06	34	1
	10	2.19E-06	46	3

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 0
 * Thickness of Uncontaminated Zone = 2 m
 * Well Depth Below Water Table = 3 m
 *RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Radon Inhalation Pathway Dependent Radionuclides. Radon (Rn-222) inhalation is the dominant exposure pathway for Ra-226+D (see Figure 3-9) and Th-230 (Figure 3-10). The sensitivity analyses show that, for these radionuclides, the site specific risk factors are very sensitive to changes in the assumed thickness of the contaminated zone. These analyses show that the contaminated zone must be at least 2 meters thick before water independent radon inhalation becomes a significant pathway. If the contaminated zone thickness is decreased, there is less radon produced underneath the house than is available to migrate into the house. Once the contaminated zone exceeds 2 meters, the radon migrates through the soil into the house before it decays, so increasing the thickness of the contaminated zone produces an increase in indoor radon.

3.1.4 Uncertainty Analysis

A preliminary quantitative analysis is performed to determine the degree of uncertainty in the derived generic risk factors for a given exposure scenario. Here, the analysis is performed using the modified RAGS/HHEM Part B models and Monte Carlo techniques.

The uncertainty analysis is performed using artificially constructed parameter distributions to describe the generic test site. Uncertainty analyses are most appropriately applied to real sites, where parameter distributions can be determined for site-specific characteristics (*i.e.*, area of contamination, thickness of the contaminated zone, depth to aquifer, K_d , hydraulic conductivity, etc.). For this reason the quantitative uncertainty analysis is used here only as a proof of concept—to demonstrate that the technique can be applied to a real site.

The results of the uncertainty analysis are included in Appendix I. Also included in the appendix is a list of the input parameter distributions used in the analysis.

3.2 GENERIC TEST SITE POPULATION IMPACTS

In addition to posing a health risk to individuals in the vicinity of a contaminated site, contamination poses a risk to the aggregate population living on or in the vicinity of a site. This section presents the cumulative population impacts at the generic site using the models, scenarios, and assumptions described in Section 2.2. It is designed to demonstrate the advantages and limitations of the models and the appropriateness of the assumption for use in evaluating the cumulative population impacts at the reference sites. It also provides insight into the limiting pathways for each radionuclide.

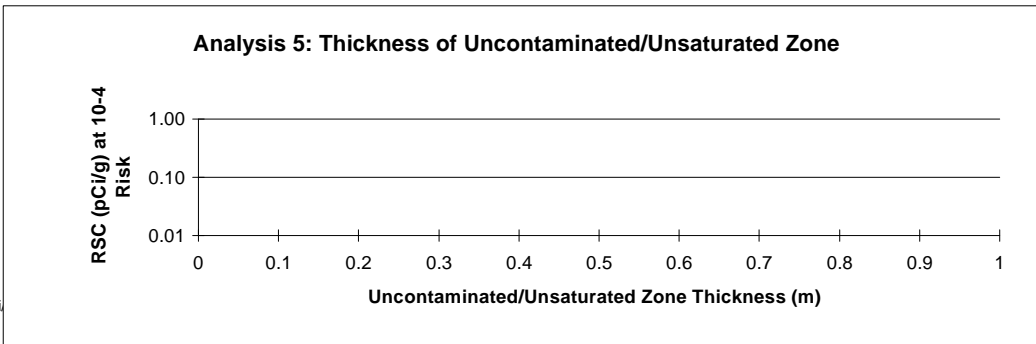
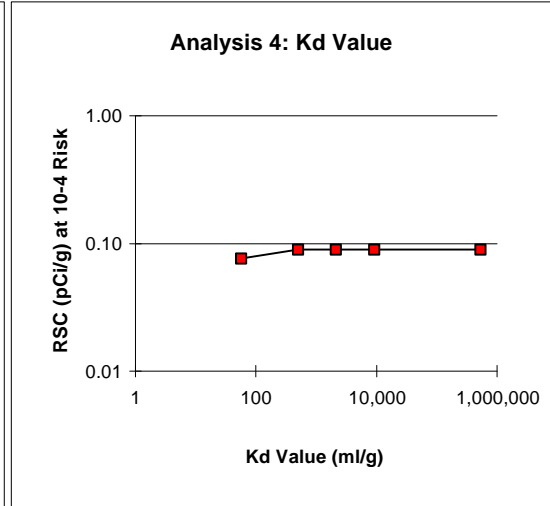
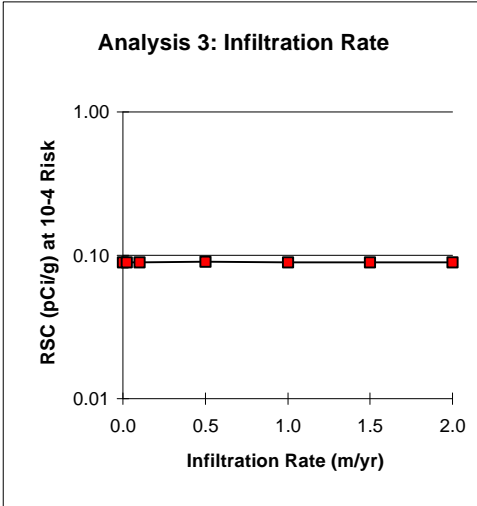
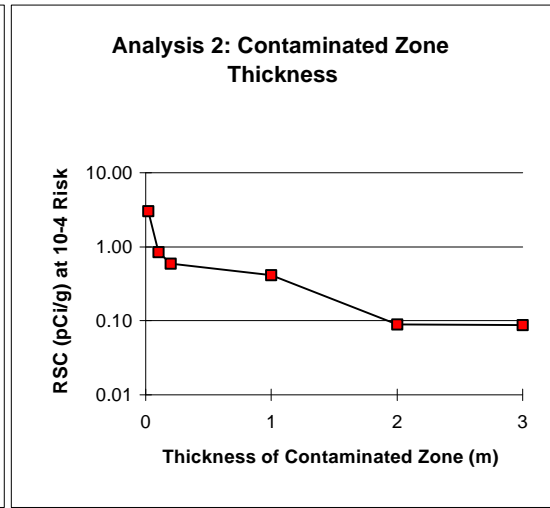
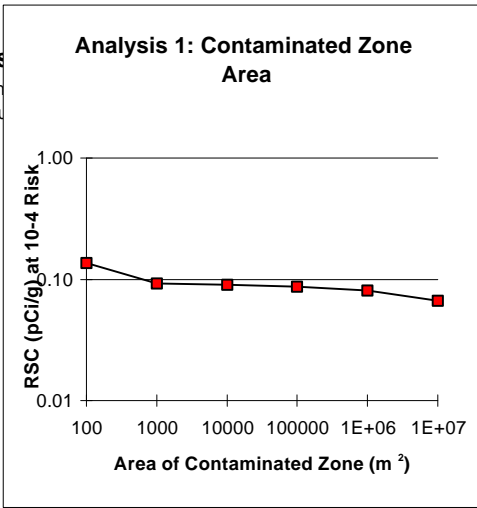
**Figure 3-9. Ra-226+D
RESRAD Parameter Sensitivity Analyses**

Performed using the DOE RESRAD computer code (Version 4.0) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	7.30E-04	0.14	0
	1E+03	1.09E-03	0.09	8
	1E+04	1.11E-03	0.09	11
	1E+05	1.15E-03	0.09	14
	1E+06	1.23E-03	0.08	11
	1E+07	1.50E-03	0.07	5
#2 Contaminated Zone Thickness (m)	0.02	3.33E-05	3.01	0
	0.1	1.19E-04	0.84	0
	0.2	1.68E-04	0.59	0
	1	2.43E-04	0.41	67
	2	1.11E-03	0.09	11
#3 Infiltration Rate (m/yr)	0.001	1.12E-03	0.09	27
	0.025	1.12E-03	0.09	26
	0.100	1.11E-03	0.09	23
	0.500	1.11E-03	0.09	11
	1	1.11E-03	0.09	1
#4 Distribution Coefficient (Kd) (ml/g)	1.5	1.11E-03	0.09	0
	2	1.11E-03	0.09	0
	57	1.31E-03	0.08	57
	500	1.11E-03	0.09	11
	2,100	1.11E-03	0.09	22
#5 Uncontaminated Zone Thickness (m)	9,100	1.12E-03	0.09	26
	530,000	1.12E-03	0.09	26
	0	1.11E-03	0.09	14
	1	1.11E-03	0.09	11
	1	1.11E-03	0.09	11
Unsat. Zone Thickness (m)	2	1.11E-03	0.09	11
	10	1.11E-03	0.09	11
	50	1.11E-03	0.09	11

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 500
 * Thickness of Uncontaminated Zone = 2 m
 * Well Depth Below Water Table = 3 m
 *RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



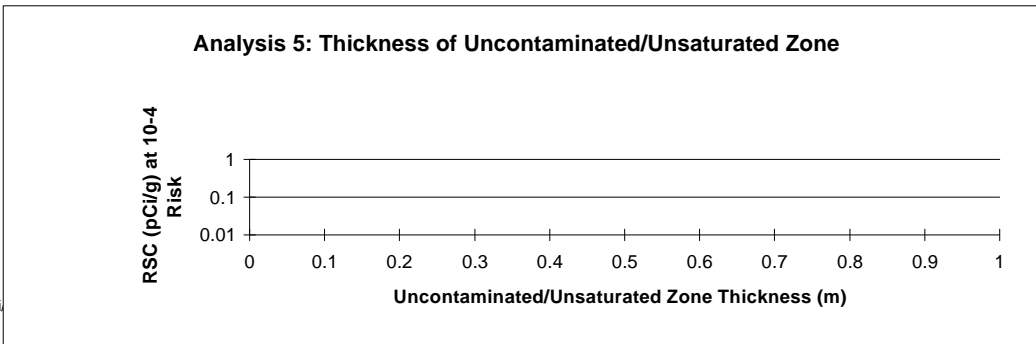
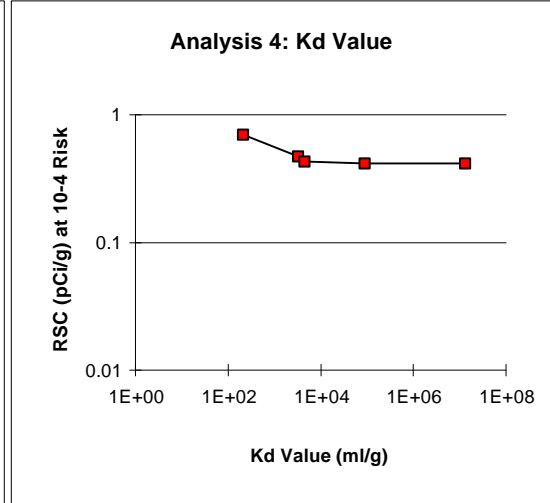
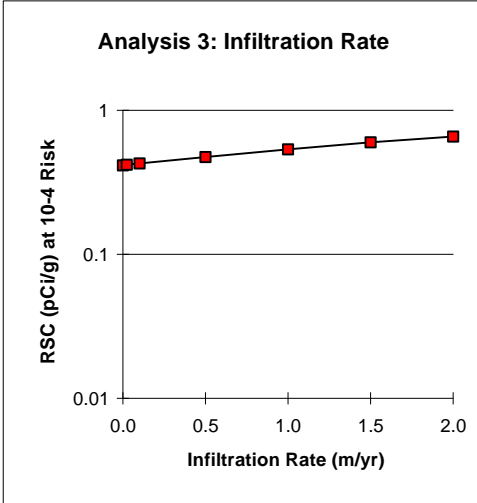
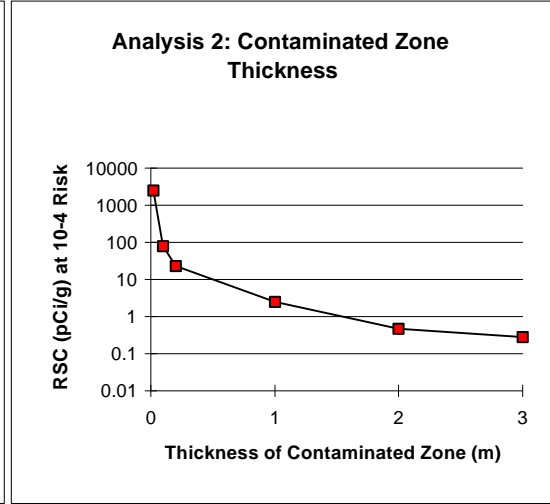
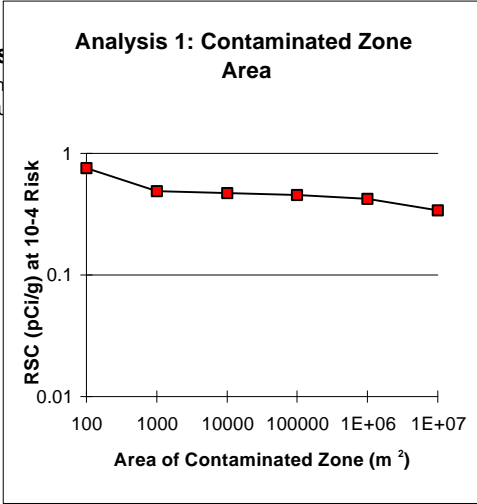
**Figure 3-10. Th-230
RESRAD Parameter Sensitivity Analyses**

Performed using the DOE RESRAD computer code (Version 4.0) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	1.32E-04	0.8	681
	1E+03	2.05E-04	0.5	691
	1E+04	2.11E-04	0.5	694
	1E+05	2.19E-04	0.5	701
	1E+06	2.37E-04	0.4	709
	1E+07	2.93E-04	0.3	731
#2 Contaminated Zone Thickness (m)	0.02	4.07E-08	2,458.8	0
	0.1	1.27E-06	78.6	32
	0.2	4.32E-06	23.1	86
	1	4.04E-05	2.5	629
	2	2.11E-04	0.5	694
	3	3.55E-04	0.3	1,000
#3 Infiltration Rate (m/yr)	0.001	2.41E-04	0.4	717
	0.025	2.39E-04	0.4	716
	0.100	2.34E-04	0.4	712
	0.500	2.11E-04	0.5	694
	1	1.86E-04	0.5	677
	2	1.53E-04	0.7	652
#4 Distribution Coefficient (Kd) (ml/g)	207	1.44E-04	0.7	467
	3,200	2.11E-04	0.5	694
	4,500	2.31E-04	0.4	712
	89,000	2.39E-04	0.4	716
	1.30E+07	2.41E-04	0.4	716
#5 Uncontaminated Unsat. Zone Thickness (m)	0	2.13E-04	0.5	697
	1	2.13E-04	0.5	701
	1	2.11E-04	0.5	696
	2	2.11E-04	0.5	694
	10	2.11E-04	0.5	694
	50	2.11E-04	0.5	694

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 3,200
 * Thickness of Uncontaminated Zone = 2 m
 * Well Depth Below Water Table = 3 m
 *RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



The models developed to estimate population impacts indicate the time integrated cumulative impacts are directly proportional to the total inventory of the radionuclides in the soil. For example, the radiation dose to any one individual residing on contaminated property will not increase if the contaminated area is increased because the radiation field, the concentration of radionuclides in food items, and the airborne concentration of radionuclides (including indoor radon) do not increase with the size of the contaminated area unless the contaminated area is very small (generally less than 10,000 m²). However, the cumulative dose to a population residing on the property will increase because the number of individuals that can reside on the property increases. As a result, if the average radionuclide concentration at a site is reduced in half (thereby halving the risk to an individual) but the area of contamination is doubled (thereby doubling the number of individuals that may be exposed), the cumulative population impact remains unchanged (note that the radionuclide inventory also remains unchanged).

In light of the above stated relationships, results of the cumulative population impacts are most conveniently presented in terms of cancers or cancer fatalities per curie. Tables 3-21 through 3-23 present a sample of the results for selected radionuclides for the generic site. Table 3-24 presents a more detailed listing of the key modeling assumptions.

These tables provide insight for the pathways and radionuclides that are most important in terms of the cumulative population impacts. However, the assumptions upon which the values are based must be kept in mind. Most importantly, the impacts for the groundwater pathway are based on the assumption that immediately below the contaminated soil is a large aquifer which is heavily used for domestic purposes and that the leach rate of the contaminants is very high (as would be associated with a site with a high infiltration rate and radionuclides with unusually low soil distribution coefficients). As demonstrated in Chapter 4, the groundwater at most reference sites is relatively deep. Thus, for many real sites, the potential impacts from the groundwater pathway, due to contamination from soil leachate, are small as compared to the other pathways. This will become apparent in the sensitivity analysis below and in the analysis of the reference sites presented in Chapter 6.

The values for direct radiation, dust inhalation, and indoor radon are based on the assumption that the population density is 1000 persons per km². This is equivalent to a suburban population density, which is unrealistic for most sites (see Appendix D), at least in the near future. Since the impacts for these pathways are directly proportional to the

Table 3-21. Generic Population Impacts (Case 1) Expressed on a per Curie Basis (100 Years)

Normalized Population Health Impacts (cancers per Ci)
For An Integration Period of 100 Years

Radionuclide	Direct Radiation	Dust Inhalation	Ground Water Ingestion	Crop Ingestion	Radon Inhalation	Rural With Agriculture ^b	Rural Without Agriculture ^b	Intermediary With Agriculture ^b	Intermediary Without Agriculture ^b	Suburban Without Agriculture ^b
Co-60	9.09E-03	4.73E-08	0.00E+00	9.25E-05		1.83E-04	9.09E-05	1.00E-03	9.09E-04	9.09E-03
Cs-137+D	1.00E-02	6.79E-08	0.00E+00	3.40E-03		3.50E-03	1.00E-04	4.40E-03	1.00E-03	1.00E-02
H-3	0.00E+00	2.07E-08	1.01E-03	2.51E-05		1.03E-03	1.01E-03	1.03E-03	1.01E-03	1.01E-03
Pb-210+D	5.65E-07	1.11E-05	0.00E+00	2.57E-02		2.57E-02	1.17E-07	2.57E-02	1.17E-06	1.17E-05
Pu-239	1.61E-07	2.63E-04	0.00E+00	1.32E-04		1.35E-04	2.64E-06	1.58E-04	2.64E-05	2.64E-04
Ra-226+D ^c	8.37E-02	6.04E-05	0.00E+00	9.97E-02	5.62E-01	1.06E-01	6.45E-03	1.64E-01	6.45E-02	6.45E-01
Ra-228+D	4.08E-03	9.11E-07	0.00E+00	2.94E-04		3.34E-04	4.08E-05	7.02E-04	4.08E-04	4.08E-03
Sr-90+D	0.00E+00	4.92E-08	9.25E-06	2.82E-02		2.82E-02	9.25E-06	2.82E-02	9.25E-06	9.30E-06
Tc-99	1.35E-11	4.64E-11	4.62E-03	1.70E-04		4.79E-03	4.62E-03	4.79E-03	4.62E-03	4.62E-03
Th-228+D	2.64E-03	3.04E-05	0.00E+00	5.19E-06		3.19E-05	2.67E-05	2.72E-04	2.67E-04	2.67E-03
Th-230 ^d	1.91E-03	1.92E-04	0.00E+00	1.40E-03	1.23E-02	1.55E-03	1.44E-04	2.84E-03	1.44E-03	1.44E-02
Th-232 ^d	1.24E-01	1.14E-03	0.00E+00	3.42E-03		4.67E-03	1.25E-03	1.59E-02	1.25E-02	1.25E-01
U-234 ^d	1.34E-07	1.16E-05	6.40E-05	6.68E-04	3.35E-06	7.32E-04	6.42E-05	7.34E-04	6.55E-05	7.91E-05
U-235+D	2.99E-04	1.08E-05	8.36E-05	7.06E-04		7.39E-04	8.67E-05	8.20E-04	1.15E-04	3.94E-04
U-238+D	6.46E-05	1.04E-05	1.10E-04	9.29E-04		1.04E-03	1.11E-04	1.05E-03	1.18E-04	1.85E-04

- (a) Depth of contaminated zone is equal to 2 meters. Infiltration rate is equal to 0.5 meters per year.
 K_d is equal to the base-case set of values.
 Unsaturated zone thickness is equal to 2 meters.
 Removal mechanisms include leaching and decay.
 Population density equals 1,000 people/square kilometer.
 Results that are less than 1.00E-20 are reported as 0.00E+00.
- (b) Rural scenario is based on a population density of 10 ind/km². Intermediary scenario is based on a population density of 100 ind/km².
 Suburban scenario is based on a population density of 1,000 ind/km².
- (c) Ra-226+D assumes Pb-210 and its progeny to be in secular equilibrium with Ra-226.
- (d) The results for this radionuclide include the effects of progeny ingrowth.

Table 3-22. Generic Population Impacts (Case 1) Expressed on a per Curie Basis (1000 Years)

Normalized Population Health Impacts (cancers per Ci)
For An Integration Period of 1,000 Years

Radionuclide	Direct Radiation	Dust Inhalation	Ground Water Ingestion	Crop Ingestion	Radon Inhalation	Rural With Agriculture ^b	Rural Without Agriculture ^b	Intermediary With Agriculture ^b	Intermediary Without Agriculture ^b	Suburban Without Agriculture ^b
Co-60	9.09E-03	4.73E-08	0.00E+00	9.25E-05		1.83E-04	9.09E-05	1.00E-03	9.09E-04	9.09E-03
Cs-137+D	1.05E-02	7.12E-08	0.00E+00	3.73E-03		3.84E-03	1.05E-04	4.78E-03	1.05E-03	1.05E-02
H-3	0.00E+00	2.07E-08	1.01E-03	2.51E-05		1.03E-03	1.01E-03	1.03E-03	1.01E-03	1.01E-03
Pb-210+D	5.77E-07	1.14E-05	0.00E+00	2.68E-02		2.68E-02	1.19E-07	2.68E-02	1.19E-06	1.19E-05
Pu-239	4.97E-07	8.12E-04	0.00E+00	9.98E-04		1.01E-03	8.13E-06	1.08E-03	8.13E-05	8.13E-04
Ra-226+D ^c	2.25E-01	1.62E-04	0.00E+00	6.32E-01	4.42E+00	6.79E-01	4.65E-02	1.10E+00	4.65E-01	4.65E+00
Ra-228+D	4.08E-03	9.11E-07	0.00E+00	2.94E-04		3.34E-04	4.08E-05	7.02E-04	4.08E-04	4.08E-03
Sr-90+D	0.00E+00	4.92E-08	1.02E-04	2.84E-02		2.85E-02	1.02E-04	2.85E-02	1.02E-04	1.02E-04
Tc-99	1.35E-11	4.64E-11	4.62E-03	1.70E-04		4.79E-03	4.62E-03	4.79E-03	4.62E-03	4.62E-03
Th-228+D	2.64E-03	3.04E-05	0.00E+00	5.19E-06		3.19E-05	2.67E-05	2.72E-04	2.67E-04	2.67E-03
Th-230 ^d	5.94E-02	1.48E-03	0.00E+00	1.44E-01	1.04E+00	1.55E-01	1.10E-02	2.54E-01	1.10E-01	1.10E+00
Th-232 ^d	1.03E+00	9.46E-03	0.00E+00	3.52E-02		4.56E-02	1.04E-02	1.39E-01	1.04E-01	1.04E+00
U-234 ^d	3.89E-06	1.17E-05	2.29E-03	8.00E-04	1.47E-03	3.11E-03	2.31E-03	3.24E-03	2.44E-03	3.77E-03
U-235+D	2.99E-04	1.08E-05	2.99E-03	7.86E-04		3.77E-03	2.99E-03	3.80E-03	3.02E-03	3.30E-03
U-238+D	6.46E-05	1.04E-05	3.93E-03	1.03E-03		4.97E-03	3.93E-03	4.97E-03	3.94E-03	4.01E-03

- (a) Depth of contaminated zone is equal to 2 meters.
Infiltration rate is equal to 0.5 meters per year.
 K_d is equal to the base-case set of values.
Unsaturated zone thickness is equal to 2 meters.
Removal mechanisms include leaching and decay.
Population density equals 1,000 people/square kilometer.
Results that are less than 1.00E-20 are reported as 0.00E+00.
- (b) Rural scenario is based on a population density of 10 ind/km².
Intermediary scenario is based on a population density of 100 ind/km².
Suburban scenario is based on a population density of 1,000 ind/km².
- (c) Ra-226+D assumes Pb-210 and its progeny to be in secular equilibrium with Ra-226.
- (d) The results for this radionuclide include the effects of progeny ingrowth.

Table 3-23. Generic Population Impacts (case 1) Expressed on a per Curie Basis (10,000 Years)

Normalized Population Health Impacts (cancers per Ci)
For An Integration Period of 10,000 Years

Radionuclide	Direct Radiation	Dust Inhalation	Ground Water Ingestion	Crop Ingestion	Radon Inhalation	Rural With Agriculture ^b	Rural Without Agriculture ^b	Intermediary With Agriculture ^b	Intermediary Without Agriculture ^b	Suburban Without Agriculture ^b
Co-60	9.09E-03	4.73E-08	0.00E+00	9.25E-05		1.83E-04	9.09E-05	1.00E-03	9.09E-04	9.09E-03
Cs-137+D	1.05E-02	7.12E-08	0.00E+00	3.73E-03		3.84E-03	1.05E-04	4.78E-03	1.05E-03	1.05E-02
H-3	0.00E+00	2.07E-08	1.01E-03	2.51E-05		1.03E-03	1.01E-03	1.03E-03	1.01E-03	1.01E-03
Pb-210+D	5.77E-07	1.14E-05	0.00E+00	2.68E-02		2.68E-02	1.19E-07	2.68E-02	1.19E-06	1.19E-05
Pu-239	5.08E-07	8.31E-04	3.95E-04	2.06E-03		2.47E-03	4.03E-04	2.54E-03	4.78E-04	1.23E-03
Ra-226+D ^c	2.27E-01	1.64E-04	2.62E-04	9.35E-01	1.03E+01	1.04E+00	1.06E-01	1.99E+00	1.05E+00	1.05E+01
Ra-228+D	4.08E-03	9.11E-07	0.00E+00	2.94E-04		3.34E-04	4.08E-05	7.02E-04	4.08E-04	4.08E-03
Sr-90+D	0.00E+00	4.92E-08	1.02E-04	2.84E-02		2.85E-02	1.02E-04	2.85E-02	1.02E-04	1.02E-04
Tc-99	1.35E-11	4.64E-11	4.62E-03	1.70E-04		4.79E-03	4.62E-03	4.79E-03	4.62E-03	4.62E-03
Th-228+D	2.64E-03	3.04E-05	0.00E+00	5.19E-06		3.19E-05	2.67E-05	2.72E-04	2.67E-04	2.67E-03
Th-230 ^d	1.49E-01	3.08E-03	0.00E+00	2.18E+00	3.27E+01	2.51E+00	3.28E-01	5.46E+00	3.28E+00	3.28E+01
Th-232 ^d	2.17E+00	1.99E-02	0.00E+00	2.28E-01		2.50E-01	2.19E-02	4.47E-01	2.19E-01	2.19E+00
U-234 ^d	9.80E-06	1.18E-05	2.29E-03	1.63E-03	6.95E-02	4.62E-03	2.99E-03	1.09E-02	9.25E-03	7.18E-02
U-235+D	2.99E-04	1.08E-05	2.99E-03	7.86E-04		3.77E-03	2.99E-03	3.80E-03	3.02E-03	3.30E-03
U-238+D	6.46E-05	1.04E-05	3.93E-03	1.03E-03		4.97E-03	3.93E-03	4.97E-03	3.94E-03	4.01E-03

- (a) Depth of contaminated zone is equal to 2 meters.
Infiltration rate is equal to 0.5 meters per year.
 K_d is equal to the base-case set of values.
Unsaturated zone thickness is equal to 2 meters.
Removal mechanisms include leaching and decay.
Population density equals 1,000 people/square kilometer.
Results that are less than 1.00E-20 are reported as 0.00E+00.
- (b) Rural scenario is based on a population density of 10 ind/km².
Intermediary scenario is based on a population density of 100 ind/km².
Suburban scenario is based on a population density of 1,000 ind/km².
- (c) Ra-226+D assumes Pb-210 and its progeny to be in secular equilibrium with Ra-226.
- (d) The results for this radionuclide include the effects of progeny ingrowth.

Table 3-24. Interim Population Model Pathways

DIRECT RADIATION

- 100, 1000, and 10,000 persons per km²
- Federal Guidance Report No. 12 Dose Conversion Factors
- July 1994 Slope Factors
- Soil Depleted by Radioactive Decay and Leaching Only

GROUNDWATER INGESTION

- Site-Specific Infiltration Rates
- Default Retardation Factors
- 50% of Leachate Captured by Wells
- 1% of Captured Groundwater Consumed
- Site-Specific Transit Travel Time
- Daughter Ingrowth

DUST INHALATION

- 50 $\mu\text{g}/\text{m}^3$ Dust Loading
- Federal Guidance Report No. 11 Inhalation Dose Conversion Factors
- July 1994 Slope Factors

CROP INGESTION

- Crop Production Rate of 0.716 kg/m²-yr
- Contamination by Root Uptake Only

INDOOR RADON

- 1.25 pCi/L of indoor radon per pCi/g of Ra-226 in soil, 0.5 equilibrium
- 236 Lung Cancers per 10⁶ WLM
- 1 pCi/L of indoor radon per pCi/g of Ra-226 in Soil
- Correction Factors for Thickness of Contaminated Zone

population density, the values can be adjusted up or down based on alternative assumptions regarding population density. These adjustments were made in developing the five scenarios presented in the right hand columns of Tables 3-21 through 3-23.

The impacts for crop ingestion are based on the assumption that the site is used heavily for agricultural purposes and that all the crops are consumed. Since a site cannot be used heavily for agricultural purposes and simultaneously have a high resident population density, the crop ingestion impacts cannot be summed with the impacts from direct radiation, dust inhalation, and indoor radon.

The impacts from the crop ingestion and groundwater pathway are not dependent on the assumed population density at the site. For these pathways, all the radioactivity in the crops grown at the site and 50% of the radioactivity leached to groundwater at the site is "harvested" and is assumed to be used by the nearby populations. Unlike the other pathways, the populations exposed from the ingestion of crops and groundwater do not need to reside onsite. This approach to deriving population impacts is convenient because there is no need to estimate the numbers of persons in the exposed population. This "short cut" to estimating population impacts is especially useful when performing future use impact assessments. However, this can only be used for contaminants where the dose-response relationship can be assumed to be linear with no threshold.

Not all aspects of the generic site are conservative. The generic site is designed to tend maximize the risk to an individual exposed to RME conditions, but, as applied to the time integrated, cumulative population impacts, the generic site does not always employ the most conservative assumptions for all pathways. For example, though the high infiltration rate and low K_d s assumed for the generic site tend to maximize the individual risks from the groundwater pathway, they can result in an underestimate of the time integrated population impacts. The high leach rate rapidly depletes the contaminated zone, substantively reducing the time integrated, cumulative population impacts for the water-independent pathways (e.g., direct radiation). However, the use of low K_d s does not substantively reduce the individual risks from the water-independent pathways because the soil depletion rate for the radionuclides is still relatively slow and little depletion actually occurs over the 30 year exposure period. Further, as applied to a 1,000 year integrated population dose, the high radionuclide leach rate does not substantively increase the time integrated cumulative population impacts by the groundwater pathway because it simply delivers the dose quickly without significantly changing the integrated dose. Subsequent sections demonstrate the sensitivity of the results to these assumptions.

3.2.1 Discussion of Radionuclides and Time Periods of Interest

The following discussion demonstrates that each radionuclide poses a substantially different potential impact from each pathway, and the magnitude of the impacts depends on the assumptions regarding:

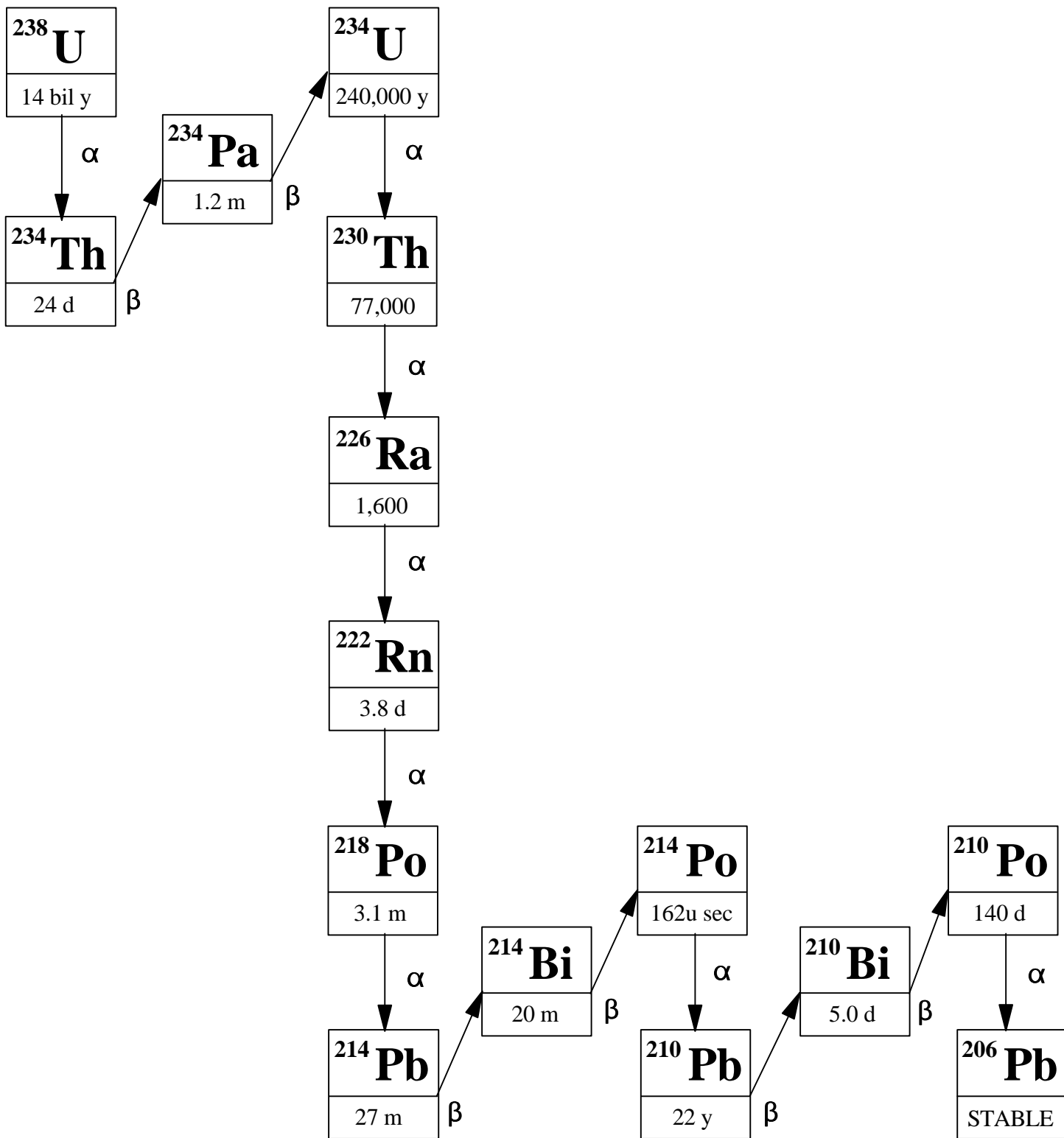
1. the prevalence of the pathway (i.e., primarily assumptions regarding population density, groundwater use, and rural residential intensity)
2. the site conditions (especially rainwater infiltration rate, depth to aquifer, and radionuclide distribution coefficients)
3. the time period of interest over which the population impacts are integrated

Ra-226. Tables 3-21 through 3-23¹ reveal that Ra-226 is potentially the most hazardous radionuclide per unit activity, primarily because of the continuous production of radon, which can diffuse into nearby homes. On a per curie basis, radon can be many times more hazardous than any other radionuclide. However, radon can only accumulate to high levels indoors if relatively large volumes of contaminated soil are in close proximity to homes. RAE 90 demonstrates, beyond a distance of about five meters, the radon in soil produced by the decaying Ra-226 generally cannot significantly influence the indoor radon levels. The radon gas diffusion rate in soil is relatively slow and beyond five meters the radon decays to its non-mobile progeny before reaching the home. In addition, if a home is designed to preclude radon buildup, or if the soil properties are such that radon transport is minimized, the buildup of indoor radon can be greatly diminished.

Even if the indoor radon impacts associated with Ra-226 in soil are mitigated, Ra-226 is still a dominant radionuclide for many pathways. This is primarily due to the gamma radiation emitted by its short-lived progeny, which can be assumed to always be in full equilibrium with their parent. In addition, the ingrowth and continued presence of Pb-210 results in a relatively significant contribution to the impacts via the crop ingestion pathway. Figure 3-11 shows the various progeny of Ra-226.

¹ For the purposes of this discussion, the 1000 year integration period is used as the base case.

Figure 3-11. U-238 Decay Series



The impacts of Ra-226 and its progeny are almost entirely a function of population density and the assumed relationship between Ra-226 in soil and radon and radon progeny indoors. This topic is discussed in Section 3.2.2.

H-3 and Tc-99. On a per curie basis, H-3 and Tc-99 pose a relatively small potential impact compared to the other radionuclides. This occurs because both radionuclides are pure, weak beta emitters. As a result, their potential for exposure by external direct radiation is minimal. Even if these nuclides are taken up internally, the dose per disintegration is relatively small due the relatively weak betas, especially for H-3. Both radionuclides are also somewhat unique because of their high mobility. Because of their chemical properties, the retardation factor for both radionuclides approximates 1.0—which means that they don't bind to soil—and their migration rate through the unsaturated and saturated zone is close to that of water. Thus, groundwater is the critical pathway of exposure for these radionuclides, even at sites with relatively deep aquifers. This is especially true for Tc-99 with its half-life of 2.1E5 years. H-3, on the other hand, has a half-life of only 12.3 years and can decay away before reaching an aquifer—especially if the aquifer is relatively deep or if the site infiltration rate is relatively small. For example, for some arid sites, the depth of the aquifer can be over 100 meters and the infiltration velocity could be less than 0.1 m/yr. As a result, the time for water and H-3 to reach the aquifer is on the order of 1000 years. Over a 1000 year period, H-3 will virtually completely decay away before reaching the aquifer. Even a 10 meter deep aquifer with a 0.1 m/yr infiltration velocity will require about a 100 year transport time, resulting in an approximate 300-fold reduction in the H-3 inventory before reaching the aquifer.

Co-60 and Cs-137. Co-60 and Cs-137 are strong gamma emitters and are relatively short-lived (i.e., 5 and 30 year half-lives, respectively). As a result, the direct radiation exposure is the dominant pathway for these radionuclides. Because of their strong gammas, they are among the potentially more hazardous radionuclides for individual exposures. However, their relatively short half-lives reduces their potential for long-term cumulative population impacts. Their half-lives and high distribution coefficients result in a relatively small potential for impacts by the other pathways, with the exception of the crop ingestion pathway for Cs-137. (If these radionuclides are present, protection from direct radiation until they decay away is an obvious remedy.)

Sr-90. This radionuclide is unique in that, as a pure beta emitter, it does not pose a significant external exposure hazard, but due to its relative mobility, its strong betas (which include its short-lived progeny, Y-90), and the fact that Sr-90 concentrates in bone (due to a chemistry similar to calcium), it poses a potentially substantial impact via the ingestion pathways. However, Sr-90's contribution to the groundwater pathway in Tables 3-21 through 3-23 is due to the conservative assumptions made regarding the groundwater pathway at the generic site. At most sites, groundwater will likely be many meters below the contaminated zone and the distribution coefficient for Sr-90 will be greater than that used in the analysis. As a result, the Sr-90 will be retarded, and, due to its relatively short half-life (28 years), it will decay substantially before reaching most groundwater resources. For example, assuming a 10 meter deep aquifer, a soil distribution coefficient of 30², and an infiltration velocity of 1 m/yr, the transit time from the soil surface to the aquifer for the Sr-90 is about 1500 years. As a result, the inventory of Sr-90 will be reduced to virtually zero due to radioactive decay in transit to the aquifer. Also, note that the transit time would exceed a 1000 year time period of interest.

Throughout this discussion and fundamental to the modeling approach employed here, is that transport is occurring through porous media where the radionuclides can interact with the soil. At some sites, the radionuclides could move rapidly to the aquifer. Sites with karst aquifers, fractured media, or low pH can cause rapid transport. At these sites, the K_ds can approach zero.

Pu-239. Pu-239 is an alpha emitter with a 2.4E4 year half-life and a generally high distribution coefficient (about 2000). As a result, its potential for direct external exposure is minimal, and its potential risk is dominated by the inhalation and ingestion pathways. In Tables 3-21 through 3-23, the groundwater pathway is negligible due to the long transit time, even for the conservative assumptions employed for the groundwater pathway. For example, at an arid site with a 10 meter deep aquifer, an infiltration velocity of 0.1 m/yr, and a K_d for plutonium of 2000, the plutonium transit time to the aquifer would be about 1 million years. Over this time period, the inventory of Pu-239 would decay to virtually zero before reaching the aquifer. In addition, assuming the time period of interest is limited to 1000 years, or

² As a rule of thumb, the retardation factor for a radionuclide can be assumed to be about a factor of 5 to 7 fold greater than the binding coefficient. The retardation factor is an expression of the groundwater velocity relative to the velocity of the radionuclide. Hence, if the infiltration velocity is 1 m/yr and the distribution coefficient is 30, the velocity of the radionuclide is about 0.0066 m/yr (i.e., 1 m/yr/(30 x 5)).

even 10,000 years, the Pu-239 will not reach the aquifer within this time period. For these types of sites, the dust inhalation and crop ingestion pathways would dominate.

U-238. In Tables 3-21 through 3-23, U-238 is assumed to be present with its short-lived, but not its long-lived, progeny. This distinction is important because the nature and magnitude of the potential risks associated with U-238 contamination differ substantially depending on whether a site is contaminated with U-238 alone or with U-238 and all its progeny. At sites where the long-lived progeny of U-238 are present, the potential impacts are dominated by the Ra-226+D.

Insight into issues pertaining to the role of progeny and progeny ingrowth in a risk assessment requires an understanding of the U-238 decay series depicted in Figure 3-11. In nature, all members of the decay chain are present, often at a concentration that approximates that of the their parent, U-238. However, environmental processes or the intervention of man often result in the separation of the principal constituents of the decay chain. For example, uranium ore contains all the progeny of U-238, but during processing the uranium is chemically separated from the progeny, leaving just U-238 and U-234 (U-235 is also present, but for the purposes of this discussion, it is not relevant due to its low abundance relative to U-238 and U-234). This is the product generated at a uranium processing facility and is a primary concern for the cleanup of these facilities.

At such facilities, the separated uranium, which includes both U-238 and U-234, begins to decay, resulting in the ingrowth of progeny. Given enough time (i.e., millions of years), all the progeny will eventually grow back in and have the same inventory and concentration of the U-238³—a condition referred to as full equilibrium. The degree of equilibrium achieved by any one progeny with its immediate parent is entirely a function of half-life. As a rule of thumb, progeny equilibrium is achieved in about 10 half-lives of the progeny. Inspection of Figure 3-11 reveals that the immediate progeny of U-238, Th-234, and Pa-234 have very short half-lives. Thus, for all practical purposes, one can assume that these two radionuclides are always present in full equilibrium with U-238 and every disintegration of U-238 is accompanied by a disintegration of its short-lived daughters. As a result, U-238 is often referred to as U-238+D, which means that its two short-lived progeny are assumed to always be present in equilibrium.

³ The half-life of U-238 is so long (4.5E9 years) that its inventory remains virtually unchanged over millions of years. If its half-life were substantially less than the age of the earth, it would have decayed away by now, along with all its progeny.

If U-234 is initially present along with U-238, as it would be at a uranium processing facility, the U-234 will undergo a series of transformations. However, its first progeny, Th-230, has a half-life of 77,000 years. Accordingly, over a 100 time period of interest, very little Th-230 will be produced. As a result, the entire chain below U-234 is not a significant contributor to risk for sites contaminated with uranium separated from its progeny. For a 1000 year time period of interest, even the small amount of ingrowth results in a significant radon contribution to risk. For a 10,000 time period of interest, some Th-230 grows in (about 5% equilibrium) along with its progeny, including Ra-226+D. Because of the relatively high impacts per curie of Ra-226+D, even 5% equilibrium is sufficient to cause indoor radon to dominate the risks for the 10,000 year period of interest.

If natural uranium is present at a site, such as at a uranium mine or mill, the entire chain is initially present at the site and the impacts are due to the sum of the impacts from U-238+D, U-234, Th-230, Ra-226+D, and Pb-210+D. However, the time integrated impacts from the entire decay chain are more than simply treating each radionuclide separately and summing the results. As discussed above, for U-238+D, the impacts are derived assuming that for each disintegration of U-238 there is also a disintegration of its short-lived daughters. However, there is no need to consider the ingrowth of U-234 for time integration periods on the order of 1000 or 10,000 years because its very long half-life precludes significant ingrowth over such a relatively short time period.

This is not the case for a site already contaminated with U-234. Th-230 will grow in sufficiently over 1000 or 10,000 years to warrant explicit consideration of progeny ingrowth when evaluating the impacts of U-234. Similarly, the derivation of the time integrated impacts from Th-230 requires explicit consideration of Ra-226 ingrowth, which has a half-life of 1600 years. Explicit consideration of progeny ingrowth can be achieved through the use of the Bateman equations, which is the method used to derive the impacts in this report. However, the impacts from ingrowth can be conservatively approximated by assuming that each disintegration of Th-230 is accompanied by a disintegration of all of its progeny. This approach is conservative because over a 1000 or 10,000 year time period Ra-226 will not achieve full equilibrium.

Ra-226 also has a series of short-lived daughters. Thus, when deriving the impacts from Ra-226, as is the case for U-238, one assumes that for each disintegration of Ra-226 there is also a disintegration of each of its daughters, including Pb-210 and its progeny.

In Tables 3-21 through 3-23, the impacts reported for U-238+D are for U-238 alone with its short-lived progeny, as would be the case for a depleted uranium site. Depleted uranium means uranium depleted in U-235 and U-234. Depleted uranium is a byproduct of the uranium enrichment process, whereby natural uranium is enriched in U-235 (and also in U-234 due to the nature of the enrichment process—whereby any uranium with an atomic weight less than that of U-235 is also enriched). Due to its very long half-life (i.e., 2.4E5 years), U-234 does not grow in, and only U-238 and its short-lived progeny are of interest in a risk assessment at a DU site.

In Tables 3-21 through 3-23, the potential impacts from U-238+D are dominated by the groundwater pathway. This occurs because of the high infiltration rate (0.5 m/yr) and relatively low K_d for uranium (i.e., 15), which results in the relatively rapid transport of U-238 to the aquifer. However, for many sites, the transit time for uranium will exceed 1000, or 10,000 years, and therefore not arrive over the time period of interest. For example, for a humid site with a 10 meter deep aquifer, an infiltration velocity of 1 m/yr and a typical uranium K_d of 50, the transit time to the aquifer would be about 2500 years. As a result, for many sites contaminated with U-238 alone (plus its short-lived daughters), the crop ingestion pathway will likely dominate.

For U-238 alone, the time period of interest is particularly relevant because of its 4.4E9 year half-life. The potential impacts of U-238 depend on whether it reaches the ground water within the time period of interest. At many sites, the U-238 will require thousands of years to reach the aquifer, thereby exceeding the time period of interest. Thus, the potential impacts are reduced several-fold and the crop ingestion pathway dominates. Given the lack of a crop ingestion pathway, the impacts are further reduced over 10-fold and are dominated by direct radiation and dust inhalation.

For U-238, the assumed time period of interest can be critical because, due to its extremely long half-life, U-238 does not decay and the potential cumulative population impacts increase as the time integration period increases. Hence, as the time integration period increases, the cumulative population impacts from U-238 increase from the water independent pathways. Also, at some point in time, the U-238 reaches the groundwater and the potential impacts can immediately increase 10-fold or more. In Tables 3-21 through 3-23, the impacts do not increase greatly as the time integration period increases because a relatively low K_d and a shallow aquifer were assumed which results in the relatively rapid depletion of the U-238 from the contaminated zone.

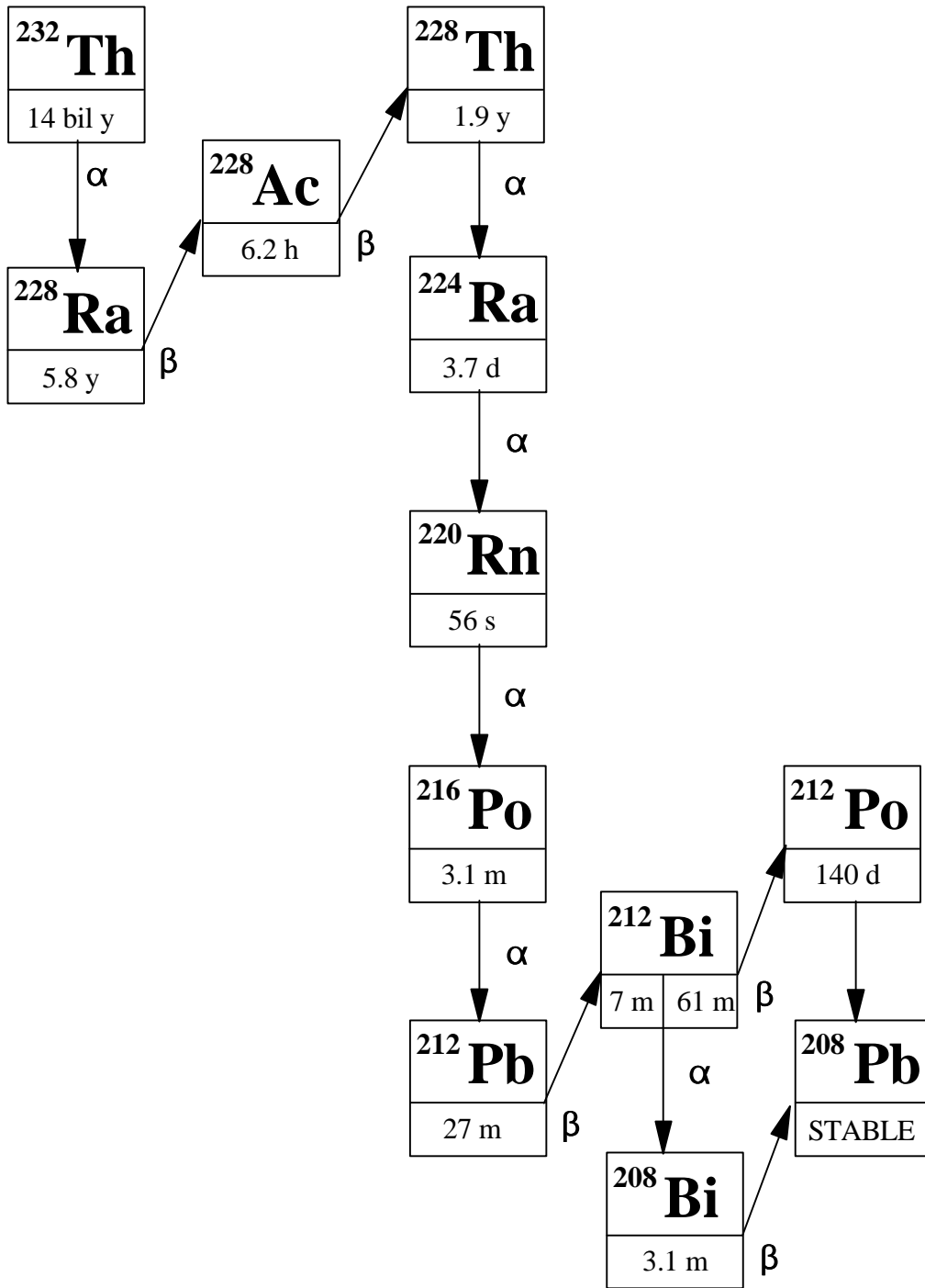
Th-232. In many respects, the issue of the time period of interest for Th-232 is similar to that of U-238 because it also has a very long half-life (i.e., $1.4E10$ years). However, this issue is less complex because Th-232's progeny, Ra-228+D, grow in virtually immediately⁴ (see Figure 3-12). In Tables 3-21 through 3-23, the impacts for Th-232 were derived using the Bateman equations. However, they could have been developed by simply assuming full equilibrium with all its progeny, along with the assumption that the progeny are being depleted from the contaminated zone at the same rate as the parent Th-232. Because of the rapid buildup and continued presence of Ra-228, the direct radiation pathway quickly dominates—even if Ra-228+D initially are not present at a site. Here, the cumulative population dose is dominated by the direct radiation pathway and increases with the assumed time period of interest.

Th-230. As discussed above, Th-230 is part of the U-238 series but can be present without its parent and is typically present with its daughter, Ra-226. When present with its progeny, Ra-226+D dominates the impacts. When Th-230 is initially present alone, Ra-226+D grows in sufficiently even over short periods (i.e., 100 years) to dominate the impacts. As in the case of U-238, when present, Ra-226 dominates the impacts. A very unique situation arises if Th-230 is initially present alone. Its progeny, Ra-226, with a 1600 year half-life, grows in sufficiently over a 1000 year time period to dominate the impacts. However, assuming a site has a low K_d is not necessarily conservative. This occurs because, as the Ra-226 grows in, a low K_d results in its rapid depletion from the contaminated zone. As with other radionuclides, this results in increased impacts from the groundwater pathways, but the depletion reduces the impacts from the indoor radon pathway, which is by far limiting. Accordingly, in the case of Th-230, a low K_d is not necessarily a conservative assumption, as it is for other radionuclides.

Combined Pathways. Tables 3-21 through 3-23 also presents the numbers of cancers per curie for sites where several exposure pathways exist simultaneously. Five scenarios are included in Tables 3-21 through 3-23: rural (10 persons/km², with and without agriculture), intermediate (100 persons/km², with and without agriculture), and suburban (1000 persons/km², without agriculture).

⁴ Ra-228 has a 5.7 year half-life and as a result, within 50 years it is in equilibrium, along with all its progeny, with its parent.

Figure 3-12. Th-232 Decay Series



The number of total cancers per curie for the rural and intermediate scenarios are the sum of each individual pathway—but with the impacts from the direct radiation, dust inhalation, and indoor radon pathways reduced 100 and 10 fold, respectively. The number of total cancers per curie for the suburban scenario is the sum of each pathway, except that the impacts from the crop ingestion pathway are not included since a high population density (i.e., 1000 persons per km²) precludes the extensive use of the site for rural residential purposes. The results reveal that for most radionuclides the suburban scenario is limiting.

3.2.2 Discussion of Pathway Uncertainties and Sensitivities

Uncertainty analyses are most appropriately applied to real sites where uncertainty distributions can be applied to site-specific characteristics, such as the radionuclide concentrations, area of contamination, thickness of the contaminated zone, depth to aquifer, kd, hydraulic conductivity, etc. For a generic site, these parameters are "given" and little is gained by assigning distributions to their values. Instead, a discussion of sensitivities is more effective in disclosing how impacts for a generic site may change depending on alternative assumptions regarding the site characteristics, land use, and demography. Nevertheless, it is feasible to discuss the uncertainties in the generic values presented in Tables 3-21 through 3-23 for each radionuclide and pathway, given the defined generic site.

A widely accepted method for quantifying uncertainties is the application of Monte Carlo techniques. However, this method is of limited use, and may even be misleading if the uncertainties in assumptions and distributions for the parameters are either large or ill defined. Under these circumstances, as is recommended by Superfund Guidance (EPA 89a), one should disclose uncertainties in a qualitative or semi-quantitative manner.

The following section presents a qualitative and semi-quantitative discussion of the uncertainties associated with the generic estimates of the time integrated cumulative population impacts associated with each of the exposure pathways.

Direct Radiation. The impacts from the direct radiation pathway in Tables 3-21 through 3-23 are based on the assumption that the site's average population density over a 1000 year time period is 1000 persons per km² (typical of a suburban community). This assumption alone may result in an upper bound estimate of direct radiation impacts because many real sites are located in remote areas where they are unlikely to be heavily populated in the near

future (see Appendix D). However, given these site conditions, the impacts for the generic site—in Tables 3-21 through 3-23 (i.e., cancers per curie) for direct radiation—depend primarily on the uncertainties in the values assigned to the external exposure slope factors, which are effectively a function of the dose conversion factors and the risk conversion factor for external exposure.

The external dose conversion factors, which convert radionuclide concentration in soil (pCi/g) to dose rate (mrem/yr) are based on the dose conversion factors reported in Federal Guidance Report No. 12. As discussed in (EPA 89b), the geometric standard deviation for external dose conversion factors is about 1.4. This indicates the real value for the dose conversion factor lies in a range of about 2.0 times higher (i.e., $2 \text{ sigma} = 1.4^2$) to 2.0 times lower than the value used (i.e., an uncertainty range of 1 to 4 or an uncertainty of about 4 fold).

EPA 89b indicates the risk conversion factor for external whole body exposure has a geometric standard deviation of 1.8. Accordingly, the approximate range of uncertainty in the risk conversion factor is about a factor of 3.2 times higher and 3.2 times lower than the reported value, or a factor of about 10 uncertainty. Further, the National Academy of Sciences (NAS 90, p. 181) states: "since epidemiologic data cannot rigorously exclude the existence of a threshold in the microsievert range,... there may be no risks from exposures comparable to external natural background radiation." Thus, for low LET radiation and low dose rates, the range of possible values for the dose to risk conversion factor should also include zero. Accordingly, the range of the risk conversion factor can be from as low as 0 to as high as about $2E-3$ cancer per rem.

Propagating these sources of uncertainty and considering uncertainty in average occupancy times and shielding factors (assumed to be uncertain by a factor of about 2 averaged over the entire population), the uncertainty in the time integrated population impacts range from 0 to an upper bound of about 7 times the derived value.⁵

⁵ The steps involved in propagating the uncertainty for values assigned a geometric standard deviation expressed as a multiplier of the geometric mean are as follows:

1. Take the log of each GSD
2. Square each value
3. Add the squared values
4. take the square root of the sum
5. Take the antilog of that value

The methodology used to derive the generic number of cancers per curie for direct radiation and dust inhalation is based on the assumption that radioactivity is located in the top 2 m of soil. This assumption results in a relatively low value for the number of cancers per curie for the direct radiation and dust inhalation pathway because the radioactivity located at the site at a depth greater than about 10 to 20 cm does not contribute to the impacts from these pathways. As a result, for a site where contamination extends down to two meters, the number of cancers per curie for direct radiation and dust inhalation are a factor of about 10 lower than for a site where the "curie" is located in the top 20 cm.

For sites where the thickness of the contaminated zone is substantially less than 20 cm, the number of cancers per curie for direct radiation and dust inhalation will be virtually unchanged because the risk per Ci/m² for each radionuclide is virtually constant for contamination thicknesses less than about 20 cm. The reason is the radioactivity will likely become generally mixed in the top 20 cm due to natural processes (wind suspension and deposition and leaching) and the activities of man (e.g., plowing).

Federal Guidance Report No. 12 (EPA 93d) presents the external dose conversion factors for individual radionuclides as a function of the thickness of the contaminated zone. The following table presents the external dose conversion factors for selected key radionuclides as a function of the thickness of the contaminated zone:

Isotope	Thickness of Contaminated Zone (sv/sec per Bq/m ³ EDE)			
	∞ cm	15 cm	5 cm	1 cm
Ba-137m	1.93E-17	1.71E-17	1.09E-17	3.76E-18
Co-60	8.68E-17	7.25E-17	4.45E-17	1.52E-17
Bi-214	5.25E-17	4.36E-17	2.68E-17	9.15E-18

The dose rate relative to the infinite thick dose rate is as follows:

Three values have the following GSDs: 1.4, 1.8, and 2. The GSD of the product of the three values is as follows:

1. Log of each value is: .336, .588, and .693
2. The square of each value is: .113, .346, and .480
3. The sum is: .939
4. The square root of the sum is .969
5. The antilog is 2.6

Accordingly, the GSD of the product of the three values is a factor of 2.6 higher and 2.6 lower than the product. An expression of the full range of uncertainty can be assumed to be 2 standard deviations, i.e., 2.6² or 6.8.

Isotope	Relative External Dose Rate			
	∞ cm	15 cm	5 cm	1 cm
Ba-137m	1	.89	.56	.19
Co-60	1	.84	.51	.18
Bi-214	1	.83	.51	.17

This reveals that uncertainty in the thickness of the contaminated zone can contribute significantly in the uncertainty in the external dose for gamma emitters if the thickness is less than about 15 cm.

The time integrated impacts from direct radiation for a given radionuclide depend on the rate at which the radionuclide is depleted from the zone of contamination that contributes to external exposure, typically 15 to 20 cm. The depletion rate depends on the radionuclide decay coefficient and the leach coefficient, which depends on the rainfall infiltration velocity and the radionuclide retardation factor. For the generic site, a relatively high infiltration rate and low retardation factors were employed. This elevates the risks to an individual from the groundwater pathway, but tends to lower the time integrated cumulative number of cancers per curie from the other pathways. For relatively short-lived radionuclides, like Co-60 and Cs-137, the significance of this characteristic of the generic site is small because the depletion rate from the soil is dominated by radioactive decay. However, for longer lived radionuclides, such as Ra-226, a high leach rate results in a marked reduction in the time integrated population impacts from the water-independent pathways. This issue is demonstrated in the sensitivity analysis presented in Section 3.2.3.

Dust Inhalation. In addition to the thickness of the contaminated zone and the depletion rate, the number of cancers per curie for the dust inhalation pathway at the generic site is based on an assumed long-term average outdoor dust loading of $100 \mu\text{g}/\text{m}^3$. In order to account for the reduced dust loading indoors, a 0.5 adjustment factor is applied. This indoor/outdoor connection factor is consistent with that employed in RESRAD, which uses a factor of 0.4, and Alz 79, which observed a factor of 0.3. Dan 83 derived factors of 0.24, 0.32, and 0.19 for a suburban house, a farm house, and a commercial building, respectively.

Since the number of cancers per curie is proportional to the assumed dust loading, the impacts can be adjusted up or down depending on the average dust loading at actual sites. The long term average outdoor dust loading at an actual nonurban site can be as low as 1 to 10 $\mu\text{g}/\text{m}^3$ to about 100 $\mu\text{g}/\text{m}^3$. Dan 93 cites work by Anspaugh which showed several radionuclides at four sites in the U.S. with a dust loading of 100 $\mu\text{g}/\text{m}^3$. Shinn's work is also cited which reports dust loadings at the Nevada Test Site of 17 and 41 $\mu\text{g}/\text{m}^3$. Also cited is Shah's work where the geometric mean dust loading at 20 rural locations was 28 $\mu\text{g}/\text{m}^3$ with a GSD of 1.6. A review of dust loading is provided in NRC 92b and SEH 84.

The airborne dust loading can also be enriched or depleted in the contaminant as compared to the contaminated soil. An enrichment factor of 1.0 is used in this analysis. A review of enrichment factors is provided in EGG 84 and DAN 93.

Given the population density for the generic site, the uncertainty in the impacts for the dust inhalation pathway primarily is due to the uncertainty in the average slope factor, adjustment factor, average occupancy times, and average dust loading. The uncertainty in the inhalation slope factors is reasonably approximated by a range of 0 to about 10 times the value used.⁶

Average occupancy times and indoor/outdoor decontamination factors may have a combined variability of about 2 fold (i.e., 1.4 times higher and 1.4 times lower than the assumed value of 0.5). The uncertainty in the soil particle suspension factor is very large. Sehmel and the NRC report the uncertainty in this value is several orders of magnitude (Seh 84; NRC 92b). However, when averaged over many sites and long time periods, the uncertainty is reduced, and may be a factor of 10 to 100 fold lower than the assumed value of 100 $\mu\text{g}/\text{m}^3$ and is unlikely to be any higher than this value. Other factors also contribute to uncertainty, but they are not likely to add significantly to overall uncertainty as compared to the parameters above.

Groundwater Ingestion. The cumulative population impacts for the groundwater pathway are based on the assumption that 50% of the leachate is withdrawn for domestic use and 1% of that is consumed. In addition, no credit is taken for radioactive decay in transit from the

6 This report does not attempt to explicitly quantify the uncertainties in the inhalation and ingestion slope factors. However, based on discussions provided in EPA 89 regarding the uncertainties in the dose conversion factors and risk conversion factor for the average member of the public, a factor of 10 times the reported values for the slope factors was selected as a generally reasonable interim upper bound.

aquifer to receptor locations (credit is taken for decay in transit in the unsaturated zone). These assumptions alone result in upper bound values for the time integrated population dose for the groundwater pathway. However, given these assumptions, the uncertainty in the time integrated population impacts for the groundwater pathway is due primarily to the uncertainty in the slope factors, which range from 0 to about a factor of 10 higher than the values used. As a result, the impacts could range from 0 to about 10 times higher than the derived values.

The generic site's number of cancers per curie for the groundwater pathway is an upper bound value because of the assumed groundwater usage described above and also because the assumptions tend to maximize the rate at which radionuclides are transported to the groundwater. For example, low end K_d values along with a shallow unsaturated zone and high infiltration rate result in minimal radioactive decay prior to transport to receptors. Any change in these assumptions will likely result in a reduction in the number of cancers per curie.

Crop Ingestion. The cumulative population impacts for the crop ingestion pathway are based on the assumptions: the entire site is used for rural residential purposes over a 1000 year period and all the crops are consumed. This results in an upper bound estimate of the impacts for this pathway. However, given these assumptions, the uncertainty in the cumulative population impacts for this pathway is primarily due to uncertainties in the soil-to-plant transfer factors and the ingestion slope factors. For individual plants at specific locations, these transfer factors, often referred to as Bvs, can vary by orders of magnitude. When used as average values representing large areas, long time periods, and a broad range of types of vegetation, the uncertainty in the Bvs is markedly reduced. As discussed in (EPA 89b), the uncertainty in the soil to plant transfer factors are isotope specific and may range from about a factor of 10 higher to a factor of 10 lower than the values used in this analysis. Insight into variability in the Bvs is also provided in the compilation of soil-to-vegetable transfer factors provided in (ANL 93a, Pet 83, Sim 90, and IAEA 82).

Imbedded in the use of the Bv approach to calculating the radionuclide concentration in vegetable crops are assumptions regarding the average concentration of the radionuclides in the soil horizon. In this analysis, the average radionuclide concentration in the top 0.9 m of soil is used. This means that if the contaminated soil extends to depth of only 0.09 m, the radionuclide concentration in the contaminated zone is diluted 10-fold since one must assume

the Bv values apply to the average radionuclide concentration in the 0.9 m root zone. As indicated in (ANL 93b), the root zone, from which the radionuclides are obtained, ranges from about 0.3 to 5 m.

The models assume an average productivity of 0.718 kg/yr per m² (EPA 89b). This is the productivity of a parcel of land dedicated to agriculture and therefore is an upper end estimate. Table 3-25 presents the agricultural productivity of different crops. As may be noted, the values selected is not bounding. However, it is considered conservative because it is assumed to persist for the entire time periods of interest.

The time integrated population impacts are also a function of the radionuclide depletion rate from the root zone, which is assumed to be 0.9 meters. As discussed above, high infiltration rates and low K_ds were selected for the generic site because they tend to increase the impacts from the groundwater pathway. However, these assumptions result in a rapid clearance from the root zone, thereby reducing the time integrated impacts.

In this analysis, the Bvs are treated as independent of the K_ds. However, it is reasonable to assume that the two parameters are coupled because a higher K_d will tend to make the radionuclide less available in the dissolved state. The use of low K_ds simultaneously tends to reduce the time integrated impacts due to rapid depletion from the root zone, but increase the impacts because of the likelihood of higher Bvs.

Taken together with the uncertainty in the slope factors, the uncertainty in the cumulative population impacts for the vegetable pathway can range from 0 to about a factor of 10 to 100 fold higher than the derived values. The upper end values are due to the possibility of localized high Bv values.

Indoor Radon. Given the assumed time averaged population density of 1000 persons per km², the uncertainty in the cumulative population impacts due to exposure to indoor radon is: (1) assumed relationship between the average indoor radon concentration (pCi/L) and the average Ra-226 concentration (pCi/g) in soil (i.e., the concentration ratio), and (2) the assumed risk of cancer per working level month (i.e., the risk factor). There are other sources of uncertainty, such as the average fractional equilibrium, the unattached fraction, and the occupancy times, but they are either part of, or a small fraction of, the uncertainties in the concentration ratio and risk factor for indoor radon.

Table 3-25. Agricultural Productivity
 PRINCIPAL VEGETABLES FOR FRESH MARKETS

Crop	Production (1,000 kg)		Area Planted (1,000 m2)		Yield (kg/m2)		
	1992	1993	1992	1993	1992	1993	Avg.
Artichokes	50,076	44,406	38,850	36,017	1.29	1.23	1.26
Asparagus	106,639	99,971	357,825	344,632	0.30	0.29	0.29
Beans, Lima	5,579	4,354	16,997	19,020	0.33	0.23	0.28
Beans, Snap	175,902	192,005	367,659	402,260	0.48	0.48	0.48
Broccoli	564,583	489,832	451,632	434,635	1.25	1.13	1.19
Brussel Sprouts	25,401	27,578	14,164	15,378	1.79	1.79	1.79
Cabbage	912,260	996,310	319,299	309,870	2.86	3.22	3.04
Cantaloupes	790,653	841,455	450,013	443,862	1.76	1.90	1.83
Carrots	1,507,779	1,461,966	437,063	422,089	3.45	3.46	3.46
Cauliflower	317,921	301,910	230,267	231,481	1.38	1.30	1.34
Celery	872,798	826,033	138,080	132,859	6.32	6.22	6.27
Corn, Sweet	808,932	770,468	922,284	903,628	0.88	0.85	0.86
Cucumbers	440,980	454,860	219,948	263,452	2.00	1.73	1.87
Eggplant	40,007	35,199	14,973	12,950	2.67	2.72	2.69
Escarole/Endive	24,358	25,900	19,425	17,685	1.25	1.46	1.36
Garlic	172,137	161,932	93,078	84,984	1.85	1.91	1.88
Honeydew	196,858	152,406	103,600	84,580	1.90	1.80	1.85
Lettuce, Head	3,211,871	3,075,975	877,525	844,179	3.66	3.64	3.65
Lettuce, Leaf	373,531	379,655	156,210	164,222	2.39	2.31	2.35
Lettuce,Romaine	256,369	299,642	81,342	103,195	3.15	2.90	3.03
Onions	2,482,543	2,567,138	601,771	637,383	4.13	4.03	4.08
Bell Peppers	643,463	626,000	274,378	266,608	2.35	2.35	2.35
Spinach	106,639	122,515	80,938	88,222	1.32	1.39	1.35
Tomatoes	1,731,943	1,599,630	549,323	552,601	3.15	2.89	3.02
Watermelons	1,646,985	1,666,490	1,028,474	908,039	1.60	1.84	1.72

Source: U.S. Department of Agriculture, Economic Research Service

Table 3-25. (Continued)

PRINCIPAL VEGETABLES FOR PROCESSING

Crop	Production (1,000 kg)		Area Planted (1,000 m2)		Yield (kg/m2)		
	1992	1993	1992	1993	1992	1993	Avg
Beans, Lima	36,272	42,766	129,055	150,949	0.28	0.28	0.28
Beans, Snap	585,787	591,410	823,783	812,532	0.71	0.73	0.72
Beets	106,776	103,574	31,363	29,259	3.40	3.54	3.47
Cabbage	156,662	122,014	25,576	25,253	6.13	4.83	5.48
Corn, Sweet	2,951,492	2,465,070	2,157,674	2,025,949	1.37	1.22	1.29
Cucumbers	506,186	532,408	437,710	463,651	1.16	1.15	1.15
Peas, Green	516,463	319,075	1,454,974	1,006,459	0.35	0.32	0.34
Spinach	92,490	117,125	56,535	64,264	1.64	1.82	1.73
Tomatoes	7,961,388	8,776,907	1,121,431	1,280,433	7.10	6.85	6.98

Source: U.S. Department of Agriculture, Economic Research Service

For any individual home, the ratio of indoor radon concentration (pCi/L) per pCi/g of Ra-226 in soil can range from less than one to several orders of magnitude. For example, data summarized in SCA 89 for 73 homes in a community with soil containing elevated levels of Ra-226 revealed average Ra-226 concentrations in soil ranging from 0.65 to 61.3 pCi/g. Indoor radon progeny concentrations ranged from 0.001 to 1.549 WL. The latter correspond to indoor radon concentrations ranging from 0.2 to 300 pCi/L. The radon ratio ranged from 0.04 to 50. The geometric mean of this range is 1.4.

The variability in the ratio is likely to be relatively small when the parameter of interest is the average ratio for large populations and long time periods of interest. As indicated in EPA 82, "... one might expect indoor radon decay product concentrations of 0.01 WL (this corresponds to about 2 pCi/L of radon assuming a typical indoor fractional equilibrium of 50% for radon progeny - this note is not included in the quote) for soils with radium concentrations of 1 to 3 pCi/g to a depth of 1 meter or more." Based on this relationship, the average ratio employed in this report is 1.25.

In this report, the risk factor is 240 lung cancer deaths per 1E6 WLM⁷. The reported range is 140 to 720, and the possibility of zero impacts at low exposure rates cannot be ruled out (EPA 89b). Accordingly, given the assumed population density, the uncertainty in the cumulative population impacts can range from 0 to about a factor of 5 greater than the derived values.

As with the other water-independent pathways, the time integrated impacts are a function of the depletion rate of radium in the zone of interest. The zone of interest for radon is assumed to be 5 meters based on RAE 90. Since a low K_d and high infiltration rate was assumed for the generic site, the time integrated impacts would increase for this pathway at sites with lower soil depletion rates.

In summary, given the generic site conditions, the values tabulated in Tables 3-21 through 3-23 can range from 0 to about 5 to 10 times higher (and to as much as 100 times higher for some radionuclides for the crop ingestion pathway) than the indicated values. An attempt

⁷ This value is based on the supporting documentation to EPA's "A Citizen's Guide to Radon, (Second Edition)" ANR-464, May 1992 Citizen Guide. The risk coefficient reported in EPA 89 is 360 cancers per 1E6 WLM.

can be made to derive a more precise estimate of the uncertainty for individual pathways and radionuclides. However, given the nature of the uncertainties in the calculational parameters, little value will be added—and this may even produce misleading results.

3.2.3 Quantitative Sensitivity Analysis

The above discussion presents a qualitative evaluation of the sensitivity of the generic cancers per curie for alternative assumptions regarding the characteristics of the contaminated soil and the environmental setting. This section presents the results of a quantitative sensitivity analysis demonstrating some of the sensitivities discussed above.

All values in Tables 3-21 through 3-23 are directly proportional to the slope factor, which, as discussed above can range from 0 to about 10 times the assumed value. For direct radiation, dust inhalation, and indoor radon, the results are directly proportional to the assumed population density. In Tables 3-21 through 3-23, the population density is assumed to be 1000 persons/km². For the groundwater ingestion pathway, the results are directly proportional to the fraction of the contaminated groundwater that is consumed. In Tables 3-21 through 3-23, an assumed 50% of the groundwater is withdrawn and 1% of this is consumed. For the crop ingestion pathway, the values in Tables 3-21 through 3-23 are directly proportional to the assumed soil-to-plant transfer factors and the crop production rate. For the indoor radon pathway, the values are directly proportional to the radon concentration ratio. The values in Tables 3-21 through 3-23 can be prorated up or down in proportion to the alternative values for these parameters. However, there are several parameters that affect the results in a non-linear manner. The most important of these include the K_d s, the thickness of the contaminated zone, and the time period of interest. The following discussion demonstrates the sensitivity of the results for alternative values of these parameters.

Increasing the K_d s. Tables 3-26 through 3-28 are identical to Tables 3-21 through 3-23 except high end K_d values are assumed. This greatly reduces the downward velocity of the radionuclides in the unsaturated zone—thereby delaying the arrival of radionuclides in the underlying aquifer—but increases the residence time in the contaminated zone. This effectively reduces the potential for exposure via the groundwater pathway but increases the potential for exposure by the direct radiation, dust inhalation, crop ingestion, and indoor radon pathways. A similar effect is realized by reducing the infiltration rate. The results are significant for several radionuclides and pathways. The following summarizes the results for the 1000 year period of interest.

Table 3-26. Generic Population Impacts (Case 2) Expressed on a per Curie Basis (100 Years)

Normalized Population Health Impacts (cancers per Ci)
For An Integration Period of 100 Years

Radionuclide	Direct Radiation	Dust Inhalation	Ground Water Ingestion	Crop Ingestion	Radon Inhalation	Rural With Agriculture ^b	Rural Without Agriculture ^b	Intermediary With Agriculture ^b	Intermediary Without Agriculture ^b	Suburban Without Agriculture ^b
Co-60	1.13E-02	5.90E-08	0.00E+00	9.63E-05		2.10E-04	1.13E-04	1.23E-03	1.13E-03	1.13E-02
Cs-137+D	1.25E-02	8.44E-08	0.00E+00	3.53E-03		3.66E-03	1.25E-04	4.78E-03	1.25E-03	1.25E-02
H-3	0.00E+00	2.12E-06	0.00E+00	3.30E-06		3.32E-06	2.12E-08	3.51E-06	2.12E-07	2.12E-06
Pb-210+D	6.86E-07	1.35E-05	0.00E+00	2.66E-02		2.66E-02	1.42E-07	2.66E-02	1.42E-06	1.42E-05
Pu-239	1.90E-07	3.10E-04	0.00E+00	1.36E-04		1.39E-04	3.10E-06	1.67E-04	3.10E-05	3.10E-04
Ra-226+D ^c	1.01E-01	7.29E-05	0.00E+00	1.03E-01	5.65E-01	1.10E-01	6.66E-03	1.70E-01	6.66E-02	6.66E-01
Ra-228+D	4.21E-03	9.41E-07	0.00E+00	2.95E-04		3.37E-04	4.21E-05	7.17E-04	4.21E-04	4.21E-03
Sr-90+D	0.00E+00	2.04E-07	0.00E+00	4.69E-02		4.69E-02	2.04E-09	4.69E-02	2.04E-08	2.04E-07
Tc-99	5.47E-11	1.89E-10	1.14E-03	6.92E-04		1.83E-03	1.14E-03	1.83E-03	1.14E-03	1.14E-03
Th-228+D	2.64E-03	3.04E-05	0.00E+00	5.19E-06		3.19E-05	2.67E-05	2.72E-04	2.67E-04	2.67E-03
Th-230 ^d	2.21E-03	1.98E-04	0.00E+00	1.46E-03	1.23E-02	1.60E-03	1.47E-04	2.93E-03	1.47E-03	1.47E-02
Th-232 ^d	1.31E-01	1.21E-03	0.00E+00	3.45E-03		4.77E-03	1.33E-03	1.67E-02	1.33E-02	1.33E-01
U-234 ^d	9.57E-07	1.49E-04	0.00E+00	1.68E-03	3.71E-06	1.68E-03	1.54E-06	1.70E-03	1.54E-05	1.54E-04
U-235+D	3.85E-03	1.39E-04	0.00E+00	1.78E-03		1.82E-03	3.99E-05	2.18E-03	3.99E-04	3.99E-03
U-238+D	8.31E-04	1.33E-04	0.00E+00	2.34E-03		2.35E-03	9.64E-06	2.44E-03	9.64E-05	9.64E-04

- (a) Depth of contaminated zone is equal to 2 meters.
Infiltration rate is equal to 0.5 meters per year.
 K_d is equal to the high-end set of values.
Unsaturated zone thickness is equal to 2 meters.
Removal mechanisms include leaching and decay.
Population density equals 1,000 people/square kilometer.
Results that are less than 1.00E-20 are reported as 0.00E+00.
- (b) Rural scenario is based on a population density of 10 ind/km².
Intermediary scenario is based on a population density of 100 ind/km².
Suburban scenario is based on a population density of 1,000 ind/km².
- (c) Ra-226+D assumes Pb-210 and its progeny to be in secular equilibrium with Ra-226.
- (d) The results for this radionuclide include the effects of progeny ingrowth.

Table 3-27. Generic Population Impacts (Case 2) Expressed on a per Curie Basis (1000 Years)

Normalized Population Health Impacts (cancers per Ci)
For An Integration Period of 1,000 Years

Radionuclide	Direct Radiation	Dust Inhalation	Ground Water Ingestion	Crop Ingestion	Radon Inhalation	Rural With Agriculture ^b	Rural Without Agriculture ^b	Intermediary With Agriculture ^b	Intermediary Without Agriculture ^b	Suburban Without Agriculture ^b
Co-60	1.13E-02	5.90E-08	0.00E+00	9.63E-05		2.10E-04	1.13E-04	1.23E-03	1.13E-03	1.13E-02
Cs-137+D	1.38E-02	9.33E-08	0.00E+00	3.93E-03		4.06E-03	1.38E-04	5.31E-03	1.38E-03	1.38E-02
H-3	0.00E+00	2.12E-06	8.35E-14	3.31E-06		3.33E-06	2.12E-08	3.52E-06	2.12E-07	2.12E-06
Pb-210+D	7.18E-07	1.41E-05	0.00E+00	2.79E-02		2.79E-02	1.48E-07	2.79E-02	1.48E-06	1.48E-05
Pu-239	1.57E-06	2.57E-03	0.00E+00	1.30E-03		1.32E-03	2.57E-05	1.56E-03	2.57E-04	2.57E-03
Ra-226+D ^c	7.64E-01	5.51E-04	0.00E+00	8.40E-01	4.67E+00	8.95E-01	5.43E-02	1.38E+00	5.43E-01	5.43E+00
Ra-228+D	4.21E-03	9.41E-07	0.00E+00	2.95E-04		3.37E-04	4.21E-05	7.17E-04	4.21E-04	4.21E-03
Sr-90+D	0.00E+00	2.09E-07	8.29E-16	5.05E-02		5.05E-02	2.09E-09	5.05E-02	2.09E-08	2.09E-07
Tc-99	5.47E-11	1.89E-10	1.14E-03	6.92E-04		1.83E-03	1.14E-03	1.83E-03	1.14E-03	1.14E-03
Th-228+D	2.64E-03	3.04E-05	0.00E+00	5.19E-06		3.19E-05	2.67E-05	2.72E-04	2.67E-04	2.67E-03
Th-230 ^d	1.82E-01	2.07E-03	0.00E+00	1.86E-01	1.08E+00	1.99E-01	1.27E-02	3.13E-01	1.27E-01	1.27E+00
Th-232 ^d	1.43E+00	1.30E-02	0.00E+00	3.73E-02		5.17E-02	1.44E-02	1.82E-01	1.44E-01	1.44E+00
U-234 ^d	4.25E-04	8.95E-04	0.00E+00	1.58E-02	3.33E-03	1.59E-02	4.65E-05	1.63E-02	4.65E-04	4.65E-03
U-235+D	2.30E-02	8.28E-04	0.00E+00	1.61E-02		1.64E-02	2.38E-04	1.85E-02	2.38E-03	2.38E-02
U-238+D	4.95E-03	7.94E-04	0.00E+00	2.13E-02		2.13E-02	5.75E-05	2.18E-02	5.75E-04	5.75E-03

- (a) Depth of contaminated zone is equal to 2 meters.
Infiltration rate is equal to 0.5 meters per year.
 K_d is equal to the high-end set of values.
Unsaturated zone thickness is equal to 2 meters.
Removal mechanisms include leaching and decay.
Population density equals 1,000 people/square kilometer.
Results that are less than 1.00E-20 are reported as 0.00E+00.
- (b) Rural scenario is based on a population density of 10 ind/km².
Intermediary scenario is based on a population density of 100 ind/km².
Suburban scenario is based on a population density of 1,000 ind/km².
- (c) Ra-226+D assumes Pb-210 and its progeny to be in secular equilibrium with Ra-226.
- (d) The results for this radionuclide include the effects of progeny ingrowth.

Table 3-28. Generic Population Impacts (Case 2) Expressed on a per Curie Basis (10,000 Years)

Normalized Population Health Impacts (cancers per Ci)
For An Integration Period of 10,000 Years

Radionuclide	Direct Radiation	Dust Inhalation	Ground Water Ingestion	Crop Ingestion	Radon Inhalation	Rural With Agriculture ^b	Rural Without Agriculture ^b	Intermediary With Agriculture ^b	Intermediary Without Agriculture ^b	Suburban Without Agriculture ^b
Co-60	1.13E-02	5.90E-08	0.00E+00	9.63E-05		2.10E-04	1.13E-04	1.23E-03	1.13E-03	1.13E-02
Cs-137+D	1.38E-02	9.33E-08	0.00E+00	3.93E-03		4.06E-03	1.38E-04	5.31E-03	1.38E-03	1.38E-02
H-3	0.00E+00	2.12E-06	8.35E-14	3.31E-06		3.33E-06	2.12E-08	3.52E-06	2.12E-07	2.12E-06
Pb-210+D	7.18E-07	1.41E-05	0.00E+00	2.79E-02		2.79E-02	1.48E-07	2.79E-02	1.48E-06	1.48E-05
Pu-239	4.38E-06	7.16E-03	0.00E+00	8.73E-03		8.80E-03	7.16E-05	9.45E-03	7.16E-04	7.16E-03
Ra-226+D ^c	1.58E+00	1.14E-03	0.00E+00	2.22E+00	1.30E+00	2.36E+00	1.45E-01	3.67E+00	1.45E+00	1.45E+01
Ra-228+D	4.21E-03	9.41E-07	0.00E+00	2.95E-04		3.37E-04	4.21E-05	7.17E-04	4.21E-04	4.21E-03
Sr-90+D	0.00E+00	2.09E-07	1.33E-15	5.05E-02		5.05E-02	2.09E-09	5.05E-02	2.09E-07	2.09E-07
Tc-99	5.47E-11	1.89E-10	1.14E-03	6.92E-04		1.83E-03	1.14E-03	1.83E-03	1.14E-03	1.14E-03
Th-228+D	2.64E-03	3.04E-05	0.00E+00	5.19E-06		3.19E-05	2.67E-05	2.72E-04	2.67E-04	2.67E-03
Th-230 ^d	5.05E+00	2.04E-02	0.00E+00	7.23E+00	4.23E+01	7.70E+00	4.74E-01	1.20E+01	4.74E+00	4.74E+01
Th-232 ^d	1.30E+01	1.19E-01	0.00E+00	3.69E-01		5.00E-01	1.31E-01	1.68E+00	1.31E+00	1.31E+01
U-234 ^d	3.21E-02	1.35E-03	0.00E+00	2.31E-01	1.43E+00	2.45E-01	1.47E-02	3.77E-01	1.47E-01	1.47E+00
U-235+D	3.15E-02	1.14E-03	0.00E+00	7.33E-02		7.36E-02	3.27E-04	7.66E-02	3.27E-03	3.27E-02
U-238+D	6.80E-03	1.09E-03	0.00E+00	9.65E-02		9.66E-02	7.90E-05	9.73E-02	7.90E-05	7.90E-03

- (a) Depth of contaminated zone is equal to 2 meters. Infiltration rate is equal to 0.5 meters per year.
 K_d is equal to the high-end set of values.
 Unsaturated zone thickness is equal to 2 meters.
 Removal mechanisms include leaching and decay.
 Population density equals 1,000 people/square kilometer.
 Results that are less than 1.00E-20 are reported as 0.00E+00.
- (b) Rural scenario is based on a population density of 10 ind/km².
 Intermediary scenario is based on a population density of 100 ind/km².
 Suburban scenario is based on a population density of 1,000 ind/km².
- (c) Ra-226+D assumes Pb-210 and its progeny to be in secular equilibrium with Ra-226.
- (d) The results for this radionuclide include the effects of progeny ingrowth.

For Co-60, Cs-137, and Ra-228+D, the use of high end K_d s results in a less than 2-fold increase in the numbers of cancers per curie. This modest increase is expected because the residence time of these radionuclides is dominated by their decay rate—and this occurs even as higher K_d s increase residence times in the contaminated zone.

For H-3, the results change substantially because the high end K_d is assumed to be 42 instead of 0. This high end value reported for tritium is reasonable for the organically bound tritium considered here. Note the impacts from the groundwater pathway decline markedly due to holdup in the contaminated and unsaturated zone, but the impacts from the other pathways increase substantially. The impacts for Tc-99 change in a similar manner when going from the base case K_d s to the upper end K_d s.

For Pu-239 and Ra-226+D, impacts from all water independent pathways increase due to increased residence times in the contaminated zone. The impacts from the groundwater pathway remain at zero because even the low base line K_d s are relatively large, thereby preventing the Pu-239 and Ra-226+D from reaching the aquifer within the 1000 year time period.

Sr-90+D is affected in a complex manner. Groundwater, a previously important pathway, is virtually eliminated, but the crop ingestion pathway, also previously important, is increased about 2-fold. Thus, the impacts for the rural residential scenario are reduced by a factor of about two, while the suburban scenario impacts are virtually eliminated due to the elimination of the groundwater pathway.

Th-232 shows a small increase (less than a factor of 2) because even the base line K_d for Th-232 is relatively large. As a result, the impacts from the critical pathway (i.e., direct radiation from its immediate progeny Ra-228+D) increase only slightly.

U-238+D is also affected in a complex manner. The groundwater pathway, which was previously dominant, is eliminated, and the water independent pathways increase substantially due the increased residence times. The overall effect is an increase in the potential impacts.

Decreasing the Thickness of the Contaminated Zone. A second case is run identical to the high K_d case but here the thickness of the contaminated zone is 20 cm as opposed to 2.0 meters. This places the "curie" in the top 20 cm, as opposed to diluting it over a 2 meter depth. Tables 3-29 through 3-31 present the results of this analysis.

As may be expected, the number of cancers per curie for the direct radiation and dust inhalation pathways increase about 10-fold. The water ingestion pathway remains unchanged, and the impacts from the crop ingestion pathway increase about 3-fold. The overall effect is a small increase in the rural residential scenario, but a large (about 10-fold) increase in the suburban scenario for all radionuclides except Ra-226, H-3, and Tc-99. The 10-fold increase is expected because the activity is assumed to be in the areas that are only affected by the contamination in the top layers of soil (i.e., direct radiation). H-3 and Tc-99 remain unchanged because the groundwater pathway is virtually unaffected by the distribution pattern of the activity in the unsaturated zone. Ra-226 remains unchanged because the total number of curies available for diffusion into homes remains unchanged (i.e., the average concentration over a 0 to 5 m depth remains the same whether the curie is assumed to be located in a 0 to 20 cm or 0 to 2 meter contaminated zone).

Alternative Time Periods of Interest. For each of the above three cases, the time integrated number of cancers per Ci was derived for time integration periods of 100, 1000, and 10,000 years. Figure 3-13 summarizes the results for the base case suburban future use scenarios for selected representative radionuclides. The results reveal that the total numbers of cancers per curie remain virtually unchanged for Cs-137, Tc-99, and U-238, but change substantively for the other radionuclides. The impacts remain the same for Cs-137 because its half life is only 30 years, and therefore, the integrated dose is the same for all three time periods. In general, any radionuclide with a half life significantly less than 100 years, such as Sr-90, Co-60, and H-3, will have the same cumulative impacts for any integration period greater than 100 years.

Tc-99 and U-238 remain unchanged because of the assumed low K_d s and a high infiltration rate. This produces a short residence time for these radionuclides in the contaminated zone— compared to 100 years—and, therefore, the time integration period has little effect. If higher K_d s or lower infiltration rates are assumed, the impacts for these radionuclides over different time periods would change.

Table 3-29. Generic Population Impacts (Case 3) Expressed on a per Curie Basis (100 Years)

Normalized Population Health Impacts (cancers per Ci)
For An Integration Period of 100 Years

Radionuclide	Direct Radiation	Dust Inhalation	Ground Water Ingestion	Crop Ingestion	Radon Inhalation	Rural With Agriculture ^b	Rural Without Agriculture ^b	Intermediary With Agriculture ^b	Intermediary Without Agriculture ^b	Suburban Without Agriculture ^b
Co-60	1.02E-01	5.90E-07	0.00E+00	2.14E-04		1.23E-03	1.02E-03	1.04E-02	1.02E-02	1.02E-01
Cs-137+D	1.16E-01	8.44E-07	0.00E+00	7.85E-03		9.01E-03	1.16E-03	1.94E-02	1.16E-02	1.16E-01
H-3	0.00E+00	2.12E-05	0.00E+00	7.33E-06		7.55E-06	2.12E-07	9.46E-06	2.12E-06	2.12E-05
Pb-210+D	6.73E-06	1.35E-04	0.00E+00	5.92E-02		5.92E-02	1.42E-06	5.92E-02	1.42E-05	1.42E-04
Pu-239	1.89E-06	3.10E-03	0.00E+00	3.01E-04		3.32E-04	3.10E-05	6.12E-04	3.10E-04	3.10E-03
Ra-226+D ^c	8.88E-01	7.29E-04	0.00E+00	2.29E-01	5.65E-01	2.43E-01	1.45E-02	3.74E-01	1.45E-01	1.45E+00
Ra-228+D	3.75E-02	9.41E-06	0.00E+00	6.56E-04		1.03E-03	3.75E-04	4.40E-03	3.75E-03	3.75E-02
Sr-90+D	0.00E+00	2.04E-06	0.00E+00	1.04E-01		1.04E-01	2.04E-08	1.04E-01	2.04E-07	2.04E-06
Tc-99	5.46E-10	1.89E-09	1.14E-03	1.54E-03		2.67E-03	1.14E-03	2.67E-03	1.14E-03	1.14E-03
Th-228+D	2.15E-02	3.04E-04	0.00E+00	1.15E-05		2.29E-04	2.18E-04	2.19E-03	2.18E-03	2.18E-02
Th-230 ^d	1.94E-02	1.98E-03	0.00E+00	3.23E-03	1.23E-02	3.57E-03	3.37E-04	6.61E-03	3.37E-03	3.37E-02
Th-232 ^d	1.10E+00	1.21E-02	0.00E+00	7.67E-03		1.88E-02	1.11E-02	1.19E-01	1.11E-01	1.11E+00
U-234 ^d	8.76E-06	1.49E-03	0.00E+00	3.74E-03	3.71E-06	3.75E-03	1.50E-05	3.89E-03	1.50E-04	1.50E-03
U-235+D	3.81E-02	1.39E-03	0.00E+00	3.95E-03		4.34E-03	3.95E-04	7.90E-03	3.95E-03	3.95E-02
U-238+D	7.67E-03	1.33E-03	0.00E+00	5.20E-03		5.29E-03	9.01E-05	6.10E-03	9.01E-04	9.01E-03

- (a) Depth of contaminated zone is equal to 0.2 meters.
Infiltration rate is equal to 0.5 meters per year.
 K_d is equal to the high-end set of values.
Unsaturated zone thickness is equal to 2 meters.
Removal mechanisms include leaching and decay.
Population density equals 1,000 people/square kilometer.
Results that are less than 1.00E-20 are reported as 0.00E+00.
- (b) Rural scenario is based on a population density of 10 ind/km².
Intermediary scenario is based on a population density of 100 ind/km².
Suburban scenario is based on a population density of 1,000 ind/km².
- (c) Ra-226+D assumes Pb-210 and its progeny to be in secular equilibrium with Ra-226.
- (d) The results for this radionuclide include the effects of progeny ingrowth.

Table 3-30. Generic Population Impacts (Case 3) Expressed on a per Curie Basis (1,000 Years)

Normalized Population Health Impacts (cancers per Ci)
For An Integration Period of 1,000 Years

Radionuclide	Direct Radiation	Dust Inhalation	Ground Water Ingestion	Crop Ingestion	Radon Inhalation	Rural With Agriculture ^b	Rural Without Agriculture ^b	Intermediary With Agriculture ^b	Intermediary Without Agriculture ^b	Suburban Without Agriculture ^b
Co-60	1.02E-01	5.90E-07	0.00E+00	2.14E-04		1.23E-03	1.02E-03	1.04E-02	1.02E-02	1.02E-01
Cs-137+D	1.28E-01	9.33E-07	0.00E+00	8.73E-03		1.00E-02	1.28E-03	2.15E-02	1.28E-02	1.28E-01
H-3	0.00E+00	2.12E-05	5.36E-13	7.35E-06		7.56E-06	2.12E-07	9.47E-06	2.12E-06	2.12E-05
Pb-210+D	7.04E-06	1.41E-04	0.00E+00	6.19E-02		6.19E-02	1.48E-06	6.20E-02	1.48E-05	1.48E-04
Pu-239	1.56E-05	2.57E-02	0.00E+00	2.89E-03		3.14E-03	2.57E-04	5.46E-03	2.57E-03	2.57E-02
Ra-226+D ^b	6.71E+00	5.51E-03	0.00E+00	1.87E+00	4.67E+00	1.98E+00	1.14E-01	3.01E+00	1.14E+00	1.14E+01
Ra-228+D	3.75E-02	9.41E-06	0.00E+00	6.56E-04		1.03E-03	3.75E-04	4.40E-03	3.75E-03	3.75E-02
Sr-90+D	0.00E+00	2.09E-06	7.15E-15	1.12E-01		1.12E-01	2.09E-08	1.12E-01	2.09E-07	2.09E-06
Tc-99	5.46E-10	1.89E-09	1.14E-03	1.54E-03		2.67E-03	1.14E-03	2.67E-03	1.14E-03	1.14E-03
Th-228+D	2.15E-02	3.04E-04	0.00E+00	1.15E-05		2.29E-04	2.18E-04	2.19E-03	2.18E-03	2.18E-02
Th-230 ^c	1.60E+00	2.07E-02	0.00E+00	4.14E-01	1.08E+00	4.41E-01	2.70E-02	6.84E-01	2.70E-01	2.70E+00
Th-232 ^c	1.20E+01	1.30E-01	0.00E+00	8.28E-02		2.04E-01	1.21E-01	1.30E+00	1.21E+00	1.21E+01
U-234 ^c	3.74E-03	8.95E-03	0.00E+00	3.52E-02	3.33E-03	3.53E-02	1.60E-04	3.68E-02	1.60E-03	1.60E-02
U-235+D	2.27E-01	8.28E-03	0.00E+00	3.59E-02		3.82E-02	2.35E-03	5.94E-02	2.35E-02	2.35E-01
U-238+D	4.58E-02	7.94E-03	0.00E+00	4.72E-02		4.78E-02	5.37E-04	5.26E-02	5.37E-03	5.37E-02

- (a) Depth of contaminated zone is equal to 0.2 meters.
Infiltration rate is equal to 0.5 meters per year.
 K_d is equal to the high-end set of values.
Unsaturated zone thickness is equal to 2 meters.
Removal mechanisms include leaching and decay.
Population density equals 1,000 people/square kilometer.
Results that are less than 1.00E-20 are reported as 0.00E+00.
- (b) Rural scenario is based on a population density of 10 ind/km².
Intermediary scenario is based on a population density of 100 ind/km².
Suburban scenario is based on a population density of 1,000 ind/km².
- (c) Ra-226+D assumes Pb-210 and its progeny to be in secular equilibrium with Ra-226.
- (d) The results for this radionuclide include the effects of progeny ingrowth.

Table 3-31. Generic Population Impacts (Case 3) Expressed on a per Curie Basis (10,000 Years)

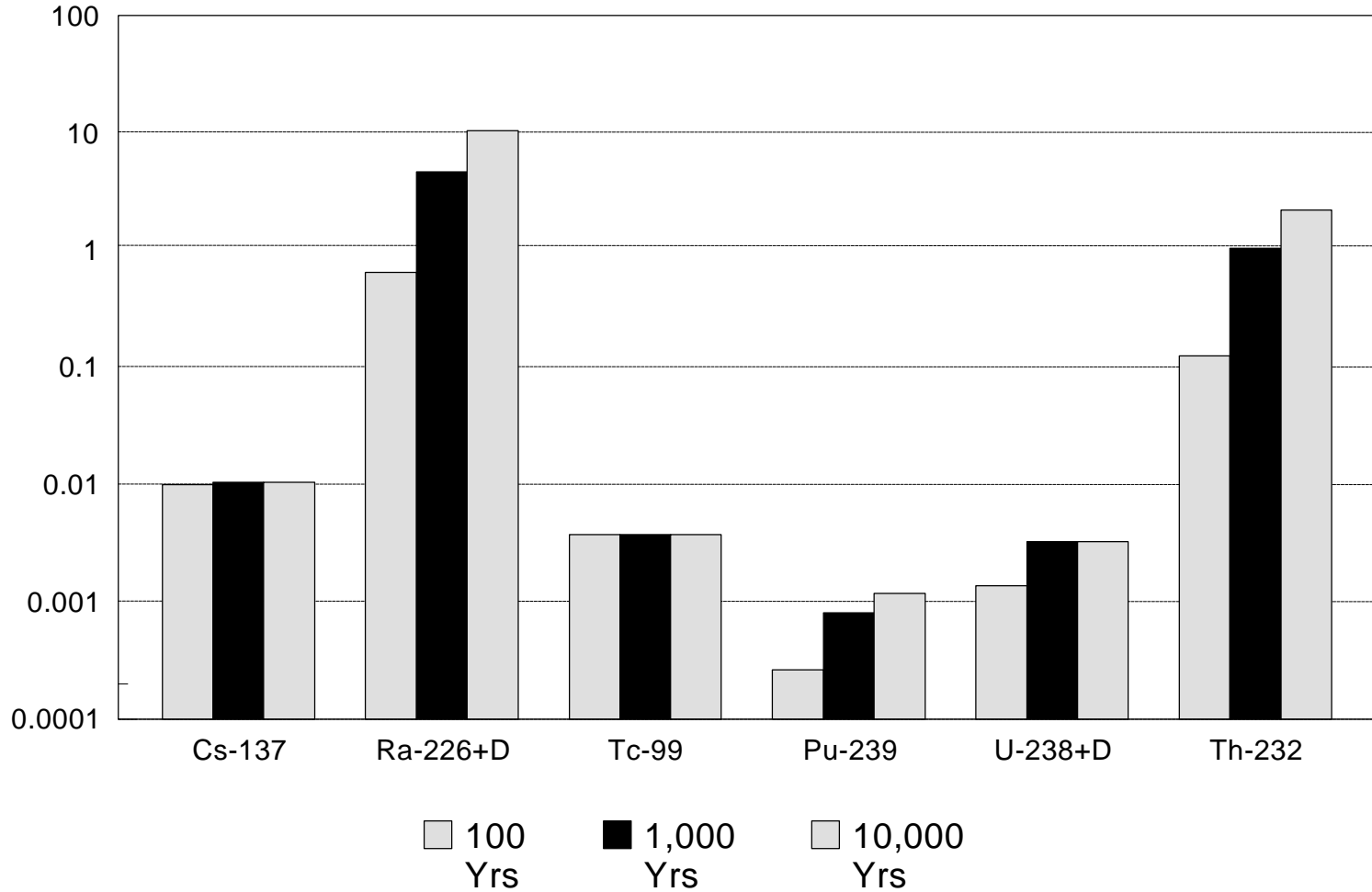
Normalized Population Health Impacts (cancers per Ci)
For An Integration Period of 10,000 Years

Radionuclide	Direct Radiation	Dust Inhalation	Ground Water Ingestion	Crop Ingestion	Radon Inhalation	Rural With Agriculture ^b	Rural Without Agriculture ^b	Intermediary With Agriculture ^b	Intermediary Without Agriculture ^b	Suburban Without Agriculture ^b
Co-60	1.02E-01	5.90E-07	0.00E+00	2.14E-04		1.23E-03	1.02E-03	1.04E-02	1.02E-02	1.02E-01
Cs-137+D	1.28E-01	9.33E-07	0.00E+00	8.73E-03		1.00E-02	1.28E-03	2.15E-02	1.28E-02	1.28E-01
H-3	0.00E+00	2.12E-05	5.36E-13	7.35E-06		7.56E-06	2.12E-07	9.47E-06	2.12E-06	2.12E-05
Pb-210+D	7.04E-06	1.41E-04	0.00E+00	6.19E-02		6.19E-02	1.48E-06	6.20E-02	1.48E-05	1.48E-04
Pu-239	4.36E-05	7.16E-02	0.00E+00	1.94E-02		2.01E-02	7.16E-04	2.66E-02	7.16E-03	7.16E-02
Ra-226+D ^c	1.38E+01	1.14E-02	0.00E+00	4.92E+00	1.30E+01	5.19E+00	2.68E-01	7.61E+00	2.68E+00	2.68E+01
Ra-228+D	3.75E-02	9.41E-06	0.00E+00	6.56E-04		1.03E-03	3.75E-04	4.40E-03	3.75E-03	3.75E-02
Sr-90+D	0.00E+00	2.09E-06	9.70E-15	1.12E-01		1.12E-01	2.09E-08	1.12E-01	2.09E-07	2.09E-06
Tc-99	5.46E-10	1.89E-09	1.14E-03	1.54E-03		2.67E-03	1.14E-03	2.67E-03	1.14E-03	1.14E-03
Th-228+D	2.15E-02	3.04E-04	0.00E+00	1.15E-05		2.29E-04	2.18E-04	2.19E-03	2.18E-03	2.18E-02
Th-230 ^d	4.44E+01	2.04E-01	0.00E+00	1.61E+01	4.23E+01	1.69E+01	8.70E-01	2.48E+01	8.70E+00	8.70E+01
Th-232 ^d	1.09E+02	1.19E+00	0.00E+00	8.20E-01		1.92E+00	1.10E+00	1.19E+01	1.10E+01	1.10E+02
U-234 ^d	2.82E-01	1.35E-02	0.00E+00	5.13E-01	1.43E+00	5.30E-01	1.73E-02	6.86E-01	1.73E-01	1.73E+00
U-235+D	3.12E-01	1.14E-02	0.00E+00	1.63E-01		1.66E-01	3.23E-03	1.95E-01	3.23E-02	3.23E-01
U-238+D	6.29E-02	1.09E-02	0.00E+00	2.15E-01		2.15E-01	7.38E-04	2.22E-01	7.38E-03	7.38E-02

- (a) Depth of contaminated zone is equal to 0.2 meters.
Infiltration rate is equal to 0.5 meters per year.
 K_d is equal to the high-end set of values.
Unsaturated zone thickness is equal to 2 meters.
Removal mechanisms include leaching and decay.
Population density equals 1,000 people/square kilometer.
Results that are less than 1.00E-20 are reported as 0.00E+00.
- (b) Rural scenario is based on a population density of 10 ind/km².
Intermediary scenario is based on a population density of 100 ind/km².
Suburban scenario is based on a population density of 1,000 ind/km².
- (c) Ra-226+D assumes Pb-210 and its progeny to be in secular equilibrium with Ra-226.
- (d) The results for this radionuclide include the effects of progeny ingrowth.

Figure 3-13. Generic Population Impacts Suburban Scenario

Cancers Per Curie

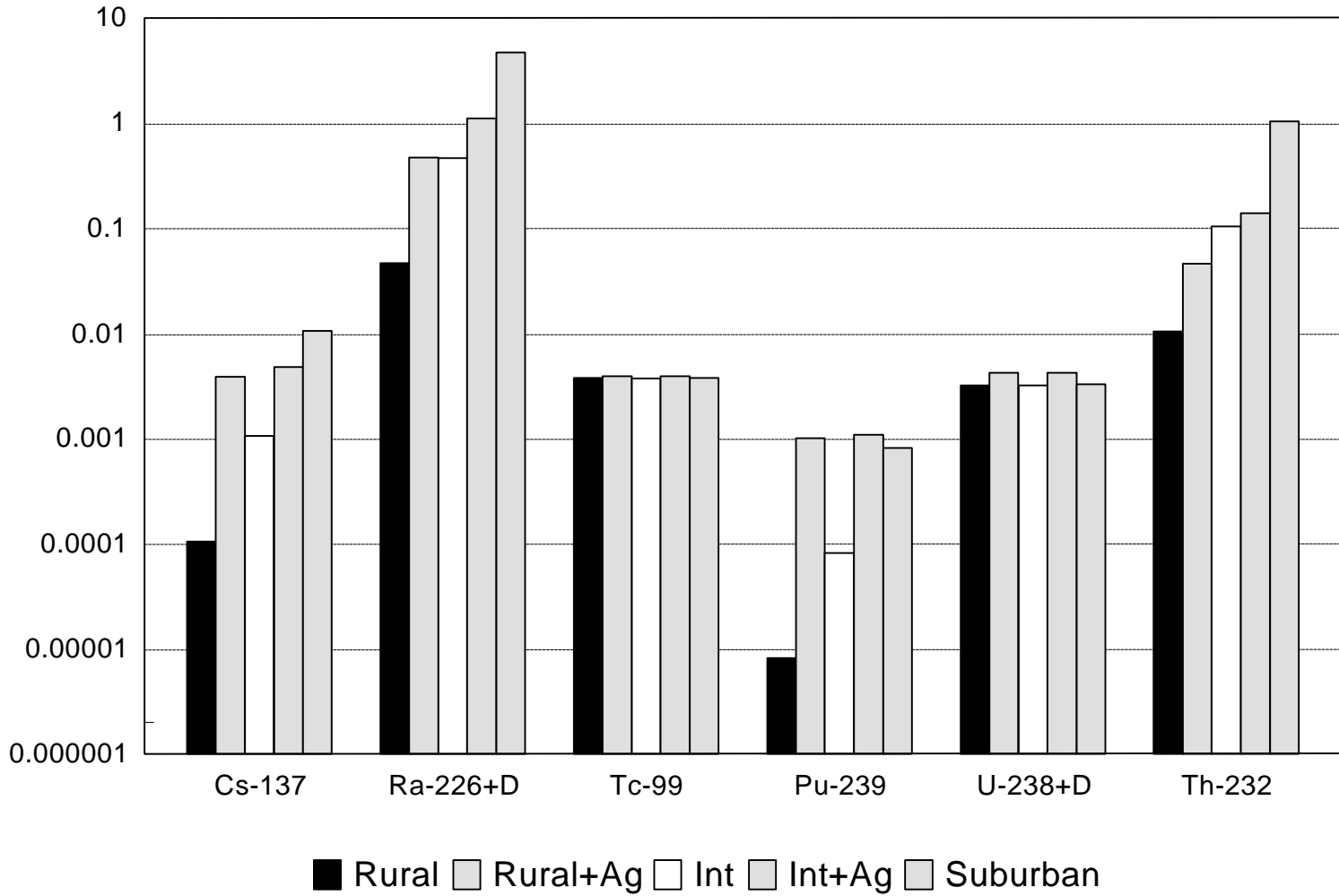


The impacts for the remaining radionuclides change substantively for different time integration periods because the radionuclides do not deplete rapidly (either by radioactive decay or leaching) over the different time periods of interest. As a result, the longer the time integration period the larger the integrated impacts.

Effect of Future land use Scenario. Figure 3-14 compares the 1000 year integrated impacts for selected radionuclides for the different future land use scenarios for the base case. For Cs-137+D, Ra-226+D, and Th-232, the results reveal the suburban scenario clearly dominates because the water independent pathways dominate. For Tc-99 and U-238+D, the results are virtually the same for all scenarios because the groundwater pathway dominates. For Pu-239, the results are significantly affected by whether or not agriculture is assumed.

Figure 3-14. Generic Population Impacts 1000 Year Case

Cancers Per Curie



4. Development of Reference Sites

As stated in the introduction, technical support for the development of the cleanup regulation must produce comprehensive information on the potential health and economic impacts of the rule, including estimates of:

- The volume of soil requiring remediation to achieve alternative risk-based cleanup levels; and
- The number of adverse radiological health effects both averted and caused by site cleanup to the alternative cleanup levels.

Chapter 5 of this report estimates the volume of soil that would require remediation, and the number of health effects averted and caused by remediation, if the cleanup level were set at various individual-risk levels, *e.g.*, 1×10^{-3} , 1×10^{-4} , etc. These estimates require, and are based on, an understanding of the nature and extent of the contamination at the various sites that may fall within the scope of the rule.

It is not feasible to obtain sufficient data to characterize each site covered by the rule. There are thousands of diverse sites, many of which have highly complex source terms. The complete characterization of an individual site often requires a large array of environmental parameters as well as detailed demographic data. Furthermore, detailed site characterization data simply does not exist for most of these sites. Therefore, a set of conceptual reference sites—based largely, but not totally, on data collected at one or more actual sites—was developed to represent the universe of actual contaminated sites. An assessment was made of the public health impacts of remediating various quantities of contaminated soil at each of these reference sites. These analyses, together with an estimate of the number of real sites represented by each reference site, enable an assessment of the total health impacts on society of remediating all real sites subject to the rule to various levels of cleanup. They also play an integral role in the assessment of the economic costs of such cleanup. This chapter describes the methodology and assumptions underlying the creation of the 16 reference sites.

The reference sites are only partially based on data from real sites, and cannot be taken as complete and accurate characterizations of those sites. For instance, the present analysis requires that concentrations of contaminants in the soil be described as continuous functions of the volume of soil contaminated at or above a given concentration. Such data is extremely sparse.

Constructing contaminant distribution functions for the reference sites therefore necessitated interpolating between the few available data points, often extrapolating beyond their range, and sometimes using data from other actual sites or forming a synthesis of several actual sites.

Limitations of the models employed and other constraints on the scope of the analyses required that the reference sites be simplified idealizations of the actual sites. For instance, the contamination at the reference sites is assumed to start at the surface, to be uniform in the vertical direction, and to end abruptly at some depth that is constant over the entire site or sub-site. In addition, current- and future-use scenarios and exposure pathways at the reference sites employ a number of default assumptions and parameters that do not apply to the actual sites. Finally, many parameters characterizing the actual sites have either not been measured or are beyond the capability of the models used for this analysis.

Thus, it would be inappropriate to assume that any reference site provides an accurate description of the actual site or sites upon which it was based. At the same time, the *set* of reference sites, *taken as a whole*, is intended to capture the range of conditions to be found throughout the universe of actual sites. Thus, an assessment of the public health benefits of cleaning up these sites (incorporating a wide range of current and future exposure scenarios) as well as an analysis of the volumes of soil that must be remediated, supports the cleanup rulemaking.

EPA employed a three-step process in constructing the reference sites. First, the Agency collected and reviewed data on the more than three hundred sites and sub-sites (*i.e.*, OU's, WAG's, *etc.*) for which formal RI/FS and other characterization documents are available. From these, EPA selected the subset of sites for which there was sufficient information to allow (with only limited use of default assumptions and parameters) an analysis of health impacts and volumes of soil requiring remediation. That subset represents fairly well the real sites (including some of those believed to contain most of the contaminated soil) that fall within the scope of the rulemaking. The third step consisted of employing the data on the selected subset of sites, along with a limited amount of input information that is not site-specific, to construct the reference sites.

The present analysis is limited to radioactivity in soil, and does not include radioactive wastes contained in storage areas or burial grounds. It is assumed that these sources of radioactive waste will be excavated and properly disposed of or stabilized in place—such waste falls into the category of conventional low-level waste and will be managed according to existing NRC (10 CFR 61) and DOE (10 CFR 834) regulations and pending EPA regulations. Accordingly, site characterization was limited to the evaluation of sites/sub-sites where the soil was contaminated as a result of spills, leaks, local fallout, overflow contamination or runoff from nearby sources of radioactive waste, or by windblown depositions.

The analysis of the benefits of remediating the reference sites to different levels of cleanup, and the determination of the volumes of soil that must be remediated to achieve these cleanup levels, are discussed in Chapter 5. The results of the analyses are then extrapolated to the universe of all radioactively contaminated sites covered by the rule,

4.1 GATHERING THE DATA ON REPRESENTATIVE SITES

EPA has analyzed available published data on more than three hundred sites, representing a wide range of administrative and functional categories and possessing a broad cross-section of source term and environmental characteristics. The process of identifying and obtaining data that could contribute to the process of constructing reference sites proceeded in an iterative manner. It began with the development of a list of key parameters needed to adequately characterize sites. These included the list of radioactive contaminants, the volumes of soil containing different concentrations of contaminants, and the hydrogeological and meteorological characteristics of the sites/sub-sites.

These parameters were initially used to conduct a pilot survey of 20 sites/sub-sites, with the intention of assessing the feasibility of extracting the necessary data from existing documentation, such as Remedial Investigation and Feasibility Study (RI/FS) reports. The pilot survey showed that data for many of the key parameters were not readily available. It suggested, however, that an expansion of this effort, with a more thorough and sophisticated analysis of published documents, might meet the needs of the rulemaking process. It was apparent, moreover, that more active assistance of DOE, DOD, and NRC in obtaining site characterization data would be extremely helpful.

The remainder of this chapter discusses the collection of data, primarily from published documents describing actual sites, and the creation of reference sites based on these data. It is anticipated that data provided by DOE, DOD, and NRC in the future will support the results of analyses based on the data that is currently available.

4.1.1 Sources of Data on DOE, DOD, and NRC Sites

Data on DOE nuclear facilities, which were the primary focus of the first phase of data collection, were obtained from DOE Public Reading Rooms and libraries and from EPA Regional Offices. Document review began with the acquisition of Federal Facility Agreements for each DOE facility, which identify the waste management units at each site/sub-site and the status of the remedial investigation, and also indicate what reports are available concerning a site/sub-site. Where available, Records of Decisions (RODs), Baseline Risk Assessments and RI/FS reports were obtained. For sites/sub-sites where RODs and RI/FS materials had not yet been completed, an attempt was made to obtain Preliminary Assessment/Site Investigation (PA/SI) reports, Environmental Audit Reports, Environmental Assessment Reports, Environmental Monitoring Reports, Environmental Data Packages, and Effluent Reports. Data on the volumes of contaminated soil at major DOE sites were supplemented by DOE's Integrated Data Base (DOE 94b).

Data on DOD sites were obtained from comparable sources.

Data characterizing NRC-licensed facilities were obtained from available documentation on the NRC's Sites Decommissioning Management Program (SDMP) and documents relating to the decommissioning of individual facilities and remediation of the sites. The latter were obtained from NRC's Public Document Room. Sites representing four of the generic categories modeled in the NRC's Generic Environmental Impact Statement (GEIS) were used in the study, including two of the same facilities cited in the GEIS.

Useful information was also obtained from databases of the Soil Conservation Service (Department of Agriculture), the US Geologic Survey (Department of Interior), the National Oceanic and Atmospheric Administration (Department of Commerce), and the Bureau of the Census (DOC).

4.1.2 Site Categorization Scheme

It became apparent early in the study that the appropriate role of the reference sites would be to mimic the conditions at facilities that performed different tasks. The universe of real sites was therefore divided into categories along functional lines, beginning with facilities that were part of the nuclear fuel cycle and those involved in the production of nuclear weapons. Additional categories were created to encompass other activities in which soils might be contaminated with radioactivity. The list of functional categories and sub-categories depicted in Table 4-1 was developed by a Federal agency workgroup consisting of representatives of EPA, DOE, NRC and DOD (Army, Navy, and Air Force). These categories reflect a wide range of radionuclide concentrations, chemical and physical forms of contaminants, spatial distributions (depths and areas) of contamination, and other source characteristics encountered in practice. Table 4-1 also presents the administrative authorities responsible for each category of site.

Not all functional and administrative categories are explicitly represented with reference sites because:

- Several functional categories, such as Categories 8, 10, and 11 (Sealed Source Users, Accelerators, and Fusion Facilities), do not have significant soil contamination.
- Several functional categories can be represented by other categories. For example, Category 6 (Research/ Biomedical/Analytical Laboratories) can represent Categories 8 and 9 (Sealed Source Users and Nuclear Medicine Departments).

Table 4-1 includes a Category 18 representing the large, multi-functional DOE facilities which encompass many of the other functional categories described in the table.

Though not every functional and administrative category has been captured by the set of reference sites, a broad range of categories are represented, and most of the contaminated soil in the United States (not including diffuse NORM) is represented by them.

Table 4-1. Site Categories Characterized by the Survey

FUNCTIONAL CATEGORIES		SUB-CATEGORY	ADMINISTRATIVE AUTHORITIES			
			DOE	DOD	NRC LICENSEES	EPA NON-FEDERAL NPL SITES
1	MINES AND MILLS	Mines				
		Mills			✓✓	
		Rare Metal Extraction	✓		✓✓	
2	CONVERSION/ENRICHMENT	UF6 Conversion	✓✓			
		Gaseous Diffusion	✓✓			
3	FUEL FABRICATION/ WEAPONS ASSEMBLY	Commercial Fuel Fabrication			✓✓	
		Weapons Fuel/Target Fabrication	✓✓			
		Weapons Parts Production/ Assembly	✓✓	✓		
4	REPROCESSING/EXTRACTION	Commercial			✓	
		Weapons	✓✓			
5	REACTORS	Commercial Power			✓✓	
		DOE Research/Test	✓✓			
		Commercial Research/Test			✓✓	
		Weapons Production	✓✓			
		Isotope Production	✓		✓	
6	RESEARCH/BIOMEDICAL/ ANALYTICAL LABS	DOE National Laboratories	✓✓			
		NRC Licensed/ Other Government			✓✓	
		Academic	✓	✓	✓	

Table 4-1. (continued)

FUNCTIONAL CATEGORIES		SUB-CATEGORY	ADMINISTRATIVE AUTHORITIES			
			DOE	DOD	NRC LICENSEES	EPA NON-FEDERAL NPL SITES
7	INDUSTRIAL/COMMERCIAL (Non-Sealed Sources)	Radiochemical/ Radioanalytical	✓	✓	✓✓	
		Sealed Source Manufacturing	✓	✓	✓✓	
		Industrial Accidents	✓	✓	✓	
8	SEALED SOURCE USERS		✓	✓		
9	NUCLEAR MEDICINE DEPARTMENTS		✓	✓		
10	ACCELERATORS		✓			
11	FUSION FACILITIES		✓			
12	NUCLEAR TEST SITES		✓✓			
13	WEAPONS ACCIDENTS AND SAFETY TESTS			✓		
14	DEPLETED URANIUM	DOD Test Ranges	✓	✓✓		
		DU Storage		✓		
15	OTHER DOD FACILITIES	Air Force Bases		✓		
		Army Bases		✓		
		Marine Bases		✓		
		National Guard		✓		
		Naval Shipyard/ Air Stations		✓		
16	WASTE DISPOSAL	Incinerators	✓	✓	✓	
		Municipal Landfills				✓
		Commercial LLRW Sites	✓	✓		✓
17	NATURALLY OCCURRING RADIOACTIVE WASTES	Radium Sites	✓✓			✓
		Thorium Sites	✓✓			✓
		Uranium Sites	✓✓			✓

Table 4-1. (continued)

FUNCTIONAL CATEGORIES		SUB-CATEGORY	ADMINISTRATIVE AUTHORITIES			
			DOE	DOD	NRC LICENSEES	EPA NON-FEDERAL NPL SITES
18	ENTIRE FACILITY	Hanford Reservation	✓✓			
		Savannah River Site	✓✓			
		Idaho National Engineering Laboratory	✓✓			
		Oak Ridge Reservation	✓✓			
		Aberdeen Proving Ground		✓✓		
		Fernald	✓✓			
		Mound	✓✓			
		Nevada Test Site	✓✓			
		Paducah Gaseous Diffusion Plant	✓✓			
		Pantex	✓			
		Portsmouth Gaseous Diffusion Plant	✓			
		Rocky Flats	✓✓			
		Weldon Spring	✓✓			

(a) A single check (✓) indicates that such facilities exist for the indicated administrative authority. Subcategories with double checks (✓✓) are represented by reference sites.

4.1.3 Aerial Surveys

Aerial radiological surveys, which have been conducted over major DOE facilities, commercial nuclear power plants, and other large sites, provide an important source of data on radionuclide contamination of the soil. To supplement the site information obtained from RI/FS and other documents, a set of 61 aerial radiological survey reports were examined to identify the radionuclides in the soil and to determine the area on each site with a given level of contamination based on the activity concentration¹ of a given radionuclide (*e.g.*, <1, 1-10, 10-100, 100-1,000, >1,000 pCi/g).

The aerial surveys were conducted by EG&G Energy Measurements, typically using a helicopter outfitted with an array of 20 NaI(Tl) detectors. A flight pattern was flown over the survey area at a usual altitude of 46 m, with flight lines spaced 76 m apart. The raw data consists of geo-referenced gamma spectra recorded every 100 feet (30 m) of flight path.

The only quantity actually measured by a survey was the g-ray flux rate as a function of photon energy. The cosmic ray contribution to the spectra can be estimated on the basis of global data. The radionuclides contributing to these radiation fields could be distinguished from other nuclides likely to be found at a given site by the shape of the spectra. Other quantities can only be inferred from the data, based on assumptions regarding their distribution in the soil. For example, given the aircraft's altitude, it is possible to calculate the spectrum that would be generated by soil with a uniform contamination of 1 pCi/g of Cs-137—contamination having an infinite area and depth. Then, for a given spectrum that includes the Cs-137 photopeak, one can calculate the soil concentration of Cs-137 giving rise to such a spectrum, *assuming that the contamination is in fact uniform in all three dimensions* (within the field of view of the detectors and within the depth of penetration of the Cs-137 g-rays). If, instead, it is assumed that the contamination consists of a very thin layer deposited on the surface, a very different concentration and a vastly different inventory would be calculated. Calculations of exposure rates at an altitude of 1 m above the surface and of annual dose rates to an individual at ground level are based on similar types of assumptions.

1 Although this report, to be consistent with the literature on soil contamination, usually quantifies the contamination as "activity concentration" or "radionuclide concentration in the soil" in units of pCi/g, the technically correct term is the specific activity of a given nuclide. The expressions are used interchangeably.

The aerial survey reports included maps consisting of isopleths delineating radiation fields of different intensities superimposed on aerial photographs of the surveyed areas. The radiation fields were represented by one or more of the following quantities:

- count rate (cps)
- exposure rate ($\mu\text{R/hr}$)
- annual dose rate (mrem/yr)
- surface concentration (nCi/m^2)
- specific activity (pCi/g)

The radiation fields were based on one of the following sources:

- total gamma
- terrestrial gamma (excluding cosmic rays)
- man-made gamma (excluding cosmic rays and naturally-occurring background terrestrial radionuclides)
- specific radionuclide

To enable the calculation of radionuclide concentrations as a function of volume, one or more of the following were needed:

- specific activities of individual nuclides (pCi/g)
- surface activities of individual nuclides (nCi/m^2)
- count rates or calculated exposure rates or dose rates from specific radionuclides accompanied by conversion factors for calculating specific activities

In addition, vertical concentration profiles or defensible assumptions regarding the depth distributions are required.

Only 14 of the reports, which presented data on 10 different facilities and included a total of 30 maps, contained the minimum information necessary to determine the radionuclide distributions in the soil. A list of these reports can be found in Appendix J.

Only in the few cases (comprising 6 maps) that specific activity isopleths (pCi/g) were presented, no conversions were required. In the case of surface activity isopleths (nCi/m²), a conversion was made assuming a bulk soil density of 1.5 g/cm³ (in common with most of the EG&G reports) and a uniform radionuclide distribution to a depth of 5 cm.²

For maps not showing either specific or surface activities, a conversion was possible only in the cases where the isopleths were for an identified, specific radionuclide. This is because the particular radionuclide conversion factors published in the reports are for a specific energy window centered on the relevant photopeak and can only be used for data produced from that particular energy window. Generally, only one conversion factor (pCi/g per cps) is presented in the reports for each radionuclide, although in some cases a number of values are presented for various relaxation lengths.³

The procedure for producing the area vs. activity histograms for maps that allow such calculations was as follows:

Step 1: Determine which maps are suitable. The maps must contain either activity concentration data or specific photopeak data with conversions to activity concentration presented in report.

² The model used for analyzing the soil cleanup at the reference sites requires a uniform, finite depth of contamination. The EG&G reports generally do not cite such a depth--at most a relaxation depth is cited (see note 3). 5 cm was chosen as a reasonable compromise between a very deep and a very shallow contaminated layer. A more thorough discussion of this assumption can be found under the description of soil contamination at Reference Site I in Section 4.4.3.

³ The following exponential expression is commonly used in the EG&G reports to characterize the vertical contamination profile:

$$C = C_0 e^{-y/l}$$

C = concentration at depth y

C₀ = concentration at surface

l = relaxation length

y = depth

The relaxation length is defined by the above expression. An alternate definition that applies in the present context: the increment of depth over which the concentration is reduced by a factor of 1/e.

Step 2) Determine which isopleths are of interest. The activity concentration intervals desired were <1, 1-10, 10-100, 100-1,000, >1,000 pCi/g. This step requires the listed data to be converted to activity concentration for most of the maps used. Isopleths closest to the above concentrations were selected from each map.

Step 3) Overlay map and trace relevant information by hand. A sheet of quadrille paper (10 squares per inch) was taped to the map. The pair was placed on a light table and the relevant isopleths, map scale and survey boundary were traced.

Step 4) Count grid elements bounded by isopleths. After tracing, the quadrille paper was removed from the light table and the grid elements between isopleths were counted.

Step 5) Determine area conversion. The scale from the map was compared to the grid elements to produce a conversion (m²/grid element).

Step 6) Calculate areas. The number of grid elements in each activity concentration interval was multiplied by the area per grid element to produce an area for each activity concentration interval.

Step 7) Sum results for sites with multiple maps. Some of the larger sites required the use of multiple maps and multiple reports. For these sites, the distribution from each map was copied to a site summary and summed for a site total. Additional information that pertains to all maps is also recorded on the site summary.

Sources of Error

Three types of errors are inherent in the use of the aerial survey data to characterize soil contamination: errors stemming from interpretation of the data, errors stemming from possible inadequacies of the data, and errors from the graphical method used to evaluate the data.

Errors in interpreting the data. A main source of error in the above procedure stems from the assumptions regarding the depth profile of the contamination. For Cs-137, the principal nuclide modeled on the basis of the aerial survey data, the dose rate from direct radiation to an individual at ground level increases by less than a factor of 2 if the thickness of the contaminated zone is increased from 5 cm to infinity. Conversely, it decreases by less than a factor of 3 if the thickness is decreased from 5 cm to 1 cm—an improbably low value for sites where the contamination has had time to "weather in" (*i.e.*, disperse downwards in the soil as a result of rainfall and wind). Thus, 5 cm is a reasonable compromise in the absence of soil sampling data, which were not available for many sites.

Another source of error stemmed from the possible misidentification of other radiation sources (e.g., reactor buildings, waste storage tanks, and radioactive wastes in above- or below-ground waste storage facilities) as contaminated soils. The detectors are not collimated; their wide field of view causes them to report what are essentially point sources as series of concentric circles.⁴ Except as noted in the descriptions of the soil contamination at the individual reference sites which appear in Section 4.4.3, it was assumed at this initial stage of the data collection that all radiation fields were due to contaminated soils. This conservative assumption could result in the overestimation of soil volumes and, because the radiation fields generated by the facilities tend to be much more intense than those resulting from soil contamination, an even greater overestimation of the radionuclide inventories in the contaminated soils.

Errors based on possibly incomplete data. It is not clear that all contaminated areas are accounted for at each site. For example, the Nevada Test Site has a number of areas that are surveyed in reports that were not readily available.

Accuracy of the graphical method. An additional source of error stemmed from miscounting grid elements, primarily from deciding whether or not to include squares intersected by isopleths. Since the smallest grid square was 0.1" wide, some small areas on the maps, which were of comparable size, may be misestimated. The significance of this error diminishes for larger map areas. The establishment of a conversion factor from the map scale was another source of error. Other errors may have been introduced while tracing the isopleths and reproducing the maps.

4.2 SELECTION OF BASIS SITES

The actual sites that were to form the bases of the reference sites were selected by comparing the site categorization scheme and additional site selection criteria with Federal facility site description documents and the available aerial survey data. The process, which was later augmented by an additional data search, resulted in the development of 16 reference sites.

⁴ The most intense radiation field is directly over the source. As the aircraft flies further away, the field becomes weaker, resulting in a lower count rate. Thus, a point source will be mapped as a diffuse, circular radioactive area with axial symmetry.

4.2.1 Site Selection Criteria

Table 4-2 presents the criteria for selecting each actual site or sites which form the basis of each of the reference sites. These sites are referred to as "basis sites." These criteria were selected to ensure that the reference sites encompass the full range of sites that may fall within the scope of this rule.

Criteria 1 and 2 ensure that the reference sites reflect the principal administrative and functional categories being administered under the major site cleanup programs. Sites are defined in terms of their administrative and functional categories. As such, the adequacy of the reference sites is judged by the degree to which the different administrative and functional categories are represented.

Criterion 3 is designed to assure that the major DOE facilities are represented. As indicated earlier, the DOE Environmental Restoration (ER) program is perhaps the single largest source of contaminated soil (not including NORM). Accordingly, the major DOE facilities with soil contamination must be represented.

Criterion 4 provides a level of assurance that a full range of source characteristics (i.e., radionuclides, radionuclide distributions, and areas, volumes and thicknesses of contaminated soil) are represented. Ideally, the reference sites should be generally representative of the source characteristics for the full range of administrative and functional categories.

Criterion 5 provides a level of assurance that a full range of environmental and demographic settings are represented. It is not sufficient to ensure that a full range of source characteristics is represented. The same source characteristics in a different environmental and demographic setting could pose substantially different risks. (As will be discussed subsequently, for five of the reference sites, three different environmental settings were chosen for each. This, in effect, expands the total number of distinct reference sites to 26.)

Table 4-3 describes the basis sites that were selected according to the criteria of Table 4-2.

Table 4-2. Criteria for the Selection/Construction of Reference Sites Required to Support the Soil Cleanup Rule

1. REPRESENTATIVE OF THE MAJOR ADMINISTRATIVE CATEGORIES OF SITES
 - DOE Facilities
 - NRC Licensees
 - DOD Facilities

2. REPRESENTATIVE OF THE MAJOR FUNCTIONAL CATEGORIES OF SITES
 - Weapons Production and R&D Facilities
 - Fuel Cycle Facilities
 - Materials Licensees

3. MAJOR FACILITIES THAT ARE UNIQUE
 - Hanford
 - Savannah River
 - Oak Ridge
 - Etc.

4. REPRESENTATIVE OF THE RANGE OF SOURCE CHARACTERISTICS
 - Radionuclides
 - Concentrations
 - Depth and Area of Contamination
 - Chemical and Physical Form

5. REPRESENTATIVE OF A RANGE OF ENVIRONMENTAL SETTINGS
 - Climatology
 - Hydrogeology
 - Demography
 - Soil Characteristics

Table 4-3. REFERENCE SITES

Ref. Site	Site Description	Name of Basis Site	Contaminants of Concern	Weather/Rainfall	Aquifer	Population Density ^a (km ⁻²)	Weighting Factor ^b
MAJOR DOE FACILITIES:							
I	Very Large Multi-Functional Fuel Reprocessing and Weapons Material Production Facility	Hanford Reservation	Cs-137	Arid	Deep	100	1
II	Medium-Size Nuclear Materials Production Facility	Fernald Environmental Management Project	Ra, Th, U	High Rainfall	Moderately Deep	1000	1
III	Very Large Multi-Functional Fuel Processing and Enrichment Facility	Idaho National Engineering Laboratory	Cs-137	Dry	Deep	100	1
IV	Small Fuel Processing Facility	Weldon Spring	U	Moderately High Rainfall	Shallow	200	1
V	Very Large Multi-Functional Nuclear Materials Production Facility	Savannah River Site	Cs-137	High Rainfall	Moderate Depth	100	1
VI	Large Multi-Functional Weapons Production and Research Facility	Oak Ridge Reservation	Cs-137, U	High Rainfall	Moderate Depth	300	22.7
VII	Very Large Nuclear Testing Facility	Nevada Test Site	Cs-137, Pu, Am-241	Arid	Deep	10	1
IX	Medium-Size Fuel Fabrication Plant	Rocky Flats Plant	Pu, Am-241	Modest Rainfall	Relatively Shallow	200	1
X	Medium-Size Gaseous Diffusion Plant	Paducah Gaseous Diffusion Plant	U, Tc-99	High Rainfall	Relatively Shallow	100	1.1
XXII	Small FUSRAP Facility	Maywood Chemical Co.	Ra, Th, U	Moderately High Rainfall	Moderately Shallow	1400	6.9

Table 4-3. (continued)

Ref. Site	Site Description	Name of Basis Site	Contaminants of Concern	Weather/Rainfall	Aquifer	Population Density ^a (km ⁻²)	Weighting Factor ^b
SELECTED DOD FACILITIES							
XII	Weapons Accident Site	BOMARC missile accident site	Pu-239, Am-241	Moderately High Rainfall	Moderately Shallow	1000	1
XIII	Depleted Uranium Site	Aberdeen Proving Ground	Depleted U	3 Environmental Settings ^c		200	8.5 ^d
SELECTED NRC REFERENCE SITES:							
XVI	Light Water Reactor	e	Cs-137, Co-60	3 Environmental Settings ^c		200	125 ^d
XVII I	Research Reactor	Cintichem, Inc.	Cs-137, Sr-90	3 Environmental Settings ^c		1000	63 ^d
XX	Generic Fuel Fabrication Facility	B&W Plant, Apollo, PA	Uranium	3 Environmental Settings ^c		200	14 ^d
XXI	Rare Earth Extraction Plant	Molycorp Plant, Washington, PA	Thorium	3 Environmental Settings ^c		1000	22 ^d

- a Reasonable occupancy scenario—see Section 5.2 and App. D
b Discussed in Section 4.3.
c The three environmental settings are discussed in Section 4.4.1
d Sum of weighting factors for sites in three different settings
e Based on composite data from six commercial nuclear power plants

The sites are grouped into the major administrative categories in an effort to satisfy Criterion 1. The major Federal facilities include 10 major DOE facilities, which represent most of the contaminated soil and the full range of functional categories in the DOE ER program, thereby satisfying Criterion 3. Detailed descriptions of the basis for each reference site and the assumed characteristics of each site are present below.

The two DOD facilities represent two of the major DOD functional categories: weapons accident sites and depleted uranium test ranges. Other DOD sites, such as reactors and byproduct materials licensees, are represented by the sites listed under NRC licensees. The four NRC sites represent the various types of NRC licensees, including commercial, test and research reactors, fuel cycle facilities, broad materials licensees (medical and industrial), and rare earth extraction facilities.

4.3 REFERENCE SITE WEIGHTING FACTORS

The total volume of radioactively contaminated soil in the U.S. is not known with any degree of certainty. Indeed, it probably will not be known until cleanup criteria are defined and the sites are remediated or at least assessed comprehensively.

In order to estimate the total radioactively-contaminated soil volume generated by the 4,952 sites identified in Table 1-1, a set of weighting factors has been developed for the 16 reference sites. The soil volume at each reference site is multiplied by the corresponding weighting factor; the sum of the weighted volumes serves as an estimate of the total soil volume.

Following a review of the available soil volume data in DOE's 1993 Integrated Data Base (IDB), a weighting factor of 1 was assigned to each of the seven large multi-functional reference sites: those based on Fernald, Hanford, Idaho, Nevada Test Site, Rocky Flats, Savannah River, and Weldon Spring. This means that each of these reference sites represents only one real site in the universe of sites.

The remaining three DOE sites that serve as basis sites are Paducah, Oak Ridge Reservation, and Maywood. The Paducah site is a Gaseous Diffusion Plant, similar to the Portsmouth site. Therefore, Reference Site X is used to represent both Paducah and Portsmouth.⁵ The weighting

⁵ The detailed description of the 16 reference sites is presented in Section 4.4.3.

factor for this reference site is calculated by dividing the sum of the IDB soil volumes for the two basis sites by the Paducah soil volume—the resulting factor is equal to 1.1.

The IDB lists significant volumes of radioactively-contaminated soil at Mound, Argonne, Brookhaven, Los Alamos, and Sandia. These five DOE facilities are involved with diversified weapons research and development activities. However, the available data was not sufficient to enable these sites to serve as the bases for constructing reference sites. The Oak Ridge Reservation (ORR) is involved in diversified weapons research and fuel production activities; ORR was therefore selected to represent itself as well as the other five sites in the present analysis. The weighting factor is calculated by dividing the sum of IDB soil volumes of all six sites by the ORR soil volume, which yields a factor of 22.7.

There are 30 FUSRAP sites identified in Table 1-1, including the Maywood site. Even though there may be significant difference among these sites, Reference Site XXII, based on the well-characterized Maywood site, was used to represent all 30 sites in the present analysis. There is no separate site-by-site soil volume presented in the IDB for each of the 30 FUSRAP sites. However, the IDB provides the following soil volume data:

Missouri sites (4)	$7.2 \times 10^5 \text{ m}^3$
New Jersey sites (5)	4.6×10^5
New York sites (7)	4.8×10^5
Other sites (14)	<u>1.3×10^5</u>
Total	$1.8 \times 10^6 \text{ m}^3$

An estimated contaminated soil volume for the Maywood site of $2.6 \times 10^5 \text{ m}^3$ is listed in an EPA report (EPA 93b). Dividing the total IDB FUSRAP soil volume by the Maywood volume yields a weighting factor of 6.9 for Reference Site XXII.

Only one nuclear accident site, BOMARC, was identified by the site survey. It therefore constitutes a unique basis site and was assigned a weighting factor of 1.

There are a total of 16 sites contaminated with depleted uranium (DU), including the large, multi-functional Aberdeen Proving Ground (APG). These sites are listed below.

Aberdeen Proving Ground	Basis site
Eglin Air Force Base	Major site
Camp Roberts	Major site
Green River Test Site	Small site
Jefferson Proving Ground	Major site
Joliet Army Ammunition Plant	Research site
Lake City Army Ammunition	Major site
Materials Technology Lab	Research site
Picatunny Arsenal	Small site
Twin Cities Army Ammunition	Research site
Lexington Arsenal	Major site
Watervliet Arsenal	Research site
White Sands Missile Range	Major site
Yuma Proving Ground	Major site
Dahlgren Naval Surface Weapons Center	Small site
El Toro Marine Corps Air Station	Small site

Among these 16 sites, there are eight major testing ranges, four small munitions firing ranges, and four small research and processing sites. APG is the basis for Reference Site XIII, which represents all the DU sites. The seven other major DU sites were each given a weighting factor of 1, the same as that of Aberdeen. Available documentation on Dahlgren NSWC suggested a weighting factor of 0.12, relative to that of Aberdeen, for each of the four smaller munitions firing ranges. Similarly, available information on the Materials Technology Lab led to the choice of a weighting factor of nearly zero for the four small research and processing sites. The total weighting factor for this category is therefore 8.5.

The weighting factors for NRC sites are based entirely on values presented in the NRC's Draft Generic Environmental Impact Statement (NRC 94). The actual site counts given by NRC are used as the weighting factors, i.e., 125 for nuclear power plants, 63 for test and research reactors, 14 for fuel fabrication plants, and 22 for rare earth extraction facilities. The 49 uranium mills under the "other fuel cycle facilities" category are covered under 40 CFR Part 192 and are not within the scope of the present report.

4.4 CONSTRUCTION OF REFERENCE SITES

4.4.1 Parameters Used in Risk and Dose Assessments

DRASTIC parameters. The environmental characteristics of the reference sites capture a broad range of settings. All ten of the DOE-based reference sites and one of the DOD sites (based on BOMARC) are unique facilities and are therefore postulated to have environmental characteristics that reflect those of their basis sites. The four sites based on NRC-licensed facilities and the remaining DOD-based site are more generalized reference sites, each of which is postulated to reflect soil conditions at a number of locations throughout the United States. Each of these five reference sites are therefore postulated to be located in any of three alternative environmental settings—settings chosen to represent the diverse environments where many of the corresponding actual facilities are found. Thus, Reference Site XIII consists of Reference Sites XIII A, XIII B and XIII C, similarly for Reference Sites XVI- XXI. The three sets of site environmental characteristics that describe these settings were chosen on the basis of the DRASTIC standardized system for evaluating groundwater pollution potential (EPA 85a) of various hydrogeologic settings. This system is based on the results of an EPA investigation, which found that the most important mappable factors that control the groundwater pollution potential were:

- Depth to water
- Recharge (net)
- Aquifer media (soil type)
- Soil media (unsaturated zone)
- Topography (slope)
- Impact of the vadose zone media
- Conductivity (hydraulic) of the aquifer

Tables in the DRASTIC manual provide ranges and respective rankings for each of the site characteristics listed above. For example, Table 4 in the manual provides ranges for the depth to water (*e.g.*, 0-5 ft, 5-10 ft, etc.) and also assigns a number from 1 to 10 to each of the depth ranges. The higher the ranking number, the greater the potential that the corresponding depth to the water would potentially result in groundwater contamination.

The ranges of parameter values defined in the DRASTIC manual were used in constructing the basic framework of the Reference Sites -A, -B and -C. Specifically, for Reference Sites -A, parameter values were selected that would result in a low potential for groundwater contamination; for Reference Sites -B, parameter values were selected that would result in a

moderate potential for groundwater contamination; and for Reference Sites -C, parameter values were selected that would result in a high potential for groundwater contamination.

The site characteristics which were extracted from the DRASTIC manual for use in the modeling include: soil types for the unsaturated and saturated zones (identified in DRASTIC as "soil" and "aquifer" media); unsaturated zone thickness (equivalent to "depth to water"); infiltration rate (equivalent to "net recharge"); and, indirectly, land surface topography.

The land surface topography was translated to a water-table hydraulic gradient based on the assumption that the shallow water table roughly follows the land surface.⁶ Table 4-4 identifies the ranges of values selected for each of the three environmental settings.

Table 4-4. Range of Parameter Values for Site Types A, B, and C

Environmental Setting	Parameter					
	Depth to Water Table (feet)	Net Recharge (inches/yr)	Aquifer Media	Soil Media	Topography	Hydraulic Conductivity (m/y)
Site Type A	≥ 50	≤ 3	Shale/ Metamorphic/ Igneous	Non-shrinking, non-aggregated clay/ Clay loam	≥ 12% slope	≤ 750
Site Type B	10 - 50	3 - 7	Sandstone/ Limestone	Loam/Sandy Loam/ Shrinking and/or Aggregated Clay	6 - 12% slope	750 - 1500
Site Type C	≤ 10	≥ 7	Sand and gravel/ Basalt/ Karst limestone	Sand/ Gravel/ Thin or absent	≤ 6% slope	≥ 1500

⁶ This assumption is consistent with the overall logic behind the construction of the three environmental settings in that, as the gradient decreases, the amount of dilution also decreases. Therefore, the potential for higher concentrations of contaminants in groundwater would be reflected by a lower gradient.

The vadose zone is synonymous to the unsaturated zone and is defined as that zone above the water table that is unsaturated. The type of vadose zone media determines the attenuation characteristics of the material below the typical soil horizon and above the water table. Biodegradation, neutralization, mechanical filtration, chemical reaction, volatilization, and dispersion are all processes which may occur within the vadose zone. DRASTIC designates vadose zone media by descriptive names (e.g., silt, sandstone, gravel) and ranks each medium relative to its pollution potential. The impact of the vadose zone ranking is essentially the same as the soil media ranking. That is, silt/clay is the lowest on both scales while gravel presented the highest groundwater pollution potential. To avoid repetition, vadose zone impact criteria were not included in the generic site analysis.

The soil and rock type information that was obtained from DRASTIC is qualitative. Therefore, it was necessary to obtain independent estimates of hydraulic properties in order to provide more quantitative input into the risk assessment models. Almost all of these additional estimates were made using the RESRAD reference table values, with the exception of the saturated zone aquifer properties. RESRAD does not provide default values for these rock types. Therefore, hydraulic conductivity values were estimated from DRASTIC Table 12, which was originally presented in Freeze and Cherry (Fr 79). The hydraulic conductivities assigned to the rock types from Table 12 assume fracture permeabilities.

The soil-specific exponential b (beta) parameter is one of the parameters used to calculate the radionuclide leaching rate of the contaminated zone. The beta value is an empirical and dimensionless parameter that is used to evaluate the saturation ratio (or the volumetric water saturation) of the soil, according to a soil characteristic function called the conductivity function (i.e., the relationship between the unsaturated hydraulic conductivity and the saturation ratio).

Reasonable estimates based on professional judgment were made for the porosity and beta parameters of the saturated zone materials. All of the saturated zone rock types were assigned the same porosity and beta values because of the high degree of uncertainty associated with these parameters in fractured rocks.

Table 4-5 identifies the selected parameter values for Site Types A, B and C based on the sources cited above.

Table 4-5. Selected Parameter Values for Site Types A, B, and C

Environmental Setting	Contaminated and Unsaturated Zone						
	Soil Type	Unsat. Zone Thickness (m)	Hydraulic Conductivity (K_{sat} :m/yr)	beta	Total Porosity (Θ_{sat})	Effective Porosity P_e	Infiltration Rate (m/yr)
Site Type A	Silty Clay	45.7	32.6	10.4	0.492	0.2	7.62E-02
Site Type B	Loam/Sandy Loam/Shrinking Aggregated Clay	15.2	1090	4.9	0.435	0.2	1.78E-01
Site Type C	Sand/Gravel/Thin or Absent	3.05	4460	4.05	0.395	0.3	4.06E-01

Environmental Setting	Saturated Zone					
	Soil Type	Conductivity (K_{sat} :m/yr)	beta	Total Porosity (Θ_{sat})	Effective Porosity P_e	Gradient
Site Type A	Shale Metamorphic Igneous	7.45E+03	4.05	0.395	0.2	0.12
Site Type B	Sandstone Limestone	1.50E+04	4.05	0.395	0.2	0.08
Site Type C	Sand & Gravel Basalt Karst Limestone	2.23E+04	4.05	0.395	0.2	0.06

Site-Specific Reference Site Parameters. Tables 4-6 through 4-8 list the contamination-related parameters for each of the 16 reference sites that were used in performing the site-specific risk assessments. The contaminated area is a parameter that can change with the cleanup level. This and the other parameters listed are discussed in the detailed description of the reference sites that is found in Section 4.4.3.

4.4.2 Characterizing the Radionuclide Distributions

The data obtained at each of the basis sites can be expressed in terms of the volume, area, and depth of contamination, and the pattern of contamination of the radionuclides in the soil. To perform the analyses described in Chapter 5, it is necessary to characterize the distribution of radionuclide concentrations in the soil for each of the reference sites. In particular, the soil volume vs. contaminant concentration relationship for each radionuclide is required. The method of constructing these distributions from the data for the basis sites is illustrated by the following example.

Figure 4-2 depicts the distribution of Cs-137 at Reference Site I. This distribution was derived from a tabulation of soil volumes in successive concentration ranges, which is illustrated in Figure 4-1. The volumes represented in this histogram were calculated from a report of an aerial radiological survey of the Hanford Site. (A detailed discussion of aerial surveys was presented in Section 4.1.3. A discussion of how the survey was used to characterize this reference site is presented in the description of Reference Site I, which appears in Section 4.4.3. These soil volumes were added cumulatively from left to right to form the volumes represented by solid circles in Figure 4-2. The straight lines drawn between the circles represent a set of power functions (shown as log-log curves) which constitute the functional relationship between the cumulative soil volume and the concentration.⁷ This particular functional form was chosen for these data because the best curve-fit using a simple function (i.e., linear, logarithmic, exponential or power) to the seven data points was obtained from a power function. Piece-wise distribution curves were constructed rather than a single simple curve fitted to the available data because the piece-wise curves honor the known data points while furnishing the best interpolation between these points.

⁷ This curve resembles the CCDF used in probabilistic risk assessments, but with significant differences. Whereas the CCDF plots a probability--by definition, probabilities are normalized-- vs. a consequence, this curve is represented by a plot of the volume, which is not normalized, vs. a physical parameter. The two functions are constructed by analogous techniques, however.

Table 4-6. Characteristics of Contamination at Reference Sites^a

Reference Site	Contaminated Area (m ²)	Chemical Elements	K _d ^b	Contaminated Zone Thickness (m)
I	2.26E+07	Cs	280	0.05
II-1/II-6	3.96E+06	Ac Pa Pb Ra Th U	2400 2700 550 9100 5800 1,600	0.50
II-7	1.11E+07	Ac Pa Pb Ra Th U	2400 2700 550 9100 5800 1,600	0.05
III	1.81E+07	Cs	1,900	0.05
IV	5.90E+05	Ac Pa Pb Ra Th U	794 330 150 165 1500 330	0.108
V	1.12E+07	Cs	500 ^c	0.05
VI	6.70E+06	Cs Ac Pa Pb Ra Th U	10,000 ^d 2400 2700 550 9100 5800 1,600	0.05
VII	3.70E+08	Pu Am Cs	550 1,900 280	0.06
IX	4.00E+06	Pu Am	10,000 ^e 112,000 ^e	0.05
X	8.92E+03	Tc Ac Pa Pb Ra Th U	0.1 450 550 270 500 3200 35	0.305 1.83
XII	1.90E+04	Pu Am	550 1,900	0.9

Table 4-6. (continued)

Reference Site	Contaminated Area (m ²)	Chemical Elements	K _d ^b	Contaminated Zone Thickness (m)
XIII	4.19E+04	Ac Pa Pb Ra Th U	104 182 469 502 21,909 89	.08
XVI	7.00E+03	Co Cs	447 894	0.15
XVIII	3.30E+03	Cs Sr	894 21	0.15
XX	2.00E+04	Ac Pa Pb Ra Th U	104 182 469 502 21,909 89	1.0/0.36 ^f
XXI	1.38E+04	Ra Th	502 21,909	2.50
XXII	3.70E+05	Ac Pa Pb Ra Th U	450 550 270 500 3200 35	2.0
a	Selected values discussed in the text, except where otherwise noted (ANL 93b, DOE 93a).			
b	RESRAD 5.0 default values based on soil type, DOE 93a, p. 32-8, unless otherwise noted.			
c	RAE 91, p. 3-63. Original reference is Lo 87.			
d	ORNL 88.			
e	Han 80, p. 152.			
f	See text			

Table 4-7. Characteristics of Contaminated and Unsaturated Zones at the Reference Sites^a

Reference Site	Soil Type ^b	Hydraulic Conductivity (K _{sat} : m/yr)	beta ^c	Total Porosity (θ _{sat})	Effective Porosity: Pe	Infiltration Rate (m/yr)	Unsat. Zone Thickness (m)
I	Sand	5,550	4.05	0.395	0.3	0.15	50
II-1/II-6	Silt/Clay	32.1	10.4	0.492	0.2	0.30	9.5
II-7	Silt/Clay	32.1	10.4	0.492	0.2	0.30	10.0
III	Clay, Silt, Loam	53.6	7.75	0.477	0.2	0.15	100
IV	Clay-like Silt Silty Clay	0.315	10.4	0.36	0.2	0.41	11.5
V	Sand Silty Clay	221	10.4	0.459 ^d	0.2	0.30	9
VI	Silt/Clay	32.6	10.4	0.492	0.2	0.31	4
VII	Sandy Loam	1,090	4.9	0.435	0.3	0.0	100
IX	Gravel Sandy Clay	3.2	7.12	0.420	0.2	0.15	2.24
X	Sandy Silty Clay	0.85 ^e	10.4	0.459 ^d	0.2	0.50	5.1
XII	Sand	5,550	4.05	0.395	0.32	0.54	6.9
XXII	Sandy Clay	68.4	10.4	0.492	0.2	0.40	1.0
<p>a Values selected from RESRAD 5.0 guidance or default values except where otherwise noted (ANL 93b, DOE 93a). Values for sites XIII A - XXIC are listed in Table 4-5, above.</p> <p>b Soil types are discussed in the text.</p> <p>c Exponential parameter used to calculate saturation</p> <p>d Average of two closest values based on RESRAD 5.0 guidance.</p> <p>e DOE 91, p. 3-30.</p>							

Table 4-8. Saturated Zone Characteristics at the Reference Sites^a

Reference Site	Soil Type ^b	Hydraulic Conductivity (K _{sat} : m/yr)	beta	Total Porosity (q _{sat})	Effective Porosity (Pe)	Gradient ^c
I	Sandy Gravel	5,550	4.05	0.395	0.3	1E-4
II	Sand/Gravel	8.2E4	4.05	0.395	0.3	8.7E-4
III	Fractured Basalt	1E3	4.9	0.17	0.17	2E-3
IV	Limestone	8.83 ^c	11.4	0.482	0.067	0.019 ^d
V	Silty Sand	221	5.3	0.485	0.2	1E-4
VI	Silt & Clay	11	10.4	0.2	0.0023	5E-3
VII	Course Gravel	3E5	4.9	0.28	0.21	1E-4
IX	Coarse Gravel and Sand	3.2	4.05	0.28	0.21	1E-4
X	Sand/Gravel	1010	4.05	0.28	0.2	7.5E-4
XII	Loamy Sand	4,930	4.38	0.41	0.32	2E-3 ^e
XXII	Silty/Sandy Clay Loam	120	5.3	0.2	0.2	0.01

a Values selected from RESRAD 5.0 guidance or default values except where otherwise noted (ANL 93b, DOE 93a). Values for sites XIII - XXIC are listed in Table 4-5, above.

b Soil types are discussed in the text.

c Conservative estimate based on best professional judgement unless otherwise noted.

d DOE 92b.

e DOE 92f, p. 15-2.

Figure 4-1

Reference Site I

Volume of Contaminated Soil

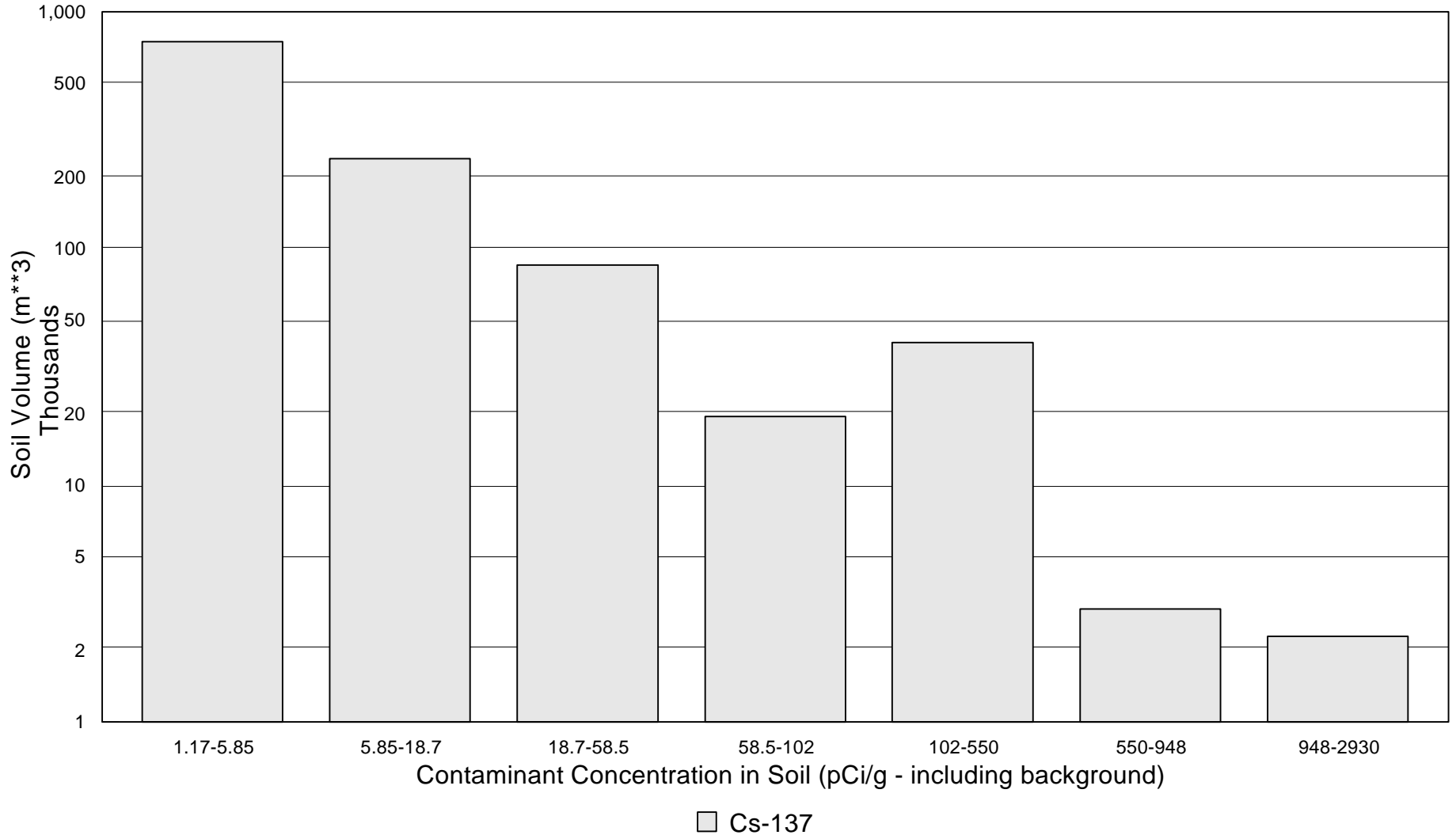
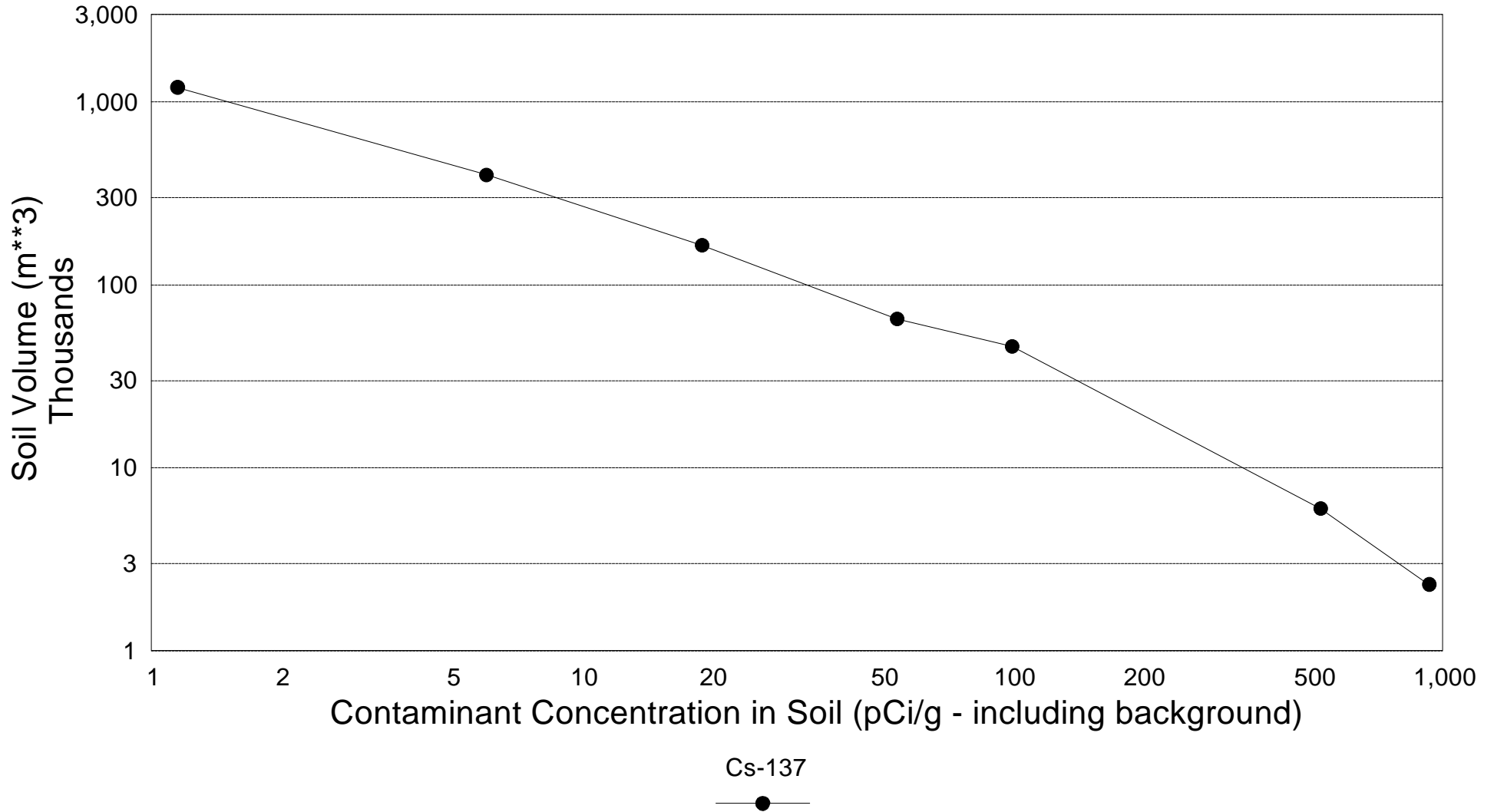


Figure 4-2

Reference Site I

Complementary Cumulative Volume of Contaminated Soil



An important point must be made concerning the data depicted in Figures 4-1 and 4-2. No volumes are shown for Cs-137 concentrations less than 1.17 pCi/g, which corresponds to the lowest isopleths on the aerial survey maps for this site. However, the typical concentration of Cs-137 at the Hanford Site as a result of world-wide fallout is approximately 0.5 pCi/g. The available data do not indicate the volume of soil that may be contaminated at 0.5 to 1.17 pCi/g; it is not unreasonable to assume, however, that a substantial, but unknown, volume of soil is contaminated at these low levels. To estimate such volumes, it is necessary to extrapolate the soil volume *vs.* contaminant concentration curve to lower concentrations.

A comparable situation prevails at sites contaminated with naturally-occurring isotopes of uranium or thorium, which are found in the soil at background concentrations on the order of 1 pCi/g. Determining the volumes of soil contaminated at 0.1 to 1 pCi/g above background at such sites is not technically feasible. In the case of some sites, however, it was necessary to extrapolate the volume *vs.* concentration curves for the purpose of modeling the cleanup.

Because only one radionuclide is postulated for Reference Site I, the distribution could be constructed from the tabulated data in a straightforward manner. If two or more nuclides are present, but all originate from a common source and/or have similar chemical properties, the situation is still relatively simple. For example, at sites contaminated with natural uranium, it is assumed that the three principal uranium isotopes—U-234, U-235 and U-238—will always have the same ratios of concentrations as are found in natural uranium ores.⁸ Thus, it is only necessary to construct the distribution of one isotope, usually U-238: U-234 is then assumed to have the identical distribution. The distribution of U-235 follows the same pattern, but its specific activity is equal to 4.7% the activity of U-238 or U-234.

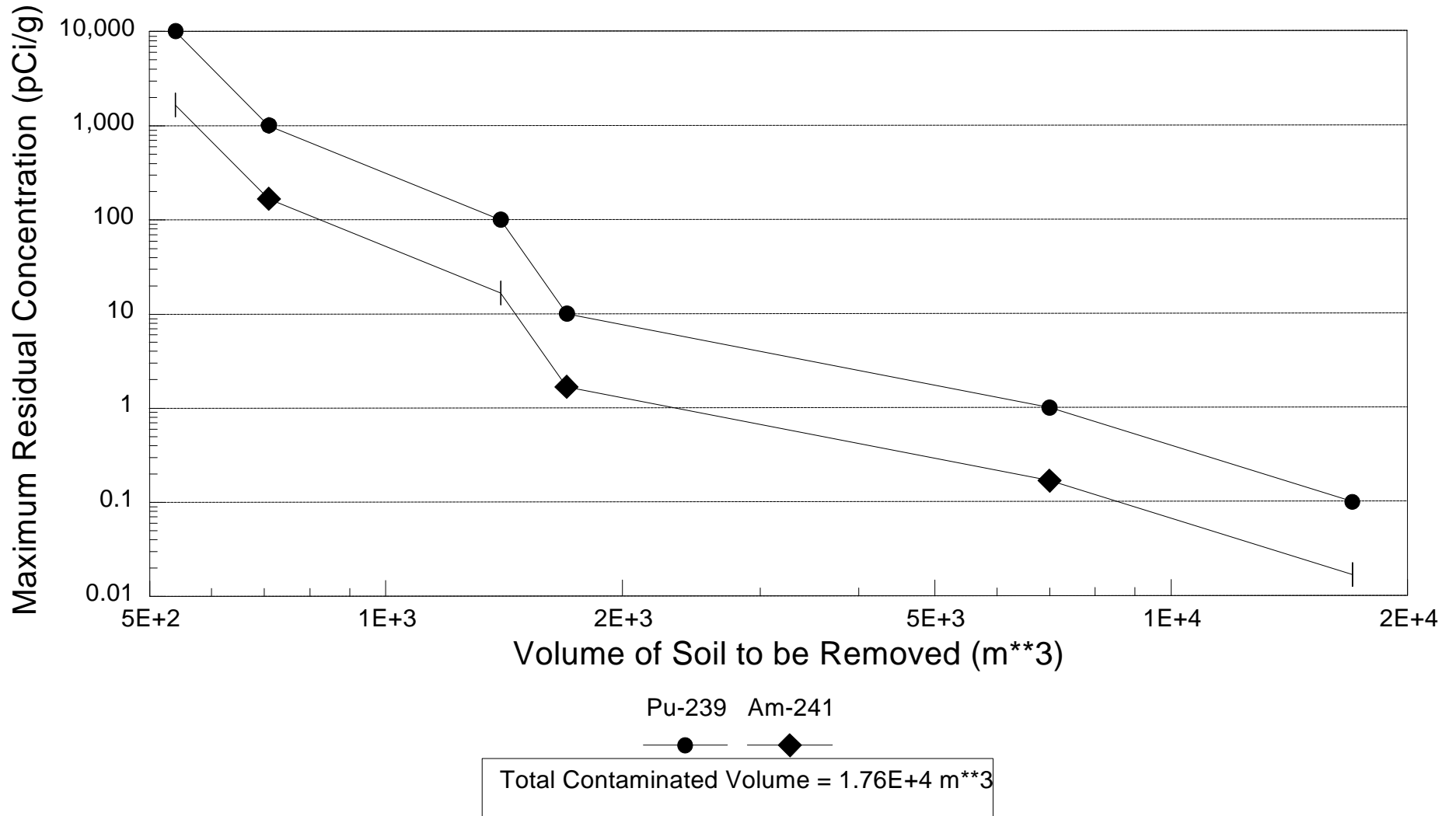
The presence of two or more nuclides at a given reference site which exhibit different patterns of contamination results in a more complex situation. Such distributions are best represented by plotting the concentration of each nuclide *vs.* the cumulative volume (*i.e.*, the volume of soil contaminated at or above a given concentration). An example of such a plot, showing the distribution of radionuclides at Reference Site XII, is shown in Figure 4-3. (Except for the presence of multiple nuclides, this plot resembles the one in Figure 4-2, but with the x- and y

⁸ As was observed in note 1, the term "radionuclide concentrations in the soil" is used to denote the specific activity of a given nuclide. Thus, while the specific activities of U-238 and U-234 in natural uranium ores are equal, because of the great disparity in their radioactive half-lives, the mass concentration of U-238, in units of $\mu\text{g/g}$ of soil, is far greater than that of U-234.

Figure 4-3

Reference Site XII

Distribution of Contaminated Soil



axes interchanged.) Implicit in the distributions shown in Figure 4-3 is the assumption that the soil that contains the highest concentrations of one nuclide also contains the highest concentrations of all the other nuclides, and so on down to the lowest extrapolated concentrations.

Once the soil cleanup level for a site is defined in terms of radionuclide concentrations, the volume of soil that must be remediated at that site can be derived from such a volume distribution curve. The cumulative volume then represents the amount of soil that must be remediated to reduce the maximum residual concentration of each nuclide to the value depicted on the corresponding curve.

If a basis site consists of sub-units, each of which is contaminated with a different mix of radionuclides, the corresponding reference site is divided into sub-sites, each with its own radionuclide distributions and, if indicated, different environmental parameters. This procedure is discussed in the detailed description of Reference Site II in Section 4.4.3.

These curves play an integral role in the analyses of benefits and determinations of cleanup volumes performed in support of the cleanup rule. For example, once a cleanup level is defined for a site, the benefits of cleanup, expressed in terms of person-rem or adverse health effects averted, can be derived (see discussion Section 5.2). Similarly, any adverse effects associated with the cleanup operation itself can be estimated, including impacts on workers and the nearby public, transportation impacts, and ecological impacts. The volume of soil that may need to be remediated is a major factor in assessing the economic cost of cleanup.⁹

A detailed description of the methods used to construct the radionuclide distributions for each of the 16 reference sites, along with figures illustrating these distributions, is found in the following section.

⁹ Because of limitations in the data characterizing the sites that are the basis for the reference sites, these curves are highly uncertain and as such are one of the largest sources of uncertainty in subsequent assessments of risks and evaluations of benefits. As work proceeds in subsequent sections toward the development of estimates of soil cleanup volumes and the number of adverse effects averted and caused as a result of site cleanup, there will be a tendency to read into these estimates a level of precision that does not exist. All estimates of risks, cleanup volumes and benefits based on these volume distributions are at best rough approximations of the actual conditions at the various sites.

4.4.3 Description of Reference Sites

As previously indicated, the data on soil contamination at actual sites that are the basis for the reference sites are often incomplete. Continuing efforts are being made to obtain improved site characterization data.

The environmental parameters that form part of the description of each of the non-generic reference sites are discussed under the corresponding subheading for each reference site. Whenever possible, these parameter values, which were needed for the analyses of the reference sites, were based on data collected at the basis sites. If actual values were not listed in the references for a given site, representative values typical of the type of soil at that site or of other known geologic or meteorological conditions were used.

REFERENCE SITE I

Reference Site I is based **in part** on radiological and environmental data for DOE's Hanford Reservation. It is essential to bear in mind that the following analysis of this reference site, although it makes use of some of the data that characterize Hanford, cannot be considered to be an analysis of the actual site. In particular, the predicted impacts refer **only** to the reference site and cannot be used to predict the future impacts of the vastly more complicated Hanford Reservation.

Description of Basis Site

The Hanford Reservation encompasses about 360,000 acres (560 square miles) in southeastern Washington State and borders the Tri-Cities area of Richland, Pasco and Kennewick (pop. about 140,000) to the south. Its primary mission since World War II has been the production of plutonium for nuclear weapons.

Four aggregate areas at Hanford are on the CERCLA National Priorities List:

- The 100 Area, which includes nine plutonium production reactors;
- The 200 Area, which includes the PUREX reprocessing plant, other plutonium recovery facilities, a plutonium finishing plant, and about 170 large underground tanks holding high-level waste;

- The 300 Area, which includes fuel fabrication and research and development facilities; and
- The 1100 Area, including vehicle maintenance facilities.

There are 78 operable units (OUs) at Hanford, including:

- 23 OUs in the 100 Area, including 9 reactors and supporting facilities.
- 43 OUs in the 200 Area, including most of the radioactive and mixed waste stored or disposed of at the site and large volumes of contaminated soil.
- 6 OUs in the 300 Area, including burial grounds, cribs, ponds, ditches and chemical spill sites.
- 3 OUs in the 1100 Area, including waste burial grounds.

Large quantities of liquid wastes have been discharged to the ground at various site locations throughout Hanford's almost 50 years of operation. Soil contamination exists at approximately 87 cribs into which liquid wastes have been disposed, as well as 34 burial grounds, 57 trenches, 13 ditches, 27 French drains¹⁰, 10 ponds, and a large but undetermined number of "unplanned release" sites. In a presentation to the Committee on Government Operations of the U.S. House of Representatives (DOE 94c), DOE reported that the principal radionuclides at Hanford include Am-241, Cs-137, Co-60, isotopes of plutonium and uranium, Tc-99, and Sr-90.

Environmental Parameters.

At all reference sites, external radiation is the principal human exposure pathway from Cs-137, the only nuclide modeled at Reference Site I (see discussion below). The maximum risk and dose occur at time zero; transport to the aquifer is therefore irrelevant to the assessment of risk and dose to the RME individual. For the population impacts, which are integrated over long periods of time (up to 10,000 years), the groundwater pathway also makes no significant contribution. Even for a relatively shallow aquifer, radioactive decay will reduce the activity of Cs-137 (which has a half-life of approximately 30 years) to an insignificantly low level during the time required for the contamination to travel through the soil column to the aquifer. Nevertheless, for consistency with the analyses of other reference sites, and for use in possible future analyses

¹⁰ A French drain is a nearly vertical perforated pipe of large diameter that extends 16 to 20 feet below the surface.

which might include other, longer-lived nuclides, values of environmental parameters were assigned to this reference site.

The vadose zone consists of alluvial and windblown deposits (Wo 93:169). In the absence of site-specific data, representative values of hydraulic parameters of sandy soil, tabulated in the RESRAD references (ANL 93b, DOE 93a), were assigned to the vadose zone of Reference Site I (see Table 4-8). The annual precipitation at Hanford is 0.2 m/yr (Wo 93:81); however, no infiltration rate data were available. An infiltration of 0.15 m/yr, representative of the arid conditions at Hanford, was assigned to Reference Site I. The K_d for Cs-137 at Reference Site I was given the representative value for sandy soil listed in the RESRAD tables.

An unconfined aquifer is found 1 to 348 feet (0.3 - 106 m) below the surface of the Hanford Site. This aquifer consists of river and lake sediments which range from sandy gravel to compacted silt and clay, plus glacial alluvial sediments (Wo 93, p. 169). Since most of the contamination indicated in the aerial survey is found in the 200 Area, which is at elevations of 60 to 70 m above the water table, a value of 50 m was selected as a conservative value for the depth to aquifer at Reference Site I. Other hydrogeological properties were assigned the representative values for sandy soil found in the RESRAD tables (ANL 93b). Groundwater gradients were not available in the survey data; a conservative value of 10^{-4} was assigned to Reference Site I.

Soil Contamination

Data sources. As far as could be determined, there are no available reports of any systematic sampling and analysis that would enable the radionuclide contamination of the Hanford soils to be fully characterized. Small numbers of soil samples are collected and analyzed yearly for the purpose of monitoring off-site fugitive dust emissions. The only site-wide radiological data consist of aerial surveys performed for DOE by EG&G Energy Measurements.¹¹ The surveys, which were performed in May and June, 1978 consisted of overflights by an aircraft carrying arrays of NaI crystals with an energy window centered on the 661 keV gamma radiation emitted by Ba-137m, the short-lived daughter product of Cs-137. (This is commonly spoken of as the Cs-137 gamma ray). The report (EGG-1183-1828) presents isopleths delineating regions of different levels of Cs-137 contamination superimposed on aerial photos of the area. The data are presented as calculated exposure rates at an elevation of 1 m that are due to Cs-137 gamma

¹¹ A report on the 1988 aerial survey of this site was received too late to be used in the present analysis.

radiation. Conversion factors in the report enable the calculation of areal concentrations, which can in turn be converted to the specific activities that are listed in Table 4-9. The areas listed in the table were determined by the methods described in Section 4.1.3, above.

Table 4-9. Areas of Cs-137 Contamination at the Hanford Site

Concentration (pCi/g)	1.17- 5.85	5.85- 18.7	18.7- 58.5	58.5- 102	102- 550	550- 948	948- 2930
Area (m ²)	1.49E7	4.59E6	1.84E6	3.81E5	8.60E5	6.10E4	4.63E4

Although an aerial survey cannot determine the depth profile of the contamination (separate analyses of soil samples are needed for this) the attenuation of the Cs-137 gamma ray by soil leads to a rapid fall-off of the count rate in the detector with increasing depth of burial. For example, the exposure rate at an altitude of 30 m from a planar disk source of Cs-137 with a radius of 140 m buried at a depth of one meter is four orders of magnitude less than from one that is 2 cm deep, the source-to-detector distance remaining constant (based on calculations using the Microshield computer code). If the depth is increased to two meters, the exposure rate is reduced by nine orders of magnitude. Thus, deeply buried wastes make but a small contribution to the apparent soil concentrations. A more serious shortcoming of these data is the poor spatial resolution of the survey (see "Sources of error" in Section 4.1.3). If intense but localized sources, such as highly radioactive materials stored in barrels or in lightly shielded structures are present, the survey will report them as diffuse areas of contamination.

Modeling of contamination. Reference Site I was modeled on the assumption that the aerial survey readings stem from Cs-137 that is uniformly distributed in the top 5 cm of the soil, that no other sources of Cs-137 were present in the detectors' fields of view, and that there is no other radioactive contamination of the soil attributable to the operation of the Hanford site.

The 5-cm depth of contamination was selected for several reasons. First, the Hanford environmental sampling program collected samples to depths of 2.5 cm (Wo 93:149), suggesting there was little reason to go deeper. Second, it is the least thickness of soil that can be reasonable remediated during a cleanup operation. Thus, the cleanup volume would not be less even if the depth were indeed smaller. Third, the aerial survey data was presented in terms of exposure rates ($\mu\text{R/hr}$) @ 1 m above the surface. Factors for converting exposure rates to surface concentrations ($\mu\text{Ci/m}^2$) were presented in the report. For a given exposure rate, assuming a greater depth would **decrease** the specific activity.

To construct the radionuclide distribution shown in Figure 4-4, the areas listed in Table 4-9 were converted to volumes of soil, again assuming a depth of 5 cm. The Cs-137 background concentration (due to world-wide fallout), which is about 0.5 pCi/g at the Hanford Site (Wal 94), was subtracted from each of the listed concentrations. A log-log extrapolation of the two lowest data points was performed to enable the modeling of cleanup to low risk levels (see Chapter 5). The total contaminated soil volume above 1 pCi/g (including background) , 1.53×10^6 m³, is considerably less than the 3.9×10^6 m³ reported in the 1993 DOE Integrated Data Base (IDB). It should be noted that the present analysis excludes waste disposal areas.

The assumption that Cs-137 is the only radioactive contaminant on Reference Site I stems from the lack of information on the spatial distribution of other nuclides and on indications that Cs-137 is in fact the chief contaminant. The limited soil sample data reported in the Hanford Environmental Report (Wo 93) lists analytical results for four radionuclides: Cs-137, Sr-90, Pu-239,240 and U-238. In 1991, the last year in which as many as 15 on-site soil samples were analyzed (there were only three in 1992), the average concentration of Sr-90 was about half of that of Cs-137. Furthermore, in only two of the 14 samples for which both nuclides were determined was the Sr-90 concentration higher than that of Cs-137. The concentrations of plutonium are well below 1 pCi/g, and therefore make little contribution to the risk, while those of U-238 are within the range of natural soil background. If, in fact, the cesium-contaminated soils contain other radionuclides as well, it is assumed that these contaminants will be cleaned up at the same time as the cesium. The present analysis does not take credit for the benefits accruing from the remediation of contaminants other than Cs-137 at Reference Site I.

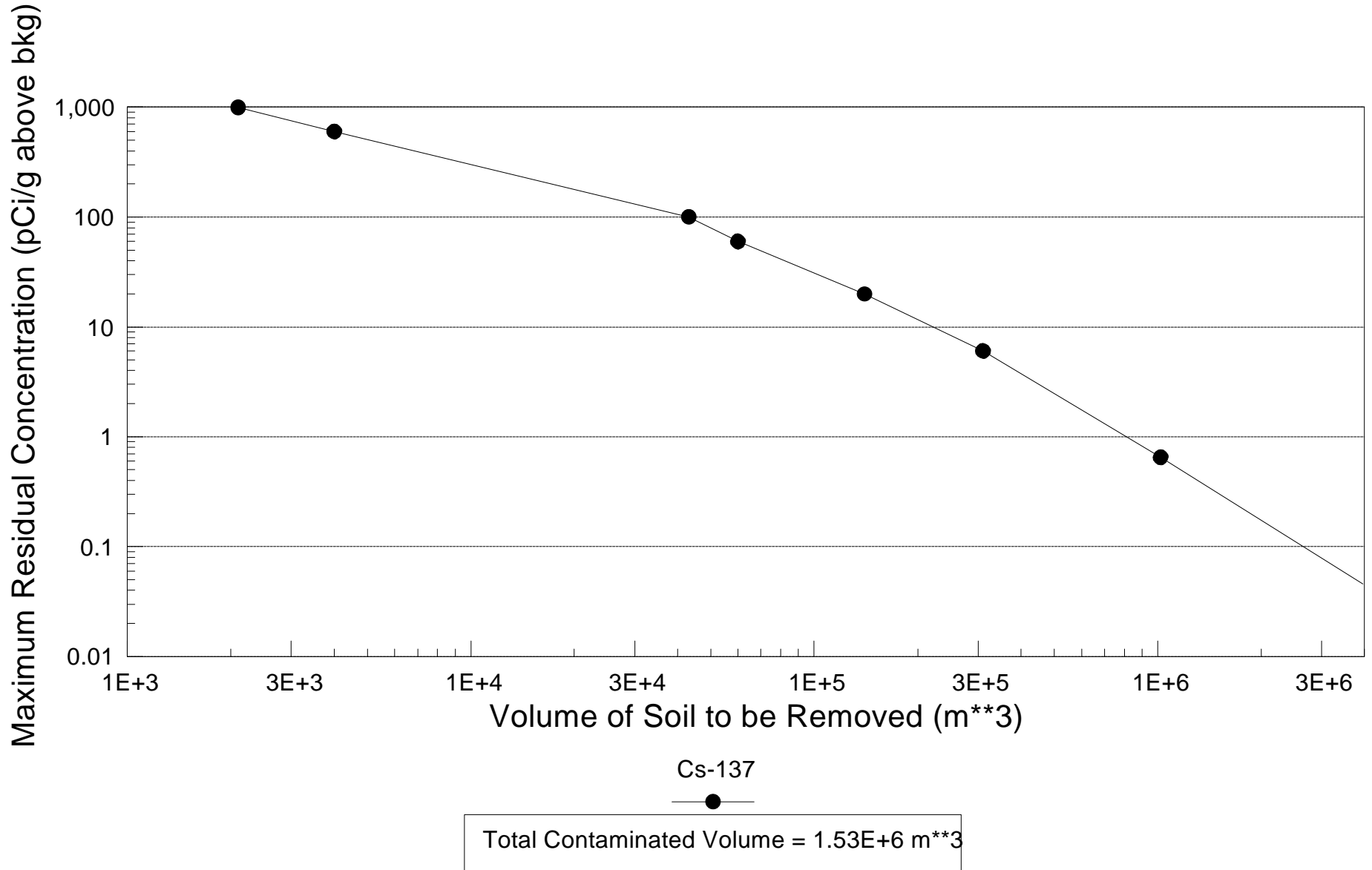
Analyses of the groundwater at Hanford have shown radioactive contamination, with concentrations of H-3, Tc-99, Cs-137, Sr-90, Co-60 and uranium in excess of the proposed Drinking Water Standard having been measured under several areas of the site (Wo 93, p. 180 *et seq.*). This contamination is the result of waste disposal practices that allowed liquid effluents to be discharged to the soil column. There is no indication that the contaminated surface soils make any significant contribution to these concentrations.

Recently released RI/FS documents for the Hanford Site are reported to contain new data on the radioactive contamination of the soils. Future analyses will incorporate such data.

Figure 4-4

Reference Site I

Distribution of Contaminated Soil



REFERENCE SITE II

Reference Site II is based **in part** on radiological and environmental data for the Fernald Environmental Management Project (FEMP). It is essential to bear in mind that the following analysis of this reference site, although it makes use of some of the data that characterize Fernald, cannot be considered to be an analysis of the actual site. In particular, the predicted impacts refer **only** to the reference site and cannot be used to predict the future impacts of the much more complicated FEMP site.

Site Description

The Fernald Environmental Management Project, formerly known as the Feed Materials Production Center (FMPC), is on the CERCLA NPL list. It covers 1050 acres and is located 17 miles northwest of Cincinnati, Ohio. Uranium metal products for the nation's defense programs were produced at the facility between 1953 and 1989. During those years, the facility produced slightly enriched or depleted uranium products for use in production reactors to make plutonium and tritium at other DOE sites.

In addition to uranium, thorium has been stored at Fernald since the mid-1960s when the U.S. was studying the use of the thorium/uranium fuel cycle for commercial production of electricity. Approximately two-thirds of the thorium at Fernald was processed on site, with the remaining portion originating from other DOE facilities.

Contaminated areas at the site include waste pits/settling ponds and waste silos containing uranium and radium residues. The radionuclides present at the site include Pu-238, Pu-239, Ra-226, Ra-228, Sr-90, Tc-99, Th-230, Th-232, Th-228, U-234, U-235/U-236¹², and U-238.

In July 1989, uranium metal production was suspended. In December 1989, the site was added to the EPA National Priorities List of federal facilities in need of remediation. DOE announced its intention to formally end the production mission in February 1991, and closure became effective in June 1991.

Environmental restoration efforts under the Fernald RI/FS address five operable units (OUs) at the site:

¹² U-235 and U-236 specific activities are lumped together in the FEMP data. In the present analysis, all these activities are attributed to U-235.

- OU-1: Waste storage units
- OU-2: Solid waste units
- OU-3: Facilities and Suspect Areas
- OU-4: Special facilities
- OU-5: Environmental media

Environmental Parameters

The vadose zone at the FEMP consists of a silty clay glacial till (FEMP 93, p. 10). The infiltration rate was calculated to be 0.30 m/yr (DOE 93b, p. 2-7). This value, along with representative values of hydraulic parameters of silt/clay that are tabulated in the RESRAD references (ANL 93b, DOE 93a) were assigned to the vadose zone of Reference Site II.

The uppermost water-bearing unit consists of sand and gravel material (FEMP 93, p. 10). In the absence of site-specific data, the exponential parameter (b) and total and effective porosities in the saturated zone of Reference Site II were assigned representative values for sand and gravel that are listed in the RESRAD tables. Groundwater gradients at Fernald are variable, with average values of 7.5×10^{-4} to 1×10^{-3} being reported for the FEMP, and values as high as 2.7×10^{-3} being reported within a 5 km radius of the site. The geometric mean of the on-site values, 8.7×10^{-4} , was assigned to Reference Site II.

The transmissivity in the aquifer is 40,000 to 67,000 ft²/day; the aquifer underneath the site is approximately 70 ft thick (DOE 93b, p. 2-6). These data can be used to calculate the hydraulic conductivity, using the relationship shown in the following equation¹³:

$$K = T/b$$

where

- T = transmissivity
- K = hydraulic conductivity, and
- b = aquifer thickness

¹³ Freeze and Cherry (Fr 79) define transmissivity as
 $T = Kb$

This equation can be manipulated to derive the value of K if T and b are given.

The hydraulic conductivities at Fernald range from 64,000 to 106,000 m/yr. The geometric mean of this range, approximately 82,000 m/yr, was assigned to Reference Site II.

The depth to the water table at Fernald generally ranges from 6-15 m (FEMP 93, p. 10), but may be as shallow as 0.3 m or as deep as 25 m (FEMP 93, p. 12). The geometric mean of approximately 10 m was assigned to Reference Site II.

No K_d values were found in the survey data for Fernald. K_d values assigned to each radionuclide at Reference Site II on the basis of representative values for clay soils in the RESRAD tables.

Soil Contamination

Data sources. The radionuclide contamination of on-site soils at the FEMP has been extensively studied as part of the RI/FS process (DOE 93b); more limited studies of off-site soil contamination have also been performed (DOE 93c).

The contaminated surface soils in OU 5 of the FEMP form the basis of the soil contamination at Reference Site II. OU 5 includes all on-site and off-site soils outside of the waste storage units. The *Site-Wide Characterization Report* presents the results of surface analyses for six of the subunits of OU 5 (DOE 93c: App. R). Included are the following data on the concentrations of 12 radionuclides: the total number of samples analyzed for each nuclide, the number of samples in which the nuclide was detected, the upper 95th percentile limit on the background activities of the nuclide, the range of activities detected, the mean and the upper 95th percentile confidence limit on the mean. These data can be used to create the radionuclide distributions, as described in the following section.

Off-site contamination data for the upper 5 cm of soil were presented as a map of the site vicinity with isopleths corresponding to uranium concentrations of 5 to 35 $\mu\text{g/g}$, in increments of 5 $\mu\text{g/g}$ (DOE 93b). In the present analysis, the areas bounded by each isopleth were determined in much the same way as was done for the aerial survey maps for other sites. The total (not incremental) areas, excluding the area of the site itself, bounded by each isopleth, are listed in Table 4-10, below.

Table 4-10. Areas of Uranium Contamination Adjacent to FEMP

Concentration (µg/g)	≥5	≥10	≥15	≥20	≥25	≥30	≥35
Area (m ²)	6.81E6	1.65E6	6.04E5	1.23E5	6.7E4	3.2E4	6E3

Modeling of contamination. The layer comprising the upper 18 inches of soil of six of the sub-units of OU 5 was the basis for sub-sites 1 - 6 of Reference Site II. Although data on subsoils (soils deeper than 18") at the FEMP are also available, these deeper layers were not used to construct the reference site for several reasons. First, the contaminated volumes are not contiguous—lenses of contaminated soil are present at various depths. Such lenses are not compatible with the simplified models of the reference sites used in the present analyses, since these models assume that the radionuclide distributions are continuous. Second, the subsoil data are less complete than the surface soil data and contain some ambiguities, *e.g.*, some nuclides are listed as positively detected although their maximum concentrations are below background.

Of the 12 nuclides for which surface soil concentration data are listed, the following eight were selected for analysis: Ra-226, Th-230, Ra-228, Th-228, Th-232, U-234, U-235 and U-238. The others had ranges of concentration that were comparable to background or that were low enough to have no effect on the present analyses.

Given the mean (μ), the upper 95th percentile confidence limit on the mean (μ_{95}), and the number of samples (n), it is possible to characterize the corresponding normal or log-normal distribution. In the case of a normal distribution, μ_{95} is determined by the following expression (Gil 87:134 *et seq.*):

$$\begin{aligned} \mu_{95} &= \mu + Z_{95}\sigma/\sqrt{n} \\ \sigma &= \text{standard deviation} \\ Z_{95} &= 95\text{th percentile of the standard normal distribution} \\ &= 1.645 \end{aligned}$$

A normal distribution is completely determined by the mean and the standard deviation; therefore, solving for σ in the above expression yields the desired information.

Normal or log-normal distributions were constructed for each of the eight nuclides at each of the six sub-sites.¹⁴ The distributions were truncated at the upper end, with a value approximately one order of magnitude above the highest measured concentration in a particular subunit forming the upper limit. The potentially contaminated soil volume at each sub-site was assumed to equal the area of the given subunit multiplied by 18 inches (46 cm), the depth of the contaminated layer. For sub-sites at which analyses of one or more samples failed to detect one of the eight nuclides, the volume used to construct the distribution of that nuclide at that sub-site was reduced by the ratio n/N , n being the number of samples with positive detection and N being the total number of samples analyzed for that nuclide. The 95% UL of the background was subtracted from the concentrations of each nuclide and the volumes of soil contaminated at or below that concentration were calculated to produce the distributions shown in Figures 4-5 to 4-10. To preserve legibility, only the four most significant nuclides are illustrated. Since the curves are calculated as continuous distributions, individual data points are not marked.

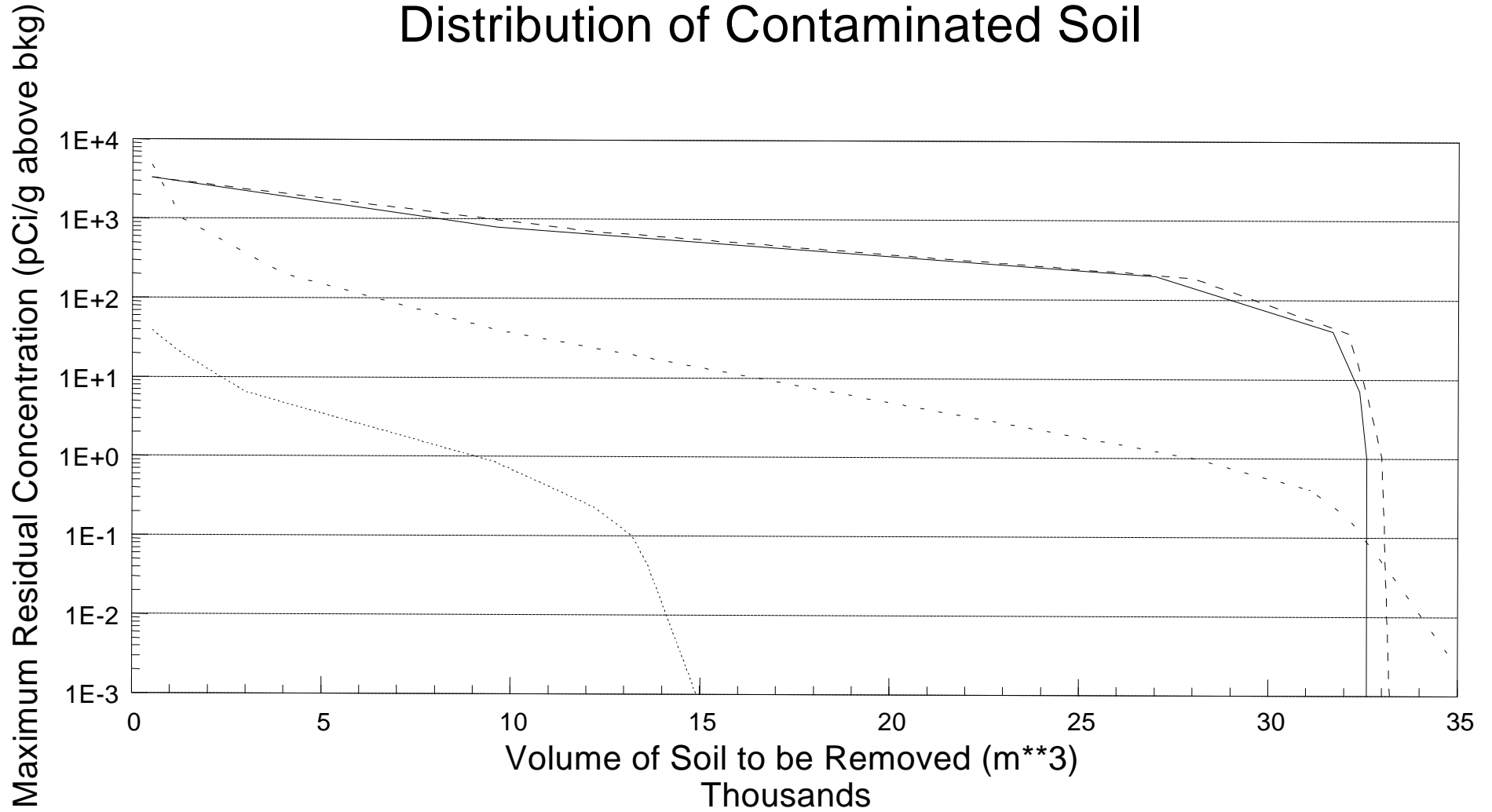
The off-site soil contamination in the vicinity of the FEMP served as the basis of sub-site II-7. Stevenson and Hardy (St 93) reported that the three uranium isotopes (U-238, U-235 and U-234) in the off-site soils were found in the same relative abundance as in natural uranium. They also reported that the natural background of total uranium in the top 5 cm of soil beyond the influence of the site to be 2.2 pCi/g.

To construct the distributions of the three uranium isotopes at sub-site II-7, volumes of soil contaminated to the depth of 5 cm were calculated from the areas listed in Table 4-10. The chemical concentrations were converted to specific activities by multiplying each value by the specific activity of each isotope in pure, natural uranium (approximately 0.334 pCi/ μ g for U-238 and U-234 and 0.016 for U-235). Finally, the background activity was apportioned among the three isotopes according to their relative abundances (1:0.047:1) and subtracted from each calculated activity to construct the distributions illustrated in Figure 4-11. Since the distribution of U-234 is identical to that of U-238, and since the distribution of U-235 parallels that of the other two, only the U-238 distribution is shown.

¹⁴ Because radionuclide data were presented separately for the six sub-units at the FEMP, six sub-sites were created in the present analysis. The analysis assumes that the same cleanup goal will be selected for the entire site, but that each sub-site will be remediated separately.

Figure 4-5

Reference Site II-1 Distribution of Contaminated Soil



Ra-226 Th-230 Th-232 U-238

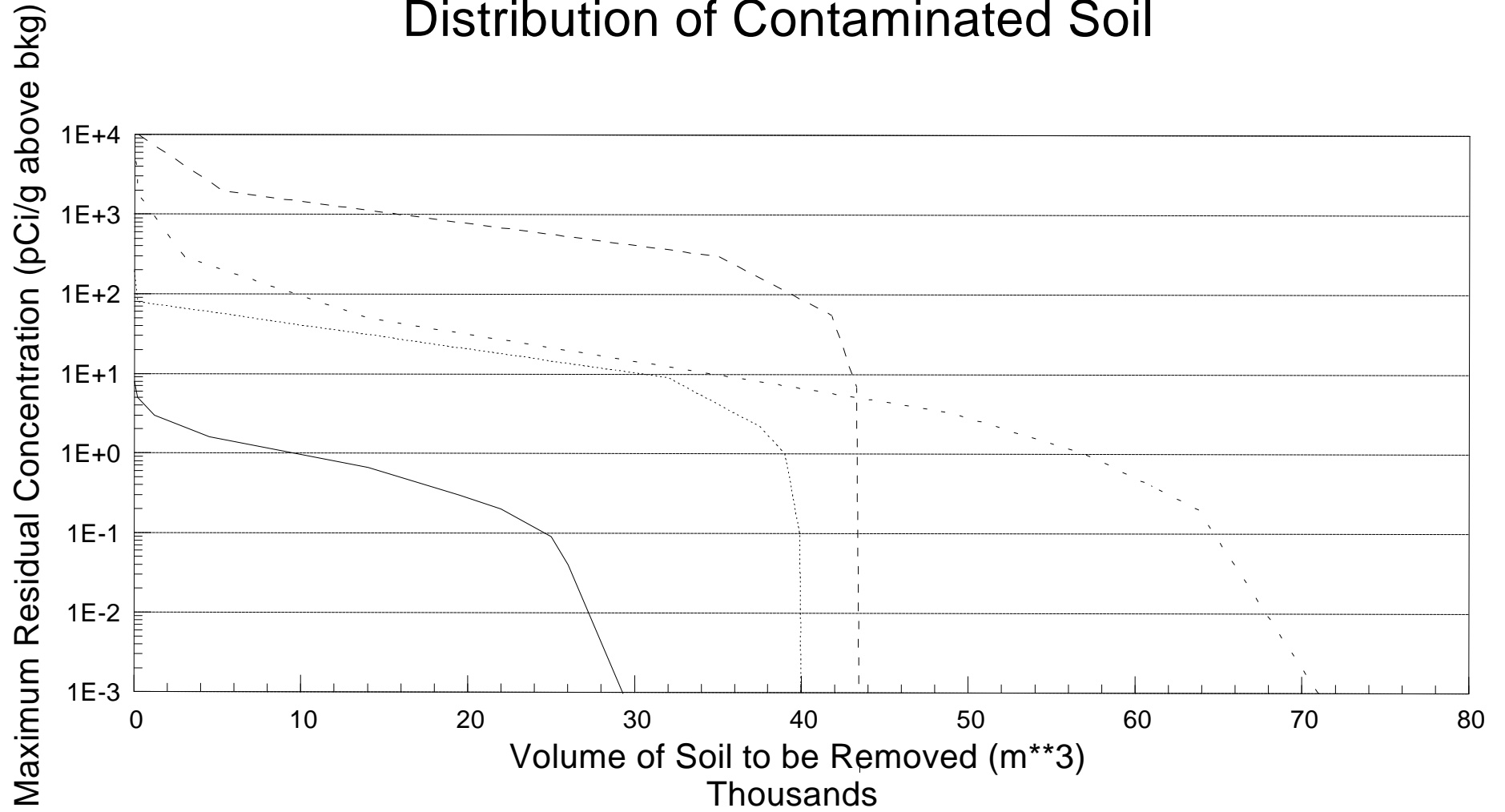
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Total Contaminated Volume = 3.30E+4 m³
Additional Nuclides: Ra-228, Th-228, U-234 & U-235

Figure 4-6

Reference Site II-2

Distribution of Contaminated Soil



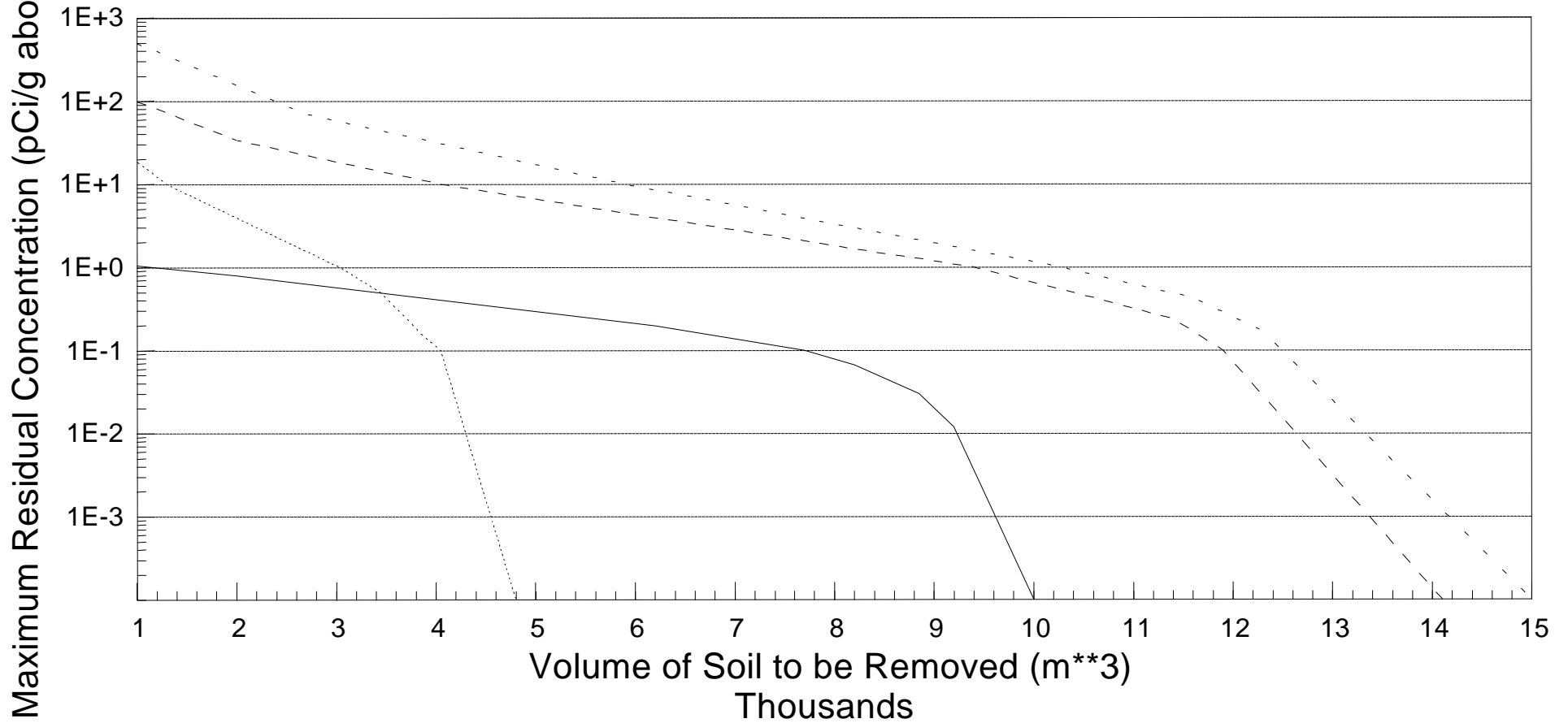
Ra-226 Th-230 Th-232 U-238

Total Contaminated Volume = 5.76E+4 m³
Additional Nuclides: Ra-228, Th-228, U-234 & U-235

Figure 4-7

Reference Site II-3

Distribution of Contaminated Soil



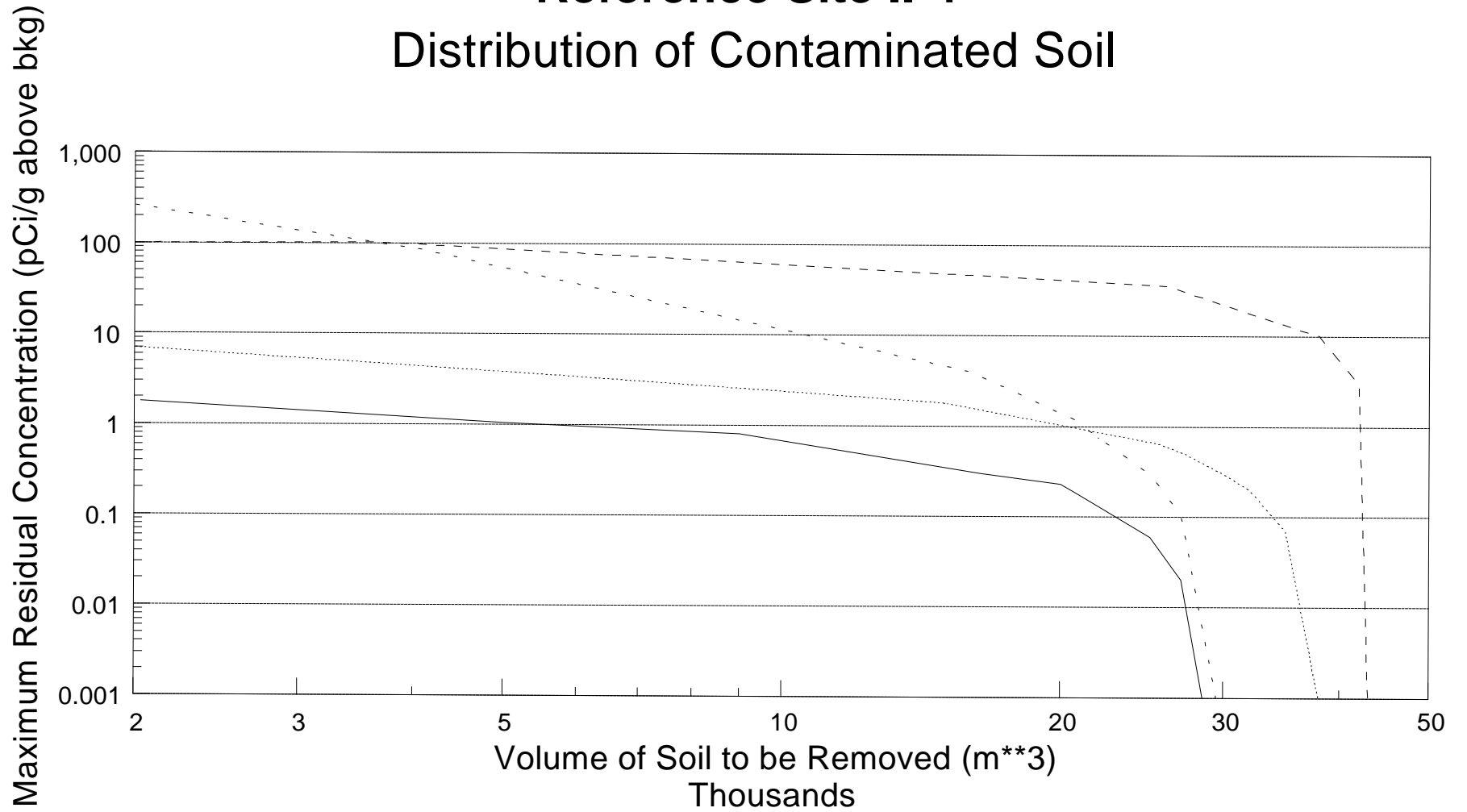
Ra-226 Th-230 Th-232 U-238

Total Contaminated Volume = 1.07E+4 m³
Additional Nuclides: Ra-228, Th-228, U-234 & U-235

Figure 4-8

Reference Site II-4

Distribution of Contaminated Soil



Ra-226 Th-230 Th-232 U-238

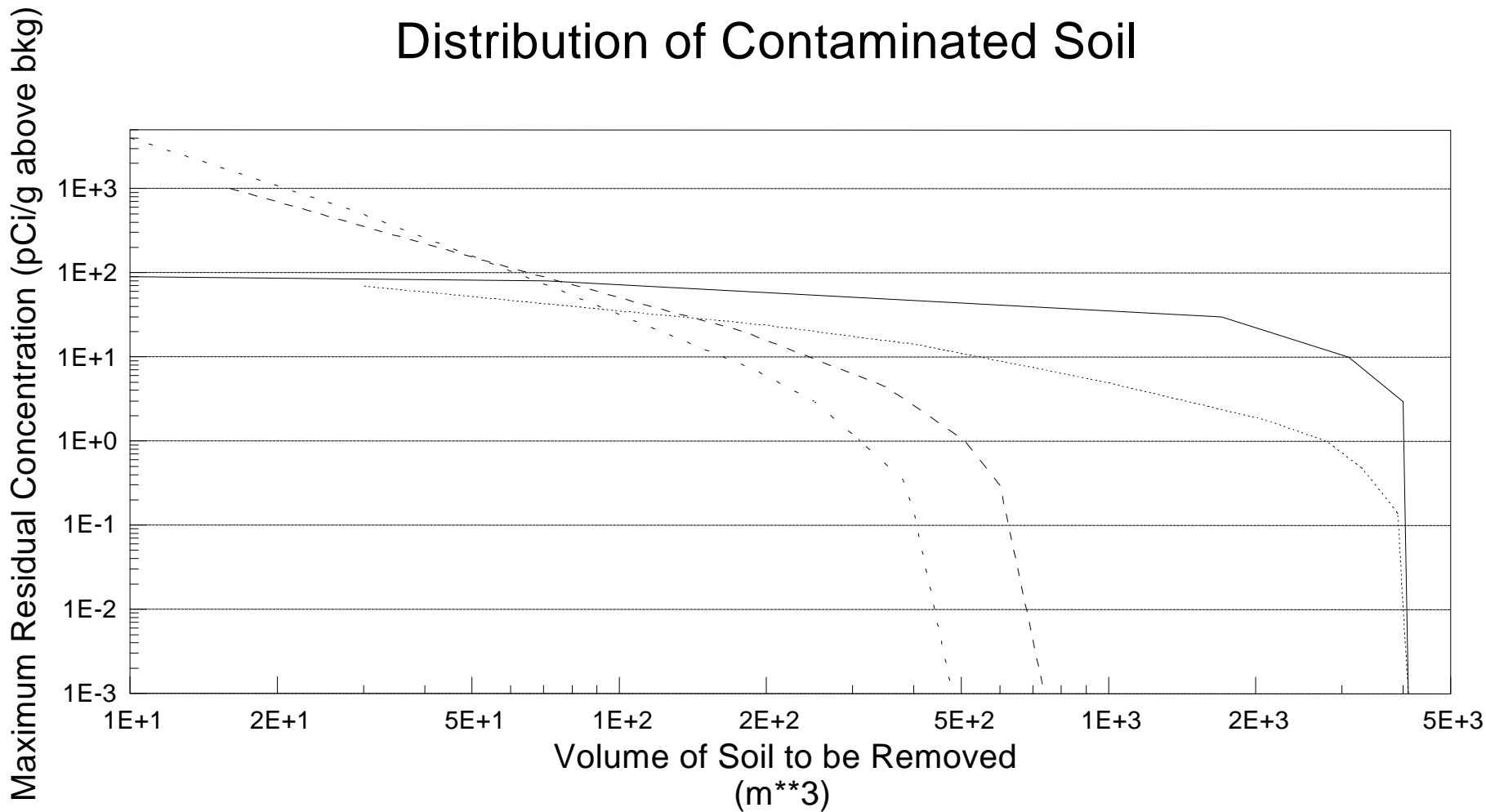
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Total Contaminated Volume = 4.27E+4 m³
Additional Nuclides: Ra-228, Th-228, U-234 & U-235

Figure 4-9

Reference Site II-5

Distribution of Contaminated Soil



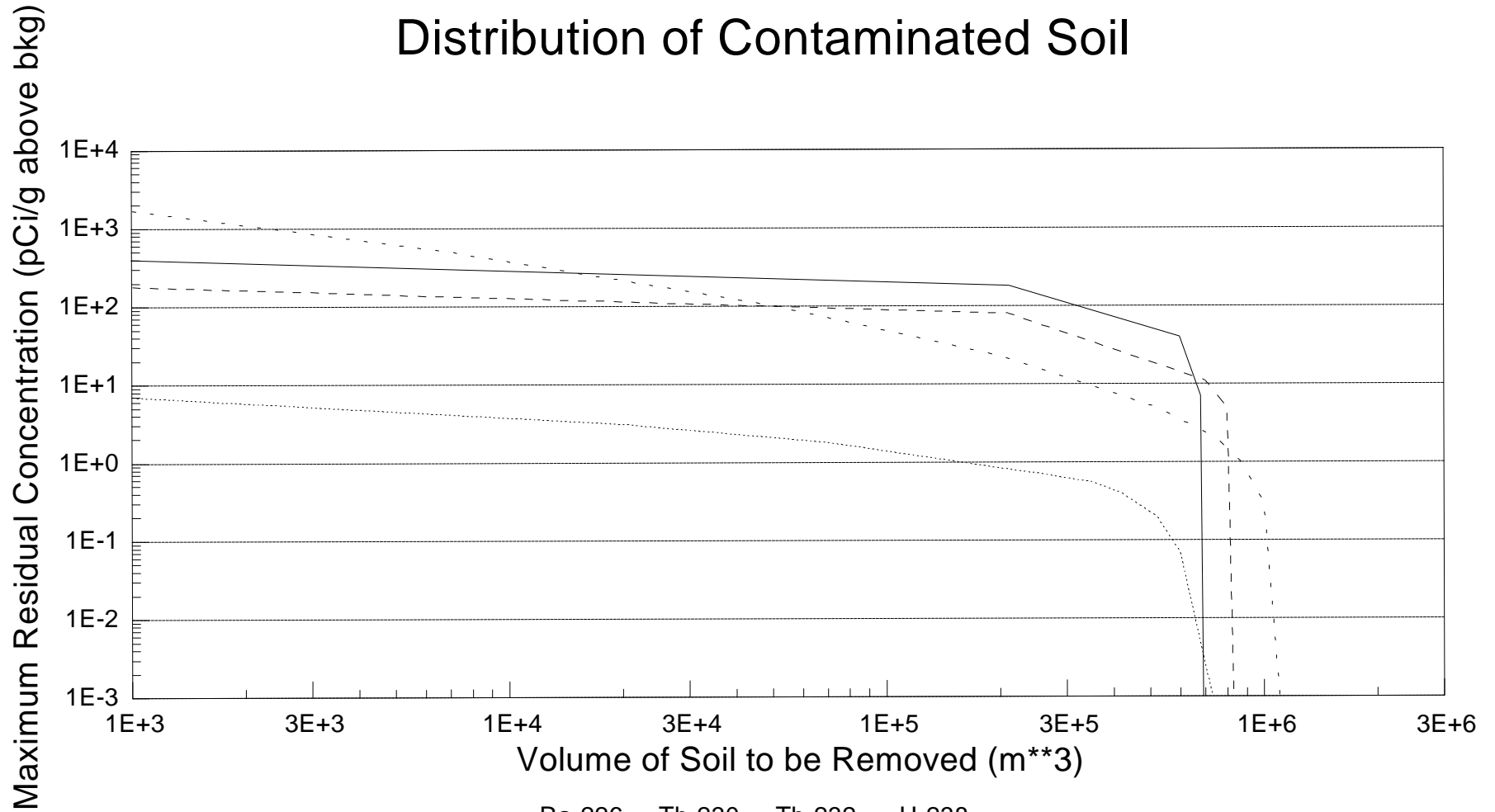
Ra-226 Th-230 Th-232 U-238

Total Contaminated Volume = 4.15E+3 m³
Additional Nuclides: Ra-228, Th-228, U-234 & U-235

Figure 4-10

Reference Site II-6

Distribution of Contaminated Soil



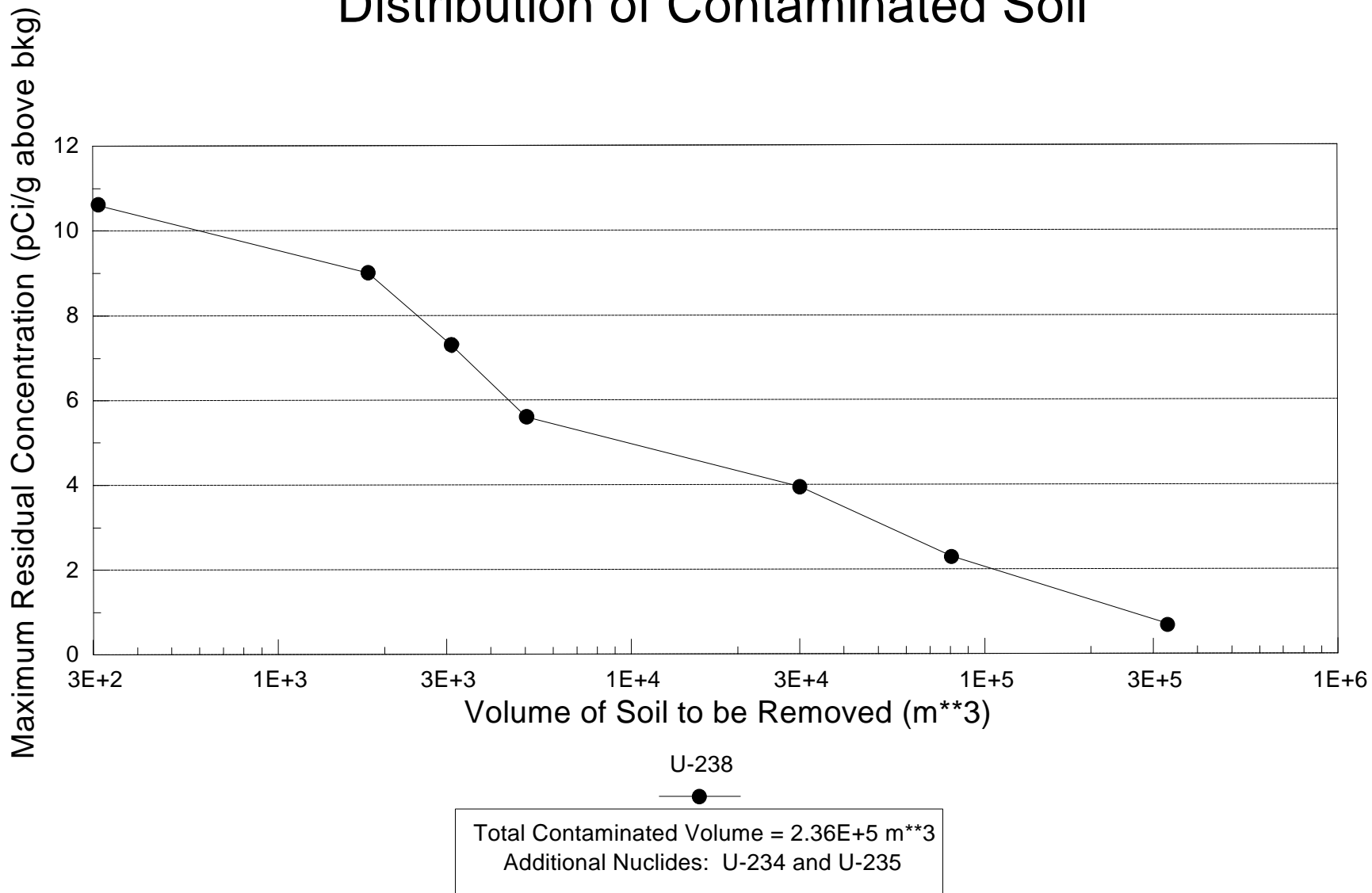
Ra-226 Th-230 Th-232 U-238

Total Contaminated Volume = 5.76E+4 m³
Additional Nuclides: Ra-228, Th-228, U-234 & U-235

Figure 4-11

Reference Site II-7

Distribution of Contaminated Soil



Quality of data. The characterization of the on-site soils appears to be comprehensive, including over 400 separate determinations for each nuclide studied. The individual values were not presented in the report, however, requiring the present analysis to estimate the distribution of concentrations, as discussed above.

The distribution of the off-site soil concentrations was directly determined from the isopleths. The accuracy and completeness of those data has been critiqued in the course of the requalification of the data. Stevenson and Hardy (St 93) concluded that the data were reliable, except for a low bias for concentrations less than about 1.3 pCi/g of U-238. Since the lowest isopleth corresponds to 1.7 pCi/g of U-238, the data used in the present analysis were not affected.

REFERENCE SITE III

Reference Site III is based **in part** on the Idaho National Engineering Laboratory (INEL). It is essential to bear in mind that the following analysis of this reference site, although it makes use of some of the data that characterizes INEL, cannot be considered to be an analysis of the actual site. In particular, the predicted impacts refer **only** to the reference site and cannot be used to predict the future impacts of the vastly more complicated INEL site.

Basis Site Description

The Idaho National Engineering Laboratory (INEL) is on the CERCLA NPL list. It encompasses an area of approximately 890 square miles of desert in southeastern Idaho on the northwestern edge of the Eastern Snake River Plain. The INEL boundary is about 22 miles west of Idaho Falls and 44 miles northwest of Pocatello.

In spite of INEL's large size, most operations are located at nine relatively small (generally less than 200 acres), discrete areas including:

- Test Area North (TAN);
- Test Reactor Area (TRA);
- Central Facility Area (CFA);
- Radioactive Waste Management Complex (RWMC);
- Auxiliary Reactor Area (ARA);
- Power Burst Facility (PBF)/Special Power Excursion Reactor Test (SPERT) area;
- Naval Reactor Facility (NRF);
- Idaho Chemical Processing Plant (ICPP); and
- Argonne National Laboratory - West (ANL-W).

INEL's functions include separating enriched uranium from spent fuel at the ICPP, operation of a large number of research reactors, and storage of transuranic wastes. Radionuclides present at INEL include Am-241, Cf-252, Cm-244, Cs-137, Cs-134, Co-60, Eu-152, Eu-154, H-3, I-129, Np-237, Pu-238, Pu-239, Pu-240, Pu-241, Ru-106, Sb-125, Sr-90, U-234, U-235, U-238, U-233, and U-236 (DOE 94c).

INEL's remedial action plan divides the site into ten Waste Area Groups (WAGs). WAGs 1-9 generally correspond to the DOE-INEL Operational Facilities listed above, while WAG 10 corresponds to overall concerns associated with the Snake River Plain Aquifer (SRPA) and those surface and subsurface areas not included in the bounds of the facility-specific WAGs.

Environmental Parameters

The soil type for the contaminated and unsaturated zones was identified as silty clay loam underlain with sand and gravel beds (EGG 92a, pp. 40-42). In the absence of site-specific data, values for silty clay loam were selected from tables of representative values in the RESRAD references (ANL 93b, DOE 93a) to characterize the hydraulic properties of the vadose zone of Reference Site III. The annual precipitation rate at INEL is 0.22 m/yr, with an evaporation rate of 0.91 m/yr; the irrigation rate in the area is high (INEL 77, pp. II-213 to II-223). Based on these data, an infiltration of 0.15 m/yr, representative of the arid conditions at INEL, was assigned to Reference Site III.

The uppermost water-bearing unit consists of sands and silts over fractured basalt (EGG 92a, p. 45 and INEL77, p. II-227). The saturated zone of Reference Site III was assigned a hydraulic conductivity corresponding to the upper end of the range for fractured igneous rocks, listed in the RESRAD tables, along with representative values of the exponential parameter (b) for sandy loam, and the total and effective porosities of fractured basalt. The groundwater gradient was assigned the value of 0.002, the average gradient measured at INEL (INEL 77, p. II-227).

The sandy loam layer at INEL, which is 11 to 40 ft thick, overlies a 1 to 10 ft layer of clayey sands (EGG 92a, p. 40). These layers are underlain by sand and gravel beds above a layer of fractured basalt that makes up the Snake River Aquifer. The estimated depth to the aquifer, 100 m, was assigned to Reference Site III.

No K_d values were found in the survey data for INEL. A representative K_d value for Cs-137 in clay or silty soils listed in the RESRAD tables was assigned to Reference Site III.

Soil Contamination

Data sources. A preliminary assessment of soil contamination has been performed by EG&G Idaho (Ma 92). Systematic soil samples, collected over an area of about 60,000 m², indicated that the main nuclide of concern was Cs-137. The only other artificially produced radionuclide was Co-60; the median concentration was less than 0.1 pCi/g, which poses an insignificant risk compared to the much higher levels of Cs-137. Other nuclides were within the range of natural soil background concentrations for the local soil type. The sampling results indicate that the depth of contamination is approximately 15 cm; the contaminated volume at this sub-site is therefore estimated to be 9,000 m³. Systematic samples at a second INEL sub-site indicated a slight Cs-137 contamination—maximum concentration of 1 pCi/g—in a volume of 5,000 m³. The remainder of the soil assessment was based on biased samples (samples collected in known "hot" spots) and therefore cannot be used to characterize the INEL site.

A more comprehensive site-wide data source was an aerial survey performed by EG&G Energy Measurements (Report EGG-10282-1002). The report includes aerial photos of the area with isopleths showing regions with different count rates in the energy range of the gamma-ray of Ba-137m, the short-lived daughter of Cs-137. A conversion factor in the report, based on a uniform volume distribution, enables the calculation of specific activities of Cs-137 in the soil. The areas of soil at different concentrations are listed in Table 4-11.

Table 4-11. Areas of Cs-137 Contamination at INEL

Concentration (pCi/g)	1-10	10-100	100-300
Area (m ²)	1.20E7	3.51E6	1.44E6

The total area contaminated by Cs-137 at soil concentrations in excess of 1 pCi/g is approximately 16 km². The volume of contaminated soil reported in the 1993 IDB is 660,000 m³.

Modeling of contamination. Dividing the IDB volume by the contaminated area yields an average depth of contamination of 4 cm. As a practical matter, the shallowest soil layer that can be remediated is approximately 5 cm. This is also the depth of the soil samples collected by EG&G Idaho, indicating that deeper soils were not a cause for concern. This was therefore assumed to be the thickness of the contaminated layer at the reference site, yielding a volume of soil with Cs-137 concentrations at or above 1 pCi/g of about 8×10^5 m³, somewhat more than

the IDB value. This assumption was discussed in greater detail in the section on soil contamination at Reference Site I, which appears above. A discussion of the limitations of the aerial survey data is found in the same section, as well as in Section 4.1.2 of this report.

To construct the distribution of Cs-137 in the soil of Reference Site III, it is necessary to subtract the Cs-137 background from world-wide fallout from the values in Table 4-11. There is no available data on the Cs-137 background at INEL; the nearest location for which this data are available is Hanford. Since both sites are in the same geographical region and at approximately the latitude, the average Cs-137 background at Hanford, 0.5 pCi/g, was assigned to Reference Site III. The distribution of Cs-137 in the soil of Reference Site III, illustrated in Figure 4-12, was constructed by calculating the volumes in the upper 5 cm of soil, given the areas listed in Table 4-11.

REFERENCE SITE IV

Reference Site IV is based **in part** on the soil in the chemical plant area of the Weldon Spring site. It is essential to bear in mind that the following analysis of this reference site, although it makes use of some of the data that characterize Weldon Spring, cannot be considered to be an analysis of the actual site. In particular, the predicted impacts refer **only** to the reference site and cannot be used to predict the future impacts of the much more complicated Weldon Spring site.

Basis Site Description

Weldon Spring is a 229-acre site located about 30 miles west of St. Louis Missouri. The site was used by the Army in the 1940's as an ordnance supply area and then by the Atomic Energy Commission for the processing of uranium and thorium until they closed it in 1966. Both the DOE and the Army are responsible for portions of the site, which has been listed on the CERCLA National Priorities List. Areas to be remediated include a 9-acre quarry containing radioactively-contaminated rubble and radioactively- and chemically-contaminated water, four waste lagoons containing raffinate sludges and contaminated water, a chemical plant comprising 44 structures and containing contaminated soil and building material, and vicinity properties having contaminated soil.

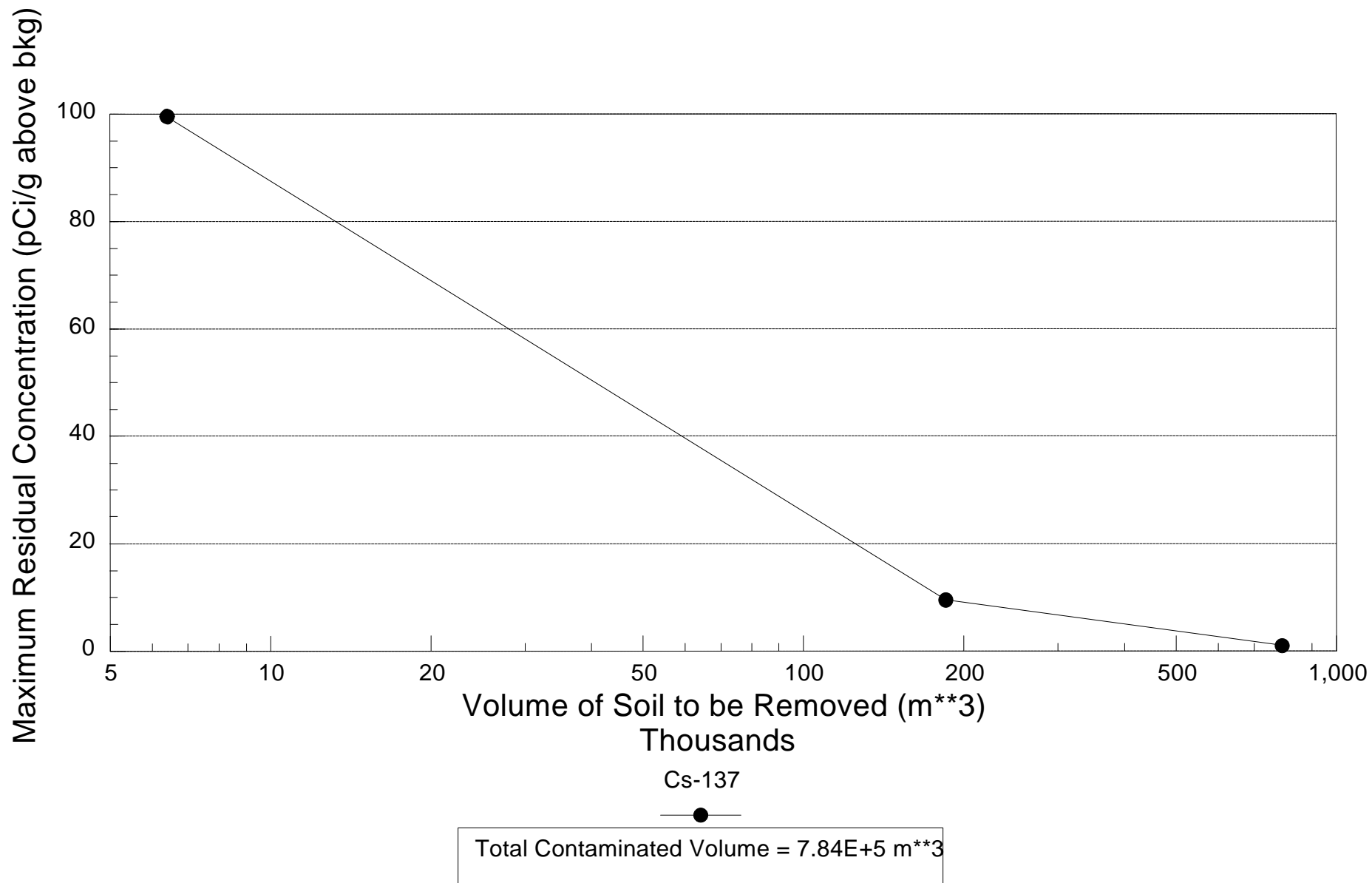
Environmental Parameters

The soil in the contaminated and unsaturated zones consists of silty loam, silt and clayey silt (DOE 92a, p. 3-2). The total porosity of the vadose zone of Reference Site IV is 36%, which

Figure 4-12

Reference Site III

Distribution of Contaminated Soil



is the average of the porosities of three of the formations that comprise the vadose zone at Weldon Spring (DOE 92b, Table 4.3-4). In the absence of site-specific data, the exponential parameter (b) and effective porosities in the vadose zone of Reference Site IV were given representative values for silty clay found in the RESRAD tables (DOE 93a, p. 230). Hydraulic conductivities on the site ranged from 1.6×10^{-11} to 2.0×10^{-7} , with an average value of 1.2×10^{-10} m/sec (DOE 92b, pp. 4-29 and 4-30). A more conservative value of 1×10^{-8} m/sec (0.315 m/yr) was assigned to Reference Site IV.

The infiltration rate at Weldon Spring is not found in the references. However, the RESRAD manual (DOE 93a, p. 198) presents a formula for calculating this rate on the basis of other parameters. (This formula is reproduced on p 3-52 of the present report). The precipitation rate at the site is 0.94 m/yr (DOE 92b, p. 4-3). No information was available for irrigation at the site, so a default value of 0.2 m/yr representative of humid conditions was assigned. Similarly a default evapotranspiration coefficient representative of humid areas of 0.5 was assigned. A runoff coefficient of 0.34 was chosen as representative of the open land on the site and the silty loam soil. These data and assumptions were used to derive an infiltration rate of 0.41 m/yr, which was assigned to Reference Site IV.

The uppermost water-bearing unit consists of 3-15 m of weathered limestone (DOE 92a, pp. 3-2 to 3-3). In the absence of site-specific data, the exponential parameter (b) and total porosities in the aquifer of Reference Site IV were given representative values for limestone (DOE 93a, p. 230). Table 4.6-10 (DOE 92b) lists the values of hydraulic gradients and hydraulic conductivities between six different pairs of monitoring wells at the chemical plant site. By drawing lines between these pairs on a map showing the contaminated areas of the site, it was possible to select the flow path that traversed the largest zones of radioactive contamination. The gradient along this path is 0.019. Two values of conductivity were determined for this path: the smaller of the two, 0.024 m/day, (8.8 m/yr) was selected as the conservative value for Reference Site IV. Calculated effective porosities at Weldon Spring range from 0.008 to 0.1453, with an average value of 0.067. The average value was assigned to Reference Site IV.

The vadose zone thickness varies from less than 10.6 m to more than 19.7 m (DOE 92b, p. 4-28). The unsaturated zone, as defined in RESRAD, is the difference between the vadose zone and the thickness of the contaminated layer. Since a thickness of 11 cm is assumed for the contaminated layer, as discussed in the section on modeling the contamination, below, 11.5 m was selected as a conservative value for the unsaturated zone thickness for Reference Site IV.

The baseline risk assessment lists K_d values that are representative of the type of soil found at the site (DOE 92a, pp. E-20 to E-21). These values were used in the analyses of Reference Site IV.

Soil Contamination

Data sources. A baseline assessment (DOE 92a) as well as a remedial investigation and feasibility study (RI/FS) for this site have been completed (DOE 92b,c), and a record of decision (ROD) has been issued (DOE 92d). As part of this process, the soil contamination has been extensively characterized. A total of 387 boreholes were drilled in this area. Soil samples were taken from these holes and analyzed for U-238, Th-230, Ra-226 and Ra-228. The studies conclude that uranium is the main radioactive contaminant of concern, and that it is assumed to consist of U-234, U-235 and U-238 in naturally occurring isotopic ratios. The analytical results for each of the approximately 1,500 samples are presented in Appendix F to the RI report (DOE 92b). The specific activities of U-238 range from a maximum of 2,105 pCi/g to background levels.

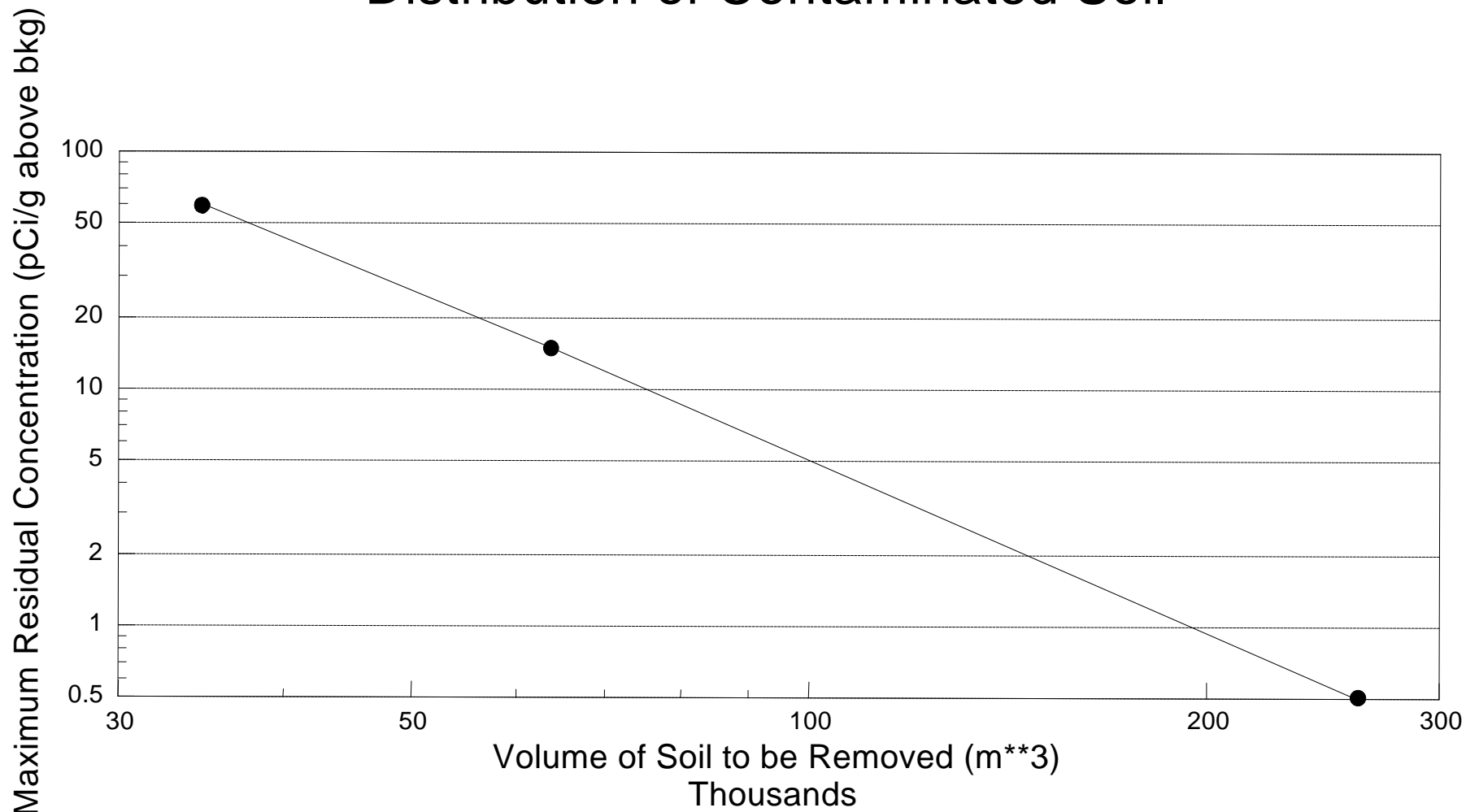
Modeling of contamination. The volumes of soil that contain total specific activities of U-238 in excess of 15 pCi/g and 60 pCi/g, respectively, were used to characterize the volume distribution of uranium in the soil (DOE 92b:5-32, DOE 92c). A distribution of uranium at Reference Site IV was constructed, based on the assumption that the logarithm of the contaminated volume has a linear relationship to the log of the minimum level of U-238 contamination (specific activity minus background) in that volume.¹⁵ The Baseline Assessment lists 1.2 pCi/g as the average local U-238 background, with an upper bound of 1.7 pCi/g (DOE 92a:2-40). Although cleanup to less than perhaps 2 pCi/g is not technically feasible, to enable the modeling of cleanup to very low risk levels, the extrapolated volume with a specific activity ≥ 1.7 pCi/g U-238 was calculated as part of the present analysis. These volumes are listed in Table 4-12. The distribution, constructed by subtracting the background from the listed activities, is illustrated in Figure 4-13. As was the case for Site II-7, only the U-238 distribution is shown. U-234 has an identical distribution, while that of U-235 has the same shape but the activities are equal to 4.7% of the activities of each of the other two isotopes.

¹⁵ Linear regression analyses of the soil contamination data at other reference sites indicates that this is a common relationship.

Figure 4-13

Reference Site IV

Distribution of Contaminated Soil



U-238

Total Contaminated Volume = 2.56E+5 m³
Additional Nuclides: U-234 and U-235

Table 4-12. Volumes of Soil Contaminated by U-238 at Reference Site IV

Concentration (pCi/g)	≥ 60	≥ 15	≥ 1.7
Volume (m ³)	34723	63711	2.6E5

The total area of the soil at the chemical plant site is 67 ha (6.7x10⁵ m²); however, above-background uranium concentrations were detected in only 340 out of 387 boreholes. Assuming that the boreholes were randomly distributed, it is estimated that 88% of this area, or 5.9x10⁵ m², is contaminated. To calculate the average thickness of the contaminated zone, the volume of soil above 15 pCi/g, 63,711 m³, was used, resulting in a thickness of 11 cm at Reference Site IV..

Other nuclides measured in the soil are Th-230, Ra-228 and Ra-226. Both the concentrations of these nuclides and the contaminated volumes are small compared to the uranium contamination. Because the impact of these additional nuclides was expected to be small and because no summary data for these nuclides was presented in the report, they were not included in the analysis of the reference site.

Several vicinity properties were characterized as part of the Weldon Spring RI/FS. The levels of radioactive contamination at these sites are low—their inclusion would have little impact on the outcome of the present analysis. The quarry at Weldon Spring was used as a waste disposal area—little if any of that site falls within the scope of the present report.

REFERENCE SITE V

Reference Site V is based **in part** on the soil contamination at the Savannah River Site (SRS). It is essential to bear in mind that the following analysis of this reference site, although it makes use of some of the data that characterize SRS, cannot be considered to be an analysis of the actual site. In particular, the predicted impacts refer **only** to the reference site and cannot be used to predict the future impacts of the vastly more complicated SRS.

Basis Site Description

The Savannah River Site is located on 325 square miles along the Savannah River near Aiken, SC, about 22 miles southeast of Augusta, Georgia. Its primary mission has been the production of plutonium and tritium for nuclear weapons. DOE has identified a total of 657 contaminated buildings for possible decontamination and decommissioning (DOE/EM-0119). The SRS

contains 15 major production, service, and research and development areas. The P, K, L, C, and R areas house five production reactors near the center of the site in the 100 series buildings. Chemical separations facilities are located in the 200 series buildings in the F and H Areas. The F and H Areas also contain the main analytical laboratory, the plutonium metallurgical facility and tritium processing buildings. The 300 series buildings of the M Area contain test reactors, uranium metal fabrication facilities, target and alloy extrusion facilities, and a metallurgical lab. The 400 buildings in the D Area purified heavy water for the production reactors. Waste management facilities are located adjacent to the F and H areas. The principal radionuclides present at the site include Am-241, Cm-243, Cm-244, Cs-137, Co-60, Eu-152, Eu-154, Eu-155, H-3, I-129, Na-22, Pu-238, Pu-239, Pu-240, Pu-242, Ra-226, Ra-228, Ru-106, Sb-125, Sr-90, Tc-99, Th-232, U-234, U-235, and U-238 (DOE 94c).

Environmental Parameters

The contaminated and unsaturated zones consist of coarse to fine sand and silty clay with localized gravel lenses, with a clay content of 20-40% (RAE 91, pp. 3-7/8). The hydraulic conductivity at SRS ranges from 11 to 4,400 m/yr. The geometric mean value of 220 m/yr was assigned to Reference Site V. In the absence of site-specific data, the values for the exponential parameter (b) and total and effective porosities in the vadose zone of Reference Site V were derived from tables of representative values for different type soils in the RESRAD manual. Because there are no specific values for sandy, silty clay, the arithmetic means of the listed values for sandy clay and silty clay were used.

The infiltration rate at Savannah River was not found in the references. The precipitation rate at the site is 1.22 m/yr (RAE 91, p. 3-5). No information was available on irrigation at the site, so a default value of 0.2 m/yr representative of humid conditions was assigned. Similarly, a default evapotranspiration coefficient of 0.5, representative of humid areas, was assigned. A runoff coefficient of 0.67 was chosen as representative of the open areas at the site and the sandy, silty clay soil. As explained in the section describing Reference Site IV, above, these data and assumptions were used to derive infiltration an rate of 0.41 m/yr, which was assigned to Reference Site V.

The uppermost water-bearing unit consists of fine silty sand containing varying amounts of clay (RAE 91, p. 3-9). The exponential parameter (b) and total and effective porosities in the saturated zone of Reference Site V were assigned representative values for silty clay that are tabulated in the RESRAD manual. Since the hydraulic conductivity in the aquifer was not

available in the literature, the conductivity for Reference Site V was set equal to the conductivity in the vadose zone, based on the similarity of the soil types in the two zones. No groundwater gradient data was available from the survey data, so a conservative value of 0.0001 was assigned to Reference Site V.

The depth to the aquifer at Savannah River ranges from near zero at the seepage line to 5-12 m in the F- and H-Area seepage basins being used to represent the site (RAE 91, p. 3-7). A value of 30 ft (9.14 m) was selected for Reference Site V.

A table of K_d values were provided for Savannah River (RAE 91, p. 2-15) based on the work of Looney, *et. al.* (Lo 87). These values were used for the analysis of Reference Site V.

Soil Contamination

Data sources. Radioactive contamination of the soil has been investigated in only a few areas, primarily the waste management facilities which do not fall into the scope of the present report. A number of aerial surveys have been performed for this site; however, the survey reports and the necessary conversion factors were not available in time for the survey data to be analyzed for this report. The 1993 IDB reports a contaminated soil volume of $3.6 \times 10^6 \text{ m}^3$ for this site.

Modeling of contamination. The limited soil analyses that had been performed as part of the baseline risk assessment for the F- and H-area seepage basins and other environmental studies indicate that Cs-137 is the main radioactive contaminant of concern. Analyses had been performed of the aerial surveys of five other DOE sites at which Cs-137 was the primary radioactive contaminant. (In addition to Hanford, INEL and Oak Ridge, which are discussed in the present report, the surveys covered Los Alamos and West Valley.) The fractional area of each site that falls within a given range of concentration is shown in Table 4-13.

The Cs-137 distribution at Reference Site V was assumed to have the same fractional distribution as the arithmetic means listed above. Before calculating the soil volumes, it was necessary to determine the threshold concentration of the soil volume reported in the IDB. This information was not readily available through DOE channels—each site apparently uses its own methods of estimating the volumes which are listed in the IDB. The only information that was obtainable regarding threshold levels for Cs-137 in soils was from the NRC. The NRC currently requires that soils at licensed facilities that are contaminated above 15 pCi/g of Cs-137 must be remediated before the site can be released for unrestricted use (John 94). A log-linear

interpolation of the arithmetic means listed in Table 4-13 predicts that 36% of the soil volume will have Cs-137 concentrations above 15 pCi/g. Assuming that the volume reported in the IDB represents this fraction of a larger volume, the total volume with Cs-137 concentrations above 1 pCi/g is calculated to be approximately 1.0×10^7 m³. Cs-137 background concentrations in the soil at SRS range from 0.3 to 3.5 pCi/g. A value of 0.5 pCi/g was selected for the Cs-137 background at Reference Site V. This background value was subtracted from the concentrations listed above in constructing the distribution of Cs-137 contamination for Reference Site V, which is illustrated in Figure 4-14.

Table 4-13. DISTRIBUTION OF Cs-137 IN CONTAMINATED SOIL

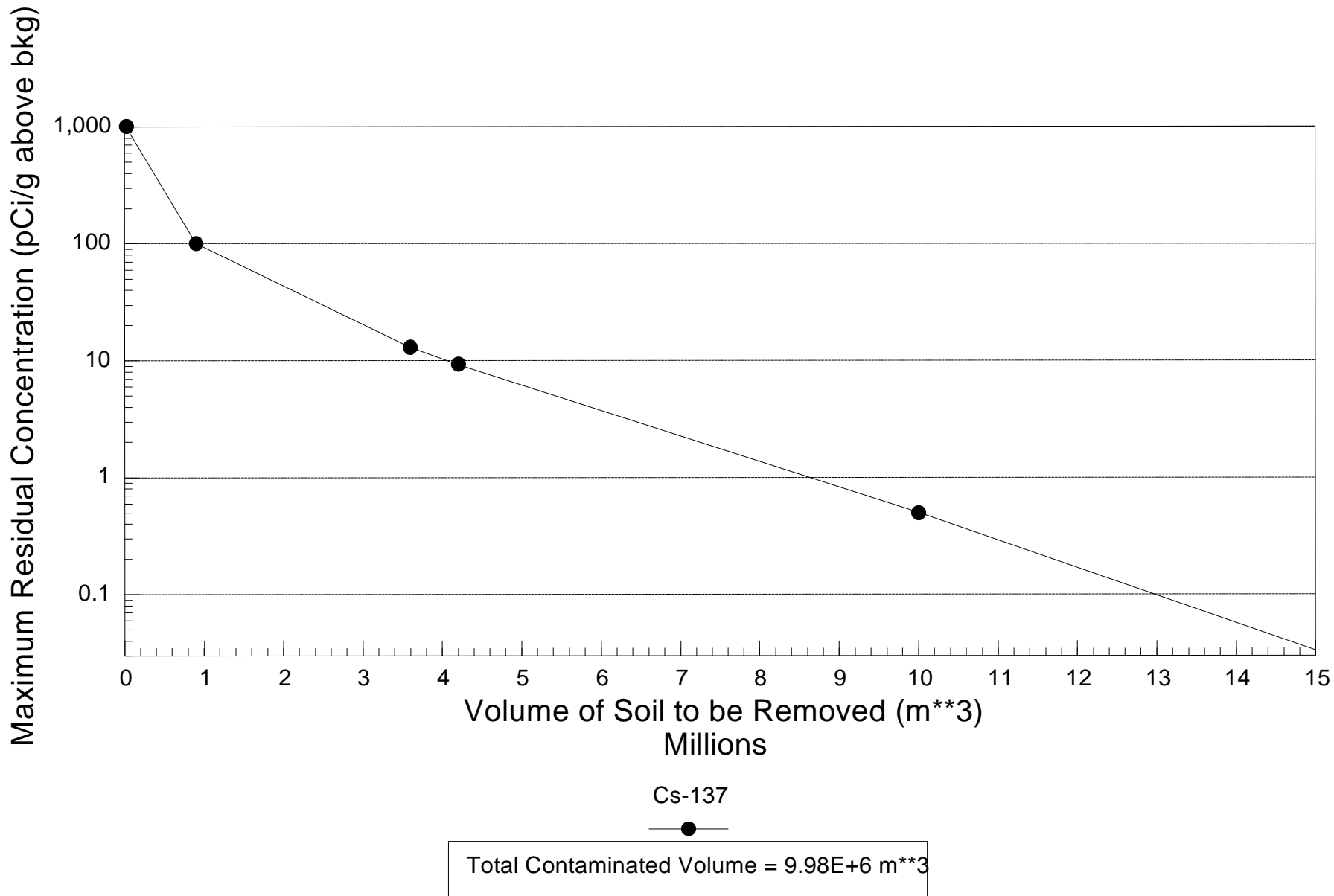
Site Name	Fraction of Soil Volume (%) vs. Specific Activity (pCi/g)			
	1 - 10	10 - 100	100 - 1000	<1000
Hanford	68.6425	27.4570	3.7148	.1857
INEL	71.9424	20.4759	6.0874	1.4942
LANL	49.2866	49.2866	1.4267	.0000
ORR	34.0426	42.5532	23.4043	.0000
W.Val	65.8307	26.3323	7.8370	.0000
A.Mean	57.9490	33.2210	8.4940	.3360
G.Mean	55.8923	31.5072	5.6811	.5268
S. D.	14.2748	10.8472	7.7631	.5836
G.S.D.	1.3243	1.3837	2.5012	2.8363
Min.	34.0426	20.4759	1.4267	.0000
Max.	71.9424	49.2866	23.4043	1.4942

The vertical concentration profile was assumed to be equivalent to a uniform depth of contamination of 5 cm, as was done for Reference Sites I and III. The rationale for this assumption was presented in the discussion of Reference Site I, which appears earlier in this section. Dividing this depth into the calculated volume of contaminated soil results in a contaminated area of about 200 km² or 77 sq. mi., which is 24% of the area of SRS. The distribution of Cs-137 at Reference Site V is illustrated in Figure 4-14. The data discussed

Figure 4-14

Reference Site V

Distribution of Contaminated Soil



above is extrapolated to lower specific activities to enable the modeling of cleanup to low risk levels.¹⁶

REFERENCE SITE VI

Reference Site VI is based **in part** on the soil contamination at the Oak Ridge Reservation (ORR). It is essential to bear in mind that the following analysis of this reference site, although it makes use of some of the data that characterize Oak Ridge, cannot be considered to be an analysis of the actual site. In particular, the predicted impacts refer **only** to the reference site and cannot be used to predict the future impacts of the vastly more complicated ORR.

Basis Site Description

The Oak Ridge Reservation has played a major role in both nuclear weapons production and commercial nuclear energy research. The ORR, which encompasses an area of 37,000 acres, consists of three principal facilities: Oak Ridge National Laboratory (ORNL), the Oak Ridge Gaseous Diffusion Plant (ORGDP) and the Y-12 Plant. These three facilities and their contaminated areas are described as follows:

- ORNL

Past R&D and waste management activities at ORNL have produced numerous waste disposal units contaminated with low-level radioactive and/or hazardous chemical wastes. ORNL contains six burial grounds covering more than 200 acres, as well as contaminated impoundments, ponds and liquid waste disposal areas. ORNL occupies approximately 2900 acres in the Melton and Bethel Valleys, 10 miles southwest of the City of Oak Ridge, Tennessee.

- K-25 Site

The K-25 site formerly produced enriched uranium hexafluoride for both defense and commercial purposes. The plant was shut down in 1987. Radioactive wastes are contained at the site in holding ponds, a burial ground and other facilities. K-25 occupies 1500 acres adjacent to the Clinch River, approximately 13 miles west of the city of Oak Ridge.

¹⁶ According to a recently-published article, effluent releases totaling approximately 600 Ci of Cs-137 have been reported at SRS--most of the activity remained on site. [**Ref:** Carlton, W. H., *et al.*, 1994. "Radiocesium in the Savannah River Site Environment." *Health Phys.* 67(3):233.] The parameters selected for Reference Site V indicate an inventory of approximately 970 Ci of Cs-137 (see Table K-195 in the present report). This is a very close correspondence, given the generic nature of the data used to construct this reference site.

- Y-12 Plant

Y-12 has produced machined components for nuclear weapons internals, as well as highly-enriched uranium metal to fuel tritium and plutonium production reactors at Savannah River. The Y-12 Plant includes several facilities that have been used to treat, store or dispose of solid and liquid chemical and radioactive wastes. The East Fork Poplar Creek, which receives Y-12 effluent discharges, contains elevated levels of radioactivity. Y-12 occupies 811 acres in the Bear Creek Valley about two miles from downtown Oak Ridge.

The principal radionuclides at ORR include Am-241, Cm-244, Cs-134, Cs-137, Co-60, Eu-152, Eu-154, Eu-155, H-3, Ni-63, Np-237, I-129, Pu-238, Pu-239, Pu-240, Ra-226, Ru-106, Sr-90, Tc-99, Th-230, Th-228, Th-232, U-233, U-234, U-235, and U-238 (DOE 94c).

Environmental Parameters

The soil in the vadose zone consists of clayey silt (ORNL 88, p. 14). In the absence of site-specific data, values which correspond to silt/clay were selected from tables of representative values in the RESRAD references (ANL 93b, DOE 93a) to characterize the hydraulic properties of the vadose zone of Reference Site VI.

The precipitation rate at Oak Ridge is 1.33 m/yr, with an evapotranspiration rate of 0.79 m/yr and a runoff rate of 0.43 m/yr (ORNL 88, pp. 16 and 17). Using the method described in the RESRAD handbook (ANL 93b, p. 9-4), the infiltration rate for Reference Site VI was calculated to be 0.76 m/yr.

The aquifer consists of weathered limestone with a gradient of 0.005, a hydraulic conductivity of 11 m/yr and an effective porosity of 0.0023 (ORNL 88, p. 21)—these values were assigned to Reference Site VI. In the absence of site-specific data, the total porosity in the saturated zone of Reference Site VI was assigned the representative values for limestone that is listed in the RESRAD tables. Since no exponential parameter (b) values for limestone are listed, that parameter was assigned the same value it has in the vadose zone.

The depth to the water table at Oak Ridge varies greatly depending on the location. Portions of the site are located near surface water bodies while other areas are located at higher elevations. The Environmental Research Areas (WAG 13) used to determine "average" site conditions at Oak Ridge have depths to the aquifer ranging from 2-10 m (ORNL 88, p. 20). The geometric mean of ≈ 4 meters was assigned to Reference Site VI.

K_d values for the principal contaminants at the ORR—isotopes of uranium and cesium—were

identified for four different areas at Oak Ridge in the survey data. Since the groundwater pathway makes a negligible contribution to human exposure for Cs-137 (radioactive decay reduces the activity to negligible levels during the travel to the aquifer), a higher cesium K_d leads to a longer residence time of Cs-137 in the soil, resulting in higher population exposures to external radiation. There would be no effect on the risk to the RME individual, since that risk is based on Cs-137 concentrations in the soil at time zero, which are not affected by the K_d . Therefore, the highest K_d reported at ORR for cesium (10,000) was assigned to Reference Site VI. The K_d values reported for uranium at ORR exceeded the range reported in the general literature. Since the groundwater pathway for uranium is potentially significant, the representative K_d for uranium in clay soils that is listed in the RESRAD tables was assigned to Reference Site VI.

Soil Contamination

Data sources. RI/FS studies have been performed on various sub-units of the ORR, notably the K-1407-B/C ponds at the ORGDP and the East Fork Poplar Creek, which receives liquid effluents from the Y-12 nuclear weapons plant. As with other sites, the emphasis of the RI/FS efforts has been on low-level waste burial grounds, ground and surface water contamination, and sediments, none of which are within the scope of this report. Although soil contamination is addressed in some of the studies, a limited assemblage of sub-sites cannot adequately characterize the size, complexity and variability of the ORR. Consequently, aerial survey data, despite their limitations, provide the best overview of soil contamination on the entire reservation and were used to characterize the soil contamination at the reference site.

The aerial survey, performed by EG&G in September, 1989, detected gamma radiation from Cs-137 and from Pa-234m, the short-lived daughter product of Th-234 (EGG 92b). Th-234, which has a radioactive half-life of 24 days, is in turn the daughter of U-238. U-238 that has been in place for more than a few months can be assumed to be in secular equilibrium with its short-lived daughters. Pa-234m can thus serve as a marker for U-238.

The aerial survey report includes maps of the area with isopleths delineating regions with different count rates in the energy range of the gamma ray of Ba-137m, the short-lived daughter of Cs-137, as well as isopleths showing count rates from the 1.0 MeV gamma ray of Pa-234m. Conversion factors in the report, based on uniform volume distributions of each nuclide, enable the calculation of specific activities of Cs-137 and Pa-234m in the soil. The lowest isopleth for Cs-137 delineated areas with soil concentrations above 1.5 pCi/g. Pa-234m is much more difficult to detect: less than 1% of its disintegrations produce gamma rays. Thus, only areas with Pa-234m (and hence U-238) concentrations in excess of 175 pCi/g were mapped. The areas of soil at different concentrations of each nuclides are listed in Table 4-14.

Table 4-14. Contamination of Surface Soils at Oak Ridge

Nuclide	Cs-137			Pa-234m	
	Concentration (pCi/g)	1.5-12.5	12.5-105	105-1250	175-1130
Area (m ²)	3.6E6	2E6	1.1E6	1.1E6	5.5E5

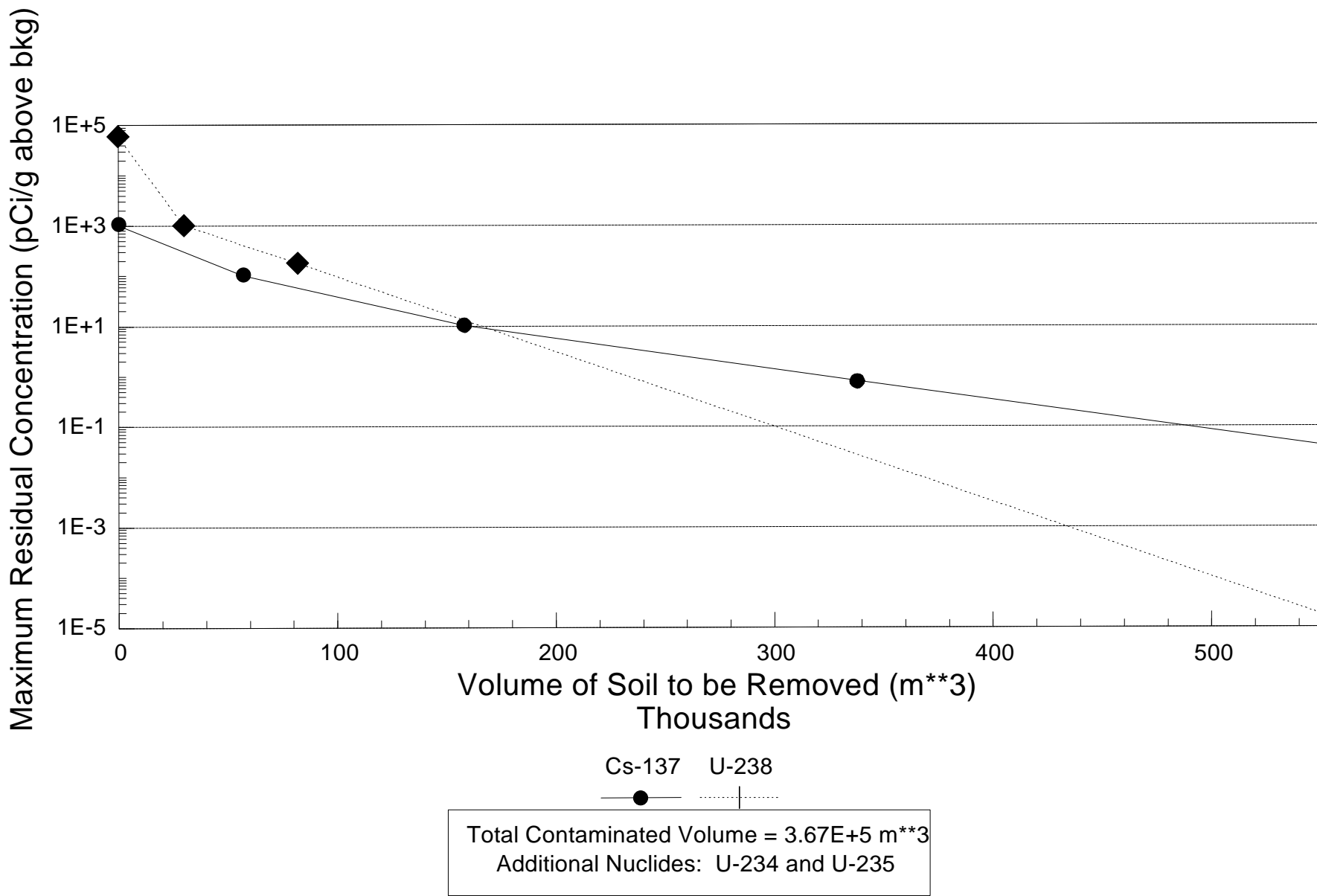
Modeling of contamination. The 1993 IDB lists contaminated soil volumes for four areas at Oak Ridge: the K-25 Site, ORNL, ORR (off-site) and the Y-12 plant. The total volume for all soil categories for the four areas is 4.3×10^5 m³. This volume may be compared to the area contaminated by U-238 if it is assumed that the IDB volume consists of soil with total uranium activities above the NRC free release limit of 30 pCi/g. (DOE has not established generic cleanup levels for uranium.) For uranium with relative isotopic abundances equal to natural uranium, this corresponds to approximately 15 pCi/g U-238. Log-linear extrapolation of the cumulative areas of U-238 activity, derived from the areas of Pa-234m activity shown in Table 4-14, results in an area of soil contaminated above 15 pCi/g equal to 3.1×10^6 m². (This is slightly larger than the area contaminated by Cs-137 in excess of its free-release limit, which is also 15 pCi/g.) Dividing this area into the IDB volume produces an average depth of contamination of 14 cm. To be consistent with the other reference sites that are based on aerial survey data, a value of 5 cm was selected as the thickness of the contaminated zone. (See descriptions of Reference Sites I, III and V.)

To construct a distribution of soil concentrations, the uranium was assumed to be commingled with the cesium (see discussion in Section 4.4.2, above). Minimum and maximum Cs-137 background concentrations at ORR are 0.08 and 4.1 pCi/g, respectively. The geometric mean of these values, ≈ 0.6 pCi/g, is assumed to be the average Cs-137 background at Reference Site VI. This background was subtracted from the Cs-137 concentrations in Table 4-14 to construct the Cs-137 distribution shown in Figure 4-15. The U-238 distribution was constructed by subtracting 1.2 pCi/g (the geometric mean of the minimum and maximum background concentrations at ORR, 0.97 and 1.4 pCi/g) from the listed concentrations and using log-linear extrapolation to determine the distribution at lower concentrations. It was further assumed that U-234, U-235 and U-238 are present in naturally occurring isotopic abundances. Only the U-238 distribution curve is shown in Figure 4-15. Both the Cs-137 and the U-238 curves were extrapolated to low specific activities to enable the modeling of cleanup to low risks.

Figure 4-15

Reference Site VI

Distribution of Contaminated Soil



REFERENCE SITE VII

Reference Site VII is based **in part** on the soil contamination at the Nevada Test Site (NTS). It is essential to bear in mind that the following analysis of this reference site, although it makes use of some of the data that characterize the NTS, cannot be considered to be an analysis of the actual site. In particular, the predicted impacts refer **only** to the reference site and cannot be used to predict the future impacts of the vastly more complicated NTS.

Basis Site Description

The NTS is 65 miles northwest of Las Vegas and occupies an area of 1350 square miles, making it the largest facility in the DOE complex. The site is surrounded on three sides by the 4,120-square-mile Nellis Air Force Range. NTS has been the primary site for atmospheric and underground nuclear weapons testing by DOE. These tests have released large quantities of radioactive material to surface and sub-surface soil both on and off site. Besides weapons testing, the site has also been used for radioactive waste disposal. The site includes contaminated sumps, injection wells, storage tanks, and other on-site facilities. The principal radionuclides at the NTS include Am-241, Cs-137, H-3, Pu-239, Pu-240, Sr-90, U-234, U-235, and U-238.

Environmental Parameters

The vadose zone at NTS, which consists of soil varying from loamy sand to clean sand, is approximately 100 meters thick (DOE 90a, pp. 1-3)—this value was assigned to Reference Site VII. Since no site-specific data were available, representative hydraulic parameters of sandy soils that are tabulated in the RESRAD references (ANL 93b, DOE 93a) were assigned to the vadose zone of Reference Site VII. Since site-specific K_d values were also unavailable, representative K_d 's for Cs-137 for sandy soils in the RESRAD tables were assigned to each nuclide at Reference Site VII.

The average annual precipitation ranges from 10 to 25 cm at different elevations (EPAa). No site-specific infiltration rate was available, however. Assuming any reasonable value for infiltration—even as high as 0.5 m/yr—and given the high K_d values for the radionuclides at this site, the travel time to the aquifer will greatly exceed the maximum 10,000 year assessment period. Therefore, the lowest infiltration rate, which leads to the longest retention of radionuclides in the uppermost soil layer, is the most conservative one for assessing the radiological impacts on future occupants of the site. An infiltration of zero has been suggested for NTS (DOE 90a, p. 12); this rate was therefore assigned to Reference Site VII.

Since no infiltration is assumed, the assignment of parameters to the saturated zone is irrelevant to the present analysis. However, the following data were gathered in the process of characterizing the site and are provided for future reference. The uppermost water-bearing unit consists of sand and gravel (DOE 90a, p. 5). Since site-specific parameters were not available, representative values of the hydraulic conductivity, the exponential parameter (b), and total and effective porosities of sand and gravel found in the RESRAD tables were assigned to the saturated zone of Reference Site VII. Since gradients in the aquifer are also unknown, a conservative value of 0.0001 was assigned to Reference Site VII.

Soil Contamination

Data sources. A draft DOE cost/benefit analysis lists "optimistic", "realistic" and "pessimistic" values for the areas and volumes of surface soil contaminated with plutonium at various concentrations (DOE 93d). The volumes corresponding to the "realistic" estimates are shown in Table 4-15, below. The total volume of soil at or above 10 pCi/g is listed as 2.2×10^7 m³, and the corresponding area as 370 km², resulting in an average depth of contamination of 5.9 cm. The isotopic composition of the plutonium is not specified. Since the IDB (SAND 92) indicates that Pu-239 is the most abundant plutonium isotope in transuranic wastes, the plutonium at NTS is assumed to be entirely Pu-239. It was further assumed that Am-241 was commingled with the Pu-239 in a 1:6 ratio, as cited in one of the aerial survey reports (EGG 83).

Table 4-15. Volumes of Soil Contaminated with Pu-239 at NTS

Concentrations (pCi/g)	>1000	>400	>200	>150	>100	>40	>10
Volume (m ³)	1.8E5	6.0E5	2.0E6	3.0E6	5.1E6	9.4E6	2.2E7

Although the cost/benefit analysis dealt only with plutonium, aerial surveys show extensive contamination by other nuclides. As is the case for aerial surveys of other DOE sites, Cs-137 is the most prominent gamma-emitter detected; it was generally used by EG&G as a marker for the extent of man-made gamma emitters. Co-60 was used for this purpose in one survey (EGG 85), for reasons that were not explained. Since the site-wide distribution of Co-60 contamination was not presented, this nuclide was not included in the present analysis. Due to its relatively short half-life of 5.3 years, it also presents less of a long-term problem. Large inventories of Eu-152 in the soil at Yucca Flat, one of the nuclear weapons test areas, were reported in a survey performed in 1978 (EGG 82a). The report did not show isopleths for this nuclide, however. Curiously, later surveys covering part of the same area made no mention of this

nuclide. It would appear that the aerial surveys were designed to monitor the extent of and periodic changes in the patterns of contamination, but not to characterize the distribution of the individual nuclides.

The Cs-137 data was presented in the form of isopleths superimposed on aerial photos of several areas of the NTS. Most of the isopleths indicate calculated exposure rates at an altitude of 1 m. Others show counts per second, while a few indicate soil concentrations of Cs-137 in pCi/g, calculated on the basis of a 5 cm-thick layer of uniform concentration. In the first two instances, conversion factors enable the calculation of soil concentrations of Cs-137.

Isopleths on the aerial photos of different areas of the NTS did not always correspond to the same concentration steps. Thus, the isopleths on one map delineated a region with soil concentrations between 6.8 and 23 pCi/g, while other maps showed activities between 6.6 and 14.3 pCi/g, with the next isopleth corresponding to 31.5 pCi/g. In such cases, the smallest intervals were used to characterize the soils. If the activity steps on different maps were identical or nearly the same, the differences were ignored (6.6 is not significantly different from 6.8) and the areas delineated by these curves were summed. If the activity intervals were overlapping, as in the above example, the area falling into the larger interval would be apportioned among the smaller intervals, using semi-log interpolation. A tabulation of the summed areas is presented in Table 4-16.

Table 4-16. Areas of Cs-137 Contamination at NTS

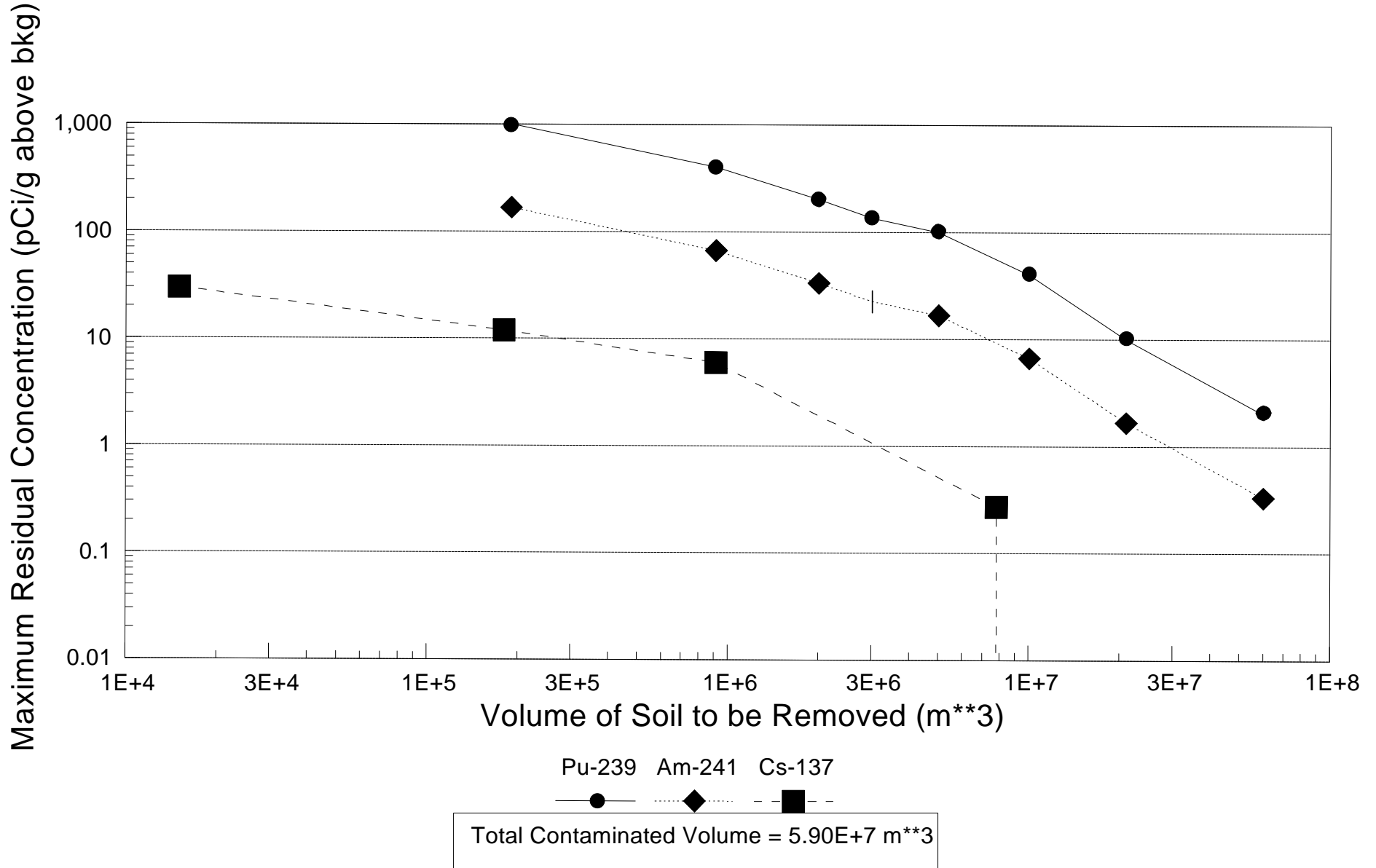
Concentration (pCi/g)	1-6.7	6.7-14.3	14.3-31.5	31.5-81
Area (m ²)	1.14E8	1.24E7	2.60E6	2.54E5

Modeling of contamination. The distribution of Pu-239 was constructed from the data listed in Table 4-15. The "typical" background concentration of Pu-239 at the NTS is listed as .047 pCi/g (Wal 94). Since this is insignificant in comparison to the listed concentrations, no correction was made. The distribution of Am-241 was constructed assuming a 1:6 activity ratio of Am-241 to Pu-239. To construct the distribution of Cs-137, the concentrations listed in Table 4-16 were corrected for the typical site background of 0.72 pCi/g. The thickness of the contaminated layer is assumed to be the same as was calculated from the Pu-239 data cited above. The resulting distributions for all three nuclides are illustrated in Figure 4-16.

Figure 4-16

Reference Site VII

Distribution of Contaminated Soil



REFERENCE SITE IX

Reference Site IX is based **in part** on radiological and environmental data for the contaminated soil east of the Rocky Flats Plant (RFP). It is essential to bear in mind that the following analysis of this reference site, although it makes use of some of the data that characterize RFP, cannot be considered to be an analysis of the actual site. In particular, the predicted impacts refer **only** to the reference site and cannot be used to predict the future impacts of the much more complicated RFP site.

Basis Site Description

The Rocky Flats Plant is an NPL site which is located on an 11-square mile site approximately 16 miles northwest of Denver. Its primary mission was to produce plutonium and other metal components for nuclear weapons. Environmental contamination at the plant is the result of past waste disposal practices, spills, and a fire that dispersed plutonium off site. There are 16 OUs at Rocky Flats where inactive sites are being investigated for possible contamination.

Environmental Parameters

The soil in the vadose zone is assumed to consist of the natural surficial material, which is an alluvial unit composed of cobbles, coarse gravel, sand and gravely clay (EGG 91, p. 99). This lithology suggests that a hydraulic conductivity representative of these soils would be relatively high. Measured hydraulic conductivity data at the site, however, indicate a relatively low conductivity of 3.3 m/yr (EGG 91, p. 100). A conductivity of 1×10^{-7} m/s (3.2 m/yr) was assigned to Reference Site IX.¹⁷ Representative RESRAD values of the total porosity, effective porosity and exponential parameter (b) in sandy soils were also assigned to Reference Site IX. No infiltration rate for Rocky Flats is available. An infiltration of 0.15 m/yr, representative of the arid conditions at Rocky Flats, was assigned to the reference site. K_d values representative of the soils at Rocky Flats, listed in the *Environmental Restoration and Waste Management - Five Year Plan* (DOE 90b, p. 152), were assigned to the nuclides at Reference Site IX.

The uppermost water-bearing unit consists of cobbles, coarse gravel, sand and gravely clay, all in hydraulic connection with a series of sandstones (EGG 91, p. 99). Calculated groundwater

17 It is unclear how representative the measured hydraulic conductivity values are, particularly in light of the wide range of groundwater velocities and relatively consistent groundwater gradients. Therefore, the representative RESRAD conductivity of a silty-clay loam, 53.6 m/yr, which falls roughly between a silty clay (32.6 m/yr) and a sandy clay (68.4 m/yr), may be more appropriate for use in future analyses of Reference Site IX. This higher value would make the analysis more conservative. Further information will be gathered to address this issue.

velocities in the upper aquifer range from 0.2 to 39 m/yr (EGG 91, pp. 106-112). Since a low hydraulic conductivity usually results in a more conservative risk assessment, a value of 3.2 m/yr, the same as for the vadose zone, was assigned to Reference Site IX. The exponential parameter (b) was assigned the representative values for sand found in the RESRAD tables, while the total and effective porosities were given the values for coarse gravel. Since no data on groundwater gradients at Rocky Flats were available, a conservative value of 0.0001 was assigned.

In the stream drainages, groundwater discharges at seeps are commonly found at the contact between the alluvium and the sandstone (EGG 91, p. 100). Presence of these seeps indicate a relatively shallow groundwater table, at least over portions of the site. A depth to the water table of 7.5 feet (2.29 m) was therefore assumed.

Soil Contamination

Data sources. The radionuclides dispersed over the site have been studied over the past two decades. The primary contaminant is Pu-239, commingled with Am-241 in a 6:1 ratio (Li 94). Although earlier studies have attempted to characterize the nuclide distributions by soil sample analyses (Kr 76), a definitive study, employing geo-statistical analyses, was recently presented by Litaor (Li 93). This study characterized the distribution of Pu-239,240 (and Am-241, by implication) in the area that lies east of RFP but within the DOE reservation. Samples were taken from the top ¼ inch of soil on 118 plots. Each plot was represented by 25 evenly spaced samples, composited together and analyzed for plutonium content.

The results of the analysis were presented as a series of isopleths drawn on a map of the study region. The plutonium concentrations exhibited a log-normal distribution, with a median activity of 4.31 pCi/g, a geometric standard deviation of 9, and observed minimum and maximum values of 0.05 and 1453 pCi/g, respectively.

Modeling of contamination. To create a distribution of soil volumes for Reference Site IX, it was necessary to first determine the area of contaminated zone. Measuring the area within the 7.5 pCi/g isopleth (the highest concentration entirely within the study area) yielded a values of 1.56×10^6 m². For a log-normal distribution with the cited parameters, the soil with activities above 7.5 pCi/g represents approximately 39% of the total, yielding in a total area of 4 km²—assuming that the pattern of contamination can be extrapolated beyond the DOE property line.

The vertical profile of plutonium concentrations has an exponential form. Litaor estimates that 95% of the plutonium is found in the first 15 cm of soil, which is equivalent to a relaxation length of 5 cm (Li 94). To determine the equivalent depth of a soil layer with a uniform vertical distribution, we observe that an infinitely deep column of soil with a relaxation length of 5 cm and a surface concentration of, say, 1 pCi/g contains the same amount of plutonium as a 5 cm-deep column with a uniform concentration of 1 pCi/g. Assuming this depth of contamination preserves the total activity in the soil, but underestimates the volume that must be remediated to meet a given cleanup level. This was therefore the thickness of the contaminated layer adopted for the radiological risk and impact modeling of Reference Site IX.

To construct the distributions used for the clean-up analysis, the volumes were calculated more exactly. First, the range of measured concentrations (0.05-1453 pCi/g) was divided into 100 intervals of equal width on a logarithmic scale. Next, for each interval, the area of soil having Pu-239 surface concentrations in that interval was calculated, based on the total area and the log-normal distribution. Next, the vertical exponential concentration profile was used to calculate the concentrations at successively greater depths under each of the 100 elements of area. In this manner, a three dimensional mathematical map was developed which enabled the construction of the distribution of Pu-239 shown in Figure 4-17. The distribution of Am-241 was constructed on the assumption that the two nuclides were found in a 6:1 ratio of specific activities.

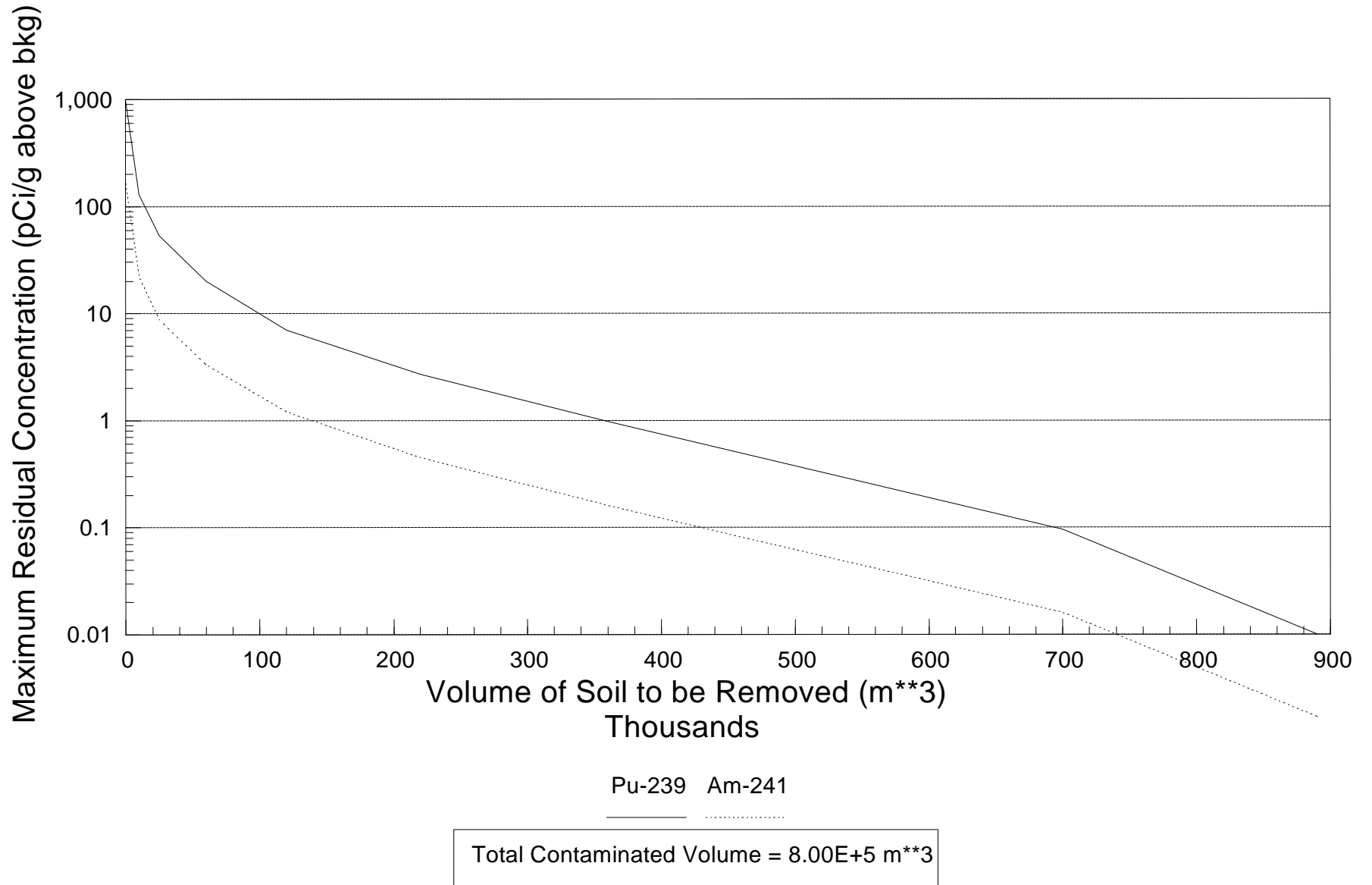
Litaor reviewed earlier studies of soil contamination in the Rocky Flats area (Li 93). He observed that the characterization of off-site plutonium contamination had been based on a paucity of data and lacked a rigorous mathematical treatment. He then noted that his data fail to support earlier assumptions about off-site contamination, concluding that the extent of such contamination and its impact on the local inhabitants had been overestimated. Because of these doubts, the earlier data were not used in characterizing Reference Site IX.

Aerial surveys, using NaI detectors, and *in-situ* surveys, employing a vehicle-mounted high-purity germanium (HPGe) detector, have also been performed at the RFP site (EGG 82b, EGG90, EGG91). The detection system used in the *in-situ* survey, although more restricted in its movement, characterizes soil distributions more accurately than the aerial survey. Its proximity to the surface—surveys were taken with the detector one meter and 7.5 m above the surface—gives it a far better spatial resolution, while its high energy resolution enables it to detect and measure the 60 keV gamma ray of Am-241 in the presence of a background radiation field. The distribution of Am-241 in the soils east of RFP, as characterized by the *in-situ*

Figure 4-17

Reference Site IX

Distribution of Contaminated Soil



survey, confirmed Litaor's analysis of the soil sample data. Since Am-241 and plutonium are known to be commingled (Pu-241 decays to Am-241 with a half-life of 14.4 years), Am-241 can usually serve as a marker for plutonium.

The aerial survey data showed a somewhat different distribution of Am-241 in the area east of RFP, with the isopleths shifted to the west. Because of the much lower resolution and sensitivity of these measurements as compared to the *in-situ* data, the latter data were not used in the present analysis.

Other areas of the RFP site, including the industrial area and the old landfill, were studied in the course of the aerial and/or in-situ surveys. The industrial area contains little exposed soil, and thus is not a good candidate for the present study. No Am-241 was detected at the old landfill by either the aerial or the *in-situ* surveys. The *in-situ* survey showed a contaminated area of roughly 10,000 m² with maximum U-238 concentrations of 13 pCi/g. This constitutes a minor site in terms of the present study; since it is about one mile away from the area of plutonium contamination east of the RFP, it is not properly part of the same site.

REFERENCE SITE X

Reference Site X is based **in part** on radiological and environmental data on soil contamination at the Paducah Gaseous Diffusion Plant (PGDP). It is essential to bear in mind that the following analysis of this reference site, although it makes use of some of the data that characterize the PGDP, cannot be considered to be an analysis of the actual site. In particular, the predicted impacts refer **only** to the reference site and cannot be used to predict the future impacts of the much more complicated PGDP site.

Site Description

The PGDP is located on a 750-acre site in Paducah, Kentucky, including 74 acres of process buildings. Its primary mission is the separation of uranium isotopes through gaseous diffusion. The process produces enriched uranium for nuclear fuel in commercial nuclear power plants and for military purposes. The US Enrichment Corporation has operated the site since 1993 under a lease from DOE.

There are two waste burial areas at Paducah, holding mainly uranium. For the purpose of environmental restoration, the site has been divided into 95 solid waste management units.

Environmental Parameters

The vadose zone at the PGDP consists of sandy and silty clay (DOE 92e, p. 3-21), with a hydraulic conductivity that ranges from 0.0035 to 210 m/yr (DOE 92e, p. 3-30). The geometric mean of 0.86 m/yr was adopted for Reference Site X. The effective porosity of the soil at Paducah is estimated at 0.2 (DOE 92e, p. 3-36), which was adopted for the reference site. Since no site-specific data for the exponential parameter (b) and total porosity were available, representative values of these parameters in sandy, silty clay soils were adopted for the vadose zone of Reference Site X. Because no representative values for sandy, silty clay are tabulated in the RESRAD references (ANL 93b, DOE 93a), the arithmetic means of the listed values for sandy clay and silty clay were used. Representative RESRAD K_d 's for clay soils were assigned to each nuclide at Reference Site X.

The precipitation rate at Paducah is 1.28 m/yr, with an evapotranspiration rate of 0.75 m/yr and a combined runoff and infiltration rate of 0.53 m/yr (DOE 92e, p. 3-2). These data were used to calculate an infiltration of 0.50 m/yr for Reference Site X, using the method outlined for the RESRAD code (ANL 93b, p. 9-4).

The saturated zone consists of alluvial deposits of sandy and silty clay overlying a gravel and sand regional aquifer (DOE 92e, p. 3-31). The hydraulic conductivity of this aquifer ranges from 315 to 3,150 m/yr. The geometric mean value of 1,010 m/yr was assigned to Reference Site X. The effective porosity is estimated at 0.2 (DOE 92e, p. 3-36)—this value was assigned to Reference Site X. The hydraulic gradient at Paducah ranges from 0.00013 to 0.00138, with an average value of 0.00075 (DOE 92e, pp. 3-37 to 3-38). The average value was assigned to Reference Site X. Since no site-specific data for the exponential parameter (b) and total porosity were available, representative RESRAD values of these parameters in gravel and sand were assigned to Reference Site X.

Soil Contamination

Data sources. Although a Phase II Site Investigation and a Public Health and Ecological Assessment have been performed at this site (DOE 91), the radionuclide contamination of on-site soils has not been characterized. The soil sampling program was directed at assessing the potential for off-site contamination; therefore, samples were taken at the peripheries of waste management units (WMUs) or in areas of known contamination. These data do not enable the development of a contamination profile of the soil. One of the reports cautions that the sample assays are likely to produce underestimates of on-site contamination and are not sufficient for a

baseline risk assessment. Other WMUs constitute low-level waste burial grounds and are thus not within the scope of the present report. Samples were taken throughout one unit: WMU-1, an oil landfarm. Buried metal has been detected at this site, raising the possibility that it, too, might be more properly classified as a waste disposal area. For lack of a better candidate, this site, with an area of approximately 8,900 m² and an estimated volume of 16,300 m³, is used to typify the pattern of soil contamination at the PGDP.

The 1993 IDB lists a total contaminated soil volume of 72,000 m³ at the PGDP.

Modeling of contamination. Radionuclide assays have been performed on 13 soil samples taken at various depths from six borehole locations at WMU-1. If it is assumed that the radionuclide concentrations in this soil exhibit a log-normal distribution and that the sample locations were randomly chosen, it is possible to use the assay results to construct a profile of soil contamination for each radionuclide in this subunit. If it is further assumed that this subunit typifies the pattern of soil contamination in the soil volume listed in the IDB, it is possible to characterize the soil contamination at the PGDP.

Radiological assays were performed on six core samples collected at WMU-1. Three of those cores, which reached a depth of 6 feet, were subdivided into three sections, each 2 feet long. The remaining three cores were analyzed as single samples. Thus, a total of 11 samples were assayed. The primary nuclides detected were Tc-99, U-238 and U-234. Nine assays for Tc-99 were performed. (It is assumed that the samples for which no specific activity is listed were not assayed for that nuclide.) Four samples were assayed for both U-238 and U-234.

Radionuclide distributions of uranium and Tc-99 at Reference Site X were constructed as follows. Each concentration was weighted by the core length of the sample or sub-sample that it represents. Since the specific activities of the two uranium isotopes did not appear to differ significantly, the average of the two activities was calculated for each sample and used in the present analysis. Log-normal distributions of Tc-99 and the two uranium isotopes were constructed, using the calculated values of the geometric mean and geometric standard deviation, which are listed below. Four values of background soil activities of U-238 for Kentucky were listed in Myr 81; the weighted average specific activity, 1.0 pCi/g, was subtracted from each value on the uranium distribution curves. Although the soil contaminants at PGDP most likely include U-235, no assay results were given. That nuclide was therefore not included in the distributions at Reference Site X. Figure 4-18 depicts the radionuclide distributions at Reference Site X.

Figure 4-18

Reference Site X

Distribution of Contaminated Soil

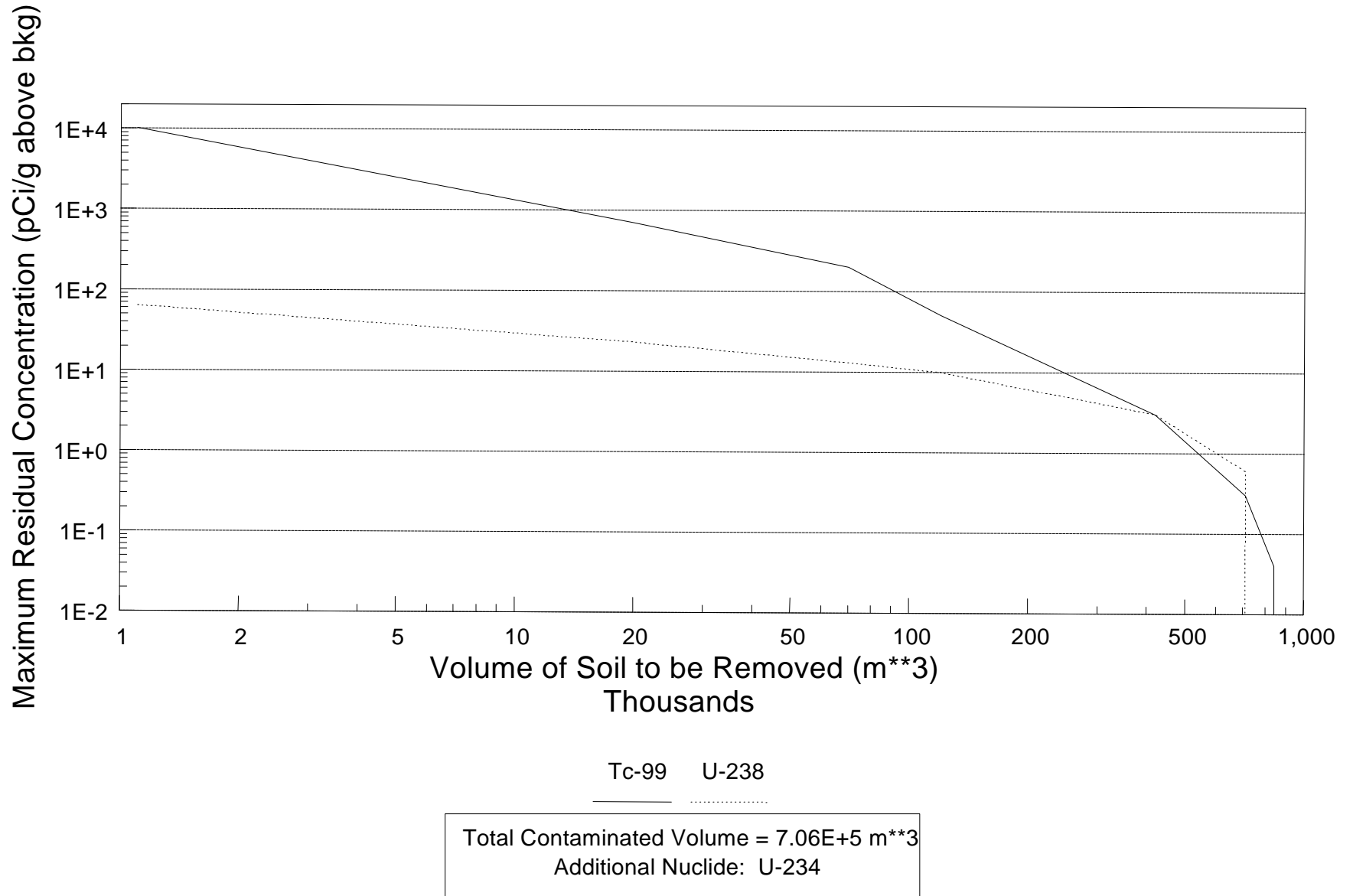


Table 4-17. Statistical Analysis of Radiological Assays of Soil Samples

Nuclides	No. of Samples	Concentration (pCi/g)			Geometric σ_D
		Geometric Mean	Maximum	Minimum	
Tc-99	9	3.08	640	0.6	15.4
U-238 & U-234	4	4.09	14.5	1.5	2.56

An earlier RESRAD analysis of the peak risk showed that the principal Tc-99 pathway was via crops raised in the contaminated soil. Since the root zone is assumed to consist of the top 90-cm soil layer, any technetium deeper than this would be inaccessible. Although Tc-99 contamination was found as deep as six feet (1.8 m), the highest concentrations were found in the top 12 inches (30.5 cm). It was therefore postulated that all of the Tc-99 activity is in the top 30.5 cm of soil at Reference Site X. The principal path for uranium, however, is via the groundwater. Postulating that the uranium at Reference Site X was uniformly distributed in the upper 1.8 m of the soil (the maximum depth of the boreholes) results in a shorter average travel time to the aquifer, and is therefore conservative.

Although this is the best characterization that can be performed using the available data, it is probably not an accurate description of the contamination pattern in WMU-1, nor does the pattern of this subunit represent the site-wide pattern of contamination at the PGDP.

REFERENCE SITE XII

Reference Site XII is based **in part** on radiological and environmental data for the Boeing Michigan Aeronautical Research Center (BOMARC) missile accident site. It is essential to bear in mind that the following analysis of this reference site, although it makes use of some of the data that characterizes BOMARC, cannot be considered to be an analysis of the actual site. In particular, the predicted impacts refer **only** to the reference site and cannot be used to predict future impacts of the much more complicated BOMARC site.

Basis Site Description

The BOMARC missile accident site occupies approximately 218 acres just east of Ocean County Highway 539 in Ocean County, New Jersey. It lies about 11 road miles east of McGuire Air Force Base and is contained in the Fort Dix Military Reservation on land leased to the Air Force. In 1960, an explosion and fire occurred in BOMARC Missile Shelter 204. A substantial amount of plutonium was released from Shelter 204 during the incident. The facility was deactivated in 1972, but remains under Air Force lease and jurisdiction.

Environmental Parameters

The soil in the vadose zone at BOMARC is a well-sorted, medium-grained, quartz sand containing minor amounts of gravel, clay, silt, and peat (ET 92, p. 2-8). In the absence of site-specific data, representative values of the hydraulic conductivity, exponential parameter (b), and total and effective porosities of sandy soils tabulated in the RESRAD references were assigned to the vadose zone of Reference Site XII. The depth to the water table ranges from 3.7 to 17 meters (ET 92, p. 2-9). The geometric mean of this range, 7.8 meters, was assigned to Reference Site XII. Since no K_d values were available, each radionuclide was assigned the geometric mean K_d value in sand tabulated in the RESRAD handbook.

The precipitation is 1.10 m/yr, with an evapotranspiration rate equal to 42% of the precipitation (0.46 m), the remaining precipitation being split between runoff and infiltration. Using the method outlined for the RESRAD code (ANL 93b, p. 9-4), the infiltration for Reference Site XII was calculated to be 0.54 m/yr.

The uppermost water-bearing unit consists of sand (ET 92, p. 2-7), with hydraulic gradients in the range of 0.002 to 0.009. A value of 0.002, the gradient of the Cohansey Sand layer (ET 92, p. 2-10), was assigned to the aquifer of Reference Site XII. Other hydrogeological parameters were assigned values representative of sandy soils that are tabulated in the RESRAD references.

Soil Contamination

Data Sources. A Remedial Investigation/Feasibility Study (RI/FS) was performed as part of the Installation Restoration Program at BOMARC in 1992. Extensive sampling and analysis activities were undertaken as part of the RI/FS, and results were available for surface and subsurface soils, as well as an *in-situ* gamma spectroscopy survey of the site.

The radionuclides of interest at the site were selected on the basis of the site's history. The contamination at BOMARC consists of weapons-grade plutonium. The primary isotope is Pu-239, but small quantities of Pu-238, Pu-240, Pu-241 and Am-241 (from beta decay of Pu-241) are also present. Pu-239 serves to represent the plutonium isotopes in this analysis. Am-241 has been detected by the HPGe gamma survey: its specific activity was estimated to equal one sixth of the Pu-239 activity (ET 92, p. 4-93).

The radioactive contamination is not distributed evenly over the site but occurs in discrete "hot spots", which in several instances, have been found to be a single particle, presumably containing plutonium oxide (ET 92, p. 1-13). Thus, radiation measurements can vary over a small area.

The results of the *in-situ* survey were presented as a series of isopleths drawn on a map of the site (ET 92, p. 4-69). These isopleths delineate areas of different surface activities, in units of $\mu\text{Ci}/\text{m}^2$. Because of the irregular distribution of contamination at the site, these data are not an accurate measure of the radionuclide concentrations in the soil. They do, however, provide a good measure of the total contaminated area, which was determined by measuring the area of the map enclosed by the outermost isopleth, which corresponds to a Pu-239 activity of $0.2 \mu\text{Ci}/\text{m}^2$.

Modeling of contamination. Six sampling stations were used to determine the depth profiles of contamination at the BOMARC site. Unfortunately, these samples only characterized the top 18 inches of soil, even though contamination was discovered at depths of 10 feet for several borehole samples. Because of this limitation, new depth profiles were conducted for each of the six sampling stations as well as each of the 26 borehole locations.

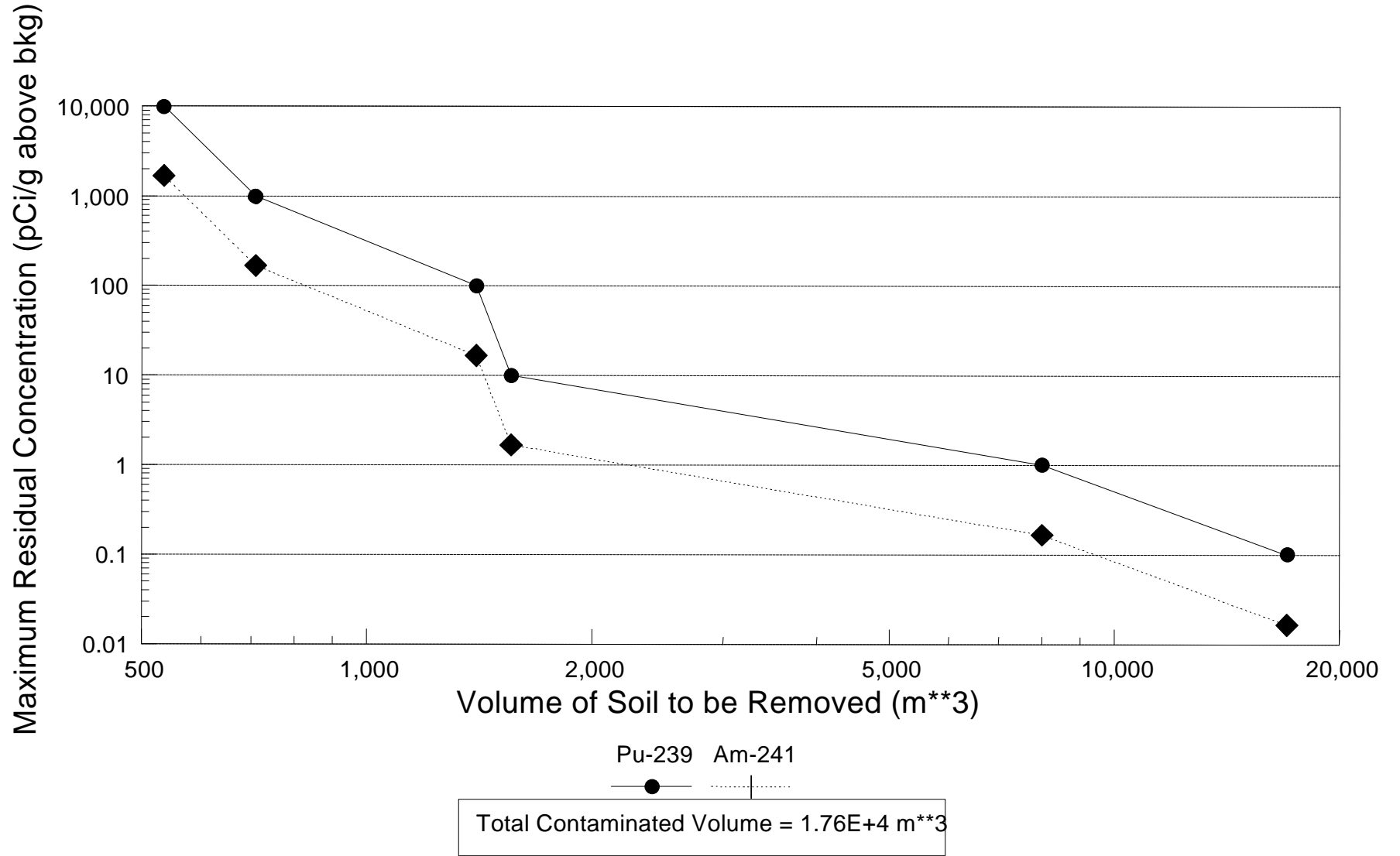
At each location, the Pu-239 concentration was measured at various depths. The volume of the contaminated soil for each depth increment was calculated, based on the surface area of contamination determined by the *in-situ* gamma survey.

Several small areas identified by the HPGe survey were not sampled for depth analyses, although surface soil samples were collected from each location. For these areas the contamination was assumed to be contained in the top 6 inches (15 cm) of soil and the volume of contaminated soil is calculated based on this assumption. The Pu-239 concentration for that volume of soil was set equal to the concentration found in the surface soil sample representing that area.

These volumes of soil were used to produce the distributions shown in Figure 4-19. The total volume of soil for the site was divided by the total area of the site to estimate the average depth of contamination on the site.

Quality of data. The characterization of the plutonium contamination in the BOMARC soils appears to be comprehensive, including over 250 contaminated soil samples and 30 randomly

Figure
4-19
Reference Site XII
Distribution of Contaminated Soil



selected background samples. The individual sample results were included in the report along with a discussion on possible sources of error. The largest single source of error in the measurements was the non-homogeneous nature of the contamination. Loss of samples was also identified as a potential error.

The areal extent of contamination on the site was determined based on results of the HPGe survey. Over 400 measurements were made to produce the isopleths used in this analysis. The report includes a discussion on the limitations and detection capabilities of the method. Once again, the largest single source of error in the measurements was determined to be non-homogeneity of the contamination.

REFERENCE SITES XIII A, -B & -C

Three Reference Sites, designated XIII A, XIII B and XIII C, represent DU sites in the Northeast, Southeast and Southwest, respectively. The area, volume and contamination profile of the soils at these sites are based **in part** on the soil contamination at the Aberdeen Proving Ground (APG). It is essential to bear in mind that the following analyses of these reference site, although they make use of some of the data that characterize the APG, cannot be considered to be analyses of the actual site, nor of any other particular DU site. In particular, the predicted impacts refer **only** to the reference sites and cannot be used to predict the future impacts of the much more complicated APG or other actual site.

Environmental Parameters

The environmental parameters that characterize these reference sites are discussed under the sub-heading "Generic Reference Site Parameters" on Section 4.4.1, above.

Basis Site Description

The processing of natural uranium to obtain uranium enriched in the fissile isotope uranium-235 results in an abundance of waste or "tails" referred to as depleted uranium (DU). The high density and low specific activity of depleted uranium make it useful for several applications, one of which is military munitions.

The military uses depleted uranium in armor-penetrating weapons. The Army has developed and refined the design of these munitions based on "soft" and "hard" testing. Soft testing is conducted to assess and refine the accuracy of the munitions. The tests are performed on outdoor firing ranges where the depleted uranium round is fired at the target, or typically a sand-filled

catch box, located several kilometers from the gun. Hard testing is conducted to evaluate and refine the destructive capability of the munitions. In hard testing, either actual munitions or scale mockups are fired at an armor-plated target.

All branches of the Department of Defense test depleted uranium munitions at several proving grounds around the country. A total of seven military sites have been used for conducting munitions testing. The Army's Ballistic Research Laboratory (BRL) and Combat Systems Test Activity (CSTA) facilities at the Aberdeen Proving Ground in Aberdeen, Maryland conduct both hard and soft testing. The Army also conducts soft testing at the Yuma Proving Ground in Yuma, Arizona and Jefferson Proving Ground in Madison, Indiana. Once every two or three years, the Army conducts an open-air hard test firing at the Nevada Test Site. The Air Force directs operation of an outdoors hard-target range in Las Vegas at the Nellis Air Force Base and soft-target testing at the Eglin Air Force Base in Florida. Both soft- and hard-testing are conducted by the Navy at China Lake, California. The Navy is also in the process of cleaning up a retired hard-testing site in Virginia known as Dahlgren. APG is considered to represent the bounding case within this category based on the fact that hard-test firing was conducted outdoors prior to 1980, and since it conducts the greatest number of test firings.

The Army's CSTA weapons testing program at Aberdeen Proving Ground has included outdoor firing of depleted uranium projectiles at two locations known as the Ford's Farm range and the B-3 range. Both areas are east of the Bush River, with the B-3 range about 6 km northeast of Ford's Farm.

Ford's Farm Range. From the late 1960's to 1980, the Ford's Farm area was used as an open-air hard-target testing site. As of early 1978, approximately 1600 kg of DU in the form of projectiles were fired 200 m into various types of armor (metal) targets. When the DU projectiles hit the plates, the DU ignites, reducing it to sizeable fragments and a particulate cloud (DU dust). The cloud settled on the ground and nearby vegetation, with the location of the deposition dependent on wind and weather conditions.

B-3 Range. The B-3 range is the site where the outdoor soft-target testing of munitions are performed. The B-3 range encompasses a large land area extending approximately 8000 m downrange from the firing position. On the range, projectiles are fired for accuracy at soft targets positioned 1000, 2000, 3000, and 4000 m downrange. These projectiles pass through the targets intact and usually burrow into the ground at locations beyond the target;

fragmentation into visible pieces is possible if projectiles hit trees or rocks either above or below ground. The intact projectiles or fragments come to rest on the surface or buried underground.

A limited environmental survey, including the collection and analysis of the soil samples, was conducted to determine the location of DU around the Ford's Farm and B-3 target areas. This survey only assessed soils believed to contain the highest levels of DU contamination based on (1) an estimate of where most projectiles were landing at the B-3 range and (2) an aerial survey map of the Ford's Farm range and surrounding areas indicating the approximate locations of elevated radiation levels.

The study made no effort to estimate the natural background levels of uranium in an unaffected area outside the Aberdeen Proving Ground. However, two samples were collected from a location on the Proving Ground that was thought to be unaffected as a comparison with samples taken from the firing range areas. An average uranium concentration of 2.0 $\mu\text{g/g}$, with an estimated analytical error of $\pm 35\%$, was calculated using these reference area samples. This value coincides with the average uranium concentration of 1.8 ppm in U.S. soils, as cited in NCRP Report 94.

Modeling of contamination. Using the above-cited environmental survey data, the total area and volume of depleted uranium soil contamination at the two firing ranges were estimated. This estimate incorporated the following assumptions:

- Analytical results related to a specific grid point were used as the average uranium concentration of soils within the entire grid area (38 m x 38 m).
- The APG soil measurements of uranium that indicated less than 2.7 $\mu\text{g/g}$ were considered to be below background levels, and those grid point sample results were not included in the area/volume calculation.
- Soils below a depth of 7.6 cm were not considered to be contaminated.
- DU was assumed to have the isotopic ratios listed in Table 4-18, below.

Table 4-18. Relative Isotopic Masses (%) of Natural and Depleted Uranium

Isotope	Natural Uranium	Depleted Uranium
U-238	99.2739	99.75
U-235	0.724	0.25
U-234	0.0057	0.0005

Using these assumptions, the areas and volumes of depleted uranium soil contamination was calculated as follows:

<u>Location</u>	<u>Area (m²)</u>	<u>Volume (m³)</u>
Ford's Farm Range	38,990	2,970
B-3 Range	<u>2,890</u>	<u>220</u>
TOTAL	41,880	3,190

Figure 4-20 shows the radionuclide distributions at Reference Site XIII.

REFERENCE SITES XVIA, -B & -C

Reference Sites XVIA, XVIB, and XVIC are based **in part** on radiological data from commercial nuclear power plants. It is essential to bear in mind that the following analysis of these reference sites, although it makes use of some of the data that characterize these plants, cannot be considered to be an analysis of the actual sites. In particular, the predicted impacts refer **only** to the reference sites and cannot be used to predict the future impacts of the more complicated and highly varied nuclear plants in general, nor of any one plant.

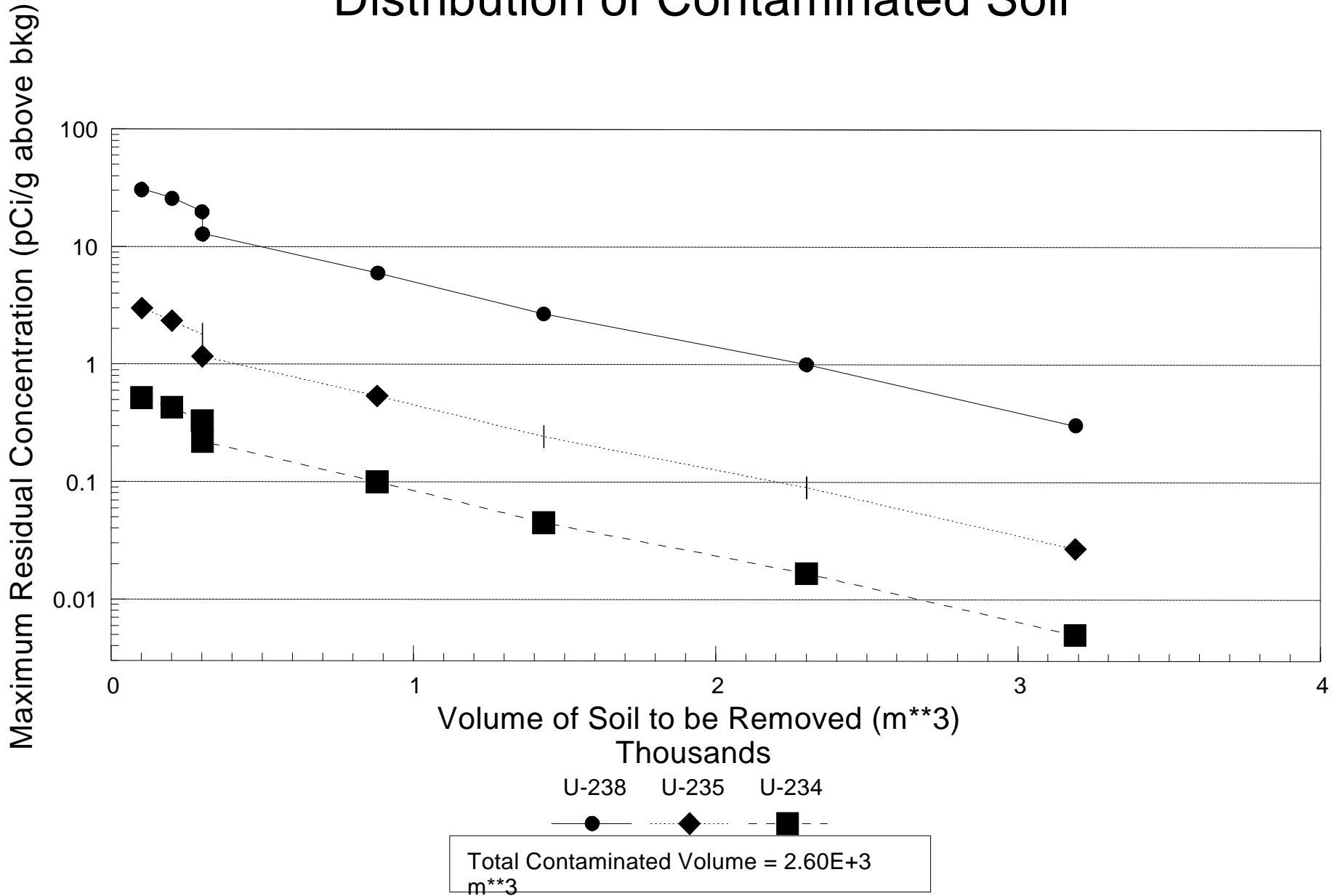
Soil Contamination

Data sources. These reference sites are based on a composite of the patterns of soil contamination at six commercial nuclear power plants, as reported by Abel *et al.* (Ab 86). Soil samples were collected at each of the six plants, each sample covering an area of 0.1 m² but varying in depth from 3 cm to 15 cm. Deeper samples were subdivided into stratified layers. The sampling plan was neither systematic nor consistent from plant to plant. At several plants, samples were taken within the exclusion area boundary in different compass directions from the reactor. In addition, biased samples were collected in areas of known or suspected contamination.

Figure 4-20

Reference Site XIII

Distribution of Contaminated Soil



The description of the sampling plan by Abel *et al* (Ab 86) also varies from plant to plant. In some cases, both the sample location and the rationale for its selection are stated. In others, only the location is given, and in still others no information on the sampling plan is presented. For all samples, the depth of the soil layer and the concentrations of up to 25 radionuclides are listed.

Modeling of contamination. An examination of the concentration data indicated that the following five nuclides which had been detected at all six plants were possible causes of concern: Co-60, Cs-134, Cs-137, Mn-54 and Sb-125. This list was further reduced after comparing the site-specific RESRAD risk factors, typical soil concentrations and radioactive half-lives. (Relatively short-lived nuclides will have largely decayed away during the time between the cold shut-down of a given plant and the release of the site following decommissioning.) Co-60 and Cs-137 were thus selected as principal nuclides of concern in the analysis of the sites. (Abel *et al.* cite Co-60 as the limiting nuclide.)

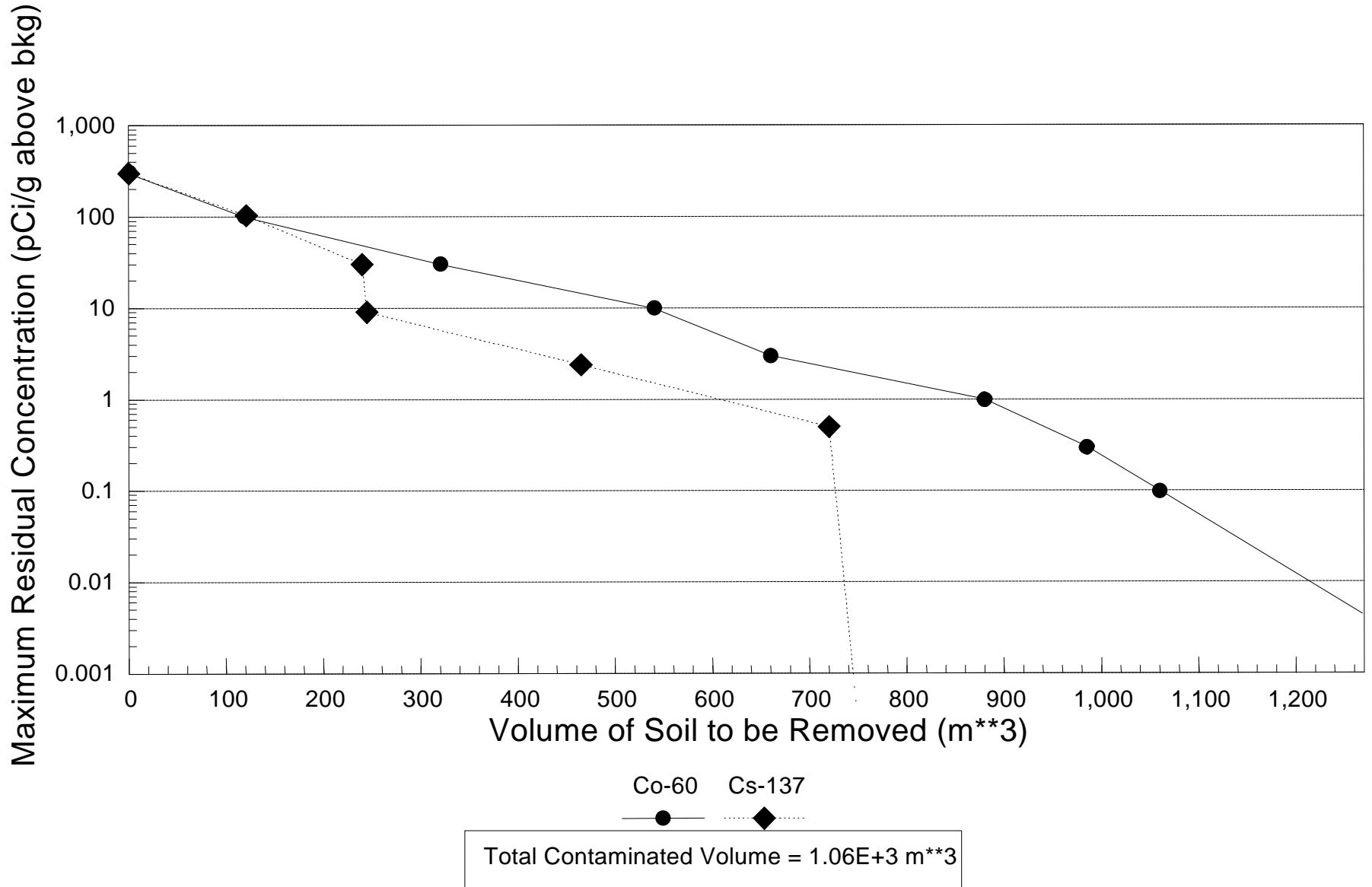
Based on the available information on the sampling plan, biased on-site samples and remote off-site samples were eliminated from the characterization scheme. The data from the remaining sample analyses for the six plants were pooled. Each concentration measurement was weighted by the thickness of the soil layer from which it was collected, all samples being assumed to represent equal areas. Frequency histograms were constructed for Cs-137 and Co-60 by grouping the individual readings into six or seven concentration ranges.

The thickness of the contaminated zone was assumed to be 15 cm, the maximum depth of the soil samples. The volume was calculated on the basis of requests for on-site disposal at nine other nuclear power plants, made to the NRC in compliance with 10 CFR 20.302 (John 94). The average volume of soil at these nine plants was 573 m³. For the purpose of the present analysis, it was assumed that these requests referred to soils contaminated above the NRC's free release limits, which are 8 pCi/g for Co-60 and 15 pCi/g for Cs-137 (John 94). Using the sum of fractions rule with the frequency histogram for Reference Site XVI, it was calculated that 54% of the sampled soils at the six plants studied by Abel *et al* were above the free release limit. The total sampled volume was therefore calculated to be 1,060 m³. The distribution of the two nuclides at Reference Site XVI is illustrated in Figure 4-21. The curves were extrapolated to low concentrations to enable the modeling of cleanup to low risk levels.

Figure 4-21

Reference Site XVI

Distribution of Contaminated Soil



Although the data on the basis sites for Reference Site XVI is admittedly sparse, little or no better data is believed to exist. Operating nuclear power plants are not required characterize the radioactive contamination of their soil; it is therefore unlikely that they would do so. Since no sites of decommissioned plants have yet been released, and since the buildings and equipment at these sites pose by far the greater radiological hazard, the soils on these sites have not been extensively studied.

REFERENCE SITES XVIII A, -B & -C

Reference Sites XVIII A, XVIII B, and XVIII C are based **in part** on radiological data from the Cintichem, Inc. reactor facility. It is essential to bear in mind that the following analysis of these reference sites, although it makes use of some of the data that characterize this reactor, cannot be considered to be an analysis of the actual site. In particular, the predicted impacts refer **only** to the reference sites and cannot be used to predict the future impacts of the more complicated reactor site, nor of any other site of this type.

Soil Contamination

Data sources. These reference sites are based on a reference research reactor. The pattern of soil contamination is based on data from the Cintichem, Inc. reactor facility in Tuxedo, N.Y., which is currently undergoing decommissioning. This facility was constructed as a research reactor but was subsequently converted to the production of radioisotopes. The pattern of soil contamination at this site may therefore not be typical of that at a research reactor; however, soil contamination data were not available for any other research reactor.

Modeling of contamination. The area and thickness of the contaminated zone were given in the results of a RESRAD analysis performed by Cintichem (Cin 92). The area was initially assumed to be 5,400 m². In a subsequent comment, Cintichem estimated that the actual area was 61% of this value, or approximately 3,300 m². Cintichem assumed the thickness to be 15 cm, which, combined with the reduced area, yields a volume of approximately 500 m³. Scant data on the distribution of radionuclides are found in the Cintichem report. The largest volume of soil, which is in the area of the underground exhaust system, is characterized as having equal concentration of Cs-137, Sr-90 and Ce-144 with peaks "possibly reaching the 10,000 pCi/g level." Since the facility has been shut down since February, 1990, Ce-144, which has a radioactive half-life of 284 days, is no longer a significant problem. Cs-137 and Sr-90 were therefore assumed to be the nuclides of concern in the present analysis (Cintichem's RESRAD analysis was limited to Sr-90).

The distributions of the two nuclides at Reference Site XVIII were constructed by assuming that both concentration had truncated log-normal distributions with a maximum (99.9 percentile) value of 10,000 pCi/g and a minimum (0.1 percentile) of 0.5 pCi/g. (Cs-137 concentrations of less than 0.5 pCi/g are in the range of global fallout (Cin 92)). These distributions are illustrated in Figure 4-22.

REFERENCE SITES XXA, -B & -C

Reference Sites XXA, XXB, and XXC are based **in part** on radiological data from the Babcock and Wilcox plant at Apollo, Pennsylvania. It is essential to bear in mind that the following analysis of these reference sites, although it makes use of some of the data that characterize this plant, cannot be considered to be an analysis of the actual site. In particular, the predicted impacts refer **only** to the reference sites and cannot be used to predict the future impacts of the more complicated plant site, nor of any other site of this type.

Soil Contamination

Data sources. Reference sites XXA, XXB, and XXC are based on a reference uranium fuel processing and fabrication plant. The soil contamination was characterized on the basis of data for the Apollo plant. The plant has been decommissioned and site remediation is currently under way. The site is listed in the NRC's Site Decommissioning Management Plan (SDMP) (NRC 93).

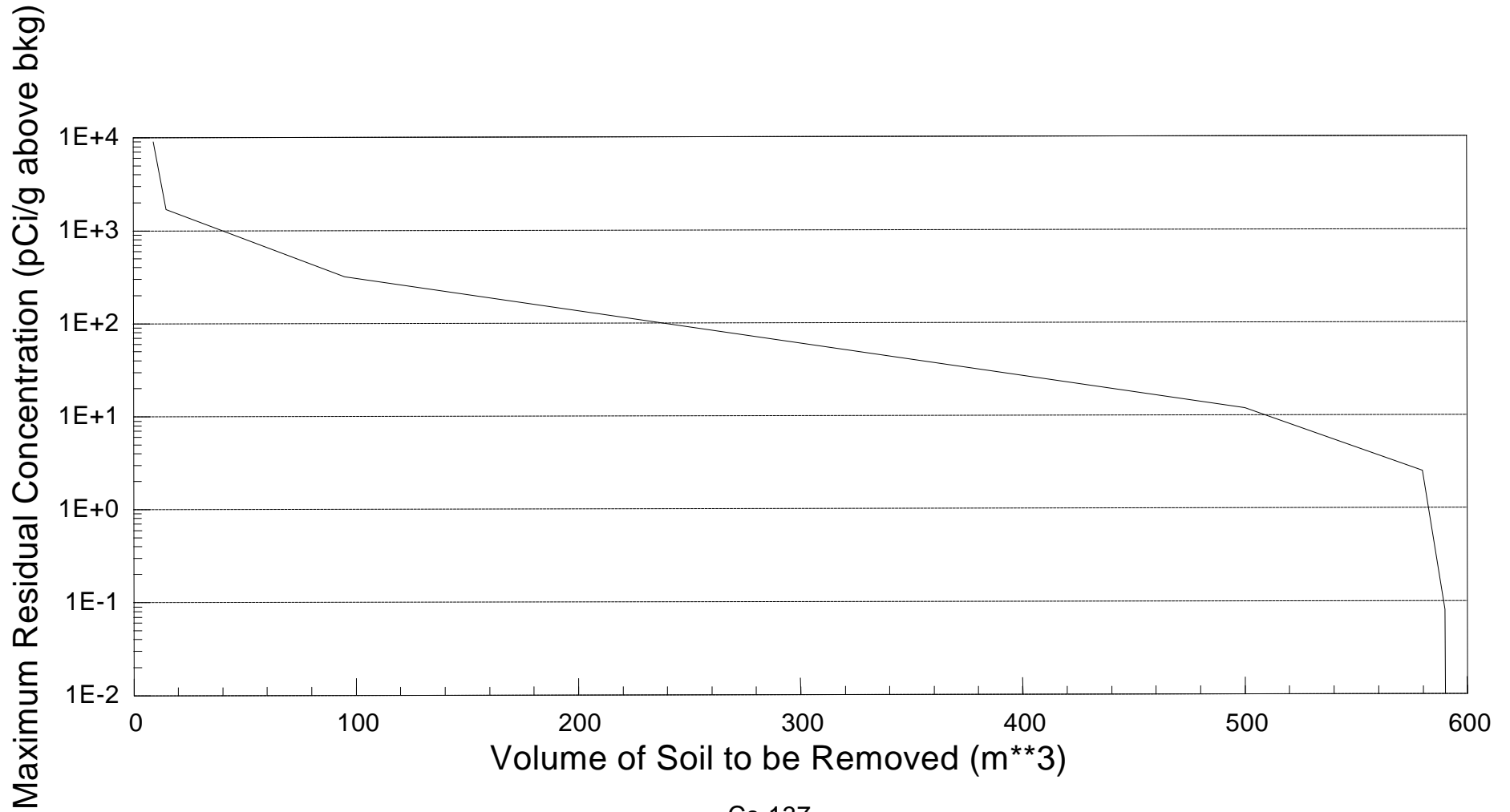
Although moderate concentrations of Tc-99 (3-160 pCi/g) have been reported in one portion of the site, the principal nuclides of concern are the isotopes of uranium. Soil and building materials with specific activities of total uranium in excess of 2,000 pCi/g had been disposed of as low-level waste. However, uranium soil concentrations up to that level remained at the beginning of the recent cleanup phase, which is documented in the quarterly progress reports for 1992 (B&W 92a, B&W 92b, B&W 93a, B&W 93b).

The progress reports cite volumes of "potentially contaminated" soil in various portions of the site, but do not report the distribution of concentrations. Although the total volume of "potentially contaminated" soil is stated to be 1,410,800 ft³ ($\approx 40,000$ m³), elsewhere the reports observe that sampling of the excavated soils reveals much of it to be below the NRC's free release limit of 30 pCi/g total uranium. The reports also state that approximately 17 m³ of soil, having uranium activities of 3,000 to 9,000 pCi/g, had been shipped to a low-level waste repository.

Figure 4-22

Reference Site XVIII

Distribution of Contaminated Soil



Cs-137

Total Contaminated Volume = 5.85E+2 m³
Additional Nuclide: Sr-90

The most current information about this site was obtained in a telephone conversation with Don Sgarlatta, a health physicist employed by Babcock and Wilcox, on August 25, 1994. Sgarlatta, who is supervising the cleanup activities, reported that all soil contaminated with 30 pCi/g or more of total uranium has been shipped off site. The total volume shipped during the recently completed cleanup phase was 773,100 cubic feet. This is approximately one-half the volume of potentially contaminated soil cited in the B&W reports and about twice the volume cited in the SDMP, which is 380,000 ft³. The volume cited by Sgarlatta is thus quite consistent with the other sources.

The inventory of radioactive waste, which consists primarily of soil, crushed rock and other excavated materials, but also includes some rubble from demolished buildings, is listed in Table 4-19. The volumes of waste with uranium contamination between 30 and 200 pCi/g of total uranium activity were reported by Sgarlatta. The volume above 2,000 pCi/g, which had been removed prior to the most recent cleanup phase, was taken from B&W 92a.

Table 4-19. Uranium Contamination at Reference Site XX

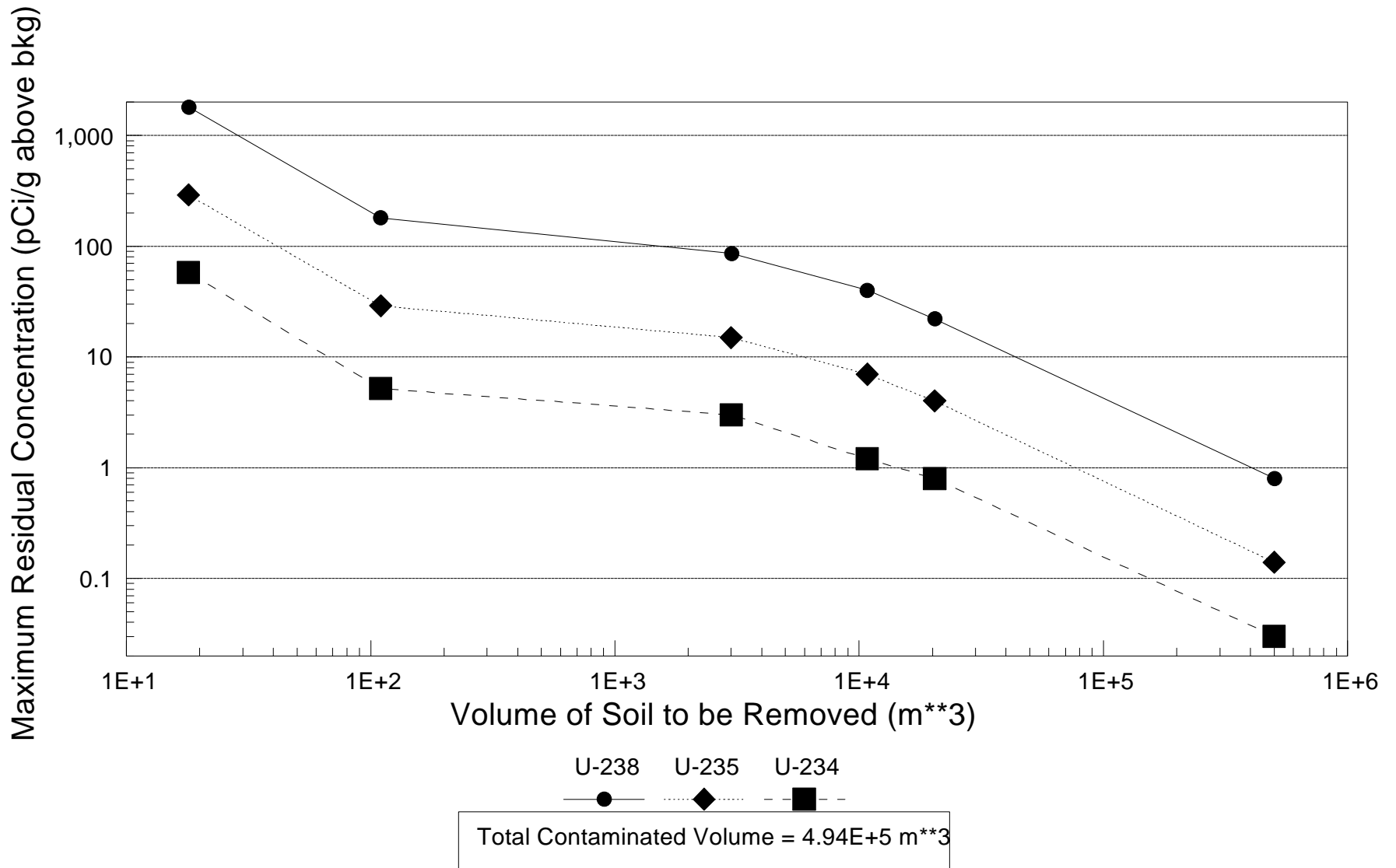
Concentration (pCi/g) ^a	>2,000	200-2000	100-200	50-100	30-50
Volume (m ³)	17	130	2888	8750	10,120
^a Sum of 3 specific activities					

Modeling of contamination. Sgarlatta stated that the uranium on site had an average enrichment of 3% (by weight) of U-235. Actual isotopic ratios of U-238, U-235 and U-234 were not available at the present time. Based on the isotopic ratios of depleted uranium, which is the material left over from the enrichment process, it was inferred that the mass ratios of the three isotopes U-238:U-235:U-234 were 0.97:0.03:0.0031, resulting in relative activities of 0.14:0.028:0.83. The total uranium activities listed in Table 4-19 were apportioned among the three isotopes according to these ratios. The natural background concentration of U-238 in the vicinity of Blairsville, Pennsylvania, the nearest cited location to the Apollo site, has an average value of 1.0 pCi/g (Myr 81). The natural background concentrations of the three uranium isotopes were subtracted from their calculated activities to construct a radionuclide distribution for Reference Site XX. To enable the modeling of cleanup to very low risk levels, the extrapolated volume with a specific activity ≥ 1 pCi/g above background of total uranium was calculated by log-log extrapolation of the tabulated data. The resulting distribution curves are illustrated in Figure 4-23.

Figure 4-23

Reference Site XX

Distribution of Contaminated Soil



The area of contamination is assumed to be equal to the site area, which is 5 acres or approximately 20,000 m². The average thickness of the contaminated zone is 36 cm if only the soil volume above 30 pCi/g is considered. This was the thickness used in calculating the population impacts. For the purpose of calculating the risk to an individual, a more conservative value of 1 m was used. Both values are listed in Table 4-6.

REFERENCE SITES XXIA, -B & -C

Reference Sites XXIA, XXIB, and XXIC are based **in part** on radiological data from the Molycorp, Inc. plant in Washington, Pennsylvania. It is essential to bear in mind that the following analysis of these reference sites, although it makes use of some of the data that characterize this plant, cannot be considered to be an analysis of the actual site. In particular, the predicted impacts refer **only** to the reference sites and cannot be used to predict the future impacts of the more complicated plant site, nor of any other site of this type.

Soil Contamination

Data sources. These reference sites represent NRC-licensed rare earth extraction facilities. However, the soil contamination data are taken from the Washington, Penn. plant, which is a rare metal smelting facility for which extensive soil characterization studies have been performed. The SDMP (NRC 93) cites the area of the site as 7 hectares (70,000 m²); however, the portion of this site selected for the detailed study of Th-232 soil concentrations had an area of 13,800 m², as measured on a map of the study area (Wr 90). This area included eight holding ponds, which are treated as soil surfaces for the purpose of the present analysis.

Wrenn *et al.* (Wr 90) drilled 28 boreholes over the study area that appear to be randomly distributed over the ground surface—excluding the ponds, which have a combined area of approximately 2,000 m². Two additional holes were drilled, each five feet (1.5 m) from one of the original holes, to check the spatial variability of the soil concentrations. Each hole was drilled to a depth of 19 feet (5.8 m) or to bedrock, whichever was reached first. Radiation exposure rates were measured at 6-inch (15 cm) intervals from the top to the bottom of each hole, using a NaI scintillation detector that had been calibrated against a PIC exposure meter in the above-ground radiation field at the Molycorp site. The exposure measurements were then converted to concentrations of Th-232 (assumed to be in equilibrium with its daughter products), using published conversion factors. Because the conversion factors were based on a 4 π geometry (*i.e.*, that the detector was completely surrounded by soil), concentrations were calculated only at depths of 1.5 ft (46 cm) or more, since the effect of the open hole above the detector becomes

negligible at this depth. Two more holes were drilled at uncontaminated locations in the vicinity of the site to determine the local soil background radiation levels.

Modeling of contamination. Upon comparing the readings in the two pairs of adjacent boreholes, Wrenn *et al.* concluded that the spatial variability was so great that the borehole data cannot be used to construct a three-dimensional map of soil concentrations. In the present analysis, however, the distribution of Th-232 in the soils of the study area was characterized by the frequency distribution of the concentrations at various depths in the 30 on-site boreholes. (Since the readings in the two pairs of adjacent boreholes did differ, they were treated as independent locations.) A frequency histogram was constructed by grouping the individual readings into nine concentration ranges. In addition, since the solid angle subtended by the contaminated soil in the uppermost part of the borehole gradually changes from 2π to 4π with increasing depth, it was possible to estimate the concentrations in the upper layers based on the geometry the concentrations in the upper 1.5-foot portions of the boreholes.

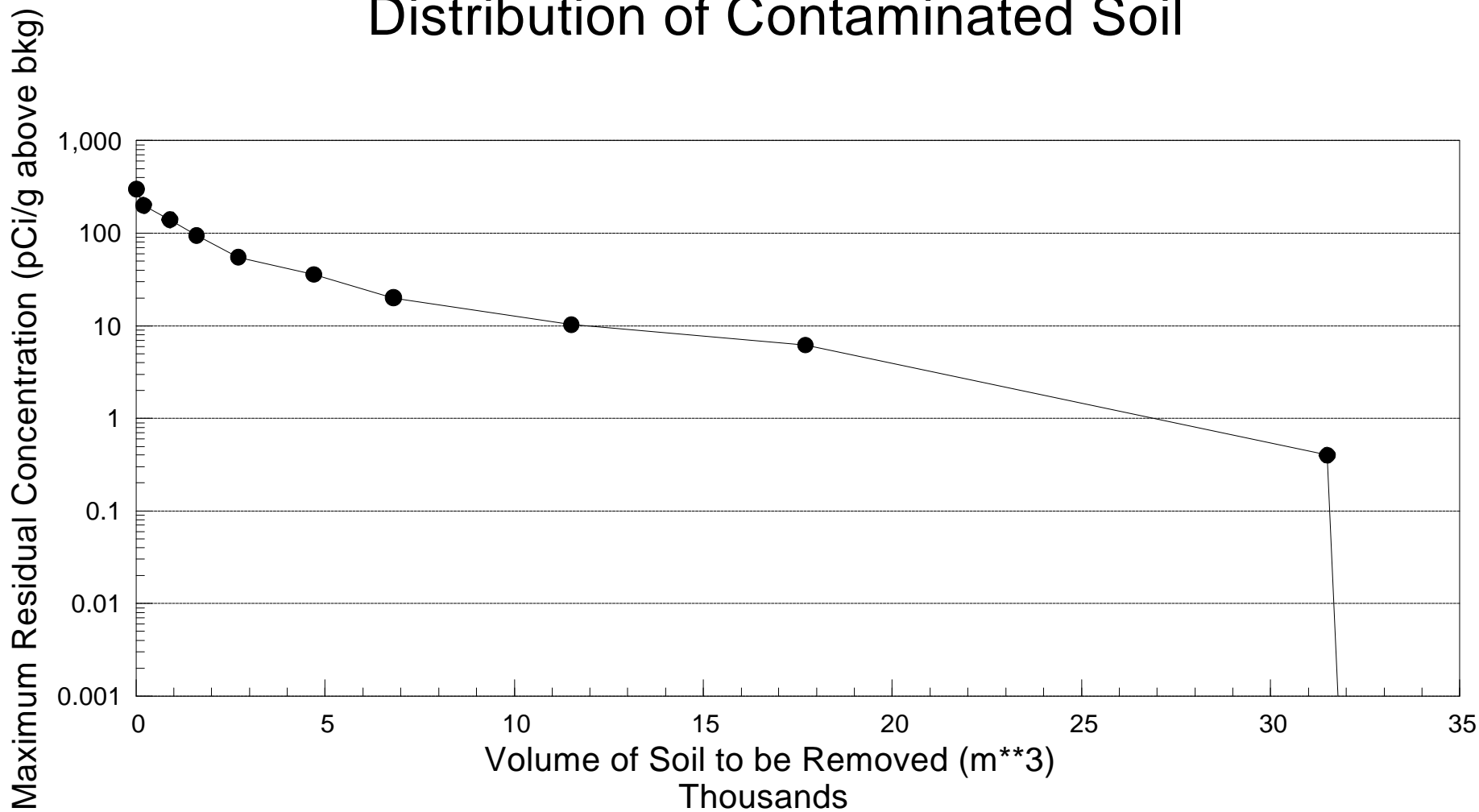
Wrenn *et al.* had determined Th-232 concentrations by multiplying each calculated exposure value by a conversion factor. The resulting value thus included the natural soil background radiation, which produced an exposure rate equivalent to 4.06 pCi/g of Th-232 (Wr 92). It was necessary to subtract this background value from each calculated concentration. The concentration profile of the soil in the study area was constructed from the frequency histogram, on the assumption that each value represented an equal volume of soil. The depth of the contaminated layer was set equal to the average number of readings above background in each hole, corrected for estimated concentrations in the first 1.5 feet of soil and multiplied by 0.5 feet, the vertical distance between successive exposure points. The calculated value was 8.75 feet, or 2.67 m, the value used in the analysis.

The NRC questioned the calibration procedure (NRC 92c): Wrenn *et al.* responded by presenting additional calculations (Wr 92). Pending a direct calibration, relating the below-ground exposure values determined from NaI detector readings to soil concentrations determined by laboratory analyses of soil samples, the concentration data should be regarded as provisional. The distribution of Th-232 at Reference Site XXI is shown in Figure 4-24.

Figure 4-24

Reference Site XXI

Distribution of Contaminated Soil



Th-232



Total Contaminated Volume = 2.89E+4 m³
Additional Nuclides: Ra-228 and Th-228

REFERENCE SITE XXII

Reference Site XXII is based **in part** on the Maywood Chemical Company site. It is essential to bear in mind that the following analysis of this reference site, although it makes use of some of the data that characterizes the Maywood site, cannot be considered to be an analysis of the actual site. In particular, the predicted impacts refer **only** to the reference site and cannot be used to predict future impacts of the much more complicated Maywood site.

Site Description

The Maywood site is located in northern New Jersey approximately 12 miles north-northwest of New York City and 13 miles northeast of Newark, New Jersey. The Maywood Chemical Works extracted thorium and rare earths from monazite ore from 1916 until 1959. More than 80 vicinity properties became contaminated with radioactive materials as a result of waste disposal operations, construction activities, and surface water movement. The Maywood Interim Storage Site (MISS) is a 12-acre fenced lot containing a waste storage pile consisting of contaminated materials from previous decontamination activities.

The Remedial Investigation (RI) identifies four operable units (OUs) based on land use. These OUs include:

- MISS
- the Stepan Company property
- commercial/government properties
- residential properties and municipal parks

Because of widely varying contaminant levels and estimated risks, the baseline risk assessment further subdivided these OUs into 12 "property units".

Environmental Parameters

The soil of the vadose zone at the Maywood site is more than 50% sand and contains varying amounts of silt and clay. It has a hydraulic conductivity of 68.4 m/yr (DOE 92f, p. 3-11), a total porosity of 0.4 and an effective porosity of 0.22 (DOE 92f, p. 3-11). These values, along with the representative exponential parameter (b) value for sandy soils tabulated in the RESRAD references, were assigned to Reference Site XXII and are listed in Table 4-8. Representative RESRAD K_d values in sandy soils were assigned to each nuclide at Reference Site XXII.

The precipitation rate at Maywood is 1.07 m/yr (DOE 92f, p. 3-11). The water balance at the Maywood site was calculated by DOE using the CREAMS (Chemicals, Runoff and Erosion from Agricultural Management Systems) model developed by the Department of Agriculture. The results of this calculation listed the evapotranspiration rate at 0.56 m/yr and the surface runoff at 0.31 m/yr. While no irrigation practices are currently being used at the Maywood site, an average value of 0.2 m/yr for humid areas (ANL 93b, p. 68) is assumed for future use scenarios. Based on these data an infiltration rate of 0.40 m/yr was calculated using the method described for the RESRAD computer model (ANL 93b, p. 61), and assigned to Reference Site XXII.

The uppermost water-bearing unit consists of unconsolidated sediments and weathered sedimentary rock (DOE 92f, pp. 3-45 and 3-53), with a mean hydraulic conductivity of 120 m/yr, a total porosity of 0.2 (DOE 92f, pp. 3-53 and 3-64) and a gradient of 0.01 (DOE 92f, pp. 3-56 to 3-58). These values were assigned to Reference Site XXII, along with an assumed effective porosity of 0.2 and a representative RESRAD value of the exponential parameter (b) in silty loam. The depth to the water table ranges from 1.5 to 4.6 meters (DOE 92f, p. 3-45). The arithmetic mean of approximately 3 meters was assigned to Reference Site XXII.

Soil Contamination

Data sources. An RI was completed for the Maywood site in 1992 (DOE 92f). Extensive sampling and analysis activities were included in the RI investigation, and a baseline risk assessment (BRA) was completed as part of the RI (DOE 93e).

The results of soil sample analyses for three radionuclides—U-238, Th-232, and Ra-226—are presented in the BRA. The mean specific activities of each nuclide in both the surface soils and subsoils of each of 10 of the 12 property units are listed in Table 4-20, below. The surface soil samples were collected between the surface and a depth of two feet (0.6 m). The subsoil samples were collected at depths of greater than two feet—no lower limit is cited (DOE 93e, p. 3-28).

The BRA lists background concentrations in the soil for the three principal nuclides at three locations in the vicinity of the site. Each of the background values listed in Table 2-1 of the BRA is preceded by a "<" symbol, implying that the levels were less than the lower detectable limit. All the values for U-238 are abnormally high, with an average of "<2.9 pCi/g." (The values for Th-232 and Ra-226 are within the normal range.) Nevertheless, the BRA subtracts each of these values from the mean concentrations at the contaminated properties.

While the actual areas of the individual property units were not provided, a map showing the boundaries of the OUs as well as the property units was included in the BRA (DOE 93e, p. 1-5). The areas of the contaminated soils were determined by measuring the areas of the respective units on the map .

Modeling of contamination. The volume of contaminated surface soil in each subunit was calculated by multiplying the area of the unit by the two-foot thickness of the soil layer. These volumes are listed in Table 4-20, below. The subsoils extend from the bottom of the surface soil layer to the bottom of the entire contaminated zone. The RESRAD analysis presented in the BRA used a value of 2 m as the thickness of the contaminated zone (DOE 93e,p. E-1). This value was used to calculate the volumes of subsoil at each unit, and was also assigned to the thickness of the contaminated zone of Reference Site XXII.

To characterize the soil contamination at Reference Site XXII, it was assumed that the uranium contamination exhibited the same relative isotopic abundance as natural uranium, *i.e.*, the specific activities of U-238, U-235 and U-234 were in the ratio of 1:.047:1. It was further assumed that Th-232 was in secular equilibrium with its two short-lived daughter products, Ra-228 and Th-228, and that Pb-210 was in equilibrium with Ra-226.

The distribution for each nuclide at Reference Site XXII was constructed by sorting the volumes into a number of bins, according to the mean specific activity of the given nuclide in each volume. The distributions of the radioactive daughter products assumed to be in secular equilibrium are identical to those of the parent. U-234 has the same distribution as U-238, while the specific activities of U-235 are 4.7% those of U-238. The distributions of the principal nuclides are shown in Figure 4-25. To enable the modeling of cleanup to low risk levels, the distribution curves were extrapolated to low specific activities.

The Radionuclide concentrations reported in Table 4-20 are concentrations **above background**. The background concentrations for these radionuclides were reported as being below the detection limit, but the actual background concentrations were not reported. Variations in the natural background may account for reported radionuclide concentrations in the range of 0.1 to 0.5 pCi/g above background. Values reported in this range have been used to determine the radionuclide distribution at Reference Site XXII, but these values may have a high level of uncertainty associated with them.

The distributions for Reference Site XXII assume that the distributions of radionuclides within the surface soil or subsoil of each unit are uniform. This is probably not the case. An alternate interpretation of this model is that the projected cleanup would deal with the site in terms of property units—the decision would be whether to clean up an entire unit or to leave the contamination in place. Although neither assumption is entirely satisfactory, it is the only plausible model that can be based on the presently available data.

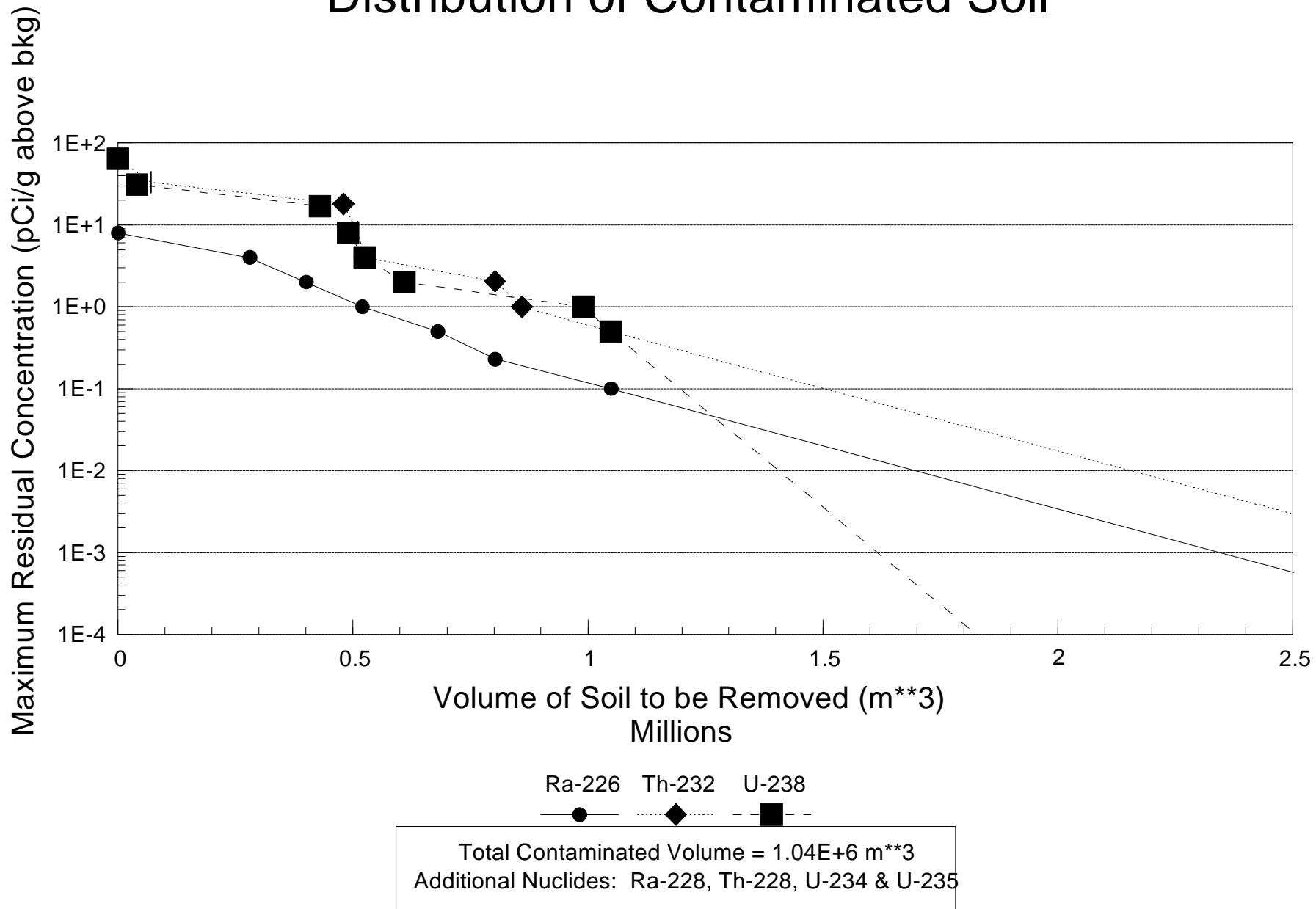
Table 4-20. Radioactive Contamination at 10 Vicinity Properties on the Maywood Site

Site ID	Area (m ²)	Surface (0 to 0.6 m)				Subsurface (0.6 to 2 m)			
		Volume (m ³)	Concentration (pCi/g)			Volume (m ³)	Concentration (pCi/g)		
			Th-232	Ra-226	U-238		Th-232	Ra-226	U-238
1	32,000	19,200	2.88	0.52	3.39	44,800	1.57	0.30	2.32
2	7,000	4,200	9.05	1.08	8.43	9,800	5.53	0.74	5.15
3	43,000	25,800	3.45	0.61	1.69	60,200	3.46	0.74	1.74
3h	31,000	18,600	16.33	3.77	4.37	43,400	33.29	7.06	5.03
4	32,000	19,200	1.21	0.17	0.96	44,800	2.11	0.11	0.84
5	140,000	84,000	2.05	0.31	1.98	196,000	0.68	0.19	1.18
6	47,000	28,200	7.91	1.43	12.78	65,800	16.42	2.69	16.14
7	154,000	92,400	18.06	1.92	24.27	215,600	16.5	4.29	31.47
7h	28,000	16,800	46.76	4.93	26.6	39,200	10.16	2.11	33.43
8	8,000	4,800	17.1	1.47	10.53	11,200	37.62	1.97	10.58

Figure 4-25

Reference Site XXII

Distribution of Contaminated Soil



5. Analysis of Reference Sites

Each of the reference sites described in Section 4.4.3 was analyzed to determine the amount of soil cleanup required to achieve one of nine alternative risk-based cleanup goals. (Additional analyses for dose-based cleanup levels are presented in Appendix M.) Each of these goals seek to limit radiation exposure and risk to an individual to a lifetime cancer incidence risk of 1×10^{-2} , 1×10^{-3} , 7×10^{-4} , 5×10^{-4} , 3×10^{-4} , 2×10^{-4} , 1×10^{-4} , 1×10^{-5} or 1×10^{-6} , with reasonable maximum exposure (RME) assumptions (discussed in Chapter 2). Specific objectives of the analysis were to determine:

- the volume of soil on each site that may require remediation,
- the potential radiological health effects averted through remediation, and
- the potential radiological health effects on workers at the site and on the near-by public as a result of activities associated with remediation.

5.1 SOIL CLEANUP VOLUMES FOR REFERENCE SITES

A three-step process was used to estimate the volume of soil that must be remediated to achieve a desired risk-based cleanup goal at each reference site:

- Step 1: Characterize the distribution of each radionuclide in the soil of each reference site. (This step is described in Section 4.4.4)
- Step 2: Determine a site-specific risk factor for each radionuclide: the relationship between the maximum concentration of a given radionuclide in the soil and the RME individual's lifetime risk of cancer incidence, expressed as risk per pCi/g.¹
- Step 3: Using site-specific risk factors and radionuclide distributions, determine the volume of soil that must be remediated (*i.e.*, the cleanup volume) to achieve the desired cleanup goal.²

¹ Generic test site risk factors have also been calculated for purposes of comparison - see Tables 3-1 through 3-3.

² Although it is convenient to visualize the mathematical relationships between volumes and radionuclide concentrations as a series of curves, the analysis was performed mathematically, not graphically. The figures that depict these relationships are for the purpose of illustration--they played no role in the analysis.

5.1.1 Step 2: Derivation of Risk Factors

As discussed in Chapter 3, risk factors define the relationship between a given concentration of a radionuclide in soil and the risk to individuals who may reside or work at the site. As such, they are useful in determining not only the risks to individuals at a site, but also the volume of soil that may require remediation at a site to meet specified risk-based cleanup goals for an exposed individual, assuming RME conditions. Section 3.1 presents generic risk factors which are broadly applicable to most sites. This section describes site-specific risk factors.

Site-specific risk factors for each radionuclide were derived using RESRAD Version 5.19 and the site-specific environmental parameters described in Section 4.2.3 and Tables 4-5 through 4-8. Two sets of risk factors were tabulated for each site: one set assumes rural residential occupancy (including agriculture), which corresponds to the site's being released for unrestricted use, while the other is for commercial/industrial occupancy which corresponds to the site's being restricted to industrial or commercial use. Separate risk factors correspond to the RME individual's occupying the site for some thirty-year period during the next 100, 1,000 or 10,000 years, yielding six factors for each radionuclide. In the majority of cases studied, the maximum risk occurs during the first 100 years; therefore, the risk factors do not increase if the study period is extended.

Risk factors for nuclides which can produce significant amounts of Rn-222 as a result of radioactive decay during the study periods (*i.e.*, U-234, Th-230 and Ra-226) two complete sets of risk factors were calculated: one with and one without the radon pathway.

It is worth noting that, in general, site-specific rural residential site risk factors are lower than the corresponding generic test site risk factors. This occurs because the generic site factors are based on a number of conservative default assumptions. Some of the key default assumptions, and the ways in which they affect the risk factors, are:

- The generic test site residential risk factors are based on the assumption that all plausible exposure pathways are present at the site, including an on-site farm, beef and milk cows, and an on-site well. Not all these pathways are necessarily relevant to a given site.
- The thickness of the contaminated zone for the generic test site is 2 meters. This is relatively thick as compared to most of the reference sites. Once the thickness of the contaminated zone exceeds about 0.2 meters, however, the risk per pCi/g no longer

increases significantly for most nuclides. Accordingly, this assumption places an effective upper bound on the water-independent pathways, such as direct radiation.

- The area of the contaminated zone for the generic test site is 1×10^4 m². This is not very large compared to most reference sites. However, the risk per pCi/g does not increase significantly for areas greater than 1×10^4 m². This assumption also tends to place an upper bound on the water independent pathways, such as direct radiation.
- The thickness of the uncontaminated unsaturated zone for the generic test site is 2 meters. This is a relatively shallow unsaturated zone, which results in an overestimate of risks for the groundwater pathway for most sites.
- Distribution coefficients (K_d) at the low end of the range of published values were used for the generic test site. The K_d is an expression of the binding capability of radionuclides to soil. The lower the K_d , the greater the potential for the contaminants to enter the groundwater. As a result, the use of low-end K_d values tends to overestimate the risks via the groundwater pathway.
- The depth of the on-site well for the generic test site is 3 meters below the water table. Most wells are screened below 3 meters. This assumption results in minimal dilution of the contaminants in the saturated zone, thereby resulting in a conservative estimate of risk from the groundwater pathways.

5.1.2 Step 3: Soil Cleanup Volumes

Once the soil contamination pattern at a site is defined (Step 1) and risk factors are developed (Step 2), the soil cleanup volumes required to achieve a specified risk-based cleanup goal can be determined.³ If only one nuclide is found at the site, the cleanup level—the maximum concentration of the contaminant that remains anywhere on the site following cleanup—is calculated by dividing the selected risk goal by the appropriate risk factor for that nuclide. The volume of soil having radionuclide concentrations greater than the calculated value can then be readily determined by solving the equation that relates the volume to the concentration. For example, the site-specific risk factor for residential occupancy of Reference Site I was calculated to be 2.66×10^{-5} per pCi/g of Cs-137, the only nuclide at this site. To achieve the goal of 10^{-4} risk

³ The reader should bear in mind that the cleanup goal must be specified not only in terms of the level of risk to the RME individual, but also in terms of the future period of concern (*i.e.*, 100, 1,000 or 10,000 years) and whether rural residential or commercial/industrial occupancy is anticipated.

to the RME individual, the maximum concentration must be $10^{-4} \div 2.66 \times 10^{-5} = 3.76$ pCi/g Cs-137. The distribution curve shown in Figure 4-2 shows that approximately 5×10^5 m³ of soil are contaminated at or above this concentration—this is the volume of soil that would have to be remediated to achieve the 10^{-4} cleanup goal. (The actual value, calculated analytically, is listed in Table 5-1, below).

For sites with multiple radionuclides, the calculation procedure is more complicated, because the sum of the risks from each nuclide must equal the cleanup goal. The volumes in such cases are determined by an iterative procedure involving trial and error. The calculation may be visualized by examining a graphical illustration of the result. Table 5-1 indicates that 614 m³ of soil must be remediated at Reference Site XVIA to achieve a risk-based cleanup goal of 10^{-3} , based on residential occupancy during the first 1,000 years. Figure 4-21 in the previous chapter shows that remediating this volume would leave maximum concentrations of ≈ 5 pCi/g of Co-60 and ≈ 1 pCi/g of Cs-137. The 1,000-year rural residential risk factors for the two nuclides at this site are 2.03×10^{-4} and 4.83×10^{-5} , respectively. Multiplying the maximum concentration of each nuclide by its risk factor and adding the products yields a risk of approximately 10^{-3} . A more precise verification of the risk can be performed by using the actual concentrations, which are listed on page K-110 in Appendix K. As discussed in Note 2, the actual calculations are performed analytically, not graphically.

Tables 5-1 through 5-4 present the derived soil cleanup volumes for each reference site, using rural residential or commercial risk factors, with and without the radon pathway, for occupancy during the first 100, 1,000 and 10,000 years.⁴ In many cases, the documents and other data on the actual sites that formed the bases for the reference sites (the basis sites discussed in Chapter 4) did not include data on the low levels of contamination that correspond to risk levels as low as 1×10^{-6} . To perform the analyses corresponding to these and, in some cases, to higher risk level, it was necessary to extrapolate the known data to lower concentrations and correspondingly higher volumes. In the case of some reference sites, this was done *a priori* by creating distributions that extend to concentrations lower than those that could be realistically detected above the ambient soil background distribution. In the case of other sites, distributions

⁴ Although the radon pathway is only relevant to sites contaminated with U-234 or its progeny, the complete set of reference sites is listed in each table for ease of reference.

Table 5-1. Soil Volumes Requiring Remediation, Using Residential Risk Factors, Excluding Indoor Radon
 Cleanup Volumes (m**3)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.00E+6	5.00E+6	5.00E+6	1.53E+6	1.53E+6	1.53E+6	4.66E+5	4.66E+5	4.66E+5	9.30E+4	9.30E+4	9.30E+4	8.82E+3	8.82E+3	8.82E+3
II	1.89E+6	1.90E+6	1.90E+6	1.30E+6	1.31E+6	1.31E+6	8.95E+5	9.28E+5	9.28E+5	7.73E+5	7.84E+5	7.84E+5	6.06E+5	6.17E+5	6.17E+5
III	8.44E+5	8.44E+5	8.44E+5	7.99E+5	7.99E+5	7.99E+5	4.63E+5	4.63E+5	4.63E+5	6.65E+4	6.65E+4	6.65E+4	.00E+0	.00E+0	.00E+0
IV	2.55E+5	2.55E+5	2.55E+5	9.73E+4	9.73E+4	9.73E+4	3.71E+4	3.71E+4	3.71E+4	1.42E+4	1.42E+4	1.42E+4	.00E+0	.00E+0	.00E+0
V	1.51E+7	1.51E+7	1.51E+7	1.05E+7	1.05E+7	1.05E+7	6.02E+6	6.02E+6	6.02E+6	2.26E+6	2.26E+6	2.26E+6	3.93E+5	3.93E+5	3.93E+5
VI	5.56E+5	5.56E+5	5.56E+5	3.96E+5	3.96E+5	3.96E+5	2.36E+5	2.36E+5	2.36E+5	1.06E+5	1.06E+5	1.06E+5	2.96E+4	2.96E+4	2.96E+4
VII	3.80E+7	3.80E+7	3.80E+7	9.26E+6	9.26E+6	9.26E+6	3.67E+6	3.67E+6	3.67E+6	1.96E+4	1.96E+4	1.96E+4	.00E+0	.00E+0	.00E+0
IX	1.65E+5	1.65E+5	1.65E+5	2.96E+4	2.96E+4	2.96E+4	1.98E+3	1.98E+3	1.98E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	8.33E+5	8.33E+5	8.33E+5	7.18E+5	7.82E+5	7.82E+5	4.03E+5	5.88E+5	5.88E+5	1.49E+5	1.82E+5	1.82E+5	3.31E+4	3.62E+4	3.62E+4
XII	6.88E+3	6.88E+3	6.88E+3	1.70E+3	1.70E+3	1.70E+3	1.41E+3	1.41E+3	1.41E+3	7.01E+2	7.01E+2	7.01E+2	4.94E+2	4.94E+2	4.94E+2
XIIIA	2.49E+3	2.49E+3	2.49E+3	6.89E+2	6.89E+2	6.89E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.49E+3	2.49E+3	2.49E+3	6.89E+2	6.89E+2	6.89E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.49E+3	2.49E+3	2.49E+3	6.89E+2	6.89E+2	6.89E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.27E+3	1.27E+3	1.27E+3	1.11E+3	1.11E+3	1.11E+3	9.41E+2	9.41E+2	9.41E+2	6.14E+2	6.14E+2	6.14E+2	2.50E+2	2.50E+2	2.50E+2
XVIB	1.27E+3	1.27E+3	1.27E+3	1.11E+3	1.11E+3	1.11E+3	9.41E+2	9.41E+2	9.41E+2	6.14E+2	6.14E+2	6.14E+2	2.50E+2	2.50E+2	2.50E+2
XVIC	1.27E+3	1.27E+3	1.27E+3	1.11E+3	1.11E+3	1.11E+3	9.41E+2	9.41E+2	9.41E+2	6.14E+2	6.14E+2	6.14E+2	2.50E+2	2.50E+2	2.50E+2
XVIIIA	5.92E+2	5.92E+2	5.92E+2	5.89E+2	5.89E+2	5.89E+2	5.80E+2	5.80E+2	5.80E+2	4.56E+2	4.56E+2	4.56E+2	1.69E+2	1.69E+2	1.69E+2
XVIIIB	5.92E+2	5.92E+2	5.92E+2	5.89E+2	5.89E+2	5.89E+2	5.80E+2	5.80E+2	5.80E+2	4.56E+2	4.56E+2	4.56E+2	1.69E+2	1.69E+2	1.69E+2
XVIIIC	5.92E+2	5.92E+2	5.92E+2	5.89E+2	5.89E+2	5.89E+2	5.80E+2	5.80E+2	5.80E+2	4.56E+2	4.56E+2	4.56E+2	1.69E+2	1.69E+2	1.69E+2
XXA	4.74E+5	4.74E+5	4.74E+5	5.50E+4	5.50E+4	5.50E+4	2.26E+3	2.26E+3	2.26E+3	3.00E+1	3.00E+1	3.00E+1	.00E+0	.00E+0	.00E+0
XXB	4.74E+5	4.74E+5	4.74E+5	5.50E+4	5.50E+4	5.50E+4	2.26E+3	2.26E+3	2.26E+3	3.00E+1	3.00E+1	3.00E+1	.00E+0	.00E+0	.00E+0
XXC	4.74E+5	4.74E+5	4.74E+5	5.50E+4	5.50E+4	5.50E+4	2.26E+3	2.26E+3	2.26E+3	3.00E+1	3.00E+1	3.00E+1	.00E+0	.00E+0	.00E+0
XXIA	3.45E+4	3.45E+4	3.45E+4	3.42E+4	3.42E+4	3.42E+4	3.18E+4	3.18E+4	3.18E+4	2.02E+4	2.02E+4	2.02E+4	4.60E+3	4.60E+3	4.60E+3
XXIB	3.45E+4	3.45E+4	3.45E+4	3.42E+4	3.42E+4	3.42E+4	3.18E+4	3.18E+4	3.18E+4	2.02E+4	2.02E+4	2.02E+4	4.60E+3	4.60E+3	4.60E+3
XXIC	3.45E+4	3.45E+4	3.45E+4	3.42E+4	3.42E+4	3.42E+4	3.18E+4	3.18E+4	3.18E+4	2.02E+4	2.02E+4	2.02E+4	4.60E+3	4.60E+3	4.60E+3
XXII	2.48E+6	2.48E+6	2.48E+6	1.83E+6	1.83E+6	1.83E+6	1.18E+6	1.19E+6	1.19E+6	6.34E+5	6.63E+5	6.63E+5	1.02E+5	1.73E+5	1.73E+5
DOE	9.19E+7	9.19E+7	9.19E+7	4.59E+7	4.60E+7	4.60E+7	2.55E+7	2.58E+7	2.58E+7	1.02E+7	1.04E+7	1.04E+7	2.42E+6	2.93E+6	2.93E+6
DOD	2.81E+4	2.81E+4	2.81E+4	7.55E+3	7.55E+3	7.55E+3	1.41E+3	1.41E+3	1.41E+3	7.01E+2	7.01E+2	7.01E+2	4.94E+2	4.94E+2	4.94E+2
NRC	7.59E+6	7.59E+6	7.59E+6	1.70E+6	1.70E+6	1.70E+6	8.85E+5	8.85E+5	8.85E+5	5.51E+5	5.51E+5	5.51E+5	1.43E+5	1.43E+5	1.43E+5
Total	9.95E+7	9.95E+7	9.95E+7	4.76E+7	4.77E+7	4.77E+7	2.64E+7	2.67E+7	2.67E+7	1.07E+7	1.10E+7	1.10E+7	2.56E+6	3.07E+6	3.07E+6

Table 5-2. Soil Volumes Requiring Remediation, Using Commercial Risk Factors, Excluding Indoor Radon Cleanup Volumes (m**3)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.66E+6	2.66E+6	2.66E+6	8.12E+5	8.12E+5	8.12E+5	2.06E+5	2.06E+5	2.06E+5	3.59E+4	3.59E+4	3.59E+4	1.70E+3	1.70E+3	1.70E+3
II	1.53E+6	1.54E+6	1.54E+6	9.56E+5	9.60E+5	9.60E+5	7.97E+5	8.32E+5	8.32E+5	7.15E+5	7.24E+5	7.24E+5	2.76E+5	2.92E+5	2.92E+5
III	8.32E+5	8.32E+5	8.32E+5	6.91E+5	6.91E+5	6.91E+5	1.62E+5	1.62E+5	1.62E+5	5.53E+3	5.53E+3	5.53E+3	.00E+0	.00E+0	.00E+0
IV	1.48E+5	1.48E+5	1.48E+5	5.65E+4	5.65E+4	5.65E+4	2.38E+4	2.38E+4	2.38E+4	1.72E+3	1.72E+3	1.72E+3	.00E+0	.00E+0	.00E+0
V	1.27E+7	1.27E+7	1.27E+7	8.13E+6	8.13E+6	8.13E+6	3.77E+6	3.77E+6	3.77E+6	7.88E+5	7.88E+5	7.88E+5	2.99E+4	2.99E+4	2.99E+4
VI	4.71E+5	4.71E+5	4.71E+5	3.11E+5	3.11E+5	3.11E+5	1.54E+5	1.54E+5	1.54E+5	5.41E+4	5.41E+4	5.41E+4	1.08E+4	1.08E+4	1.08E+4
VII	1.62E+7	1.62E+7	1.62E+7	6.66E+6	6.66E+6	6.66E+6	5.41E+5	5.41E+5	5.41E+5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	6.21E+4	6.21E+4	6.21E+4	7.06E+3	7.06E+3	7.06E+3	1.45E+2	1.45E+2	1.45E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	7.85E+5	8.00E+5	8.00E+5	5.65E+5	7.47E+5	7.47E+5	2.61E+5	4.07E+5	4.07E+5	8.97E+4	1.02E+5	1.02E+5	1.33E+4	1.41E+4	1.41E+4
XII	2.17E+3	2.17E+3	2.17E+3	1.55E+3	1.55E+3	1.55E+3	8.06E+2	8.06E+2	8.06E+2	5.73E+2	5.73E+2	5.73E+2	8.26E+1	8.26E+1	8.26E+1
XIIIA	1.41E+3	1.41E+3	1.41E+3	1.92E+2	1.92E+2	1.92E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.41E+3	1.41E+3	1.41E+3	1.92E+2	1.92E+2	1.92E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.41E+3	1.41E+3	1.41E+3	1.92E+2	1.92E+2	1.92E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.19E+3	1.19E+3	1.19E+3	1.03E+3	1.03E+3	1.03E+3	7.95E+2	7.95E+2	7.95E+2	4.56E+2	4.56E+2	4.56E+2	8.87E+1	8.87E+1	8.87E+1
XVIB	1.19E+3	1.19E+3	1.19E+3	1.03E+3	1.03E+3	1.03E+3	7.95E+2	7.95E+2	7.95E+2	4.56E+2	4.56E+2	4.56E+2	8.87E+1	8.87E+1	8.87E+1
XVIC	1.19E+3	1.19E+3	1.19E+3	1.03E+3	1.03E+3	1.03E+3	7.95E+2	7.95E+2	7.95E+2	4.56E+2	4.56E+2	4.56E+2	8.87E+1	8.87E+1	8.87E+1
XVIIIA	5.92E+2	5.92E+2	5.92E+2	5.84E+2	5.84E+2	5.84E+2	5.30E+2	5.30E+2	5.30E+2	2.97E+2	2.97E+2	2.97E+2	5.97E+1	5.97E+1	5.97E+1
XVIIIB	5.92E+2	5.92E+2	5.92E+2	5.84E+2	5.84E+2	5.84E+2	5.30E+2	5.30E+2	5.30E+2	2.97E+2	2.97E+2	2.97E+2	5.97E+1	5.97E+1	5.97E+1
XVIIIC	5.92E+2	5.92E+2	5.92E+2	5.84E+2	5.84E+2	5.84E+2	5.30E+2	5.30E+2	5.30E+2	2.97E+2	2.97E+2	2.97E+2	5.97E+1	5.97E+1	5.97E+1
XXA	1.11E+5	1.11E+5	1.11E+5	1.12E+4	1.12E+4	1.12E+4	5.84E+1	5.84E+1	5.84E+1	6.51E+0	6.51E+0	6.51E+0	.00E+0	.00E+0	.00E+0
XXB	1.11E+5	1.11E+5	1.11E+5	1.12E+4	1.12E+4	1.12E+4	5.84E+1	5.84E+1	5.84E+1	6.51E+0	6.51E+0	6.51E+0	.00E+0	.00E+0	.00E+0
XXC	1.11E+5	1.11E+5	1.11E+5	1.12E+4	1.12E+4	1.12E+4	5.84E+1	5.84E+1	5.84E+1	6.51E+0	6.51E+0	6.51E+0	.00E+0	.00E+0	.00E+0
XXIA	3.44E+4	3.44E+4	3.44E+4	3.36E+4	3.36E+4	3.36E+4	2.57E+4	2.57E+4	2.57E+4	1.04E+4	1.04E+4	1.04E+4	1.10E+3	1.10E+3	1.10E+3
XXIB	3.44E+4	3.44E+4	3.44E+4	3.36E+4	3.36E+4	3.36E+4	2.57E+4	2.57E+4	2.57E+4	1.04E+4	1.04E+4	1.04E+4	1.10E+3	1.10E+3	1.10E+3
XXIC	3.44E+4	3.44E+4	3.44E+4	3.36E+4	3.36E+4	3.36E+4	2.57E+4	2.57E+4	2.57E+4	1.04E+4	1.04E+4	1.04E+4	1.10E+3	1.10E+3	1.10E+3
XXII	2.12E+6	2.12E+6	2.12E+6	1.47E+6	1.47E+6	1.47E+6	8.43E+5	9.07E+5	9.07E+5	4.90E+5	4.99E+5	4.99E+5	.00E+0	.00E+0	.00E+0
DOE	6.02E+7	6.02E+7	6.02E+7	3.51E+7	3.53E+7	3.53E+7	1.51E+7	1.57E+7	1.57E+7	6.25E+6	6.34E+6	6.34E+6	5.69E+5	5.86E+5	5.86E+5
DOD	1.41E+4	1.41E+4	1.41E+4	3.18E+3	3.18E+3	3.18E+3	8.06E+2	8.06E+2	8.06E+2	5.73E+2	5.73E+2	5.73E+2	8.26E+1	8.26E+1	8.26E+1
NRC	2.50E+6	2.50E+6	2.50E+6	1.06E+6	1.06E+6	1.06E+6	6.98E+5	6.98E+5	6.98E+5	3.05E+5	3.05E+5	3.05E+5	3.90E+4	3.90E+4	3.90E+4
Total	6.27E+7	6.28E+7	6.28E+7	3.62E+7	3.64E+7	3.64E+7	1.58E+7	1.64E+7	1.64E+7	6.56E+6	6.64E+6	6.64E+6	6.08E+5	6.25E+5	6.25E+5

Table 5-3. Soil Volumes Requiring Remediation, Using Residential Risk Factors, Including Indoor Radon
 Cleanup Volumes (m**3)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.00E+6	5.00E+6	5.00E+6	1.53E+6	1.53E+6	1.53E+6	4.66E+5	4.66E+5	4.66E+5	9.30E+4	9.30E+4	9.30E+4	8.82E+3	8.82E+3	8.82E+3
II	1.89E+6	1.91E+6	1.91E+6	1.35E+6	1.36E+6	1.36E+6	9.17E+5	9.36E+5	9.36E+5	7.81E+5	7.90E+5	7.90E+5	6.64E+5	6.71E+5	6.71E+5
III	8.44E+5	8.44E+5	8.44E+5	7.99E+5	7.99E+5	7.99E+5	4.63E+5	4.63E+5	4.63E+5	6.65E+4	6.65E+4	6.65E+4	.00E+0	.00E+0	.00E+0
IV	2.55E+5	2.55E+5	2.55E+5	9.73E+4	9.73E+4	9.73E+4	3.71E+4	3.71E+4	3.71E+4	1.42E+4	1.42E+4	1.42E+4	.00E+0	.00E+0	.00E+0
V	1.51E+7	1.51E+7	1.51E+7	1.05E+7	1.05E+7	1.05E+7	6.02E+6	6.02E+6	6.02E+6	2.26E+6	2.26E+6	2.26E+6	3.93E+5	3.93E+5	3.93E+5
VI	5.56E+5	5.56E+5	5.56E+5	3.96E+5	3.96E+5	3.96E+5	2.36E+5	2.36E+5	2.36E+5	1.06E+5	1.06E+5	1.06E+5	2.96E+4	2.96E+4	2.96E+4
VII	3.80E+7	3.80E+7	3.80E+7	9.26E+6	9.26E+6	9.26E+6	3.67E+6	3.67E+6	3.67E+6	1.96E+4	1.96E+4	1.96E+4	.00E+0	.00E+0	.00E+0
IX	1.65E+5	1.65E+5	1.65E+5	2.96E+4	2.96E+4	2.96E+4	1.98E+3	1.98E+3	1.98E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	8.33E+5	8.33E+5	8.33E+5	7.18E+5	7.82E+5	7.82E+5	4.03E+5	5.88E+5	5.88E+5	1.49E+5	1.82E+5	1.82E+5	3.31E+4	3.62E+4	3.62E+4
XII	6.88E+3	6.88E+3	6.88E+3	1.70E+3	1.70E+3	1.70E+3	1.41E+3	1.41E+3	1.41E+3	7.01E+2	7.01E+2	7.01E+2	4.94E+2	4.94E+2	4.94E+2
XIIIA	2.49E+3	2.49E+3	2.49E+3	6.89E+2	6.89E+2	6.89E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.49E+3	2.49E+3	2.49E+3	6.89E+2	6.89E+2	6.89E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.49E+3	2.49E+3	2.49E+3	6.89E+2	6.89E+2	6.89E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.27E+3	1.27E+3	1.27E+3	1.11E+3	1.11E+3	1.11E+3	9.41E+2	9.41E+2	9.41E+2	6.14E+2	6.14E+2	6.14E+2	2.50E+2	2.50E+2	2.50E+2
XVIB	1.27E+3	1.27E+3	1.27E+3	1.11E+3	1.11E+3	1.11E+3	9.41E+2	9.41E+2	9.41E+2	6.14E+2	6.14E+2	6.14E+2	2.50E+2	2.50E+2	2.50E+2
XVIC	1.27E+3	1.27E+3	1.27E+3	1.11E+3	1.11E+3	1.11E+3	9.41E+2	9.41E+2	9.41E+2	6.14E+2	6.14E+2	6.14E+2	2.50E+2	2.50E+2	2.50E+2
XVIIIA	5.92E+2	5.92E+2	5.92E+2	5.89E+2	5.89E+2	5.89E+2	5.80E+2	5.80E+2	5.80E+2	4.56E+2	4.56E+2	4.56E+2	1.69E+2	1.69E+2	1.69E+2
XVIIIB	5.92E+2	5.92E+2	5.92E+2	5.89E+2	5.89E+2	5.89E+2	5.80E+2	5.80E+2	5.80E+2	4.56E+2	4.56E+2	4.56E+2	1.69E+2	1.69E+2	1.69E+2
XVIIIC	5.92E+2	5.92E+2	5.92E+2	5.89E+2	5.89E+2	5.89E+2	5.80E+2	5.80E+2	5.80E+2	4.56E+2	4.56E+2	4.56E+2	1.69E+2	1.69E+2	1.69E+2
XXA	4.74E+5	4.94E+5	4.94E+5	5.50E+4	7.97E+4	7.97E+4	2.26E+3	5.68E+3	5.68E+3	3.00E+1	4.26E+1	4.26E+1	.00E+0	2.61E+0	2.61E+0
XXB	4.74E+5	4.74E+5	4.74E+5	5.50E+4	5.50E+4	5.50E+4	2.26E+3	2.26E+3	2.26E+3	3.00E+1	3.00E+1	3.00E+1	.00E+0	.00E+0	.00E+0
XXC	4.74E+5	4.74E+5	4.74E+5	5.50E+4	5.50E+4	5.50E+4	2.26E+3	2.26E+3	2.26E+3	3.00E+1	3.00E+1	3.00E+1	.00E+0	.00E+0	.00E+0
XXIA	3.45E+4	3.45E+4	3.45E+4	3.42E+4	3.42E+4	3.42E+4	3.18E+4	3.18E+4	3.18E+4	2.02E+4	2.02E+4	2.02E+4	4.60E+3	4.60E+3	4.60E+3
XXIB	3.45E+4	3.45E+4	3.45E+4	3.42E+4	3.42E+4	3.42E+4	3.18E+4	3.18E+4	3.18E+4	2.02E+4	2.02E+4	2.02E+4	4.60E+3	4.60E+3	4.60E+3
XXIC	3.45E+4	3.45E+4	3.45E+4	3.42E+4	3.42E+4	3.42E+4	3.18E+4	3.18E+4	3.18E+4	2.02E+4	2.02E+4	2.02E+4	4.60E+3	4.60E+3	4.60E+3
XXII	2.61E+6	2.61E+6	2.61E+6	1.96E+6	1.96E+6	1.96E+6	1.31E+6	1.31E+6	1.31E+6	7.42E+5	7.62E+5	7.62E+5	3.05E+5	3.35E+5	3.35E+5
DOE	9.28E+7	9.28E+7	9.28E+7	4.69E+7	4.70E+7	4.70E+7	2.64E+7	2.66E+7	2.66E+7	1.09E+7	1.11E+7	1.11E+7	3.87E+6	4.10E+6	4.10E+6
DOD	2.81E+4	2.81E+4	2.81E+4	7.55E+3	7.55E+3	7.55E+3	1.41E+3	1.41E+3	1.41E+3	7.01E+2	7.01E+2	7.01E+2	4.94E+2	4.94E+2	4.94E+2
NRC	7.59E+6	7.68E+6	7.68E+6	1.70E+6	1.81E+6	1.81E+6	8.85E+5	9.01E+5	9.01E+5	5.51E+5	5.51E+5	5.51E+5	1.43E+5	1.43E+5	1.43E+5
Total	1.00E+8	1.00E+8	1.00E+8	4.86E+7	4.88E+7	4.88E+7	2.73E+7	2.75E+7	2.75E+7	1.15E+7	1.17E+7	1.17E+7	4.02E+6	4.24E+6	4.24E+6

Table 5-4. Soil Volumes Requiring Remediation, Using Commercial Risk Factors, Including Radon Pathway Cleanup Volumes (m**3)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.66E+6	2.66E+6	2.66E+6	8.12E+5	8.12E+5	8.12E+5	2.06E+5	2.06E+5	2.06E+5	3.59E+4	3.59E+4	3.59E+4	1.70E+3	1.70E+3	1.70E+3
II	1.55E+6	1.55E+6	1.55E+6	9.91E+5	9.99E+5	9.99E+5	8.01E+5	8.58E+5	8.58E+5	7.37E+5	7.46E+5	7.46E+5	4.14E+5	4.27E+5	4.27E+5
III	8.32E+5	8.32E+5	8.32E+5	6.91E+5	6.91E+5	6.91E+5	1.62E+5	1.62E+5	1.62E+5	5.53E+3	5.53E+3	5.53E+3	.00E+0	.00E+0	.00E+0
IV	1.48E+5	1.48E+5	1.48E+5	5.65E+4	5.65E+4	5.65E+4	2.38E+4	2.38E+4	2.38E+4	1.72E+3	1.72E+3	1.72E+3	.00E+0	.00E+0	.00E+0
V	1.27E+7	1.27E+7	1.27E+7	8.13E+6	8.13E+6	8.13E+6	3.77E+6	3.77E+6	3.77E+6	7.88E+5	7.88E+5	7.88E+5	2.99E+4	2.99E+4	2.99E+4
VI	4.71E+5	4.71E+5	4.71E+5	3.11E+5	3.11E+5	3.11E+5	1.54E+5	1.54E+5	1.54E+5	5.41E+4	5.41E+4	5.41E+4	1.08E+4	1.08E+4	1.08E+4
VII	1.62E+7	1.62E+7	1.62E+7	6.66E+6	6.66E+6	6.66E+6	5.41E+5	5.41E+5	5.41E+5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	6.21E+4	6.21E+4	6.21E+4	7.06E+3	7.06E+3	7.06E+3	1.45E+2	1.45E+2	1.45E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	7.85E+5	8.00E+5	8.00E+5	5.65E+5	7.47E+5	7.47E+5	2.61E+5	4.07E+5	4.07E+5	8.97E+4	1.02E+5	1.02E+5	1.33E+4	1.41E+4	1.41E+4
XII	2.17E+3	2.17E+3	2.17E+3	1.55E+3	1.55E+3	1.55E+3	8.06E+2	8.06E+2	8.06E+2	5.73E+2	5.73E+2	5.73E+2	8.26E+1	8.26E+1	8.26E+1
XIIIA	1.41E+3	1.41E+3	1.41E+3	1.92E+2	1.92E+2	1.92E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.41E+3	1.41E+3	1.41E+3	1.92E+2	1.92E+2	1.92E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.41E+3	1.41E+3	1.41E+3	1.92E+2	1.92E+2	1.92E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.19E+3	1.19E+3	1.19E+3	1.03E+3	1.03E+3	1.03E+3	7.95E+2	7.95E+2	7.95E+2	4.56E+2	4.56E+2	4.56E+2	8.87E+1	8.87E+1	8.87E+1
XVIB	1.19E+3	1.19E+3	1.19E+3	1.03E+3	1.03E+3	1.03E+3	7.95E+2	7.95E+2	7.95E+2	4.56E+2	4.56E+2	4.56E+2	8.87E+1	8.87E+1	8.87E+1
XVIC	1.19E+3	1.19E+3	1.19E+3	1.03E+3	1.03E+3	1.03E+3	7.95E+2	7.95E+2	7.95E+2	4.56E+2	4.56E+2	4.56E+2	8.87E+1	8.87E+1	8.87E+1
XVIIIA	5.92E+2	5.92E+2	5.92E+2	5.84E+2	5.84E+2	5.84E+2	5.30E+2	5.30E+2	5.30E+2	2.97E+2	2.97E+2	2.97E+2	5.97E+1	5.97E+1	5.97E+1
XVIIIB	5.92E+2	5.92E+2	5.92E+2	5.84E+2	5.84E+2	5.84E+2	5.30E+2	5.30E+2	5.30E+2	2.97E+2	2.97E+2	2.97E+2	5.97E+1	5.97E+1	5.97E+1
XVIIIC	5.92E+2	5.92E+2	5.92E+2	5.84E+2	5.84E+2	5.84E+2	5.30E+2	5.30E+2	5.30E+2	2.97E+2	2.97E+2	2.97E+2	5.97E+1	5.97E+1	5.97E+1
XXA	1.11E+5	1.87E+5	1.87E+5	1.12E+4	2.17E+4	2.17E+4	5.84E+1	9.53E+1	9.53E+1	6.51E+0	1.31E+1	1.31E+1	.00E+0	.00E+0	.00E+0
XXB	1.11E+5	1.58E+5	1.58E+5	1.12E+4	1.76E+4	1.76E+4	5.84E+1	8.12E+1	8.12E+1	6.51E+0	1.10E+1	1.10E+1	.00E+0	.00E+0	.00E+0
XXC	1.11E+5	1.11E+5	1.11E+5	1.12E+4	1.12E+4	1.12E+4	5.84E+1	5.84E+1	5.84E+1	6.51E+0	6.51E+0	6.51E+0	.00E+0	.00E+0	.00E+0
XXIA	3.44E+4	3.44E+4	3.44E+4	3.36E+4	3.36E+4	3.36E+4	2.57E+4	2.57E+4	2.57E+4	1.04E+4	1.04E+4	1.04E+4	1.10E+3	1.10E+3	1.10E+3
XXIB	3.44E+4	3.44E+4	3.44E+4	3.36E+4	3.36E+4	3.36E+4	2.57E+4	2.57E+4	2.57E+4	1.04E+4	1.04E+4	1.04E+4	1.10E+3	1.10E+3	1.10E+3
XXIC	3.44E+4	3.44E+4	3.44E+4	3.36E+4	3.36E+4	3.36E+4	2.57E+4	2.57E+4	2.57E+4	1.04E+4	1.04E+4	1.04E+4	1.10E+3	1.10E+3	1.10E+3
XXII	2.26E+6	2.26E+6	2.26E+6	1.61E+6	1.61E+6	1.61E+6	9.71E+5	1.01E+6	1.01E+6	5.16E+5	5.24E+5	5.24E+5	.00E+0	.00E+0	.00E+0
DOE	6.12E+7	6.12E+7	6.12E+7	3.61E+7	3.63E+7	3.63E+7	1.60E+7	1.65E+7	1.65E+7	6.45E+6	6.53E+6	6.53E+6	7.07E+5	7.20E+5	7.20E+5
DOD	1.41E+4	1.41E+4	1.41E+4	3.18E+3	3.18E+3	3.18E+3	8.06E+2	8.06E+2	8.06E+2	5.73E+2	5.73E+2	5.73E+2	8.26E+1	8.26E+1	8.26E+1
NRC	2.50E+6	3.08E+6	3.08E+6	1.06E+6	1.14E+6	1.14E+6	6.98E+5	6.98E+5	6.98E+5	3.05E+5	3.05E+5	3.05E+5	3.90E+4	3.90E+4	3.90E+4
Total	6.37E+7	6.43E+7	6.43E+7	3.72E+7	3.75E+7	3.75E+7	1.67E+7	1.72E+7	1.72E+7	6.76E+6	6.84E+6	6.84E+6	7.46E+5	7.59E+5	7.59E+5

that were based on actual site data were extrapolated past the last data points (corresponding to the lowest reported concentrations) on the appropriate soil distribution curve shown in Chapter 4.

As discussed in Chapter 4, the extrapolated data may be unrealistic because the pattern of contamination of one more nuclides at a given site is unknown at concentrations that are lower than the range of measured values. In addition, the data may project a cleanup level that is well below the natural or man-made background for a given nuclide or below the minimum detectable concentration (MDC), making the attainment of such levels technically unfeasible. For example, cleaning up the soil at Reference Site I to achieve a 1×10^{-6} risk to the RME individual, assuming rural residential occupancy, would require a Cs-137 level of 0.04 pCi/g above the local background level of Cs-137. Since a typical background level of Cs-137 due to global fallout is 0.5 pCi/g at the Hanford site, this small increment over background would be all but impossible to determine. A risk level of 1×10^{-5} requires cleaning up to 0.38 pCi/g. Such a level is theoretically achievable, but there are no available data on Cs-137 soil concentrations below ~ 0.7 pCi/g (above average background) on this site.

In the present analysis, contamination is considered to be undetectable if the total concentration, including background, is less than the upper limit of the background, or less than the minimum detectable concentration (MDC), whichever is lower. Cleanup of soil that does not contain at least one nuclide above a detectable level is indicated in the tables in this chapter and in Appendix K by listing the corresponding soil volume or other derived quantity in italics.

5.2 RADIOLOGICAL IMPACTS AVERTED DUE TO SOIL CLEANUP

One of the benefits associated with site cleanup is the reduction in the cumulative exposure and associated health risks to the population residing on, or in the vicinity of, the contaminated property following cleanup. In order to estimate the radiological health effects averted by achieving a given cleanup level at each of the reference sites, it was necessary to make certain assumptions about the future population density on each site, as well as whether or not the site would be cultivated. In order to bracket a wide range of future uses of the land, six different scenarios were constructed. These are described below.

High Density Scenario. Population density is equal to 1,000 people per km². Since such a high density is incompatible with agriculture, no crops are raised on site.

Medium Density Scenarios. Two scenarios assume population densities of 100 people per km²: one assumes no agriculture, the other assumes that the site is intensely cultivated.

Low Density Scenarios. Two scenarios assume population densities of 10 people per km²: one with and one without agriculture.

Reasonable Occupancy Scenario. A "reasonable" population density was assigned to each reference site, based on demographic data on the areas surrounding the corresponding basis sites. The demographic data and the methods used to assign site-specific densities are presented in Appendix D; the densities assigned to each of the reference sites are listed in Table 4-3. Sites with densities of 300 people per km² or less are assumed to be intensely cultivated; no crops are raised on sites with higher densities.

For each reference site, it was assumed that the groundwater would be used extensively for domestic purposes by people both on and off the site, and that all crops raised would be consumed either on or off site. The specific population exposure pathways addressed include:

- Direct radiation from living on contaminated soil
- Inhalation of suspended dust
- Exposure to indoor radon progeny (if applicable)
- Ingestion of crops grown on contaminated soil (if applicable)
- Ingestion of contaminated groundwater

Sites contaminated by U-234, Th-230 or Ra-226—nuclides which include Rn-222 in their progeny—underwent two separate analyses. In one analysis, the calculation of risks to the RME individual included risks posed by the inhalation of indoor radon; the modeling of health effects averted by future populations likewise included the radon pathway. In the second analysis, the individual risk calculation ignored the radon pathway—it was also ignored in the assessment of population impacts averted. Thus, for sites at which radon is a potential hazard, 12 distinct scenarios were modeled.

Cumulative population exposures and the adverse health effects attributable to these exposures were derived for each exposure pathway and for integration periods of 100, 1,000, and 10,000 years. These alternative pathways and time periods were explicitly addressed to support EPA consideration of future land-use scenarios and time periods of interest for the rulemaking. A simple computer model was developed to facilitate the performance of the calculations. A summary of the methodology is provided in Section 2.2 of this report.

The calculation of radiological impacts averted consists of two distinct steps: (1) derivation of population health effect factors; and (2) calculation of radionuclide inventories of remediated soil

5.2.1 Step 1: Derivation of Population Health Effect Factors

The cumulative integrated population dose, expressed in person-rem, was calculated separately for each nuclide at a given reference site, assuming a total activity of one curie distributed uniformly throughout the contaminated soil. (The area and thickness of the contaminated layer used both in these calculations and in the RESRAD risk assessments are listed in Table 4-6.) Separate calculations were performed for the three integration periods, for each of the 12 possible scenarios. Corresponding calculations were performed to determine the total incidence of radiogenic cancers resulting from this unit activity, as well as the cancer fatalities for the same set of circumstances. These calculations yielded a set of population health effect factors—health effects per unit activity—for each nuclide at each site.

5.2.2 Step 2: Calculation of Radionuclide Inventories of Remediated Soil

The present analysis assumes that the cumulative population impacts are directly proportional to the total inventory of each radionuclide at the site. The impacts averted are therefore proportional to the activities removed, *i.e.*, the inventories in the remediated soil. These impacts can thus be determined by multiplying the total activity of each nuclide (expressed in curies) in the volume of remediated soil by the health effect factor for that nuclide and adding the products. Tables 5-5 through 5-8 list the fatal cancers averted by remediating the volumes of soil listed in Tables 5-1 through 5-4, assuming the reasonable occupancy scenario described above. The same integration time is used to calculate the risk to the RME individual and the population impacts. The complete set of tables in Appendix K list the collective doses, fatal cancers and total cancers averted for the various cleanup goals and risk factors for the 12 possible scenarios.

Table 5-5. Fatal Cancers Averted for Reasonable Occupancy Scenario, Cleanup Based on Residential Risk Factors Excluding Radon Potential Cancer Deaths Averted

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.51E-1	8.21E-1	8.21E-1	7.38E-1	8.07E-1	8.07E-1	6.97E-1	7.62E-1	7.62E-1	5.60E-1	6.12E-1	6.12E-1	2.51E-1	2.74E-1	2.74E-1
II	4.83E+1	4.51E+2	2.22E+3	4.82E+1	4.51E+2	2.22E+3	4.82E+1	4.50E+2	2.22E+3	4.82E+1	4.49E+2	2.19E+3	4.65E+1	4.33E+2	2.09E+3
III	3.25E-1	3.60E-1	3.60E-1	3.25E-1	3.60E-1	3.60E-1	3.03E-1	3.36E-1	3.36E-1	1.61E-1	1.78E-1	1.78E-1	.00E+0	.00E+0	.00E+0
IV	2.79E-1	1.57E+0	3.04E+0	2.76E-1	1.55E+0	3.00E+0	2.63E-1	1.48E+0	2.86E+0	2.07E-1	1.16E+0	2.26E+0	.00E+0	.00E+0	.00E+0
V	1.95E+1	2.13E+1	2.13E+1	1.95E+1	2.12E+1	2.12E+1	1.93E+1	2.10E+1	2.10E+1	1.77E+1	1.92E+1	1.92E+1	1.16E+1	1.26E+1	1.26E+1
VI	1.18E+1	7.88E+1	5.55E+2	1.17E+1	7.88E+1	5.55E+2	1.17E+1	7.88E+1	5.55E+2	1.15E+1	7.83E+1	5.52E+2	1.02E+1	7.24E+1	5.14E+2
VII	2.13E+0	1.52E+1	1.01E+2	1.78E+0	1.24E+1	8.21E+1	1.31E+0	9.01E+0	5.95E+1	3.38E-2	2.33E-1	1.54E+0	.00E+0	.00E+0	.00E+0
IX	4.48E-2	3.90E-1	2.43E+0	3.26E-2	2.84E-1	1.77E+0	1.12E-2	9.73E-2	6.06E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.13E+0	3.46E+0	9.92E-1	2.36E+0	2.57E+0	8.69E-1	1.43E+0	1.52E+0
XII	2.64E-2	8.16E-2	8.39E-2	2.64E-2	8.15E-2	8.38E-2	2.63E-2	8.14E-2	8.38E-2	2.60E-2	8.04E-2	8.27E-2	2.46E-2	7.59E-2	7.81E-2
XIIIA	1.74E-4	1.02E-3	2.39E-3	1.25E-4	7.29E-4	1.71E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.56E-4	6.62E-4	1.00E-3	1.12E-4	4.75E-4	7.17E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.27E-4	3.58E-4	6.47E-3	9.14E-5	2.57E-4	4.64E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.30E-3	2.30E-3	2.16E-3	2.28E-3	2.28E-3	1.91E-3	2.04E-3	2.04E-3
XVIB	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.13E-3	2.26E-3	2.26E-3	1.90E-3	2.01E-3	2.01E-3
XVIC	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.09E-3	2.20E-3	2.20E-3	1.86E-3	1.96E-3	1.96E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.63E-2	2.91E-2	2.91E-2	2.30E-2	2.55E-2	2.55E-2
XVIIIB	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.59E-2	2.86E-2	2.86E-2	2.27E-2	2.50E-2	2.50E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.51E-2	2.73E-2	2.73E-2	2.19E-2	2.39E-2	2.39E-2
XXA	1.27E-2	9.89E-2	7.78E-1	8.01E-3	6.24E-2	4.91E-1	1.67E-3	1.30E-2	1.02E-1	3.97E-4	3.10E-3	2.44E-2	.00E+0	.00E+0	.00E+0
XXB	1.21E-2	7.03E-2	3.13E-1	7.62E-3	4.43E-2	1.98E-1	1.59E-3	9.25E-3	4.12E-2	3.78E-4	2.20E-3	9.82E-3	.00E+0	.00E+0	.00E+0
XXC	1.09E-2	3.95E-2	8.91E-1	6.89E-3	2.49E-2	5.62E-1	1.44E-3	5.20E-3	1.17E-1	3.42E-4	1.24E-3	2.79E-2	.00E+0	.00E+0	.00E+0
XXIA	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.46E-2	7.79E-1	7.34E+0	7.26E-2	7.58E-1	7.14E+0	4.94E-2	5.15E-1	4.85E+0
XXIB	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.40E-2	7.66E-1	6.64E+0	7.21E-2	7.46E-1	6.46E+0	4.90E-2	5.07E-1	4.39E+0
XXIC	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.29E-2	7.39E-1	5.37E+0	7.10E-2	7.19E-1	5.23E+0	4.82E-2	4.89E-1	3.56E+0
XXII	3.13E+0	3.11E+1	6.84E+1	3.13E+0	3.10E+1	6.83E+1	3.11E+0	3.09E+1	6.80E+1	2.97E+0	2.96E+1	6.52E+1	9.35E-1	1.38E+1	3.04E+1
DOE	3.61E+2	2.50E+3	1.54E+4	3.60E+2	2.49E+3	1.54E+4	3.59E+2	2.49E+3	1.54E+4	3.50E+2	2.45E+3	1.52E+4	2.98E+2	2.19E+3	1.40E+4
DOD	2.77E-2	8.73E-2	1.12E-1	2.73E-2	8.56E-2	1.04E-1	2.63E-2	8.14E-2	8.38E-2	2.60E-2	8.04E-2	8.27E-2	2.46E-2	7.59E-2	7.81E-2
NRC	3.70E+0	1.98E+1	1.53E+2	3.63E+0	1.95E+1	1.50E+2	3.55E+0	1.90E+1	1.45E+2	3.48E+0	1.84E+1	1.40E+2	2.73E+0	1.29E+1	9.57E+1
Total	3.65E+2	2.52E+3	1.56E+4	3.64E+2	2.51E+3	1.56E+4	3.62E+2	2.51E+3	1.55E+4	3.54E+2	2.47E+3	1.53E+4	3.01E+2	2.20E+3	1.41E+4

Table 5-6. Fatal Cancers Averted for Reasonable Occupancy Scenario, Cleanup Based on Commercial Risk Factors Excluding Radon Potential Cancer Deaths Averted

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.46E-1	8.15E-1	8.15E-1	7.22E-1	7.89E-1	7.89E-1	6.38E-1	6.97E-1	6.97E-1	4.28E-1	4.68E-1	4.68E-1	1.09E-1	1.19E-1	1.19E-1
II	4.82E+1	4.51E+2	2.22E+3	4.82E+1	4.50E+2	2.22E+3	4.82E+1	4.50E+2	2.21E+3	4.80E+1	4.46E+2	2.17E+3	3.28E+1	3.13E+2	1.54E+3
III	3.25E-1	3.60E-1	3.60E-1	3.22E-1	3.56E-1	3.56E-1	2.37E-1	2.62E-1	2.62E-1	3.79E-2	4.19E-2	4.19E-2	.00E+0	.00E+0	.00E+0
IV	2.78E-1	1.56E+0	3.02E+0	2.71E-1	1.52E+0	2.94E+0	2.46E-1	1.38E+0	2.68E+0	4.41E-2	2.48E-1	4.80E-1	.00E+0	.00E+0	.00E+0
V	1.95E+1	2.13E+1	2.13E+1	1.94E+1	2.12E+1	2.12E+1	1.88E+1	2.04E+1	2.04E+1	1.45E+1	1.58E+1	1.58E+1	4.08E+0	4.44E+0	4.44E+0
VI	1.17E+1	7.88E+1	5.55E+2	1.17E+1	7.88E+1	5.55E+2	1.17E+1	7.87E+1	5.55E+2	1.10E+1	7.60E+1	5.37E+2	7.71E+0	5.73E+1	4.10E+2
VII	1.95E+0	1.38E+1	9.16E+1	1.64E+0	1.13E+1	7.49E+1	5.14E-1	3.62E+0	2.39E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	3.88E-2	3.37E-1	2.10E+0	2.02E-2	1.76E-1	1.09E+0	2.10E-3	1.82E-2	1.14E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.21E+0	3.55E+0	1.01E+0	2.93E+0	3.23E+0	9.61E-1	1.98E+0	2.14E+0	7.71E-1	1.09E+0	1.14E+0
XII	2.64E-2	8.15E-2	8.39E-2	2.64E-2	8.15E-2	8.38E-2	2.61E-2	8.07E-2	8.31E-2	2.55E-2	7.89E-2	8.11E-2	8.22E-3	2.54E-2	2.61E-2
XIIIA	1.58E-4	9.23E-4	2.17E-3	6.04E-5	3.54E-4	8.30E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.42E-4	6.01E-4	9.07E-4	5.42E-5	2.30E-4	3.48E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.16E-4	3.25E-4	5.87E-3	4.43E-5	1.24E-4	2.25E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.30E-3	2.30E-3	2.17E-3	2.30E-3	2.30E-3	2.10E-3	2.23E-3	2.23E-3	1.18E-3	1.26E-3	1.26E-3
XVIB	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.15E-3	2.27E-3	2.27E-3	2.08E-3	2.20E-3	2.20E-3	1.17E-3	1.24E-3	1.24E-3
XVIC	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.21E-3	2.21E-3	2.04E-3	2.14E-3	2.14E-3	1.14E-3	1.21E-3	1.21E-3
XVIII A	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.54E-2	2.81E-2	2.81E-2	1.74E-2	1.93E-2	1.93E-2
XVIII B	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.87E-2	2.87E-2	2.50E-2	2.75E-2	2.75E-2	1.71E-2	1.89E-2	1.89E-2
XVIII C	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.42E-2	2.64E-2	2.64E-2	1.66E-2	1.81E-2	1.81E-2
XXA	9.63E-3	7.50E-2	5.90E-1	4.19E-3	3.26E-2	2.56E-1	4.79E-4	3.73E-3	2.94E-2	1.81E-4	1.41E-3	1.11E-2	.00E+0	.00E+0	.00E+0
XXB	9.16E-3	5.33E-2	2.37E-1	3.98E-3	2.32E-2	1.03E-1	4.56E-4	2.65E-3	1.18E-2	1.72E-4	1.00E-3	4.47E-3	.00E+0	.00E+0	.00E+0
XXC	8.29E-3	3.00E-2	6.75E-1	3.60E-3	1.30E-2	2.94E-1	4.12E-4	1.49E-3	3.36E-2	1.56E-4	5.63E-4	1.27E-2	.00E+0	.00E+0	.00E+0
XXIA	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.41E-2	7.73E-1	7.28E+0	6.37E-2	6.65E-1	6.26E+0	2.28E-2	2.38E-1	2.24E+0
XXIB	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.35E-2	7.61E-1	6.59E+0	6.32E-2	6.54E-1	5.67E+0	2.26E-2	2.34E-1	2.03E+0
XXIC	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.24E-2	7.33E-1	5.34E+0	6.22E-2	6.31E-1	4.59E+0	2.22E-2	2.25E-1	1.64E+0
XXII	3.13E+0	3.11E+1	6.84E+1	3.13E+0	3.10E+1	6.83E+1	3.07E+0	3.06E+1	6.73E+1	2.81E+0	2.81E+1	6.18E+1	.00E+0	.00E+0	.00E+0
DOE	3.61E+2	2.50E+3	1.54E+4	3.60E+2	2.49E+3	1.54E+4	3.56E+2	2.48E+3	1.53E+4	3.34E+2	2.38E+3	1.48E+4	2.13E+2	1.62E+3	1.09E+4
DOD	2.75E-2	8.68E-2	1.09E-1	2.68E-2	8.35E-2	9.35E-2	2.61E-2	8.07E-2	8.31E-2	2.55E-2	7.89E-2	8.11E-2	8.22E-3	2.54E-2	2.61E-2
NRC	3.66E+0	1.96E+1	1.51E+2	3.58E+0	1.92E+1	1.47E+2	3.52E+0	1.87E+1	1.43E+2	3.21E+0	1.63E+1	1.23E+2	1.71E+0	6.44E+0	4.46E+1
Total	3.64E+2	2.52E+3	1.56E+4	3.64E+2	2.51E+3	1.55E+4	3.59E+2	2.50E+3	1.55E+4	3.37E+2	2.40E+3	1.49E+4	2.14E+2	1.63E+3	1.09E+4

Table 5-7. Fatal Cancers Averted for Reasonable Occupancy Scenario, Cleanup Based on Residential Risk Factors Including Radon Potential Cancer Deaths Averted

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.51E-1	8.21E-1	8.21E-1	7.38E-1	8.07E-1	8.07E-1	6.97E-1	7.62E-1	7.62E-1	5.60E-1	6.12E-1	6.12E-1	2.51E-1	2.74E-1	2.74E-1
II	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.13E+4	1.40E+2	1.36E+3	1.09E+4
III	3.25E-1	3.60E-1	3.60E-1	3.25E-1	3.60E-1	3.60E-1	3.03E-1	3.36E-1	3.36E-1	1.61E-1	1.78E-1	1.78E-1	.00E+0	.00E+0	.00E+0
IV	2.79E-1	1.59E+0	7.47E+0	2.76E-1	1.57E+0	7.38E+0	2.63E-1	1.50E+0	7.05E+0	2.07E-1	1.18E+0	5.55E+0	.00E+0	.00E+0	.00E+0
V	1.95E+1	2.13E+1	2.13E+1	1.95E+1	2.12E+1	2.12E+1	1.93E+1	2.10E+1	2.10E+1	1.77E+1	1.92E+1	1.92E+1	1.16E+1	1.26E+1	1.26E+1
VI	1.18E+1	7.96E+1	8.42E+2	1.17E+1	7.96E+1	8.42E+2	1.17E+1	7.95E+1	8.42E+2	1.15E+1	7.90E+1	8.38E+2	1.02E+1	7.31E+1	7.81E+2
VII	2.13E+0	1.52E+1	1.01E+2	1.78E+0	1.24E+1	8.21E+1	1.31E+0	9.01E+0	5.95E+1	3.38E-2	2.33E-1	1.54E+0	.00E+0	.00E+0	.00E+0
IX	4.48E-2	3.90E-1	2.43E+0	3.26E-2	2.84E-1	1.77E+0	1.12E-2	9.73E-2	6.06E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.14E+0	3.57E+0	9.92E-1	2.36E+0	2.64E+0	8.69E-1	1.44E+0	1.55E+0
XII	2.64E-2	8.16E-2	8.39E-2	2.64E-2	8.15E-2	8.38E-2	2.63E-2	8.14E-2	8.38E-2	2.60E-2	8.04E-2	8.27E-2	2.46E-2	7.59E-2	7.81E-2
XIIIA	1.74E-4	1.02E-3	3.01E-3	1.25E-4	7.31E-4	2.16E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.56E-4	6.64E-4	1.44E-3	1.12E-4	4.76E-4	1.03E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.27E-4	3.60E-4	6.71E-3	9.14E-5	2.58E-4	4.81E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.30E-3	2.30E-3	2.16E-3	2.28E-3	2.28E-3	1.91E-3	2.04E-3	2.04E-3
XVIB	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.13E-3	2.26E-3	2.26E-3	1.90E-3	2.01E-3	2.01E-3
XVIC	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.09E-3	2.20E-3	2.20E-3	1.86E-3	1.96E-3	1.96E-3
XVIII A	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.63E-2	2.91E-2	2.91E-2	2.30E-2	2.55E-2	2.55E-2
XVIII B	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.59E-2	2.86E-2	2.86E-2	2.27E-2	2.50E-2	2.50E-2
XVIII C	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.51E-2	2.73E-2	2.73E-2	2.19E-2	2.39E-2	2.39E-2
XXA	1.27E-2	1.02E-1	1.72E+0	8.01E-3	7.08E-2	1.19E+0	1.67E-3	2.30E-2	3.87E-1	3.97E-4	3.52E-3	5.94E-2	.00E+0	6.79E-4	1.15E-2
XXB	1.21E-2	7.28E-2	9.67E-1	7.62E-3	4.59E-2	6.09E-1	1.59E-3	9.58E-3	1.27E-1	3.78E-4	2.28E-3	3.03E-2	.00E+0	.00E+0	.00E+0
XXC	1.09E-2	4.18E-2	1.25E+0	6.89E-3	2.64E-2	7.87E-1	1.44E-3	5.51E-3	1.64E-1	3.42E-4	1.31E-3	3.91E-2	.00E+0	.00E+0	.00E+0
XXIA	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.46E-2	7.79E-1	7.34E+0	7.26E-2	7.58E-1	7.14E+0	4.94E-2	5.15E-1	4.85E+0
XXIB	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.40E-2	7.66E-1	6.64E+0	7.21E-2	7.46E-1	6.46E+0	4.90E-2	5.07E-1	4.39E+0
XXIC	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.29E-2	7.39E-1	5.37E+0	7.10E-2	7.19E-1	5.23E+0	4.82E-2	4.89E-1	3.56E+0
XXII	5.95E+0	5.36E+1	1.28E+2	5.95E+0	5.36E+1	1.28E+2	5.93E+0	5.34E+1	1.27E+2	5.75E+0	5.19E+1	1.24E+2	4.13E+0	3.93E+1	9.37E+1
DOE	4.74E+2	3.61E+3	3.15E+4	4.74E+2	3.61E+3	3.15E+4	4.72E+2	3.60E+3	3.15E+4	4.64E+2	3.56E+3	3.12E+4	4.14E+2	3.31E+3	2.93E+4
DOD	2.77E-2	8.74E-2	1.16E-1	2.73E-2	8.57E-2	1.06E-1	2.63E-2	8.14E-2	8.38E-2	2.60E-2	8.04E-2	8.27E-2	2.46E-2	7.59E-2	7.81E-2
NRC	3.70E+0	1.99E+1	1.62E+2	3.63E+0	1.95E+1	1.56E+2	3.55E+0	1.90E+1	1.47E+2	3.48E+0	1.84E+1	1.41E+2	2.73E+0	1.29E+1	9.57E+1
Total	4.78E+2	3.63E+3	3.17E+4	4.77E+2	3.63E+3	3.17E+4	4.76E+2	3.62E+3	3.16E+4	4.67E+2	3.58E+3	3.13E+4	4.17E+2	3.32E+3	2.94E+4

Table 5-8. Fatal Cancers Averted for Reasonable Occupancy Scenario, Cleanup Based on Commercial Risk Factors Including Radon Potential Cancer Deaths Averted

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.46E-1	8.15E-1	8.15E-1	7.22E-1	7.89E-1	7.89E-1	6.38E-1	6.97E-1	6.97E-1	4.28E-1	4.68E-1	4.68E-1	1.09E-1	1.19E-1	1.19E-1
II	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.38E+3	1.11E+4	1.20E+2	1.17E+3	9.19E+3
III	3.25E-1	3.60E-1	3.60E-1	3.22E-1	3.56E-1	3.56E-1	2.37E-1	2.62E-1	2.62E-1	3.79E-2	4.19E-2	4.19E-2	.00E+0	.00E+0	.00E+0
IV	2.78E-1	1.58E+0	7.44E+0	2.71E-1	1.54E+0	7.25E+0	2.46E-1	1.40E+0	6.59E+0	4.41E-2	2.51E-1	1.18E+0	.00E+0	.00E+0	.00E+0
V	1.95E+1	2.13E+1	2.13E+1	1.94E+1	2.12E+1	2.12E+1	1.88E+1	2.04E+1	2.04E+1	1.45E+1	1.58E+1	1.58E+1	4.08E+0	4.44E+0	4.44E+0
VI	1.17E+1	7.96E+1	8.42E+2	1.17E+1	7.96E+1	8.42E+2	1.17E+1	7.94E+1	8.41E+2	1.10E+1	7.67E+1	8.15E+2	7.71E+0	5.79E+1	6.23E+2
VII	1.95E+0	1.38E+1	9.16E+1	1.64E+0	1.13E+1	7.49E+1	5.14E-1	3.62E+0	2.39E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	3.88E-2	3.37E-1	2.10E+0	2.02E-2	1.76E-1	1.09E+0	2.10E-3	1.82E-2	1.14E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.21E+0	3.66E+0	1.01E+0	2.93E+0	3.33E+0	9.61E-1	1.98E+0	2.19E+0	7.71E-1	1.09E+0	1.16E+0
XII	2.64E-2	8.15E-2	8.39E-2	2.64E-2	8.15E-2	8.38E-2	2.61E-2	8.07E-2	8.31E-2	2.55E-2	7.89E-2	8.11E-2	8.22E-3	2.54E-2	2.61E-2
XIIIA	1.58E-4	9.24E-4	2.73E-3	6.04E-5	3.54E-4	1.05E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.42E-4	6.02E-4	1.30E-3	5.42E-5	2.31E-4	5.00E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.16E-4	3.26E-4	6.08E-3	4.43E-5	1.25E-4	2.33E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.30E-3	2.30E-3	2.17E-3	2.30E-3	2.30E-3	2.10E-3	2.23E-3	2.23E-3	1.18E-3	1.26E-3	1.26E-3
XVIB	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.15E-3	2.27E-3	2.27E-3	2.08E-3	2.20E-3	2.20E-3	1.17E-3	1.24E-3	1.24E-3
XVIC	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.21E-3	2.21E-3	2.04E-3	2.14E-3	2.14E-3	1.14E-3	1.21E-3	1.21E-3
XVIII A	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.54E-2	2.81E-2	2.81E-2	1.74E-2	1.93E-2	1.93E-2
XVIII B	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.87E-2	2.87E-2	2.50E-2	2.75E-2	2.75E-2	1.71E-2	1.89E-2	1.89E-2
XVIII C	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.42E-2	2.64E-2	2.64E-2	1.66E-2	1.81E-2	1.81E-2
XXA	9.63E-3	8.60E-2	1.45E+0	4.19E-3	4.60E-2	7.74E-1	4.79E-4	4.27E-3	7.19E-2	1.81E-4	2.26E-3	3.82E-2	.00E+0	.00E+0	.00E+0
XXB	9.16E-3	5.96E-2	7.91E-1	3.98E-3	3.01E-2	3.99E-1	4.56E-4	2.96E-3	3.94E-2	1.72E-4	1.47E-3	1.96E-2	.00E+0	.00E+0	.00E+0
XXC	8.29E-3	3.17E-2	9.46E-1	3.60E-3	1.38E-2	4.12E-1	4.12E-4	1.58E-3	4.71E-2	1.56E-4	5.96E-4	1.78E-2	.00E+0	.00E+0	.00E+0
XXIA	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.41E-2	7.73E-1	7.28E+0	6.37E-2	6.65E-1	6.26E+0	2.28E-2	2.38E-1	2.24E+0
XXIB	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.35E-2	7.61E-1	6.59E+0	6.32E-2	6.54E-1	5.67E+0	2.26E-2	2.34E-1	2.03E+0
XXIC	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.24E-2	7.33E-1	5.34E+0	6.22E-2	6.31E-1	4.59E+0	2.22E-2	2.25E-1	1.64E+0
XXII	5.95E+0	5.36E+1	1.28E+2	5.95E+0	5.35E+1	1.28E+2	5.87E+0	5.30E+1	1.26E+2	5.41E+0	4.90E+1	1.17E+2	.00E+0	.00E+0	.00E+0
DOE	4.74E+2	3.61E+3	3.15E+4	4.73E+2	3.60E+3	3.15E+4	4.69E+2	3.59E+3	3.14E+4	4.46E+2	3.48E+3	3.05E+4	3.00E+2	2.49E+3	2.33E+4
DOD	2.75E-2	8.68E-2	1.13E-1	2.68E-2	8.35E-2	9.48E-2	2.61E-2	8.07E-2	8.31E-2	2.55E-2	7.89E-2	8.11E-2	8.22E-3	2.54E-2	2.61E-2
NRC	3.66E+0	1.97E+1	1.59E+2	3.58E+0	1.93E+1	1.51E+2	3.52E+0	1.87E+1	1.44E+2	3.21E+0	1.63E+1	1.23E+2	1.71E+0	6.44E+0	4.46E+1
Total	4.78E+2	3.63E+3	3.17E+4	4.77E+2	3.62E+3	3.16E+4	4.73E+2	3.61E+3	3.15E+4	4.49E+2	3.50E+3	3.06E+4	3.02E+2	2.50E+3	2.34E+4

5.3 POTENTIAL RADIOGENIC CANCERS CAUSED BY CLEANUP

The potential radiological impacts resulting from site cleanup include the impact on workers and the nearby public during cleanup, impacts on the public from the transport of the waste to a disposal site, and the impacts on the workers and public at the disposal site location. These short-term impacts could offset some of the long-term impacts averted through cleanup. This section addresses these issues.

5.3.1 Radiological Impacts on Workers During Cleanup

During site cleanup, workers are exposed to both direct radiation and inhalation of airborne radioactive soil particles. A key parameter in the calculation of the cumulative dose to workers is the cumulative level of effort required to remediate a unit volume of contaminated soil. In this analysis, remediation is assumed to be soil excavation. The analysis is based on an assumed 1.62 person-hours to excavate, monitor and package one cubic meter of soil (from NUREG/CR-1754 (Addendum 1), which is in part based on "Superfund Record of Decision: Monticello Mill Tailings," EPA/ROD/RO8-90/034, August 1990).

The inhalation dose is based on a dust loading of $400 \mu\text{g}/\text{m}^3$ during excavation (NRC 92). The outdoor dust loading is highly variable depending on the properties of the soil (especially moisture content), wind speed and activities at a site that could cause the suspension of dust. NRC 92 summarizes the literature on dust loading, indicating that the outdoor dust loading can vary from about 10 to several hundred $\mu\text{g}/\text{m}^3$. For a site with heavy industrial activity, it is not unusual for the dust loading to exceed several hundred $\mu\text{g}/\text{m}^3$. The OSHA standard for nuisance dust in the workplace is $10,000 \mu\text{g}/\text{m}^3$, but the dust level can be maintained well below this level by using dust suppression techniques, such as wetting the soil with a fine mist.

Another consideration in modeling dust inhalation is the enhancement or discrimination factor. In this report, it is assumed that the concentration of the radionuclide on the dust is the same as in the soil. Studies have shown that, in some cases and for some contaminants, the concentration of the radionuclides in dust can be either higher (enhancement) or lower (discrimination) than the concentration in the soil (EGG 84). For example, windblown suspension picks up the smaller, lower density soil particles, typically less than 50 microns in diameter (NRC 83). Hence, if the contaminants adhere to soil particles larger than 50

microns, little of the contaminants will be suspended. The converse is also true. If the radionuclides preferentially adhere to the very small particles, enhancement can occur. For example, there is evidence that uranium-contaminated soil at uranium mill tailing sites (NRC 87) and at a radium-contaminated site (Nei 92) have an enhancement factor of about 2 to 3. In this report, an enhancement factor of 1 is used.

The dose attributable to inhalation of suspended dust, DOS_{Inh} , may be determined as follows:

$$DOS_{Inh} = RSC \times DCF_{Inh} \times IR \times 1.62 \times VOL \times DL$$

where:

DOS_{Inh} = cumulative effective dose commitment to workers due to inhalation of suspended dust (person-rem)

RSC = radionuclide soil concentration (pCi/g)

DCF_{Inh} = inhalation dose conversion factor (mrem/pCi)

IR = inhalation rate (m^3/hr)

1.62 = person-hours of work required to excavate 1 m^3 of soil

DL = airborne dust loading
= 400 $\mu g/m^3$ (based on a review provided in NRC 92).

VOL = volume of soil being excavated (m^3).

The dose attributable to external radiation exposure, DOS_{Ext} , may be determined as follows:

$$DOS_{Ext} = RSC \times DCF_{Ext} \times SD \times 1.62 \times VOL$$

where:

DOS_{Ext} = cumulative worker dose from external radiation on ground during cleanup (person-rem)

RSC = radionuclide soil concentration (pCi/g)

DCF_{Ext} = external dose conversion factor (rem/yr per pCi/cm³)
SD = soil density (1.6 g/cm³)

Total and fatal cancers are calculated in a similar fashion, using the slope factors from EPA's 1993 Health Effects Assessment Summary Tables (EPA 92b). Table 5-9 lists the calculated incidence of fatal cancers among site remediation workers, using cleanup goals based on residential risk factors excluding radon. For example, the highest incidence of potential cumulative radiogenic fatal cancers among workers performing cleanup at Reference Site II is about 0.1. In other words, there is about a 10% probability of a single radiogenic cancer death among the worker population as a consequence of cleaning up this site, which is based on conservative assumptions regarding airborne dust loadings. In fact, dust suppression techniques will likely reduce these risks. These impacts are compared to the 451 fatal cancers over the next 1,000 years that can be averted in the general population by cleaning up this site, based on the reasonable occupancy scenario, as shown in Table 5-5. A comparison of nationwide totals of worker impacts and cancer deaths averted in the general population, listed in Tables 5-9 and 5-5, respectively, leads to a similar conclusion. In summary, the results reveal that the potential radiation doses and risks to workers are extremely small in comparison to the potential impacts averted due to cleanup.

5.3.2 Off-Site Impacts During Remediation

The dust generated on site during remediation can be transported off site and result in exposures to nearby members of the public. It can be assumed that dust suppression techniques and other contamination control procedures will be followed during cleanup, and airborne monitoring will be performed to ensure that worker and public exposures will be maintained within existing regulations. Nevertheless, it is appropriate, in support of the cost-benefit analysis, to estimate these potential impacts.

A two-step process is used to evaluate the impacts. First, a generic analysis is provided which can be used to represent a broad range of sites. Second, the generic analysis is applied to a reference site. The overall analysis demonstrates that the potential radiological impacts off site due to the dust generated during site remediation is small compared to the potential radiological impacts averted as a result of site cleanup.

Table 5-9. Fatal Cancers Among Remediation Workers, Assuming Residential Risk Factors, Excluding Indoor Radon Potential
Cancer Deaths of Workers

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.92E-3	5.92E-3	5.92E-3	5.81E-3	5.81E-3	5.81E-3	5.49E-3	5.49E-3	5.49E-3	4.41E-3	4.41E-3	4.41E-3	1.97E-3	1.97E-3	1.97E-3
II	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	9.86E-2	9.91E-2	9.91E-2
III	2.44E-3	2.44E-3	2.44E-3	2.44E-3	2.44E-3	2.44E-3	2.27E-3	2.27E-3	2.27E-3	1.21E-3	1.21E-3	1.21E-3	.00E+0	.00E+0	.00E+0
IV	6.15E-4	6.15E-4	6.15E-4	6.07E-4	6.07E-4	6.07E-4	5.79E-4	5.79E-4	5.79E-4	4.57E-4	4.57E-4	4.57E-4	.00E+0	.00E+0	.00E+0
V	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.53E-1	1.53E-1	1.53E-1	1.40E-1	1.40E-1	1.40E-1	9.16E-2	9.16E-2	9.16E-2
VI	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.92E-2	1.92E-2	1.92E-2	1.63E-2	1.63E-2	1.63E-2
VII	5.17E-2	5.17E-2	5.17E-2	4.32E-2	4.32E-2	4.32E-2	3.18E-2	3.18E-2	3.18E-2	8.23E-4	8.23E-4	8.23E-4	.00E+0	.00E+0	.00E+0
IX	1.82E-4	1.82E-4	1.82E-4	1.32E-4	1.32E-4	1.32E-4	4.54E-5	4.54E-5	4.54E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.24E-4	1.24E-4	1.24E-4	1.23E-4	1.24E-4	1.24E-4	1.08E-4	1.20E-4	1.20E-4	6.96E-5	7.69E-5	7.69E-5	3.01E-5	3.17E-5	3.17E-5
XII	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.31E-4	5.31E-4	5.31E-4	5.01E-4	5.01E-4	5.01E-4
XIIIA	3.22E-7	3.22E-7	3.22E-7	2.31E-7	2.31E-7	2.31E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.22E-7	3.22E-7	3.22E-7	2.31E-7	2.31E-7	2.31E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	3.22E-7	3.22E-7	3.22E-7	2.31E-7	2.31E-7	2.31E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.23E-5	5.23E-5	5.23E-5	4.34E-5	4.34E-5	4.34E-5
XVIB	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.23E-5	5.23E-5	5.23E-5	4.34E-5	4.34E-5	4.34E-5
XVIC	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.23E-5	5.23E-5	5.23E-5	4.34E-5	4.34E-5	4.34E-5
XVIIIA	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.42E-5	4.42E-5	4.42E-5	3.86E-5	3.86E-5	3.86E-5
XVIIIB	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.42E-5	4.42E-5	4.42E-5	3.86E-5	3.86E-5	3.86E-5
XVIIIC	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.42E-5	4.42E-5	4.42E-5	3.86E-5	3.86E-5	3.86E-5
XXA	3.73E-5	3.73E-5	3.73E-5	2.35E-5	2.35E-5	2.35E-5	4.90E-6	4.90E-6	4.90E-6	1.16E-6	1.16E-6	1.16E-6	.00E+0	.00E+0	.00E+0
XXB	3.73E-5	3.73E-5	3.73E-5	2.35E-5	2.35E-5	2.35E-5	4.90E-6	4.90E-6	4.90E-6	1.16E-6	1.16E-6	1.16E-6	.00E+0	.00E+0	.00E+0
XXC	3.73E-5	3.73E-5	3.73E-5	2.35E-5	2.35E-5	2.35E-5	4.90E-6	4.90E-6	4.90E-6	1.16E-6	1.16E-6	1.16E-6	.00E+0	.00E+0	.00E+0
XXIA	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.83E-4	7.83E-4	7.83E-4	7.62E-4	7.62E-4	7.62E-4	5.18E-4	5.18E-4	5.18E-4
XXIB	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.83E-4	7.83E-4	7.83E-4	7.62E-4	7.62E-4	7.62E-4	5.18E-4	5.18E-4	5.18E-4
XXIC	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.83E-4	7.83E-4	7.83E-4	7.62E-4	7.62E-4	7.62E-4	5.18E-4	5.18E-4	5.18E-4
XXII	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.98E-2	1.98E-2	1.98E-2	1.89E-2	1.89E-2	1.89E-2	5.94E-3	8.87E-3	8.87E-3
DOE	9.04E-1	9.04E-1	9.04E-1	8.94E-1	8.94E-1	8.94E-1	8.79E-1	8.79E-1	8.79E-1	8.15E-1	8.16E-1	8.16E-1	6.04E-1	6.24E-1	6.24E-1
DOD	5.41E-4	5.41E-4	5.41E-4	5.40E-4	5.40E-4	5.40E-4	5.38E-4	5.38E-4	5.38E-4	5.31E-4	5.31E-4	5.31E-4	5.01E-4	5.01E-4	5.01E-4
NRC	2.72E-2	2.72E-2	2.72E-2	2.70E-2	2.70E-2	2.70E-2	2.67E-2	2.67E-2	2.67E-2	2.61E-2	2.61E-2	2.61E-2	1.92E-2	1.92E-2	1.92E-2
Total	9.31E-1	9.31E-1	9.31E-1	9.22E-1	9.22E-1	9.22E-1	9.06E-1	9.06E-1	9.06E-1	8.42E-1	8.43E-1	8.43E-1	6.23E-1	6.44E-1	6.44E-1

Example Analysis

This section evaluates the risks associated with the release of contaminated dust into the air during site cleanup at a hypothetical test site. The test site is assumed to have an area of 1 ha (100 x 100 meters square) and its characteristics are those associated with a typical location in the Midwest. It will be shown that the results of the generic analysis are equally applicable to other regions of the country.

The release of contaminated dust emitted from the site was estimated using empirical correlations given in EPA 85b and EPA 85c. Note that these estimates are highly uncertain, both because the correlations themselves are very uncertain, and because the input parameters used here are subjective choices and may not be representative of the actual conditions. EPA 85b points out that these methods are order-of-magnitude estimates for estimating potential exposure.

EPA 85c gives the following relationship for estimating the dust produced during soil loading, which is assumed to be the major source of dust suspension during a soil removal operation.

$$E_{10} = 0.0009k \frac{\left[\frac{s}{5} \right] \left[\frac{U}{2.2} \right] \left[\frac{H}{1.5} \right]}{\left[\frac{M}{2} \right]^2 \left[\frac{Y}{4.6} \right]^{0.33}} \quad (1)$$

where,

- E_{10} = kg dust released per Mg of soil handled
- k = particle size multiplier = 0.36 for particles < 10 μ m
- s = silt content, percent
- U = mean wind speed, m/sec
- H = drop height, m
- M = soil moisture content, percent
- Y = dumping device capacity, m³

Assuming that the silt content is 29 percent, the mean wind speed is 4 m/sec, the drop height is 2 m, the moisture content is 40 percent, and the dumping device capacity is 2 m³, then,

$$E_{10} = (0.0009) (.36) \frac{\left[\frac{29}{5} \right] \left[\frac{4}{2.2} \right] \left[\frac{2}{1.5} \right]}{\left[\frac{40}{2} \right]^2 \left[\frac{2}{4.6} \right]^{0.33}} \quad (2)$$

$$= 1.5 \times 10^{-5} \text{ kg dust/Mg soil dumped}$$

Assuming that the top meter of soil is removed from the 1 ha area and loaded onto trucks, and that the bulk density of the soil is 1.6 g/cc (1.6 Mg/m³), then there would be 1.6x10⁴ Mg of soil removed and (1.6x10⁴)(1.5x10⁻⁵) = 0.24 kg = 240 g of dust produced.

The rate at which radioactivity is put into the air is the concentration of radionuclide i times the rate at which dust enters the air, i.e.,

$$Q_i = 10^{-12} E_{10} C_i \quad (3)$$

where,

- Q_i = release rate of radionuclide i, Ci/yr
- 10⁻¹² = pCi/Ci
- E₁₀ = rate of dust emission, g/yr
- C_i = concentration of radionuclide i in soil, pCi/g

Table 5-10 presents the lifetime risk of fatal cancer to an individual located 50 meters from the site in the worst sector. CAP88-PC was used to estimate the risk, which include the direct radiation, inhalation, and food ingestion pathways. The default pathway parameters contained in CAP88-PC were used because they are reasonably representative values. The meteorology was that of Dayton, Ohio, and the population data was that around the Mound Laboratory.

Table 5-10
Maximum Lifetime Risk of Fatal Radiological Cancer from Site Cleanup

RADIONUCLIDE	LIFETIME RISK OF FATAL CANCER (per pCi/g)*
Natural uranium	2×10^{-12}
Co-60	6×10^{-14}
Cs-137	5×10^{-14}
Natural thorium	3×10^{-12}

* Based on pre-1994 slope factors

Table 5-11 presents the population impacts, expressed in terms of cancer fatalities, for the first year of exposure following site remediation. Each subsequent year, the number of impacts decline due to depletion of the contamination by radioactive decay and erosion. The estimate is based on a total exposed population 2.9×10^6 people within a 50-mile (80-kilometer) radius around the site. The population distribution and tables of χ/Q are given in Table 5-12.

Table 5-11. Total Fatal Cancers Within 80 Kilometer Radius of a Generic Site
Over a 1-year Period Following Site Cleanup (Fatal cancers per year per pCi/g)

RADIONUCLIDE	Fatal Cancers/pCi/g
Natural uranium	2×10^{-10}
Co-60	8×10^{-12}
Cs-137	8×10^{-12}
Natural thorium	2×10^{-10}

The risk from both ingestion of contaminated food and exposure to off-site contaminated ground may be somewhat underestimated because the analysis only considered the release of particles less than 10 μm in size. The ratio of the mass of particles less than 30 μm in size (particles larger than about 30 μm are not transported very far by the wind) to those less than 10 μm in size is about a factor of 2 judging from the particle size correction factors (k) in EPA 85b. For natural uranium and thorium, the ingestion and ground pathways account for

Table 5-12. χ/Q and Population Distribution Ground-Level χ/Q

χ/Q Toward Indicated Direction (sec/m³)

Distance (meters)							
Dir	250	750	1500	2500	3500	4500	7500
N	2.9E-05	3.8E-06	1.1E-06	4.7E-07	2.7E-07	1.9E-07	8.7E-08
NNW	1.5E-05	1.9E-06	5.7E-07	2.4E-07	1.3E-07	9.5E-08	4.3E-08
NW	1.6E-05	2.1E-06	6.4E-07	2.7E-07	1.5E-07	1.0E-07	4.9E-08
WNW	1.1E-05	1.4E-06	4.3E-07	1.8E-07	1.0E-07	7.2E-08	3.3E-08
W	1.6E-05	2.0E-06	6.0E-07	2.5E-07	1.4E-07	1.0E-07	4.6E-08
WSW	1.1E-05	1.4E-06	4.2E-07	1.7E-07	1.0E-07	7.0E-08	3.2E-08
SW	8.7E-06	1.1E-06	3.3E-07	1.4E-07	8.1E-08	5.5E-08	2.5E-08
SSW	1.2E-05	1.5E-06	4.6E-07	1.9E-07	1.1E-07	7.7E-08	3.5E-08
S	1.6E-05	2.1E-06	6.2E-07	2.6E-07	1.5E-07	1.0E-07	4.6E-08
SSE	1.2E-05	1.6E-06	4.9E-07	2.0E-07	1.2E-07	8.1E-08	3.7E-08
SE	1.2E-05	1.5E-06	4.6E-07	1.9E-07	1.1E-07	7.7E-08	3.5E-08
ESE	1.3E-05	1.7E-06	5.1E-07	2.1E-07	1.2E-07	8.6E-08	3.9E-08
E	2.7E-05	3.6E-06	1.0E-06	4.5E-07	2.6E-07	1.7E-07	8.2E-08
ENE	1.4E-05	1.8E-06	5.4E-07	2.3E-07	1.3E-07	9.1E-08	4.1E-08
NE	1.5E-05	2.0E-06	6.0E-07	2.5E-07	1.4E-07	1.0E-07	4.6E-08
NNE	1.9E-05	2.5E-06	7.6E-07	3.2E-07	1.8E-07	1.2E-07	5.8E-08

Distance (meters)

Dir	15000	25000	35000	45000	55000	70000
N	3.2E-08	1.5E-08	9.5E-09	6.5E-09	4.6E-09	2.9E-09
NNW	1.6E-08	7.5E-09	4.7E-09	3.2E-09	2.2E-09	1.4E-09
NW	1.8E-08	8.6E-09	5.3E-09	3.6E-09	2.6E-09	1.6E-09
WNW	1.2E-08	5.7E-09	3.5E-09	2.4E-09	1.7E-09	1.0E-09
W	1.7E-08	8.1E-09	5.0E-09	3.4E-09	2.4E-09	1.5E-09
WSW	1.1E-08	5.6E-09	3.5E-09	2.4E-09	1.7E-09	1.0E-09
SW	9.3E-09	4.3E-09	2.7E-09	1.8E-09	1.3E-09	8.2E-10
SSW	1.2E-08	6.0E-09	3.7E-09	2.5E-09	1.7E-09	1.0E-09
S	1.7E-08	7.9E-09	4.9E-09	3.3E-09	2.3E-09	1.4E-09
SSE	1.3E-08	6.3E-09	3.9E-09	2.6E-09	1.9E-09	1.1E-09
SE	1.3E-08	6.2E-09	3.8E-09	2.6E-09	1.8E-09	1.1E-09
ESE	1.4E-08	6.8E-09	4.2E-09	2.9E-09	2.0E-09	1.3E-09
E	3.0E-08	1.4E-08	8.8E-09	6.0E-09	4.3E-09	2.7E-09
ENE	1.5E-08	7.2E-09	4.5E-09	3.0E-09	2.2E-09	1.4E-09
NE	1.7E-08	8.0E-09	5.0E-09	3.4E-09	2.4E-09	1.5E-09
NNE	2.1E-08	1.0E-08	6.3E-09	4.4E-09	3.1E-09	2.0E-09

Table 5-12 (Continued)
Population Data

Distance (m)							
Dir	250	750	1500	2500	3500	4500	7500
N	0	0	799	0	0	0	0
NNW	0	1557	0	0	0	0	3868
NW	0	0	1546	0	0	0	0
WNW	0	0	0	0	0	0	0
W	0	0	0	2132	0	0	5966
WSW	0	0	0	0	0	0	1009
SW	0	0	0	0	0	0	3102
SSW	0	0	0	0	0	0	7666
S	0	0	0	767	0	0	6473
SSE	0	0	0	468	0	0	6677
SE	0	0	0	0	0	0	0
ESE	0	0	1730	0	1597	0	3250
E	0	0	0	0	0	0	9340
ENE	0	0	0	2852	0	2857	7365
NE	0	0	471	0	3898	2191	16453
NNE	593	0	1040	1086	0	0	4856

Distance (m)						
Dir	15000	25000	35000	45000	55000	70000
N	45365	36184	15879	30312	27926	30986
NNW	4085	7707	4616	7065	12717	23106
NW	3777	3380	4549	5381	4223	16238
WNW	2740	4133	8780	4360	47053	22798
W	2719	3932	3742	3072	4139	28587
SW	18238	12638	83556	17650	14277	38926
SSW	35825	13221	24045	169397	363735	37915
S	7806	5822	45842	72806	78978	92117
SSE	5020	17157	5324	14092	7380	19412
SE	1349	1619	1783	8292	4565	15152
ESE	3621	4905	2451	13355	6458	9075
E	20431	11472	7316	6923	1212	2238
ENE	55176	24453	16373	6004	3497	16057
NE	103165	57218	36202	23998	89972	24474
NNE	103048	74061	21522	7028	3633	10815

less than 3 percent of the risk; however, for Cs-137 and Co-60, they account for almost all of the risk. Thus, the risk estimates given here for Cs-137 and Co-60 may be low by about a factor of 2. Given the uncertainty in estimating the dust release rate, however, this is not significant.

Application to the Reference Sites

The generic analysis is based on a 1E4 m² site where the radionuclide concentrations are 1 pCi/g and the closest off-site resident is 50 meters from the center of the site (i.e., at a 1E4 m² site, this places the individual at the edge of site). At the reference sites, the radionuclide concentrations in the contaminated zones range from a few pCi/g to thousands of pCi/g above background. Multiplying the above results by 1E4 to 1E5 still yields extremely small individual and population risks.

The reference sites are also much larger than the generic site. However, at the larger sites, the nearest residents are much farther than 50 meters. These effects tend to offset each other. For example, if the size of the site increases by a factor of 10, the total release increases 10-fold. However, atmospheric dispersion also increases substantially with increasing distance. For example, the highest average annual atmospheric dispersion factor at 50 meters from the center of the site is 6.6E-4 sec/m³. At greater distances the dispersion factor declines exponentially as follows:

Distance from Center of Site (m)	Atmospheric Dispersion Factor (sec/m ³)
50	6.61x10 ⁻⁴
100	1.28x10 ⁻⁴
250	2.90x10 ⁻⁵
750	3.80x10 ⁻⁶
1500	1.10x10 ⁻⁶

As applied to the reference sites, the population impacts due to cleanup can be assumed to be proportional to the radionuclide inventory at the site. The total inventory of each radionuclide at the generic test site is 0.016 Ci. The actual inventories in contaminated soil at the reference sites range from a fraction of a curie to several hundred curies of a given radionuclide. Multiplying the values in Table 5-11 by 1x10⁵ (i.e., 1000/0.016) yields impacts

that are a small fraction of 1 fatality per year. If the impacts were assumed to remain constant over a 1,000 year period, the potential impacts are still less than 1 fatality.

Accordingly, it can be concluded that the potential off-site radiological impacts associated with the site cleanup operation are very small compared to the potential impacts averted due to cleanup.

5.3.3 Impacts Due to Radiation Exposures During Waste Transport

One disposal option is the packaging and shipping of the waste to a licensed low-level radioactive waste disposal site. Exposures of the drivers and the public during transport are due to the direct radiation exposures along the transport route. The duration of these exposures and the numbers of individuals that may come in close proximity to the transport vehicle are extremely small in comparison to the numbers of people and exposures associated with leaving the contaminated soil in place. Specifically, if the soil is not remediated, members of the public are assumed to be living on top of the soil, ingesting the soil, inhaling suspended soil particles, and eating food grown in contaminated soil for hundreds to thousands of years. Accordingly, it is apparent that any radiological impacts caused by the shipment of the radioactive material will be small in comparison to the impacts averted through cleanup.

5.3.4 Impacts Associated with Exposures at a Disposal Facility

Both workers and the public can be exposed due to the handling of the waste. However, since the soil is containerized, and because of properly engineered barriers at the facility, it can be assumed that the exposures to individuals would be acceptably low.

A more important issue is the long-term exposure of the population following disposal of the soil. Once the contaminated soil is properly disposed of at a licensed facility, it can be assumed that no radionuclides will be transported off site as long as the facility is under institutional control, which is typically assumed to be at least 100 years. Following the period of institutional control, engineered barriers may begin to degrade and, in time, the radionuclides will be subject to the same environmental transport processes that they would have experienced had they never been removed from their original site. Accordingly, in the long term, the benefits of waste disposal begin to diminish. Nevertheless, since the waste at a

properly designed disposal site is buried or isolated via engineered barriers, it is expected that in the long term—over 10,000 years—the potential for radiation exposure of the public from direct radiation, dust inhalation, plant uptake, and indoor radon would be lower than at the original site. Similarly, the siting criteria for a licensed, low-level radioactive waste disposal facility, as set forth in 10 CFR 61 and in the regulations of interstate low-level waste compacts, minimize the potential for groundwater exposure over the long term, and therefore offer a potentially important benefit compared to leaving the soil unremediated.

In this report, it is assumed that if the soil is placed in a properly designed waste disposal facility, it will be isolated from direct human contact by large numbers of individuals indefinitely and that the potential for groundwater contamination is minimal. This is assumed whether the soil is disposed of in above- or below-grade engineered facilities.

5.4 RESULTS AND CONCLUSIONS

5.4.1 Benefits vs Volumes of Soil Remediated

Figure 5-1 presents a plot of the volumes of soil remediated to achieve a specified risk-based cleanup goal as a function of maximum risk of cancer incidence to the RME individual at Reference Site II. The risks were modeled assuming rural residential occupancy for a 30-year period some time during the first 1,000 years, excluding the risk caused by indoor radon. The same figure shows the number of fatal cancers averted by future populations over the same 1,000 years, assuming the reasonable occupancy scenario described in Section 5.2, also excluding the impacts of indoor radon. In order to demonstrate the benefits of cleanup to progressively lower risk levels, the vertical axis on the right of the figure indicates **incremental** cancer deaths averted, over those averted by cleaning up the site to a 10^{-2} risk level. A box at the bottom of the figure indicates that 433 fatal cancers would be averted by cleanup to a 10^{-2} risk. Figure 5-2 shows the results of calculations in which both the RME individual risks and the population impacts averted include the contribution of indoor radon. Since Ra-226 is a major contaminant at Reference Site II, the radon pathway plays a significant role in the impacts on future populations.

Appendix L contains comparable figures for all the reference sites. Graphs depicting calculations both including and excluding the radon pathway are presented for the two sites with significant contamination by Ra-226: Reference Sites II (duplicates of Figs. 5-1 and 5-2

Figure 5-1

Reference Site II: 1,000 years, Excluding Rn

Volume of Soil Remediated: Rural Residential
Fatal Cancers Averted: Reasonable Scenario

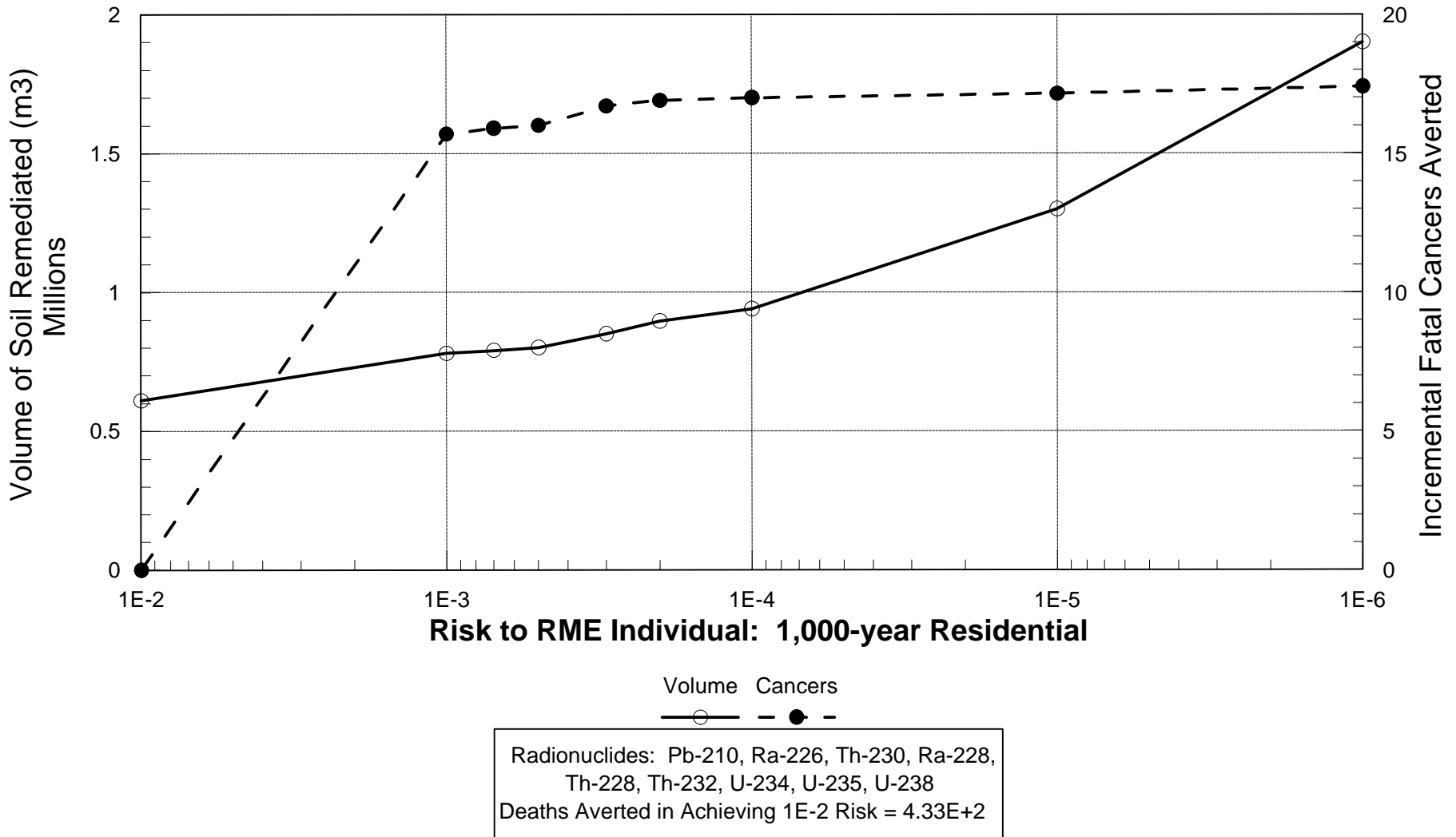
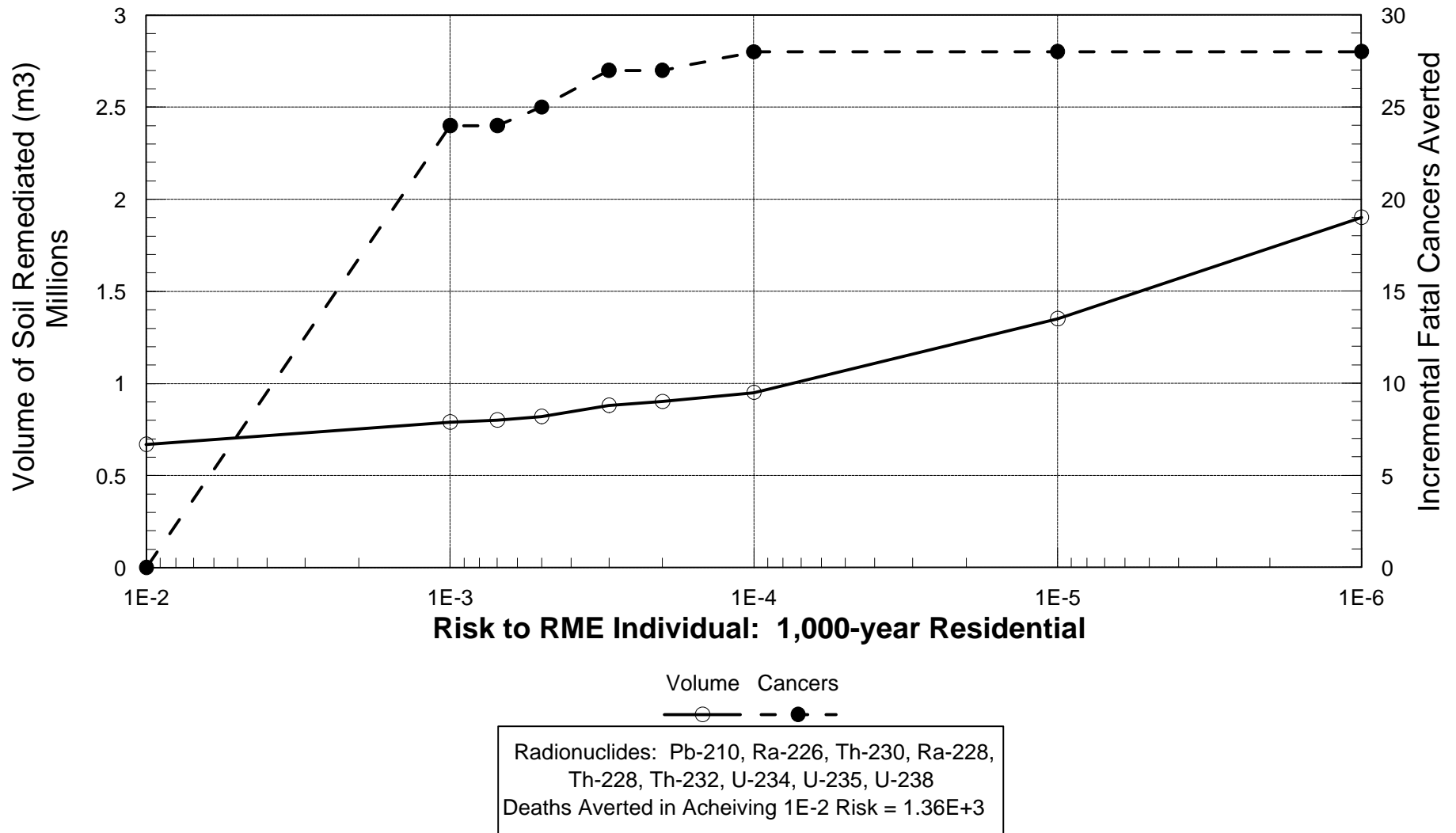


Figure 5-2

Reference Site II: 1,000 years, Including Rn

Volume of Soil Remediated: Rural Residential Fatal Cancers Averted: Reasonable Scenario



are included in Appendix L for ease of reference) and XXII. Although the radon pathway plays a small role at sites contaminated by U-234 at which Ra-226 is not a significant contaminant, the differences in the cleanup levels and in the population impacts averted would not be noticeable on a graph. In addition, some sites postulated to have three different environmental settings did not exhibit significantly different modeling results--such trios were represented by a single member. Included in Appendix L are graphs showing the weighted totals for all sites, with and without radon. The effects of radon on all sites contaminated with one or more of its radioactive ancestors are included.

5.4.2 Summary of Fundamental Assumptions

The following summarizes a number of the key assumptions that underlie the central calculations in this report.

The horizontal axis of each figure refers to the lifetime risk of cancer incidence (not mortality) to an individual receiving a reasonable maximum exposure (RME) to radiation at the reference site at the time of peak risk during the first 1,000 years after the site is released for occupancy.

Assumptions in the Assessment of Risk to the RME Individual

- The RME individual occupies the site, and is therefore exposed, for 30 years.
- The slope factors used to determine risk as a function of radiation exposure through different pathways (*i.e.*, exposure to direct radiation, ingestion of radionuclides, inhalation, etc.) are based on average rates of cancer induction in a population whose members range in age from 0 to 30 years.
- Whenever the radon pathway is included in the assessment of risk to the RME individual, it is also included in the calculation of health effects averted by achieving a cleanup goal based on the individual risk assessment. If radon is ignored in the individual risk assessment, it is also ignored in the corresponding determination of health effects averted
- Two post-cleanup modes of occupancy by the RME individual are considered separately: the rural residential and the commercial/industrial.

Assumptions in the Determination of Health Effects Averted by Future Populations

- The population is considered to be an average or typical exposed group, not a group of RME individuals;
- The slope factors used in calculating numbers of health effects average risks over a population of ages from 0 to 70 years;
- Six general population-density/land-use exposure scenarios are considered, as follows:
 - low density scenario: 10 people per square kilometer, with or without crop production;
 - medium density scenario: 100/km², with or without crop production;
 - high density scenario: 1,000/km², without crop production;
 - reasonable use scenario, in which the population density at a reference site reflects that near the real site(s) upon which it was based. The crop pathway is included for population densities of 300/km² or less.
- There is no need to assume an average period of on-site residence by any individual as long as the population density and age distribution remain constant over time.

The risk-based cleanup goal may be based on either rural residential or commercial/industrial occupancy by the RME individual. For either set of cleanup goals, the population health effects averted can be modeled by any one (or all) of the six above-mentioned scenarios. Thus, each of the tables of population impacts in Appendix K reflects a combination of the RME assumptions which form the **basis** of risk-based cleanup goals and the scenarios the evaluate some of the **benefits** (*i.e.*, population impacts averted) of performing the cleanup.

5.5 SUPPLEMENTARY CALCULATIONS - DOSE-BASED CLEANUP LEVELS

All analyses of site cleanup discussed thus far in this report are of cleanup levels based on risk to the RME individual. To supplement these calculations, a set of analyses was performed using identical assumptions and parameters, but based on the annual committed effective dose equivalent (CEDE) to the same RME individual. The results of these analyses are found in a set of tables in Appendix M.

6. Discussion of Sensitivities and Uncertainties in Soil Cleanup Volumes and Health Impacts Averted

The major objectives of this report are to:

- (1) estimate the volume of soil that may require remediation at sites that fall within the scope of the proposed rule, and
- (2) estimate the numbers of potential radiogenic cancers averted as a result of the remediation of the contaminated soil.

The overall results, as indicated in Tables 5-1 to 5-8 of this report, are that total site cleanup may require the remediation of up to 1×10^8 m³ of soil, and that the total potential number of radiogenic cancer fatalities averted as a result of the cleanup will be on the order of 1×10^4 over 1,000 years. These estimates are sensitive to the assumptions that were used in their derivation. In addition, given the assumptions, the results are highly uncertain due to substantial uncertainties in the data, mathematical models, and parameters that were used in their derivation. This section discusses the sensitivities of the results associated with alternative modeling assumptions and the uncertainties in the results due to uncertainties in the overall approach used in their derivation.

6.1 DISCUSSION OF SENSITIVITIES AND UNCERTAINTIES IN THE SOIL CLEANUP VOLUMES AT REFERENCE SITES

This section discusses the sensitivities and uncertainties in the derived soil cleanup volumes for the reference sites by evaluating the degree to which the results change using alternative calculational assumptions and assessing the uncertainties in the soil cleanup volumes for the real sites upon which the reference sites are based.

"Sensitivities in the soil cleanup volumes" refers to how the cleanup volumes change as a function of changes in fundamental assumptions regarding the site characteristics and usage patterns. "Uncertainties in the soil cleanup volumes" refers to the uncertainties in the soil cleanup volume due to uncertainties in the calculational parameters. The two concepts are not always clearly distinguishable. However, in general, for real sites, sensitivity analyses are concerned with issues such as: how do the results change assuming different postulated land usage patterns, time periods of interest, and cleanup criteria? Uncertainty analyses are concerned with issues such as: given the land usage patterns, etc., how uncertain are the

results in light of the uncertainties in key calculational parameters? This section addresses these issues in a qualitative and semi-quantitative manner.

6.1.1 Overall Sensitivity of the Results

Tables 5-1 through 5-4 (and Appendix K) present estimates of soil cleanup volumes for the reference sites for a number of cases, as follows:

- Ten alternative risk-based cleanup levels (ranging from 1×10^{-6} to 1×10^{-2})
- Risk factors based on three time periods of interest (100, 1000, and 10,000 years)
- Risk factors based on two alternative post cleanup land use scenarios (rural residential and commercial risk factors)
- Risk factors with and without indoor radon

The lower end of the range of risk-based cleanup levels was selected based on consideration of Superfund guidance which establishes a lifetime risk of 1×10^{-6} as a point of departure for site cleanup. The upper end represents the upper bound risk based level that could be used based on existing regulatory requirements and guidelines. Accordingly, this range essentially bounds the range of risk-based cleanup levels that are appropriately considered under the cleanup rule.

The lower end of the time periods of interest represents a judgement that it is unlikely that a time period of interest less than 100 years would be considered protective given the relatively long radiological half-lives of many radionuclides. The upper end was selected based on precedence established by the high level waste rulemaking. The 1000 year time period of interest is intermediate between these two extremes.

The rural residential scenario was selected because it represents a plausible future use scenario which results in high end risks. Under this scenario, individuals residing at the site make extensive use of the site for agricultural purposes and use on-site sources of drinking water. The commercial use scenario represents a plausible future use scenario where the potential for exposure is markedly decreased. There are a large number of other plausible future use scenarios, such as residential without agriculture, recreational uses, and unusual

demographic settings, such as very high density urban settings. However, the evaluation was limited to the rural residential and commercial use scenarios because they convey the potential magnitude of the impacts and the variability in the impacts for two fundamentally different scenarios. These are plausible scenarios for the reference sites described in Chapter 4.

The residential scenario without agriculture would result in impacts somewhere between the rural residential and commercial scenario. A recreational scenario would result in impacts less than those of the commercial scenario. An extremely high density scenario would present unique issues. For example, urban settings, such as Manhattan, can have population densities of 25,000 persons/km². This greatly increases the potential for exposure. However, there are also numerous offsetting factors. For example, pavement and large structures shield against direct radiation, soil ingestion, soil suspension, and infiltration to groundwater. Also, construction for multistory buildings often requires excavation of large volumes of soil (thereby removing the contaminated soil) and reduces the potential for indoor radon exposures, but at the price of increased risk to construction workers.

Risk factors with and without indoor radon were evaluated because it is conceivable that a separate regulation could be implemented specifically for indoor radon. Accordingly, it is desirable to evaluate differences in cleanup volumes with and without explicit consideration of the risks from indoor radon.

The different cases addressed in this report represent a type of quantitative sensitivity analysis. Inspection of the "totals" in Tables 5-1 to 5-4 and Appendix K reveals the following:

1. The total cleanup volume is virtually independent of the time period of interest used to derive the risk factors. Recognizing that the cleanup volume is determined by the contamination pattern and the RME risk factors, the reason this occurs is the risk factors are virtually unchanged for the different time periods of interest. This occurs because the peak dose to the RME individual is delivered within a relatively short time after he or she takes occupancy at the site.
2. The use of rural residential as opposed to commercial risk factors results in an approximate 2 to 5-fold greater volume of soil that may require remediation. This occurs because the risk factors for the RME individual are generally about 3 times higher for the rural residential as opposed to the commercial scenarios. The approximate three-fold difference in the risk factors is primarily related to the approximately three-fold difference in occupancy times for the two scenarios.

3. The total cleanup volume is only slightly reduced by eliminating indoor radon from the derivation of the risk factors. The reason is, in the aggregate, the volume of soil addressed in this report containing elevated levels of Ra-226 is relatively small. Even for sites with significant Ra-226 contamination, the differences in the cleanup volume with and without consideration of the risks due to indoor radon are small. The largest difference is at Reference Site XXII, where the difference is a factor of approximately 3, and this only occurs at a cleanup level of 1×10^{-2} .
4. The volume of soil that may require remediation changes by over a factor of 10 as the cleanup level is varied from 1×10^{-2} to 1×10^{-6} . The reason is, the lower the risk-based cleanup level, the lower the cleanup concentration, and, since the volume of contaminated soil at the reference sites is generally greatest at the lower concentrations, the cleanup volume increases as the cleanup level is made more restrictive.

The last observation is critical to the rulemaking effort because it reveals that the potential cost of remediation depends, at least in part, on the risk-based cleanup level. Table 6-1, which is summarized from Appendix K, demonstrates the relationship between the cleanup level and cleanup volume.

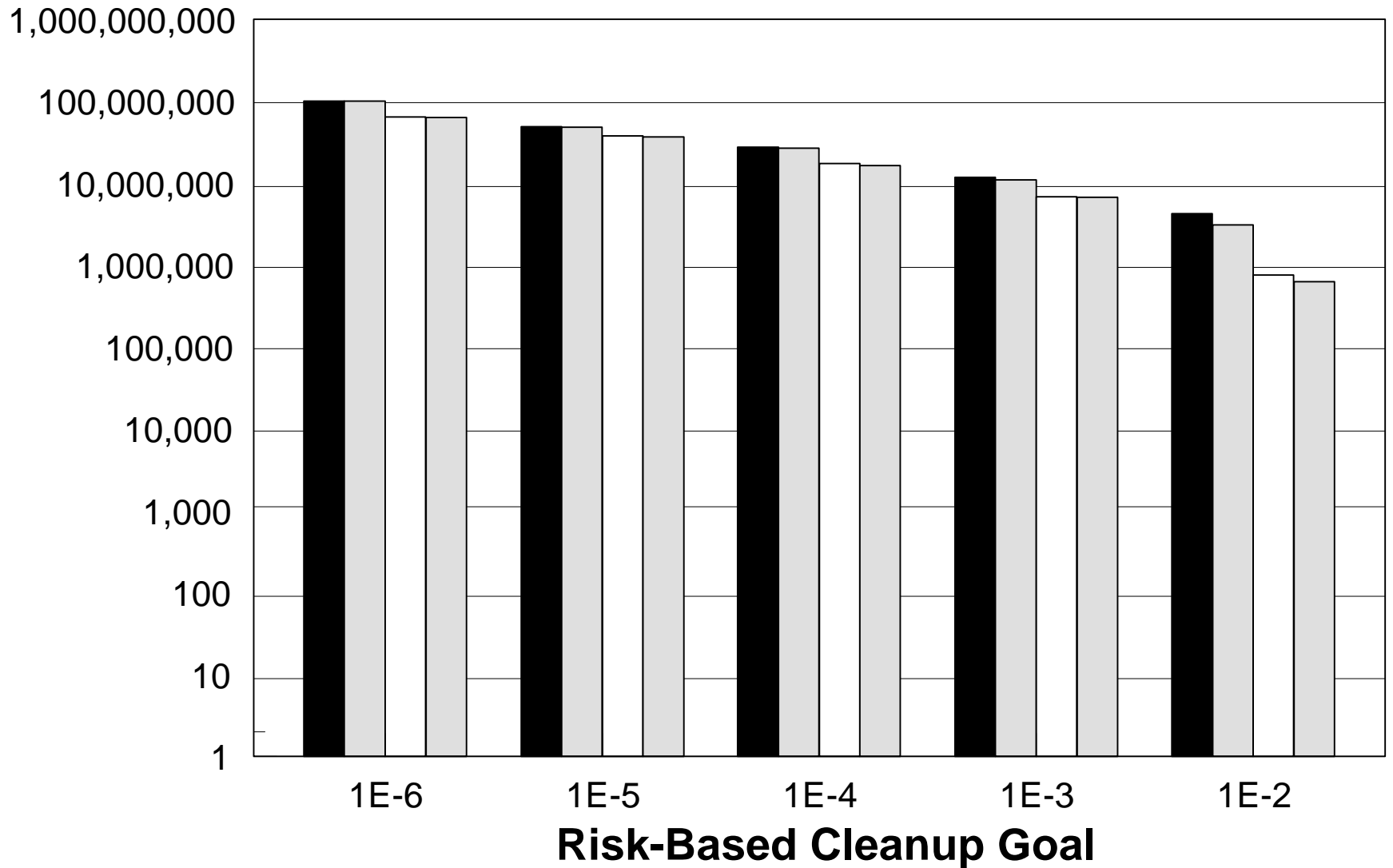
Table 6-1. Total Soil Volume Requiring Remediation

Risk-Based Cleanup Level	Soil Volume Potentially Requiring Remediation (m ³)			
	Rural Residential Risk Factors		Commercial Risk Factors	
	With Radon	Without Radon	With Radon	Without Radon
1×10^{-6}	1.00×10^8	9.95×10^7	6.43×10^7	6.28×10^7
1×10^{-5}	4.88×10^7	4.77×10^7	3.75×10^7	3.64×10^7
1×10^{-4}	2.75×10^7	2.67×10^7	1.72×10^7	1.64×10^7
1×10^{-3}	1.17×10^7	1.10×10^7	6.84×10^6	6.64×10^6
1×10^{-2}	4.24×10^6	3.07×10^6	7.59×10^5	6.25×10^5

Figure 6-1 presents these results graphically.

Figure 6-1. Soil Cleanup Volumes U.S. Total

Cubic Meters of Soil



Not Including Diffuse NORM

■ Resid/Rn ■ Resid/No Rn □ Comm/Rn ■ Comm/No Rn

6.1.2 Discussion of Uncertainties in Soil Cleanup Volumes

The uncertainties in the calculated soil cleanup volumes presented in Tables 5-1 to 5-4 are a result of uncertainties associated with each of the steps used in their derivation. In all cases, the uncertainty in the cleanup volume is dominated by uncertainty in the estimate of the volume of the contaminated soil and the radionuclide concentration distributions in the soil for the real sites which formed the bases for the reference sites. Figures 4-4 through 4-25 present the assumed contaminated soil volumes and radionuclide concentration distributions at each reference site. A separate discussion of the uncertainties in these distributions is provided in Section 4.

A second major source of uncertainty in the cleanup volume is uncertainty in the site-specific risk factors which are used to derive the site-specific cleanup concentrations required to achieve a given risk-based cleanup level. Uncertainty in the site-specific risk factors are due to uncertainties in the patterns of contamination, the environmental characteristics, and the extent to which the site will be used following cleanup. Tables 6-2a and 6-2b present the site-specific risk factors and dose factors for each site as derived using RESRAD and the assumptions described in Section 4. These are the individual radionuclide risk factors at the time of the peak dose rate at the site. Table 6-3 presents the peak risk factors for each radionuclide as if they were the only radionuclide at the site. Table 6-3 sorts the site-specific risk factors by isotope and compares them to the generic risk factors. This comparison provides insight into the magnitude of the variability of risk factors among the different reference sites.¹

For Cs-137, the variability among sites is small, less than a factor of 2. The reason is the risk from Cs-137 is virtually entirely due to direct radiation which is dependent only on the thickness of the contaminated zone. This is also true for Co-60 and Ra-228. In general, the risk factors for strong gamma emitters remain constant for contaminated zone thicknesses in excess of 15 to 20 cm because any contamination at greater depths is shielded by the overlying soil. However, as the thickness is reduced below 15 cm, the risk factor begins to decrease. For example, the risk factor at 5 cm is about one half that at 15 cm. (See Section 3.6 which presents the relative dose rate of selected gamma emitters as a function of the

The risk factors in Table 6-3 are often slightly higher than those in Table 6-2 because the different radionuclides at a site do not necessarily peak at the same time. Hence, the peak risk factor for a radionuclide can be higher when it is at a site by itself than when it is at a site commingled with other radionuclides that have different peaking times. In addition, Table 6-3 is based on a more recent version of RESRAD which also contributes to the small differences between the values in Table 6-2 and 6-3.

Table 6-2a. Residential Scenario Maximum Health Impact Per Unit Concentration
(Total Cancers per pCi/g) for a 1,000 Year Period

Reference Site No.	Nuclide	With Radon Pathway	Excluding Radon Pathway
I	Cs-137	2.66E-05	2.66E-05
II-1 to II-7	Pb-210	9.26E-06	9.26E-06
	Ra-226	3.12E-04	1.92E-04
	Th-230	2.63E-05	2.06E-05
	Ra-228	9.76E-05	9.76E-05
	Th-228	1.64E-04	1.64E-04
	Th-232	3.44E-07	3.44E-07
	U-234	4.52E-07	4.52E-07
	U-235	7.51E-06	7.51E-06
	U-238	2.03E-06	2.03E-06
II-2	U-234	1.27E-07	1.27E-07
	U-235	4.60E-06	4.60E-06
	U-238	8.32E-07	8.32E-07
III	Cs-137	2.66E-05	2.66E-05
IV	U-234	2.74E-07	2.74E-07
	U-235	6.52E-06	6.52E-06
	U-238	1.41E-06	1.41E-06
V	Cs-137	2.66E-05	2.66E-05
VI	Cs-137	2.66E-05	2.66E-05
	U-234	1.27E-07	1.27E-07
	U-235	4.60E-06	4.60E-06
	U-238	8.32E-07	8.32E-07
VII	Pu-239	1.96E-07	1.96E-07
	Am-241	2.88E-07	2.88E-07
	Cs-137	3.03E-05	3.03E-05
IX	Pu-239	1.63E-07	1.63E-07
	Am-241	2.48E-07	2.48E-07
X	Tc-99	2.52E-05	2.52E-05
	U-238	3.02E-05	3.02E-05
	U-234	2.04E-05	2.03E-05
XII	Pu-239	6.61E-07	6.61E-07
	Am-241	7.87E-07	7.87E-07
XIIIA	U-238	1.17E-06	1.17E-06
	U-235	5.84E-06	5.84E-06
	U-234	2.02E-07	2.02E-07
XIIIB	U-238	1.17E-06	1.17E-06
	U-235	5.84E-06	5.84E-06
	U-234	2.02E-07	2.02E-07
XIIIC	U-238	1.17E-06	1.17E-06
	U-235	5.84E-06	5.84E-06
	U-234	2.02E-07	2.02E-07

Reference Site No.	Nuclide	With Radon Pathway	Excluding Radon Pathway
I	Cs-137	2.66E-05	2.66E-05
XVIA	Co-60	2.04E-04	2.04E-04
	Cs-137	4.95E-05	4.95E-05
XVIB	Co-60	2.04E-04	2.04E-04
	Cs-137	4.95E-05	4.95E-05
XVIC	Co-60	2.04E-04	2.04E-04
	Cs-137	4.95E-05	4.95E-05
XVIII A	Cs-137	4.73E-05	4.73E-05
	Sr-90	4.39E-06	4.39E-06
XVIII B	Cs-137	4.73E-05	4.73E-05
	Sr-90	4.39E-06	4.39E-06
XVIII C	Cs-137	4.73E-05	4.73E-05
	Sr-90	4.39E-06	4.39E-06
XXA	U-234	1.20E-06	5.28E-07
	U-235	6.49E-06	7.59E-06
	U-238	1.72E-06	2.15E-06
XXB	U-234	5.28E-07	5.28E-07
	U-235	7.59E-06	7.59E-06
	U-238	2.15E-06	2.15E-06
XXC	U-234	5.28E-07	5.28E-07
	U-235	7.59E-06	7.59E-06
	U-238	2.15E-06	2.15E-06
XXIA	Ra-228	1.05E-04	1.05E-04
	Th-228	1.67E-04	1.67E-04
	Th-232	3.55E-07	3.55E-07
XXIB	Ra-228	1.05E-04	1.05E-04
	Th-228	1.67E-04	1.67E-04
	Th-232	3.55E-07	3.55E-07
XXIC	Ra-228	1.05E-04	1.05E-04
	Th-228	1.67E-04	1.67E-04
	Th-232	3.55E-07	3.55E-07
XXII	Ra-226	1.14E-03	2.03E-04
	Th-232	3.63E-07	3.62E-07
	Th-228	1.67E-04	1.67E-04
	U-234	2.43E-05	2.41E-05
	U-235	2.73E-05	2.73E-05
	U-238	3.60E-05	3.60E-05
	Pb-210	1.50E-05	1.50E-05
Ra-228	1.06E-04	1.06E-04	

Table 6-2b. Residential Scenario Dose Rate Per Unit Concentration
(mrem/yr pCi/g) for a 1,000 Year Period

Reference Site No.	Nuclide	With Radon Pathway	Excluding Radon Pathway
I	Cs-137	1.23E+00	1.23E+00
II-1 to II-6	Pb-210	1.59E+00	1.59E+00
	Ra-226	2.49E+01	8.98E+00
	Th-230	1.92E+00	1.12E+00
	Ra-228	5.32E+00	5.32E+00
	Th-228	6.90E+00	6.90E+00
	Th-232	6.94E-01	6.94E-01
	U-234	7.49E-02	7.49E-02
	U-235	5.32E-01	5.32E-01
	U-238	1.35E-01	1.35E-01
II-2	U-234	2.24E-02	2.24E-02
	U-235	3.13E-01	3.13E-01
	U-238	5.06E-02	5.06E-02
III	Cs-137	1.23E+00	1.23E+00
IV	U-234	4.80E-02	4.80E-02
	U-235	4.52E-01	4.52E-01
	U-238	9.23E-02	9.23E-02
V	Cs-137	1.23E+00	1.23E+00
VI	Cs-137	1.23E+00	1.23E+00
	U-234	2.24E-02	2.24E-02
	U-235	3.13E-01	3.13E-01
	U-238	5.06E-02	5.06E-02
VII	Pu-239	1.12E-01	1.12E-01
	Am-241	1.31E-01	1.31E-01
	Cs-137	1.40E+00	1.40E+00
IX	Pu-239	9.29E-02	9.29E-02
	Am-241	1.10E-01	1.10E-01
X	Tc-99	3.76E-01	3.76E-01
	U-238	2.29E+00	2.29E+00
	U-234	2.39E+00	2.38E+00
XII	Pu-239	3.77E-01	3.77E-01
	Am-241	4.06E-01	4.06E-01
XIIIA	U-238	7.35E-02	7.35E-02
	U-235	4.01E-01	4.01E-01
	U-234	3.54E-02	3.54E-02
XIIIB	U-238	7.35E-02	7.35E-02
	U-235	4.01E-01	4.01E-01
	U-234	3.54E-02	3.54E-02
XIIIC	U-238	7.35E-02	7.35E-02
	U-235	4.01E-01	4.01E-01
	U-234	3.54E-02	3.54E-02

Reference Site No.	Nuclide	With Radon Pathway	Excluding Radon Pathway
I	Cs-137	1.23E+00	1.23E+00
XVIA	Co-60	9.34E+00	9.34E+00
	Cs-137	2.28E+00	2.28E+00
XVIB	Co-60	9.34E+00	9.34E+00
	Cs-137	2.28E+00	2.28E+00
XVIC	Co-60	9.34E+00	9.34E+00
	Cs-137	2.28E+00	2.28E+00
XVIII A	Cs-137	2.21E+00	2.21E+00
	Sr-90	2.60E-01	2.60E-01
XVIII B	Cs-137	2.21E+00	2.21E+00
	Sr-90	2.60E-01	2.60E-01
XVIII C	Cs-137	2.21E+00	2.21E+00
	Sr-90	2.60E-01	2.60E-01
XXA	U-234	1.55E-01	8.34E-02
	U-235	6.10E-01	5.38E-01
	U-238	1.15E-01	1.43E-01
XXB	U-234	8.34E-02	8.34E-02
	U-235	5.38E-01	5.38E-01
	U-238	1.43E-01	1.43E-01
XXC	U-234	8.34E-02	8.34E-02
	U-235	5.38E-01	5.38E-01
	U-238	1.43E-01	1.43E-01
XXIA	Ra-228	5.98E+00	5.98E+00
	Th-228	7.04E+00	7.04E+00
	Th-232	7.12E-01	7.12E-01
XXIB	Ra-228	5.98E+00	5.98E+00
	Th-228	7.04E+00	7.04E+00
	Th-232	7.12E-01	7.12E-01
XXIC	Ra-228	5.98E+00	5.98E+00
	Th-228	7.04E+00	7.04E+00
	Th-232	7.12E-01	7.12E-01
XXII	Ra-226	1.35E+02	9.78E+00
	Th-232	7.28E-01	7.28E-01
	Th-228	7.04E+00	7.04E+00
	U-234	2.85E+00	2.83E+00
	U-235	2.94E+00	2.94E+00
	U-238	2.73E+00	2.73E+00
	Pb-210	2.58E+00	2.58E+00
	Ra-228	6.15E+00	6.15E+00

thickness of the contaminated zone based on the external dose conversion factors tabulated in Federal Guidance Report No. 12). Uncertainties regarding the hydrogeological characteristics of the site, dust suspension factors, or the extent to which the site is or is not used for agricultural purposes do not contribute to uncertainties in the risk factor for sites contaminated with Cs-137 or other strong gamma emitters. This is an important observation because the risk factors among sites for strong gamma emitters will be similar, which implies that a simple set of cleanup concentrations may be broadly applicable to most sites contaminated with strong gamma emitters.

The risk from Ra-226 is primarily due to indoor radon. The buildup of indoor radon is highly site-specific and cannot be reliably predicted for individual homes. As a result, the relationship between the Ra-226 concentration in soil and indoor radon levels is based on simplified models and default assumptions which are designed to result in reasonable values for most sites. However, the risk factors could be significantly higher or lower for many sites. Section 3.2.2 describes the variability in the relationship between indoor radon and the concentration of Ra-226 in soil. Given the default modeling parameters, the major contributor to uncertainty in the risk factor is the average Ra-226 concentration in the soil adjacent to the home. In general, it is the concentration of Ra-226 over an approximate 5 meter depth that controls the indoor radon concentration. When the contaminated zone is thin, the contribution of the indoor radon to the risk decreases and the risks from direct radiation become comparable to that of indoor radon. This is the main reason for the variability in the risk factors for Ra-226 in Table 6-3.

The risk factors for uranium in Table 6-3 fall into two groups, those sites where the uranium reaches the water table within the time period of interest and those sites where it does not. At sites where it reaches the groundwater, the risk factor is about 10 times greater. At sites where it does not reach the aquifer, the direct radiation, dust inhalation, and crop ingestion pathways dominate. Accordingly, a source of uncertainty in modeling the risks of uranium is uncertainty in the time required for uranium to reach groundwater resources. The uncertainty in the time required to reach groundwater is dependent on the uncertainties associated with the K_d value for uranium and the hydrogeologic characteristics of the site (i.e., hydraulic conductivity, residual saturation, infiltration, etc.).

The key pathway for Pu-239 is dust inhalation. As a result, the primary contributor to uncertainty is the airborne dust loading. This value is highly site-specific and difficult to reliably predict. (See Section 3.2 for a discussion of the variability of the dust loading). As a result, a conservative value of $200 \mu\text{g}/\text{m}^3$ is used to model the risk from dust inhalation at all

sites. This is an upper end value as applied to long term exposures in non-urban settings (ANL 93b). Given this assumption, the primary contributor to uncertainty in the risk factor for Pu-239 is uncertainty in the thickness of the contaminated zone. This occurs because the dust inhalation model is based on the assumption that the radionuclide concentration in the airborne dust is the average radionuclide concentration in the top 15 cm of soil. Accordingly, if the contaminated zone is only a few cm, the risk per pCi/g will be several times smaller than at sites where the thickness of the contaminated zone exceeds 15 cm. The variability in the Pu-239 risk factors in Table 6-3 is due to differences in the thicknesses of the contaminated zones modeled at the sites.

In the following sections, the uncertainties in the cleanup volumes of each site are discussed. Each section is divided into three parts. The first part discusses the contamination patterns for each site as presented in Figures 4-4 to 4-25. Reference is then made to the RESRAD derived risk factors provided in Table 6-2. These risk factors are used to derive the isotope-specific cleanup concentrations required to achieve a cleanup level of 1×10^{-4} for each site. These cleanup concentrations are then applied to the appropriate figures characterizing the soil contamination pattern in order to estimate the soil cleanup volume required to achieve a risk level of 1×10^{-4} . These graphically derived cleanup volumes are then compared to the mathematically interpolated cleanup volumes in Table 5-3. Table 5-3 is used in the evaluation because it includes indoor radon and it is based on the more conservative rural residential risk factors (i.e., the upper end case). In addition, the discussion keys in on the 1×10^{-4} cleanup level because it is in the mid range of the risk levels addressed and its use as a health-based cleanup level under CERCLA. The purpose of this exercise is to confirm the cleanup volumes reported in Table 5-3, given the site-specific risk factors derived using RESRAD.

The next step is an independent derivation of the RESRAD derived risk factors. This is accomplished through the use of hand calculations which accomplish two objectives. First, the calculations confirm the RESRAD derived values, and second, they explicitly identify the key parameters and assumption used to derive the risk factors.

The third step in the analysis is a discussion of the uncertainties in the key parameters used to derive the site-specific risk factors. The discussion explores how the cleanup volumes may change as a function of alternative calculational assumptions and the uncertainties in the values of the calculational parameters.

The overall analysis serves not only as a sensitivity and uncertainty analysis, but also serves as a type of quality assurance check on the computer derived estimates of the soil cleanup volumes presented in Table 5-3.

Table 6-3
Comparison of Risk Factors

Ref. Site	Risk Factors (lifetime risk of cancer/pCi/g - 30 year slope factors - rural residential scenario)															
	Th-228	Th-232	Cs-137	Ra-226 with Rn	Ra-226 no Rn	Th-230 with Rn	Th-230 no Rn	U-234	U-235	U-238	Pu-239	Am-241	Tc-99	Co-60	Sr-90	Ra-228
I			2.82x10 ⁻⁵													
II-1				3.29x10 ⁻⁴	2.14x10 ⁻⁴	2.75x10 ⁻⁵	2.20x10 ⁻⁵	6.74x10 ⁻⁷	7.38x10 ⁻⁶	2.36x10 ⁻⁶						1.73x10 ⁻⁴
II-2								1.70x10 ⁻⁷	4.65x10 ⁻⁶	8.95x10 ⁻⁷						
III			2.82x10 ⁻⁵													
IV								3.65x10 ⁻⁷	6.62x10 ⁻⁶	1.55x10 ⁻⁶						
V			2.82x10 ⁻⁵													
VI			2.82x10 ⁻⁵					1.69x10 ⁻⁷	4.68x10 ⁻⁶	8.95x10 ⁻⁷						
VII			3.22x10 ⁻⁵								2.26x10 ⁻⁷	3.16x10 ⁻⁷				
IX											1.88x10 ⁻⁷	2.71x10 ⁻⁷				
X								4.73x10 ⁻⁶		7.05x10 ⁻⁶				2.65x10 ⁻⁵		
XII											9.85x10 ⁻⁷	1.12x10 ⁻⁶				
XIIIA								2.69x10 ⁻⁷	5.92x10 ⁻⁶	1.27x10 ⁻⁶						
XIIIB								2.69x10 ⁻⁷	5.92x10 ⁻⁶	1.27x10 ⁻⁶						
XIIIC								2.69x10 ⁻⁷	5.92x10 ⁻⁶	1.34x10 ⁻⁶						
XVIA, B&C			5.01x10 ⁻⁵											2.04x10 ⁻⁴		
XVIII A,B&C			4.86x10 ⁻⁵												1.01x10 ⁻⁵	
XXA,B &C								8.58x10 ⁻⁷	7.90x10 ⁻⁶	2.64x10 ⁻⁶						
XXIA, B&C	1.71x10 ⁻⁴	2.99x10 ⁻⁴														1.79x10 ⁻⁴
XXII	1.74x10 ⁻⁴	3.04x10 ⁻⁴		1.17x10 ⁻³	2.49x10 ⁻⁴			2.48x10 ⁻⁵	2.78x10 ⁻⁵	3.67x10 ⁻⁵						1.06x10 ⁻⁴
Generic Site*	1.68x10 ⁻⁴	2.95x10 ⁻⁴	7.30x10 ⁻⁵	1.11x10 ⁻³	2.38x10 ⁻⁴	2.11x10 ⁻⁴	7.50x10 ⁻⁵	1.85x10 ⁻⁵	2.41x10 ⁻⁵	2.84x10 ⁻⁵	9.58x10 ⁻⁷	1.11x10 ⁻⁶	5.51x10 ⁻⁵	2.69x10 ⁻⁴	8.06x10 ⁻⁵	1.78x10 ⁻⁴

Reference Site I

Reference Site I is based in part on information characterizing the Hanford Reservation. Figure 4-4 presents the radionuclide contamination pattern for soil used in this analysis, which, in turn, was based primarily on aerial survey data. As indicated in Section 4.4.3, numerous assumptions and extrapolations were made in order to derive this contamination pattern. For example, the aerial survey contour lines are assumed to be indicative of soil contamination. The contour lines may, at least in part, reflect radiation fields created by large inventories of localized buried or stored material. The contaminated soil may not be dispersed but localized in the vicinity of the pits and trenches. In addition, the soil at the site is known to be contaminated with radionuclides other than Cs-137. Work is proceeding to obtain specific information characterizing soil contamination at Hanford. For these reasons, this report employs the concept of a reference site and does not claim that the analyses are accurate representations of the soil contamination pattern at the real sites, in this case Hanford. Until better data characterizing the contamination pattern at the real sites are available, any attempt at assigning an uncertainty distribution to the contamination patterns would be highly speculative.

Notwithstanding the difficulties in characterizing the uncertainties in the actual volumes of contaminated soil and the radionuclide distributions at a given site, some general conclusions can be drawn. First, all else being equal, the cleanup volume is proportional to the contaminated soil volume and the average radionuclide concentration in the soil. Accordingly, the tabulated estimates of cleanup volumes can be prorated as new information is acquired regarding the contaminated soil volume or average radionuclide concentration at a given site. If other radionuclides are determined to be present at a site, the degree to which they may influence the cleanup volume will be a function of the volume of soil contaminated with the radionuclides, the average concentrations of the radionuclides in the soil, and the radionuclide risk factors. As a rule of thumb, the product of the soil volume, the average radionuclide concentration, and the risk factor for a given radionuclide is a convenient index for determining the degree to which any radionuclide could substantively influence the estimates of the soil cleanup volume at a given site. For example, it is known that U-238 is present in the soil at Hanford. However, because its risk factor is at least 10 times smaller than that of Cs-137, its average concentration in the contaminated soil volume used in the analysis would have to be about 10 times greater than that of Cs-137 before it could significantly influence the volume of soil that needs to be remediated at Reference Site I.

Given the pattern of soil contamination, the uncertainty in the soil cleanup volume derived for Reference Site I is due to the uncertainty in the RESRAD derived site-specific risk factor for Cs-137, i.e., 2.66×10^{-5} lifetime risk of cancer per pCi/g (see Table 6-2). The risk factor is used to determine the soil cleanup concentration level, which is then used to derive the cleanup soil volume. For example, if the cleanup level is 1×10^{-4} , the soil cleanup concentration, as derived using the risk factor for Cs-137 for Reference Site I, is about 3.6 pCi/g (i.e., $1 \times 10^{-4} / 2.66 \times 10^{-5}$). Note that in Figure 4-4, 3.6 pCi/g corresponds to about 4×10^5 m³. Also note that the actual value reported in Table 5-3 for a cleanup level of 1×10^{-4} , which is based on curve fitting and mathematical interpolation, is 4.66×10^5 m³.

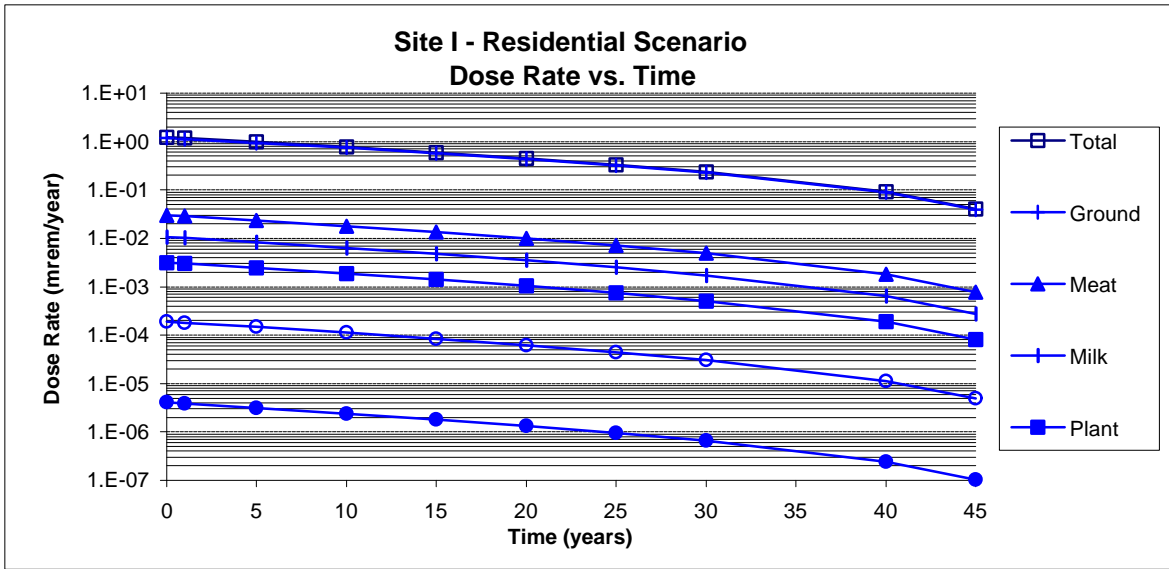
Disregarding the uncertainty in the estimate of the soil contamination volume and radionuclide distribution at Hanford, uncertainty in the cleanup volume for Reference Site I depends on the uncertainty in the risk factor for Cs-137. For example, if the risk factor were 10 times higher, the cleanup concentration would be 0.36 pCi/g, which is in the range of background. As a result, the cleanup volume would be the entire volume of contaminated soil at the site. As a general rule, the entire volume of contaminated soil at any site is that volume which is clearly and unambiguously above background.² This would be about 1×10^6 m³ at Reference Site I. If the risk factor were 10 times smaller, the cleanup concentration would be 36 pCi/g, and the cleanup volume would be about 1×10^5 m³ (see Figure 4-4).

Hence, at this site, given the contamination pattern, the cleanup volume would range from 1×10^6 m³ to 1×10^5 m³ depending on whether the risk factor were either 0.36 pCi/g to 36 pCi/g. The question is, what is the uncertainty in the risk factor?

The risk factor for Cs-137 for Reference Site I was derived using RESRAD and the input assumptions described in Section 4. Inspection of Figure 6-2, which was constructed from the RESRAD run, reveals that the risk is virtually entirely due to direct external radiation. As a result, the risk factor is independent of all site-specific characteristics except those specifically pertaining to the calculation of external exposure risk. The key parameters include the area and thickness of the contaminated zone and the external exposure slope factor (the uncertainty in the external exposure slope factor is a combination of the uncertainty in the external dose conversion factor and the risk conversion factor).

Such a determination must often be defined and implemented based on geostatistical considerations, which could require extensive sampling to confirm the absence of a contaminant above a relatively large and variable background.

Figure 6-2



Site 1 - Residential Scenario
Dose Rate (mrem/year) vs. Time

Time (years)	Water Independent Pathways					Inhalation		Others (b)
	Total	Ground	Meat	Milk	Plant	Soil	(a)	
0	1.23E+00	1.18E+00	3.01E-02	1.07E-02	3.16E-03	1.90E-04	4.05E-06	0.00E+00
1	1.17E+00	1.13E+00	2.86E-02	1.01E-02	3.00E-03	1.81E-04	3.85E-06	0.00E+00
5	9.76E-01	9.42E-01	2.33E-02	8.24E-03	2.44E-03	1.47E-04	3.13E-06	0.00E+00
10	7.67E-01	7.41E-01	1.78E-02	6.30E-03	1.87E-03	1.12E-04	2.40E-06	0.00E+00
15	5.93E-01	5.73E-01	1.34E-02	4.74E-03	1.41E-03	8.45E-05	1.80E-06	0.00E+00
20	4.49E-01	4.35E-01	9.88E-03	3.50E-03	1.04E-03	6.23E-05	1.33E-06	0.00E+00
25	3.31E-01	3.21E-01	7.08E-03	2.51E-03	7.43E-04	4.47E-05	9.52E-07	0.00E+00
30	2.34E-01	2.27E-01	4.87E-03	1.73E-03	5.11E-04	3.07E-05	6.55E-07	0.00E+00
40	9.18E-02	8.91E-02	1.80E-03	6.38E-04	1.89E-04	1.14E-05	2.42E-07	0.00E+00
45	4.06E-02	3.95E-02	7.75E-04	2.74E-04	8.13E-05	4.89E-06	1.04E-07	0.00E+00
>50 (c)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

(a) Water independent inhalation pathway excludes radon inhalation.

(b) "Others" includes the following pathways: Radon (water independent and dependent), and all the water dependent pathways (water, fish, plant, meat, and milk).

(c) Dose rates for all pathways are equal to 0.00E+00 for times between 50 and 10,000 years.

Though RESRAD was used to derive the risk factors, for any one radionuclide and pathway it is possible to derive the risk factor using simple hand calculations. Such calculations are useful because they serve as an independent check on the computer runs and explicitly reveal the role of each parameter in the calculation.

For a site contaminated with Cs-137, the lifetime risk of cancer is derived using the following equation for external exposure to contaminated soil:

$$\text{Risk} = C \times \text{SF} \times t \times \text{AF1} \times \text{AF2} \times \text{AF3}$$

where:

- Risk = Risk based cleanup level (for this example, assume 1×10^{-4} lifetime risk of cancer)
- C = Average Cs-137 concentration in soil associated with a lifetime risk of cancer of 1×10^{-4} (pCi/g)
- SF = External exposure slope factor for Cs-137 plus its short-lived progeny Ba-137m for an effective infinite slab (3.7×10^{-6} risk/yr per pCi/g, 30-year slope factors are listed in Appendix C)
- t = time period of exposure (30 years)
- AF1 = unitless adjustment factor to account for the thickness of the contaminated zone of 5 cm (0.46 for a thickness of 5 cm)
- AF2 = unitless adjustment factor to account for terrain roughness and indoor shielding (0.5)
- AF3 = unitless adjustment factor to account for the area of the contaminated zone (1.0 for most sites and radionuclides since, as long as the contaminated area exceeds about $1 \times 10^4 \text{ m}^2$, the area is effectively infinite).

Based on this equation, the concentration of Cs-137 in soil (C) which corresponds to a risk of 1×10^{-4} at Reference Site I is about 3.8 pCi/g, which agrees well with the above cited risk factor.

The key uncertainties in the calculation of the risk factor are the uncertainties in the slope factor and the first two adjustment factors. There is little uncertainty in the third adjustment factor since, as indicated in the generic sensitivity analysis presented in Table 3-15, the area of contamination does not begin to affect the risk factor for Cs-137 until the contaminated area is less than about 10,000 m².

As discussed earlier, an external slope factor could range from 0 to as much as 5 times the assumed value. In addition, if a family were to take occupancy at a location on the site where the average thickness of the contaminated zone was significantly greater than 5 cm (i.e., the thickness assumed for Reference Site I) or if they had living habits which kept them outdoors, all adjustment factors would be 1.0. As a result, the risk factor would increase about 4-fold and the cleanup concentrations would decrease 4-fold to about 1 pCi/g. Based on Figure 4-4, the cleanup volume would thereby increase to about 1x10⁶ m³; i.e., cleanup to close to background (background concentrations of Cs-137 at a site are due to fallout and are typically 0.7 pCi/g (see Table 7-7).

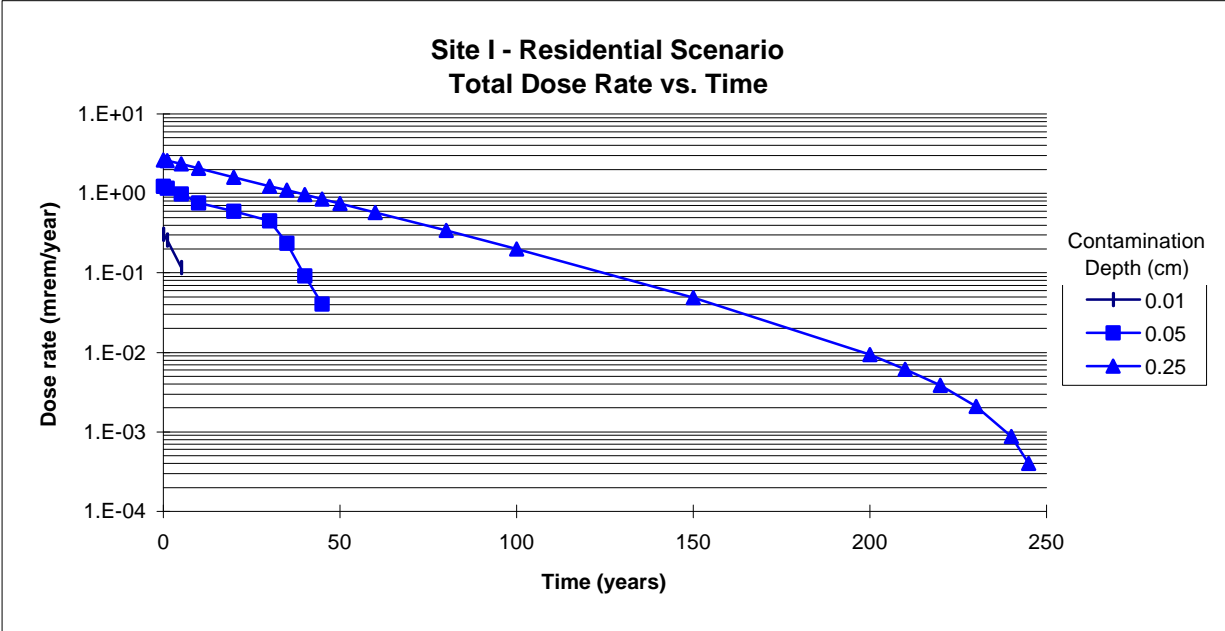
If the thickness of the contaminated zone were only 1 cm, instead of 5 cm, the risk factor would decrease about 4-fold and the soil cleanup concentration would increase to about 15 pCi/g (see Figure 6-3, which presents the results of a sensitivity analysis for the thickness of the contaminated zone for Cs-137). Inspection of Figure 4-4 reveals that at a soil cleanup concentration of 15 pCi/g, the soil cleanup volume would be about 2x10⁵ m³.

Based on this overview, and given the contamination distribution, the cleanup volume for Reference Site I required to achieve a risk level of 1x10⁻⁴ could be as high as the entire volume of contaminated soil (i.e., about 1.5x10⁶ m³) to 2x10⁵ m³.

If the cleanup level were set at 1x10⁻⁵ or 1x10⁻⁶, there would be little option but to remediate all the contaminated soil down to background because, at these risk levels, there is little uncertainty that the cleanup concentration would be at or below background.

Because the limiting pathway for Cs-137 is external radiation exposure, uncertainties in hydrogeology, agricultural practices, and dust suspension factors, which are highly uncertain for most sites, do not contribute to uncertainties in the risk factor or uncertainties in the derived soil cleanup volumes.

Figure 6-3



Site I - Residential Scenario
Total Dose Rate (mrem/year) vs. Time (years) for Various
Contaminated Zone Thicknesses (meters)

Time	0.01	0.05	0.25
0	3.06E-01	1.23E+00	2.65E+00
1	2.62E-01	1.17E+00	2.59E+00
5	1.18E-01	9.76E-01	2.34E+00
10	0.00E+00	7.67E-01	2.06E+00
20		5.93E-01	1.60E+00
30		4.49E-01	1.24E+00
35		2.34E-01	1.09E+00
40		9.18E-02	9.62E-01
45		4.06E-02	8.47E-01
50		0.00E+00	7.45E-01
60			5.76E-01
80			3.42E-01
100			2.01E-01
150			4.93E-02
200			9.31E-03
210			6.16E-03
220			3.82E-03
230			2.11E-03
240			8.75E-04
245			3.99E-04
250			0.00E+00

Reference Site II

Reference Site II is based in part on conditions at Fernald. The data characterizing this site is much more complete than that for Reference Site I, and the uncertainty in the contaminated soil volume and radionuclide concentrations is relatively small.

A large number of radionuclides are present at Fernald, but the most important radionuclide from the perspective of soil contamination is U-238. However, Ra-226 may also be important for the on-site portion of Fernald. Accordingly, insight into the uncertainty in the risk factors for these radionuclides provides insight into the uncertainty in the Fernald cleanup volumes.

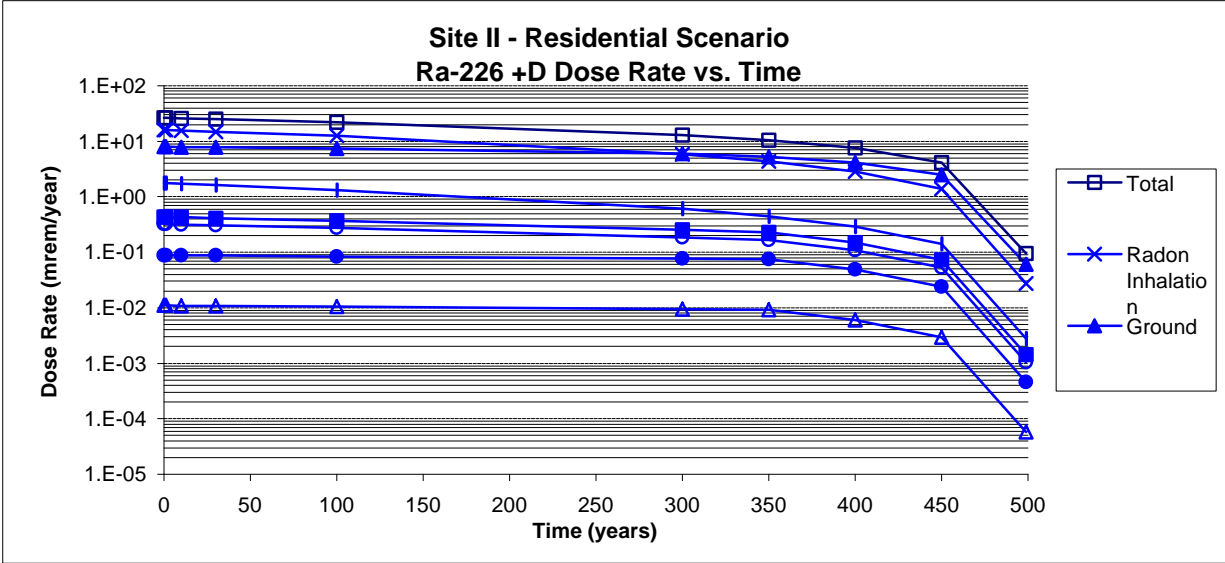
In developing Reference Site II, the Fernald was divided into 7 subsites. Each subsite was separately analyzed to determine the cleanup volume and then the summed value is reported in Table 5-3. However, subsites II-6 and II-7 are responsible for the majority of the contaminated soil volume.

For subsite II-6 (see Figure 4-10), the cleanup volume is determined primarily by Ra-226, which has a high risk factor of 3.12×10^{-4} cancers per pCi/g, primarily due to indoor radon and direct radiation to a lesser degree (see Figure 6-4). For a cleanup level of 1×10^{-4} , the Ra-226 cleanup concentration is 0.32 pCi/g. This is less than the variability in natural background, and, as a result, cleanup to this risk level would require the entire contaminated volume of soil on-site at subsite II-6 to be remediated. This is approximately $8.4 \times 10^5 \text{ m}^3$, which is consistent with the value in Table 5-3 of $9.36 \times 10^5 \text{ m}^3$.

Uncertainty in the Ra-226 risk factor is primarily due to uncertainty in the radon concentration ratio and the risk coefficient for radon. RESRAD derives the indoor radon concentration through the use of a diffusion model which results in an indoor radon risk factor of 1.2×10^{-4} risk per pCi/g³. A simple and reliable method for checking on the risk factor and gaining insight into its uncertainties is to use the simple relationship described in Section 2.2.5.5; i.e., 4.62×10^{-5} risk of cancer per person per year per pCi/g of Ra-226 in soil, or 1.4×10^{-3} lifetime risk per pCi/g. Note that the rule of thumb approach results in a

The lifetime risk from inhalation of radon and radon decay products is calculated as the difference between the Ra-226 risk factor including the radon pathway and the Ra-226 risk factor excluding the radon pathway listed in Table 6-2.

Figure 6-4



Site II - Residential Scenario
Ra-226+D Dose Rate (mrem/year) vs. Time

Time (years)	Water Independent Pathways							
	Total	Radon Inhalation	Ground	Plant	Meat	Milk	Soil	Others (a)
0	2.65E+01	1.59E+01	7.96E+00	1.75E+00	4.37E-01	3.24E-01	8.88E-02	1.10E-02
1	2.64E+01	1.59E+01	7.96E+00	1.75E+00	4.36E-01	3.23E-01	8.88E-02	1.10E-02
10	2.60E+01	1.56E+01	7.92E+00	1.71E+00	4.29E-01	3.18E-01	8.82E-02	1.09E-02
30	2.51E+01	1.49E+01	7.83E+00	1.62E+00	4.15E-01	3.08E-01	8.72E-02	1.08E-02
100	2.21E+01	1.25E+01	7.49E+00	1.33E+00	3.70E-01	2.73E-01	8.42E-02	1.04E-02
300	1.30E+01	5.91E+00	5.96E+00	6.05E-01	2.56E-01	1.86E-01	7.65E-02	9.44E-03
350	1.05E+01	4.35E+00	5.21E+00	4.44E-01	2.31E-01	1.67E-01	7.47E-02	9.22E-03
400	7.57E+00	2.85E+00	4.12E+00	2.89E-01	1.50E-01	1.08E-01	4.86E-02	6.00E-03
450	4.18E+00	1.39E+00	2.49E+00	1.41E-01	7.33E-02	5.29E-02	2.37E-02	2.93E-03
499	9.42E-02	2.73E-02	6.12E-02	2.76E-03	1.43E-03	1.03E-03	4.64E-04	5.72E-05
>500 (b)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

(a) "Others" includes the water independent inhalation pathway.
All the water dependent pathways are equal to 0.00E+00.

(b) Dose rates for all pathways are equal to 0.00E+00 for times between 500 and 10,000 years.

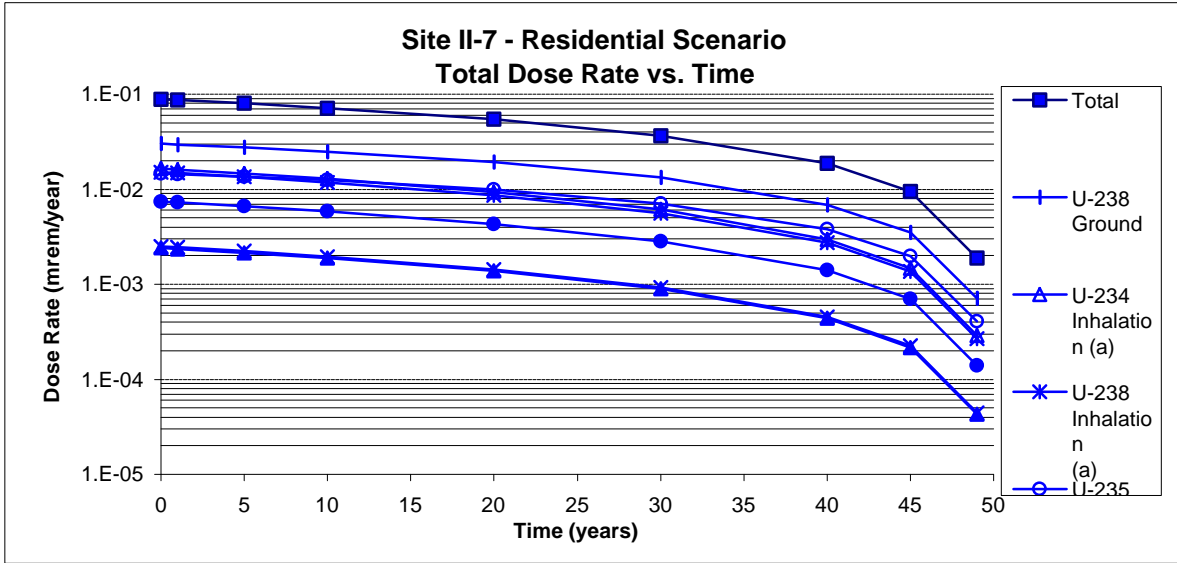
radon risk factor approximately 10 times higher than that derived by RESRAD (see Table 6-2). The reason for the 10-fold difference is the rule of thumb value is based on the assumption that the thickness of the contaminated zone is at least 5 meters. For II-6, the thickness of the contaminated zone is assumed to be 0.5 meters. Adjusting for the thickness of the contaminated zone, the two approaches for deriving the risk factor are compatible.

Imbedded in the simple relationship is the assumption that 1 pCi/g of Ra-226 in soil results in an average indoor radon concentration of 1.25 pCi/l. Subsequent sections of this report reveal that the concentration ratio could be many times higher depending on soil properties and structural characteristics of the residence.

This exercise reveals that the risk factor for Reference Site II for Ra-226 in Table 6-2 could be more than 10 times higher if the contaminated zone were in fact thicker or if the radon concentration ratio were higher. In addition, Section 3.2.2 also reveals that the generic risk factor for Ra-226 could range from 0 to 5 times the generic value. However, such increases in the risk factor would not necessarily result in an increase in the cleanup volume. For example, using the current risk factor, all the soil contaminated above background would require remediation if the cleanup level were set at 1×10^{-4} . Accordingly, a higher risk factor would not increase the cleanup volume. Similarly, a more restrictive cleanup level would not result in an increase in the cleanup volume. If the cleanup level were set at 1×10^{-3} , the cleanup concentration would be 3.2 pCi/g, which still requires virtually all the soil above background to be remediated. As a general rule, notwithstanding the uncertainties in the risk factors, if the cleanup for a site containing Ra-226 is set at 1×10^{-4} to 1×10^{-3} or less and includes the potential for the buildup of indoor radon, virtually all of the soil contaminated above background will need to be remediated.

This conclusion is based on the assumption that indoor radon is the limiting pathway. If however, the radon issue were resolved (perhaps by installing a sub-slab ventilation system), the risk factor for Ra-226 would decrease to 1.92×10^{-4} (see Table 6-2). This is a relatively small change and would not significantly change the cleanup volume. The reduction in the risk factor would have been greater if the thickness of the contaminated zone were 5 as opposed to 0.5 m. For the direct radiation pathway, an increase in the thickness of the contaminated zone would not result in an increase in the risk factor because the zone of influence for direct radiation is only the top 15 to 20 cm. However, an increase in the thickness of the contaminated zone would result in a significant increase in the radon pathway contribution to the risk factor because the zone of influence for indoor radon is the top 5 meters of soil.

Figure 6-5



Site II-7 - Residential Scenario
Total Dose Rate (mrem/year) vs. Time

Time (years)	Water Independent Pathways							
	Total	U-238 Ground	U-234 Inhalation (a)	U-238 Inhalation (a)	U-235 Ground	U-234 Milk	U-238 Milk	Others (b)
0	8.87E-02	3.01E-02	1.64E-02	1.52E-02	1.46E-02	2.51E-03	2.41E-03	7.42E-03
1	8.70E-02	2.96E-02	1.61E-02	1.48E-02	1.44E-02	2.45E-03	2.36E-03	7.26E-03
5	8.02E-02	2.75E-02	1.46E-02	1.35E-02	1.36E-02	2.23E-03	2.15E-03	6.62E-03
10	7.16E-02	2.49E-02	1.28E-02	1.18E-02	1.24E-02	1.96E-03	1.88E-03	5.84E-03
20	5.44E-02	1.93E-02	9.39E-03	8.66E-03	9.94E-03	1.43E-03	1.38E-03	4.31E-03
30	3.68E-02	1.33E-02	6.11E-03	5.63E-03	7.09E-03	9.32E-04	8.96E-04	2.83E-03
40	1.87E-02	6.87E-03	2.98E-03	2.75E-03	3.81E-03	4.54E-04	4.37E-04	1.40E-03
45	9.44E-03	3.50E-03	1.47E-03	1.36E-03	1.98E-03	2.24E-04	2.16E-04	6.96E-04
49	1.90E-03	7.10E-04	2.91E-04	2.69E-04	4.07E-04	4.44E-05	4.27E-05	1.39E-04
>50 (c)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

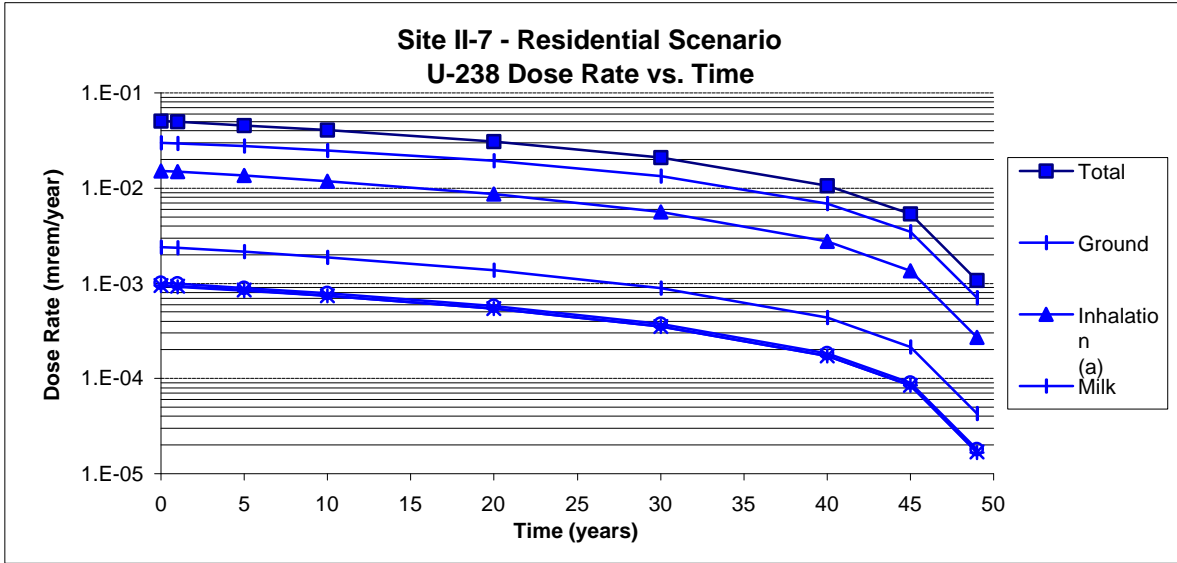
(a) Water independent inhalation pathway excludes radon inhalation.

(b) "Others" includes all other pathways calculated by RESRAD.

Dose rates for all water dependent pathways are equal to 0.00E+00.

(c) Dose rates for all pathways are equal to 0.00E+00 for times between 50 and 10,000 years.

Figure 6-6



Site II-7 - Residential Scenario
U-238 Dose Rate (mrem/year) vs. Time

Time (years)	Water Independent Pathways							
	Total	Ground	Inhalation (a)	Milk	Plant	Soil	Meat	Others (b)
0	5.06E-02	3.01E-02	1.52E-02	2.41E-03	1.01E-03	9.49E-04	9.47E-04	0.00E+00
1	4.96E-02	2.96E-02	1.48E-02	2.36E-03	9.87E-04	9.28E-04	9.25E-04	0.00E+00
5	4.57E-02	2.75E-02	1.35E-02	2.15E-03	8.97E-04	8.44E-04	8.41E-04	0.00E+00
10	4.08E-02	2.49E-02	1.18E-02	1.88E-03	7.88E-04	7.41E-04	7.39E-04	0.00E+00
20	3.10E-02	1.93E-02	8.66E-03	1.38E-03	5.76E-04	5.42E-04	5.41E-04	0.00E+00
30	2.09E-02	1.33E-02	5.63E-03	8.96E-04	3.75E-04	3.52E-04	3.52E-04	0.00E+00
40	1.06E-02	6.87E-03	2.75E-03	4.37E-04	1.83E-04	1.72E-04	1.72E-04	0.00E+00
45	5.33E-03	3.50E-03	1.36E-03	2.16E-04	9.03E-05	8.49E-05	8.47E-05	0.00E+00
49	1.07E-03	7.10E-04	2.69E-04	4.27E-05	1.79E-05	1.68E-05	1.68E-05	0.00E+00
>50 (c)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

(a) Water independent inhalation pathway excludes radon inhalation.

(b) "Others" includes the following pathways: Radon (water independent and dependent), and all the water dependent pathways (water, fish, plant, meat, and milk).

(c) Dose rates for all pathways are equal to 0.00E+00 for times between 50 and 10,000 years.

Subsite II-7 represents a different problem than subsites II-1 or II-6 because the risks are entirely due to uranium (see Figure 4-11). Two radionuclides contribute to most of the risk, U-238, with a risk factor of 8.32×10^{-7} and U-234, with a risk factor of 1.27×10^{-7} . Figures 6-5 and 6-6 present the total dose rate as a function of time for each radionuclide and pathway. As indicated, external exposure to U-238 is the limiting radionuclide and pathway.

U-238 is one of the more complex radioisotopes from the perspective of assessing the uncertainties in the risk factor. Unlike most radionuclides, which have only one or two important pathways, U-238 can contribute to risk from the direct radiation, dust inhalation, groundwater, and crop ingestion pathway. The relative importance of each pathway depends on site-specific characteristics. The primary reason for this complexity is uranium can have a relatively low K_d and therefore reach an aquifer within the time period of interest. Its short-lived daughters also have a significant gamma which creates the potential for external exposure, and its alpha emission represent a significant inhalation risk. Figure 6-6 indicates that the limiting pathways in this case are direct external radiation and inhalation of suspended dust because the U-238 cannot reach the aquifer within the 1000 year time period of interest.

An important consideration in the uncertainty analysis of U-238 at any site is the possibility that the U-238 could reach the groundwater within the time period of interest. If so, the groundwater pathway dominates (see Table 3-1). At Reference Site II, the depth to the aquifer is chosen to be about 10 meters, the infiltration rate is 0.3 m/yr, the effective porosity is 0.2, and the K_d for uranium is 1600 (see Tables 4-6, 4-7, and 4-8). These parameters can be used to estimate the approximate travel time (T) to the aquifer, as follows:

$$T = D \times R/v$$

where:

- D = Thickness of the unsaturated zone (10 m)
- R = Retardation factor (approximated as 5 times K_d or 8000)
- v = Velocity at which rainwater percolates down through the unsaturated zone (approximated as the infiltration rate/volumetric water content, or about 1 m/yr)

Therefore:

$$T = 10 \times 8000/1 = 80,000 \text{ years}$$

Clearly, the uranium cannot reach the aquifer within a 1000 year time period of interest unless the hydrogeological characteristics are completely mischaracterized. For example, if the K_d were 10 times smaller due to the presence of chelating agents or if the infiltration velocity were 10 times greater due to channeling, or if there were locations at the site where the thickness of the unsaturated zone were 1 instead of 10 meters, the travel time could be reduced to 8000 years. Accordingly, contamination of the groundwater pathway offsite at Reference Site II, as modeled, due to leachate from uranium contaminated soil would appear to be unlikely. However, for the purpose of this uncertainly analysis, the possibility of facilitated transport is addressed.⁴

Figure 6-7, with its accompanying table, indicates how the results of the analysis would change if low K_d values were used which resulted in the arrival of the uranium in the aquifer within the 1000 year period of interest. Note that, initially, the water independent pathways (i.e., external radiation from the ground) is the limiting pathway. However, the water independent pathways decline rapidly with time because the low K_d results in rapid depletion of the contaminated soil. At approximately year 50, the water dependent pathways begin to contribute to the risk because it is at this time that the uranium reaches the aquifer. The water dependent doses increase rapidly and eventually deliver a dose rate more than 10 times the original water independent pathways dose rates. After the groundwater pulse moves through the system, the dose rates decline rapidly and then level off or slightly increase with time due to the ingrowth of Th-230 and Ra-226 from the decaying U-234.

If the groundwater travel time were less than 1000 years, the maximum concentration of uranium in the groundwater would be the ratio of the concentration in the soil to the uranium K_d . Therefore, the upper bound risk factor for uranium via the groundwater pathway could be approximated as follows:

$$\text{Risk per pCi/g} = \frac{(C/K_d) \times 1000 \text{ ml/L} \times 2 \text{ L/d} \times 365 \text{ d/yr} \times 30 \text{ yr} \times \text{SF}}{(\text{groundwater})}$$

The groundwater at Fernald is contaminated. The method by which this contamination is occurring is under investigation.

Where:

C = radionuclide concentration in soil (1 pCi/g)
K_d = uranium distribution coefficient (1600 ml/g)
SF = 30 year slope factor for uranium ingestion (1.1x10⁻¹⁰ lifetime risk of cancer per pCi ingested)

Risk per pCi/g (groundwater) = 1.5x10⁻⁶

If the groundwater pathway was eliminated due to travel time, the important pathways would include direct radiation, dust inhalation, and vegetable ingestion. The following presents a simple method for approximating the risk factors for each of these pathways:

Risk per pCi/g (external) = 1 pCi/g x SF (risk/yr per pCi/g) x AF1 x AF2 x AF3 x t (yrs)

Where:

SF = 30 year external slope factor for uranium+D (1.01x10⁻⁷)

AF1 = Adjustment factor for thickness of the contaminated zone (the contaminated zone indicated in Table 4-6 is 5 cm, which has an adjustment factor of about 0.5; see Section 3.2 for a discussion of the effect of contaminated zone thickness on the external dose conversion factor)

AF2 = Adjustment factor to account for surface roughness and indoor shielding (about 0.5). Oakley (Oak 72) estimates that the indoor dose rate for frame dwellings is about 70 to 80 percent of that outdoors. Kocher (Koc 83) presents a discussion of correction factors for external exposure, indicating that structural shielding can range from 0.7 for automobiles to 0.005 for basements of large, multistory buildings. Kocher further cites studies for ground surface roughness correction factors that can range from 1 for paved areas to 0.5 for deeply plowed fields.

AF3 = Adjustment factor to account for area of the contaminated zone (assumed to be 1.0 since it is unlikely that the contaminated area is less than 1000 m²)

t = exposure duration (30 years)

Risk per pCi/g (external) = 7.6x10⁻⁷

Figure 6-7

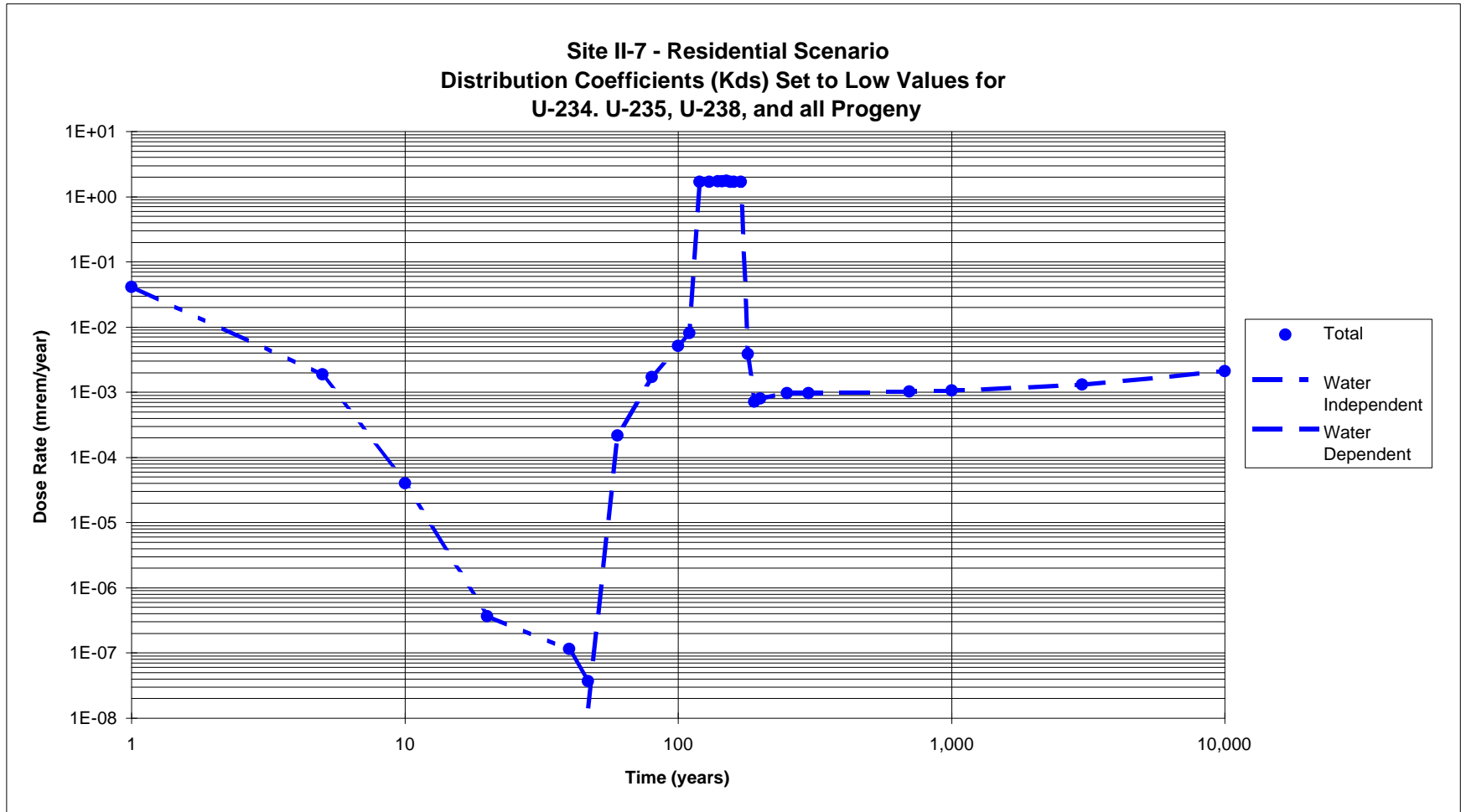


Figure 6-7 (continued)

Site II-7 - Residential Scenario
 Distribution Coefficients (Kds) Set to Low Values for U-234, U-235, U-238, and all Progeny

Time	Total	Water Independent Pathway Major Contributors						Water Dependent Pathway Major Contributors					
		U-238 Ground	U-234 Inhal.	U-238 Inhal.	U-235 Ground	U-234 Food	Independen t	U-234 Water	U-238 Water	U-234 Food	U-238 Food	U-235 Water	Water Dependent
0	8.9E-02	3.0E-02	1.6E-02	1.5E-02	1.5E-02	4.5E-03	8.9E-02	0	0	0	0	0	0
1	4.1E-02	1.4E-02	7.6E-03	7.0E-03	6.8E-03	2.1E-03	4.1E-02	0	0	0	0	0	0
5	1.9E-03	6.5E-04	3.4E-04	3.2E-04	3.2E-04	9.5E-05	1.9E-03	0	0	0	0	0	0
10	4.0E-05	1.4E-05	7.4E-06	6.5E-06	6.8E-06	2.0E-06	4.0E-05	0	0	0	0	0	0
20	3.7E-07	5.8E-09	2.9E-07	2.6E-09	3.0E-09	1.2E-08	3.7E-07	0	0	0	0	0	0
40	1.2E-07	3.5E-14	9.2E-08	3.5E-13	3.5E-16	3.7E-09	1.1E-07	0	0	0	0	0	0
47	3.7E-08	1.2E-14	2.9E-08	1.1E-13	7.1E-19	1.2E-09	3.7E-08	0	0	0	0	1.3E-08	1.4E-08
60	2.2E-04	0	0	0	0	0	0	0	0	0	0	2.0E-04	2.2E-04
80	1.7E-03	0	0	0	0	0	0	0	0	0	0	1.6E-03	1.7E-03
100	5.1E-03	0	0	0	0	0	0	0	0	0	0	4.7E-03	5.1E-03
110	8.1E-03	0	0	0	0	0	0	0	0	0	0	7.5E-03	8.1E-03
120	1.7E+00	0	0	0	0	0	0	7.7E-01	7.4E-01	6.8E-02	6.5E-02	4.9E-02	1.7E+00
130	1.7E+00	0	0	0	0	0	0	7.7E-01	7.4E-01	6.8E-02	6.5E-02	5.0E-02	1.7E+00
140	1.7E+00	0	0	0	0	0	0	7.7E-01	7.4E-01	6.8E-02	6.5E-02	5.0E-02	1.7E+00
145	1.7E+00	0	0	0	0	0	0	7.8E-01	7.5E-01	6.8E-02	6.6E-02	5.0E-02	1.7E+00
150	1.7E+00	0	0	0	0	0	0	7.9E-01	7.6E-01	6.9E-02	6.6E-02	5.0E-02	1.7E+00
155	1.7E+00	0	0	0	0	0	0	7.7E-01	7.4E-01	6.8E-02	6.5E-02	4.8E-02	1.7E+00
160	1.7E+00	0	0	0	0	0	0	7.7E-01	7.4E-01	6.8E-02	6.5E-02	4.7E-02	1.7E+00
170	1.7E+00	0	0	0	0	0	0	7.7E-01	7.5E-01	6.8E-02	6.5E-02	4.4E-02	1.7E+00
180	3.8E-03	0	0	0	0	0	0	1.8E-03	1.4E-03	4.2E-04	1.2E-04	8.3E-05	3.8E-03
190	7.1E-04	0	0	0	0	0	0	3.5E-04	7.3E-07	3.4E-04	1.2E-07	4.0E-08	7.1E-04
200	8.0E-04	0	0	0	0	0	0	4.0E-04	5.1E-08	3.8E-04	4.7E-08	1.7E-11	8.0E-04
250	9.7E-04	0	0	0	0	0	0	4.8E-04	7.1E-08	4.6E-04	6.7E-08	0	9.7E-04
300	9.7E-04	0	0	0	0	0	0	4.8E-04	7.4E-08	4.6E-04	7.0E-08	0	9.7E-04
700	1.0E-03	0	0	0	0	0	0	5.1E-04	6.1E-08	4.9E-04	5.8E-08	0	1.0E-03
1,000	1.1E-03	0	0	0	0	0	0	5.3E-04	7.0E-08	5.1E-04	6.6E-08	0	1.1E-03
3,000	1.3E-03	0	0	0	0	0	0	6.5E-04	1.2E-07	6.3E-04	1.2E-07	0	1.3E-03
10,000	2.1E-03	0	0	0	0	0	0	1.0E-03	4.0E-07	1.0E-03	3.8E-07	0	2.1E-03

If the contaminated zone thickness were greater than 15 cm and the individuals were assumed to spend all their time outdoors, the risk factor for external exposure would increase to about 3×10^{-6} .

For the dust inhalation pathway, the risk factor is approximated as follows:

$$\text{Risk per pCi/g (dust)} = 1 \text{ pCi/g} \times 200 \text{ } \mu\text{g/m}^3 \times 1 \times 10^{-6} \text{ g/} \mu\text{g} \times 8000 \text{ m}^3/\text{yr} \times 30 \text{ yr} \times \text{SF} \times \text{AF1} \times \text{AF2} \times \text{AF3}$$

Where:

200 = airborne dust loading ($\mu\text{g}/\text{m}^3$). This is the recommended default value cited in RESRAD (ANL 93b). The supporting documentation for RESRAD indicates that this is a generally high end value, especially as applied to long term exposures in non urban settings.

8000 = annual breathing rate (m^3/yr)

SF = 30 year inhalation slope factor (1.87×10^{-8} risk/pCi inhaled)

AF1 = Adjustment factor to account for thickness of the contaminated zone. Since the thickness of the contaminated zone is 5 cm, an adjustment factor of 0.33 is applied to account for the assumption that it is the average concentration in the top 15 cm that is responsible for the airborne dust loading.

AF2 = Adjustment factor to account for indoor occupancy and the indoor/outdoor decontamination factor (assumed to be about 0.5, see discussion in Section 3.2)

AF3 = Adjustment factor to account for area of the contaminated zone (for areas greater than $1 \times 10^4 \text{ m}^2$, the value is 1.0; this means that virtually all of the airborne dust at the occupied location is assumed to be from contaminated soil)

$$\text{Risk per pCi/g (dust)} = 1.5 \times 10^{-7}$$

If the thickness of the contaminated zone were greater than 15 cm and if most of the time were spent outdoors, this risk factor could increase to about 1×10^{-6} . However, if a less conservative dust loading were assumed, such as $10 \mu\text{g}/\text{m}^3$, the risk factor would decrease 20 fold to 7.5×10^{-9} .

For the crop ingestion pathway, the risk factor is estimated as follows:

$$\text{Risk per pCi/g (crop)} = 1 \text{ pCi/g} \times B_v \times I \text{ (kg/yr)} \times 1000 \text{ g/kg} \times 30 \text{ yr} \times SF$$

Where:

B_v = soil to plant transfer factor for uranium (2.5×10^{-3} , see Table C.3). EPA 89 indicates that the range of the average B_v s for uranium in vegetables is 1.4×10^{-3} to 0.2.

I = ingestion rate of vegetable (122.5 + 13.3 kg/yr from Table 3-11).

SF = 30 year ingestion slope factor (1.10×10^{-10})

$$\text{Risk per pCi/g (crops)} = 1.1 \times 10^{-6}$$

The uncertainty in this value depends primarily on the uncertainty in B_v , I , and SF . The B_v could be a factor of 100 higher to about 2 lower. SF could range from 0 to 10 times higher than the selected value. The ingestion rate of contaminated crops could not reasonably be higher since it assumes a large portion of the persons vegetables are grown in contaminated soil over a 30 year period.

In summary, the risk factors for uranium for Reference Site II by pathway are approximated as follows:

Pathway	Risk Factor
Groundwater	1.5×10^{-6}
Direct Radiation	7.6×10^{-7}
Dust Inhalation	1.5×10^{-7}
Crop Ingestion	1.1×10^{-6}
Total (all paths)	3.5×10^{-6}
Total (without groundwater)	2.0×10^{-6}

The risk factor derived by RESRAD for U-238 without decay products is 8.95×10^{-7} (see Table 6-3), which is consistent with the above hand calculation, especially since the groundwater is

not assumed to be a contributor at subsite II-2. These hand calculated approximations are reliable within a factor of approximately 2 due to differences in the adjustment factors.

At a cleanup level of 1×10^{-4} , a risk factor of 8.32×10^{-7} translates to a cleanup concentration of 120 pCi/g. Applying this risk factor to Figure 4-11, no soil would require remediation because no soil is contaminated above 120 pCi/g. If groundwater is assumed to be present, the risk factor would increase to about 3.5×10^{-6} , with an associated 1×10^{-4} cleanup concentration of about 30 pCi/g. Given the K_d of 1600, it is unlikely that the cleanup concentration could be much lower because it is based on the assumption that the leachate is undiluted. However, as indicated in Section 3, the K_d could be 10 to 100 times smaller, resulting in a groundwater risk factor 10 to 100 times greater and cleanup concentrations down to background levels. Alternatively, if less conservative assumptions regarding Bv, I, and airborne dust loading are used, these pathways could be virtually eliminated, leaving only the direct radiation pathway, which by itself is associated with a cleanup concentration at 1×10^{-4} risk of 130 pCi/g. Clearly, the uncertainties are large and significant. Depending on the assumptions, all of which are plausible, one could conclude that either all or very little of the contaminated soil at Reference Site II requires remediation in order to achieve cleanup levels on the order of 1×10^{-4} .

Reference Site III

Reference Site III is based in part on INEL and, like Reference Site I, it is assumed that the soil contamination is dominated by Cs-137 and the thickness of the contaminated zone is 5 cm. As a result, the discussion pertaining to Reference Site I also applies to Reference Site III.

Applying a cleanup concentration of 3.8 pCi/g to Figure 4-12 results in an estimated cleanup volume of $4 \times 10^5 \text{ m}^3$ in order to achieve a risk level of 1×10^{-4} . This is consistent with the mathematically interpolated value of $4.63 \times 10^5 \text{ m}^3$ presented in Table 5-3.

As a rule, at sites contaminated with strong gamma emitters, such as Cs-137, Co-60, and Ra-228, the direct radiation pathways is the major contributor to the risk factor, and the primary assumption that contributes to the uncertainty in the risk factor is the thickness of the contaminated zone. For contaminated zone thicknesses less than about 15 cm, the risk factor is highly sensitive to the assumed thickness. Above 15 cm, the risk factor is insensitive to

thickness. All other site parameters are essentially irrelevant in deriving the risk factors for these radionuclides.

Reference Site IV

Reference Site IV is based in part on Weldon Spring. Two radionuclides contribute to the risk,

U-238, with a risk factor of 1.41×10^{-6} , and U-234, with a risk factor of 2.74×10^{-7} (see Table 6-2). U-238 is limiting, and, since the two radionuclides can be assumed to be commingled, it is only necessary to discuss U-238.

At a cleanup level of 1×10^{-4} , the cleanup concentration is about 70 pCi/g. Inspection of Figure 4-13 reveals that the cleanup volume at 70 pCi/g is about $3 \times 10^4 \text{ m}^3$. This is consistent with the mathematically extrapolated value of $3.71 \times 10^4 \text{ m}^3$ presented in Table 5-3. At a cleanup level of 1×10^{-5} , the cleanup concentration would be 7 pCi/g, which, according to Figure 4-13, corresponds to about $8 \times 10^4 \text{ m}^3$. Table 5-3 indicates a cleanup volume of 9.73×10^4 . These comparisons help to demonstrate how the cleanup volumes were derived and begin to provide insight into the reliability and uncertainty in the numbers.

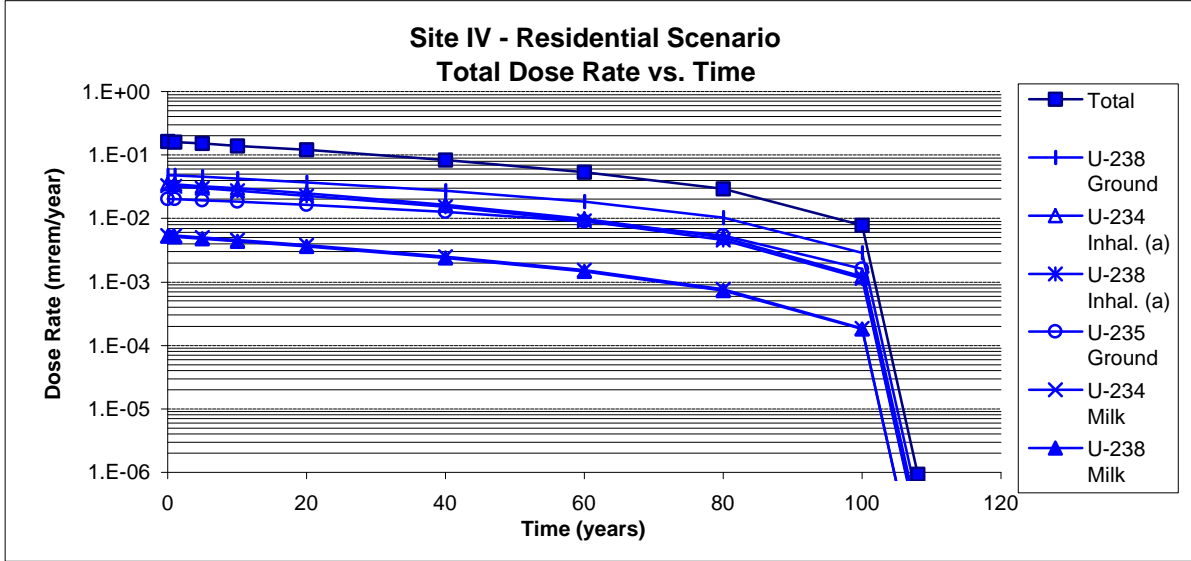
Figure 6-8 indicates that U-238 exposure from direct radiation is limiting, with significant contributions from dust inhalation. Like Reference Site II, the uncertainties in the risk factors for U-238 are substantial and significant. Figure 6-9 and its accompanying table reveal how the results would change if a low K_d were assumed for uranium. As for Reference Site II, the groundwater pathway dominates the dose rate following its transport to the aquifer. This situation rarely occurs because the uranium is held up in the unsaturated zone for periods of time substantially greater than 1000 years.

Reference Site V

Reference Site V is based in part on Savannah River and, like Reference Sites I and II, it is assumed that the soil contamination issues are dominated by Cs-137. Figure 6-10, which presents the dose rate by pathway and as a function of time, reveals that the direct radiation exposure is the dominant pathway. As a result, the discussion pertaining to Reference Site I also applies to Reference Site V.

Applying a cleanup concentration of 3.8 pCi/g to Figure 4-14 yields a cleanup volume of about $6 \times 10^6 \text{ m}^3$, which is consistent with the mathematically interpolated value of $6.02 \times 10^6 \text{ m}^3$ in Table 5-3.

Figure 6-8



Site IV - Residential Scenario
Total Dose Rate (mrem/year) vs. Time

Time (years)	Water Independent Pathways							
	Total	U-238 Ground	U-234 Inhal. (a)	U-238 Inhal. (a)	U-235 Ground	U-234 Milk	U-238 Milk	Others (b)
0	1.63E-01	4.82E-02	3.54E-02	3.27E-02	2.04E-02	5.42E-03	5.21E-03	1.57E-02
1	1.61E-01	4.76E-02	3.48E-02	3.21E-02	2.02E-02	5.33E-03	5.12E-03	1.54E-02
5	1.51E-01	4.53E-02	3.25E-02	3.00E-02	1.94E-02	4.97E-03	4.78E-03	1.44E-02
10	1.40E-01	4.25E-02	2.98E-02	2.75E-02	1.84E-02	4.56E-03	4.38E-03	1.32E-02
20	1.20E-01	3.72E-02	2.48E-02	2.28E-02	1.64E-02	3.79E-03	3.64E-03	1.11E-02
40	8.39E-02	2.73E-02	1.64E-02	1.51E-02	1.27E-02	2.51E-03	2.42E-03	7.44E-03
60	5.42E-02	1.85E-02	9.94E-03	9.17E-03	9.02E-03	1.52E-03	1.46E-03	4.58E-03
80	2.91E-02	1.03E-02	4.98E-03	4.59E-03	5.39E-03	7.61E-04	7.32E-04	2.35E-03
100	7.75E-03	2.86E-03	1.22E-03	1.12E-03	1.60E-03	1.87E-04	1.79E-04	5.91E-04
108	9.42E-07	3.51E-07	1.43E-07	1.32E-07	2.03E-07	2.19E-08	2.10E-08	7.01E-08
>108 (c)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

- (a) Water independent inhalation pathways exclude radon inhalation.
- (b) "Others" includes all other pathways calculated by RESRAD.
Dose rates for all water dependent pathways are equal to 0.00E+00.
- (c) Dose rates for all pathways are equal to 0.00E+00 for times between 108 and 10,000 year.

Figure 6-9

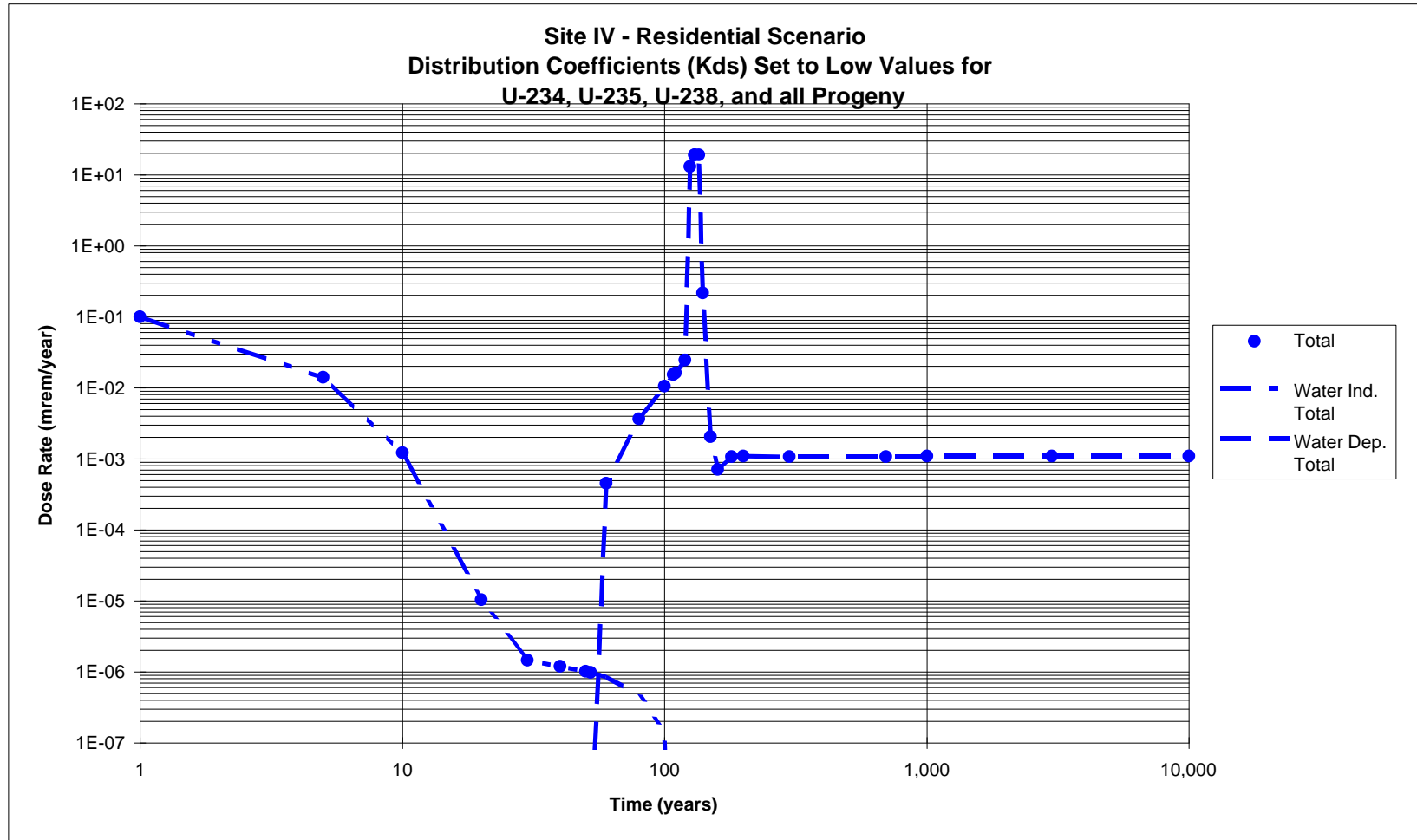
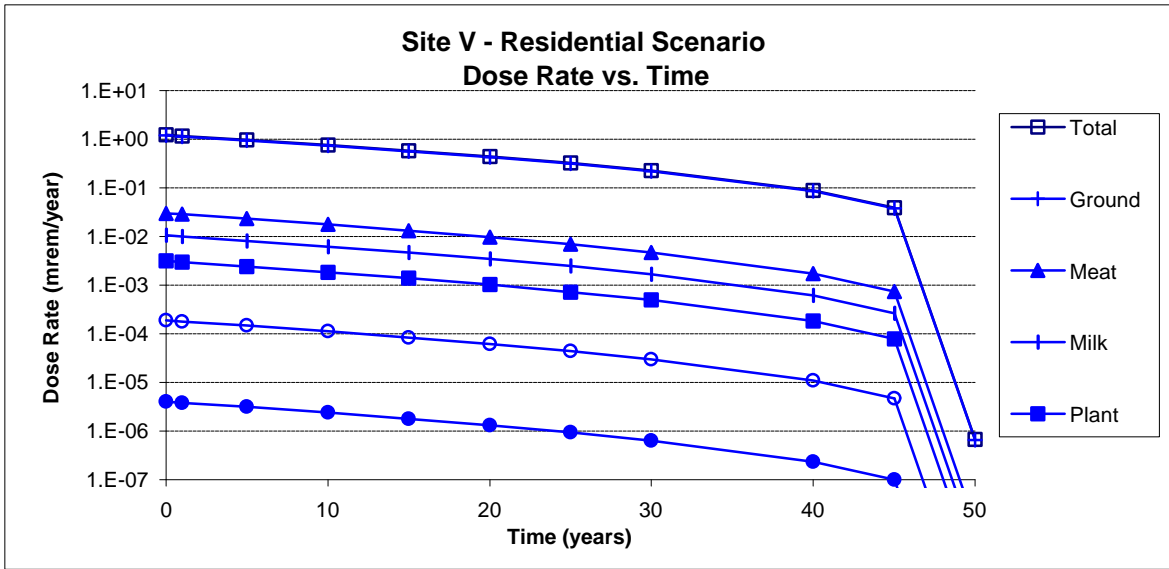


Figure 6-9 (continued)

Site IV - Residential Scenario
 Distribution Coefficients (Kds) Set to Low Values for U-234, U-235, U-238, and all Progeny

Time	Water Independent Pathway Major Contributors							Water Dependent Pathway Major Contributors					Water Dep. Total
	Total	U-238 Ground	U-234 Inhal.	U-238 Inhal.	U-235 Ground	U-234 Food	Water Ind. Total	U-234 Water	U-238 Water	U-234 Food	U-238 Food	U-235 Water	
0	1.6E-01	4.8E-02	3.5E-02	3.3E-02	2.0E-02	9.8E-03	1.6E-01	0	0	0	0	0	0
1	1.0E-01	3.0E-02	2.2E-02	2.0E-02	1.3E-02	6.0E-03	1.0E-01	0	0	0	0	0	0
5	1.4E-02	4.2E-03	3.0E-03	2.8E-03	1.8E-03	8.4E-04	1.4E-02	0	0	0	0	0	0
10	1.2E-03	3.7E-04	2.6E-04	2.4E-04	1.6E-04	7.1E-05	1.2E-03	0	0	0	0	0	0
20	1.0E-05	2.8E-06	3.1E-06	1.7E-06	1.2E-06	5.6E-07	1.0E-05	0	0	0	0	0	0
30	1.5E-06	2.0E-08	1.2E-06	1.2E-08	9.2E-09	5.1E-08	1.5E-06	0	0	0	0	0	0
40	1.2E-06	1.5E-10	9.9E-07	8.9E-11	6.9E-11	4.1E-08	1.2E-06	0	0	0	0	0	0
50	1.0E-06	1.6E-12	8.4E-07	5.5E-12	5.1E-13	3.5E-08	1.0E-06	0	0	0	0	0	0
52	9.8E-07	8.4E-13	8.0E-07	4.9E-12	1.6E-13	3.3E-08	9.8E-07	0	0	0	0	2.9E-09	3.0E-09
60	4.6E-04	4.7E-13	6.9E-07	4.0E-12	3.7E-15	2.9E-08	8.4E-07	0	0	0	0	4.3E-04	4.6E-04
80	3.6E-03	2.9E-13	4.0E-07	2.3E-12	1.6E-19	1.6E-08	4.9E-07	0	0	0	0	3.4E-03	3.6E-03
100	1.1E-02	9.3E-14	1.1E-07	6.5E-13	3.5E-24	4.6E-09	1.4E-07	0	0	0	0	1.0E-02	1.1E-02
108	1.5E-02	1.2E-17	1.4E-11	8.1E-17	1.0E-29	5.7E-13	1.7E-11	0	0	0	0	1.4E-02	1.5E-02
110	1.6E-02	0	0	0	0	0	0	0	0	0	0	1.5E-02	1.6E-02
120	2.4E-02	0	0	0	0	0	0	0	0	0	0	2.3E-02	2.4E-02
125	1.3E+01	0	0	0	0	0	0	0	0	0	0	3.5E-01	1.3E+01
130	1.9E+01	0	0	0	0	0	0	6.1E+00	5.8E+00	4.4E-01	4.2E-01	4.9E-01	1.9E+01
131	1.9E+01	0	0	0	0	0	0	8.8E+00	8.5E+00	6.4E-01	6.1E-01	4.9E-01	1.9E+01
135	1.9E+01	0	0	0	0	0	0	8.9E+00	8.5E+00	6.4E-01	6.2E-01	4.9E-01	1.9E+01
140	2.2E-01	0	0	0	0	0	0	1.0E-01	9.7E-02	7.4E-03	7.0E-03	5.6E-03	2.2E-01
150	2.1E-03	0	0	0	0	0	0	1.0E-03	7.0E-04	2.2E-04	5.1E-05	4.1E-05	2.1E-03
160	7.1E-04	0	0	0	0	0	0	4.3E-04	5.1E-06	2.5E-04	4.1E-07	2.9E-07	7.1E-04
180	1.1E-03	0	0	0	0	0	0	6.6E-04	1.0E-07	3.9E-04	5.9E-08	1.4E-11	1.1E-03
200	1.1E-03	0	0	0	0	0	0	6.7E-04	2.0E-07	3.9E-04	1.2E-07	6.2E-16	1.1E-03
300	1.1E-03	0	0	0	0	0	0	6.6E-04	7.4E-08	3.9E-04	4.2E-08	0	1.1E-03
700	1.1E-03	0	0	0	0	0	0	6.6E-04	1.4E-07	3.8E-04	7.9E-08	0	1.1E-03
1,000	1.1E-03	0	0	0	0	0	0	6.7E-04	6.3E-08	3.9E-04	3.5E-08	0	1.1E-03
3,000	1.1E-03	0	0	0	0	0	0	6.7E-04	6.7E-08	3.9E-04	3.8E-08	0	1.1E-03
10,000	1.1E-03	0	0	0	0	0	0	6.7E-04	1.5E-07	4.0E-04	8.8E-08	0	1.1E-03

Figure 6-10



Site V - Residential Scenario
Dose Rate (mrem/year) vs. Time

Time (years)	Water Independent Pathways						Inhalation	
	Total	Ground	Meat	Milk	Plant	Soil	(a)	Others (b)
0	1.23E+00	1.18E+00	3.01E-02	1.07E-02	3.16E-03	1.90E-04	4.05E-06	0.00E+00
1	1.17E+00	1.13E+00	2.86E-02	1.01E-02	3.00E-03	1.80E-04	3.84E-06	0.00E+00
5	9.72E-01	9.38E-01	2.32E-02	8.21E-03	2.43E-03	1.46E-04	3.12E-06	0.00E+00
10	7.60E-01	7.34E-01	1.77E-02	6.25E-03	1.85E-03	1.11E-04	2.37E-06	0.00E+00
15	5.85E-01	5.66E-01	1.32E-02	4.68E-03	1.39E-03	8.35E-05	1.78E-06	0.00E+00
20	4.42E-01	4.27E-01	9.71E-03	3.44E-03	1.02E-03	6.13E-05	1.31E-06	0.00E+00
25	3.24E-01	3.14E-01	6.93E-03	2.45E-03	7.27E-04	4.37E-05	9.32E-07	0.00E+00
30	2.28E-01	2.21E-01	4.75E-03	1.68E-03	4.98E-04	3.00E-05	6.38E-07	0.00E+00
40	8.87E-02	8.61E-02	1.74E-03	6.16E-04	1.83E-04	1.10E-05	2.34E-07	0.00E+00
45	3.91E-02	3.80E-02	7.46E-04	2.64E-04	7.82E-05	4.70E-06	1.00E-07	0.00E+00
50	6.73E-07	6.54E-07	1.25E-08	4.41E-09	1.31E-09	7.86E-11	1.68E-12	0.00E+00
>50 (c)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

- (a) Water independent inhalation pathway excludes radon inhalation.
- (b) "Others" includes the following pathways: Radon (water independent and dependent), and all the water dependent pathways (water, fish, plant, meat, and milk).
- (c) Dose rates for all pathways are equal to 0.00E+00 for times between 50 and 10,000 years.

Reference Site VI

Reference Site VI is based in part on Oak Ridge where the radionuclides which were selected as dominant from the perspective of soil cleanup are Cs-137 and U-238. Figures 6-11 and 6-12 indicate the dose rate as a function of time for the various isotopes and pathways. As indicated, Cs-137 via the direct radiation pathway dominates. The previous discussions provide insight into the uncertainties and sensitivities associated with their risk factors. However, it is instructive to examine how the two radionuclides together influence the cleanup volume.

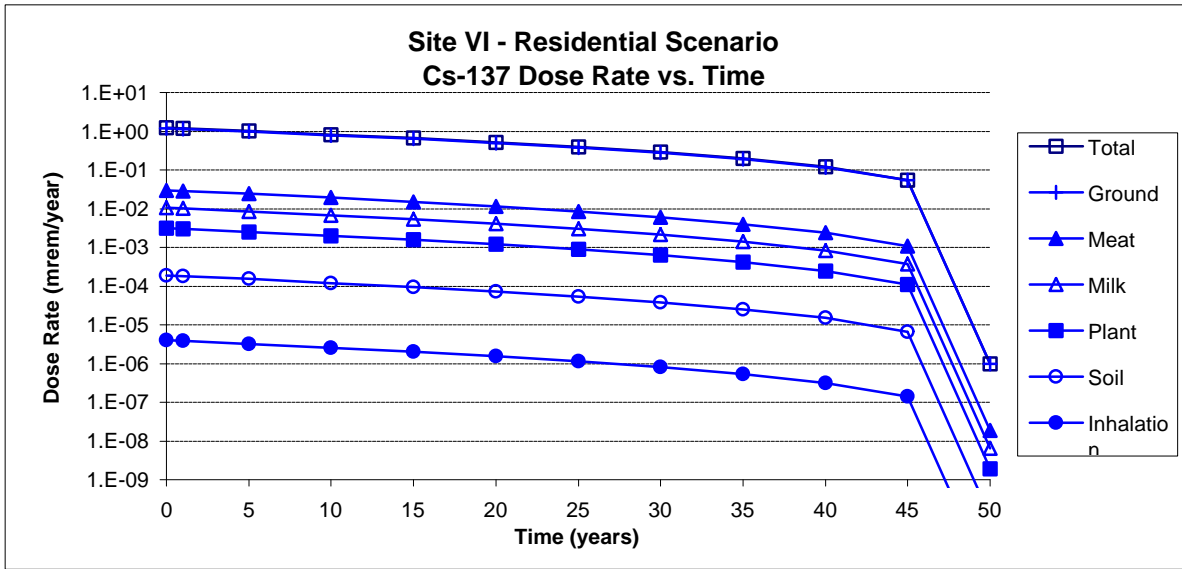
The Cs-137 risk factor is 2.66×10^{-5} (i.e., the same as that used for Reference Sites I and III, primarily because in all cases the thickness of the contaminated zone was assumed to be 5 cm). Accordingly, if the cleanup level is set at 1×10^{-4} , the soil cleanup concentration for Cs-137 is 3.8 pCi/g. However, for U-238, the risk factor is 8.32×10^{-7} , which corresponds to a cleanup concentration of 120 pCi/g. Assuming the two radionuclides are commingled, and using Figure 4-15, the cleanup volume obtained for Cs-137 at a cleanup concentration of 3.8 pCi/g is about $2.6 \times 10^5 \text{ m}^3$. For U-238, the cleanup volume for a cleanup concentration of 120 pCi/g is about $1 \times 10^5 \text{ m}^3$. Accordingly, Cs-137 dominates. Inspection of Table 5-3 reveals that the mathematically derived cleanup volume, which is based on curve fitting and consideration of the contribution of all radionuclides, is $2.36 \times 10^5 \text{ m}^3$.

This type of discussion is useful in gaining confidence in the computerized methods used to estimate cleanup volumes. It also reveals that, at least in this case, though several radionuclides are present, the cleanup volume is dominated by one radionuclide, Cs-137, and the uncertainties in the cleanup volume are due primarily to uncertainties in the Cs-137 contamination pattern, volume, and risk factor.

Reference Site VII

Reference Site VII is based in part on the Nevada Test Site (NTS). As indicated in Figure 4-15, three radionuclides are primarily of concern, Pu-239, Am-241 and Cs-137. Figures 6-13 and 6-14 show that Cs-137 is the limiting radionuclide via the external exposure pathway. Figures 6-15 and 6-16 show the contribution of Pu-239 and Am-241 to the dose rate to the RME individual.

Figure 6-11



Site VI - Residential Scenario
Cs-137 Dose Rate (mrem/years) vs. Time

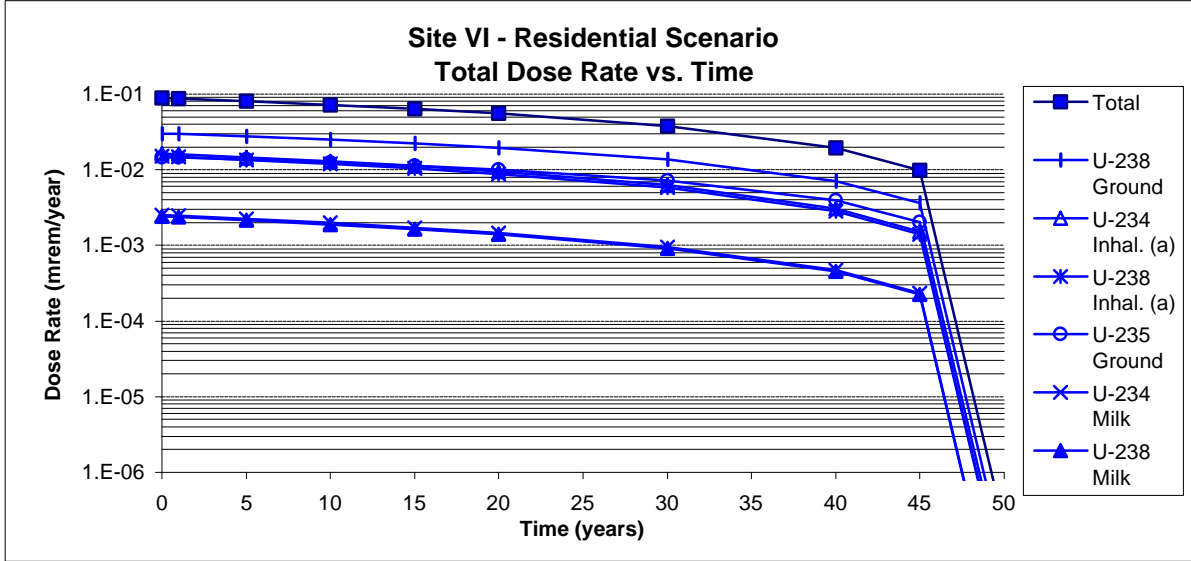
Water Independent Pathways (Inhalation Excludes Radon)

Time (years)	Total	Ground	Meat	Milk	Plant	Soil	Inhalation	Others (a)
0	1.23E+00	1.18E+00	3.01E-02	1.07E-02	3.16E-03	1.90E-04	4.04E-06	0.00E+00
1	1.18E+00	1.14E+00	2.88E-02	1.02E-02	3.02E-03	1.82E-04	3.87E-06	0.00E+00
5	1.01E+00	9.75E-01	2.41E-02	8.53E-03	2.53E-03	1.52E-04	3.24E-06	0.00E+00
10	8.22E-01	7.94E-01	1.91E-02	6.75E-03	2.00E-03	1.20E-04	2.56E-06	0.00E+00
15	6.58E-01	6.36E-01	1.49E-02	5.26E-03	1.56E-03	9.38E-05	2.00E-06	0.00E+00
20	5.16E-01	4.99E-01	1.13E-02	4.02E-03	1.19E-03	7.15E-05	1.52E-06	0.00E+00
25	3.93E-01	3.81E-01	8.42E-03	2.98E-03	8.82E-04	5.31E-05	1.13E-06	0.00E+00
30	2.88E-01	2.79E-01	5.99E-03	2.12E-03	6.28E-04	3.78E-05	8.06E-07	0.00E+00
35	1.98E-01	1.92E-01	4.00E-03	1.42E-03	4.20E-04	2.52E-05	5.38E-07	0.00E+00
40	1.21E-01	1.18E-01	2.38E-03	8.41E-04	2.49E-04	1.50E-05	3.19E-07	0.00E+00
45	5.54E-02	5.39E-02	1.06E-03	3.74E-04	1.11E-04	6.67E-06	1.42E-07	0.00E+00
50	9.92E-07	9.65E-07	1.84E-08	6.50E-09	1.93E-09	1.16E-10	2.47E-12	0.00E+00
>50 (b)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

(a) "Others" includes the following pathways: Radon (water independent and dependent), and all the water dependent pathways (water, fish, plant, meat, and milk).

(b) Dose rates for all pathways are equal to 0.00E+00 for times between 50 and 10,000 years.

Figure 6-12

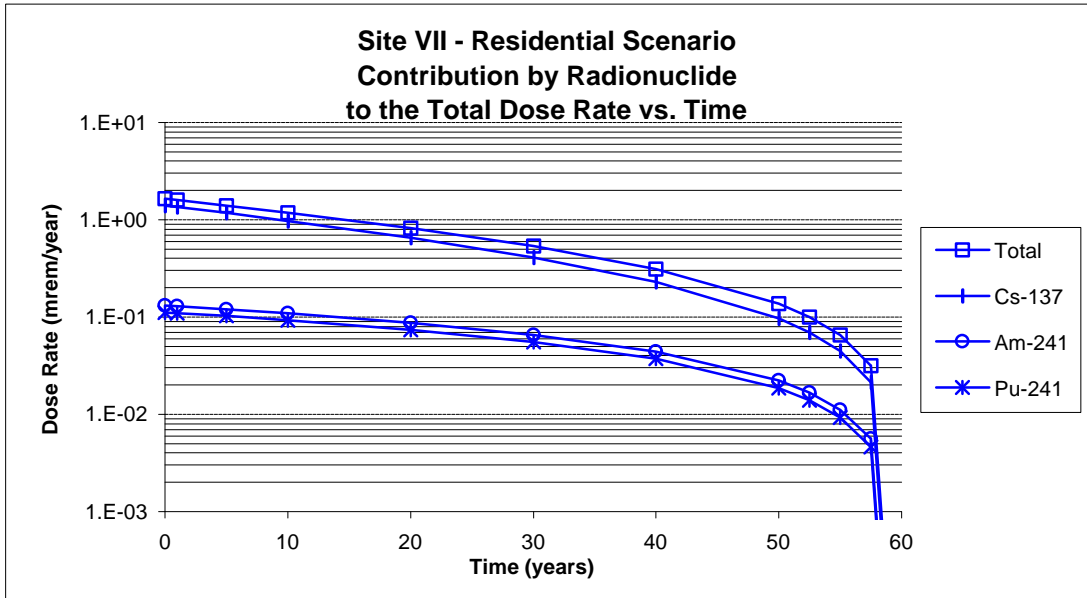


Site VI - Residential Scenario
Total Dose Rate (mrem/year) vs. Time

Time (years)	Water Independent Pathways							Others (b)
	Total	U-238 Ground	U-234 Inhal. (a)	U-238 Inhal. (a)	U-235 Ground	U-234 Milk	U-238 Milk	
0	8.87E-02	3.01E-02	1.64E-02	1.52E-02	1.46E-02	2.51E-03	2.41E-03	7.42E-03
1	8.70E-02	2.96E-02	1.61E-02	1.48E-02	1.44E-02	2.46E-03	2.36E-03	7.27E-03
5	8.05E-02	2.76E-02	1.47E-02	1.35E-02	1.36E-02	2.24E-03	2.15E-03	6.65E-03
10	7.22E-02	2.51E-02	1.29E-02	1.19E-02	1.25E-02	1.97E-03	1.90E-03	5.89E-03
15	6.38E-02	2.24E-02	1.12E-02	1.04E-02	1.14E-02	1.71E-03	1.65E-03	5.13E-03
20	5.52E-02	1.96E-02	9.54E-03	8.80E-03	1.01E-02	1.46E-03	1.40E-03	4.38E-03
30	3.77E-02	1.36E-02	6.25E-03	5.77E-03	7.26E-03	9.54E-04	9.18E-04	2.91E-03
40	1.93E-02	7.10E-03	3.08E-03	2.84E-03	3.93E-03	4.69E-04	4.51E-04	1.45E-03
45	9.79E-03	3.63E-03	1.53E-03	1.41E-03	2.05E-03	2.33E-04	2.24E-04	7.22E-04
50	1.94E-07	7.24E-08	2.95E-08	2.72E-08	4.17E-08	4.50E-09	4.33E-09	1.41E-08
>50 (c)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

- (a) Water independent inhalation pathway excludes radon inhalation.
- (b) "Others" includes all other pathways calculated by RESRAD.
Dose rates for all water dependent pathways are equal to 0.00E+00.
- (c) Dose rates for all pathways are equal to 0.00E+00 for times between 50 and 10,000 years.

Figure 6-13

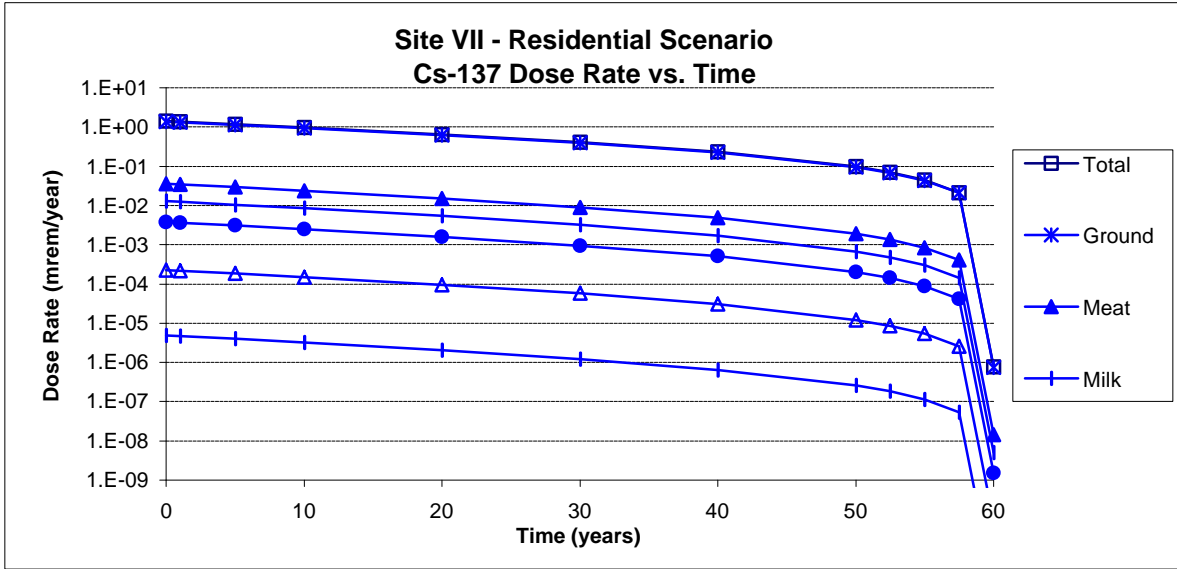


Site VII - Residential Scenario
Contribution by Radionuclide to the
Total Dose Rate (mrem/year) vs. Time (years)

Time (years)	Total	Cs-137	Am-241	Pu-241
0	1.64E+00	1.40E+00	1.31E-01	1.12E-01
1	1.59E+00	1.35E+00	1.28E-01	1.10E-01
5	1.40E+00	1.17E+00	1.20E-01	1.02E-01
10	1.18E+00	9.76E-01	1.09E-01	9.30E-02
20	8.16E-01	6.55E-01	8.71E-02	7.44E-02
30	5.33E-01	4.12E-01	6.55E-02	5.58E-02
40	3.12E-01	2.31E-01	4.40E-02	3.72E-02
50	1.38E-01	9.71E-02	2.22E-02	1.86E-02
53	1.00E-01	6.98E-02	1.67E-02	1.40E-02
55	6.51E-02	4.46E-02	1.12E-02	9.30E-03
58	3.16E-02	2.14E-02	5.60E-03	4.65E-03
60	1.17E-06	7.78E-07	2.14E-07	1.77E-07
>60 (a)	0.00E+00	0.00E+00	0.00E+00	0.00E+00

(a) Dose rates for all pathways are equal to 0.00E+00 for times between 60 and 10,000 years.

Figure 6-14



Site VII - Residential Scenario
Cs-137 Dose Rate (mrem/year) vs. Time

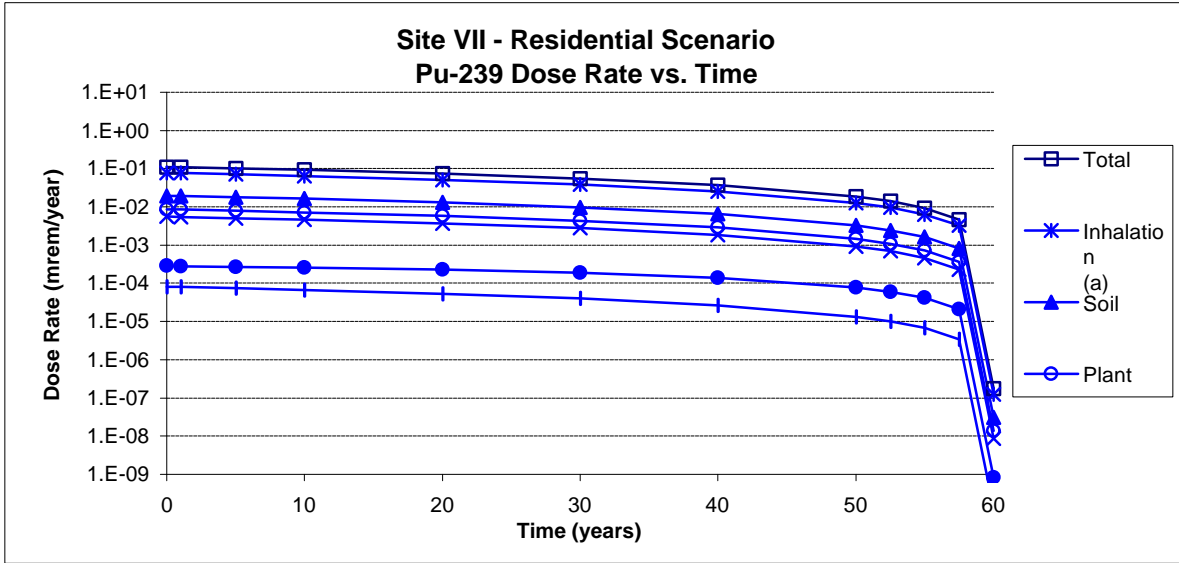
Time (years)	Water Independent Pathways						Inhalation	
	Total	Ground	Meat	Milk	Plant	Soil	(a)	Others (b)
0	1.40E+00	1.35E+00	3.61E-02	1.28E-02	3.79E-03	2.28E-04	4.86E-06	0.00E+00
1	1.35E+00	1.30E+00	3.47E-02	1.23E-02	3.64E-03	2.19E-04	4.67E-06	0.00E+00
5	1.17E+00	1.13E+00	2.95E-02	1.04E-02	3.09E-03	1.86E-04	3.97E-06	0.00E+00
10	9.76E-01	9.41E-01	2.39E-02	8.46E-03	2.51E-03	1.51E-04	3.22E-06	0.00E+00
20	6.55E-01	6.32E-01	1.52E-02	5.38E-03	1.59E-03	9.59E-05	2.05E-06	0.00E+00
30	4.12E-01	3.99E-01	9.06E-03	3.21E-03	9.50E-04	5.72E-05	1.22E-06	0.00E+00
40	2.31E-01	2.24E-01	4.80E-03	1.70E-03	5.03E-04	3.03E-05	6.46E-07	0.00E+00
50	9.71E-02	9.44E-02	1.91E-03	6.75E-04	2.00E-04	1.20E-05	2.57E-07	0.00E+00
53	6.98E-02	6.78E-02	1.35E-03	4.78E-04	1.42E-04	8.52E-06	1.82E-07	0.00E+00
55	4.46E-02	4.33E-02	8.50E-04	3.01E-04	8.92E-05	5.36E-06	1.14E-07	0.00E+00
58	2.14E-02	2.08E-02	4.02E-04	1.42E-04	4.21E-05	2.53E-06	5.40E-08	0.00E+00
60	7.78E-07	7.57E-07	1.44E-08	5.10E-09	1.51E-09	9.08E-11	1.94E-12	0.00E+00
>60 (c)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

(a) Water independent inhalation pathway excludes radon inhalation.

(b) "Others" includes the following pathways: Radon (water independent and dependent), and all the water dependent pathways (water, fish, plant, meat, and milk).

(c) Dose rates for all pathways are equal to 0.00E+00 for times between 60 and 10,000 years.

Figure 6-15



Site VII - Residential Scenario
Pu-239 Dose Rate (mrem/year) vs. Time

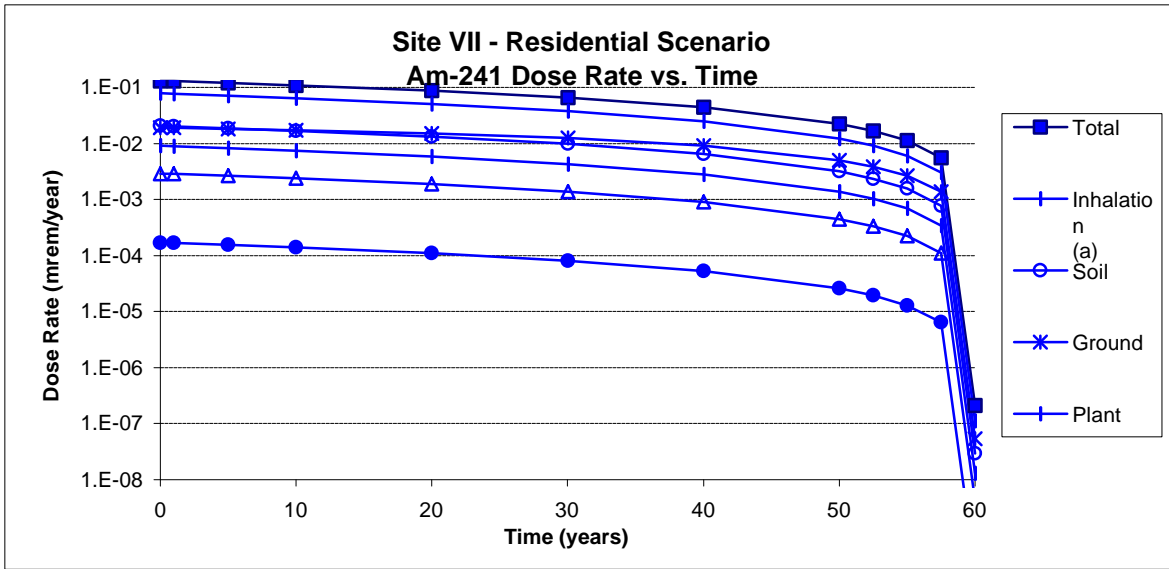
Time (years)	Water Independent Pathways							
	Total	Inhalation (a)	Soil	Plant	Meat	Ground	Milk	Others (b)
0	1.12E-01	7.74E-02	1.96E-02	8.64E-03	5.56E-03	2.84E-04	8.08E-05	0.00E+00
1	1.10E-01	7.61E-02	1.93E-02	8.50E-03	5.47E-03	2.82E-04	7.95E-05	0.00E+00
5	1.02E-01	7.10E-02	1.80E-02	7.92E-03	5.10E-03	2.73E-04	7.41E-05	0.00E+00
10	9.30E-02	6.45E-02	1.63E-02	7.20E-03	4.63E-03	2.60E-04	6.73E-05	0.00E+00
20	7.44E-02	5.16E-02	1.31E-02	5.76E-03	3.71E-03	2.29E-04	5.39E-05	0.00E+00
30	5.58E-02	3.87E-02	9.79E-03	4.32E-03	2.78E-03	1.90E-04	4.04E-05	0.00E+00
40	3.72E-02	2.58E-02	6.52E-03	2.88E-03	1.85E-03	1.41E-04	2.69E-05	0.00E+00
50	1.86E-02	1.29E-02	3.26E-03	1.44E-03	9.26E-04	7.84E-05	1.35E-05	0.00E+00
53	1.40E-02	9.66E-03	2.45E-03	1.08E-03	6.94E-04	6.05E-05	1.01E-05	0.00E+00
55	9.30E-03	6.44E-03	1.63E-03	7.19E-04	4.63E-04	4.15E-05	6.72E-06	0.00E+00
58	4.65E-03	3.22E-03	8.15E-04	3.60E-04	2.31E-04	2.14E-05	3.36E-06	0.00E+00
60	1.77E-07	1.22E-07	3.10E-08	1.37E-08	8.79E-09	8.35E-10	1.28E-10	0.00E+00
>60 (c)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

(a) Water independent inhalation pathway excludes radon inhalation.

(b) "Others" includes the following pathways: Radon (water independent and dependent), and all the water dependent pathways (water, fish, plant, meat, and milk).

(c) Dose rates for all pathways are equal to 0.00E+00 for times between 60 and 10,000 years.

Figure 6-16



Site VII - Residential Scenario
Am-241 Dose Rate (mrem/year) vs. Time

Time (years)	Water Independent Pathways							
	Total	Inhalation (a)	Soil	Ground	Plant	Meat	Milk	Others (b)
0	1.31E-01	7.89E-02	2.05E-02	1.91E-02	9.04E-03	2.91E-03	1.69E-04	0.00E+00
1	1.28E-01	7.75E-02	2.01E-02	1.89E-02	8.88E-03	2.86E-03	1.66E-04	0.00E+00
5	1.20E-01	7.18E-02	1.86E-02	1.82E-02	8.23E-03	2.65E-03	1.54E-04	0.00E+00
10	1.09E-01	6.47E-02	1.68E-02	1.72E-02	7.42E-03	2.39E-03	1.39E-04	0.00E+00
20	8.71E-02	5.10E-02	1.32E-02	1.50E-02	5.84E-03	1.88E-03	1.09E-04	0.00E+00
30	6.55E-02	3.76E-02	9.77E-03	1.24E-02	4.31E-03	1.39E-03	8.06E-05	0.00E+00
40	4.40E-02	2.47E-02	6.41E-03	9.09E-03	2.83E-03	9.10E-04	5.29E-05	0.00E+00
50	2.22E-02	1.22E-02	3.15E-03	5.04E-03	1.39E-03	4.48E-04	2.60E-05	0.00E+00
53	1.67E-02	9.07E-03	2.36E-03	3.88E-03	1.04E-03	3.35E-04	1.94E-05	0.00E+00
55	1.12E-02	6.02E-03	1.56E-03	2.66E-03	6.90E-04	2.22E-04	1.29E-05	0.00E+00
58	5.60E-03	3.00E-03	7.79E-04	1.36E-03	3.44E-04	1.11E-04	6.43E-06	0.00E+00
60	2.14E-07	1.14E-07	2.95E-08	5.33E-08	1.30E-08	4.19E-09	2.43E-10	0.00E+00
>60 (c)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

(a) Water independent inhalation pathway excludes radon inhalation.

(b) "Others" includes the following pathways: Radon (water independent and dependent), and all the water dependent pathways (water, fish, plant, meat, and milk).

(c) Dose rates for all pathways are equal to 0.00E+00 for times between 60 and 10,000 years.

The risk factors (based on Table 6-2), and associated cleanup concentrations at a risk level 1×10^{-4} , and derived cleanup volumes (based on Figure 4-16) are as follows:

Isotope	Risk Factor (Can/pCi/g)	Cleanup Conc (pCi/g)	Cleanup Volume (m ³)
Pu-239	1.96×10^{-7}	500	3×10^5
Am-241	2.88×10^{-7}	350	1×10^5
Cs-137	3.03×10^{-5}	3	3×10^6

Note that the Cs-137 is limiting. Inspection of Table 5-3 indicates that, at a cleanup level of 1×10^{-4} , the cleanup volume is 3.67×10^6 m³, which is consistent with this calculation.

Since Cs-137 is the limiting radionuclide, the direct external radiation pathway is limiting and the discussion of uncertainties provided for Reference Site I applies here also. However, assuming that Cs-137 is not present at the site in significant volumes, the limiting radionuclide would be Pu-239. Am-241 would not significantly affect the cleanup volume because, even though its risk factor is slightly greater than that of Pu-239, its concentration is about 6 times less. Hence the following discussion of uncertainties in the cleanup volume is limited to an assessment of the uncertainties in the Pu-239 risk factor.

The following describes the method used to derive the Pu-239 risk factor for Reference Site VII.

For Pu-239 in an arid environment, the risk factor is dominated by the dust inhalation pathway. For the dust inhalation pathway, the Pu-239 risk factor is approximated as follows:

$$\text{Risk per pCi/g (dust)} = 1 \text{ pCi/g} \times 200 \text{ } \mu\text{g/m}^3 \times 1 \times 10^{-6} \text{ g/} \mu\text{g} \times 8000 \text{ m}^3/\text{yr} \times 30 \text{ yr} \times \text{SF} \times \text{AF1} \times \text{AF2} \times \text{AF3} \times \text{EF}$$

Where:

200 = airborne dust loading ($\mu\text{g/m}^3$). (ANL 93b) presents a discussion of the basis for recommending $200 \mu\text{g/m}^3$ as a default dust loading. The discussion which follows indicates that this parameter is a major contributor to uncertainty in the risk factor, but $200 \mu\text{g/m}^3$ can be considered an upper bound when used as a long term average value (i.e., over 30 years) at sites which are generally non-urban.

- 8000 = annual breathing rate (m³/yr)
- SF = 30 year inhalation slope factor (3.02x10⁻⁸ risk/pCi inhaled)
- AF1 = Adjustment factor to account for thickness of the contaminated zone. Since the thickness of the contaminated zone is 6 cm, an adjustment factor of 0.4 is applied to account for the assumption that it is the average concentration in the top 15 cm that is responsible for the airborne dust loading.
- AF2 = Adjustment factor to account for indoor occupancy and decontamination factor (assumed to be about 0.5)
- AF3 = Adjustment factor to account for area of the contaminated zone (for areas greater than 1x10⁴ m², the value is 1.0; this means that virtually all of the airborne dust at the occupied location is assumed to be from contaminated soil.
- EF = Enhancement factor to account for either the discrimination or enhancement of the Pu concentration in the dust as compared to the Pu concentration in the soil. A value of 1.0 is used, which is consistent with work cited by Dan 93 for the NTS.

Risk per pCi/g (dust) = 2.9x10⁻⁷

This agrees well with the RESRAD derived value of 1.96x10⁻⁷. The difference is due to slight differences in adjustment factors. If cleanup were based on this risk factor, the cleanup concentration for a 1x10⁻⁴ risk level would be 510 pCi/g of Pu-239. Based on Figure 4-16, this corresponds to a cleanup volume of about 6x10⁵ m³ instead of 3.67x10⁶ m³ if cleanup were based on Cs-137.

If the thickness of the contaminated zone were greater than 15 cm and if most of the RME individual's time were spent outdoors, this risk factor could increase to about 1.5x10⁻⁶. The cleanup concentration would decrease to about 70 pCi/g, which would result in a cleanup volume of 8x10⁶ m³. However, if a less conservative dust loading were assumed, such as 10 μg/m³, the risk factor would decrease 20 fold to 1.5x10⁻⁸. This would correspond to a cleanup concentration of about 6700 pCi/g. Using this cleanup concentration, very little of the Pu-239 contaminated soil at the NTS would require remediation.

(DOE 93d) indicates a dust loading of 20 to 40 $\mu\text{g}/\text{m}^3$ at the NTS. Reference is also made to a total suspended solids (TSP) concentration in at 20 rural sites in the U.S. with a geometric mean of 28 $\mu\text{g}/\text{m}^3$ and a geometric standard deviation of 1.6. This would indicate an upper end value of about 70 $\mu\text{g}/\text{m}^3$. On this basis, the risk factor would be about 1×10^{-7} and the cleanup concentration would be about 1000 pCi/g of Pu-239. Based on Figure 4-16, the cleanup volume would then be about $2 \times 10^5 \text{ m}^3$.

The uncertainties in the risk factor and associated cleanup volumes are further exacerbated by uncertainty in the enhancement factor (EF). The EF is an empirically determined relationship between the concentration of the radionuclide in the dust to that in the soil. A discussion of the EF is provided in (EGG 84). In general, for sites where the radionuclide contamination in soil is associated with particles with a diameter greater than about 50 μ , the likelihood of resuspension is small (Pet 83). As the particle size decreases, the likelihood of resuspension increases and the enhancement factor could exceed 1.0 depending on soil chemistry, moisture content, and particle size distribution. Daniels (Dan 93) cites Shinn's work on enhancement factors for Pu-239 at the NTS of 0.87 and 1.04. In this analysis, an enhancement factor of 1.0 was assumed.

Reference Site IX

Reference Site IX is based in part on Rocky Flats, which is dominated by Pu-239 contamination. As indicated in Table 6-2, the risk factor for Pu-239 for Reference Site IX, as derived using RESRAD, is 1.63×10^{-7} . This corresponds a 1×10^{-4} cleanup concentration of 613 pCi/g. Based on an expanded version of Figure 4-17, the cleanup volume would be about $2 \times 10^3 \text{ m}^3$. This is consistent with the mathematically interpolated value of $1.98 \times 10^3 \text{ m}^3$ presented in Table 5-3.

The methods used to derive the risk factor and the associated uncertainties are similar to those described for Pu-239 at Reference Site VII. If the dust loading were substantively less, the cleanup concentration would increase to a point where little of the contaminated soil would require remediation.

It is also possible that the risk factor could be higher than 1.63×10^{-7} . This would occur if the slope factor were higher, the airborne dust loading were higher, and/or the adjustment factors were all 1.0. Under these assumptions, the risk factor could increase by perhaps

10-fold, resulting in a soil cleanup concentration of about 60 pCi/g. Under these circumstances, the cleanup volume would increase to about 3×10^4 , as opposed to $1.98 \times 10^3 \text{ m}^3$.

Reference Site X

Reference Site X is based in part on Paducah. As indicated in Figure 4-18, the key radionuclides at the site include Tc-99 and U-238. Table 6-2 indicates that the RESRAD derived risk factors for these radionuclides are 2.52×10^{-5} and 2.04×10^{-5} , respectively. Using these risk factors, the cleanup concentrations required to achieve a risk level of 1×10^{-4} are 3.7 and 4.9 pCi/g. Applying these values to Figure 4-18, the cleanup volume is approximately $4 \times 10^5 \text{ m}^3$ for both radionuclides. This is consistent with the mathematically interpolated value of $5.88 \times 10^5 \text{ m}^3$ presented in Table 5-3.

If 1×10^{-3} were selected as the cleanup level, the cleanup concentrations for Tc-99 and U-238 would be 37 and 49 pCi/g, respectively. Due to the differences in the patterns of contamination, U-238 would be limiting, and the cleanup volume would be about $1.5 \times 10^5 \text{ m}^3$, which is consistent with the mathematically interpolated value of $1.82 \times 10^5 \text{ m}^3$ presented in Table 5-3.

For U-238, the critical pathway is drinking water, and as the discussion for Reference Site II indicates, if the travel time to the aquifer were increased to beyond 1000 years, the groundwater pathway would be eliminated, and the risk dominated by direct radiation. The result would be an approximate 10-fold reduction in the risk factor. Given that the groundwater pathway is of concern, the uncertainty in the risk factor could range from 0 to about 10 times the indicated value. At the high end, cleanup to a 1×10^{-4} risk level would require virtually the entire $7 \times 10^5 \text{ m}^3$ of contaminated soil at the site to be remediated.

Reference Site XII

Reference Site XII is based in part on BOMARC. As indicated in Figure 4-19, the key radionuclides are Pu-239 and Am-241. Table 6-2 indicates that the RESRAD derived risk factors are 6.61×10^{-7} and 7.87×10^{-7} risk per pCi/g, respectively. Using these risk factors, the cleanup concentrations required to achieve a cleanup level of 1×10^{-4} are 151 and 127 pCi/g, respectively. Applying these risk factors to Figure 4-19, the cleanup volume is limited by Pu-239 and is about 1500 m^3 . This is compatible with the mathematically interpolated value of $1.41 \times 10^3 \text{ m}^3$ presented in Table 5-3.

The uncertainty in the risk factor is as discussed for Reference Site VII. That is, the risk factor could be as much as 10 times higher to 100 times lower. If 10 times higher, the cleanup volume required to achieve a risk level of 1×10^{-4} increases to about 2000 m³, if 100 times lower, it decreases to less than 500 m³.

Reference Site XIII

Reference Site XIII is based in part on Aberdeen Proving Ground. It was selected as generally representative of a number of sites with depleted uranium contamination (DU). As such, Reference Sites XIII A, B, and C were created to represent the range of different environmental settings. Table 5-3 indicates that the cleanup volume is the same for the different settings.

Figure 4-20 indicates that U-238, U-234, and U-235 are present at the site. Table 6-2 indicates that the RESRAD derived risk factors are 1.17×10^{-6} , 2.12×10^{-7} , and 5.84×10^{-6} , respectively. These correspond to a 1×10^{-4} risk-based cleanup level of 85, 472, and 17 pCi/g, respectively. Applying these cleanup levels to Figure 4-20 reveals that no cleanup is required at a cleanup level of 1×10^{-4} . At 1×10^{-5} , the cleanup levels are 8.5, 47, and 1.7 pCi/g, respectively. Applying these cleanup levels to Figure 4-20, the cleanup volumes are about 700 (U-238), 0 (U-234), and 0 (U-235), respectively. U-238 is therefore limiting, as would be expected at a DU site. This value is consistent with the mathematically interpolated value of 689 m³ in Table 5-3.

As is the case for Reference Site II, the risk factors for U-238 by pathway are approximated as follows:

Pathway	Risk Factor
Groundwater =	1.5×10^{-6}
Direct Radiation =	7.6×10^{-7}
Dust Inhalation =	1.5×10^{-7}
Crop Ingestion =	1.1×10^{-6}
Total (all paths) =	3.5×10^{-6}
Total =	2.0×10^{-6}
(without groundwater)	

Since groundwater is not an issue at Reference Site XIII, a reasonable approximation of the risk factor is 2.0×10^{-6} , which is consistent with the RESRAD derived value of 1.17×10^{-6} . In light of the uncertainties in the U-238 risk factor described above, the cleanup volume at risk level of 1×10^{-4} can range from 0 m³ to up to about 1000 m³.

Reference Site XVI

Reference Site XVI is based on the reference commercial nuclear power plant. It was selected as generally representative of a number of sites. As such, Reference Sites XVIA, B, and C were created to represent the range of different environmental settings. Table 5-3 indicates that the cleanup volume is the same for the different settings.

Figures 6-17 to 6-20 present the dose rate as a function of time and pathway for the two key radionuclides at the site, Cs-137 and Co-60. As may be noted, external exposure to Co-60 from contaminated soil is the limiting pathway.

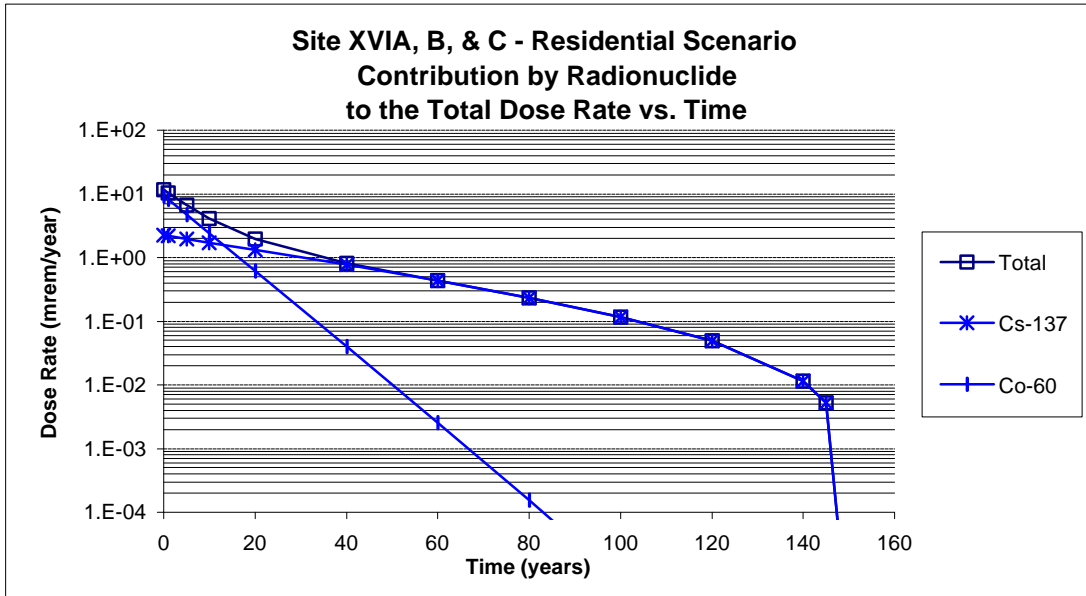
The RESRAD derived risk factors for Co-60 and Cs-137, as presented in Table 6-2, are 2.0×10^{-4} and 4.95×10^{-5} , respectively. These correspond to a 1×10^{-4} risk-based cleanup level of cleanup level of 0.5 and 2.0 pCi/g, respectively. Applying these cleanup levels to Figure 4-21 reveals that cleanup for Co-60 would require remediation of about 950 m³. The cleanup of Cs-137 would require the remediation of about 550 m³. Therefore the Co-60 is limiting. The Co-60 value is consistent with the mathematically interpolated value of 941 m³ in Table 5-3.

Uncertainty in the risk factor for both Cs-137 and Co-60 could range from 0 to about 10 times the indicated values. Since virtually all of the soil contaminated above background will require remediation at a 1×10^{-4} risk level, the cleanup volume cannot be substantially larger.

Reference Site XVIII

Reference Site XVIII is based in part on Cintichem and is treated as generally representative of research and test reactors. As such, Reference Sites XVIIIA, B, and C were created to represent the range of different environmental settings. Table 5-3 indicates that the cleanup volume is the same for the different settings.

Figure 6-17

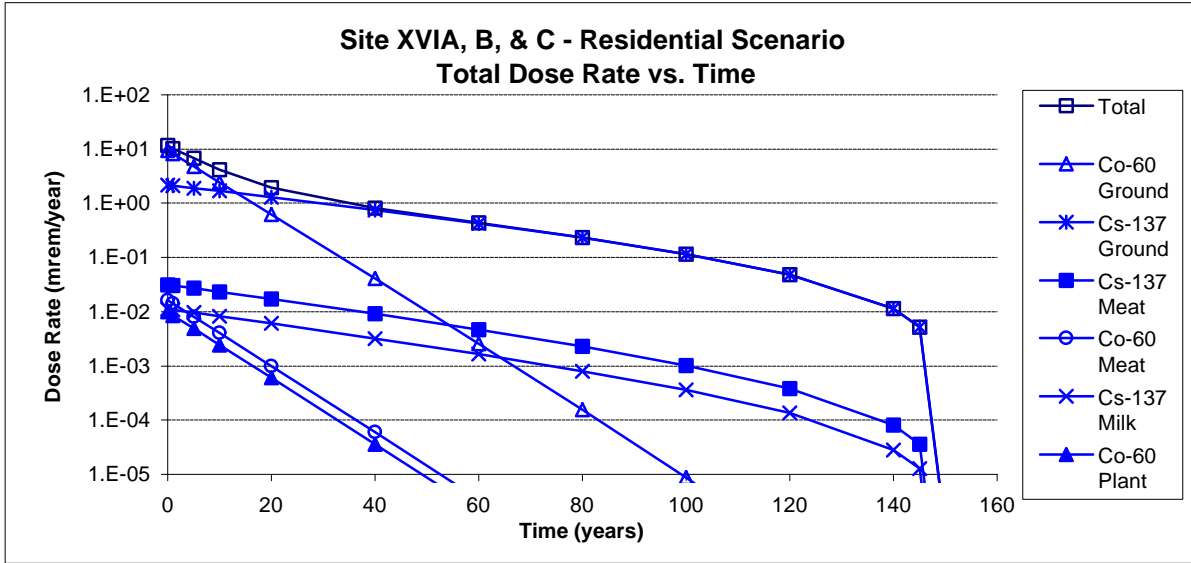


Site XVIA, B, & C - Residential Scenario
Contribution by Radionuclide to the
Total Dose Rate (mrem/year) vs. Time (years)

Time	Total	Cs-137	Co-60
0	1.16E+01	2.23E+00	9.32E+00
1	1.03E+01	2.18E+00	8.14E+00
5	6.71E+00	1.96E+00	4.74E+00
10	4.13E+00	1.72E+00	2.41E+00
20	1.94E+00	1.32E+00	6.21E-01
40	8.09E-01	7.68E-01	4.06E-02
60	4.36E-01	4.34E-01	2.57E-03
80	2.34E-01	2.34E-01	1.55E-04
100	1.16E-01	1.16E-01	8.64E-06
120	4.88E-02	4.88E-02	4.06E-07
140	1.15E-02	1.15E-02	1.06E-08
145	5.25E-03	5.25E-03	2.81E-09
150	9.68E-07	9.68E-07	3.00E-13
>150 (a)	0.00E+00	0.00E+00	0.00E+00

(a) Total dose rate is equal to 0.00E+00 for times between 150 years and 10,000 years.

Figure 6-18



Site XVIA, B, & C - Residential Scenario
Total Dose Rate (mrem/year) vs. Time

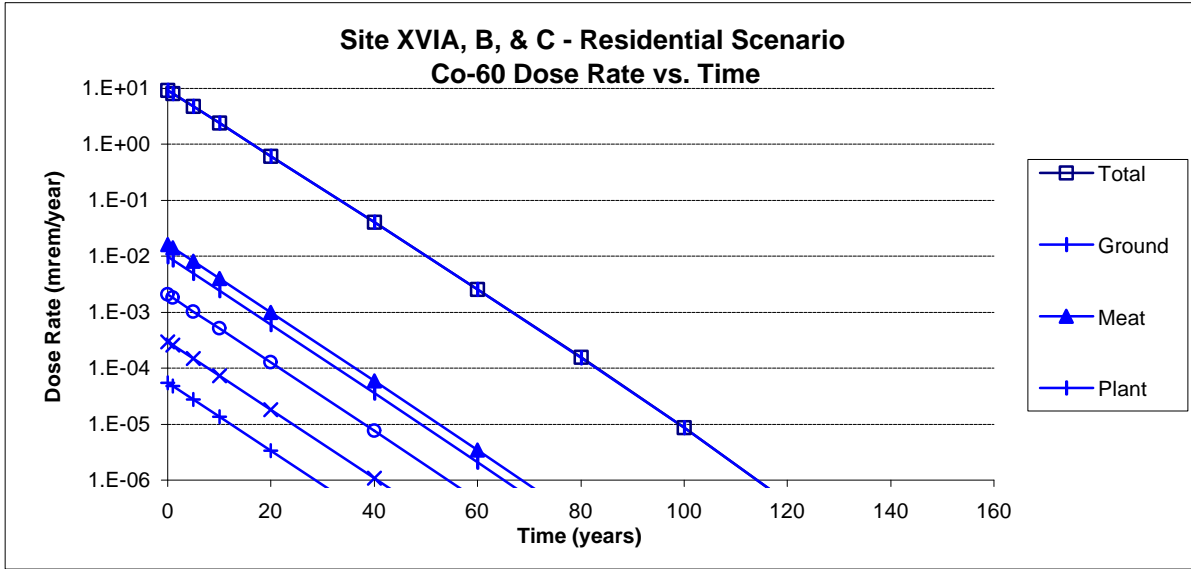
Time (years)	Water Independent Pathways							Others (a)
	Total	Co-60 Ground	Cs-137 Ground	Cs-137 Meat	Co-60 Meat	Cs-137 Milk	Co-60 Plant	
0	1.16E+01	9.29E+00	2.18E+00	3.16E-02	1.62E-02	1.12E-02	9.84E-03	1.25E-02
1	1.03E+01	8.12E+00	2.12E+00	3.07E-02	1.41E-02	1.09E-02	8.56E-03	1.19E-02
5	6.71E+00	4.73E+00	1.92E+00	2.72E-02	8.06E-03	9.62E-03	4.91E-03	9.85E-03
10	4.13E+00	2.40E+00	1.68E+00	2.34E-02	4.02E-03	8.26E-03	2.45E-03	8.02E-03
20	1.94E+00	6.19E-01	1.29E+00	1.72E-02	9.94E-04	6.08E-03	6.05E-04	5.61E-03
40	8.09E-01	4.05E-02	7.53E-01	9.10E-03	5.97E-05	3.22E-03	3.64E-05	2.90E-03
60	4.36E-01	2.56E-03	4.26E-01	4.67E-03	3.47E-06	1.65E-03	2.11E-06	1.49E-03
80	2.34E-01	1.55E-04	2.30E-01	2.28E-03	1.91E-07	8.06E-04	1.17E-07	7.24E-04
100	1.16E-01	8.63E-06	1.15E-01	1.02E-03	9.71E-09	3.61E-04	5.91E-09	3.24E-04
120	4.88E-02	4.05E-07	4.82E-02	3.83E-04	4.14E-10	1.36E-04	2.52E-10	1.22E-04
140	1.15E-02	1.06E-08	1.13E-02	8.01E-05	9.79E-12	2.84E-05	5.96E-12	2.55E-05
145	5.25E-03	2.81E-09	5.19E-03	3.56E-05	2.53E-12	1.26E-05	1.54E-12	1.13E-05
150	9.68E-07	3.00E-13	9.57E-07	6.38E-09	2.62E-16	2.26E-09	1.60E-16	2.03E-09
>150 (b)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

(a) "Others" includes all other pathways calculated by RESRAD.

Dose rates for all water dependent pathways are equal to 0.00E+00.

(b) Dose rates for all pathways are equal to 0.00E+00 for times between 150 and 10,000 year.

Figure 6-19

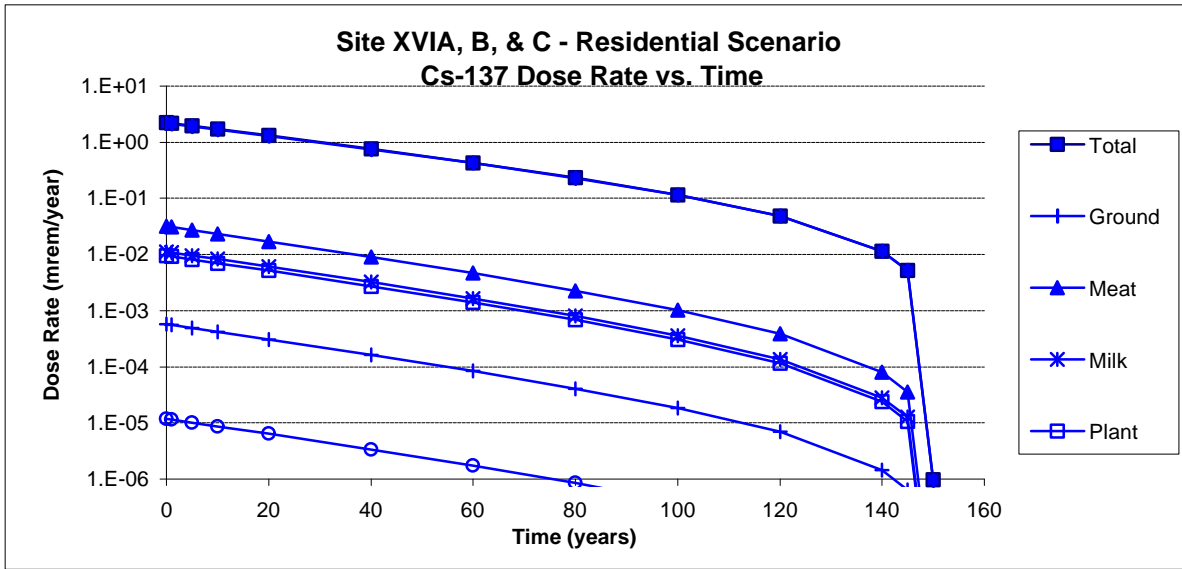


Site XVIA, B, & C - Residential Scenario
Co-60 Dose Rate (mrem/year) vs. Time

Time (years)	Water Independent Pathways							Others (b)
	Total	Ground	Meat	Plant	Milk	Soil	Inhalation (a)	
0	9.32E+00	9.29E+00	1.62E-02	9.84E-03	2.07E-03	2.96E-04	5.50E-05	0.00E+00
1	8.14E+00	8.12E+00	1.41E-02	8.56E-03	1.80E-03	2.58E-04	4.78E-05	0.00E+00
5	4.74E+00	4.73E+00	8.06E-03	4.91E-03	1.03E-03	1.48E-04	2.74E-05	0.00E+00
10	2.41E+00	2.40E+00	4.02E-03	2.45E-03	5.14E-04	7.36E-05	1.37E-05	0.00E+00
20	6.21E-01	6.19E-01	9.94E-04	6.05E-04	1.27E-04	1.82E-05	3.38E-06	0.00E+00
40	4.06E-02	4.05E-02	5.97E-05	3.64E-05	7.64E-06	1.09E-06	2.03E-07	0.00E+00
60	2.57E-03	2.56E-03	3.47E-06	2.11E-06	4.44E-07	6.36E-08	1.18E-08	0.00E+00
80	1.55E-04	1.55E-04	1.91E-07	1.17E-07	2.45E-08	3.51E-09	6.52E-10	0.00E+00
100	8.64E-06	8.63E-06	9.71E-09	5.91E-09	1.24E-09	1.78E-10	3.30E-11	0.00E+00
120	4.06E-07	4.05E-07	4.14E-10	2.52E-10	5.29E-11	7.58E-12	1.41E-12	0.00E+00
140	1.06E-08	1.06E-08	9.79E-12	5.96E-12	1.25E-12	1.79E-13	3.33E-14	0.00E+00
145	2.81E-09	2.81E-09	2.53E-12	1.54E-12	3.23E-13	4.63E-14	8.60E-15	0.00E+00
150	3.00E-13	3.00E-13	2.62E-16	1.60E-16	3.36E-17	4.81E-18	8.93E-19	0.00E+00
>150 (c)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

- (a) Water independent inhalation pathway excludes radon inhalation.
- (b) "Others" includes the following pathways: Radon (water independent and dependent), and all the water dependent pathways (water, fish, plant, meat, and milk).
- (c) Dose rates for all pathways are equal to 0.00E+00 for times between 150 and 10,000 year.

Figure 6-20



Site XVIA, B, & C - Residential Scenario
Cs-137 Dose Rate (mrem/year) vs. Time

Time (years)	Water Independent Pathways					Inhalation		
	Total	Ground	Meat	Milk	Plant	Soil	(a)	Others (b)
0	2.23E+00	2.18E+00	3.16E-02	1.12E-02	9.46E-03	5.69E-04	1.17E-05	0.00E+00
1	2.18E+00	2.12E+00	3.07E-02	1.09E-02	9.18E-03	5.53E-04	1.14E-05	0.00E+00
5	1.96E+00	1.92E+00	2.72E-02	9.62E-03	8.14E-03	4.90E-04	1.01E-05	0.00E+00
10	1.72E+00	1.68E+00	2.34E-02	8.26E-03	6.99E-03	4.21E-04	8.67E-06	0.00E+00
20	1.32E+00	1.29E+00	1.72E-02	6.08E-03	5.14E-03	3.09E-04	6.37E-06	0.00E+00
40	7.68E-01	7.53E-01	9.10E-03	3.22E-03	2.73E-03	1.64E-04	3.38E-06	0.00E+00
60	4.34E-01	4.26E-01	4.67E-03	1.65E-03	1.40E-03	8.42E-05	1.73E-06	0.00E+00
80	2.34E-01	2.30E-01	2.28E-03	8.06E-04	6.82E-04	4.10E-05	8.45E-07	0.00E+00
100	1.16E-01	1.15E-01	1.02E-03	3.61E-04	3.05E-04	1.84E-05	3.78E-07	0.00E+00
120	4.88E-02	4.82E-02	3.83E-04	1.36E-04	1.15E-04	6.91E-06	1.42E-07	0.00E+00
140	1.15E-02	1.13E-02	8.01E-05	2.84E-05	2.40E-05	1.44E-06	2.97E-08	0.00E+00
145	5.25E-03	5.19E-03	3.56E-05	1.26E-05	1.07E-05	6.42E-07	1.32E-08	0.00E+00
150	9.68E-07	9.57E-07	6.38E-09	2.26E-09	1.91E-09	1.15E-10	2.37E-12	0.00E+00
>150 (c)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

(a) Water independent inhalation pathway excludes radon inhalation.

(b) "Others" includes the following pathways: Radon (water independent and dependent), and all the water dependent pathways (water, fish, plant, meat, and milk).

(c) Dose rates for all pathways are equal to 0.00E+00 for times between 150 and 10,000 year.

Figures 6-21 to 6-24 present the dose rate as a function of time and pathway for the two key radionuclides at the site, Cs-137 and Sr-90. As may be noted, external exposure to Cs-137 from contaminated soil is the limiting pathway.

The RESRAD derived risk factor for Cs-137, as presented in Table 6-2, is 4.73×10^{-5} . This corresponds to a 1×10^{-4} risk-based cleanup level of about 2.0 pCi/g. Applying this cleanup level to Figure 4-22 reveals that virtually the entire 585 m³ will require remediation. This value is consistent with the mathematically interpolated value of 580 m³ in Table 5-3.

Uncertainty in the risk factor for Cs-137 could range from 0 to about 10 times the indicated value. Since virtually all of the soil contaminated above background will require remediation at a 1×10^{-4} risk level, the cleanup volume cannot be substantially larger.

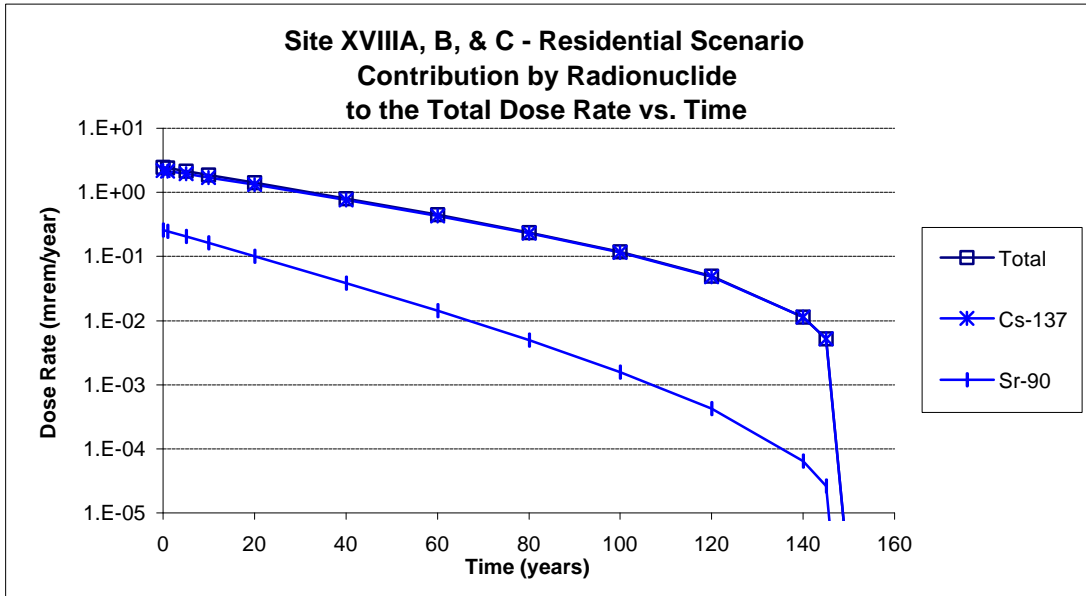
Reference Site XX

Reference Site XX is based in part on the Apollo plant and is treated as generally representative of uranium fabrication facilities. As such, Reference Sites XXA, B, and C were created to represent the range of different environmental settings. Table 5-3 indicates that the cleanup volume is similar for the different settings.

As indicated in Figure 4-23, U-238 and U-234 are present. The RESRAD derived risk factor, as presented in Table 6-2, are 1.72×10^{-6} and 1.20×10^{-6} , respectively. This corresponds to a 1×10^{-4} risk-based cleanup level of about 58 and 98 pCi/g, respectively. Applying a 58 pCi/g cleanup level for U-238 to Figure 4-23 reveals that about 100 m³ will require remediation. Applying the 98 pCi/g cleanup level for U-234 to Figure 4-23 indicates that 2000 m³ will require remediation. This value is consistent with sites B and C and about one third the site A cleanup volume.

As discussed earlier, uncertainty in the risk factor for U-238 could range from 0 to about 10 times the indicated value. At the upper end, the cleanup volume could increase to about 1×10^5 m³. In this case, uncertainty in the risk factor has a very large effect on the uncertainty in the cleanup volume.

Figure 6-21

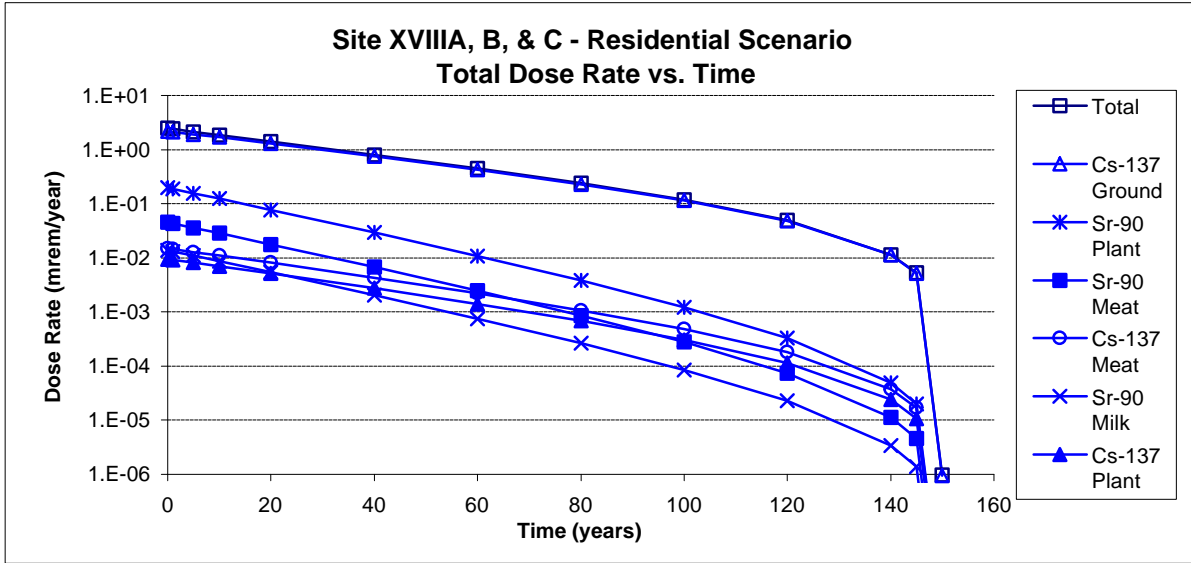


Site XVIII A, B, & C - Residential Scenario
Contribution by Radionuclide to the
Total Dose Rate (mrem/year) vs. Time (years)

Time	Total	Cs-137	Sr-90
0	2.47E+00	2.21E+00	2.60E-01
1	2.40E+00	2.15E+00	2.48E-01
5	2.15E+00	1.94E+00	2.06E-01
10	1.87E+00	1.71E+00	1.63E-01
20	1.41E+00	1.31E+00	1.01E-01
40	8.00E-01	7.62E-01	3.85E-02
60	4.45E-01	4.30E-01	1.42E-02
80	2.37E-01	2.32E-01	4.94E-03
100	1.17E-01	1.16E-01	1.59E-03
120	4.90E-02	4.86E-02	4.28E-04
140	1.15E-02	1.14E-02	6.41E-05
145	5.25E-03	5.22E-03	2.62E-05
150	9.68E-07	9.63E-07	4.32E-09
>150 (a)	0.00E+00	0.00E+00	0.00E+00

(a) Total dose rate is equal to 0.00E+00 for times between 150 years and 10,000 years.

Figure 6-22



Site XVIII A, B, & C - Residential Scenario
Total Dose Rate (mrem/year) vs. Time

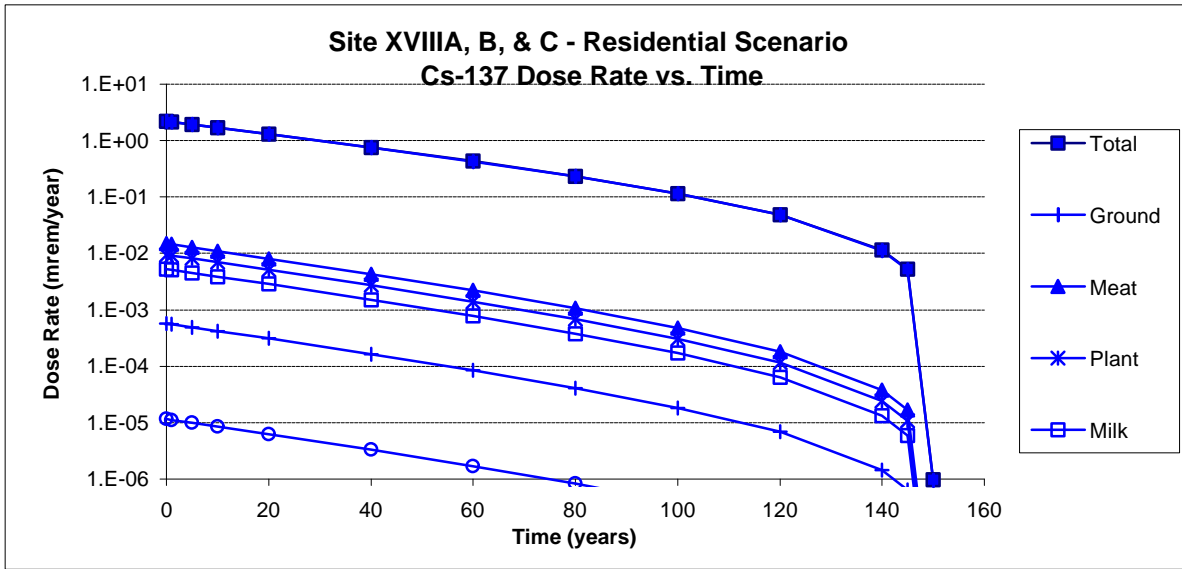
Time (years)	Water Independent Pathways (Inhalation Excludes Radon)							Others (a)
	Total	Cs-137 Ground	Sr-90 Plant	Sr-90 Meat	Cs-137 Meat	Sr-90 Milk	Cs-137 Plant	
0	2.47E+00	2.18E+00	1.99E-01	4.54E-02	1.49E-02	1.38E-02	9.46E-03	7.91E-03
1	2.40E+00	2.12E+00	1.89E-01	4.34E-02	1.45E-02	1.32E-02	9.18E-03	7.65E-03
5	2.15E+00	1.92E+00	1.57E-01	3.60E-02	1.28E-02	1.09E-02	8.14E-03	6.67E-03
10	1.87E+00	1.68E+00	1.24E-01	2.84E-02	1.10E-02	8.65E-03	6.99E-03	5.62E-03
20	1.41E+00	1.29E+00	7.73E-02	1.77E-02	8.09E-03	5.38E-03	5.14E-03	3.98E-03
40	8.00E-01	7.53E-01	2.94E-02	6.73E-03	4.29E-03	2.05E-03	2.73E-03	1.99E-03
60	4.45E-01	4.26E-01	1.08E-02	2.47E-03	2.20E-03	7.53E-04	1.40E-03	9.77E-04
80	2.37E-01	2.30E-01	3.78E-03	8.65E-04	1.07E-03	2.63E-04	6.82E-04	4.61E-04
100	1.17E-01	1.15E-01	1.21E-03	2.78E-04	4.81E-04	8.44E-05	3.05E-04	2.01E-04
120	4.90E-02	4.82E-02	3.27E-04	7.48E-05	1.81E-04	2.28E-05	1.15E-04	7.44E-05
140	1.15E-02	1.13E-02	4.90E-05	1.12E-05	3.78E-05	3.41E-06	2.40E-05	1.53E-05
145	5.25E-03	5.19E-03	2.01E-05	4.59E-06	1.68E-05	1.40E-06	1.07E-05	6.81E-06
150	9.68E-07	9.57E-07	3.30E-09	7.56E-10	3.01E-09	2.30E-10	1.91E-09	1.22E-09
>150 (b)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

(a) "Others" includes all other pathways calculated by RESRAD.

Dose rates for all water dependent pathways are equal to 0.00E+00.

(b) Dose rates for all pathways are equal to 0.00E+00 for times between 150 and 10,000 year.

Figure 6-23

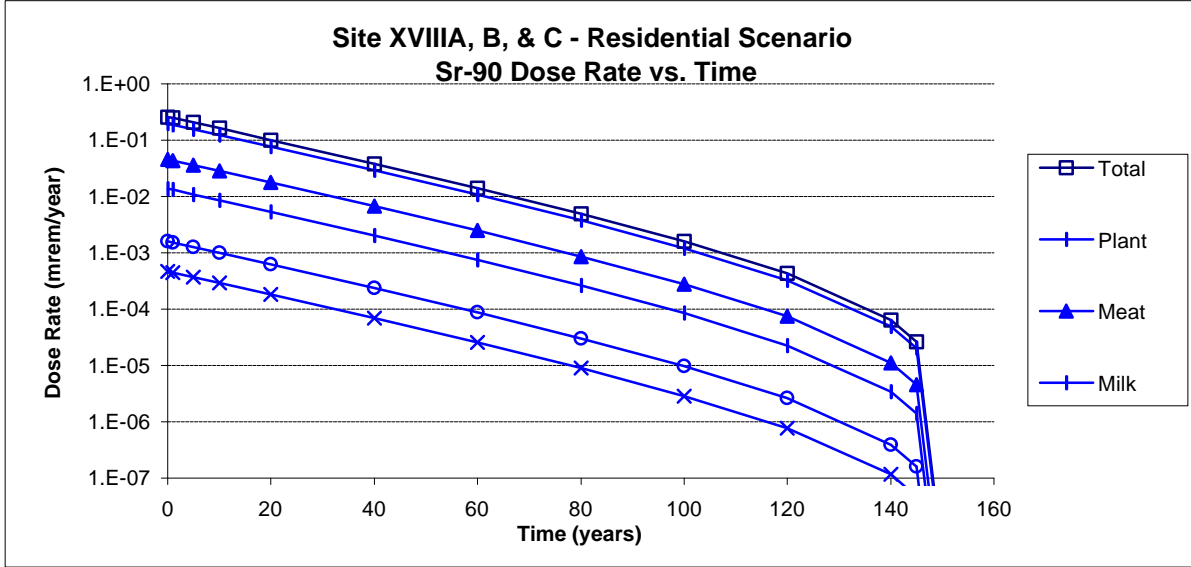


Site XVIII A, B, & C - Residential Scenario
Cs-137 Dose Rate (mrem/year) vs. Time

Time (years)	Water Independent Pathways					Inhalation		
	Total	Ground	Meat	Plant	Milk	Soil	(a)	Others (b)
0	2.21E+00	2.18E+00	1.49E-02	9.46E-03	5.27E-03	5.69E-04	1.15E-05	0.00E+00
1	2.15E+00	2.12E+00	1.45E-02	9.18E-03	5.12E-03	5.53E-04	1.12E-05	0.00E+00
5	1.94E+00	1.92E+00	1.28E-02	8.14E-03	4.53E-03	4.90E-04	9.93E-06	0.00E+00
10	1.71E+00	1.68E+00	1.10E-02	6.99E-03	3.90E-03	4.21E-04	8.53E-06	0.00E+00
20	1.31E+00	1.29E+00	8.09E-03	5.14E-03	2.86E-03	3.09E-04	6.27E-06	0.00E+00
40	7.62E-01	7.53E-01	4.29E-03	2.73E-03	1.52E-03	1.64E-04	3.33E-06	0.00E+00
60	4.30E-01	4.26E-01	2.20E-03	1.40E-03	7.79E-04	8.42E-05	1.71E-06	0.00E+00
80	2.32E-01	2.30E-01	1.07E-03	6.82E-04	3.80E-04	4.10E-05	8.32E-07	0.00E+00
100	1.16E-01	1.15E-01	4.81E-04	3.05E-04	1.70E-04	1.84E-05	3.72E-07	0.00E+00
120	4.86E-02	4.82E-02	1.81E-04	1.15E-04	6.40E-05	6.91E-06	1.40E-07	0.00E+00
140	1.14E-02	1.13E-02	3.78E-05	2.40E-05	1.34E-05	1.44E-06	2.93E-08	0.00E+00
145	5.22E-03	5.19E-03	1.68E-05	1.07E-05	5.95E-06	6.42E-07	1.30E-08	0.00E+00
150	9.63E-07	9.57E-07	3.01E-09	1.91E-09	1.06E-09	1.15E-10	2.33E-12	0.00E+00
>150 (c)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

- (a) Water independent inhalation pathway excludes radon inhalation.
- (b) "Others" includes the following pathways: Radon (water independent and dependent), and all the water dependent pathways (water, fish, plant, meat, and milk).
- (c) Dose rates for all pathways are equal to 0.00E+00 for times between 150 and 10,000 year.

Figure 6-24



Site XVIII A, B, & C - Residential Scenario
Sr-90 Dose Rate (mrem/year) vs. Time

Time (years)	Water Independent Pathways						
	Total	Plant	Meat	Milk	Soil	Inhalation (a)	Others (b)
0	2.60E-01	1.99E-01	4.54E-02	1.38E-02	1.59E-03	4.69E-04	0.00E+00
1	2.48E-01	1.89E-01	4.34E-02	1.32E-02	1.52E-03	4.48E-04	0.00E+00
5	2.06E-01	1.57E-01	3.60E-02	1.09E-02	1.26E-03	3.71E-04	0.00E+00
10	1.63E-01	1.24E-01	2.84E-02	8.65E-03	9.98E-04	2.93E-04	0.00E+00
20	1.01E-01	7.73E-02	1.77E-02	5.38E-03	6.21E-04	1.83E-04	0.00E+00
40	3.85E-02	2.94E-02	6.73E-03	2.05E-03	2.36E-04	6.95E-05	0.00E+00
60	1.42E-02	1.08E-02	2.47E-03	7.53E-04	8.68E-05	2.55E-05	0.00E+00
80	4.94E-03	3.78E-03	8.65E-04	2.63E-04	3.03E-05	8.93E-06	0.00E+00
100	1.59E-03	1.21E-03	2.78E-04	8.44E-05	9.74E-06	2.87E-06	0.00E+00
120	4.28E-04	3.27E-04	7.48E-05	2.28E-05	2.63E-06	7.73E-07	0.00E+00
140	6.41E-05	4.90E-05	1.12E-05	3.41E-06	3.93E-07	1.16E-07	0.00E+00
145	2.62E-05	2.01E-05	4.59E-06	1.40E-06	1.61E-07	4.74E-08	0.00E+00
150	4.32E-09	3.30E-09	7.56E-10	2.30E-10	2.65E-11	7.80E-12	0.00E+00
>150 (c)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

- (a) Water independent inhalation pathway excludes radon inhalation.
- (b) "Others" includes the following pathways: Radon (water independent and dependent), and all the water dependent pathways (water, fish, plant, meat, and milk).
- (c) Dose rates for all pathways are equal to 0.00E+00 for times between 150 and 10,000 year.

Reference Site XXI

Reference Site XXI is based in part on Molycorp and is treated as generally representative of rare earth facilities. As such, Reference Sites XXIA, B, and C were created to represent the range of different environmental settings. Table 5-3 indicates that the cleanup volume is the same for the different settings.

As indicated in Figure 4-24, the key radionuclide is Th-232. The RESRAD derived risk factors, as presented in Table 6-2, for Th-232 and its daughters Ra-228+D and Th-228+D (which grow in quickly) are 3.55×10^{-7} , 1.67×10^{-4} , and 1.05×10^{-4} , respectively. Since these are assumed to be in equilibrium, the effective risk factor for Th-232 is the sum of the three, or 2.72×10^{-4} . This corresponds to a 1×10^{-4} risk-based cleanup level of about 0.36 pCi/g. Applying this cleanup level to Figure 4-24 reveals that the entire volume of contaminated soil of $2.89 \times 10^4 \text{ m}^3$ would require remediation. This value is consistent with the mathematically interpolated value of $3.18 \times 10^4 \text{ m}^3$ in Table 5-3.

The derivation of the risk and the uncertainty in the risk factor for Th-232+D is similar to that for Cs-137 since the external dose from contaminated soil is limiting. Accordingly, the risk factor could range from 0 to about 10 times the indicated value. Since virtually all of the soil contaminated above background will require remediation at a 1×10^{-4} risk level, the cleanup volume cannot be substantially larger.

Reference Site XXII

Reference Site XXII is based in part on Maywood. As indicated in Figure 4-25, the key radionuclides are Ra-226, Th-232, and U-238. The RESRAD derived risk factors, as presented in Table 6-2, are 1.14×10^{-3} for Ra-226, 3.6×10^{-5} for U-238, and for Th-232 it is appropriate to assume that its progeny are present in equilibrium, resulting in a combined risk factor of about 3×10^{-4} for Th-232. This corresponds to a 1×10^{-4} risk-based cleanup level of cleanup level of about 0.1 for Ra-226, 2.8 for U-238, and 0.3 for Th-232 plus progeny. Applying this cleanup level to Figure 4-25 reveals that the entire volume of contaminated soil of $1.04 \times 10^6 \text{ m}^3$ would require remediation. This value is consistent with the mathematically interpolated value of $1.31 \times 10^6 \text{ m}^3$ in Table 5-3.

6.1.3 Summary of Uncertainties in Cleanup Volumes

The above discussion provides an overview of the uncertainties in the cleanup volume for each of the reference sites assuming a risk-based cleanup level of 1×10^{-4} and risk factors based on a rural residential land use scenario. The types and magnitudes of uncertainties also apply to the other risk-based cleanup levels addressed in this report and to cleanup volumes based on commercial/industrial risk factors.

In general, the results reveal that, for a risk-based cleanup level of 1×10^{-4} , there are large uncertainties in the calculational parameters which could markedly reduce the volume of soil requiring remediation. However, it is unlikely that the volumes of soil requiring remediation would be substantively larger for two reasons. First, the calculational assumptions were deliberately selected to obtain high end estimates. Secondly, for most sites, cleanup to a risk level of 1×10^{-4} requires the remediation of most of the contaminated soil at the site that is distinguishable from background.

6.2 EVALUATION OF SENSITIVITIES AND UNCERTAINTIES IN ESTIMATES OF FATAL CANCERS AVERTED DUE TO SITE CLEANUP

In a memo dated February 26, 1992 from F. Henry Habicht to EPA Assistant and Regional Administrators, Agency guidance is provided on risk characterization for risk managers and risk assessors (referred to as the Habicht memo, EPA 92c). The memo emphasizes "the need to provide a full and complete picture of risk, including a statement of the confidence about data and methods used to develop the assessment." The guidance addresses both risk management and risk characterization. With respect to risk characterization, which is the primary objective of this section, the guidance emphasizes the need to characterize and quantify, to the extent possible, the risks and the uncertainties in the risks.

One of the key points made in the Habicht memo is the importance of identifying the hazards, dose response relationships, and exposures associated with the contaminants of concern, in this case radionuclides. These topics are addressed in detail for exposure to radiation and radioactive materials in EPA 89a and EPA 89b. As such, it is not necessary to repeat this information here. In summary, these reports demonstrate that radiation exposure is potentially carcinogenic, mutagenic, teratogenic, and, at very high dose rates, can cause acute radiation poisoning. This report is concerned with relatively low dose rates and is therefore limited to the carcinogenic, mutagenic, and teratogenic effects of radiation. EPA 89a and b

also demonstrate that, of these three types of effects, radiation carcinogenesis is limiting and is best assumed to be a stochastic process based on a linear, non-threshold dose response relationship. As a result, risk assessments for radiation exposure generally explicitly address radiation carcinogenesis quantitatively using the linear, non-threshold model, but remain cognizant of the other potential health impacts that may need to be considered and the possibility that the dose-response relationship may be non-linear and/or have a threshold. The risk assessment provided in this report is limited to radiation carcinogenesis and is based on the linear, non-threshold hypothesis.

This section specifically addresses the time integrated cumulative population impacts associated with exposures to radioactive materials. Of the three types of risk descriptors referred to in the Habicht memo, these impacts fall into the category entitled "population risks." This category of risk differs from the assessment of individual lifetime risks, such as the risks to the RME individual discussed earlier. The primary difference is that, in a population impact assessment, differences in radiosensitivity and living habits among individuals in a population offset each other, and the population is best characterized using aggregate, average parameters regarding radiosensitivity and exposure factors. However, the assessment of population impacts can be more complex because overall average living habits of exposed populations must be characterized over long periods of time. In this report, three different time periods are addressed, 100, 1000, and 10,000 years. Such analyses are of value to a risk assessment because they provide insight into the magnitude of the potential health impacts on the population if remedial action are not taken and the potential health benefits if remediation is implemented. In addition, the differential benefits to the population associated with alternative cleanup criteria can also be characterized. As such, population impact analyses are a fundamental part of the analysis of the benefits of alternative rule making strategies and criteria.

As described in the sections that follow, due to the long time periods of interest in an assessment of cumulative population impacts, it is difficult to project land usage patterns far into the future. It is therefore difficult to establish a baseline, as suggested in the Habicht memo. As a result, the analyses provided in this section postulate alternative land use and demographic patterns, referred to as alternative future use scenarios. In all cases, conservative assumptions are employed to ensure that the potential impacts are not underestimated. It is difficult to state whether these estimates represent a given confidence limit or that they apply to special population groups that have very unique living habits.

However, in the following sections, it is demonstrated that, for each scenario, the derived impacts and the potential health benefits of cleanup have not been substantively underestimated. Given the uncertainties in the effects of exposure to low levels of radiation and in our ability to predict land use scenarios far into the future, this strategy errs on the safe side. As defined in the Habicht memo, the approach used in this report results in "bounding estimates." This section is intended to facilitate risk management decisions by attempting to fully disclose the uncertainties associated with the risk characterization provided in Chapter 5.

The Habicht memo (EPA 92c) refers to the preparation of population impacts that identify the number of individuals in different risk groups (e.g., the number of people bearing a lifetime individual risk greater than 1×10^{-4} , vs 1×10^{-5} , vs 1×10^{-6}). Given that the estimates provided in Chapter 5 are integrated values over long periods of time and apply to sites which are under the control of the Federal government (and generally do not currently have a large residential population), it was not possible to present the results at this level of precision. Instead, the total number of potential health impacts averted over different time periods are presented for a broad range of alternative risk-based cleanup levels and future use assumptions.

6.2.1 Overview of Results

Tables 5-5 to 5-8 (and Appendix K) present estimates of the fatal cancers averted for the reference sites for a number of cases, as follows:

- Ten alternative risk-based cleanup levels (ranging from 1×10^{-6} to 1×10^{-2})
- Risk factors for deriving soil cleanup volumes based on rural residential and commercial industrial use of the land
- Risk factors for deriving soil cleanup volumes based on three time periods of interest (100, 1000, and 10,000 years)
- Risk factors for deriving soil cleanup volumes with and without indoor radon
- Population impacts averted due to soil cleanup based on several alternative future land use and demographic scenarios (a range of population densities with and without intensive agricultural use of the land)

These different cases are a type of quantitative sensitivity analysis. Inspection of the "totals" in Tables 5-5 to 5-8, Appendix K, and Appendix N reveals the following:

1. The total numbers of cancers averted are only modestly affected (about 10-50 percent increase) by an RME individual risk-based cleanup level of 1×10^{-6} as opposed to 1×10^{-2} . The reason is that the numbers of cancers averted are proportional to the number of curies remediated. In order to reduce the risks to the RME individual to 1×10^{-2} , most of the radionuclide inventory at a site requires remediation, and, in many cases, virtually all of the radioactivity above background requires remediation to achieve a risk level of 1×10^{-4} . As a result, once a site is remediated to a cleanup level of 1×10^{-4} , most of the radionuclide inventory is removed, and additional cleanup to lower risk-based levels does not substantively increase the number of cancers averted at the site. This point is demonstrated in Figure 6-25.
2. The total number of cancers averted differ substantially (almost 2 orders of magnitude) as a function of the time period of interest. This occurs because many of the radionuclides at the reference sites are extremely long-lived and are depleted from the contaminated zone very slowly. As a result, the longer the time integration period, the larger the time integrated impacts.
3. The use of rural residential as opposed to commercial risk factors has little effect (about a 5% increase) on the numbers of cancers averted. As with the alternative cleanup levels, the differences in the total numbers of curies requiring remediation to achieve a given cleanup level using rural residential versus commercial risk factors are small. The great majority of the radioactivity is remediated in order to achieve a cleanup level of 1×10^{-2} , no matter which risk factors are used.
4. The total numbers of cancers averted are modestly affected (about a 50% reduction) by eliminating indoor radon from the derivation of the risk factors. The reason is, in the aggregate, the volume of soil addressed in this report containing elevated levels of Ra-226 is small. However, for sites with significant Ra-226 contamination, the differences in the numbers of cancers averted with and without indoor radon are significant.
5. Future land use based on a high versus low population densities and with and without agriculture substantially affect the numbers of cancers averted (up to 100-fold, see Appendix N).

6. Of the 16 reference sites evaluated, the groundwater pathway is responsible for the majority of the potential impacts at only three sites. The reason is, for the suburban scenario, at most sites, either direct radiation or indoor radon is limiting. For the rural and intermediate scenarios with farms, the crop ingestion pathway dominates. The groundwater pathway is only significant in controlling soil cleanup volumes at sites with uranium or Tc-99 contamination and relatively shallow aquifers. This finding is especially telling considering the extremely conservative assumptions used to estimate the population impacts by the groundwater pathway.

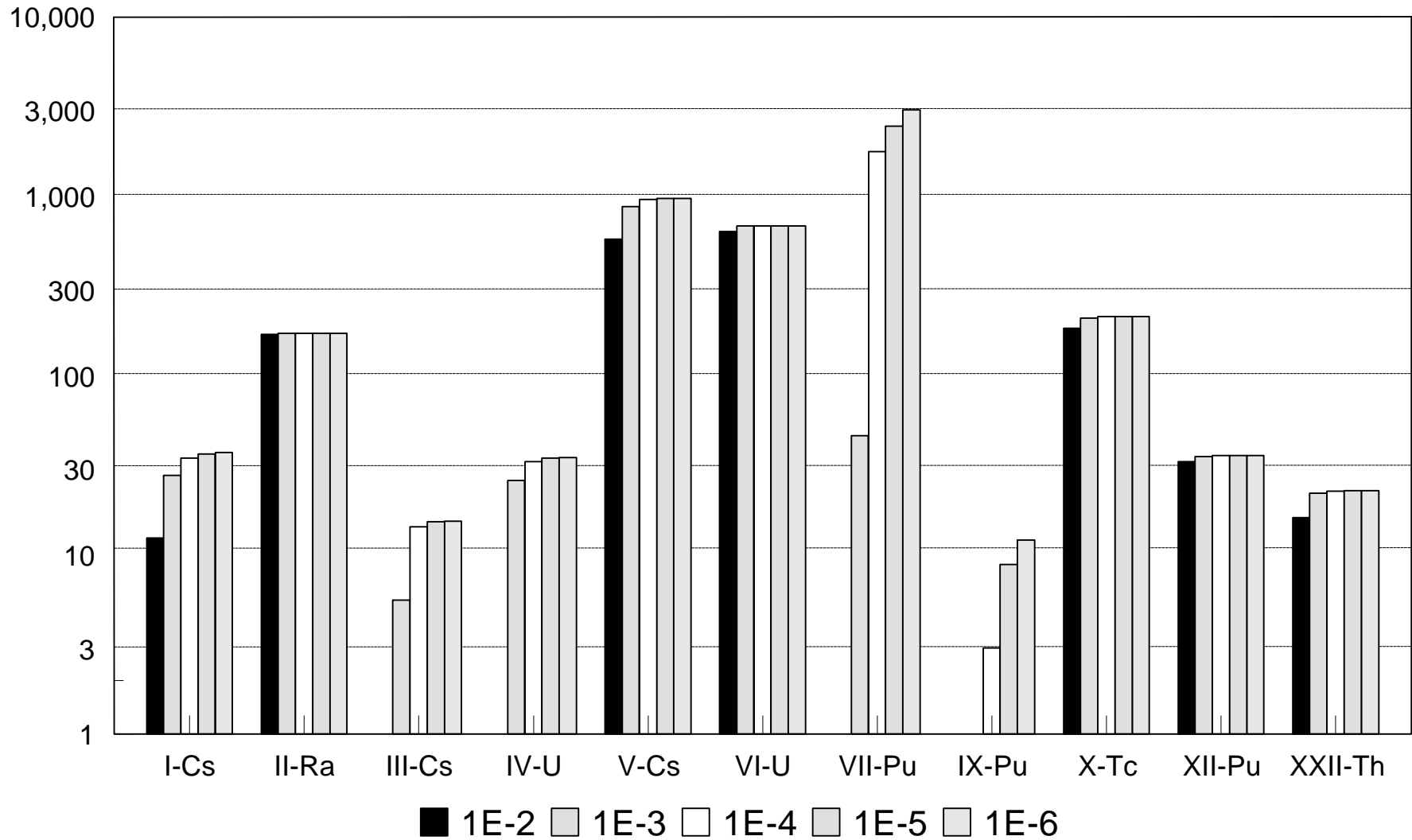
Table 6-4 summarizes the results, revealing the strong dependency of potential cancers averted on the integration time and future use scenario, and small dependency on cleanup criteria.

Table 6-4. Summary of Potential Fatal Cancers Averted Due to Cleanup of Contaminated Soil

Risk-Based Cleanup Level	Potential Numbers of Fatal Radiogenic Cancers Averted by Cleanup - Risk Factors based on 30 year slope factors, rural residential scenario, with radon								
	Intermediate (100 persons/km ² with farms)(Table K-65)			Suburban Scenario (1000 persons/km ² no farms) (Table K-13)			Rural (10 persons/km ² with farms) (Table K-53)		
	100 years	1000 Years	10000 Years	100 Years	1000 Years	10000 Years	100 Years	1000 Years	10000 Years
1x10 ⁻⁶	232	1770	17100	957	5450	47600	146	1280	12800
1x10 ⁻⁵	231	1760	17000	948	5380	47000	145	1280	12800
1x10 ⁻⁴	229	1750	16900	934	5290	46300	145	1280	12800
1x10 ⁻³	221	1710	16600	879	5010	44200	142	1260	12600
1x10 ⁻²	197	1590	15500	745	4600	41300	130	1170	11800

Figure 6-25. Curies Removed for Critical Isotopes vs. Risk-Based Cleanup Goal

Curies Removed



From Table 6-8

6.2.2 Discussion of Uncertainties

The uncertainties in the numbers of cancers averted, as presented in Tables 5-5 to 5-8 and in Appendix K, are a result of uncertainties in the contamination pattern and the derived soil cleanup volumes, which are discussed in Section 6.1, and the uncertainties in estimating the numbers of cancers per curie for each radionuclide and exposure pathway. The latter includes uncertainties in the models, the calculational parameters, and the assumptions used to construct exposure scenarios. For the purpose of disclosing and discussing the uncertainties in the estimates of the cumulative numbers of cancers averted due to site cleanup, this section evaluates the total numbers of fatal cancers averted for each reference site for a cleanup level of 1×10^{-4} and a 1000 year integration period for the suburban scenario (Table K-13). The discussion is limited to fatal cancers, as opposed to total cancers, because fatal cancers has been used as the standard measure of radiological impacts for exposure to ionizing radiation. In addition, the uncertainties in total cancers parallels that of the uncertainty in fatal cancers. A time integration period of 1000 years was selected for the discussion of uncertainties because it is the time period of interest expressed in the Agency's proposed rule. A risk based cleanup level of 1×10^{-4} was selected for explicit consideration in this chapter because it is a convenient number near the midpoint of the range of cleanup levels being considered for the rulemaking. Also, it is often used as the basis for site cleanup under CERCLA. The suburban scenario is selected because it is the limiting scenario in terms of long term future use of the site. Table 6-5 presents the actual population densities at the real sites which form the reference sites. Risk factors based on the rural residential scenario with consideration of indoor radon is explicitly addressed because it results in the more restrictive cleanup levels. The discussion also is limited to reference sites based on DOE facilities because they account for most of the contaminated soil and potential radiological health impacts evaluated in this report.

The approach used to perform the uncertainty analyses is as follows:

1. First, an estimate is made of the total number of curies that must be removed to achieve a risk level of 1×10^{-4} . This is achieved by inspection of the soil contamination patterns for each reference site presented in Figures 4-4 to 4-25. This is then compared to the computer derived values presented in Appendix K.
2. Second, once the total curies removed is verified, the average concentration of the radionuclides in the remediated soil is estimated by dividing the curies

remediated by the estimated total volume of soil requiring remediation to achieve a cleanup level of 1×10^{-4} . The soil remediation volumes and their uncertainties were addressed in Section 6.1.

3. Once the average concentration of each radionuclide is determined, a hand calculation is performed to estimate the total numbers of cancers averted for the key radionuclides and pathways if this contaminated soil were remediated. This estimated value is compared to the values in Table K-13. This exercise serves to independently confirm the values in Table K-13 and explicitly identify the key assumptions and calculational parameters upon which the estimates of cancers averted are based.
4. Finally, a discussion is provided of the uncertainties in the key calculational parameters and assumptions and how these uncertainties affect the estimates of cancers averted.

Step 3 requires knowing which of the radionuclides and pathways are critical. This is accomplished through the use of Table 6-6, which presents for each reference site the total number of fatal cancers averted by pathway and isotope over a 1000 year integration period. It also provides a compilation of the pathways for a range of future land use scenarios, including the suburban scenario. Appendix N presents a more complete set of these tables addressing:

- (1) the total person rem, numbers of cancers, and numbers of fatal cancers for each radionuclide and pathway at each reference site for 100, 1000, and 10,000 years,
- (2) the total person rem, numbers of cancers, and numbers of fatal cancers per curie for each radionuclide and pathway at each reference site for 100, 1000, and 10,000 years, and
- (3) for each of these cases, several demographic and agricultural scenarios.

As such, these tables provide insight into the sensitivity of the results to alternative modeling and scenario assumptions.

This section accomplishes several objectives. It serves as a means to independently verify the computer generated values, it fully discloses all assumptions and parameters used to derive the values, and it describes the sensitivities and uncertainties in the values.

For ease of presentation, the tables of results that are provided in other sections and reports, which are relevant to this discussion, are reproduced here. Table 6-7 presents the cleanup volumes, and Table 6-8 presents the numbers of curies of individual radionuclides that require remediation.

Table 6-5
 POPULATION DENSITY 0 - 80 KM AND COUNTY POPULATION DENSITY
 FOR DOE/DOD SITES*

Site	0 - 80 Km	County	1990	Area (km ²)	Density (ind/km ²)
Aberdeen ~20 km NE	-	Harford	182,132	1,160	157
Idaho	10	Bonneville	72,207	4,766	15
Hanford	23	Benton	112,560	4,442	25
Fernald	-	Hamilton	866,228	1,067	831
Maywood	-	Bergen	825,380	614	1,344
Nevada Test	0.5	Nye	17,781	46,786	0.4
Oak Ridge	59	Knox	335,749	1,311	256
Paducah	35	McCracken	62,879	650	97
Portsmouth	58	Pike	24,249	1,147	21
Rocky Flats ~27 km NW	110	Boulder	225,339	1,922	117
Savannah Riv ~25 km NE	55	Aiken Barnwell	120,991 20,293	2,828 1,445	43 14
Weldon Spring ~40 km W	-	St.Charles	212,751	1,445	147

Population density in 0 - 80 km for a reference LWR is 117 +/- 150 persons per km².

* See Appendix D for additional demographic information.

Table 6-6. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	5.65E+00	8.90E-05	0.00E+00	1.99E-01		2.56E-01	5.65E-02	7.64E-01	5.65E-01	5.65E+00	7.64E-01
	Total			5.65E+00	8.90E-05	0.00E+00	1.99E-01		2.56E-01	5.65E-02	7.64E-01	5.65E-01	5.65E+00	7.64E-01
II-1	Ra-226+D	5.43E+01	4.65E+05	3.57E+02	3.96E-01	0.00E+00	2.44E+02	7.63E+02	2.55E+02	1.12E+01	3.56E+02	1.12E+02	1.12E+03	1.12E+03
	Ra-228	2.69E+00	4.65E+05	9.41E-02	3.17E-05	0.00E+00	3.77E-03		4.71E-03	9.41E-04	1.32E-02	9.41E-03	9.41E-02	9.41E-02
	Th-228	2.69E+00	2.96E+05	5.85E-02	1.13E-03	0.00E+00	5.92E-05		6.55E-04	5.96E-04	6.02E-03	5.96E-03	5.96E-02	5.96E-02
	Th-230	5.40E+01	2.96E+05	7.81E+01	1.34E+00	0.00E+00	5.25E+01	1.75E+02	5.51E+01	2.55E+00	7.80E+01	2.55E+01	2.55E+02	2.55E+02
	Th-232+D	9.66E-01	2.96E+05	1.04E+01	1.57E-01	0.00E+00	1.67E-01		2.73E-01	1.06E-01	1.22E+00	1.06E+00	1.06E+01	1.06E+01
	U-234+D	7.07E+01	8.17E+04	2.72E-01	1.09E+00	0.00E+00	5.09E+00	7.10E-01	5.11E+00	2.07E-02	5.30E+00	2.07E-01	2.07E+00	2.07E+00
	U-235	1.14E+00	8.17E+04	2.68E-01	1.63E-02	0.00E+00	8.33E-02		8.62E-02	2.84E-03	1.12E-01	2.84E-02	2.84E-01	2.84E-01
	U-238+D	3.11E+01	8.17E+04	1.58E+00	4.25E-01	0.00E+00	2.96E+00		2.98E+00	2.01E-02	3.16E+00	2.01E-01	2.01E+00	2.01E+00
	Total			4.48E+02	3.43E+00	0.00E+00	3.04E+02	9.40E+02	3.18E+02	1.39E+01	4.44E+02	1.39E+02	1.39E+03	1.39E+03
II-2	U-234+D	2.52E+02	8.60E+04	1.12E+00	1.09E+01	0.00E+00	5.09E+00	7.10E-01	5.22E+00	1.27E-01	6.36E+00	1.27E+00	1.27E+01	1.27E+01
	U-235	4.08E+00	8.60E+04	1.82E+00	1.63E-01	0.00E+00	8.33E-02		1.03E-01	1.99E-02	2.82E-01	1.99E-01	1.99E+00	1.99E+00
	U-238+D	1.11E+02	8.60E+04	7.53E+00	4.25E+00	0.00E+00	2.96E+00		3.08E+00	1.18E-01	4.14E+00	1.18E+00	1.18E+01	1.18E+01
	Total			1.05E+01	1.53E+01	0.00E+00	8.14E+00	7.10E-01	8.40E+00	2.65E-01	1.08E+01	2.65E+00	2.65E+01	2.65E+01
III	Cs-137	9.89E+00	2.00E+06	2.53E+00	3.99E-05	0.00E+00	8.35E-02		1.09E-01	2.53E-02	3.36E-01	2.53E-01	2.53E+00	3.36E-01
	Total			2.53E+00	3.99E-05	0.00E+00	8.35E-02		1.09E-01	2.53E-02	3.36E-01	2.53E-01	2.53E+00	3.36E-01
IV	U-234+D	3.24E+02	1.48E+04	9.68E-03	2.05E-01	0.00E+00	5.31E-01	9.36E-02	5.34E-01	3.08E-03	5.62E-01	3.08E-02	3.08E-01	5.92E-01
	U-235	1.52E+01	1.48E+04	1.34E-01	8.92E-03	0.00E+00	2.55E-02		2.69E-02	1.43E-03	3.98E-02	1.43E-02	1.43E-01	5.41E-02
	U-238+D	3.24E+02	1.48E+04	5.10E-01	1.82E-01	0.00E+00	7.09E-01		7.16E-01	6.93E-03	7.78E-01	6.93E-02	6.93E-01	8.47E-01
	Total			6.54E-01	3.96E-01	0.00E+00	1.27E+00	9.36E-02	1.28E+00	1.14E-02	1.38E+00	1.14E-01	1.14E+00	1.49E+00
V	Cs-137	1.07E+03	2.39E+04	1.55E+02	2.44E-03	0.00E+00	5.52E+00		7.07E+00	1.55E+00	2.10E+01	1.55E+01	1.55E+02	2.10E+01
	Total			1.55E+02	2.44E-03	0.00E+00	5.52E+00		7.07E+00	1.55E+00	2.10E+01	1.55E+01	1.55E+02	2.10E+01
VI	Cs-137	8.63E+01	2.07E+05	8.49E+00	1.30E-04	0.00E+00	2.82E-01		3.67E-01	8.49E-02	1.13E+00	8.49E-01	8.49E+00	2.83E+00
	U-234	1.22E+03	3.31E+04	3.36E+00	3.14E+01	0.00E+00	1.55E+01	2.17E+00	1.59E+01	3.69E-01	1.92E+01	3.69E+00	3.69E+01	2.66E+01
	U-235	5.75E+01	3.31E+04	1.57E+01	1.37E+00	0.00E+00	7.39E-01		9.10E-01	1.70E-01	2.44E+00	1.70E+00	1.70E+01	5.85E+00
	U-238+D	1.22E+03	3.31E+04	5.10E+01	2.79E+01	0.00E+00	2.05E+01		2.13E+01	7.89E-01	2.84E+01	7.89E+00	7.89E+01	4.42E+01
	Total			7.85E+01	6.07E+01	0.00E+00	3.71E+01	2.17E+00	3.85E+01	1.41E+00	5.12E+01	1.41E+01	1.41E+02	7.95E+01

Table 6-6. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIA	Co-60	3.63E+01	4.29E+05	4.98E-03	4.35E-08	0.00E+00	8.58E-06		5.84E-05	4.98E-05	5.07E-04	4.98E-04	4.98E-03	1.01E-03
	Cs-137+D	2.89E+01	8.59E+05	5.08E-03	4.50E-08	0.00E+00	2.83E-04		3.34E-04	5.08E-05	7.92E-04	5.08E-04	5.08E-03	1.30E-03
	Total			1.01E-02	8.85E-08	0.00E+00	2.92E-04		3.92E-04	1.01E-04	1.30E-03	1.01E-03	1.01E-02	2.31E-03
XVIB	Co-60	3.63E+01	6.09E+04	4.95E-03	4.32E-08	0.00E+00	8.57E-06		5.80E-05	4.95E-05	5.03E-04	4.95E-04	4.95E-03	9.98E-04
	Cs-137+D	2.89E+01	1.22E+05	4.98E-03	4.41E-08	0.00E+00	2.82E-04		3.32E-04	4.98E-05	7.80E-04	4.98E-04	4.98E-03	1.28E-03
	Total			9.93E-03	8.73E-08	0.00E+00	2.91E-04		3.90E-04	9.93E-05	1.28E-03	9.93E-04	9.93E-03	2.28E-03
XVIC	Co-60	3.63E+01	5.37E+03	4.87E-03	4.26E-08	0.00E+00	8.55E-06		5.72E-05	4.87E-05	4.95E-04	4.87E-04	4.87E-03	9.82E-04
	Cs-137+D	2.89E+01	1.07E+04	4.77E-03	4.22E-08	0.00E+00	2.80E-04		3.28E-04	4.77E-05	7.57E-04	4.77E-04	4.77E-03	1.23E-03
	Total			9.64E-03	8.47E-08	0.00E+00	2.89E-04		3.85E-04	9.64E-05	1.25E-03	9.64E-04	9.64E-03	2.22E-03
XVIII	Cs-137+D	3.54E+02	8.59E+05	2.94E-02	2.60E-07	0.00E+00	1.63E-03		1.93E-03	2.94E-04	4.57E-03	2.94E-03	2.94E-02	2.94E-02
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	7.90E-07	0.00E+00	2.47E-02		2.47E-02	7.90E-09	2.47E-02	7.90E-08	7.90E-07	7.90E-07
	Total			2.94E-02	1.05E-06	0.00E+00	2.63E-02		2.66E-02	2.94E-04	2.92E-02	2.94E-03	2.94E-02	2.94E-02
XVIII	Cs-137+D	3.54E+02	1.22E+05	2.88E-02	2.54E-07	0.00E+00	1.63E-03		1.92E-03	2.88E-04	4.51E-03	2.88E-03	2.88E-02	2.88E-02
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	5.20E-07	0.00E+00	2.19E-02		2.19E-02	5.20E-09	2.19E-02	5.20E-08	5.20E-07	5.20E-07
	Total			2.88E-02	7.74E-07	0.00E+00	2.35E-02		2.38E-02	2.88E-04	2.64E-02	2.88E-03	2.88E-02	2.88E-02
XVIII	Cs-137+D	3.54E+02	3.22E+04	2.75E-02	2.44E-07	0.00E+00	1.62E-03		1.89E-03	2.75E-04	4.37E-03	2.75E-03	2.75E-02	2.75E-02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	2.95E-07	5.37E-10	1.75E-02		1.75E-02	3.49E-09	1.75E-02	3.01E-08	2.96E-07	2.96E-07
	Total			2.75E-02	5.39E-07	5.37E-10	1.91E-02		1.94E-02	2.75E-04	2.19E-02	2.75E-03	2.75E-02	2.75E-02
XXA	U-234+D	4.37E+01	8.57E+04	4.67E-04	1.34E-03	0.00E+00	1.72E-02	2.90E-03	1.72E-02	4.70E-05	1.77E-02	4.70E-04	4.70E-03	1.81E-02
	U-235	1.46E+00	8.57E+04	6.76E-04	4.11E-05	0.00E+00	5.78E-04		5.85E-04	7.17E-06	6.49E-04	7.17E-05	7.17E-04	7.21E-04
	U-238+D	7.51E+00	8.57E+04	7.60E-04	2.04E-04	0.00E+00	3.89E-03		3.90E-03	9.64E-06	3.99E-03	9.64E-05	9.64E-04	4.09E-03
	Total			1.90E-03	1.58E-03	0.00E+00	2.17E-02	2.90E-03	2.17E-02	6.38E-05	2.23E-02	6.38E-04	6.38E-03	2.29E-02
XXB	U-234+D	2.54E+01	1.21E+04	1.23E-04	3.42E-04	0.00E+00	7.21E-03	1.62E-03	7.23E-03	2.08E-05	7.42E-03	2.08E-04	2.08E-03	7.63E-03
	U-235	8.40E-01	1.21E+04	1.71E-04	1.04E-05	0.00E+00	2.39E-04		2.40E-04	1.81E-06	2.57E-04	1.81E-05	1.81E-04	2.75E-04
	U-238+D	4.36E+00	1.21E+04	1.93E-04	5.18E-05	0.00E+00	1.62E-03		1.62E-03	2.45E-06	1.64E-03	2.45E-05	2.45E-04	1.67E-03
	Total			4.87E-04	4.04E-04	0.00E+00	9.07E-03	1.62E-03	9.09E-03	2.51E-05	9.32E-03	2.51E-04	2.51E-03	9.57E-03
XXC	U-234+D	2.54E+01	1.07E+03	4.04E-05	1.50E-04	0.00E+00	4.08E-03	1.48E-03	4.10E-03	1.67E-05	4.25E-03	1.67E-04	1.67E-03	4.41E-03
	U-235	8.40E-01	1.07E+03	7.51E-05	4.57E-06	0.00E+00	1.34E-04		1.34E-04	7.97E-07	1.42E-04	7.97E-06	7.97E-05	1.50E-04
	U-238+D	4.36E+00	1.07E+03	8.50E-05	2.28E-05	0.00E+00	9.06E-04		9.07E-04	1.08E-06	9.17E-04	1.08E-05	1.08E-04	9.28E-04
	Total			2.00E-04	1.78E-04	0.00E+00	5.12E-03	1.48E-03	5.14E-03	1.86E-05	5.31E-03	1.86E-04	1.86E-03	5.49E-03

Table 6-6. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	2.23E-03	7.47E-07	0.00E+00	1.61E-04		1.83E-04	2.23E-05	3.83E-04	2.23E-04	2.23E-03	2.23E-03
	Th-228	1.83E+01	2.10E+07	1.41E-03	2.67E-05	0.00E+00	2.52E-06		1.69E-05	1.43E-05	1.46E-04	1.43E-04	1.43E-03	1.43E-03
	Th-232+D	1.83E+01	2.10E+07	7.62E-01	1.14E-02	0.00E+00	2.02E-02		2.79E-02	7.73E-03	9.75E-02	7.73E-02	7.73E-01	7.73E-01
	Total			7.66E-01	1.14E-02	0.00E+00	2.04E-02		2.81E-02	7.77E-03	9.81E-02	7.77E-02	7.77E-01	7.77E-01
XXIB	Ra-228	1.83E+01	6.84E+04	2.21E-03	7.42E-07	0.00E+00	1.60E-04		1.83E-04	2.21E-05	3.82E-04	2.21E-04	2.21E-03	2.21E-03
	Th-228	1.83E+01	2.99E+06	1.41E-03	2.67E-05	0.00E+00	2.52E-06		1.69E-05	1.43E-05	1.46E-04	1.43E-04	1.43E-03	1.43E-03
	Th-232+D	1.83E+01	2.99E+06	7.50E-01	1.12E-02	0.00E+00	2.01E-02		2.77E-02	7.61E-03	9.62E-02	7.61E-02	7.61E-01	7.61E-01
	Total			7.53E-01	1.12E-02	0.00E+00	2.03E-02		2.79E-02	7.64E-03	9.67E-02	7.64E-02	7.64E-01	7.64E-01
XXIC	Ra-228	1.83E+01	6.03E+03	2.18E-03	7.31E-07	0.00E+00	1.60E-04		1.82E-04	2.18E-05	3.78E-04	2.18E-04	2.18E-03	2.18E-03
	Th-228	1.83E+01	2.63E+05	1.41E-03	2.67E-05	0.00E+00	2.52E-06		1.69E-05	1.43E-05	1.46E-04	1.43E-04	1.43E-03	1.43E-03
	Th-232+D	1.83E+01	2.63E+05	7.23E-01	1.08E-02	0.00E+00	2.00E-02		2.73E-02	7.33E-03	9.34E-02	7.33E-02	7.33E-01	7.33E-01
	Total			7.26E-01	1.09E-02	0.00E+00	2.02E-02		2.75E-02	7.37E-03	9.39E-02	7.37E-02	7.37E-01	7.37E-01
XXII	U-234	1.71E+01	1.40E+02	1.76E-04	7.42E-04	2.67E+00	2.88E-02	4.51E-02	2.70E+00	2.67E+00	2.70E+00	2.67E+00	2.71E+00	2.73E+00
	U-235	8.01E-01	1.40E+02	5.28E-04	3.21E-05	1.31E-01	1.32E-03		1.32E-01	1.31E-01	1.32E-01	1.31E-01	1.31E-01	1.31E-01
	U-238+D	1.71E+01	1.40E+02	2.45E-03	6.56E-04	3.63E+00	3.66E-02		3.67E+00	3.63E+00	3.67E+00	3.63E+00	3.64E+00	3.64E+00
	Ra-226+D	3.16E+00	1.99E+03	6.61E-01	7.28E-04	0.00E+00	1.88E+00	1.59E+01	2.05E+00	1.65E-01	3.54E+00	1.65E+00	1.65E+01	2.32E+01
	Ra-228	1.92E+01	1.99E+03	6.12E-02	2.05E-05	0.00E+00	4.50E-03		5.11E-03	6.12E-04	1.06E-02	6.12E-03	6.12E-02	8.57E-02
	Th-228	1.92E+01	1.27E+04	3.95E-02	7.50E-04	0.00E+00	7.09E-05		4.73E-04	4.02E-04	4.09E-03	4.02E-03	4.02E-02	5.63E-02
	Th-232	1.92E+01	1.27E+04	1.64E+01	2.46E-01	0.00E+00	5.42E-01		7.09E-01	1.67E-01	2.21E+00	1.67E+00	1.67E+01	2.34E+01
	Total			1.72E+01	2.49E-01	6.43E+00	2.50E+00	1.59E+01	9.26E+00	6.76E+00	1.23E+01	9.77E+00	3.98E+01	5.32E+01

(a) Based on 1,000 people/km²

(b) Based on 10 people/km²

(c) Based on 100 people/km²

(d) Based on site specific data

Table 6-7. CLEANUP VOLUMES (m**3) - Indoor Radon Pathway Included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.00E+6	5.00E+6	5.00E+6	1.53E+6	1.53E+6	1.53E+6	4.66E+5	4.66E+5	4.66E+5	9.30E+4	9.30E+4	9.30E+4	8.82E+3	8.82E+3	8.82E+3
II	1.89E+6	1.91E+6	1.91E+6	1.35E+6	1.36E+6	1.36E+6	9.17E+5	9.36E+5	9.36E+5	7.81E+5	7.90E+5	7.90E+5	6.64E+5	6.71E+5	6.71E+5
III	8.44E+5	8.44E+5	8.44E+5	7.99E+5	7.99E+5	7.99E+5	4.63E+5	4.63E+5	4.63E+5	6.65E+4	6.65E+4	6.65E+4	.00E+0	.00E+0	.00E+0
IV	2.55E+5	2.55E+5	2.55E+5	9.73E+4	9.73E+4	9.73E+4	3.71E+4	3.71E+4	3.71E+4	1.42E+4	1.42E+4	1.42E+4	.00E+0	.00E+0	.00E+0
V	1.51E+7	1.51E+7	1.51E+7	1.05E+7	1.05E+7	1.05E+7	6.02E+6	6.02E+6	6.02E+6	2.26E+6	2.26E+6	2.26E+6	3.93E+5	3.93E+5	3.93E+5
VI	5.56E+5	5.56E+5	5.56E+5	3.96E+5	3.96E+5	3.96E+5	2.36E+5	2.36E+5	2.36E+5	1.06E+5	1.06E+5	1.06E+5	2.96E+4	2.96E+4	2.96E+4
VII	3.80E+7	3.80E+7	3.80E+7	9.26E+6	9.26E+6	9.26E+6	3.67E+6	3.67E+6	3.67E+6	1.96E+6	1.96E+6	1.96E+6	.00E+0	.00E+0	.00E+0
IX	1.65E+5	1.65E+5	1.65E+5	2.96E+4	2.96E+4	2.96E+4	1.98E+3	1.98E+3	1.98E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	8.33E+5	8.33E+5	8.33E+5	7.18E+5	7.82E+5	7.82E+5	4.03E+5	5.88E+5	5.88E+5	1.49E+5	1.82E+5	1.82E+5	3.31E+4	3.62E+4	3.62E+4
XII	6.88E+3	6.88E+3	6.88E+3	1.70E+3	1.70E+3	1.70E+3	1.41E+3	1.41E+3	1.41E+3	7.01E+2	7.01E+2	7.01E+2	4.94E+2	4.94E+2	4.94E+2
XIIIA	2.49E+3	2.49E+3	2.49E+3	6.89E+2	6.89E+2	6.89E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.49E+3	2.49E+3	2.49E+3	6.89E+2	6.89E+2	6.89E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.49E+3	2.49E+3	2.49E+3	6.89E+2	6.89E+2	6.89E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.27E+3	1.27E+3	1.27E+3	1.11E+3	1.11E+3	1.11E+3	9.41E+2	9.41E+2	9.41E+2	6.14E+2	6.14E+2	6.14E+2	2.50E+2	2.50E+2	2.50E+2
XVIB	1.27E+3	1.27E+3	1.27E+3	1.11E+3	1.11E+3	1.11E+3	9.41E+2	9.41E+2	9.41E+2	6.14E+2	6.14E+2	6.14E+2	2.50E+2	2.50E+2	2.50E+2
XVIC	1.27E+3	1.27E+3	1.27E+3	1.11E+3	1.11E+3	1.11E+3	9.41E+2	9.41E+2	9.41E+2	6.14E+2	6.14E+2	6.14E+2	2.50E+2	2.50E+2	2.50E+2
XVIIIA	5.92E+2	5.92E+2	5.92E+2	5.89E+2	5.89E+2	5.89E+2	5.80E+2	5.80E+2	5.80E+2	4.56E+2	4.56E+2	4.56E+2	1.69E+2	1.69E+2	1.69E+2
XVIIIB	5.92E+2	5.92E+2	5.92E+2	5.89E+2	5.89E+2	5.89E+2	5.80E+2	5.80E+2	5.80E+2	4.56E+2	4.56E+2	4.56E+2	1.69E+2	1.69E+2	1.69E+2
XVIIIC	5.92E+2	5.92E+2	5.92E+2	5.89E+2	5.89E+2	5.89E+2	5.80E+2	5.80E+2	5.80E+2	4.56E+2	4.56E+2	4.56E+2	1.69E+2	1.69E+2	1.69E+2
XXA	4.74E+5	4.94E+5	4.94E+5	5.50E+4	7.97E+4	7.97E+4	2.26E+3	5.68E+3	5.68E+3	3.00E+1	4.26E+1	4.26E+1	.00E+0	2.61E+0	2.61E+0
XXB	4.74E+5	4.74E+5	4.74E+5	5.50E+4	5.50E+4	5.50E+4	2.26E+3	2.26E+3	2.26E+3	3.00E+1	3.00E+1	3.00E+1	.00E+0	.00E+0	.00E+0
XXC	4.74E+5	4.74E+5	4.74E+5	5.50E+4	5.50E+4	5.50E+4	2.26E+3	2.26E+3	2.26E+3	3.00E+1	3.00E+1	3.00E+1	.00E+0	.00E+0	.00E+0
XXIA	3.45E+4	3.45E+4	3.45E+4	3.42E+4	3.42E+4	3.42E+4	3.18E+4	3.18E+4	3.18E+4	2.02E+4	2.02E+4	2.02E+4	4.60E+3	4.60E+3	4.60E+3
XXIB	3.45E+4	3.45E+4	3.45E+4	3.42E+4	3.42E+4	3.42E+4	3.18E+4	3.18E+4	3.18E+4	2.02E+4	2.02E+4	2.02E+4	4.60E+3	4.60E+3	4.60E+3
XXIC	3.45E+4	3.45E+4	3.45E+4	3.42E+4	3.42E+4	3.42E+4	3.18E+4	3.18E+4	3.18E+4	2.02E+4	2.02E+4	2.02E+4	4.60E+3	4.60E+3	4.60E+3
XXII	2.61E+6	2.61E+6	2.61E+6	1.96E+6	1.96E+6	1.96E+6	1.31E+6	1.31E+6	1.31E+6	7.42E+5	7.62E+5	7.62E+5	3.05E+5	3.35E+5	3.35E+5
DOE	9.28E+7	9.28E+7	9.28E+7	4.69E+7	4.70E+7	4.70E+7	2.64E+7	2.66E+7	2.66E+7	1.09E+7	1.11E+7	1.11E+7	3.87E+6	4.10E+6	4.10E+6
DOD	2.81E+4	2.81E+4	2.81E+4	7.55E+3	7.55E+3	7.55E+3	1.41E+3	1.41E+3	1.41E+3	7.01E+2	7.01E+2	7.01E+2	4.94E+2	4.94E+2	4.94E+2
NRC	7.59E+6	7.68E+6	7.68E+6	1.70E+6	1.81E+6	1.81E+6	8.85E+5	9.01E+5	9.01E+5	5.51E+5	5.51E+5	5.51E+5	1.43E+5	1.43E+5	1.43E+5
Total	1.00E+8	1.00E+8	1.00E+8	4.86E+7	4.88E+7	4.88E+7	2.73E+7	2.75E+7	2.75E+7	1.15E+7	1.17E+7	1.17E+7	4.02E+6	4.24E+6	4.24E+6

Table 6-8 (Continued)
 ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XVIA	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.09E-2	6.09E-2	6.09E-2	5.99E-2	5.99E-2	5.99E-2	4.84E-2	4.84E-2	4.84E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.83E-2	4.83E-2	4.83E-2	4.62E-2	4.62E-2	4.62E-2
XVIB	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.09E-2	6.09E-2	6.09E-2	5.99E-2	5.99E-2	5.99E-2	4.84E-2	4.84E-2	4.84E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.83E-2	4.83E-2	4.83E-2	4.62E-2	4.62E-2	4.62E-2
XVIC	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.09E-2	6.09E-2	6.09E-2	5.99E-2	5.99E-2	5.99E-2	4.84E-2	4.84E-2	4.84E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.83E-2	4.83E-2	4.83E-2	4.62E-2	4.62E-2	4.62E-2
XVIIIA	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.78E-1	2.78E-1	2.78E-1	2.43E-1	2.43E-1	2.43E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.78E-1	2.78E-1	2.78E-1	2.43E-1	2.43E-1	2.43E-1
XVIIIB	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.78E-1	2.78E-1	2.78E-1	2.43E-1	2.43E-1	2.43E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.78E-1	2.78E-1	2.78E-1	2.43E-1	2.43E-1	2.43E-1
XVIIIC	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.78E-1	2.78E-1	2.78E-1	2.43E-1	2.43E-1	2.43E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.78E-1	2.78E-1	2.78E-1	2.43E-1	2.43E-1	2.43E-1
XXA	U-234	4.14E+0	4.16E+0	4.16E+0	2.61E+0	2.89E+0	2.89E+0	5.45E-1	9.36E-1	9.36E-1	1.30E-1	1.44E-1	1.44E-1	.00E+0	2.78E-2	2.78E-2
	U-235	1.39E-1	1.40E-1	1.40E-1	8.75E-2	9.69E-2	9.69E-2	1.80E-2	3.12E-2	3.12E-2	4.05E-3	4.53E-3	4.53E-3	.00E+0	8.11E-4	8.11E-4
	U-238	7.09E-1	7.14E-1	7.14E-1	4.47E-1	4.95E-1	4.95E-1	9.34E-2	1.61E-1	1.61E-1	2.22E-2	2.47E-2	2.47E-2	.00E+0	4.77E-3	4.77E-3
XXB	U-234	4.14E+0	4.14E+0	4.14E+0	2.61E+0	2.61E+0	2.61E+0	5.45E-1	5.45E-1	5.45E-1	1.30E-1	1.30E-1	1.30E-1	.00E+0	.00E+0	.00E+0
	U-235	1.39E-1	1.39E-1	1.39E-1	8.75E-2	8.75E-2	8.75E-2	1.80E-2	1.80E-2	1.80E-2	4.05E-3	4.05E-3	4.05E-3	.00E+0	.00E+0	.00E+0
	U-238	7.09E-1	7.09E-1	7.09E-1	4.47E-1	4.47E-1	4.47E-1	9.34E-2	9.34E-2	9.34E-2	2.22E-2	2.22E-2	2.22E-2	.00E+0	.00E+0	.00E+0
XXC	U-234	4.14E+0	4.14E+0	4.14E+0	2.61E+0	2.61E+0	2.61E+0	5.45E-1	5.45E-1	5.45E-1	1.30E-1	1.30E-1	1.30E-1	.00E+0	.00E+0	.00E+0
	U-235	1.39E-1	1.39E-1	1.39E-1	8.75E-2	8.75E-2	8.75E-2	1.80E-2	1.80E-2	1.80E-2	4.05E-3	4.05E-3	4.05E-3	.00E+0	.00E+0	.00E+0
	U-238	7.09E-1	7.09E-1	7.09E-1	4.47E-1	4.47E-1	4.47E-1	9.34E-2	9.34E-2	9.34E-2	2.22E-2	2.22E-2	2.22E-2	.00E+0	.00E+0	.00E+0
XXIA	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	9.85E-1	9.85E-1	9.85E-1	6.69E-1	6.69E-1	6.69E-1
XXIB	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	9.85E-1	9.85E-1	9.85E-1	6.69E-1	6.69E-1	6.69E-1
XXIC	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	9.85E-1	9.85E-1	9.85E-1	6.69E-1	6.69E-1	6.69E-1
XXII	Ra-226	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.74E+0	3.74E+0	3.74E+0	3.63E+0	3.64E+0	3.64E+0	2.72E+0	2.87E+0	2.87E+0
	Th-232	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.27E+1	2.27E+1	2.27E+1	2.20E+1	2.21E+1	2.21E+1	1.51E+1	1.61E+1	1.61E+1
	U-234	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	1.95E+1	1.96E+1	1.96E+1	1.37E+1	1.47E+1	1.47E+1
	U-235	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.18E-1	9.21E-1	9.21E-1	6.45E-1	6.90E-1	6.90E-1
U-238	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	1.95E+1	1.96E+1	1.96E+1	1.37E+1	1.47E+1	1.47E+1	

Reference Site I

Table 6-6 indicates that the cleanup of Reference Site I to a cleanup level of 1×10^{-4} would avert 5.65 cancers deaths over a 1000 year time period for the suburban scenario. From Table 6-7, cleanup of the site to a risk level of 1×10^{-4} would require the removal of $4.66 \times 10^5 \text{ m}^3$ of soil. Table 6-8 indicates that 34.6 Ci of Cs-137 would be removed in this volume of soil (i.e., 0.16 fatal cancers per Ci). The cleanup volume was derived by mathematical interpolation of the data points used to construct Figure 4-4, and the Cs-137 inventory was obtained by integrating under the area of the curve. These values can be approximated by inspection of Figure 4-4. Recall that in order to achieve a risk level of 1×10^{-4} , all the soil at the site containing more than 3.8 pCi/g of Cs-137 will require remediation. Based on Figure 4-4, the $4.66 \times 10^5 \text{ m}^3$ of soil contains Cs-137 at a concentration ranging from 3.8 to 2930 pCi/g (this high end value is based on extrapolation to 0 volume in Figure 4-4). An accurate estimate of the total number of curies of Cs-137 in this volume of soil is obtained by integrating under the area of the curve, which is how the 34.6 curies was obtained. However, a simple way of approximating the Cs-137 inventory is to estimate the median concentration of Cs-137 in the soil volume and then multiplying by the volume. Specifically, the median concentration of Cs-137 in the remediated soil is that concentration where half the volume is greater and half the volume is less than the median concentration. In Figure 4-4, the Cs-137 concentration in the soil at a volume of $2.33 \times 10^5 \text{ m}^3$ (i.e., $1/2$ of $4.66 \times 10^5 \text{ m}^3$) is about 10 pCi/g which corresponds to an inventory of about 7.5 Ci (i.e., $10 \text{ pCi/g} \times 4.66 \times 10^5 \text{ m}^3 \times 1 \times 10^6 \text{ cm}^3/\text{m}^3 \times 1.6 \text{ g/cm}^3 \times 1 \times 10^{-12} \text{ Ci/pCi}$). Another approach for approximating the average concentration of Cs-137 in the remediated soil using Figure 4-4 is to estimate the geometric mean concentration of Cs-137 in the remediated volume by taking the square root of the product of the low end concentration (3.8 pCi/g) and the high end concentration (2930 pCi/g). This approach yields 105 pCi/g, which translates to about 80 Ci. These crude approaches to approximating the average concentration and inventory of Cs-137 in the remediated soil come within about a factor of 2 to 5 of the value obtained by integrating under the area of the curve.

Throughout this chapter, these types of approximations are made using simplified approaches, such as graphical approximations, to gain insight into how the cleanup volumes and potential adverse impacts averted were derived using more mathematically precise methods. These approaches cannot duplicate the computer derived values but can approach the more precise estimates with a factor of about 2. This level of accuracy is considered acceptable for the

purposes of this chapter; i.e., to demonstrate how the various values of cleanup volumes and cancers averted are estimated, to independently check the values, and to identify the key parameters and assumptions inherent in the estimates so that sensitivities and uncertainties in the estimates can be disclosed and discussed.

For the purpose of estimating the numbers of cancer deaths averted due to cleanup, it is convenient to assume that the $4.66 \times 10^5 \text{ m}^3$ of soil containing an average Cs-137 concentration of 46 pCi/g (i.e., $34.6 \text{ Ci} / 4.66 \times 10^5 \text{ m}^3$) is spread over an area of about $9 \times 10^6 \text{ m}^2$ at a thickness of 5 cm (which is the assumed thickness of the contaminated zone for Reference Site I, see Table 4-6). If this soil were not remediated, a population taking residence at this site could be exposed via a number of pathways. However, as discussed earlier, for Cs-137, external exposure to contaminated soil is the limiting pathway. This is confirmed in Table 6-6.

The following presents the calculation of the cumulative population impacts integrated over 1000 years. As indicated in Section 2.2.3, the equation used to derive cumulative population dose is as follows (the input assumptions for the calculation are presented in Tables 4-5 to 4-8):

$$\text{POP}_{\text{Ext-TOT}} = \text{RSC} \times \text{SF}_{\text{Ext}} \times \text{AF1} \times \text{AF2} \times \text{AF3} \times \text{A} \times \text{N} \times [1 - e^{-(\text{DF1} \times t)}] / \text{DF1}$$

Where:

RSC = Average radionuclide concentration in remediated soil (46 pCi/g of Cs-137)

SF_{Ext} = 70 year infinite slab fatal cancer slope factor for external exposure to ground (1.38×10^{-6} risk/yr per pCi/g for Cs-137+D)

AF1 = Adjustment factor for thickness of contaminated zone (For a contaminated zone of 5 cm, an adjustment factor of about 0.5 is appropriate for Cs-137.)

AF2 = Adjustment factor to account for shielding (0.6)

AF3 = Adjustment factor to account for area of contaminated zone (1.0)

A = Contaminated area ($4.66 \times 10^5 \text{ m}^3 / 0.05 \text{ m} = 9.3 \times 10^6 \text{ m}^2$)

N	=	Population density (0.001 persons per m ²)
DF1	=	Soil depletion coefficient (.025/yr)
DF1	=	$[V / (MD \times R)] + \lambda$
V	=	Rainwater infiltration velocity (0.5 m/yr)
V	=	I/θ
I	=	Rainwater infiltration rate (0.15 m/yr)
θ	=	Soil volumetric water content (0.3)
R	=	Retardation factor (1494)
R	=	$1 + [SD \times K_d/\theta]$
SD	=	Soil density (1.6 g/cm ³)
K_d	=	Soil distribution coefficient (280 ml/g for Cs-137, see Table 4-6)
MD	=	Direct radiation zone of interest (0.15 m)
t	=	Time period of interest (1000 years)
λ	=	Radioactive decay constant (0.693/30 yr = 2.31x10 ⁻² /yr)

The equation reduces to:

$$\begin{aligned} \text{Cancers} &= 46 \text{ pCi/g} \times 1.38 \times 10^{-6} \text{ risk/yr per pCi/g} \times 0.5 \times .6 \times 1.0 \times \\ & 9.3 \times 10^6 \text{ m}^2 \times .001 \text{ persons per m}^2 / .025/\text{yr} \\ &= 7.1 \text{ cancers over 1000 years} \end{aligned}$$

This agrees well with the computer generated value of 5.65 presented in Table 6-6. These results confirm the values reported in Table 6-6 and explicitly identify the key calculational parameters. Given the pattern of contamination, the derived estimate of 7.1 cancers averted at a cleanup criteria of 1×10^{-4} could be either higher or lower under the following conditions:

1. The assumed average population density of 1000 persons per km² projected over the next 1000 years could be higher, but is more likely to be lower, given the remote location of the actual site represented by Reference Site I and its current low population density (see Table 6-5). The numbers of cancers averted are directly proportional to the assumed population density. Hence, if the population density were assumed to be 100 as opposed to 1000 persons/km², the impacts would be 0.7 instead of 7 fatal cancers.
2. The slope factor is based on the linear extrapolation model. Given the uncertainties in this model, it is possible, but unlikely, that the slope factor could be a factor of 5 to 10 higher, resulting in a 5- to 10-fold greater number of cancers averted. It is also possible that the slope factor at these low dose rates is zero, resulting in no cancers averted due to cleanup.
3. The hydrogeological characteristics of the site (i.e., infiltration rate, K_d , volumetric water content) are irrelevant to the analysis because the residence time in the contaminated zone is controlled by the relatively short radiological half-life of Cs-137 (i.e., 30 years).
4. Time periods of interest greater than 1000 years have no effect on the results since the Cs-137 decays away within this time period. Even a time period of interest of 100 years does not change the numbers of cancers averted because most of the dose from the Cs-137 is delivered within the first 100 years.

The results summarized in Table 6-6 reveal that, in spite of its size, the total numbers of cancers averted for Reference Site I are relatively small compared to the other sites. The primary reason is Cs-137 is a relatively short-lived radionuclide, and, though the individual dose rates are relatively high, the time over which these doses are delivered is short. As a result, the cumulative time integrated population impacts are relatively small. If other radionuclides were assumed to be present, such as Ra-226+D and Th-232+D, the impacts could increase substantially.

Table 6-6 also indicates that, if the population density is reduced to 10 persons per km², the crop ingestion pathway would become a significant contributor to the cumulative population impacts. Under these conditions, the impacts would depend directly on the assumed crop production rate and the soil-to-plant transfer factors.

It is concluded that, given the contamination pattern, the number of cancers averted represent an upper bound value, which could be lower by a factor of 10 or more using a more realistic population density.

Reference Site II

Not addressed

Reference Site III

Table 6-6 indicates that the cleanup of Reference Site III to a cleanup level of 1×10^{-4} will avert 2.53 cancers deaths over a 1000 year time period. From Table 6-7, cleanup of the site to a risk level of 1×10^{-4} will require the removal of 4.63×10^5 m³ of soil. Table 6-8 indicates that 14.3 Ci of Cs-137 would be removed in this volume of soil. Accordingly, the average concentration of Cs-137 is about 19.3 pCi/g. This number can be independently approximated by graphical extrapolation using Figure 4-12. Based on extrapolation, the 4.63×10^5 m³ of soil will contain Cs-137 ranging in concentration from 3.8 pCi/g to 300 pCi/g (the upper end concentration is based on extrapolation to 0 volume). The median based on Figure 4-12 is about 10 pCi/g. The geometric mean of 3.8 and 300 pCi/g is 34 pCi/g. These are reasonable approximations of the mathematically interpolated value.

Since this site is similar to Reference Site I, it can be assumed that the numbers of fatal cancers averted per Ci removed is about 0.16. As a result, the total numbers of cancers averted due to remediation of 14.3 Ci of Cs-137 should be about 2.3. This is consistent with the mathematically derived value of 2.53 presented in Table 6-6. In addition, since the setting is very similar to that of Reference Site I, the discussion of uncertainties and sensitivities also applies to this site.

Reference Site IV

Table 6-6 indicates that the cleanup of Reference Site IV to a cleanup level of 1×10^{-4} will avert 1.14 cancers deaths over a 1000 year time period for the suburban scenario. Table 6-6 indicates that a combination of direct radiation and dust inhalation, primarily from U-238, are limiting.

From Table 6-7, cleanup of the site to a risk level of 1×10^{-4} will require the removal of 3.71×10^4 m³ of soil, which is the volume of soil containing U-238 in excess of 70 pCi/g of U-238 (recall that in order to achieve an RME individual cleanup level of 1×10^{-4} , all soil containing U-238 in excess of 70 pCi/g requires remediation). Table 6-8 indicates that 33 Ci of both U-234 and U-

238 will be contained in this volume of soil, which corresponds to an average concentration of 555 pCi/g. The number of fatal cancers/Ci for U-238 via external radiation is 0.51 cancers/33 Ci or 0.015 cancers/Ci.

This cleanup volume can be independently approximated based on graphical extrapolation of Figure 4-13. The $3.71 \times 10^4 \text{ m}^3$ of soil will contain U-234 and U-238 ranging in concentration from 70 pCi/g to 2200 pCi/g (this latter concentration is an extrapolation of the curve in Figure 4-13 to 0 m^3). The geometric mean of 70 and 2200 pCi/g is 392 pCi/g, which is in fairly good agreement with the mathematically interpolated value.

Table 4-6 indicates that the depth of contamination at the site is about 0.1 meter. Accordingly, the population impacts averted can be estimated by deriving the population impacts caused by an area of $3.71 \times 10^5 \text{ m}^2$ contaminated with U-238 and U-234 to a depth of 0.1 m. For the external exposure pathway, the following equation is used to derive the cumulative population impacts:

$$\text{POP}_{\text{Ext-TOT}} = \text{RSC} \times \text{SF}_{\text{Ext}} \times \text{AF1} \times \text{AF2} \times \text{AF3} \times \text{A} \times \text{N} \times [1 - e^{-(\text{DF1} \times t)}] / \text{DF1}$$

Where:

RSC = Radionuclide soil concentration (555 pCi/g of U-234 and U-238).

SF_{Ext} = 70 year infinite slab fatal cancer slope factor for external exposure to ground is 3.74×10^{-8} for U-238.

AF1 = Adjustment factor for thickness of contaminated zone (For a contaminated zone of 10 cm, an adjustment factor of 0.8 is appropriate.)

AF2 = Adjustment factor to account for shielding (0.6)

AF3 = Adjustment factor to account for area of contaminated zone (1.0)

A = Contaminated area ($3.71 \times 10^4 \text{ m}^3 / 0.1 \text{ m} = 3.71 \times 10^5 \text{ m}^2$)

N = Population density (0.001 persons per m^2)

DF1 = Soil depletion coefficient

DF1	=	$[V / (MD \times R)] + \lambda = 5.17 \times 10^{-3}/\text{yr}$
V	=	Rainwater infiltration velocity
V	=	$I/\theta = 2 \text{ m/yr}$
I	=	Rainwater infiltration rate (0.41 m/yr)
θ	=	Soil volumetric water content (0.2)
R	=	Retardation factor
R	=	$1 + [SD \times K_d/\theta] = 2640$
SD	=	Soil density (1.6 g/cm ³)
K_d	=	Soil distribution coefficient (330 ml/g for uranium)
MD	=	Direct radiation zone of interest (0.15 m)
t	=	Time period of interest (1000 years)
λ	=	Radioactive decay constant (For U-238, $0.693/4.47 \times 10^9 \text{ yr} = 1.55 \times 10^{-10}/\text{yr}$) (For U-234, $0.693/2.44 \times 10^5 = 2.84 \times 10^{-6}/\text{yr}$)

The equation reduces to:

Cancers	=	$555 \text{ pCi/g} \times 3.74\text{E-}8 \text{ risk/yr per pCi/g} \times 0.8 \times .6 \times 1.0 \times 3.71 \times 10^5 \text{ m}^2 \times .001 \text{ persons per m}^2 / 5.17 \times 10^{-3}/\text{yr}$
	=	0.7 cancers over 1000 years

This is compatible with the value of 0.51 reported in Table 6-6.

Given the U-238 concentration and given the population density, the uncertainties in the impacts from the external exposure pathway are primarily due to uncertainties in the contaminated zone depletion rate and the slope factor. The depletion rate is due to the sum the radioactive decay and leaching coefficient. If the leaching coefficient were much lower, either due to a lower infiltration rate or higher K_d , the depletion rate would decline, and the impacts averted for the direct radiation pathway would markedly increase. Such a situation could arise if the soil had a high ion exchange capacity. For example, if the retardation factor were increased to 10,000

instead of 2640, DF1 would be 1.36×10^{-3} instead of 5.17×10^{-3} and the direct radiation impacts would be as follows:

$$\begin{aligned} \text{Cancers} &= 555 \text{ pCi/g} \times 3.74 \times 10^{-8} \text{ risk/yr per pCi/g} \times 0.8 \times .6 \times 1.0 \times \\ & 3.71 \times 10^5 \text{ m}^2 \times .001 \text{ persons per m}^2 \times [1 - \exp(-1.36 \times 10^{-3}/\text{yr} \times 1000 \\ & \text{yr})] / 1.36 \times 10^{-3}/\text{yr} \\ &= 2 \text{ cancers over 1000 years} \end{aligned}$$

If R were 100,000, which is plausible at some sites, DF1 would be $1.36 \times 10^{-4}/\text{yr}$, and the number of cancers averted would be as follows:

$$\begin{aligned} \text{Cancers} &= 555 \text{ pCi/g} \times 2.9 \times 10^{-8} \text{ risk/yr per pCi/g} \times 1.0 \times .6 \times 1.0 \times \\ & 3.71 \times 10^5 \text{ m}^2 \times .001 \text{ persons per m}^2 \times [1 - \exp(-1.36 \times 10^{-4}/\text{yr} \times 1000 \\ & \text{yr})] / 1.36 \times 10^{-4}/\text{yr} \\ &= 3.4 \text{ cancers over 1000 years} \end{aligned}$$

Reference Site V

Table 6-6 indicates that the cleanup of Reference Site V to a cleanup level of 1×10^{-4} will avert 155 cancers deaths over a 1000 year time period. From Table 6-7, cleanup of the site to a risk level of 1×10^{-4} will require the removal of $6.02 \times 10^6 \text{ m}^3$ of soil. Table 6-8 indicates that 960 Ci of Cs-137 would be removed in this volume of soil. Accordingly, the average concentration of Cs-137 is about 100 pCi/g.

These values can be independently derived from Figure 4-14. Recall that in order to reduce the RME individual risk to 1×10^{-4} , all soil contaminated with Cs-137 in excess of 3.8 pCi/g will require remediation. Based on Figure 4-14, the $6.02 \times 10^6 \text{ m}^3$ of soil will contain Cs-137 at concentrations ranging from 3.8 to 1000 pCi/g. The geometric mean of this range is 62 pCi/g, which is consistent with the mathematically interpolated value.

Since this site is similar to Reference Site I, it can be assumed that the numbers of fatal cancers averted per Ci removed is about 0.16. As a result, the total numbers of cancers averted due to remediation of 960 Ci of Cs-137 should be about 154. This is consistent with the value of mathematically derived value of 155 presented in Table 6-6. In addition, since the setting is very similar to that of Reference Site I, the discussion of uncertainties and sensitivities also applies to this site.

Reference Site VI

Table 6-6 indicates that the cleanup of Reference Site VI to a cleanup level of 1×10^{-4} will avert 141 cancer deaths over a 1000 year time period for the suburban scenario. It also indicates that direct radiation from U-238+D is the predominant pathway, accounting for over 51 of the potential fatal cancers. From Table 6-7, cleanup of the site to a risk level of 1×10^{-4} will require the removal of $2.36 \times 10^5 \text{ m}^3$ of soil. Table 6-8 indicates that 48.3 Ci of Cs-137 and 684 Ci each of U-238 and U-234 would be removed in this volume of soil. This corresponds to an average Cs-137 concentration of 128 pCi/g in the remediated soil. The average U-238 and U-234 concentration is 1811 pCi/g.

These values can be independently derived from Figure 4-15. Recall that in order to reduce the RME individual risk to 1×10^{-4} , all soil contaminated with Cs-137 in excess of 3.8 pCi/g and with U-238 in excess of 120 pCi/g will require remediation. Based on Figure 4-15, Cs-137 is limiting, and the $2.36 \times 10^5 \text{ m}^3$ of soil will contain Cs-137 at concentrations ranging from 3.8 to 1250 pCi/g (the 1250 is based on extrapolation to 0 volume). The geometric mean of this range is 69 pCi/g, which is consistent with the mathematically interpolated value. For U-238, the cleanup soil volume will range from about 5 to 57500 pCi/g (the 57500 is based on extrapolation to 0 volume). The geometric mean of this range is 536 pCi/g, which is not inconsistent with the mathematically interpolated value given the crude method of approximation.

Table 4-6 indicates that the depth of contamination at the site is about 0.05 meter. Accordingly, the population impacts averted can be estimated by deriving the population impacts caused by a volume of $2.36 \times 10^5 \text{ m}^3$ contaminated with U-238 and U-234 to a depth of 0.05 m; i.e., an area of $2.36 \times 10^5 \text{ m}^3 / 0.05 \text{ m} = 4.72 \times 10^6 \text{ m}^2$. For the external exposure pathway, the following equation is used to derive the cumulative population impacts:

$$POP_{Ext-TOT} = RSC \times SF_{Ext} \times AF1 \times AF2 \times AF3 \times A \times N \times [1 - e^{-(DF1 \times t)}] / DF1$$

Where:

RSC = Radionuclide soil concentration (1811 pCi/g of U-238).

SF_{Ext} = 70 year infinite slab fatal cancer slope factor for external exposure to ground is 3.74x10⁻⁸ for U-238.

AF1 = Adjustment factor for thickness of contaminated zone (For a contaminated zone of 5 cm, an adjustment factor of 0.5 is appropriate.)

AF2 = Adjustment factor to account for shielding (0.6)

AF3 = Adjustment factor to account for area of contaminated zone (1.0)

A = 4.72x10⁶ m²

N = Population density (0.001 persons per m²)

DF1 = Soil depletion coefficient

DF1 = $[V / (MD \times R)] + \lambda = 8.07 \times 10^{-4} / \text{yr}$

V = Rainwater infiltration velocity

V = I/θ = 1.55 m/yr

I = Rainwater infiltration rate (0.31 m/yr)

θ = Soil volumetric water content (0.2)

R = Retardation factor

R = 1 + [SD x K_d/θ] = 12800

SD = Soil density (1.6 g/cm³)

K_d = Soil distribution coefficient (1600 ml/g for uranium)

MD = Direct radiation zone of interest (0.15 m)

t = Time period of interest (1000 years)

$$\lambda = \text{Radioactive decay constant (For U-238, } 0.693/4.47 \times 10^9 \text{ yr} = 1.55 \times 10^{-10}/\text{yr) (For U-234, } 0.693/2.44 \times 10^5 = 2.84 \times 10^{-6}/\text{yr)}$$

The equation reduces to:

$$\begin{aligned} \text{Cancers} &= 1811 \text{ pCi/g} \times 3.74 \times 10^{-8} \text{ risk/yr per pCi/g} \times 0.5 \times .6 \times 1.0 \times \\ & 4.72 \times 10^6 \text{ m}^2 \times .001 \text{ persons per m}^2 \times [1 - \exp(-8.07 \times 10^{-4}/\text{yr} \times 1000 \\ & \text{ yrs})] / 8.07 \times 10^{-4}/\text{yr} \\ &= 65 \text{ cancers over 1000 years} \end{aligned}$$

This is compatible with the value of 51 reported in Table 6-6.

Reference Site VII

Table 6-6 indicates that the cleanup of Reference Site VII to a cleanup level of 1×10^{-4} will avert 224 cancers deaths over a 1000 year time period for the suburban scenario, and that the inhalation of Pu-239 in dust is the limiting pathway accounting for 195 of these potential impacts. From Table 6-7, cleanup of the site to a risk level of 1×10^{-4} will require the removal of $3.67 \times 10^6 \text{ m}^3$ of soil. Table 6-8 indicates that 1780 Ci of Pu-239, 297 Ci of Am-241, and 31.5 Ci of Cs-137 would be removed in this volume of soil. This corresponds to an average concentration in the remediated soil of 303 pCi/g of Pu-239, 51 pCi/g of Am-241, and 5.4 pCi/g of Cs-137.

These values can be independently derived from Figure 4-16. Recall that in order to reduce the RME individual risk to 1×10^{-4} , all soil contaminated in excess of 510, 347, and 3.3 pCi/g of Pu-239, Am-241, and Cs-137, respectively, requires remediation. Inspection of Figure 4-16 indicates that Cs-137 is the limiting radionuclide (i.e., its cleanup is responsible for the majority of the soil requiring remediation). Based on graphical extrapolation of Figure 4-16, the $3.67 \times 10^6 \text{ m}^3$ of soil will contain Cs-137 ranging in concentration from 0.8 to 80 pCi/g. The concentration of Pu-239 in the remediated soil will range from about 200 to 1500 pCi/g, and the concentration of Am-241 in the remediated soil will range from about 30 to 250 pCi/g (the upper end values are based on extrapolation to 0 volume). The geometric mean of these ranges are 8 pCi/g for Cs-137, 547 pCi/g for Pu-239, and 87 pCi/g for Am-241. These graphically extrapolated values are higher than, but not inconsistent with, the more accurate mathematically derived values.

Table 6-6 indicates that Pu-239 exposure via the dust inhalation pathway is the major contributor to the time integrated population impacts. The following equation is used to derive the cumulative population impacts for the Pu-239 via the dust inhalation pathway:

$$POP_{\text{Inh-TOT}} = \frac{RSC \times DL \times 1 \times 10^{-6} \text{ g}/\mu\text{g} \times IR \times SF_{\text{Inh}} \times AF1 \times AF2 \times AF3 \times A \times N \times [1 - e^{-(DF2 \times t)}]}{DF2}$$

Where:

RSC = Average radionuclide concentration in remediated soil (298 pCi/g of Pu-239).

DL = Average outdoor dust loading to which the population is exposed ($100 \mu\text{g}/\text{m}^3$)

IR = Inhalation rate ($8000 \text{ m}^3/\text{yr}$)

SF_{Inh} = 70 year fatal cancer slope factor for inhalation of Pu-239 (2.52×10^{-8} risk/pCi inhaled)

AF1 = Adjustment factor for thickness of contaminated zone. (For a contaminated zone of 6 cm, an adjustment factor of 6/15 or 0.4 is appropriate. This is based on the assumption that the average concentration of radionuclides in the top 15 cm of soil is responsible for the airborne dust loading. However, in this analysis, it is conservatively assumed that the contaminated zone is undiluted and AF1 = 1).

AF2 = Adjustment factor to account for the reduced concentration of dust indoors. (The average airborne dust concentration indoors is typically lower than that outdoors. As a result, an adjustment factor of about 0.5 is appropriately applied).

AF3 = Adjustment factor to account for area of contaminated zone. (For large areas, AF3 = 1.0)

A = Contaminated area ($6.3 \times 10^7 \text{ m}^2$)

N = Population density (0.001 persons per m^2)

DF2 = Soil depletion coefficient ($2.89 \times 10^{-5}/\text{yr}$)

DF2 = $[V / (MD \times R)] + \lambda$

V	=	Rainwater infiltration velocity (0 m/yr)
V	=	I/θ
I	=	Rainwater infiltration rate (0 m/yr)
θ	=	Soil volumetric water content (0.2)
R	=	Retardation factor (2750)
R	=	1 + [SD x K _d /θ]
SD	=	Soil density (1.6 g/cm ³)
K _d	=	Soil distribution coefficient (550 ml/g for Pu-239)
MD	=	Dust inhalation zone of interest (0.15 m)
t	=	Time period of interest (1000 years)
λ	=	Radioactive decay constant (.693/24000 yr = 2.89x10 ⁻⁵ /yr)

The equation reduces to:

$$\begin{aligned}
 \text{Cancers} &= 298 \text{ pCi/g} \times 100 \text{ } \mu\text{g/m}^3 \times 1 \times 10^{-6} \text{ g/} \mu\text{g} \times 8000 \text{ m}^3/\text{yr} \times 2.52 \times 10^{-8} \text{ risk/pCi} \times \\
 & 1 \times 0.5 \times 1 \times 6.3 \times 10^7 \text{ m}^2 \times .001 \text{ persons per m}^2 \times \\
 & [1 - e^{-(\text{DF}^2 \times t)}] / 2.89 \times 10^{-5} / \text{yr} \\
 &= 198 \text{ cancers over 1000 years}
 \end{aligned}$$

This is consistent with the value of 195 presented in Table 6-6.

This estimate is considered an upper bound because it is based on a combination of three conservative assumption: (1) an average population density of 1000 persons per km², (2) an average outdoor dust loading of 100 μg/m³, and (3) a soil depletion rate that depends on radioactive decay only.

The population density is extremely conservative when the reference site is remote. A more realistic value would be less than 1 person/km² (see Table 6-5). This would reduce the impacts from dust inhalation by a factor of over 100. Under these circumstances, the crop ingestion pathway would dominate, and the overall impacts from all pathways would decline about 20-fold.

The average outdoor airborne dust loading is highly variable, and over short periods of time can be over $1000 \mu\text{g}/\text{m}^3$. However, over a long period of time, it is unlikely that the average dust loading will exceed $100 \mu\text{g}/\text{m}^3$. NRC 92b reports that, in remote nonurban areas, the dust loading averages from about 10 to $60 \mu\text{g}/\text{m}^3$. A lower dust loading will result in correspondingly lower impacts.

The removal rate of the Pu-239 from the soil is assumed to be by radioactive decay only; i.e., no credit is taken for leaching. This is a worst case assumption since any leaching would reduce the time integrated impacts. However, given the extremely dry climate selected for the reference site and the low retardation factor, leaching would probably not significantly reduce the impacts.

Overall, the impacts are likely to be overestimated by at least a factor of 10.

Reference Site IX

Table 6-6 indicates less than 1 cancer averted at Reference Site IX for a cleanup level of 1×10^{-4} over a 1000 year time period for the suburban scenario. From Table 6-7, cleanup of the site to a risk level of 1×10^{-4} will require the removal of 1980 m^3 of soil. Table 6-8 indicates that 3.03 Ci of Pu-239 would be removed in this volume of soil. This corresponds to an average Pu-239 concentration of 956 pCi/g in the remediated soil.

These values can be independently derived from Figure 4-17. Recall that in order to reduce the RME individual risk to 1×10^{-4} , all soil contaminated with Pu-239 in excess of 613 pCi/g will require remediation. Based on Figure 4-17, the 1980 m^3 of soil will contain Pu-239 at concentrations ranging from 613 to 2981 pCi/g (the 2981 is based on extrapolation to 0 volume). The geometric mean of this range is 1352 pCi/g, which is consistent with the mathematically interpolated value.

As in the case of Reference Site VII, Pu-239 via the dust inhalation pathway is limiting. Since the two sites are similar (i.e., the thickness of the contaminated zone is similar and the depletion rate of Pu-239 from the contaminated zone is controlled by radioactive decay), they both should have similar numbers of cancers per curie. For Reference Site VII, the number of cancers per curie is 0.13. Accordingly, the number of cancers averted is 0.38, which is consistent with the value reported in Table 6-7.

Because of similarities, the discussion of uncertainties and sensitivities provided for Reference Site VII also applies to Reference Site IX.

Reference Site X

Table 6-6 indicates 3.10 cancers averted at Reference Site X for a cleanup level of 1×10^{-4} over a 1000 year time period for the suburban scenario. Of this 3.08 is from Tc-99 and uranium in ground water. From Table 6-7, cleanup of the site to a risk level of 1×10^{-4} will require the removal of $5.88 \times 10^5 \text{ m}^3$ of soil. Table 6-8 indicates that 213 Ci of Tc-99 and 7.31 Ci of both U-238 and U-234 would be removed in this volume of soil. This corresponds to an average Tc-99 concentration of 226 pCi/g and 7.7 pCi/g of both U-238 and U-234 in the remediated soil.

These values can be independently derived from Figure 4-18. Recall that in order to reduce the RME individual risk to 1×10^{-4} , all soil contaminated in excess of 4.0 pCi/g of Tc-99, 3.3 pCi/g of U-238, and 4.9 pCi/g of U-234 will require remediation. Based on Figure 4-18, the $5.88 \times 10^5 \text{ m}^3$ of soil will contain Tc-99 at concentrations ranging from 1 to $1.7 \times 10^5 \text{ pCi/g}$ and U-238 and U-234 concentrations ranging from about 1 to 174 pCi/g (the high end values are based on extrapolation to 0 volume). The geometric mean of these ranges are 412 and 13 pCi/g, respectively, which is about 2 times higher, but not inconsistent with the mathematically interpolated values.

Based on Table 6-6, Tc-99 and U-238 in groundwater account for most of the 3.10 cancers. A simplified version of the groundwater pathway model is as follows (the equation can be simplified because there is no need to account for radioactive decay due to the long half-lives of these radionuclides):

$$\text{POP}(t)_{\text{GW}} = \text{Inv}(0) \times e^{-\text{FR} \times t} \times \text{FR} \times f1 \times f2 \times \text{SF}_{\text{Ing}}$$

$$\text{POP}_{\text{GW-TOT}} = \text{Inv}(0) \times [1 - e^{-\text{FR}(t-T)}] \times \text{FR} \times f1 \times f2 \times \text{SF}_{\text{Ing}} / \text{FR}$$

Where:

$$\text{Inv}(0) = \text{Radionuclide inventory at time 0 (2.13} \times 10^{14} \text{ pCi of Tc-99 and } 7.31 \times 10^{12} \text{ pCi of U-238)}$$

- FR = Radionuclide depletion rate of the contaminated zone (3.8/yr for Tc and 0.03/yr for U. This is effectively also the rate that the contaminants are being delivered to the aquifer.)
- FR = $V/(CD \times R)$
- V = Rainwater infiltration velocity (1.7 m/yr)
- V = I/θ
- I = Rainwater infiltration rate (0.5 m/yr)
- θ = Soil volumetric water content (0.3)
- R = Retardation factor (1.5 for Tc and 188 for U)
- R = $1 + [SD \times K_d/\theta]$
- SD = Soil density (1.6 g/cm³)
- K_d = Soil distribution coefficient (0.1 for Tc-99 and 35 for U-238)
- CD = Thickness of the contaminated zone (0.3 m)
- t = Time period of interest (1000 years)
- f1 = Fraction of the leachate withdrawn for domestic use (0.5)
- f2 = Fraction of the withdrawn water consumed (.01)
- T = Travel time of the radionuclide to the water table (5.3 yrs for Tc and 663 yrs for U)
- T = $D \times R / V$
- D = Depth to aquifer (6 m)
- SF = 70 year fatal cancer ingestion slope factor (9.21x10⁻¹³ fatal cancers/pCi for Tc-99 and 3.77x10⁻¹¹ fatal cancers/pCi for U-238)

For Tc-99:

$$\begin{aligned} \text{POP}_{\text{GW-TOT}} &= \text{Inv}(0) \times [1 - e^{-\text{FR}(t-T)}] \times \text{FR} \times f1 \times f2 \times \text{SF}_{\text{Ing}}/\text{FR} \\ &= 2.13 \times 10^{14} \text{ pCi} \times 1 \times 3.8/\text{yr} \times .5 \times .01 \times 9.21 \times 10^{-13} \text{ cancers/pCi}/3.8/\text{yr} \\ &= 1 \text{ cancer} \end{aligned}$$

For U-238:

$$\begin{aligned} \text{POP}_{\text{GW-TOT}} &= \text{Inv}(0) \times [1 - e^{-\text{FR}(t-T)}] \times \text{FR} \times f1 \times f2 \times \text{SF}_{\text{Ing}}/\text{FR} \\ &= 6.71 \times 10^{12} \text{ pCi} \times 1 \times .03 \times .5 \times .01 \times 3.77 \times 10^{-11} \text{ cancers/pCi}/.03/\text{yr} \\ &= 1.3 \text{ cancers} \end{aligned}$$

The total is about 2.3 fatal cancers over 1000 years, which is consistent with the values in Table 6-6. The other approximately 0.7 fatal cancer is the sum of the impacts from other isotopes and pathways.

Given the radionuclide inventories, these values represent an upper bound primarily because of the assumption that 0.5 of the leachate is withdrawn for domestic purposes over the 1000 year time period of interest. This assumption is bounding because it effectively assumes that 50% of the groundwater flow in the region is withdrawn for domestic purposes. Such a situation only arises at locations where large populations are serviced by groundwater supplies and the supplies are limited. The fraction withdrawn could not be very much larger than 0.5. The estimate also assumes that 1% of the withdrawn water is consumed. Based on the Water Encyclopedia, this is a conservative value. A more realistic average value would be 0.1%. Effectively, this calculation assumes that 0.005 of the initial inventory of the radionuclides are consumed.

Given this overall intake of the radionuclides, the uncertainty in the impacts is due to uncertainty in the slope factors. As discussed previously, it is unlikely that the slope factor could be more than 10 times greater than the values used. In addition, it is possible that at such low dose rates there are in fact 0 impacts.

It can be concluded that these are upper bound estimates, which likely overestimate the impacts by at least a factor of 10.

Inspection of Table 6-6 reveals that if the groundwater pathway were reduced in importance because it is assumed to be less intensively used, the indoor radon and crop ingestion pathways dominate, and the impacts would be reduced by about 50-fold.

Reference Site XXII

Table 6-6 indicates 39.8 fatal cancers averted at Reference Site XXII for a cleanup level of 1×10^{-4} over a 1000 year time period for the suburban scenario. About half is from indoor radon and the other half from direct radiation from Th-232+D in soil. From Table 6-7, cleanup of the site to a risk level of 1×10^{-4} will require the removal of 1.31×10^6 m³ of soil. Table 6-8 indicates that the following radionuclides would be removed in this volume of soil. Also presented are the derived average concentrations, the 70 year mortality risk factors, and 1×10^{-4} cleanup concentrations:

Isotope	Quantity Removed (Ci)	Average Concentration (pCi/g)	Risk Factor	Cleanup Concentration (pCi/g)
Ra-226+D	3.74	1.78	1.14×10^{-3}	0.09
Th-232+D	22.7	10.8	2.73×10^{-4}	0.37
U-234	20.2	9.6	2.43×10^{-5}	4.1
U-235	0.948	-	-	-
U-238+D	20.2	9.6	3.60×10^{-5}	2.8

The average radionuclide concentrations in the cleanup volume can be independently derived from Figure 4-25. Based on Figure 4-25, the limiting radionuclide is Ra-226, and the 1.31×10^6 m³ of soil will contain radionuclides with the following ranges of concentrations and geometric mean values:

Isotope	Concentration Range (pCi/g)	Geometric Mean (pCi/g)
Ra-226+D	bkgd - 8	2.8
Th-232+D	bkgd - 64	8
U-234	bkgd - 64	8
U-235	-	-
U-238+D	bkgd - 64	8

These values agree well with the mathematically interpolated values.

Inspection of Table 6-6 reveals that indoor radon and direct radiation from Th-232+D are responsible for the majority of the impacts.

For the indoor radon exposure pathway, the following equation is used to derive the cumulative population impacts:

$$\text{POP}_{\text{Rn-TOT}} = \text{RSC} \times \text{SF}_{\text{Rn}} \times \text{AF1} \times \text{AF2} \times \text{AF3} \times \text{A} \times \text{N} \times [1 - e^{-(\text{DF4} \times t)}] / \text{DF4}$$

Where:

- RSC = Radionuclide soil concentration (1.78 pCi/g of Ra-226+D).
- SF_{Rn} = Indoor radon slope factor (4.62x10⁻⁵ cancers/yr per pCi/g of Ra-226 in soil)
- AF1 = Adjustment factor for thickness of contaminated zone (for a contaminated zone of 2.0 m, an adjustment factor of 0.4 is appropriate since the indoor radon level is assumed to be a function of the average Ra-226 concentration in the top 5 meters).
- AF2 = Adjustment factor to account for occupancy (0.6)
- AF3 = Adjustment factor to account for area of contaminated zone (1.0)
- A = Contaminated area (1.31x10⁶ m³/2 m = 6.55x10⁵ m²)
- N = Population density (0.001 persons per m²)
- DF4 = Soil depletion coefficient
- DF4 = $[V / (\text{ED} \times \text{R})] + \lambda = 1 \times 10^{-4} / \text{yr} + 4.33 \times 10^{-4} / \text{yr} = 5.33 \times 10^{-4} / \text{yr}$
- V = Rainwater infiltration velocity (2 m/yr)
- V = I/θ
- I = Rainwater infiltration rate (0.41 m/yr)
- θ = Soil volumetric water content (0.2)
- R = Retardation factor

R	=	$1 + [SD \times K_d / \theta] = 4000$
SD	=	Soil density (1.6 g/cm ³)
K _d	=	Soil distribution coefficient (500 ml/g for Ra-226)
ED	=	Thickness of the radon effectiveness zone (5 m)
t	=	Time period of interest (1000 years)
λ	=	Radioactive decay constant (.693/1600 yr = 4.33x10 ⁻⁴ /yr)

The equation reduces to:

Cancers	=	$1.78 \text{ pCi/g} \times 4.62 \times 10^{-5} \text{ cancers/yr per pCi/g} \times 0.4 \times .6 \times 1.0 \times [1 - \exp(-5.33 \times 10^{-4} / \text{yr} \times 1000 \text{ yr})] \times 6.55 \times 10^5 \text{ m}^2 \times .001 \text{ persons per m}^2 / 5.33 \times 10^{-4} / \text{yr}$
	=	10 cancers over 1000 years

This result is consistent with the value of 15.9 presented in Table 6-6. The uncertainties in this estimate are large due to the large uncertainties in many of the calculational parameters. Given the assumed time averaged population density of 1000 persons per km² (which is not unreasonable for Reference Site XXII, see Table 6-5), the uncertainty in the cumulative population impacts due to exposure to indoor radon is due primarily to:

- (1) the uncertainty in the assumed relationship between the average indoor radon concentration (pCi/L) and the average Ra-226 concentration (pCi/g) in soil (i.e., the concentration ratio),
- (2) the assumed risk of cancer per working level month (i.e., the risk factor), and
- (3) the assumed thickness of the contaminated zone (i.e., 2 m)
- (4) the depletion rate of Ra-226 from the soil.

For any individual home, the ratio of indoor radon concentration, in pCi/l, per pCi/g of Ra-226 in soil can range from less than one to several orders of magnitude. For example, data summarized in SCA 89 for 73 homes in a community with soil containing elevated levels of Ra-226 revealed average Ra-226 concentrations in soil ranging from 0.65 to 61.3 pCi/g. Indoor

radon progeny concentrations ranged from 0.001 to 1.549 WL. The latter correspond to indoor radon concentrations ranging from 0.2 to 300 pCi/L. The radon ratio ranged from 0.04 to 50. The geometric mean of this range is 1.4.

The variability in the ratio is likely to be relatively small when the parameter of interest is the average ratio for large populations and long time periods of interest. As indicated in EPA 82, "... one might expect indoor radon decay product concentrations of 0.01 WL (this corresponds to about 2 pCi/L of radon assuming a typical indoor fractional equilibrium of 50% for radon progeny - this note is not included in the quote) for soils with radium concentrations of 1 to 3 pCi/g to a depth of 1 meter or more." Based on this relationship, the average ratio employed in this report is 1.25.

In this report, the risk factor is 240 lung cancer deaths per 1×10^6 WLM⁵. The reported range is 140 to 720, and the possibility of zero impacts at low exposure rates cannot be ruled out (EPA 89b).

The model assumes that the thickness of the contaminated zone is 2 m, and thereby applies an adjustment factor of 0.4. If the thickness of the contaminated zone were greater than 5 m, the adjustment factor would be 1.0.

As with the other water-independent pathways, the time integrated impacts are a function of the depletion rate of radium in the zone of interest (for radon the zone of interest is assumed to be 5 meters based on RAE 90). In this analysis, a relatively high K_d of 500 was assumed. As discussed in Chapter 3, the K_d for radium reported in the literature ranges from 11 to 530,000. The higher K_d values result in a higher time integrated dose because of the greater residence time in the soil. However, if a high K_d is assumed, such as 530,000, the residence time in soil is controlled by the radioactive decay coefficient of Ra-226, which results in a DF4 of 4.33×10^{-4} instead of 5.33×10^{-4} . Accordingly, the results are virtually unaffected by assuming a higher K_d for Ra-226.

Accordingly, given the assumed population density, the uncertainty in the cumulative population impacts can range from 0 (if it is assumed that there is no risk associated with exposures to low levels of radon) to about of perhaps 10 to 100-fold greater if a high end radon concentration ratio or risk factor were assumed.

This value is based on the supporting documentation to EPA's "A Citizen's Guide to Radon, (Second Edition)" ANR-464, May 1992 Citizen Guide. The risk coefficient reported in EPA 89 is 360 cancers per 1×10^6 WLM.

Table 6-6 also indicates that at Reference Site XXII external exposure to Th-232+D is an important pathway of exposure, responsible for 15.5 of the 32.1 potential fatal cancers for the suburban scenario.

The following presents the calculation of the cumulative population impacts integrated over 1000 years. As indicated in Section 2.2.5.1, the equation used to derive cumulative population dose is as follows:

$$\text{POP}_{\text{Ext-TOT}} = \text{RSC} \times \text{SF}_{\text{Ext}} \times \text{AF1} \times \text{AF2} \times \text{AF3} \times \text{A} \times \text{N} \times [1 - e^{-(\text{DF1} \times t)}] / \text{DF1}$$

Where:

RSC = Average radionuclide concentration in remediated soil (10.8 pCi/g of Th-232, which can be assumed to be in equilibrium with its daughters because of their relatively short half-lives as compared to the 1000 year period of interest.)

SF_{Ext} = 70 year infinite slab fatal cancer slope factor for external exposure to ground (9.5x10⁻⁶ risk/yr per pCi/g for Th-232 in equilibrium with all its progeny)

AF1 = Adjustment factor for thickness of contaminated zone (For a contaminated zone of 2 m, an adjustment factor of 1.0 is appropriate for this thickness).

AF2 = Adjustment factor to account for shielding (0.6)

AF3 = Adjustment factor to account for area of contaminated zone (1.0)

A = Contaminated area (6.55x10⁵ m²)

N = Population density (0.001 persons per m²)

DF1 = Soil depletion coefficient

DF1 = $[V / (\text{MD} \times \text{R})] + \lambda = 5.2\text{E-}4/\text{yr}$

V = Rainwater infiltration velocity (2 m/yr)

V = I/θ

I	=	Rainwater infiltration rate (0.4 m/yr)
θ	=	Soil volumetric water content (0.2)
R	=	Retardation factor
R	=	$1 + [SD \times K_d / \theta] = 25600$
SD	=	Soil density (1.6 g/cm ³)
K_d	=	Soil distribution coefficient (3200 ml/g for Cs-137)
MD	=	Radon zone of interest (0.15 m)
t	=	Time period of interest (1000 years)
λ	=	Radioactive decay constant (0.693/1.4x10 ¹⁰ yr = 4.95x10 ⁻¹¹ /yr)

The equation reduces to:

$$\begin{aligned} \text{Cancers} &= 10.8 \text{ pCi/g} \times 5 \times 10^{-6} \text{ risk/yr per pCi/g} \times 1.0 \times .6 \times 1.0 \times \\ & 6.55 \times 10^5 \text{ m}^2 \times .001 \text{ persons per m}^2 \times [1 - \exp(-5.2 \times 10^{-4} / \text{yr} \times 1000 \\ & \text{yr})] / 5.2 \times 10^{-4} / \text{yr} \\ &= 16 \text{ cancers over 1000 years} \end{aligned}$$

This is consistent with the 15.4 potential fatal cancers presented in Table 6-6.

Given the population density, the primary sources of uncertainty are in:

- (1) the slope factor
- (2) the depletion rate of the contaminated zone

As discussed earlier, the external slope factor could range from 0 to about 5 to 10 times the indicated value. The depletion rate is dependent primarily on the K_d . The higher the K_d , the longer the residence time, and the higher the impacts. The K_d for Th-232 used in this analysis is 3200. However, K_d s as high as 1.3×10^7 have been reported for thorium. Given this K_d , R would be 1.0×10^8 and DF1 would be $1.3 \times 10^{-7} / \text{yr}$ and the impacts would be in the thousands. Accordingly, the impacts could range from zero to several thousand.

7. Implementation Considerations

This chapter discusses technical issues relevant to the implementation of the proposed soil cleanup regulations and presents some of the options EPA is currently exploring to address these issues. Section 7.1 describes possible Agency implementation strategies for deriving residual radionuclide concentrations in soil that correspond to various dose/risk limits, assumed land use scenarios after cleanup, and both generic and site-specific data. Section 7.2 examines the feasibility of attaining and complying with derived radionuclide soil concentrations (RSCs) by comparing RSCs against (1) laboratory and field detection limits, (2) typical background levels, and (3) EPA's proposed drinking water standards. Finally, Section 7.3 discusses EPA's plans to prepare several different kinds of implementation guidance documents that will incorporate comprehensive quality assurance/quality control programs similar to the one outlined in *Data Quality Objectives Process for Superfund*, EPA 540-R-93-071 (EPA 93e).

It should be noted that EPA has not yet identified all possible implementation considerations, and that the issues and options explored in this chapter are preliminary in nature and do not represent final Agency decisions or policies.

7.1 STRATEGIES FOR DERIVING SOIL CLEANUP CONCENTRATIONS

7.1.1 Basis for the Form of the Standard

This section focuses on the form of the standard being selected to address the overall risk posed by a site. This section also includes a discussion of which other options were considered but not selected as the preferred option for this proposed rulemaking.

EPA is proposing that for a site to be released, the level of radionuclides must ensure that members of the public are limited to a specific dose or risk level, employing exposure assumptions appropriate for the selected land use scenario (e.g., rural residential, industrial/commercial). The primary objective of EPA's current rulemaking is to expedite the cleanup of sites contaminated with radioactive materials and promote beneficial use of the land.

By applying the cleanup standard as an overall site dose or risk limit, EPA will provide for protection of members of the public from all relevant exposure pathways at a site without predetermining an approach for summing the additive risks. Site owners and operators will be directed to account for all likely exposure pathways and to devise remediation approaches that will limit members of the public to the dose or risk level specified in the rule. Thus, when a site is remediated, one must determine what potential exposure pathways exist and what levels of risk they pose. Potential pathways include soil, surface water, groundwater, air, and contaminated structures at a site.

Under the regulations that would be proposed, risk is treated as additive for each of the exposure pathways. In other words, the total risk presented by a site is the sum of the risks of each exposure pathway. Therefore, all likely exposure pathways must be considered to determine if a site meets a particular risk level above background. This principle implies that risks from exposure to contaminated soil and air are additive to the extent that people using the site after cleanup face both exposure pathways.

7.1.1.1 Alternative Overall Site Risk Standard Approaches Considered

EPA reviewed several alternative approaches to a proposed overall site dose or risk standard. The approaches EPA considered, but did not select as the preferred option, include:

- a pathway by pathway dose limitation;
- technology-based requirements;
- a "look-up" table of radionuclide-specific cleanup standards for a site; and
- a "look-up" table combined with a pathways model to establish site-specific cleanup standards.

7.1.2 Proposed Implementation Guidance on Soil Cleanup Concentrations

The Agency intends to develop guidance providing radionuclide soil concentrations (RSCs) that correspond to the risk or dose cleanup level specified in the rule. EPA believes that RSC values will facilitate the selection of soil cleanup levels at most sites and will prevent potential future contamination of other media (e.g., groundwater, surface water, air).

As proposed, EPA envisions that RSC values will be risk-based radionuclide soil cleanup concentrations corresponding to above-background (i.e., net) radioactivity levels. These will be presented in one or several Agency look-up tables, with each table containing RSC values based on a different land use exposure scenario after cleanup. Initially, RSC values will be derived by EPA using conservative default exposure assumptions. Some or all of these assumptions will be adjustable to derive RSC values that meet site-specific conditions. EPA believes that this approach will ensure fully-protective, but not overly conservative cleanup levels at most sites.

Application of RSC values should be straightforward at those sites where the exposure pathways of concern and site conditions are identical to those assumed in the development of the RSC values. However, at those sites where exposure assumptions are not identical to the default assumptions assumed by the Agency, implementing agencies and site owners and operators will be encouraged to conduct an analysis to compare EPA's default input parameter values against similar site-specific values obtained from sampling and analysis data, historical records, aerial photographs, hydrogeologic data, and other relevant site information. If this analysis indicates that the site-specific values differ significantly from the default values, then the implementing agencies and site owners/operators will have the option of adjusting RSC values site specifically.

EPA intends to provide a method or methods for adjusting RSC values up or down based on site-specific conditions. For example, EPA may develop a method for adjusting RSC values to account for the inclusion or deletion of certain exposure pathways as appropriate for modeling the risks posed by each site. EPA also may create tables of adjustment factors for certain key site parameters, but not for all parameters. Conversely, EPA may forego developing adjustment factors in favor of recommending a suitable pathway model and guidance to derive site-specific cleanup concentrations. At the present time, EPA is experimenting with a number of different methods and approaches.

7.1.2.1 Look-up Table Approach

Table 7-1 presents an example of a possible look-up table of generic radionuclide soil concentrations (RSCs). These concentrations were calculated using the DOE RESRAD computer code (version 5.19), assuming three different land use exposure scenarios (discussed in Chapter 2), generic site data (discussed in Chapter 3), and a 1,000-year time

Table 7-1. Example of a Look-up Table Containing Generic Radionuclide Soil Concentrations Needed to Achieve Various Residual Dose/Risk Limits, Assuming Three Different Land Use Scenarios After Cleanup (all values in pCi/g)

Radionuclide	1E-4 Risk Limit			3E-4 Risk Limit			15 mrem/year Dose Rate Limit		
	Rural Residential	Suburban	Commercial/Industrial	Rural Residential	Suburban	Commercial/Industrial	Rural Residential	Suburban	Commercial/Industrial
Ac-227+D	3	4	13	10	12	38	2	6	10
Ag-108m+D	1	1	2	2	2	7	3	3	7
Ag-110m+D	0.3	0.3	1	1	1	3	1	1	4
Am-241	90	226	661	271	677	1,982	26	74	168
Am-243+D	12	14	43	37	41	130	13	20	52
Bi-207	1	1	2	2	2	7	3	3	8
C-14	1	4	11,490	3	13	34,469	3	16	248
Cd-109	11	29	17,118	32	86	51,355	55	143	6,539
Ce-144+D	22	23	77	67	69	230	91	92	248
Cl-36	0.1	2	29	0.3	5	88	1	9	147
Cm-243	21	22	67	62	65	200	39	54	108
Cm-244	125	384	1,071	376	1,153	3,213	53	165	358
Cm-248	26	77	232	77	231	696	8	24	51
Co-57	16	18	58	48	53	174	54	57	154
Co-60	0.4	0.4	1.3	1	1	4	1.2	1.3	3.4
Cs-134	1	1	2	2	2	6	2	3	7
Cs-135	40	391	2,919	120	1,173	8,758	196	1,907	11,876
Cs-137+D	1	2	6	4	5	17	5	6	16
Eu-152	1	1	3	3	3	9	3	3	8
Eu-154	1	1	3	2	2	8	3	3	7
Eu-155	60	60	195	179	181	586	174	175	470
Fe-55	6,762	140,080	3,278,689	20,285	420,240	9,836,066	31,793	601,443	6,645,990
Gd-153	51	51	165	152	153	496	136	136	366
H-3	34	44	127	101	133	381	312	412	987
I-129	0.1	0.1	0.2	0.2	0.3	0.7	0	1	1
K-40	2	5	20	5	14	59	9	20	66
Mn-54	1	1	4	3	3	11	5	5	13

Table 7-1. Example of a Look-up Table Containing Generic Radionuclide Soil Concentrations (all values in pCi/g) - (Continued)

Radionuclide	1E-4 Risk Limit			3E-4 Risk Limit			15 mrem/year Dose Rate Limit		
	Rural Residential	Suburban	Commercial/Industrial	Rural Residential	Suburban	Commercial/Industrial	Rural Residential	Suburban	Commercial/Industrial
Na-22	0.4	0.5	1.5	1	1	5	2	2	5
Nb-94	1	1	2	2	2	6	2	2	5
Ni-59	897	6,892	30,475	2,690	20,676	91,424	7,049	53,744	197,915
Ni-63	286	2,193	283,696	857	6,580	851,087	2,616	20,105	2,162,318
Np-237+D	1	1	1	2	2	4	0.2	0.2	0.3
Pa-231	3	3	9	9	10	28	1	1	2
Pb-210+D	3	9	1,286	10	27	3,859	3	8	952
Pm-147	4,121	13,563	440,684	12,362	40,689	1,322,052	54,905	178,976	1,618,996
Pu-238	101	325	837	302	975	2,510	31	100	211
Pu-239	104	338	866	313	1,015	2,598	27	88	191
Pu-240	104	338	865	313	1,014	2,596	27	88	190
Pu-241	3,076	7,671	22,466	9,228	23,012	67,399	870	2,524	5,607
Pu-242	109	352	896	326	1,057	2,689	29	93	202
Pu-244+D	1	1	3	3	3	10	9	11	30
Ra-226 (+Rn)	0.1	0.1	0.3	0.3	0.3	0.9	0.1	0.1	0.3
Ra-226 (-Rn)	0.4	0.5	2	1	2	5	1	1	5
Ra-228+D	1	1	2	2	2	6	2	2	6
Ru-106+D	4	5	17	12	14	50	20	21	57
Sb-125+D	3	3	9	8	8	27	10	10	28
Sm-147	137	184	461	410	551	1,382	113	161	316
Sm-151	12,752	42,732	1,614,361	38,256	128,195	4,843,084	147,203	543,281	3,163,222
Sr-90+D	1	5	44	4	15	131	3	13	92
Tc-99	2	2	7	5	7	22	18	25	62
Th-228+D	1	1	2	2	2	6	2	2	6
Th-229+D	4	5	14	13	14	43	7	11	21
Th-230 (+Rn)	0.5	0.5	2	1	2	5	1	1	2
Th-230 (-Rn)	1	2	6	4	5	18	3	5	16
Th-232	0.3	0.4	1	1	1	4	1	1	3

Table 7-1. Example of a Look-up Table Containing Generic Radionuclide Soil Concentrations (all values in pCi/g) - (Continued)

Radionuclide	1E-4 Risk Limit			3E-4 Risk Limit			15 mrem/year Dose Rate Limit		
	Rural Residential	Suburban	Commercial/Industrial	Rural Residential	Suburban	Commercial/Industrial	Rural Residential	Suburban	Commercial/Industrial
Th-Sep (+Rn)	0.2	0.2	1	1	1	2	0.4	0.4	1
Th-Sep (-Rn)	0.3	0.3	1	1	1	3	1	1	3
Th-Series (+Rn)	0.3	0.4	1	1	1	4	1	1	3
Th-Series (-Rn)	0.3	0.4	1	1	1	4	1	1	3
Tl-204	53	171	13,160	158	514	39,481	250	802	34,827
U-232	1	1	4	4	4	11	2	2	4
U-233	5	6	14	16	17	42	7	7	14
U-234	5	6	14	16	17	42	7	7	15
U-235+D	4	4	11	12	13	34	6	7	14
U-236	6	6	15	17	18	45	7	8	16
U-238+D	4	4	9	11	11	28	7	8	15
DU (+Rn)	3	3	9	10	10	26	6	7	14
DU (-Rn)	3	3	9	10	10	26	6	7	14
U-Sep (+Rn)	2	2	5	6	7	16	3	4	7
U-Sep (-Rn)	2	2	5	6	7	16	3	4	7
U-Series (+Rn)	0.1	0.1	0.3	0.3	0.3	1	0.1	0.1	0.3
U-Series (-Rn)	0.3	0.4	1	1	1	4	1	1	3
Zn-65	1	2	5	2	5	16	3	7	21

NOTE: Data represent above-background (i.e., net) radionuclide soil concentrations. They are provided as examples only and should not be used or cited. Values were derived using the DOE RESRAD computer code (version 5.19), assuming generic site data; rural residential, suburban, and commercial/industrial land use exposure scenarios; EPA's 30-year radionuclide cancer slope factors for risk calculations and DOE's RESRAD dose conversion factors for dose rate calculations; and a 1,000-year time horizon for all calculations.

horizon for calculations. It should be noted that RSC values presented in this table are preliminary results and are provided only to demonstrate the concept of a look-up table approach. EPA is aware that different RSC values are possible using different models, such as PRESTO or RAGS/HHEM, and modeling assumptions.

The principal advantage of using look-up tables is that these tables might simplify implementation. Site owners/operators could identify the radionuclides present at their sites, then look up the required cleanup concentrations in a table based on exposure assumptions that most closely match their own site-specific conditions. Compliance would also be simple. Upon termination of remedial activities, site owners/operators could follow EPA guidance on verification sampling and analysis procedures to demonstrate that residual levels of radionuclides meet or exceed the required cleanup level.

The primary disadvantage of the look-up table approach becomes apparent when actual sites are considered: the degree of protection afforded by applying generic cleanup concentrations to specific sites is difficult to measure. Considering the diversity and complexity of sites contaminated with radioactive materials, it is possible that generic soil cleanup concentrations may be overly protective at some sites and not protective enough at others. However, it is likely that the use of generic soil cleanup concentrations at most sites would result in more, rather than less, protective remedies, given the conservatism EPA is building into its exposure and risk modeling to cover the full range of potential site conditions. From a regulatory standpoint, this may be a prudent approach. However, from a cost-benefit perspective, it may be undesirable and more costly to use conservative implementation guidance to achieve an acceptable dose or risk limit.

7.1.2.2 Look-up Table With Adjustment Factors or Site-Specific Modeling Approach

This approach offers greater flexibility and specificity than the look-up table-only approach, because it combines look-up tables with EPA-derived adjustment factors or a suitable pathway model and guidance to derive site-specific cleanup concentrations. Under this approach, site owners/operators would have a choice, by way of a tiered approach, of selecting or deriving soil cleanup concentrations. A possible three-tiered approach may be envisioned as follows:

- Tier 1: A site owner/operator or regulatory agency would select a generic RSC value(s) for the radionuclide(s) of concern from an EPA-developed look-up table(s);
- (a) If the radionuclide concentration in soil at the site after cleanup is less than or equal to the RSC, no further remedial action would be required;
 - (b) If the radionuclide concentration in soil at the site after cleanup exceeds the RSC, the site owner/operator could either perform further remedial action or adjust the RSC to reflect site-specific conditions according to Tier 2.
- Tier 2: A site owner/operator or regulatory agency would select a generic RSC value(s) for the radionuclide(s) of concern from a look-up table(s) developed by EPA and would adjust the RSC(s) to fit site-specific conditions using Agency-derived tables of adjustment factors;
- (a) If the radionuclide concentration in soil at the site after cleanup meets or is more stringent than the adjusted RSC, then no further remedial action would be required;
 - (b) If the radionuclide concentration in soil at the site after cleanup is greater than the adjusted RSC, then the site owner/operator would have the choice of continuing remedial action or adjusting the RSC to reflect site-specific conditions using site-specific modeling according to Tier 3.
- Tier 3: A site owner/operator or regulatory agency would derive site-specific RSC value(s) for the radionuclide(s) of concern using a suitable model(s) and guidance;
- (a) If the radionuclide concentration in soil at the site after cleanup meets the site-specific RSC, then no further remedial action would be required;
 - (b) If the radionuclide concentration in soil at the site after cleanup is greater than the site-specific RSC, then the site owner/operator would be required to continue remedial action.

EPA is in the process of preparing and evaluating tables of adjustment factors to customize RSCs to reflect site-specific conditions. Table 7-2 is an example of such a table of adjustment factors. These factors were derived using RESRAD (version 5.19) assuming the rural residential exposure scenario discussed in Chapter 2. These factors can be used in conjunction with data in Table 7-1 to adjust generic RSC values to account for site-specific contaminated zone areas, contaminated zone thicknesses, infiltration rates, K_d values, and unsaturated zone thicknesses that differ from the base case assumptions used to model the generic test site (see Chapter 3). Again, it should be noted that RSC values presented in this table are preliminary results and are provided only to demonstrate the concept of a look-up table approach. For example, a site owner/operator could use the factors in Table 7-2 to adjust the generic RSC value for Am-241 to account for a contaminated zone thickness of 0.1 meters, as follows:

- Step 1. The site owner would look up the RSC value for Am-241 in Table 7-1 at the $1E-4$ risk cleanup level for rural residential exposure (i.e., 90 pCi/g);
- Step 2. The site owner would then look up the appropriate adjustment factor for Am-241 in Table 7-2 for a contaminated zone thickness of 0.1 m (i.e., 2.39); and
- Step 3. The site owner would multiply the answers from Steps 1 and 2 to obtain the adjusted RSC for Am-241 specific for the subject site (i.e., $90 \text{ pCi/g} \times 2.39 = 215 \text{ pCi/g}$).

Similar adjustments could be made for other RSCs and exposure scenarios. However, as designed, the factors in Table 7-2 permit site owners/operators to adjust only one factor site-specifically at a time, such as the K_d value, but not the K_d value and the contaminated zone thickness simultaneously. The reason for this limitation is that each adjustment factor was derived independently from others. As a result, EPA is uncertain at this time whether or not varying more than one parameter value simultaneously will result in a new adjustment factor that is larger or smaller than the two values independently or combined, as illustrated in Table 7-3 by way of a comparison between RSC values derived for selected radionuclides assuming generic and reference site data. As indicated by the values presented in this table, most of the RSC values derived for the reference sites fall within the range of values presented for the generic site. This would suggest that the adjustment factors in Table 7-2—which were used to develop the range of generic site values in the table—are reasonable

Table 7-2. Example of a Table of Adjustment Factors for Rural Residential Exposures

Nuclide	Contaminated Zone Area (m2)						Contaminated Zone Thickness (m)						Infiltration Rate (m/yr)						Kd (ml/g)					Unsaturated Zone Thickness (m)						
	100	1,000	10,000	100,000	1,000,000	10,000,000	0.02	0.1	0.2	1	2	3	0.001	0.025	0.1	0.5	1	2	Low	Default	Mid-1	Mid-2	High	0	0.5	1	2	10	50	
Ac-227 +D	2.04	1.05	1	1	1	1	5.04	1.55	1.20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ag-108m +D	1.95	1.11	1	0.95	0.95	0.95	4.74	1.47	1.14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ag-110m +D	1.90	1.09	1	0.97	0.97	0.97	5.28	1.56	1.16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Am-241	2.86	1.04	1	0.98	0.98	0.98	9.29	2.39	1.64	1	1	1	1	1	1	1	1	1	NC	1	1	1	1	1	1	1	1	1	1	1
Am-243 +D	1.92	1.06	1	1	1	1	3.48	1.27	1.08	1	1	1	1	1	1	1	1	1	0.01	1	1	1	1	1	1.05	1	1	1	1	1
Bi-207	1.84	1.06	1	1	1	1	4.56	1.42	1.10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
C-14	150.17	5.24	1	0.22	0.07	0.01	44.90	8.98	4.49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cd-109	10.76	1.09	1	0.92	0.92	0.92	42.93	8.75	4.42	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ce-144 +D	1.92	1.06	1	1	1	1	5.58	1.62	1.19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cl-36	41.08	4.11	1	0.54	0.54	0.54	44.93	8.98	4.49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cm-243	1.80	1.06	1	1	1	1	3.56	1.23	1.03	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cm-244	3.03	1.03	1	0.99	0.98	0.98	14.07	2.82	1.78	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cm-248	3.16	1.03	1	0.99	0.98	0.98	14.48	2.90	1.82	1	1	1	1	1	1	1	1	1	0.09	1	1	1	1	1	0.98	1	1	1	1	1
Co-57	2.02	1.12	1	0.94	0.94	0.94	3.27	1.26	1.11	1	1	1	1	1	1	1	1	1	0.42	1	1	1	1	1	1	1	1	1	1	1
Co-60	1.91	1.09	1	0.97	0.97	0.97	5.52	1.60	1.18	1	1	1	1	1	1	1	1	1	0.40	1	1	1	1	1	1	1	1	1	1	1
Cs-134	2.11	1.17	1	0.90	0.90	0.90	5.29	1.60	1.21	1	1	1	1	1	1	1	1	1	0.18	1	1	1	1	1	1	1	1	1	1	1
Cs-135	30.55	3.06	1	0.57	0.57	0.22	27.86	5.57	3.15	1	1	1	1	1	1	1	1	1	0.02	1	1	1	1	1	1	1	1	1	1	1
Cs-137 +D	2.35	1.26	1	0.85	0.85	0.85	5.79	1.73	1.30	1	1	1	1	1	1	1	1	1	0.07	1	1	1	1	1	1	1	1	1	1	1
Eu-152	1.82	1.06	1	1	1	1	5.38	1.56	1.15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Eu-154	1.82	1.06	1	1	1	1	5.24	1.53	1.14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Eu-155	1.84	1.06	1	0.99	0.99	0.99	2.58	1.10	1.02	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Fe-55	51.53	5.28	1	0.53	0.53	0.53	8.89	1.78	1.17	1	1	1	1	1	1	1	1	1	0.03	1	1	1	1	1	1	1	1	1	1	1
Gd-153	1.84	1.06	1	1	1	1	2.57	1.10	1.01	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
H-3	11.12	2.68	1	0.40	0.28	0.27	65.29	13.06	6.80	0.60	1	0.90	1.11	1.31	1.45	1	0.61	1.87	1.21	1	119.01	311.75	311.75	1.68	1.68	0.90	1	1.36	1.68	
I-129	14.27	4.03	1	0.28	0.17	0.11	12.85	2.75	1.73	0.93	1	0.98	39.11	9.69	3.51	1	0.65	0.47	0.21	1	2.59	16.14	39.11	0.99	0.99	1	1	1.01	1.02	
K-40	5.11	1.73	1	0.69	0.41	0.08	14.49	3.71	2.38	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.97	1	1	1	1	1
Mn-54	1.86	1.06	1	1	1	1	5.22	1.54	1.15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Na-22	1.94	1.12	1	0.95	0.95	0.95	5.37	1.58	1.17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Nb-94	1.82	1.06	1	1	1	1	4.81	1.45	1.11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ni-59	25.69	2.57	1	0.60	0.60	0.50	29.70	5.94	3.31	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ni-63	25.70	2.57	1	0.60	0.60	0.60	29.71	5.94	3.31	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Np-237 +D	8.49	2.65	1	0.37	0.22	0.13	13.35	2.87	1.82	0.91	1	0.97	8.07	6.95	3.39	1	0.59	0.42	0.08	1	5.22	8.07	8.07	0.96	0.97	0.98	1	1.06	1.08	
Pa-231	3.08	1.41	1	0.60	0.45	0.34	37.17	7.68	4.58	0.70	1	0.88	1.02	1.03	1.07	1	0.79	0.67	1	1	1.07	1.04	1.04	0.67	0.83	0.88	1	1.23	1.23	

Table 7-2. Example of a Table of Adjustment Factors for Rural Residential Exposures (Continued)

Nuclide	Contaminated Zone Area (m2)						Contaminated Zone Thickness (m)						Infiltration Rate (m/yr)						Kd (ml/g)					Unsaturated Zone Thickness (m)					
	100	1,000	10,000	100,000	1,000,000	10,000,000	0.02	0.1	0.2	1	2	3	0.001	0.025	0.1	0.5	1	2	Low	Default	Mid-1	Mid-2	High	0	0.5	1	2	10	50
Pb-210 +D	10.97	1.11	1	0.90	0.90	0.90	33.64	6.73	3.64	1	1	1	1	1	1	1	1	0.04	1	1	1	1	1	1	1	1	1	1	1
Pm-147	12.74	1.40	1	0.76	0.76	0.76	17.77	3.63	2.22	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pu-238	2.97	1.05	1	0.97	NC	0.96	13.53	2.71	1.72	1	1	1	1	1	1	1	1	0.02	1	1	1	1	1	1	1	1	1	1	1
Pu-239	2.97	1.05	1	0.97	0.96	0.96	13.52	2.71	1.71	1	1	1	1	1	0.37	0.28	0.01	1	1	1	1	1	0.42	0.43	0.53	1	1	1	1
Pu-240	2.96	1.05	1	0.97	0.96	0.96	13.51	2.71	1.71	1	1	1	1	1	0.40	0.25	0.01	1	1	1	1	1	0.43	0.46	0.57	1	1	1	1
Pu-241 +D	2.86	1.04	1	0.98	0.97	0.97	55.76	4.20	1.89	0.99	1	1	0.99	0.99	0.99	1	1.01	1.02	0.01	1	0.99	0.99	0.99	0.96	1	1	1	1	1
Pu-242	2.96	1.05	1	0.97	0.96	0.96	13.48	2.70	1.71	1	1	1	1	1	0.36	0.27	NC	1	1	1	1	1	0.41	0.43	0.51	1	1	1	1
Pu-244 +D	1.83	1.06	1	1	1	1	4.60	1.42	1.10	1	1	1	1	1.01	1	1	1.75	2.01	0.66	1	1	1.01	1	1.11	1.23	1.33	1	1	1
Ra-226 +D	1.52	1.02	1	0.97	0.90	0.74	33.44	9.34	6.62	0.22	1	0.96	1	1	1	1	1	0.85	1	1	1	1	1	1	1	1	1	1	1
Ra-228 +D	2.08	1.08	1	0.98	0.96	0.91	7.93	1.97	1.36	1	1	1	1	1	1	1	1	1.01	1	1	1	1	1	1	1	1	1	1	1
Ru-106 +D	2.20	1.07	1	0.97	0.97	0.97	5.28	1.64	1.27	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sb-125 +D	1.82	1.06	1	1	1	1	4.27	1.36	1.08	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sm-147	9.00	2.11	1	0.58	0.55	0.37	28.77	5.75	3.62	0.74	1	0.92	2.04	2.04	2.04	1	0.66	0.50	1	1	2.04	2.04	2.04	0.87	0.91	0.94	1	2.04	2.04
Sm-151	13.11	1.40	1	0.76	0.76	0.76	18.25	3.67	2.23	1	1	1	1	1	1	1	1	1	1	1	1	1	0.97	1	1	1	1	1	1
Sr-90 +D	15.63	1.56	1	0.71	0.71	0.71	42.75	8.55	4.34	1	1	1	1	1	1	1	1	0.05	1	1	1	1	1	1	1	1	1	1	1
Tc-99	10.25	1.85	1	0.47	0.31	0.22	22.01	4.55	2.74	0.81	1	0.92	1.73	1.73	1.73	1	0.73	0.57	0.77	1	1.73	1.73	1.73	0.86	0.89	0.93	1	1.73	1.73
Th-228 +D	1.82	1.06	1	1	1	1	6.83	1.82	1.26	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Th-229 +D	1.88	1.06	1	1	1	1	5.94	1.66	1.20	1	1	1	1	1	1	1	1	1.02	1	1	1	1	1	1	1	1	1	1	1
Th-230	1.60	1.03	1	0.96	0.89	0.72	5183.18	165.59	48.79	0.19	1	0.59	0.88	0.88	0.90	1	1.13	1.26	1.47	1	0.91	0.88	0.88	0.99	0.99	1	1	1	1
Th-232	2.06	1.08	1	0.98	0.96	0.91	22.65	2.59	1.52	0.99	1	1	0.99	0.99	1	1	1.01	1.01	1.05	1	1	0.99	0.99	1	1	1	1	1	1
Tl-204	12.14	1.31	1	0.79	0.79	0.79	34.01	7.80	4.15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
U-232	1.07	0.62	1	1.05	1.17	0.98	53.43	2.03	1.08	0.68	1	0.87	0.54	0.55	0.55	1	0.76	0.66	0.04	1	0.55	0.54	0.54	0.51	0.59	0.71	1	0.59	0.59
U-233	9.59	2.92	1	0.36	0.22	0.18	13.02	2.79	1.75	0.93	1	0.97	6.59	6.26	3.74	1	0.57	0.41	0.02	1	6.62	6.91	6.47	0.99	0.99	1	1	1.02	1.75
U-234	9.72	2.94	1	0.36	NC	0.18	12.97	2.78	1.75	0.93	1	0.97	11.35	7.76	3.95	1	0.57	0.40	0.02	1	8.06	11.85	11.18	0.99	0.99	0.99	1	1.02	1.76
U-235 +D	5.27	2.19	1	0.41	0.26	0.21	10.09	3.35	2.10	0.87	1	0.95	2.91	3.55	2.51	1	0.62	0.46	0.02	1	3.90	3.14	2.85	0.91	0.94	0.96	1	1.18	2.12
U-236	9.73	2.94	1	0.36	0.22	0.18	12.97	2.78	1.75	0.93	1	0.97	24.78	11.32	4.02	1	0.57	0.40	0.02	1	11.32	24.78	24.78	0.99	0.99	0.99	1	1.02	1.77
U-238 +D	8.59	2.78	1	0.37	0.23	0.18	13.35	2.86	1.80	0.92	1	0.97	11.46	8.50	3.66	1	0.58	0.41	NC	1	8.78	11.46	11.45	0.97	0.98	0.99	1	1.04	1.81
Zn-65	4.55	2.03	1	0.65	0.65	0.65	10.84	3.01	2.06	1	1	1	1	1	1	1	1	0.73	1	1	1	1	1	1	1	1	1	1	1

NOTES: Adjustment factors are used to tailor (i.e., either increase or decrease) radionuclide soil cleanup concentrations derived using generic site data (see Table 7-1) to fit site-specific conditions. Refer to the accompanying text for a discussion of the derivation and application of adjustment factors included in this table. These example adjustment factors are applicable only to rural residential exposures. They are provided for illustration only and should not be used or cited.

Table 7-3. Comparison of Generic and Reference Radiation Site Soil Concentrations (in pCi/g) for Selected Radionuclides of Concern Corresponding to a 1E-4 Risk Limit, Assuming Rural Residential Exposure^(a)

Category	Radionuclides ^(b)	Generic Site Radionuclide Soil Concentrations (pCi/g) at 1E-4 Risk Limit		Reference Site Radionuclide Soil Concentrations (pCi/g) at 1E-4 Risk Limit ^(e)		
		Base Case Conc. ^(c)	Range ^(d)	# of Sites	Average	Range
Naturally Occurring Radionuclides	U-238 +D	4	0.6 - 47	(12)	58	3 - 112
	U-235 +D	4	0.1 - 42	(11)	15	4 - 22
	U-234	5	0.1 - 61	(12)	258	4 - 592
	U-238 Series (including Rn-222)	0.1	NC	(3)	0.5	0.1 - 1
	Separated uranium isotopes (including Rn-222)	2	NC	(6)	40	2 - 77
	Depleted uranium isotopes (including Rn-222)	3	NC	(3)	71	69 - 72
	Th-232	0.3	0.3 - 8	(5)	0.3	0.3 - 0.3
	Th-230	0.5	0.3 - 2,459	(1)	4	N/A
	Th-228 +D	1	0.6 - 4	(5)	1	1 - 1
	Ra-228 +D	1	0.5 - 5	(5)	1	1 - 1
	Ra-226 (including Rn-222)	0.1	0.1 - 3	(2)	0.2	0.1 - 0.3
	Ra-226 (excluding Rn-222)	0.4	NC	(2)	0.4	0.4 - 0.5

Table 7-3. Comparison of Generic and Reference Radiation Site Soil Concentrations (in pCi/g)^(a) - (Continued)

Category	Radionuclides ^(b)	Generic Site Radionuclide Soil Concentrations (pCi/g) at 1E-4 Risk Limit		Reference Site Radionuclide Soil Concentrations (pCi/g) at 1E-4 Risk Limit ^(e)		
		Base Case Conc. ^(c)	Range ^(d)	# of Sites	Average	Range
Man-made Radionuclides	Am-241	90	90 - 840	(3)	258	89 - 369
	Co-60	0.4	0.4 - 2	(3)	0.5	0.5 - 0.5
	Cs-137 +D	1	0.1 - 6	(11)	3	2 - 4
	Pu-239	104	12 - 1,412	(3)	359	102 - 532
	Sr-90 +D	1	0.1 - 53	(3)	10	10 - 10
	Tc-99	2	0.4 - 40	(1)	4	N/A

NOTES:

- (a) All values were derived using the DOE RESRAD computer code (version 5.19), assuming a rural residential land use exposure scenario (discussed in Chapter 2) and a 1,000-year time horizon for calculations. Soil concentrations correspond to a 1E-4 (i.e., 1×10^{-4}) target risk limit and vary linearly with risk level. To obtain soil concentrations at 1E-6, 1E-5, 5E-4 or 1E-3, multiply the values in the columns by 0.01, 0.1, 5, or 10, respectively.
- (b) Includes the most commonly encountered radionuclides at the reference radiation sites. "+D" designates the inclusion of the radioactive decay products.
- (c) Data taken from Table 7-1. The base case analysis assumed the following generic site data: contaminated zone area = 10,000 m²; contaminated zone thickness = 2 m; infiltration rate = 0.5 m/yr; default, radionuclide-specific Kd values (see Chapter 3); uncontaminated, unsaturated zone thickness = 2 m; and a well depth intake = 3 m. (Refer to Chapter 3 for detailed discussions of the model assumptions and analysis.)
- (d) Reported range of possible values based on a RESRAD sensitivity analysis of key site-specific parameter input values. (See Chapter 3 for a detailed discussion of this analysis and results.)
- (e) Reference radiation site data are provided in Chapter 4. "# of Sites" refers to the total number of reference sites at which the specified radionuclide is a principal contaminant.

NC = Not calculated; N/A = Not applicable

when used to adjust one parameter value only. Nevertheless, EPA is aware of the disadvantages associated with the single-variable adjustment factor approach and is currently investigating the possibility of developing tables of adjustment factors that account for multiple combinations of site-specific data.

As stated previously, a combined look-up-table and pathway model approach that gives site owners/operators the choice of either generic or site-specific cleanup concentrations may offer greater flexibility in developing and implementing the regulations than that afforded by a look-up table-only approach. As part of the data quality objectives process, site owners/operators who perform site-specific modeling would be required to justify and document their assumptions, and this, in turn, might require implementing agency review and approval of these assumptions and the site-specific modeling. A primary disadvantage of this approach is that the additional modeling and documentation responsibilities imposed on site owners/operators and the corresponding effort and expertise required to review the pathway analysis may make it more costly and difficult to enforce than the look-up table-only approach.

EPA is continuing its evaluation of possible approaches and models for deriving and adjusting radionuclide soil cleanup concentrations site-specifically.

7.2 TECHNICAL FEASIBILITY ISSUES ASSOCIATED WITH IMPLEMENTATION

An important consideration in the development of soil cleanup levels is the feasibility of implementing the cleanup criteria in actual practice in the field. If the cleanup levels are set below the lower limits of detection for laboratory and field measurements techniques, or if the background radiation or radioactivity levels are highly variable and comparable to the cleanup levels, it will be very difficult to implement and enforce the regulations based on those cleanup criteria.

This section examines the feasibility of attaining and complying with derived radionuclide soil concentrations by comparing RSC values against (1) available radioanalytical laboratory and field detection limits (Section 7.2.1), (2) typical background concentrations of radionuclides in U.S. soils (Section 7.2.2), and (3) EPA's proposed radionuclide drinking water standards (Section 7.2.3).

7.2.1 Lower Limits of Detection

The lower limit of detection is a measure of the sensitivity of a radioanalytical method. The detection limit discussed here is the minimum detectable concentration (MDC) of a radionuclide in soil based on an analysis of a soil sample. The MDC is a statistical estimate of the ability of a specific radiochemical method, combined with a specific detection system, to identify the presence of a specific radionuclide in a given soil sample.

MDCs are specific for each radionuclide, each detector, each radiochemical method, and each measurement technique. Sample size, count time, detector efficiency, background radiation, and nuclear decay characteristics are important factors in calculating the MDC. Because of these variables, the MDC will vary for each analysis. The laboratory performing the analyses is the best source of information about the detection limits.

7.2.1.1 Laboratory Analyses

A laboratory analysis for a radionuclide may be defined as a measurement technique or combination of techniques designed to measure the radiation from that radionuclide. Such techniques may include spectral analysis, where the specific energy of the radiation is measured, radiochemical purification, where the isotope of interest is chemically separated from interfering contaminants prior to measurement, or a combination of the two. These measurements require sensitive detection instruments and methods that are generally available only in a laboratory.

Laboratory analyses of collected media samples are used to conduct broad spectrum analyses for all radionuclide types, and to avoid the possibility of false negatives from field measurements alone. They generally provide more information for a wider range of radionuclides than field analyses, and are more sensitive than field screening or field analytical techniques. Laboratory analyses can also provide data generated with a full complement of quality control/quality assurance checks of specified types and frequencies according to specified analytical protocols for radiological parameters --*i.e.*, they allow an estimate of total error.

Laboratory analyses produce lower MDCs because of the increased shielding and lower backgrounds of fixed detectors, increased counting times, and the selectiveness of the

particular analyses. Drawbacks to laboratory analyses include increased sample cost per analysis and the additional time required for sample preparation and measurement.

Two analytical laboratories were surveyed to obtain information on analytical capabilities for laboratory analyses. Tables 7-4 through 7-6 list MDCs for several radionuclides for laboratory analysis of soils, and compares generic RSC values with these MDCs and typical background radionuclide soil concentrations, assuming three different land use exposure scenarios and three different dose/risk limits. The radiochemical method, detector type, sample size, count time, background, and average sample cost per analysis information associated with each MDC are included in Appendix O.

7.2.1.2 Field Surveys

Field surveys are measurement techniques where total activity from a type of radiation (alpha, beta, and/or gamma) is measured. This measurement is then used to estimate radioactivity concentrations and radiation exposure rates based on decay characteristics. For radionuclides widely distributed in the environment, a field survey generally involves exposure rate measurements.

Field analyses are typically used to gather preliminary information on the presence of radioactive materials, to reduce errors associated with spatial heterogeneity, and to prepare preliminary maps to guide further sampling. These preliminary measurements are typically referred to as screening measurements. In addition to screening, field analyses can be used to identify some contaminants, verify that samples leaving a site comply with U.S. Department of Transportation (DOT) regulations, and to ensure that the radioactivity of a sample sent off site for analysis complies with the recipient laboratory's radioactive material license limits.

Field surveys usually provide data only on near-surface gamma-emitting radionuclide soil concentrations and gamma radiation exposure rates and often miss contamination at depth due to the shielding effect of over-lying soil or other surface cover. Since alpha and beta radiations lack the range of gamma photons in soil, their detection in the field is difficult.

Field survey instruments provide real time results and can be used to detect a wide range of radionuclides. No sample preparation is required, and individual samples may be measured

Table 7-4. Comparison of Rural Residential Land Use Soil Concentrations Needed to Achieve Various Residual Dose/Risk Limits With Typical U.S. Background Concentrations and Minimum Detectable Concentrations (all values are in pCi/g)

Radionuclide	Background Soil Concentration		Laboratory MDC	1E-4 Risk Limit		3E-4 Risk Limit		15 mrem/yr Dose Rate Limit	
	Typical	Range		Concentration	Achievable?	Concentration	Achievable?	Concentration	Achievable?
Ac-227+D	0.01	0.001 - 0.03	0.02	3	○	10	○	2	○
Ag-108m+D	0	N/A	0.01	1	○	2	○	3	○
Ag-110m+D	0	N/A	0.01	0.3	○	1	○	1	○
Am-241	0.01	0.003 - 0.015	0.01	90	○	271	○	26	○
Am-243+D	0	N/A	0.03	12	○	37	○	13	○
Bi-207	0	N/A	0.01	1	○	2	○	3	○
C-14	0.25	0.01 - 2.5	1	1	●	3	●	3	●
Cd-109	0	N/A	0.1	11	○	32	○	55	○
Ce-144+D	0	N/A	0.03	22	○	67	○	91	○
Cl-36	0	N/A	0.7	0.1	◐	0.3	◐	1	◐
Cm-243	0	N/A	0.03	21	○	62	○	39	○
Cm-244	0	N/A	0.03	125	○	376	○	53	○
Cm-248	0	N/A	0.03	26	○	77	○	8	○
Co-57	0	N/A	0.004	16	○	48	○	54	○
Co-60	0	N/A	0.01	0.4	○	1	○	1	○
Cs-134	0	N/A	0.01	1	○	2	○	2	○
Cs-135	0	N/A	1	40	○	120	○	196	○
Cs-137+D	0.7	0.1 - 3.5	0.01	1	◑	4	◑	5	◑
Eu-152	0	N/A	0.02	1	○	3	○	3	○
Eu-154	0	N/A	0.01	1	○	2	○	3	○
Eu-155	0	N/A	0.02	60	○	179	○	174	○
Fe-55	0	N/A	1	6,762	○	20,285	○	31,793	○
Gd-153	0	N/A	0.01	51	○	152	○	136	○
H-3	7	0.8 - 20	0.02	34	○	101	○	312	○
I-129	3E-05	1E-05 - 9E-05	2	0.1	◐	0.2	◐	0.4	◐
K-40	10	3 - 20	0.1	2	◑	5	◑	9	◑

Table 7-4. Comparison of Rural Residential Soil Concentrations With MDCs and Background (all values in pCi/g) - (Continued)

Radionuclide	Background Soil Concentration		Laboratory MDC	1E-4 Risk Limit		3E-4 Risk Limit		15 mrem/yr Dose Rate Limit	
	Typical	Range		Concentration	Achievable?	Concentration	Achievable?	Concentration	Achievable?
Mn-54	0	N/A	0.1	1	○	3	○	5	○
Na-22	0	N/A	0.02	0.4	○	1	○	2	○
Nb-94	0	N/A	0.01	1	○	2	○	2	○
Ni-59	0	N/A	1	897	○	2,690	○	7,049	○
Ni-63	0	N/A	2	286	○	857	○	2,616	○
Np-237+D	0	N/A	0.03	1	○	2	○	0.2	○
Pa-231	0.01	0.001 - 0.03	0.03	3	◐	9	◐	1	◐
Pb-210+D	1	0.23 - 4.2	2	3	●	10	○	3	●
Pm-147	0	N/A	1	4,121	○	12,362	○	54,905	○
Pu-238	0.00	0.0005 - 0.002	0.03	101	○	302	○	31	○
Pu-239	0.03	0.009 - 0.04	0.03	104	○	313	○	27	○
Pu-240	0.03	0.009 - 0.04	0.03	104	○	313	○	27	○
Pu-241	0	N/A	1	3,076	○	9,228	○	870	○
Pu-242	0	N/A	0.03	109	○	326	○	29	○
Pu-244+D	0	N/A	0.03	1	○	3	○	9	○
Ra-226 (+Rn)	1	0.23 - 4.2	0.15	0.1	●	0.3	◐	0.1	●
Ra-226 (-Rn)	1	0.23 - 4.2	0.15	0.4	◐	1	◐	1	◐
Ra-228+D	1	0.10 - 3.4	0.15	1	◐	2	◐	2	◐
Ru-106+D	0	N/A	0.15	4	○	12	○	20	○
Sb-125+D	0	N/A	0.1	3	○	8	○	10	○
Sm-147	0	N/A	0.1	137	○	410	○	113	○
Sm-151	0	N/A	0.02	12,752	○	38,256	○	147,203	○
Sr-90+D	1	0.2 - 4.0	0.02	1	◐	4	◐	3	◐
Tc-99	0	N/A	1	2	◑	5	○	18	○
Th-228+D	1	0.10 - 3.4	1	1	●	2	●	2	●
Th-229+D	0	N/A	1	4	○	13	○	7	○

Table 7-4. Comparison of Rural Residential Soil Concentrations With MDCs and Background (all values in pCi/g) - (Continued)

Radionuclide	Background Soil Concentration		Laboratory MDC	1E-4 Risk Limit		3E-4 Risk Limit		15 mrem/yr Dose Rate Limit	
	Typical	Range		Concentration	Achievable?	Concentration	Achievable?	Concentration	Achievable?
Th-230	1	0.12 - 3.8	0.05	0.5	☐	1	☐	1	☐
Th-232	1	0.10 - 3.4	0.03	0.3	☐	1	☐	1	☐
Tl-204	0	N/A	0.05	53	○	158	○	250	○
U-232	0	N/A	0.05	1	○	4	○	2	○
U-233	0	N/A	1	5	○	16	○	7	○
U-234	1	0.12 - 3.8	0.03	5	☐	16	○	7	○
U-235+D	0.03	0.01 - 0.05	0.03	4	○	12	○	6	○
U-236	0.01	0.005 - 0.02	0.03	6	○	17	○	7	○
U-238+D	1	0.12 - 3.8	0.03	4	☐	11	○	7	○
Zn-65	0	N/A	0.03	1	○	2	○	3	○
				<i>Totals:</i> ○ = 45/62 (73%) ☐ = 10/62 (16%) ☐ = 3/62 (5%) ● = 4/62 (6%)		<i>Totals:</i> ○ = 49/62 (79%) ☐ = 9/62 (15%) ☐ = 2/62 (3%) ● = 2/62 (3%)		<i>Totals:</i> ○ = 48/62 (77%) ☐ = 8/62 (13%) ☐ = 2/62 (3%) ● = 4/62 (6%)	

Key:

- Neither MDC nor background are of concern in achieving the stated dose/risk limit.
- ☐ Background may limit the ability to achieve the stated dose/risk limit.
- ☐ Minimum detectable concentration (MDC) may limit the ability to achieve the stated dose/risk limit.
- Both the MDC and background may limit the ability to achieve the stated dose/risk limit.

Sources: Background radionuclide soil concentration data were taken from NCRP Report No. 94 prepared by the National Council on Radiation Protection and Measurements. Laboratory MDC information were provided by two commercial laboratories: Analytical Technologies, Inc., Fort Collins, CO, and International Technology Corporation, Oak Ridge, TN. All data presented in this table are currently being reviewed by the EPA and are subject to revision.

Notes: Generic radionuclide soil concentrations associated with the various dose/risk limits are above-background (i.e., net) radioactivity concentrations. They were calculated using the DOE RESRAD computer code (version 5.19), assuming rural residential land use exposure scenarios and generic site data. (See text for discussions of model assumptions, calculations, and results.) Also, note that MDCs and background are only two pertinent issues. Other issues related to achieving the various residual dose/risk limits are the availability of treatment technologies and disposal capacity; the threats to ecosystems and workers; potential transportation risks; and higher costs.

Table 7-5. Comparison of Suburban Land Use Soil Concentrations Needed to Achieve Various Residual Dose/Risk Limits With Typical U.S. Background Concentrations and Minimum Detectable Concentrations (all values are in pCi/g)

Radionuclide	Background Soil Concentration		Laboratory MDC	1E-4 Risk Limit		3E-4 Risk Limit		15 mrem/yr Dose Rate Limit	
	Typical	Range		Concentration	Achievable?	Concentration	Achievable?	Concentration	Achievable?
Ac-227+D	0.01	0.001 - 0.03	0.02	4	○	12	○	6	○
Ag-108m+D	0	N/A	0.01	1	○	2	○	3	○
Ag-110m+D	0	N/A	0.01	0.3	○	1	○	1	○
Am-241	0.01	0.003 - 0.015	0.01	226	○	677	○	74	○
Am-243+D	0	N/A	0.03	14	○	41	○	20	○
Bi-207	0	N/A	0.01	1	○	2	○	3	○
C-14	0.25	0.01 - 2.5	1	4	○	13	○	16	○
Cd-109	0	N/A	0.1	29	○	86	○	143	○
Ce-144+D	0	N/A	0.03	23	○	69	○	92	○
Cl-36	0	N/A	0.7	1.5	◐	5	○	9	○
Cm-243	0	N/A	0.03	22	○	65	○	54	○
Cm-244	0	N/A	0.03	384	○	1,153	○	165	○
Cm-248	0	N/A	0.03	77	○	231	○	24	○
Co-57	0	N/A	0.004	18	○	53	○	57	○
Co-60	0	N/A	0.01	0.4	○	1	○	1	○
Cs-134	0	N/A	0.01	1	○	2	○	3	○
Cs-135	0	N/A	1	391	○	1,173	○	1,907	○
Cs-137+D	0.7	0.1 - 3.5	0.01	2	◑	5	○	6	○
Eu-152	0	N/A	0.02	1	○	3	○	3	○
Eu-154	0	N/A	0.01	1	○	2	○	3	○
Eu-155	0	N/A	0.02	60	○	181	○	175	○
Fe-55	0	N/A	1	140,080	○	420,240	○	601,443	○
Gd-153	0	N/A	0.01	51	○	153	○	136	○
H-3	7	0.8 - 20	0.02	44	○	133	○	412	○
I-129	3E-05	1E-05 - 9E-05	2	0.1	◐	0.3	◐	0.5	◐
K-40	10	3 - 20	0.1	5	◑	14	◑	20	◑

Table 7-5. Comparison of Suburban Soil Concentrations With MDCs and Background (all values in pCi/g) - (Continued)

Radionuclide	Background Soil Concentration		Laboratory MDC	1E-4 Risk Limit		3E-4 Risk Limit		15 mrem/yr Dose Rate Limit	
	Typical	Range		Concentration	Achievable?	Concentration	Achievable?	Concentration	Achievable?
Mn-54	0	N/A	0.1	1	○	3	○	5	○
Na-22	0	N/A	0.02	0.5	○	1	○	2	○
Nb-94	0	N/A	0.01	1	○	2	○	2	○
Ni-59	0	N/A	1	6,892	○	20,676	○	53,744	○
Ni-63	0	N/A	2	2,193	○	6,580	○	20,105	○
Np-237+D	0	N/A	0.03	1	○	2	○	0.2	●
Pa-231	0.01	0.001 - 0.03	0.03	3	○	10	○	1	○
Pb-210+D	1	0.23 - 4.2	2	9	○	27	○	8	○
Pm-147	0	N/A	1	13,563	○	40,689	○	178,976	○
Pu-238	0.00	0.0005 - 0.002	0.03	325	○	975	○	100	○
Pu-239	0.03	0.009 - 0.04	0.03	338	○	1,015	○	88	○
Pu-240	0.03	0.009 - 0.04	0.03	338	○	1,014	○	88	○
Pu-241	0	N/A	1	7,671	○	23,012	○	2,524	○
Pu-242	0	N/A	0.03	352	○	1,057	○	93	○
Pu-244+D	0	N/A	0.03	1	○	3	○	11	○
Ra-226 (+Rn)	1	0.23 - 4.2	0.15	0.1	●	0.3	◐	0.1	●
Ra-226 (-Rn)	1	0.23 - 4.2	0.15	0.5	◐	2	◐	1	◐
Ra-228+D	1	0.10 - 3.4	0.15	1	◐	2	◐	2	◐
Ru-106+D	0	N/A	0.15	5	○	14	○	21	○
Sb-125+D	0	N/A	0.1	3	○	8	○	10	○
Sm-147	0	N/A	0.1	184	○	551	○	161	○
Sm-151	0	N/A	0.02	42,732	○	128,195	○	543,281	○
Sr-90+D	1	0.2 - 4.0	0.02	5	◐	15	○	13	○
Tc-99	0	N/A	1	2	◐	7	○	25	○
Th-228+D	1	0.10 - 3.4	1	1	●	2	●	2	●
Th-229+D	0	N/A	1	5	○	14	○	11	○

Table 7-5. Comparison of Suburban Soil Concentrations With MDCs and Background (all values in pCi/g) - (Continued)

Radionuclide	Background Soil Concentration		Laboratory MDC	1E-4 Risk Limit		3E-4 Risk Limit		15 mrem/yr Dose Rate Limit	
	Typical	Range		Concentration	Achievable?	Concentration	Achievable?	Concentration	Achievable?
Th-230	1	0.12 - 3.8	0.05	0.5	☐	2	☐	1	☐
Th-232	1	0.10 - 3.4	0.03	0.4	☐	1	☐	1	☐
Tl-204	0	N/A	0.05	171	○	514	○	802	○
U-232	0	N/A	0.05	1	○	4	○	2	○
U-233	0	N/A	1	6	○	17	○	7	○
U-234	1	0.12 - 3.8	0.03	6	○	17	○	7	○
U-235+D	0.03	0.01 - 0.05	0.03	4	○	13	○	7	○
U-236	0.01	0.005 - 0.02	0.03	6	○	18	○	8	○
U-238+D	1	0.12 - 3.8	0.03	4	☐	11	○	8	○
Zn-65	0	N/A	0.03	2	○	5	○	7	○
				Totals: ○ = 49/62 (79%) ☐ = 8/62 (13%) ☐ = 3/62 (5%) ● = 2/62 (3%)		Totals: ○ = 54/62 (87%) ☐ = 6/62 (10%) ☐ = 1/62 (<2%) ● = 1/62 (<2%)		Totals: ○ = 53/62 (85%) ☐ = 5/62 (8%) ☐ = 2/62 (3%) ● = 2/62 (3%)	

Key:

- Neither MDC nor background are of concern in achieving the stated dose/risk limit.
- ☐ Background may limit the ability to achieve the stated dose/risk limit.
- ☐ Minimum detectable concentration (MDC) may limit the ability to achieve the stated dose/risk limit.
- Both the MDC and background may limit the ability to achieve the stated dose/risk limit.

Sources: Background radionuclide soil concentration data were taken from NCRP Report No. 94 prepared by the National Council on Radiation Protection and Measurements. Laboratory MDC information were provided by two commercial laboratories: Analytical Technologies, Inc., Fort Collins, CO, and International Technology Corporation, Oak Ridge, TN. All data presented in this table are currently being reviewed by the EPA and are subject to revision.

Notes: Generic radionuclide soil concentrations associated with the various dose/risk limits are above-background (i.e., net) radioactivity concentrations. They were calculated using the DOE RESRAD computer code (version 5.19), assuming suburban land use exposure scenarios and generic site data. (See text for discussions of model assumptions, calculations, and results.) Also, note that MDCs and background are only two pertinent issues. Other issues related to achieving the various residual dose/risk limits are the availability of treatment technologies and disposal capacity; the threats to ecosystems and workers; potential transportation risks; and higher costs.

Table 7-6. Comparison of Commercial/Industrial Land Use Soil Concentrations Needed to Achieve Various Residual Dose/Risk Limits With Typical U.S. Background Concentrations and Minimum Detectable Concentrations (all values are in pCi/g)

Radionuclide	Background Soil Concentration		Laboratory MDC	1E-4 Risk Limit		3E-4 Risk Limit		15 mrem/yr Dose Rate Limit	
	Typical	Range		Concentration	Achievable?	Concentration	Achievable?	Concentration	Achievable?
Ac-227+D	0.01	0.001 - 0.03	0.02	13	○	38	○	10	○
Ag-108m+D	0	N/A	0.01	2	○	7	○	7	○
Ag-110m+D	0	N/A	0.01	1	○	3	○	4	○
Am-241	0.01	0.003 - 0.015	0.01	661	○	1,982	○	168	○
Am-243+D	0	N/A	0.03	43	○	130	○	52	○
Bi-207	0	N/A	0.01	2	○	7	○	8	○
C-14	0.25	0.01 - 2.5	1	11,490	○	34,469	○	248	○
Cd-109	0	N/A	0.1	17,118	○	51,355	○	6,539	○
Ce-144+D	0	N/A	0.03	77	○	230	○	248	○
Cl-36	0	N/A	0.7	29	○	88	○	147	○
Cm-243	0	N/A	0.03	67	○	200	○	108	○
Cm-244	0	N/A	0.03	1,071	○	3,213	○	358	○
Cm-248	0	N/A	0.03	232	○	696	○	51	○
Co-57	0	N/A	0.004	58	○	174	○	154	○
Co-60	0	N/A	0.01	1	○	4	○	3	○
Cs-134	0	N/A	0.01	2	○	6	○	7	○
Cs-135	0	N/A	1	2,919	○	8,758	○	11,876	○
Cs-137+D	0.7	0.1 - 3.5	0.01	6	○	17	○	16	○
Eu-152	0	N/A	0.02	3	○	9	○	8	○
Eu-154	0	N/A	0.01	3	○	8	○	7	○
Eu-155	0	N/A	0.02	195	○	586	○	470	○
Fe-55	0	N/A	1	3,278,689	○	9,836,066	○	6,645,990	○
Gd-153	0	N/A	0.01	165	○	496	○	366	○
H-3	7	0.8 - 20	0.02	127	○	381	○	987	○
I-129	3E-05	1E-05 - 9E-05	2	0.2	◐	1	◐	1	◐
K-40	10	3 - 20	0.1	20	◑	59	○	66	○

Table 7-6. Comparison of Commercial/Industrial Soil Concentrations With MDCs and Background (in pCi/g) - (Continued)

Radionuclide	Background Soil Concentration		Laboratory MDC	1E-4 Risk Limit		3E-4 Risk Limit		15 mrem/yr Dose Rate Limit	
	Typical	Range		Concentration	Achievable?	Concentration	Achievable?	Concentration	Achievable?
Mn-54	0	N/A	0.1	4	○	11	○	13	○
Na-22	0	N/A	0.02	2	○	5	○	5	○
Nb-94	0	N/A	0.01	2	○	6	○	5	○
Ni-59	0	N/A	1	30,475	○	91,424	○	197,915	○
Ni-63	0	N/A	2	283,696	○	851,087	○	2,162,318	○
Np-237+D	0	N/A	0.03	1	○	4	○	0.3	○
Pa-231	0.01	0.001 - 0.03	0.03	9	○	28	○	2	○
Pb-210+D	1	0.23 - 4.2	2	1,286	○	3,859	○	952	○
Pm-147	0	N/A	1	440,684	○	1,322,052	○	1,618,996	○
Pu-238	0.00	0.0005 - 0.002	0.03	837	○	2,510	○	211	○
Pu-239	0.03	0.009 - 0.04	0.03	866	○	2,598	○	191	○
Pu-240	0.03	0.009 - 0.04	0.03	865	○	2,596	○	190	○
Pu-241	0	N/A	1	22,466	○	67,399	○	5,607	○
Pu-242	0	N/A	0.03	896	○	2,689	○	202	○
Pu-244+D	0	N/A	0.03	3	○	10	○	30	○
Ra-226 (+Rn)	1	0.23 - 4.2	0.15	0.3	●	1	◐	0.3	●
Ra-226 (-Rn)	1	0.23 - 4.2	0.15	2	◐	5	○	5	○
Ra-228+D	1	0.10 - 3.4	0.15	2	◐	6	○	6	○
Ru-106+D	0	N/A	0.15	17	○	50	○	57	○
Sb-125+D	0	N/A	0.1	9	○	27	○	28	○
Sm-147	0	N/A	0.1	461	○	1,382	○	316	○
Sm-151	0	N/A	0.02	1,614,361	○	4,843,084	○	3,163,22	○
Sr-90+D	1	0.2 - 4.0	0.02	44	○	131	○	92	○
Tc-99	0	N/A	1	7	○	22	○	62	○
Th-228+D	1	0.10 - 3.4	1	2	●	6	○	6	○
Th-229+D	0	N/A	1	14	○	43	○	21	○

Table 7-6. Comparison of Commercial/Industrial Soil Concentrations With MDCs and Background (in pCi/g) - (Continued)

Radionuclide	Background Soil Concentration		Laboratory MDC	1E-4 Risk Limit		3E-4 Risk Limit		15 mrem/yr Dose Rate Limit	
	Typical	Range		Concentration	Achievable?	Concentration	Achievable?	Concentration	Achievable?
Th-230	1	0.12 - 3.8	0.05	2	☐	5	○	2	☐
Th-232	1	0.10 - 3.4	0.03	1	☐	4	☐	3	☐
Tl-204	0	N/A	0.05	13,160	○	39,481	○	34,827	○
U-232	0	N/A	0.05	4	○	11	○	4	○
U-233	0	N/A	1	14	○	42	○	14	○
U-234	1	0.12 - 3.8	0.03	14	○	42	○	15	○
U-235+D	0.03	0.01 - 0.05	0.03	11	○	34	○	14	○
U-236	0.01	0.005 - 0.02	0.03	15	○	45	○	16	○
U-238+D	1	0.12 - 3.8	0.03	9	○	28	○	15	○
Zn-65	0	N/A	0.03	5	○	16	○	21	○
				Totals: ○ = 54/62 (87%) ☐ = 5/62 (8%) ☐ = 1/62 (2%) ● = 2/62 (3%)		Totals: ○ = 59/62 (95%) ☐ = 2/62 (3%) ☐ = 1/62 (2%) ● = 0/62 (0%)		Totals: ○ = 58/62 (94%) ☐ = 2/62 (3%) ☐ = 1/62 (2%) ● = 1/62 (2%)	

Key:

- Neither MDC nor background are of concern in achieving the stated dose/risk limit.
- ☐ Background may limit the ability to achieve the stated dose/risk limit .
- ☐ Minimum detectable concentration (MDC) may limit the ability to achieve the stated dose/risk limit .
- Both the MDC and background may limit the ability to achieve the stated dose/risk limit .

Sources: Background radionuclide soil concentration data were taken from NCRP Report No. 94 prepared by the National Council on Radiation Protection and Measurements. Laboratory MDC information were provided by two commercial laboratories: Analytical Technologies, Inc., Fort Collins, CO, and International Technology Corporation, Oak Ridge, TN. All data presented in this table are currently being reviewed by the EPA and are subject to revision.

Notes: Generic radionuclide soil concentrations associated with the various dose/risk limits are above-background (i.e., net) radioactivity concentrations. They were calculated using the DOE RESRAD computer code (version 5.19), assuming commercial/industrial land use exposure scenarios and generic site data. (See text for discussions of model assumptions, calculations, and results.) Also, note that MDCs and background are only two pertinent issues. Other issues related to achieving the various residual dose/risk limits are the availability of treatment technologies and disposal capacity; the threats to ecosystems and workers; potential transportation risks; and higher costs.

intact. Disadvantages of field surveys include high detection limits, inability to distinguish between radionuclides, and the inability to detect alpha and beta radiation in most media.

Tables 7-7 through 7-9 list theoretical field survey MDCs for several radionuclides of interest. The MDCs were estimated for photon-emitting radionuclides based on predicted external exposure rates. RESRAD was used to calculate exposure rates for each radionuclide individually at a height of one meter above a theoretically contaminated soil surface with an assumed activity concentration of 1 pCi/g uniformly distributed over an area of 10,000 square meters to a depth of 2 meters. RESRAD results are given in units of mrem/yr per pCi/g and are listed in Appendix O.

A Reuter-Stokes pressurized ion chamber was selected for the MDC calculations because it is commonly used in the field for performing exposure rate measurements and has the following characteristics:

- a nearly flat energy response from 70 to 10,000 keV,
- a ± 5 percent accuracy at background exposure levels,
- an omni-directional response,
- a linear output from 0 - 100 mR/hr, and
- is beta insensitive.

There are several survey methods and instruments available for performing field surveys of contaminated soils. Using different methods or instruments may result in lower minimum detectable concentrations for specific radionuclides than those reported in Tables 7-7 through 7-9 and in Appendix O.

For the purposes of the MDC calculations, twice the natural background exposure rate was selected as the criterion for defining areas of observed contamination. This criterion is consistent with EPA's requirements in the Hazard Ranking System (HRS, 40 CFR Part 300, Appendix A, Section 7). The natural background exposure rate was assumed to be 10 μ R/hr, a value slightly higher than the national average of 7 μ R/hr. The MDCs are expressed as activity concentrations in soil (pCi/g) expected to produce a dose rate of 10 μ R/hr above background at 1 meter above the soil surface.

Table 7-7. Comparison of Rural Residential Land Use Soil Concentrations Needed to Achieve Various Residual Dose/Risk Limits With Typical U.S. Background Concentrations and Field Minimum Detectable Concentrations (all values are in pCi/g)

Radionuclide	Background Soil Concentration		Field MDC	1E-4 Risk Limit		3E-4 Risk Limit		15 mrem/yr Dose Rate Limit	
	Typical	Range		Concentration	Detectable?	Concentration	Detectable?	Concentration	Detectable?
Ac-227+D	0.01	0.001 - 0.03	31	3	●	10	●	2	●
Ag-108m+D	0	N/A	8	1	●	2	●	3	●
Ag-110m+D	0	N/A	4	0.3	●	1	●	1	●
Am-241	0.01	0.003 - 0.015	NR	90	*	271	*	26	*
Am-243+D	0	N/A	79	12	●	37	●	13	●
Bi-207	0	N/A	506	1	●	2	●	3	●
C-14	0.25	0.01 - 2.5	NR	1	*	3	*	3	*
Cd-109	0	N/A	NR	11	*	32	*	55	*
Ce-144+D	0	N/A	270	22	●	67	●	91	●
Cl-36	0	N/A	NR	0.1	*	0.3	*	1	*
Cm-243	0	N/A	117	21	●	62	●	39	●
Cm-244	0	N/A	NR	125	*	376	*	53	*
Cm-248	0	N/A	NR	26	*	77	*	8	*
Co-57	0	N/A	160	16	●	48	●	54	●
Co-60	0	N/A	4	0.4	●	1	●	1	●
Cs-134	0	N/A	8	1	●	2	●	2	●
Cs-135	0	N/A	NR	40	*	120	*	196	*
Cs-137+D	0.7	0.1 - 3.5	17	1	●	4	●	5	●
Eu-152	0	N/A	9	1	●	3	●	3	●
Eu-154	0	N/A	8	1	●	2	●	3	●
Eu-155	0	N/A	510	60	●	179	●	174	●
Fe-55	0	N/A	NR	6,762	*	20,285	*	31,793	*
Gd-153	0	N/A	NR	51	*	152	*	136	*
H-3	7	0.8 - 20	NR	34	*	101	*	312	*
I-129	3E-05	1E-05 - 9E-05	NR	0.1	*	0.2	*	0.4	*
K-40	10	3 - 20	72	2	●	5	●	9	●

Table 7-7. Comparison of Rural Residential Soil Concentrations With Field MDCs and Background (in pCi/g) - (Continued)

Radionuclide	Background Soil Concentration		Field MDC	1E-4 Risk Limit		3E-4 Risk Limit		15 mrem/yr Dose Rate Limit	
	Typical	Range		Concentration	Detectable?	Concentration	Detectable?	Concentration	Detectable?
Mn-54	0	N/A	5	1	●	3	●	5	●
Na-22	0	N/A	5	0.4	●	1	●	2	●
Nb-94	0	N/A	6	1	●	2	●	2	●
Ni-59	0	N/A	NR	897	*	2,690	*	7,049	*
Ni-63	0	N/A	NR	286	*	857	*	2,616	*
Np-237+D	0	N/A	53	1	●	2	●	0.2	▸
Pa-231	0.01	0.001 - 0.03	NR	3	*	9	*	1	*
Pb-210+D	1	0.23 - 4.2	NR	3	*	10	*	3	*
Pm-147	0	N/A	NR	4,121	*	12,362	*	54,905	*
Pu-238	0.001	0.0005 - 0.002	NR	101	*	302	*	31	*
Pu-239	0.03	0.009 - 0.04	NR	104	*	313	*	27	*
Pu-240	0.03	0.009 - 0.04	NR	104	*	313	*	27	*
Pu-241	0	N/A	NR	3,076	*	9,228	*	870	*
Pu-242	0	N/A	NR	109	*	326	*	29	*
Pu-244+D	0	N/A	38	1	●	3	●	9	●
Ra-226 (+Rn)	1	0.23 - 4.2	5	0.1	●	0.3	●	0.1	●
Ra-226 (-Rn)	1	0.23 - 4.2	5	0.4	●	1	●	1	●
Ra-228+D	1	0.10 - 3.4	10	1	●	2	●	2	●
Ru-106+D	0	N/A	62	4	●	12	●	20	●
Sb-125+D	0	N/A	30	3	●	8	●	10	●
Sm-147	0	N/A	NR	137	*	410	*	113	*
Sm-151	0	N/A	NR	12,752	*	38,256	*	147,203	*
Sr-90+D	1	0.2 - 4.0	NR	1	*	4	*	3	*
Tc-99	0	N/A	NR	2	*	5	*	18	*
Th-228+D	1	0.10 - 3.4	6	1	●	2	●	2	●
Th-229+D	0	N/A	39	4	●	13	●	7	●

Table 7-7. Comparison of Rural Residential Soil Concentrations With Field MDCs and Background (in pCi/g) - (Continued)

Radionuclide	Background Soil Concentration		Field MDC	1E-4 Risk Limit		3E-4 Risk Limit		15 mrem/yr Dose Rate Limit	
	Typical	Range		Concentration	Detectable?	Concentration	Detectable?	Concentration	Detectable?
Th-230	1	0.12 - 3.8	NR	0.5	*	1	*	1	*
Th-232	1	0.10 - 3.4	NR	0.3	*	1	*	1	*
Tl-204	0	N/A	NR	53	*	158	*	250	*
U-232	0	N/A	NR	1	*	4	*	2	*
U-233	0	N/A	NR	5	*	16	*	7	*
U-234	1	0.12 - 3.8	NR	5	*	16	*	7	*
U-235+D	0.03	0.01 - 0.05	95	4	●	12	●	6	●
U-236	0.01	0.005 - 0.02	NR	6	*	17	*	7	*
U-238+D	1	0.12 - 3.8	670	4	●	11	●	7	●
Zn-65	0	N/A	23	1	●	2	●	3	●
				<i>Totals: ○ = 0/62 (0%) * = 32/62 (52%) ● = 30/62 (48%)</i>		<i>Totals: ○ = 0/62 (0%) * = 32/62 (52%) ● = 30/62 (48%)</i>		<i>Totals: ○ = 0/62 (0%) * = 32/62 (52%) ● = 30/62 (48%)</i>	

Are the calculated concentrations at the specified dose/risk limit detectable (i.e., \geq MDC \pm 1 pCi/g)?

- Yes.
- * No. The specified radionuclide does not emit photon radiation or emits only weak or low-abundance photons.
- No. Calculated concentration is below the MDC.

N/A: Not applicable; NR: No response expected from the selected detector due to absent, low abundance (<1%), or weak photon emissions (<70 keV).

Sources: Background radionuclide soil concentration data were taken from NCRP Report No. 94 prepared by the National Council on Radiation Protection and Measurements. Field MDCs are theoretical values calculated using RESRAD. They represent above-background soil concentrations of photon-emitting radionuclides - assumed to be distributed uniformly in an 10,000 m² area to a depth of 2 m - that will add an exposure rate of 10 microroentgens per hour above the natural background exposure rate at one meter above the ground surface. (See text for a discussion of the methods used to derive these MDCs.) All data presented in this table are currently being reviewed by the EPA and are subject to revision.

Notes: Generic radionuclide soil concentrations associated with the various dose/risk limits are above-background (i.e., net) radioactivity concentrations. They were calculated using the DOE RESRAD computer code (version 5.19), assuming rural residential land use exposure scenarios and generic site data. (See text for discussions of model assumptions, calculations, and results.) Also, note that MDCs and background are only two pertinent issues. Other issues related to achieving the various residual dose/risk limits are the availability of treatment technologies and disposal capacity; the threats to ecosystems and workers; potential transportation risks; and higher costs.

Table 7-8. Comparison of Suburban Land Use Soil Concentrations Needed to Achieve Various Residual Dose/Risk Limits With Typical U.S. Background Concentrations and Field Minimum Detectable Concentrations (all values are in pCi/g)

Radionuclide	Background Soil Concentration		Theoretical Field MDC	1E-4 Risk Limit		3E-4 Risk Limit		15 mrem/yr Dose Rate Limit	
	Typical	Range		Concentration	Detectable?	Concentration	Detectable?	Concentration	Detectable?
Ac-227+D	0.01	0.001 - 0.03	31	4	●	12	●	6	●
Ag-108m+D	0	N/A	8	1	●	2	●	3	●
Ag-110m+D	0	N/A	4	0.3	●	1	●	1	●
Am-241	0.01	0.003 - 0.015	NR	226	*	677	*	74	*
Am-243+D	0	N/A	79	14	●	41	●	20	●
Bi-207	0	N/A	506	1	●	2	●	3	●
C-14	0.25	0.01 - 2.5	NR	4	*	13	*	16	*
Cd-109	0	N/A	NR	29	*	86	*	143	*
Ce-144+D	0	N/A	270	23	●	69	●	92	●
Cl-36	0	N/A	NR	1.5	*	5	*	9	*
Cm-243	0	N/A	117	22	●	65	●	54	●
Cm-244	0	N/A	NR	384	*	1,153	*	165	*
Cm-248	0	N/A	NR	77	*	231	*	24	*
Co-57	0	N/A	160	18	●	53	●	57	●
Co-60	0	N/A	4	0.4	●	1	●	1	●
Cs-134	0	N/A	8	1	●	2	●	3	●
Cs-135	0	N/A	NR	391	*	1,173	*	1,907	*
Cs-137+D	0.7	0.1 - 3.5	17	2	●	5	●	6	●
Eu-152	0	N/A	9	1	●	3	●	3	●
Eu-154	0	N/A	8	1	●	2	●	3	●
Eu-155	0	N/A	510	60	●	181	●	175	●
Fe-55	0	N/A	NR	140,080	*	420,240	*	601,443	*
Gd-153	0	N/A	NR	51	*	153	*	136	*
H-3	7	0.8 - 20	NR	44	*	133	*	412	*
I-129	0.00003	1E-5 - 9E-5	NR	0.1	*	0.3	*	0.5	*
K-40	10	3 - 20	72	5	●	14	●	20	●

Table 7-8. Comparison of Suburban Soil Concentrations With Field MDCs and Background (all values in pCi/g) - (Continued)

Radionuclide	Background Soil Concentration		Theoretical Field MDC	1E-4 Risk Limit		3E-4 Risk Limit		15 mrem/yr Dose Rate Limit	
	Typical	Range		Concentration	Detectable?	Concentration	Detectable?	Concentration	Detectable?
Mn-54	0	N/A	5	1	●	3	●	5	●
Na-22	0	N/A	5	0.5	●	1	●	2	●
Nb-94	0	N/A	6	1	●	2	●	2	●
Ni-59	0	N/A	NR	6,892	*	20,676	*	53,744	*
Ni-63	0	N/A	NR	2193	*	6580	*	20,105	*
Np-237+D	0	N/A	53	1	●	2	●	0.2	●
Pa-231	0.01	0.001 - 0.03	NR	3	*	10	*	1	*
Pb-210+D	1	0.23 - 4.2	NR	9	*	27	*	8	*
Pm-147	0	N/A	NR	13,563	*	40,689	*	178,976	*
Pu-238	0.001	0.0005 - 0.002	NR	325	*	975	*	100	*
Pu-239	0.03	0.009 - 0.04	NR	338	*	1,015	*	88	*
Pu-240	0.03	0.009 - 0.04	NR	338	*	1,014	*	88	*
Pu-241	0	N/A	NR	7,671	*	23,012	*	2,524	*
Pu-242	0	N/A	NR	352	*	1,057	*	93	*
Pu-244+D	0	N/A	38	1	●	3	●	11	●
Ra-226 (+Rn)	1	0.23 - 4.2	5	0.1	●	0.3	●	0.1	●
Ra-226 (-Rn)	1	0.23 - 4.2	5	0.5	●	2	●	1	●
Ra-228+D	1	0.10 - 3.4	10	1	●	2	●	2	●
Ru-106+D	0	N/A	62	5	●	14	●	21	●
Sb-125+D	0	N/A	30	3	●	8	●	10	●
Sm-147	0	N/A	NR	184	*	551	*	161	*
Sm-151	0	N/A	NR	42,732	*	128,195	*	543,281	*
Sr-90+D	1	0.2 - 4.0	NR	5	*	15	*	13	*
Tc-99	0	N/A	NR	2	*	7	*	25	*
Th-228+D	1	0.10 - 3.4	6	1	●	2	●	2	●
Th-229+D	0	N/A	39	5	●	14	●	11	●

Table 7-8. Comparison of Suburban Soil Concentrations With Field MDCs and Background (all values in pCi/g) - (Continued)

Radionuclide	Background Soil Concentration		Theoretical Field MDC	1E-4 Risk Limit		3E-4 Risk Limit		15 mrem/yr Dose Rate Limit	
	Typical	Range		Concentration	Detectable?	Concentration	Detectable?	Concentration	Detectable?
Th-230	1	0.12 - 3.8	NR	0.5	*	2	*	1	*
Th-232	1	0.10 - 3.4	NR	0.4	*	1	*	1	*
Tl-204	0	N/A	NR	171	*	514	*	802	*
U-232	0	N/A	NR	1	*	4	*	2	*
U-233	0	N/A	NR	6	*	17	*	7	*
U-234	1	0.12 - 3.8	NR	6	*	17	*	7	*
U-235+D	0.03	0.01 - 0.05	95	4	●	13	●	7	●
U-236	0.01	0.005 - 0.02	NR	6	*	18	*	8	*
U-238+D	1	0.12 - 3.8	670	4	●	11	●	8	●
Zn-65	0	N/A	23	2	●	5	●	7	●
				Totals: ○ = 0/62 (0%) * = 32/62 (52%) ● = 30/62 (48%)		Totals: ○ = 0/62 (0%) * = 32/62 (52%) ● = 30/62 (48%)		Totals: ○ = 0/62 (0%) * = 32/62 (52%) ● = 30/62 (48%)	

Are the calculated concentrations at the specified dose/risk limit detectable (i.e., \geq MDC \pm 1 pCi/g)?

- Yes.
- * No. The specified radionuclide does not emit photon radiation or emits only weak or low-abundance photons.
- No. Calculated concentration is below the MDC.

N/A: Not applicable; NR: No response expected from the selected detector due to absent, low abundance (<1%), or weak photon emissions (<70 keV).

Sources: Background radionuclide soil concentration data were taken from NCRP Report No. 94 prepared by the National Council on Radiation Protection and Measurements. Field MDCs are theoretical values calculated using RESRAD. They represent above-background soil concentrations of photon-emitting radionuclides - assumed to be distributed uniformly in an 10,000 m² area to a depth of 2 m - that will add an exposure rate of 10 microroentgens per hour above the natural background exposure rate at one meter above the ground surface. (See text for a discussion of the methods used to derive these MDCs.) All data presented in this table are currently being reviewed by the EPA and are subject to revision.

Notes: Generic radionuclide soil concentrations associated with the various dose/risk limits are above-background (i.e., net) radioactivity concentrations. They were calculated using the DOE RESRAD computer code (version 5.19), assuming suburban land use exposure scenarios and generic site characteristics. (See text for discussions of model assumptions, calculations, and results.) Also, note that MDCs and background are only two pertinent issues. Other issues related to achieving the various residual dose/risk limits are the availability of treatment technologies and disposal capacity; the threats to ecosystems and workers; potential transportation risks; and higher costs.

Table 7-9. Comparison of Commercial/Industrial Land Use Soil Concentrations Needed to Achieve Various Residual Dose/Risk Limits With Typical U.S. Background Concentrations and Field Minimum Detectable Concentrations (all values are in pCi/g)

Radionuclide	Background Soil Concentration		Theoretical Field MDC	1E-4 Risk Limit		3E-4 Risk Limit		15 mrem/yr Dose Rate Limit	
	Typical	Range		Concentration	Detectable?	Concentration	Detectable?	Concentration	Detectable?
Ac-227+D	0.01	0.001 - 0.03	31	13	●	38	○	10	●
Ag-108m+D	0	N/A	8	2	●	7	○	7	○
Ag-110m+D	0	N/A	4	1	●	3	○	4	○
Am-241	0.01	0.003 - 0.015	NR	661	*	1,982	*	168	*
Am-243+D	0	N/A	79	43	●	130	○	52	●
Bi-207	0	N/A	506	2	●	7	●	8	●
C-14	0.25	0.01 - 2.5	NR	11,490	*	34,469	*	248	*
Cd-109	0	N/A	NR	17,118	*	51,355	*	6,539	*
Ce-144+D	0	N/A	270	77	●	230	●	248	●
Cl-36	0	N/A	NR	29	*	88	*	147	*
Cm-243	0	N/A	117	67	●	200	○	108	●
Cm-244	0	N/A	NR	1,071	*	3,213	*	358	*
Cm-248	0	N/A	NR	232	*	696	*	51	*
Co-57	0	N/A	160	58	●	174	○	154	●
Co-60	0	N/A	4	1	●	4	○	3	○
Cs-134	0	N/A	8	2	●	6	●	7	○
Cs-135	0	N/A	NR	2,919	*	8,758	*	11,876	*
Cs-137+D	0.7	0.1 - 3.5	17	6	●	17	○	16	○
Eu-152	0	N/A	9	3	●	9	○	8	○
Eu-154	0	N/A	8	3	●	8	○	7	○
Eu-155	0	N/A	510	195	●	586	○	470	●
Fe-55	0	N/A	NR	3,278,689	*	9,836,066	*	6,645,990	*
Gd-153	0	N/A	NR	165	*	496	*	366	*
H-3	7	0.8 - 20	NR	127	*	381	*	987	*
I-129	3E-05	1E-05 - 9E-05	NR	0.2	*	1	*	1	*
K-40	10	3 - 20	72	20	●	59	●	66	●

Table 7-9. Comparison of Commercial/Industrial Soil Concentrations With MDCs and Background (in pCi/g) - (Continued)

Radionuclide	Background Soil Concentration		Theoretical Field MDC	1E-4 Risk Limit		3E-4 Risk Limit		15 mrem/yr Dose Rate Limit	
	Typical	Range		Concentration	Detectable?	Concentration	Detectable?	Concentration	Detectable?
Mn-54	0	N/A	5	4	●	11	○	13	○
Na-22	0	N/A	5	2	●	5	○	5	○
Nb-94	0	N/A	6	2	●	6	○	5	○
Ni-59	0	N/A	NR	30,475	*	91,424	*	197,915	*
Ni-63	0	N/A	NR	283,696	*	851,087	*	2,162,318	*
Np-237+D	0	N/A	53	1	●	4	●	0.3	●
Pa-231	0.01	0.001 - 0.03	NR	9	*	28	*	2	*
Pb-210+D	1	0.23 - 4.2	NR	1,286	*	3,859	*	952	*
Pm-147	0	N/A	NR	440,684	*	1,322,052	*	1,618,996	*
Pu-238	0.001	0.0005 - 0.002	NR	837	*	2,510	*	211	*
Pu-239	0.03	0.009 - 0.04	NR	866	*	2,598	*	191	*
Pu-240	0.03	0.009 - 0.04	NR	865	*	2,596	*	190	*
Pu-241	0	N/A	NR	22,466	*	67,399	*	5,607	*
Pu-242	0	N/A	NR	896	*	2,689	*	202	*
Pu-244+D	0	N/A	38	3	●	10	●	30	●
Ra-226 (+Rn)	1	0.23 - 4.2	5	0.3	●	1	●	0.3	●
Ra-226 (-Rn)	1	0.23 - 4.2	5	2	●	5	○	5	○
Ra-228+D	1	0.10 - 3.4	10	2	●	6	●	6	●
Ru-106+D	0	N/A	62	17	●	50	●	57	●
Sb-125+D	0	N/A	30	9	●	27	●	28	●
Sm-147	0	N/A	NR	461	*	1,382	*	316	*
Sm-151	0	N/A	NR	1,614,361	*	4,843,084	*	3,163,22	*
Sr-90+D	1	0.2 - 4.0	NR	44	*	131	*	92	*
Tc-99	0	N/A	NR	7	*	22	*	62	*
Th-228+D	1	0.10 - 3.4	6	2	●	6	○	6	○
Th-229+D	0	N/A	39	14	●	43	●	21	●

Table 7-9. Comparison of Commercial/Industrial Soil Concentrations With MDCs and Background (in pCi/g) - (Continued)

Radionuclide	Background Soil Concentration		Theoretical Field MDC	1E-4 Risk Limit		3E-4 Risk Limit		15 mrem/yr Dose Rate Limit	
	Typical	Range		Concentration	Detectable?	Concentration	Detectable?	Concentration	Detectable?
Th-230	1	0.12 - 3.8	NR	2	*	5	*	2	*
Th-232	1	0.10 - 3.4	NR	1	*	4	*	3	*
Tl-204	0	N/A	NR	13,160	*	39,481	*	34,827	*
U-232	0	N/A	NR	4	*	11	*	4	*
U-233	0	N/A	NR	14	*	42	*	14	*
U-234	1	0.12 - 3.8	NR	14	*	42	*	15	*
U-235+D	0.03	0.01 - 0.05	95	11	●	34	●	14	●
U-236	0.01	0.005 - 0.02	NR	15	*	45	*	16	*
U-238+D	1	0.12 - 3.8	670	9	●	28	●	15	●
Zn-65	0	N/A	23	5	●	16	●	21	●
				Totals: ○ = 0/62 (0%) * = 32/62 (52%) ● = 30/62 (48%)		Totals: ○ = 16/62 (26%) * = 32/62 (52%) ● = 14/62 (23%)		Totals: ○ = 12/62 (19%) * = 32/62 (52%) ● = 18/62 (29%)	

Are the calculated concentrations at the specified dose/risk limit detectable (i.e., \geq MDC \pm 1 pCi/g)?

- Yes.
- * No. The specified radionuclide does not emit photon radiation or emits only weak or low-abundance photons.
- No. Calculated concentration is below the MDC.

N/A: Not applicable; NR: No response expected from the selected detector due to absent, low abundance (<1%), or weak photon emissions (<70 keV).

Sources: Background radionuclide soil concentration data were taken from NCRP Report No. 94 prepared by the National Council on Radiation Protection and Measurements. Field MDCs are theoretical values calculated using RESRAD. They represent above-background soil concentrations of photon-emitting radionuclides - assumed to be distributed uniformly in an 10,000 m² area to a depth of 2 m - that will add an exposure rate of 10 microrentgens per hour above the natural background exposure rate at one meter above the ground surface. (See text for a discussion of the methods used to derive these MDCs.) All data presented in this table are currently being reviewed by the EPA and are subject to revision.

Notes: Generic radionuclide soil concentrations associated with the various dose/risk limits are above-background (i.e., net) radioactivity concentrations. They were calculated using the DOE RESRAD computer code (version 5.19), assuming rural residential land use exposure scenarios and generic site characteristics. (See text for discussions of model assumptions, calculations, and results.) Also, note that MDCs and background are only two pertinent issues. Other issues related to achieving the various residual dose/risk limits are the availability of treatment technologies and disposal capacity; the threats to ecosystems and workers; potential transportation risks; and higher costs.

An MDC was computed for each radionuclide individually, as follows:

$$MDC_{OCC} = \frac{OCC}{DoseRate \times CF}$$

where:

Parameter	Definition (units)	Default Value
MDC _{OCC}	Minimum detectable concentration at the observed activity contamination criterion (pCi/g)	Calculated
OCC	Observed activity contamination criterion (μR/hr)	10
Dose rate	RESRAD calculated exposure rate (mrem/yr per pCi/g)	radionuclide-specific (see Appendix O)
CF	Conversion factor ((yr-μR) per (hr-mrem))	1.14E-01

These calculations are based on the weighted average photon energy for each radionuclide (i.e., the summation of all photon energies for each radionuclide multiplied by their relative emission rates), rather than on the highest energy photon only.

An ionization chamber will detect beta particles from some radionuclides of interest. However, for the purposes of this exercise, the beta exposure rates from C-14, Cs-135, H-3, Ni-63, Sm-147, Sr-90+D, and Tc-99 were neglected, (i.e., assumed to be zero). In addition, some radionuclides of interest (Fe-55, Ni-59, and Sm-151) only emit photons below the low-end range of the ionization chamber (i.e., <70 keV); MDCs were not calculated for these radionuclides. Both corrections have been shown in other experiments to have minor, if not insignificant, effects on the calculated exposure rates and theoretically-derived field MDCs.

7.2.1.3 Combined Field and Laboratory Measurement

In actual measurement situations, an optimal program uses field survey techniques in combination with laboratory measurements. This type of program is developed based on data quality objectives, capabilities of the various measurement techniques, and cost control objectives. Exclusive reliance on either field survey techniques or laboratory measurements is not advisable in actual application.

To generate reliable confirmatory data, particularly in the context of releasing sites for unrestricted use, some degree of laboratory measurement is necessary to confirm the usability of data acquired in the field. Field survey measurement techniques can be used to focus the scope of the study and economize on laboratory measurements.

The incremental cost of laboratory analyses themselves is not prohibitive when compared to the labor required to mobilize an effort to conduct field measurements or collect samples for shipment to a laboratory. Fixed costs that apply to either approach include preparation of a work plan, quality assurance plan, and health and safety plan, as well as mobilization of a field crew. To the extent that laboratory analyses can be minimized using field survey techniques, incremental laboratory costs can also be minimized.

7.2.1.4 Effects of MDCs on Cleanup Level

RSC values were calculated for the generic test site and are listed in Tables 7-4 through 7-9. Also included in these tables are MDCs for laboratory and field measurements. Comparisons between the generic RSC value and the laboratory MDC for individual radionuclides in these tables can be used to highlight the potential adverse impacts certain radionuclide MDCs may have on attaining and complying with the proposed cleanup level. The results of these comparisons reveal that at a target risk level of 1×10^{-4} :

- All radionuclides can be detected using existing laboratory analysis methods for the rural residential exposure scenario, except C-14, Cl-36, I-129, Pb-210, Ra-226, Tc-99 and Th-228 (Table 7-4).
- All radionuclides can be detected using existing laboratory analysis methods for the suburban exposure scenario, except Cl-36, I-129, Ra-226, Tc-99 and Th-228 (Table 7-5).
- All radionuclides can be detected using laboratory analysis methods for the commercial/industrial exposure scenario, except for I-129, Ra-226 and Th-228 (Table 7-6)
- No radionuclides can be detected using field measurements for the rural residential exposure scenario (Table 7-7).

- No radionuclides can be detected using field measurements for the suburban exposure scenario (Table 7-8).
- No radionuclides can be detected using field measurements for the commercial/industrial exposure scenario (Table 7-9).

At a target risk level of 3×10^{-4} :

- All radionuclides can be detected using existing laboratory analysis methods for the rural residential exposure scenario, except C-14, Cl-36, I-129, and Th-228 (Table 7-4).
- All radionuclides can be detected using existing laboratory analysis methods for the suburban exposure scenario, except I-129 and Th-228 (Table 7-5).
- All radionuclides can be detected using laboratory analysis methods for the commercial/industrial exposure scenario, except I-129 (Table 7-6).
- No radionuclides can be detected using field measurements for the rural residential exposure scenario (Table 7-7).
- No radionuclides can be detected using field measurements for the suburban exposure scenario (Table 7-8).
- Ac-227, Ag-108m, Ag-110m, Am-243, Cm-243, Co-57, Co-60, Cs-137, Eu-152, Eu-154, Eu-155, Mn-54, Na-22, Nb-94, Ra-226, and Th-228 can be detected using field measurements for the commercial/industrial exposure scenario (Table 7-9).

At a target dose rate limit of 15 mrem/yr:

- All radionuclides can be detected using existing laboratory analysis methods for the rural residential exposure scenario, except C-14, Cl-36, I-129, Ra-226, and Th-228 (Table 7-4).

- All radionuclides can be detected using existing laboratory analysis methods for the suburban exposure scenario, except I-129, Ra-226, and Th-228 (Table 7-5).
- All radionuclides can be detected using laboratory analysis methods for the commercial/industrial exposure scenario, except I-129 and Ra-226 (Table 7-6).
- No radionuclides can be detected using field measurements for the rural residential exposure scenario (Table 7-7).
- No radionuclides can be detected using field measurements for the suburban exposure scenario (Table 7-8).
- Ag-108m, Ag-110m, Co-60, Cs-134, Cs-137, Eu-152, Eu-154, Mn-54, Na-22, Nb-94, Ra-226, and Th-228 can be detected using field measurements for the commercial/industrial exposure scenario (Table 7-9).

In general, currently-available laboratory measurement techniques are adequate to detect 88% (53/62) of the radionuclides included in the model calculations at a target risk level of 1×10^{-4} . In comparison, current field measurement techniques are generally not adequate for detecting any of the radionuclides included in the model calculations at a target risk level of 1×10^{-4} .

It is important to emphasize that in some situations, it is the spatial variability in the levels of naturally occurring or anthropogenic background radioactivity (discussed in the next section), rather than the MDC, that limits the technical feasibility of using field or laboratory techniques to assess contaminant concentrations at a site.

7.2.2 Background Soil Concentration

In addition to the potential problems associated with inadequate laboratory detection limits, the presence of background concentrations of several naturally occurring and manmade radionuclides in soil may also have an adverse effect on the implementation of the rule. At sites with elevated background soil concentrations, it may be difficult to detect and quantify residual levels of soil radioactivity attributed to previous site operations.

7.2.2.1 Natural Background

Natural background radiation can be divided into two groups according to origin: naturally occurring radionuclides, and cosmic radiation and cosmogenic radionuclides. Naturally occurring radionuclides are those terrestrial radionuclides, and their decay products, of primordial origin with half-lives comparable to the age of the earth (about 3 billion years). Most of these radionuclides are isotopes of the heavy elements and belong to the three radioactive decay series headed by uranium-238, uranium-235, and thorium-232. The radionuclides that make up these three decay series are listed in Appendix O.

When the decay members of these series are not subjected to either chemical or physical separation processes in the environment, a state of secular equilibrium may be achieved where the rate of decay of each radionuclide is essentially equal to the nuclide that heads the series. More often, however, series members separate from each other in the environment to some extent due to their differing physical and chemical properties. As a result, local concentrations of series members can vary widely. Potassium-40 and rubidium-87 are the major primordial radionuclides which decay directly to a stable nuclide.

The source of the primordial radionuclides is the earth's crust and the underlying plastic mantle. Radionuclides in soil are derived from source rock, although soil activity concentrations are often less than source rock concentrations. The concentrations of naturally occurring radionuclides in water are several orders of magnitude less than those in rocks and soils. The level of natural radioactivity in air and soil water is due primarily to radon (radon-222, radon-220, radon-219) and radon decay products (NCRP 76; NCRP 87).

Cosmic radiation consists of primary charged and neutral particles that bombard the earth's atmosphere and the secondary particles produced by interactions of primary particles in the atmosphere. Primary cosmic radiation is composed predominately of protons. Secondary cosmic particles consist of high-energy muons and electrons and cosmogenic radionuclides. The major cosmogenic radionuclides include carbon-14, tritium, and sodium-22.

Cosmic radiation increases with altitude as the mass of the atmosphere decreases. Cosmic flux density is least near the geomagnetic equator and increases with latitude. Energetic solar flares generate large numbers of photons that add to the cosmic flux density.

7.2.2.2 Ubiquitous Manmade Radioactive Contamination

Manmade isotopes are distributed in the environment due primarily to releases from nuclear weapons testing and to the very small, but measurable releases from nuclear power facilities (NCRP 76; NCRP 87). Some of the important radionuclides produced by these processes are listed in Appendix O, along with preliminary background soil concentration data for selected manmade and naturally occurring radionuclides at DOE sites.

Since the first test of a nuclear weapon at Alamogordo, New Mexico, in 1945, approximately 450 additional weapons have been detonated in the atmosphere. These detonations resulted in the production and global dispersal of several millions of curies of radioactive fission and activation products, transuranic elements, and unfissioned uranium and plutonium isotopes. Strontium-90 and cesium-137 are two of the most important fission products that were distributed in near-surface soils because of weapons testing.

In general, the quantities of radionuclides released as a result of normal nuclear power plant operations are very small and are mostly localized around each facility. These releases occur infrequently because of periodic fuel failure, defects, or corrosion that results in transfer of some fission and activation products into the reactor coolant. Tracer amounts of radionuclides that may be released to the atmosphere due to these causes include noble gases (argon, krypton, and xenon), carbon-14, tritium, iodines, and particulates. Small amounts of radionuclides that may also be discharged in liquid effluents include tritium, fission products, and activated corrosion products.

7.2.2.3 Effects of Soil Background on Cleanup Levels

Tables 7-4, 7-5, and 7-6 list typical background soil concentrations for 62 naturally occurring and manmade radionuclides in U.S. soils. For the purposes of evaluating the possible effects of soil background concentrations on cleanup levels, two criteria were used to define radionuclide soil concentrations which clearly exceed background. For naturally occurring or ubiquitous manmade radionuclides in soil, the "above-background criterion" is defined as a measured concentration of a specific radionuclide in soil that exceeds its respective site-specific mean background concentration by two standard deviations. For nonubiquitous manmade radionuclides (i.e., those with zero background concentrations), the "above-background criterion" is defined as the concentration of a specific radionuclide in soil that

equals or exceeds its MDC. Applying these criteria, the following observations were made based on inspection of the data presented in Table 7-4 through 7-6:

At a target risk level of 1×10^{-4} :

- All radionuclides may be detectable above their respective background concentrations for the rural residential exposure scenario, except C-14, Cs-137, K-40, Pa-231, Pb-210, Ra-226, Ra-228, Sr-90, Th-228, Th-230, Th-232, U-234, and U-238 (Table 7-4).
- All radionuclides may be detectable above their respective background concentrations for the suburban exposure scenario, except for Cs-137, K-40, Ra-226, Ra-228, Sr-90, Th-228, Th-230, Th-232, and U-238 (Table 7-5).
- All radionuclides may be detectable above their respective background concentrations for the commercial/industrial exposure scenario, except K-40, Ra-226, Ra-228, Th-228, Th-230, and Th-232 (Table 7-6).

At a target risk level of 3×10^{-4} :

- All radionuclides may be detectable above their respective background concentrations for the rural residential exposure scenario, except for C-14, Cs-137, K-40, Pa-231, Ra-226, Ra-228, Sr-90, Th-228, Th-230, and Th-232 (Table 7-4).
- All radionuclides may be detectable above their respective background concentrations for the suburban exposure scenario, except K-40, Ra-226, Ra-228, Th-228, Th-230, and Th-232 (Table 7-5).
- All radionuclides can be detected using laboratory analysis methods for the commercial/industrial exposure scenario, except Ra-226 and Th-232 (Table 7-6).

At a target dose rate limit of 15 mrem/yr:

- All radionuclides may be detectable above their respective background concentrations for the rural residential exposure scenario, except C-14, Cs-137, K-40, Pa-231, Pb-210, Ra-226, Ra-228, Th-228, Th-230 and Th-232 (Table 7-4).
- All radionuclides may be detectable above their respective background concentrations for the suburban exposure scenario, except K-40, Ra-226, Ra-228, Th-228, Th-230 and Th-232 (Table 7-5).
- All radionuclides may be detectable above their respective background concentrations for the commercial/industrial exposure scenario, except Ra-226, Th-230 and Th-232 (Table 7-6).

7.2.3 Demonstrating Compliance With EPA's Proposed Drinking Water Standards

As proposed, the cleanup rule stipulates that residual concentrations of radionuclides in soil after cleanup must meet or exceed proposed Agency drinking water standards for radionuclides cited in *40 CFR Parts 141 and 142, National Primary Drinking Water Regulations; Radionuclides; Proposed Rule, Federal Register* (56 FR 33050-33127, July 18, 1991). Because of this stipulation, EPA conducted an evaluation to determine whether or not RSCs derived using generic site data could result in radionuclide concentrations in groundwater that exceed these drinking water standards assuming various dose/risk limits and exposure scenarios.

Generic radionuclide soil concentrations were first calculated using the DOE RESRAD computer code (version 5.19), assuming three different land use exposure scenarios (discussed in Chapter 2) and generic site data (discussed in Chapter 3) for all relevant soil exposure pathways over a 1,000-year time horizon. The results of these calculations are presented in Table 7-1. Soil concentrations were then recalculated using RESRAD for each scenario by excluding all soil exposure pathways, except groundwater. The groundwater pathway-only results were compared with the soil concentrations in Table 7-1. Based on these comparisons, drinking water MCLs were assumed to be exceeded if the calculated groundwater dose rate exceeded 4 mrem/yr for any beta/gamma-emitting radionuclide or exceeded a lifetime cancer incidence risk of 1E-4 for any alpha-emitting radionuclide. The

results of the drinking water evaluation are shown in Table 7-10 and can be interpreted as follows:

At a target risk level of 1×10^{-4} :

- All radionuclides should meet EPA's proposed drinking water standards for all three exposure scenarios evaluated.

At a target risk level of 3×10^{-4} :

- All radionuclides should meet EPA's proposed drinking water standards for the rural residential exposure pathway, except H-3, I-129, Np-237, Sm-147, Sr-90, U-233, U-234, U-235, U-236, and U-238.
- All radionuclides should meet EPA's proposed drinking water standards for the suburban exposure pathway, except H-3, I-129, Ni-59, Np-237, Sm-147, Sr-90, U-233, U-234, U-235, U-236, and U-238.
- All radionuclides should meet EPA's proposed drinking water standards for the commercial/industrial exposure pathway, except H-3, I-129, Np-237, Ni-59, Pa-231, Sm-147, Sr-90, U-233, U-234, U-235, U-236, and U-238.

At a target dose rate limit of 15 mrem/yr:

- All radionuclides should meet EPA's proposed drinking water standards for the rural residential exposure pathway, except H-3, I-129, Np-237, Pa-231, Sm-147, Sr-90, U-233, U-234, U-235, U-236, and U-238.
- All radionuclides should meet EPA's proposed drinking water standards for the suburban exposure pathway, except H-3, I-129, Ni-59, Np-237, Pa-231, Sm-147, Sr-90, U-233, U-234, U-235, U-236, and U-238.
- All radionuclides should meet EPA's proposed drinking water standards for the commercial/industrial exposure pathway, except H-3, I-129, Ni-59, Np-237, Pa-231, Sm-147, Sr-90, U-233, U-234, U-235, U-236, and U-238.

Table 7-10. Evaluation of Generic Soil Concentrations That Could Exceed EPA Drinking Water Standards - (Continued)

<i>Could the generic soil concentration for the specified radionuclide result in a groundwater concentration exceeding EPA's proposed drinking water standard?</i>									
Radionuclide	1E-4 Risk Limit			3E-4 Risk Limit			15 mrem/year Dose Rate Limit		
	Rural Residential	Suburban	Commercial/ Industrial	Rural Residential	Suburban	Commercial/ Industrial	Rural Residential	Suburban	Commercial/ Industrial
Pu-242	○	○	○	○	○	○	○	○	○
Pu-244+D	○	○	○	○	○	○	○	○	○
Ra-226 +D	○	○	○	○	○	○	○	○	○
Ra-228+D	○	○	○	○	○	○	○	○	○
Ru-106+D	○	○	○	○	○	○	○	○	○
Sb-125+D	○	○	○	○	○	○	○	○	○
Sm-147	○	○	○	●	●	●	●	●	●
Sm-151	○	○	○	○	○	○	○	○	○
Sr-90+D	○	○	○	○	○	●	○	○	●
Tc-99	○	○	○	●	●	●	●	●	●
Th-228+D	○	○	○	○	○	○	○	○	○
Th-229+D	○	○	○	○	○	○	○	○	○
Th-230	○	○	○	○	○	○	○	○	○
Th-232	○	○	○	○	○	○	○	○	○
Tl-204	○	○	○	○	○	○	○	○	○
U-232	○	○	○	○	○	○	●	●	●
U-233	○	○	○	●	●	●	●	●	●
U-234	○	○	○	●	●	●	●	●	●
U-235+D	○	○	○	●	●	●	●	●	●
U-236	○	○	○	●	●	●	●	●	●

Table 7-10. Evaluation of Generic Soil Concentrations That Could Exceed EPA Drinking Water Standards - (Continued)

<i>Could the generic soil concentration for the specified radionuclide result in a groundwater concentration exceeding EPA's proposed drinking water standard?</i>									
Radionuclide	1E-4 Risk Limit			3E-4 Risk Limit			15 mrem/year Dose Rate Limit		
	Rural Residential	Suburban	Commercial/ Industrial	Rural Residential	Suburban	Commercial/ Industrial	Rural Residential	Suburban	Commercial/ Industrial
U-238+D	○	○	○	●	●	●	●	●	●
Zn-65	○	○	○	○	○	○	○	○	○

For each target dose/risk limit and exposure scenario combination listed in the table above, could the calculated generic soil concentration for a given radionuclide result in groundwater contamination in excess of EPA's proposed maximum contaminant level (MCL) for that radionuclide (i.e., >4 mrem/yr due to any beta/gamma emitter or >1E-4 lifetime cancer incidence risk due to any alpha emitter)?

- Not likely.
- Yes.

Source: U.S. Environmental Protection Agency, *40 CFR Parts 141 and 142 National Primary Drinking Water Regulations; Radionuclides; Proposed Rule*, Federal Register, Vol. 56, No. 138: 33050-33127, July 18, 1991.

Notes: Generic radionuclide soil concentrations were calculated using the DOE RESRAD computer code (version 5.19), assuming three different land use exposure scenarios (discussed in Chapter 2) and generic site data (discussed in Chapter 3) for all relevant soil exposure pathways over a 1,000-year time horizon. The results of these calculations are presented in Table 7-1. To determine whether or not EPA's proposed drinking water standards could be exceeded, soil concentrations were recalculated using RESRAD for each scenario excluding all soil exposure pathways except groundwater, and compared with the results in Table 7-1. Based on these comparisons, drinking water MCLs were assumed to be exceeded if the calculated groundwater dose rate exceeded 4 mrem/yr for any beta/gamma-emitting radionuclide or exceeded a lifetime cancer incidence risk of 1E-4 for any alpha particle emitting radionuclide.

7.3 EPA IMPLEMENTATION GUIDANCE DOCUMENTS

EPA is preparing or planning to prepare several different kinds of implementation guidance documents. For example, EPA is presently collaborating with DOE, NRC, and DOD to develop a single multiagency manual for conducting environmental radiological surveys. The purpose of this manual is to provide standardized and consistent approaches for conducting characterization and closeout surveys with a high degree of assurance that problems concerning lower limits of detection and background radiation have been adequately addressed. A draft version of this document is currently being reviewed by all participating agency workgroup members.

EPA is also planning on developing sets of standardized routine analytical services (SAS) and special analytical services (RAS) procedures for radiochemical analyses, similar to the procedures developed by EPA for hazardous chemical substances under the Agency's Contract Laboratory Program (CLP). The proposed CLP-equivalent RAS and SAS procedures for radionuclide analyses will improve the quality and usability of all radiological data needed for site characterization and for verification sampling and analysis.

Other Agency implementation guides are likely and some are already in the initial planning stages.

8. References

- Ab 86 Abel, K. H., et al, 1986. *Residual Radionuclide Contamination Within and Around Commercial Nuclear Power Plants*. NUREG/CR-4289, U.S. Nuclear Regulatory Commission, Washington, D.C.
- Alz 79 Alzona, J., et.al., 1979. "Indoor-Outdoor Relationships for Airborne Particulate Matter of Outdoor Origin," Atmospheric Environment, **13**:55-60.
- ANL 91 Argonne National Laboratory, *RESRAD Parameter Sensitivity Analysis*, ANL/EAIS-3, August 1991.
- ANL 93a Argonne National Laboratory, *A Compilation of Radionuclide Transfer Factors for the Plant, Meat, Milk, and Aquatic Food Pathways and the Suggested Default Values for RESRAD*, ANL/EAIS/TM-103, August 1993.
- ANL 93b Argonne National Laboratory, *Data Collection Handbook to Support Modeling of Impacts of Radioactive Material in Soil*, ANL/EAIS-8, April 1993.
- B&W 92a Babcock & Wilcox, 1992. *Technical Progress Report, Apollo, Pennsylvania, Nuclear Fuel Facility D&D Project: Quarterly Progress Report for the Period 1/1/92 - 3/31/92*. DOE/EW/40017--T2, unpublished.
- B&W 92b Babcock & Wilcox, 1992. *Technical Progress Report, Apollo, Pennsylvania, Nuclear Fuel Facility D&D Project: Quarterly Progress Report for the Period 4/1/92 - 6/30/92*. DOE/EW/40017--T3, unpublished.
- B&W 93a Babcock & Wilcox, 1993. *Technical Progress Report, Apollo, Pennsylvania, Nuclear Fuel Facility D&D Project: Quarterly Progress Report for the Period 7/1/92 - 9/30/92*. DOE/EW/40017--T4, unpublished.

- B&W 93b Babcock & Wilcox, 1993. *Technical Progress Report, Apollo, Pennsylvania, Nuclear Fuel Facility D&D Project: Quarterly Progress Report for the Period 10/1/92 - 12/31/92*. DOE/EW/40017--T5, unpublished.
- Baca 92 Baca, T.E., "DOD Environmental Requirements and Priorities," Federal Facilities Environmental Journal, Autumn 1992.
- Bl 92 Black, S. C., and W. G. Phillips, 1992. *National Emission Standards for Hazardous Air Pollutants Submittal-1992*. Reynolds Electrical & Engineering Co., Inc., Las Vegas, Nev.
- Cin 92 Cintichem, Inc., 1992. *Description of Soil Remediation and Disposition of Contaminated Soil at the Cintichem Facility - Tuxedo, New York*. Unpublished.
- Dan 93 Daniels, J.E., ed., 1993. *Pilot Study Risk Assessment for Selected Problems at the Nevada Test Site (NTS)*, UCRL-LR-113891.
- DOD 92 Department of Defense, 1992. *Defense Environmental Restoration Program Annual Report to Congress for FY 1991*.
- DOE 90a Department of Energy, 1990. *Tritium Variations in Groundwater on the Nevada Test Site*, DOE/NV/10384-38, UC-703. Water Resources Center, Desert Research Institute, University of Nevada.
- DOE 90b Department of Energy. *Environmental Restoration and Waste Management, Five-Year Plan*, DOE/S-0078P, June 1990.
- DOE 91 Department of Energy, 1991. *Results of the Public Health and Ecological Assessment, Phase II, at the Paducah Gaseous Diffusion Plant-Draft*, KY/SUB/13B-97777C P-03/1991/1. Martin Marietta Energy Systems, Inc., Paducah, KY.

- DOE 92a Department of Energy, 1992. *Baseline Assessment for the Chemical Plant Area of the Weldon Spring Site*, DOE/OR/21548-091. U.S. Department of Energy, Oak Ridge Field Office, Oak Ridge, Tenn.
- DOE 92b Department of Energy, 1992. *Remedial Investigation for the Chemical Plant Area of the Weldon Spring Site, vols. i and ii*, DOE/OR/21548-074. U.S. Department of Energy, Oak Ridge Field Office, Oak Ridge, Tenn.
- DOE 92c Department of Energy, 1992. *Proposed Plan for Remedial Action at the Chemical Plant Area of the Weldon Spring Site*, DOE/OR/21548-160. U.S. Department of Energy, Oak Ridge Field Office, Oak Ridge, Tenn.
- DOE 92d Department of Energy, 1992. *Integrated Database for 1992: U.S. Spent Fuel and Radioactive Waste Inventories, Projections, and Characteristics*, DOE/RW-006-Rev. 8.
- DOE 92e Department of Energy, 1992. *Results of the Site Investigation, Phase II, at the Paducah Gaseous Diffusion Plant, KY/SUB/13B-97777C P-03/1991, Volumes 1 through 6*.
- DOE 92f Department of Energy, 1992. *Remedial Investigation for the Maywood Site, Volume I, Draft*, DOE/OR/21949-337.
- DOE 93a Department of Energy, 1993. *Manual for Implementing Residual Radioactive Material Guidelines Using RESRAD, Version 5.0, Final Draft*.
- DOE 93b Department of Energy, 1993. *Initial Screening of Alternatives for Operable Unit 5, Fernald Environmental Management Project, Remedial Investigation and Feasibility Study--Final*. U.S. Department of Energy, Fernald Field Office, Fernald, Ohio.
- DOE 93c Department of Energy, 1993. *Site-Wide Characterization Report, Fernald Environmental Management Project, vol. 2--Final*. U.S. Department of Energy, Fernald Field Office, Fernald, Ohio.

- DOE 93d Department of Energy, 1993. *Screening Level Cost-Benefit Analysis for Plutonium Cleanup Levels at the Nevada Test Site--Draft*. U.S. Department of Energy, Nevada Operations Office, Las Vegas, Nev.
- DOE 93e Department of Energy, 1993. *Baseline Risk Assessment for the Maywood Site, Volume I*, DOE/OR/21950-003. Science Applications International Corporation, ESC-FUSRAP.
- DOE 94a Department of Energy, 1994. *Environmental Management 1994: Progress and Plans of the Environmental Restoration and Waste Management Program*, DOE/EM-0119.
- DOE 94b Department of Energy, 1994. *Integrated Database for 1994: U.S. Spent Fuel and Radioactive Waste Inventories, Projections, and Characteristics*, DOE/RW-006-Rev. 9.
- DOE 94c Department of Energy, 1994. *Preliminary Analysis of the Technical Feasibility of Achieving Various Residual Risk Standards for Cleanup of Radionuclides in Soil*, Revision 1.
- EGG 82a EG&G Energy Measurements Group, 1982. *An Aerial Radiological Survey of Areas 1, 2, 3, 4, 6, 7, 8, 9, 10, 12, 15 & 17, Yucca Flat, Nevada Test Site*, EGG-1183-1808, UC-41. Unpublished.
- EGG 82b EG&G Energy Measurements Group, 1982. *An Aerial Radiological Survey of United States Department of Energy's Rocky Flats Plant*, EGG-1183-1771, UC-41. Unpublished.
- EGG 83 EG&G Energy Measurements Group, 1983. *An Aerial Radiological Survey of Area 11, Nevada Test Site*, EGG-10282-1004, UC-41. Unpublished.
- EGG 84 EG&G Idaho, 1994. *Algorithm for Calculating an Availability Factor for the Inhalation of Radioactive and Chemical Materials*, EGG-2278.

- EGG 85 EG&G Energy Measurements, 1985. *An Aerial Radiological Survey of Areas 18 and 20, Nevada Test Site*, EGG-10282-1093, UC-41. Unpublished.
- EGG 90 EG&G Energy Measurements Group, 1990. *An Aerial Radiological Survey of United States Department of Energy's Rocky Flats Plant and Surrounding Area*, EGG-10617-1044, UC-702. Unpublished.
- EGG 91 EG&G Energy Measurements, 1991. *In Situ Surveys of United States Department of Energy's Rocky Flats Plant*, EGG-10617-1044, UC-702.
- EGG 92a EG&G Idaho, 1992. *Preliminary Assessment of Surface Soils at Active EG&G Idaho Facilities Data Document*, EGG-ESQ-9225, Rev. 1.
- EGG 92b EG&G Energy Measurements, 1992. *An Aerial Radiological Survey of the Oak Ridge Reservation and Surrounding Area*, EGG-10617-1123, UC-702. Unpublished.
- EGG 92c EG&G Energy Measurements, 1992. *An Aerial Radiological Survey of the Oak Ridge Reservation and Surrounding Area*, EGG-10617-1123, UC-702. Unpublished.
- EPA 82 Environmental Protection Agency, 1982. *Final EIS for Remedial Action Standards for Inactive Uranium Processing Sites (40 CFR 192)*, EPA 520/4-82-013-1.
- EPA 85a Environmental Protection Agency, 1985. *DRASTIC: A Standardized System for Evaluating Ground Water Pollution Potential Using Hydrogeologic Settings*, EPA/600/2-85/018.
- EPA 85b Environmental Protection Agency, 1985. *Rapid Assessment of Exposure to Particulate Emissions from Surface Contamination Sites*, EPA/600/8-85/002.
- EPA 85c Environmental Protection Agency, 1985. *Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources*, AP-42, Fourth Edition.

- EPA 87 Environmental Protection Agency, 1987. *Low-level and NARM Radioactive Wastes, Model Documentation PRESTO-EPA-POP: Volume 1 - Methodology Manual*, EPA 520/1-87-024-1.
- EPA 88a Environmental Protection Agency, 1988. *Low-Level and NARM Radioactive Wastes - Draft Environmental Impact Statement for Proposed Rules*, EPA 520/1-87-012.
- EPA 88b Environmental Protection Agency, 1988. *Superfund Exposure Assessment Manual*, EPA 540/1-88/001, OSWER Directive 9285.5-1.
- EPA 88c Environmental Protection Agency, 1988. "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion," *Federal Guidance Report No. 11*, EPA 520/1-88-020.
- EPA 89a Environmental Protection Agency, 1989. *Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual, Part A*, EPA/540/1-89-002.
- EPA 89b Environmental Protection Agency, 1989. *Risk Assessment Methodology, Background Information Document, NESHAPS for Radionuclides - Volume I*, EPA/520/1-89-006-1.
- EPA 89c Environmental Protection Agency, 1989. *Exposure Factors Handbook*, EPA/600/8-89/043.
- EPA 90a Environmental Protection Agency, 1990. *Assessment of Technologies for the Remediation of Radioactively Contaminated Superfund Sites*, EPA/540/2-90/001.
- EPA 90b Environmental Protection Agency, 1990. *Superfund Record of Decision: Monticello Mill Tailings*, EPA/ROD/R08-90/034.

- EPA 91a Environmental Protection Agency, 1991. *Risk Assessment Guidance for Superfund. Volume 1, Human Health Evaluation Manual. Part B, Development of Risk Based Preliminary Remediation Goals*, PB92-963333.
- EPA 91b Environmental Protection Agency, 1991. *Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors*, OSWER Directive 9285.6-03.
- EPA 92a Environmental Protection Agency, 1992. *National Residential Radon Survey*, EPA 402-R-92-011.
- EPA 92b Environmental Protection Agency, 1992. *Health Effects Assessment Summary Tables*, OHEA ECAO-CIN-821.
- EPA 92c Environmental Protection Agency, "Guidance on Risk Assessment for Risk Managers and Risk Assessors," Memo from F. Henry Habicht II to Assistant and regional Administrators, February 26, 1992.
- EPA 93a Environmental Protection Agency, 1993. *Issues Paper on Radiation Site Cleanup Regulations*, EPA 402-R-93-084.
- EPA 93b Environmental Protection Agency, 1993. *Environmental Characteristics of EPA, NRC, and DOE Sites Contaminated with Radioactive Substances*, EPA 402-R-93-011.
- EPA 93c Environmental Protection Agency, 1993. *Computer Models Used to Support Cleanup Decision-making at Hazardous and Radioactive Waste Sites*, EPA 402-R-93-005.
- EPA 93d Environmental Protection Agency, "External Exposure to Radionuclides in Air, Water, and Soil," *Federal Guidance Report No. 12*, EPA 402-R-93-081, September 1993.
- EPA 93e Environmental Protection Agency, *Data Quality Objectives process for Superfund*, Interim Final Guidance, EPA 540-R-93-071.

- EPA 94 Environmental Protection Agency, 1994. *Draft Guidance for Soil Screening Level Framework*, Quick Reference Fact Sheet, Review Draft.
- ET 92 Earth Technology Corporation, 1992. *Installation Restoration Program Stage 2 Remedial Investigation/Feasibility Study for BOMARC Missile Accident Site, McGuire Air Force Base, New Jersey*.
- FEMP 93 Fernald Environmental Project, 1993. *Site Environmental Report -- 1992*, FEMP-2290, UC-707. Fernald Environmental Restoration Management Corporation.
- Fr 79 Freeze, R. A. and J. A. Cherry, 1979. *Groundwater*, Prentice-Hall, 604 pp.
- Han 80 Hanson, W.C., ed. *Transuranic Elements in the Environment*, DOE/TIC 22800, Pacific Northwest Laboratory, 1980.
- IAEA 82 International Atomic Energy Agency, 1982. *Generic Models and Parameters for Assessing the Environmental Transfer of Radionuclides from Routine Releases*, Safety Series No. 57.
- INEL 77 Idaho National Engineering Laboratory, 1977. *Final Environmental Impact Statement, Waste Management Operations*, ERDA-1536, UC-2-11-70. Energy Research and Development Administration.
- John 94 Johnson, T., 1994. Private communication from NRC Division of Low-Level Waste Management and Decommissioning.
- Koc 83 Kocher, D.C., 1983. "External Dosimetry," In Radiological Assessment, Edited by John E. Till and H. Robert Meyer, NUREG/CR-3332.
- Kr 76 Krey, P. W., 1976. "Remote Plutonium Contamination and Total Inventories from Rocky Flats." Health Physics, **30**:209-214.

- Li 93 Litaor, M. I., 1993. "Spatial Analysis of Plutonium Activity in Soils East of Rocky Flats Plant" in *Environmental Health Physics*, Proceedings of the 26th Topical Meeting, Health Physics Society.
- Li 94 Litaor, M. I., 1994. Private communication.
- Lo 87 Looney, B.B., M.W. Grant, C.M. King, 1987. "Estimation of Geochemical Parameters for Assessing Subsurface Transport at the Savannah River Plant," *E.I. duPont de Nemours & Co., Environmental Information Document*, DPST-85-904.
- Myr 81 Myrick, T. E., *et al.*, 1981. *State Background Radiation Levels: Results of Measurements Taken During 1975-1979*, ORNL/TM7343, Oak Ridge National Laboratory, Oak Ridge, Tenn.
- NAS 90 National Academy of Sciences, 1990. *Health Effects of Exposure to Low Levels of Ionizing Radiation - BEIR V*, National Research Council.
- Nei 92 Neiheisel, J., and J. Mauro, 1992. "The Role of Petrographic and Radiochemical Analyses in Risk Assessment at Superfund Sites Contaminated with Radioactive Materials," in *Waste Management '92: Working Towards a Cleaner Environment*, proceedings of the Annual Waste Management Meeting, Tucson, Arizona.
- NCRP 76 National Council on Radiation Protection and Measurements, 1976. *Environmental Radiation Measurements*, NCRP Report No. 50.
- NRC 87 Nuclear Regulatory Commission, 1987. *Methods for Estimating Radioactive and Toxic Airborne Source Terms for Uranium Mill Operations*, Regulatory Guide 3.59.
- NRC 92a Nuclear Regulatory Commission, 1992. *Updated Report on Site Decommissioning Management Plan*, SECY-92-200.

- NRC 92b Nuclear Regulatory Commission, 1992. *Residual Radioactive Contamination from Decommissioning - Technical Basis for Translating Contamination Levels to Annual Total Effective Dose Equivalent*, NUREG/CR-5512. Prepared by W.E Kennedy and D.L. Streng, Battelle Pacific Northwest Laboratory.
- NRC 92c Nuclear Regulatory Commission, 1992. *NRC Comments on Report Entitled "A Sub-surface Survey for Thorium Content at the MolyCorp Plant Site in Washington, Pennsylvania."* Unpublished.
- NRC 93 Nuclear Regulatory Commission, 1993. *Site Decommissioning Management Plan*, NUREG-1444. Division of Low-Level Waste Management and Decommissioning, U.S. Nuclear Regulatory Commission, Washington, D.C.
- NRC 94 Nuclear Regulatory Commission, 1994. *Draft Generic Environmental Impact Statement In Support of Radiological Criteria For Rulemaking on Decommissioning*, NUREG-1496, April, 1994.
- Oak 72 Oakley, D.T., 1972. *Natural Radiation Exposure in the United States*, ORP/SID 72-1.
- ORNL 88 Oak Ridge National Laboratory, 1988. *Environmental Data Package for the Environmental Research Areas (WAG 13)*, ORNL/RAP-48.
- Pet 83 Peterson, H.T. "Terrestrial and Aquatic Food Chain Pathways," In: *Radiological Assessment*, Edited by John E. Till and H. Robert Meyer, NUREG/CR-3332, September 1983.
- RAE 90 Rogers and Associates Engineering Corporation, "Foundation Soil Cleanup Depths for Removing Radium Contamination Causing Elevated Indoor Radon," Prepared by K.K Nielson and V.C. Rogers under EPA Contract No. 68D90170 with S. Cohen & Associates, Inc., Task 4 of Work Assignment 1-35, Mark Cotton Work Assignment Manager for EPA. September 14, 1990.

- RAE 91 Rogers and Associates Engineering Corp., 1991. *Baseline Risk Assessment for the F- and H-Area Seepage Basins Groundwater Unit (U)*, Draft Final, WSRC-RP-91-950.
- RAE 92 Rogers and Associates Engineering Corp., 1994. *Foundation Soil Cleanup Depths and Radium Limits for Avoiding Elevated Indoor Radon*, Prepared for EPA under contract No. 68D90170, EPA Work Assignment Manager H. Ben Hull.
- RAE 94 Rogers and Associates Engineering Corp., 1994. *Modifications to the PRESTO-CPG Code to Facilitate the Analysis of Soil Contamination Sites*, RAE-9231/6-1.
- Seh 84 Sehmel, G.A., 1984. "Deposition and Resuspension", In: *Atmospheric Science and Power Production*, Randerson, Darryl, E., Ed., DOE/TIC-27601.
- She 90 Sheppard, M.I. and D.H. Thibault, 1990. "Default Soil Solid/Liquid Partition Coefficients, K_{ds} , for Four Major Soil Types: A Compendium," *Health Physics*, **59**(4): 471-482.
- Sim 90 Simon, S.L., and S.A. Ibrahim, "Biological Uptake of radium by Terrestrial Plants," In: *The Environmental Behavior of Radium*, IAEA, Technical Reports Series No. 310, 1990.
- St 93 Stevenson, K. A., and E. P. Hardy, 1993. "Estimate of Excess Uranium in Surface Soil Surrounding the Feed Materials Production Center Using a Requalified Data Base." *Health Phys.* 65(3):283-287.
- Van 90 Van der Leeden, F. et. al., 1990. *The Water Encyclopedia*, 2nd Edition, Lewis Publishers.
- Wo 93 Woodruff, R. K., and R. W. Hanf, eds, 1993. *Hanford Site Environmental Report for Calendar Year 1992*. Pacific Northwest Laboratory, Richland, Wash. 99352.

- Wr 90 Wrenn, M. E., 1990. "A Sub-surface Survey for Thorium Content at the Molycorp Plant Site in Washington, PA." Appendix I to *Plan for Site Characterization in Support of Decommissioning of the Molycorp Inc. Washington Pa Facility*.
- Wr 92 Wrenn, M. E., et al, 1992. "Justification of the Calibration Factor Used for Borehole Measurements of Underground Radiation Exposure Rates and Average Th-232 Concentration". Appendix J to *Plan for Site Characterization in Support of Decommissioning of the Molycorp Inc. Washington Pa Facility*.



Radiation Site Cleanup Regulations:

Technical Support Document
For The Development Of
Radionuclide Cleanup Levels
For Soil

Appendices A-K

Review Draft

Radiation Site Cleanup Regulations:

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Review Draft

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**U.S. Environmental Protection Agency
Office of Radiation and Indoor Air
401 M Street, S.W.
Washington, DC 20460**

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APPENDIX A

FOOTNOTES FOR TABLE 1-2

Appendix A

Footnotes for Table 1-2

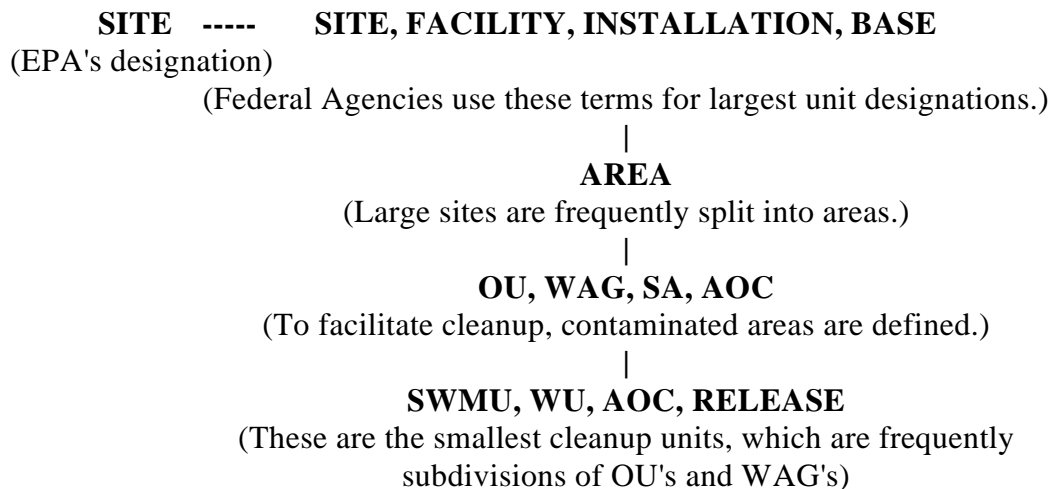
Definitions of Terms Used in the Footnotes for Table 1-2:

For the purpose of this report, the following definitions are adopted:

- A "*site*" is any installation, facility, or discrete, physically separate parcel of land, or any building or structure, or any ground water or surface water, that is known to be contaminated with radionuclides defined under the Atomic Energy Act, or with naturally occurring or accelerator-produced radionuclides in concentrations greater than those naturally occurring. If a portion of a "*site*" is contaminated, the entire site is considered a "*site*." For example, the Hanford Reservation, which has many contaminated buildings, discrete release sites, and ground water contamination, is considered a single "*site*."
- A functional or operational **area** is defined as a portion of the site designated independently for its specific functional or operational mission. A functional area could be a specific facility or an installation. For example, K-25 is one of the three operational areas in the Oak Ridge Reservation.
- An **Operable Unit** (OU) is a SUPERFUND term. It represents a discrete portion or a subdivision of a complex site consisting of one or more sub-subdivisions (*e.g.*, SWMU, WU, or AOC) considered together for assessment and cleanup activities. The primary criteria for placement of smaller waste subdivisions into an operable unit include geographic proximity, similarity of waste characteristics and type, and the possibilities of an economy of scale. In some cases, operable units may address specific sets of remedial response actions performed over time and any actions that are concurrent but located in different areas of a site.
- A **Waste Area Grouping** (WAG) is a DOE waste management term. It represents a grouping of waste and/or release subdivisions with areawide soil and/or groundwater contamination that is not readily traceable to individual sources or operational areas. Generally, a WAG is limited to a geographically contiguous and hydrologically defined area.
- A **Study Area** (SA) is a DOE term. It represents a contiguous portion or a subdivision of a site at which a radioactive release or contamination has occurred or is suspected of having occurred. The study area is designed for evaluation and characterization.

- A **Solid Waste Management Unit** (SWMU) is a RCRA term defining a unit or subdivision at a waste facility from which radioactive materials might migrate, irrespective of whether the unit was intended for the management of wastes. SWMU's include, but are not limited to: containers, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells.
- A **Waste Unit** (WU) is a DOE waste management term. It defines a contiguous waste unit or subdivision at a complex site from which radioactive materials might migrate, irrespective of whether the unit was intended for the management of wastes. WU's include, but are not limited to: trenches, cribs, ditches, drainages, vaults, ponds, containers, tanks, surface impoundments, waste piles, waste pits, land treatment units, landfills, incinerators, and underground injection wells.
- An **Area of Concern** (AOC) is a DOE term. It defines a subdivision of a complex site from which radioactive materials might migrate into ground water. This unit is used for those subdivisions which are not defined as SWMUs or WUs.
- A **Release** is a SUPERFUND term. It represents a location in a site at which a radioactive, hazardous, or mixed waste release has occurred.

A site can be subdivided into smaller units. The site subdivisions are presented as follows:



Footnotes for Table 1-2

1. Fernald:
 - 5 Operable Units [FERMCO RI/FS Fact Sheets #2579-1,2,3,4,5]
 - OU1: Waste Pit Area [PEIS: 10 subdivisions]
 - OU2: Other Waste Units [PEIS: 10 subdivisions]
 - OU3: Production Area [PEIS: 252 subdivisions]
 - OU4: Silos 1-4 [PEIS: 14 subdivisions]
 - OU5: Environmental Media [PEIS: 45 subdivisions]

2. Hanford:
 - 8 functional areas - Areas 100, 200, 300, 400, 600, 700, 1100, and 3000.
 - Area 100: 9 reactor sites, associated facilities, low-level waste burial grounds and irradiated fuel storage.
 - Area 200: fuel reprocessing, waste processing, and disposal
 - Area 300: nuclear research and development
 - Area 400: Fast Flux Test Facility, and breeder reactor systems
 - Area 600: remaining Hanford operational areas
 - Area 700: downtown Richland
 - Areas 1100 and 3000:
 - site support, general stores, and transportation maintenance
 - [Hanford Site Environmental Report 1991: PNL-8148/UC-602]
 - A total of 1,494 WMUs were identified in the Hanford Site Waste Management Units Report [DOE/RL-88-30 Rev.3, Vol 1, April 1993]. Of these, 1,070 units are identified as SWMUs (consisting of 386 RCRA TSD units) and 424 units are one-time spills WMUs. 1,249 of the WMUs are assigned to 71 OUs.
 - {According to the recent PEIS database, 10 functional subareas are identified with a total of 2,015 WMUs. These 10 subareas (their respective numbers of WMUs) are 100D (60), 100H (27), 100N (137), 100F (43), 100K (63), 100B (78), 200W (614), 200E (646), 400 (99), and 300 (248).}

3. INEL:
 - The Idaho National Engineering Laboratory (INEL) is divided into 10 WAGs to facilitate environmental restoration activities. WAGs 1 through 9 generally correspond to DOE-designated operational facilities, while WAG 10 corresponds to overall concerns associated with the Snake River Aquifer and those surface and subsurface areas not included in the bounds of WAGs 1 to 9. 367 subdivisions were identified in SC&A's preliminary evaluation.
 - WAG 1: Test Area North (TAN) - 10 Ous, and 43 subdivisions
 - WAG 2: Test Reactor Area (TRA) - 13 Ous, and 50 subdivisions
 - WAG 3: Idaho Chemical Processing Plant (ICPP) - 13 Ous, and 84 subdivisions
 - WAG 4: Central Facilities Area (CFA) - 13 Ous, and 54 subdivisions
 - WAG 5: Power Burst Facility (PBF) and Auxiliary Reactor Area (ARA) - 13 Ous, and 50 subdivisions
 - WAG 6: Experimental Breeder Reactor No.1 (EBR-1) and Boiling Water Reactor Experiment (BORAX) Areas - 5 Ous, and 20 subdivisions
 - WAG 7: Radioactive Waste Management Complex (RWMC) - 14 Ous, and 10 subdivisions
 - WAG 8: Naval Reactors Facility (NRF) - 8 Ous, and 67 subdivisions
 - WAG 9: Argonne National Laboratory-West (ANL-W) - 4 Ous, and 37 subdivisions
 - WAG 10: Miscellaneous surface and liquid disposal areas - 5 Ous, and 12 subdivisions
 - Total: 98 Ous, and 427 subdivisions
 - [According to the PEIS database, 725 subdivisions are listed in TAN (WAG 1-194), TRA (WAG - 150), ICPP (WAG - 241), and CFA (WAG - 140).]

Footnotes for Table 1-2

4. Mound:
6 OUs and 319 potential releases.
[Personal Communication.]
5. Nevada Test Site:
NTS is comprised of three main areas: [NVOO Report: Screening Level Cost-Benefit Analysis for Plutonium Cleanup Levels at the Nevada Test Site, December 10, 1993.]
Nevada Test Site (NTS)
Nellis Air Force Range (NAFR)
Tonopah Test Range (TTR)
[According to personal communication, there are 3 OUs :
OU 1: Underground Testing Areas - possibly 6 AOCs.
OU 2: Soil Media - possibly 15 AOCs (see NVOO Report)
OU 3: Potential Source Units - between 3000 to 4000 industrial units = approximately 3500 units.]
6. Oak Ridge Reservation:
ORR consists of 3 installations including the Y-12 Plant, K-25 Plant, and ORNL (X-10).
[DOE-ER Fact Sheets OER-005 (Fall 1992), OER-12 (Fall 1991), OER-13 (Fall 1992), OER-14 (Fall 1991)]
Y-12 Plant: Separation of U-235 from other uranium isotopes; weapons manufacturing; weapons transportation, dismantling, and storage. 4 OUs and 210 subdivisions were identified.
K-25 Plant: Gaseous diffusion process, and gas centrifuge program. 16 OUs and 123 subdivisions were identified.
X-10 (ORNL): Graphite Reactor, pilot fuel reprocessing plant, R&D, isotope production, and reactor research. 20 OUs and 350 subdivisions were identified.
7. Paducah:
26 WAGs and 197 SWMUs.
[Personal communication]
8. Pantex:
14 OUs and 143 SWMUs.
[Personal Communication.]
9. Portsmouth:
The entire site is divided into four quadrants and 92 SWMUs.
[Personal communication.]
10. Rocky Flats:
[Fact Sheet, May 1993] 16 OUs were identified:
OU 1: 881 Hillside Areas
OU 2: 903 Pad, Mound, and East Trenches Area
OU 3: Off-Site Releases
OU 4: Solar Evaporation Ponds
OU 5: Woman Creek Drainage
OU 6: Walnut Creek Drainage

Footnotes for Table 1-2

OU 7: Present Landfill
OU 8: 700 Area
OU 9: Original Process Waste Lines
OU 10: Other Outside Closures
OU 11: West Spray Field
OU 12: 400/800 Area
OU 13: 100 Area
OU 14: Radioactive Sites
OU 15: Inside Building Closures
OU 16: Miscellaneous Sites
[16 OUs and 177 SWMUs identified; Personal Communication.]
[According to PEIS database, 639 SWMUs were identified.]

11. Savannah River:
6 waste groups and 420 subdivisions.
[Personal Communication.]
12. Weldon Spring:
Site comprises two functional areas (does not include the U.S. Army Former Army Ordnance Works):
 - I: Weldon Spring Chemical Plant (including Raffinate Pits) - a uranium feed materials processing plant with 4 pits for disposal of raffinates from refinery operation and washed slag from the uranium recovery process. 6 areas of concerns are identified in ROD report: (1) Raffinate Pits; (2) Frog Pond; (3) Ash Pond; (4) North Dump and South Dump; (5) Material Staging Area; (6) Temporary Storage Area.
 - II: Weldon Spring Quarry - used as a disposal site for uranium and thorium residues, building rubble, and process equipment.
13. Argonne:
No OUs but 65 SWMUs.
[Personal communication.]
14. Brookhaven:
7 OUs, 27 AOCs and 92 SWMUs.
[Personal communication.]
15. Fermi:
No OUs but 98 SWMUs and 3 AOCs.
[Personal communication.]
16. Lawrence Berkeley:
[Report on RCRA Facility Assessment at the Lawrence Berkeley Laboratory, Rev.1. 9/30/1992.]
15 Study Areas were identified that consist of 63 AOCs and 73 SWMUs.
17. Lawrence Livermore:
The facility includes two functional areas: the main laboratory and Site 300 for testing.
Main Laboratory: 1 OU, 862 SWMUs and 34 AOCs [RCRA Facility Assessment Visual Site Inspection Report, 9/1988.]
Site 300: 6 OUs and 176 SWMUs.

Footnotes for Table 1-2

18. Los Alamos National Laboratory:
24 OUs, 68 Technical Areas, 250 Areas of Concern, and >2000 SWMUs. [Tucson WM94 presentation, based on November 1990 data.]
19. Sandia National Laboratory:
17 OUs and 219 SWMUs.
[Personal Communication.]
20. FUSRAP Sites:
There are 44 sites in the Formerly Utilized Sites Remedial Action Program of which 14 have completed remediation activities.
21. UMTRAP Sites:
There are 24 sites in the Uranium Mill Tailings Remedial Action Program of which 10 have completed remediation activities.
22. Other DOE Sites:
According to DOE Report EM-00119, there are 33 additional sites identified under the Environmental Restoration Program to be remediated by DOE. However, this number does not include 340 active and 3,389 inactive (a total of 3,729) uranium mines.
23. Aberdeen Proving Ground:
APG consists of over 50 tenants in both Aberdeen and Edgewood areas. There are, however, six major radiation-related areas in APG. They are:
 - 1: Army Research Laboratory (formerly Ballistic Research Laboratory)
 - 2: Combat Systems Test Activity
 - 3: Army Environmental Health Agency
 - 4: Chemical and Biological Defense Command
 - 5: Medical Research Institute of Chemical Defense
 - 6: Chemical Research, Development, Engineering Command
24. DOD Sites with Burial Areas:
There are 79 burial sites including pipe sites, shallow land waste burials, onsite landfills, waste dumps, and disposal pits.
25. DOD Sites with Accident Contamination:
Only 1 weapons-related accident site was identified by the Air Force: the BOMARC missile accident site at McGuire Air Force Base.
26. DOD Sites with DU Contamination:
There are 15 other DU contaminated sites in addition to Aberdeen Proving Ground, including weapons testing facilities, firing ranges, and DU staging and storage areas.
27. Other DOD Sites:
The remaining 51 DOD sites are mainly reactors, radwaste storage areas, hot cells, silos, previous AEC sites, training sites, and sampling sites.

Footnotes for Table 1-2

The following is a breakdown of the DOD sites by Department:

	<u>DU</u>	<u>Burial</u>	<u>Accident</u>	<u>Other</u>	<u>Total</u>	<u>NPL</u>
Army	13	8	0	47	68	11
Navy	2	7	0	0	9	4
Air Force	1	63	1	4	69	14
Air Guard	<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>
TOTAL	16	79	1	51	147	30

28. USDA:
Fremont National Forest Uranium Mines at Lake County Oregon (on NPL list).
29. GSA:
Watertown Arsenal Site (former defense weapons manufacturing facility).
30. NPL Municipal Landfills:
6 of 26 non-Federal NPL sites are commercial/municipal landfills or dump sites. [Based on EPA internal database for "Final and Proposed NPL sites contaminated with radioactive substances" (June 1993).]
31. NPL Radium Sites:
7 sites on the NPL are radium/thorium-related manufacturers or industrial sites.
32. Other NPL Sites:
The remaining 13 NPL sites contaminated with radioactive material include uranium mills, a disposal site, and several manufacturing facilities.
33. Nuclear Power Plants:
There are 78 PWRs (6 inactive), 43 BWRs (6 inactive), and 4 other shut-down reactors. NRC site counts are taken directly from NRC's 1994 "Draft Generic Environmental Impact Statement in Support of Radiological Criteria Used in the Decommissioning of NRC-Licensed Nuclear Facilities."
34. Test and Research Reactors:
There are 47 active nuclear research and testing reactors with operating licenses, 8 reactors with possession licenses, and 10 shut-down reactors.
35. Other Fuel Cycle Facilities:
There are a total of 65 Other Fuel Cycle Facilities that include:
a: Fuel Fabrication Plant - 14
b: Uranium Hexafluoride (Conversion) Plant - 2
c: Uranium Mill - 49
Not included are:
a: Independent Spent Fuel Storage - 9 (not included because the cleanup of these facilities may be included as part of the nuclear power plant decommissioning effort.)
b: Uranium Mines - (DOE has overall cleanup responsibility. It is addressed in EPA's NORM Report.)
36. Rare Earth Extraction:
There are 22 sites counted.

Footnotes for Table 1-2

37. Byproduct Materials Facilities:

NRC estimates give the site count by category as follows:

- a: Sealed Source Manufacturers - total 930 licenses
- b: Research and Development Facilities - total 3471 licenses. However, these estimates do not include 2010 Hospital Nuclear Medical Departments and 5,237 sealed source users.

NRC site count includes all Agreement States licenses in the total count. In their GEIS, to estimate the total volume of contamination, NRC scaled the total count of each byproduct category with respect to the GEIS reference site size, scaling down the number of sealed source manufacturers to 816 and the number of research and development facilities to 1,602.)

The byproduct material facilities include various industrial facilities such as research, materials testing, chemical production, drug research, clinical testing, mineral exploration and processing, consumer production manufacturing, sealed sources, and pharmaceuticals. Of these sites, NRC has identified 47 facilities that warrant special attention, which are grouped under the Site Decommissioning Management Plan (SDMP). Most of these 47 facilities are byproduct facilities. They all have contaminated buildings, soils, slag, and groundwater. They may also have former waste disposal areas and tailing piles. The SDMP program classifies the sites into 7 categories:

- | | | |
|----|------------------|----------|
| 1: | Metal Extraction | 14 sites |
| 2: | Fuel Cycle | 6 |
| 3: | Research | 6 |
| 4: | Byproduct | 6 |
| 5: | U-Catalyst | 3 |
| 6: | Mg-Th Alloy | 3 |
| 7: | Others | 9 |

38. Other State Sites:

These sites consist primarily of research sites and sites with Naturally-Occurring and Accelerator-Produced Radioactive Materials (NARM) which are not under the authority of the NRC/Agreement States, but which have been licensed by the States. The Conference of Radiation Control Program Directors (CRCPD) tracks the licenses issued to NARM sites.

APPENDIX B

PARAMETER VALUES USED IN PATHWAY/RISK MODELING

Table B-1. EPA 30-Year Slope Factors for Principal Radionuclides of Concern^{a,b}

Element (Atomic Number)	Isotope ^c	CASRN ^d	Radioactive Half-life ^e	ICRP Lung Class ^f	GI Absorption Factor (f) ^g	Slope Factor		
						Lifetime Excess Total Cancer Risk per Unit Intake/Exposure		
						Ingestion (Risk/pCi)	Inhalation (Risk/pCi)	External Exposure (Risk/yr per pCi/g)
Actinium (89)	Ac-227+D	014952-40-0(+D)	2.180E+01 Y	Y	1.0E-03	8.44E-10	1.08E-07	1.64E-06
Americium (95)	Am-241	014596-10-2	4.320E+02 Y	W	1.0E-03	2.70E-10	2.92E-08	8.29E-09
	Am-243+D	014993-75-0(+D)	7.380E+03 Y	W	1.0E-03	2.76E-10	2.85E-08	4.73E-07
Antimony (51)	Sb-125+D	014234-35-6(+D)	2.770E+00 Y	W	1.0E-01	7.33E-12	1.02E-11	2.36E-06
Bismuth (83)	Bi-207	013982-38-2	3.340E+01 Y	W	5.0E-02	1.05E-11	1.65E-11	9.69E-06
Cadmium (20)	Cd-109	014109-32-1	4.640E+02 D	Y	5.0E-02	1.37E-11	2.89E-11	1.07E-09
Carbon (6)	C-14	014762-75-5	5.730E+03 Y	*	1.0E+00	1.77E-12	1.18E-14	0.00E+00
Cerium (58)	Ce-144+D	014762-78-8(+D)	2.840E+02 D	Y	3.0E-04	6.34E-11	1.74E-10	2.76E-07
Cesium (55)	Cs-134	013967-70-9	2.060E+00 Y	D	1.0E+00	8.18E-11	5.03E-11	1.04E-05
	Cs-135	015726-30-4	2.300E+06 Y	D	1.0E+00	7.66E-12	4.63E-12	0.00E+00
	Cs-137+D	010045-97-3(+D)	3.020E+01 Y	D	1.0E+00	5.40E-11	3.31E-11	3.86E-06
Chlorine (17)	Cl-36	013981-43-6	3.010E+05 Y	D	1.0E+00	3.96E-12	2.22E-12	0.00E+00
Cobalt (27)	Co-57	013981-50-5	2.710E+02 D	Y	3.0E-01	1.83E-12	4.74E-12	3.69E-07
	Co-60	010198-40-0	5.270E+00 Y	Y	3.0E-01	3.34E-11	1.12E-10	1.72E-05
Curium (96)	Cm-243	015757-87-6	2.850E+01 Y	W	1.0E-03	2.50E-10	2.60E-08	3.00E-07
	Cm-244	013981-15-2	1.810E+01 Y	W	1.0E-03	2.24E-10	2.36E-08	4.03E-11
	Cm-248	015758-33-5	3.390E+05 Y	W	1.0E-03	1.15E-09	1.10E-07	2.86E-11
Europium (63)	Eu-152	014683-23-9	1.360E+01 Y	W	1.0E-03	1.15E-11	1.08E-10	7.18E-06
	Eu-154	015585-10-1	8.800E+00 Y	W	1.0E-03	1.92E-11	1.25E-10	8.21E-06
	Eu-155	014391-16-3	4.960E+00 Y	W	1.0E-03	3.45E-12	1.26E-11	1.09E-07
Gadolinium (64)	Gd-153	014276-65-4	2.420E+02 D	W	3.0E-04	2.78E-12	5.07E-12	1.29E-07
Hydrogen (1)	H-3	010028-17-8	1.230E+01 Y	*	1.0E+00	1.29E-13	1.69E-13	0.00E+00

Table B-1. EPA 30-Year Slope Factors (continued)

Element (Atomic Number)	Isotope ^c	CASRN ^d	Radioactive Half-life ^e	Y	ICRP Lung Class ^f	GI Absorption Factor (f _g) ^g	Slope Factor Lifetime Excess Total Cancer Risk per Unit Intake/Exposure		
							Ingestion (Risk/pCi)	Inhalation (Risk/pCi)	External Exposure (Risk/yr per pCi/g)
Iodine (53)	I-129	015046-84-1	1.570E+07	Y	D	1.0E+00	3.46E-10	2.30E-10	4.92E-09
Iron (26)	Fe-55	014681-59-5	2.700E+00	Y	W	1.0E-01	6.14E-13	9.29E-13	0.00E+00
Lead (82)	Pb-210+D	014255-04-0(+D)	2.230E+01	Y	D	2.0E-01	1.29E-09	5.27E-09	2.65E-10
Manganese (25)	Mn-54	013966-31-9	3.130E+02	D	W	1.0E-01	3.74E-12	6.40E-12	5.74E-06
Neptunium (93)	Np-237+D	013994-20-2(+D)	2.140E+06	Y	W	1.0E-03	2.50E-10	2.58E-08	8.17E-07
Nickel (28)	Ni-59	014336-70-0	7.500E+04	Y	W	5.0E-02	3.52E-13	6.66E-13	0.00E+00
	Ni-63	013981-37-8	1.000E+02	Y	W	5.0E-02	1.08E-12	1.70E-12	0.00E+00
Niobium (41)	Nb-94	014681-63-1	2.030E+04	Y	Y	1.0E-02	1.42E-11	1.25E-10	1.07E-05
Plutonium (94)	Pu-238	013981-16-3	8.780E+01	Y	Y	1.0E-03	2.57E-10	3.13E-08	3.77E-11
	Pu-239	015117-48-3	2.410E+04	Y	Y	1.0E-03	2.55E-10	3.02E-08	2.41E-11
	Pu-240	014119-33-6	6.570E+03	Y	Y	1.0E-03	2.55E-10	3.02E-08	3.62E-11
	Pu-241+D	014119-32-5(+D)	1.440E+01	Y	Y	1.0E-03	2.60E-12	1.40E-10	0.00E+00
	Pu-242	013982-10-0	3.760E+05	Y	Y	1.0E-03	2.42E-10	2.87E-08	3.01E-11
Pu-244+D	014119-34-7(+D)	8.260E+07	Y	Y	1.0E-03	2.82E-10	2.91E-08	6.44E-07	
Potassium (19)	K-40	013966-00-2	1.280E+09	Y	D	1.0E+00	2.16E-11	1.28E-11	1.08E-06
Promethium (61)	Pm-147	014380-75-7	2.620E+00	Y	Y	3.0E-04	3.02E-12	1.15E-11	1.13E-11
Protactinium (91)	Pa-231 [†]	014331-85-2	3.730E+04	Y	Y	1.0E-03	1.10E-10	2.81E-08	4.81E-08
Radium (88)	Ra-226+D	013982-63-3(+D)	1.600E+03	Y	W	2.0E-01	4.78E-10	4.30E-09	1.19E-05
	Ra-228+D	015262-20-1(+D)	5.750E+00	Y	W	2.0E-01	4.03E-10	1.56E-09	5.77E-06
Radon (86)	Rn-220 [†]	022481-48-7	5.560E+01	S	*	1.0E+00	---	1.20E-13	1.70E-09
	Rn-222+D	014859-67-7(+D)	3.820E+00	D	*	1.0E+00	1.7E-12	1.10E-11	5.90E-06
Ruthenium (44)	Ru-106+D	013967-48-1(+D)	3.680E+02	D	Y	5.0E-02	7.22E-11	1.87E-10	1.33E-06

Table B-1. EPA 30-Year Slope Factors (continued)

Element (Atomic Number)	Isotope ^c	CASRN ^d	Radioactive Half-life ^e	ICRP Lung Class ^f	GI Absorption Factor (f _g) ^g	Slope Factor Lifetime Excess Total Cancer Risk per Unit Intake/Exposure			
						Ingestion (Risk/pCi)	Inhalation (Risk/pCi)	External Exposure (Risk/yr per pCi/g)	
Samarium (62)	Sm-147	014392-33-7	1.060E+11 Y	W	3.0E-04	3.54E-11	6.96E-09	0.00E+00	
	Sm-151	015715-94-3	9.000E+01 Y	W	3.0E-04	9.73E-13	4.55E-12	5.59E-13	
Silver (47)	Ag-108m	014391-65-2(m)	1.270E+02 Y	Y	5.0E-02	1.17E-11	1.08E-10	9.86E-06	
	Ag-110m	014391-76-5(m)	2.500E+02 D	Y	5.0E-02	1.64E-11	5.40E-11	1.86E-05	
Sodium (11)	Na-22	013966-32-0	2.600E+00 Y	D	1.0E+00	1.37E-11	8.25E-12	1.44E-05	
Strontium (38)	Sr-90+D	010098-97-2(+D)	2.860E+01 Y	D	3.0E-01	7.94E-11	7.56E-11	0.00E+00	
Technetium (43)	Tc-99	014133-76-7	2.130E+05 Y	W	8.0E-01	2.89E-12	4.92E-12	1.11E-12	
Thallium (81)	Tl-204	013968-51-9	3.780E+00 Y	D	1.0E+00	3.43E-12	1.94E-12	1.56E-09	
Thorium (90)	Th-228+D	014274-82-9(+D)	1.910E+00 Y	Y	2.0E-04	4.52E-10	1.47E-07	1.09E-05	
	Th-229+D	015594-54-4(+D)	7.340E+03 Y	Y	2.0E-04	6.49E-10	1.19E-07	1.36E-06	
	Th-230 [†]	014269-63-7	7.700E+04 Y	Y	2.0E-04	5.92E-11	2.31E-08	8.21E-11	
	Th-232 [†] +D	007440-29-1(+D)	1.410E+10 Y	Y	2.0E-04	5.11E-11	2.56E-08	3.74E-11	
Uranium (92)	U-232	014158-29-3	7.200E+01 Y	Y	5.0E-02	1.20E-10	7.77E-08	6.51E-11	
	U-233	013968-55-3	1.590E+05 Y	Y	5.0E-02	7.47E-11	2.12E-08	6.55E-11	
	U-234 [†]	013966-29-5	2.450E+05 Y	Y	5.0E-02	7.44E-11	2.09E-08	4.11E-11	
	U-235+D	015117-96-1(+D)	7.040E+08 Y	Y	5.0E-02	8.01E-11	1.95E-08	4.70E-07	
	U-236	013982-70-2	2.340E+07 Y	Y	5.0E-02	7.03E-11	1.98E-08	3.32E-11	
	U-238+D	007440-61-1(+D)	4.470E+09 Y	Y	5.0E-02	1.10E-10	1.87E-08	1.01E-07	
Zinc (30)	Zn-65	013982-39-3	2.440E+02 D	Y	5.0E-01	1.73E-11	1.70E-11	4.00E-06	

Table B-1. EPA 30-Year Slope Factors (continued)

ENDNOTES:

- a** EPA classifies all radionuclides as Group A (known human) carcinogens. Radionuclide slope factors are calculated by EPA's Office of Radiation and Indoor Air (ORIA) to assist risk assessors with risk-related evaluations and decision-making at various stages of the remediation process. Ingestion and inhalation slope factors are central estimates (i.e., median or 50th percentile values) of the age-averaged, lifetime excess cancer incidence (fatal and nonfatal cancer) risk per unit of activity inhaled or ingested, expressed as risk/picocurie (pCi) in HEAST Table 4A or as risk/becquerel (Bq) in Table 4B. External exposure slope factors are central estimates of the lifetime excess cancer incidence risk for each year of exposure to external radiation from photon-emitting radionuclides distributed uniformly in a thick layer of soil, and are expressed as risk/yr per pCi/gram of soil (Table 4A) or as risk/yr per Bq/gram of soil (Table 4B). For a discussion on the derivation of radionuclide slope factors and guidance on their use, refer to the HEAST User's Guide section on radionuclide carcinogenicity.
- b** A curie (Ci), the customary unit of activity, is equal to 3.7×10^{10} nuclear transformations per second. 1 picocurie (pCi) = 10^{-12} Ci.
- c** For each radionuclide listed, slope factors correspond to the risks per unit intake or exposure for that radionuclide only, except when marked with a "+D" to indicate that the risks from radioactive decay chain products are also included. Radionuclides designated with a "†" are members of a decay chain. Refer to Exhibit 1 in the User's Guide section on radionuclide carcinogenicity for guidance on determining slope factors for partial or complete radioactive decay chains.
- d** Chemical Abstract Service Reference Number (CASRN). For risk calculations involving decay chains, a CASRN should be reported for the parent radionuclide and each chain member.
- e** Radioactive half-life: S = Second, M = Minute, D = Day, Y = Year. For those radionuclides with decay products (+D), half-lives are listed for the parent radionuclide.
- f** Lung clearance classification recommended by the International Commission on Radiological Protection (ICRP): Y = Year, W = Week, D = Day, * = Gas.
- g** Gastrointestinal (GI) absorption factors are the fractional amounts of each radionuclide absorbed across the GI tract into the bloodstream.

SOURCE: Health Effects Assessment Summary Tables, FY-93 Annual Update, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, EPA 540-R-93-058, March 1993.

Table B-2. Intake Rates and Exposure Assumptions Used in Pathway/Risk Model Calculations

Factor Category	Parameter (Units)		Model Values	Agency Default Values			Distribution of Values Reported in the Listed References					Comments
				EPA	DOE	NRC	Mean ± SD	90th %	95th %	RME	Range	
Intake Rates	Drinking Water Ingestion Rate (l/d)	Residential	2	2	1.4	2	1.4 ± 0.4	1.9		2	0.3-3	For worker exposures, EPA assumes half the residential daily intake consumed during an 8-hour work day.
		Commercial/Industrial	1	1	NS*	NS						
	Inhalation Rate (m ³ /d)	Residential	20	20	23	29	14 ± 4			30		DOE uses ICRP reference man data : 16 hours of light activity, 8 hours resting. NRC also uses ICRP data, but assumes 24 hours of light activity.
		Commercial/Industrial	20	20	NS	NS						
	Soil Ingestion Rate (mg/d)	Child Resident	200	200	NS	NS	105 ± 82				0-800	EPA assumes exposure durations of 6 years for children and 24 years adults. The weighted intake rate is 120 mg/day for 30 years .
		Adult Resident	100	100	100	50	71 ± 77				0-800	
		Commercial/Industrial	50	50	NS	NS					0.5-480	
	Leafy Vegetables (g/d)	Total	38	NS	38	30	40 ± 15	75	95	175	3-200	EPA does not distinguish "leafy vegetables" from all vegetables.
		Contaminated Fraction	0.5	NS	0.5	0.25	0.25			0.4		
		Actual Intake (total x fract.)	19	NS	19	7.5	10			70		
	Non-Leafy Vegetables (g/d)	Total	200	200	236	140	200 ± 83	314	422	770	26-510	DOE values assume that non-leafy vegetables are 54% of total intake of fruits, vegetables, and grains.
		Contaminated Fraction	0.4	0.4	0.4	0.25	0.25			0.4		
		Actual Intake (total x fract.)	80	80	118	35	50			308		
	Fruits (g/d)	Total	140	140	96	126	140 ± 58	268	327	313	30-487	DOE values assume that fruits are 22% of total intake of fruits, vegetables, and grains.
		Contaminated Fraction	0.3	0.3	0.5	0.25	0.2			0.3		
Actual Intake (total x fract.)		42	42	48	32	28			94			

Table B-2 (Continued)

Factor Category	Parameter (Units)		Model Values	Agency Default Values			Distribution of Values Reported in the Listed References					Comments
				EPA	DOE	NRC	Mean ± SD	90th %	95th %	RME	Range	
Intake Rates	Grains (g/d)	Total	105	NS	105	189	125					EPA does not use grains in risk calculations (0% of homegrown grains are consumed). DOE values are calculated assuming grains are 24% of total intake of fruits, vegetables, and grains.
		Contaminated Fraction	0.5	0	0.5	0.25						
		Actual Intake (total x fract.)	53	NS	53	47						
	Milk (l/d)	Total	0.25	0.4	0.25	0.27	0.4 ± 0.01			0.85	0.25-1.0	DOE assumes 100% of the milk is contaminated for areas greater than 20,000 m ² , and applies a correction factor for smaller areas. NRC lists 0.3 l/day as an average daily intake.
		Contaminated Fraction	1	0.4	1	NS	0.4	0.75				
		Contaminated Intake	0.25	0.16	0.25	NS	0.16			0.3		
	Beef and Poultry (g/d)	Total	173	170	173	214	100 ± 2			300	67-124	DOE assumes 100% of the meat is contaminated for areas greater than 20,000 m ² , and applies a correction factor for smaller areas. EPA numbers are for beef only; data was available for poultry and eggs. NRC lists 260 g/day as an average daily intake.
		Contaminated Fraction	1	0.44	1	NS	0.44					
		Actual Intake (total x fract.)	173	75	173	NS	44			75		
	Fish (g/d)	Total	15	54	15	27	12 ± 12		42	58	0 - 140	Mean and 95th% values listed are for all consumers. A median and 90th% for fisherman are 30 g/day and 140 g/day. NRC assumes 19 g/day as an average daily intake.
		Contaminated Fraction	0.5	1	0.5	NS						
		Actual Intake (total x fract.)	7.5	54	7.5	NS				54		
Other Seafood (g/d)	Total	NC	NS	2.5	NS	2.1 ± 2.0			14		EPA and NRC do not specify separate values for "other seafood." NRC assumes 2.7 g/day as an avg daily intake.	
	Contaminated Fraction	NC	NS	0.5	NS							
	Actual Intake (total x fract.)	NC	NS	1.2	NS							

Table B-2 (Continued)

Factor Category	Parameter (Units)		Model Values	Agency Default Values			Distribution of Values Reported in the Listed References					Comments	
				EPA	DOE	NRC	Mean ± SD	90th %	95th %	RME	Range		
Exposure Assumptions	Exposure Time (h/d)	Indoors - Residential	14.9	NS	12.5	13	14.2 ± 2.5	24				2-24	
		Indoors - Commercial/Industrial	7.5	NS	NS	NS	7.5 ± 6.9	11.2				0-16	Calculated from EPA89 assuming 8 hours as an average work day.
		Outdoors - Residential	0.4	NS	6.3	4.7	0.72 ± 0.89	2.4				0-24	
		Outdoors - Commercial/Industrial	0.5	NS	NS	NS	0.5 ± 0.6	1.8				0-7.7	Calculated from EPA89 assuming 8 hours as an average work day.
	Exposure Frequency (d/y)	Residential	350	350	350	365						0-365	EPA assumes 2 weeks vacation per year away from home.
		Commercial/Industrial	250	250	NS	NS						0-365	EPA assumes 5 d/wk, 50 wk/yr.
	Exposure Duration (y)	Residential	30	30	30	NS	9 ± 9	30				0 - >33	
		Commercial/Industrial	25	25	NS	NS		25					
Other Factors	Gamma Shielding Factor		0.8	0.8	0.7	0.33						0-1	
	Soil Concentration in Air (µg/m ³)		200	0.2	200	100	113 ± 95				200	9-1800	
	Ratio of Indoor Dust to Outdoor Dust		0.4	NS	0.4	0.5						0-1	
	Dilution Factor for Drinking Water		10	1-100	C*	C						1-100	EPA assumes dilution factors of 1, 10, and 100.
	Livestock Soil Intake Rate (kg/d)		0.5	NS	0.5	0.6	0.6 ± 0.7					0.2-2.9	
	Fodder Intake Rate for Beef (kg/d)		68	NS	68	44							DOE based on IAEA92, NRC based on IAEA82.
	Fodder Intake Rate for Milk (kg/d)		55	NS	55	67							DOE based on NCRP91, NRC based on IAEA82.

Table B-2 (Continued)

Factor Category	Parameter (Units)		Model Values	Agency Default Values			Distribution of Values Reported in the Listed References					Comments
				EPA	DOE	NRC	Mean ± SD	90th %	95th %	RME	Range	
Other Factors	Volatilization Factor for Rn-222 (pCi/m ³ per pCi/g)	Indoors	1250	NS	C*	NS	1250 ± 3110	3400	5000	4000	400-30,000	Data from EPA's National Residential Radon Survey assuming 1 pCi/g Ra-226.
		Outdoors	120	120	C	NS	120 ± 110				20-500	
	Volatilization Factor for Rn-220 (pCi/m ³ per pCi/g)	Indoors	5	NS	C	NS						Assumes 1 pCi/g Ra-224 in soil.
		Outdoors	5	5	C	NS	100 ± 96				25-500	

* NS = Not specified by Agency; NC = Not considered in soil model calculations; C = Calculated by RESRAD.

EPA
References: EPA89 Exposure Factors Handbook Office of Health and Environmental Assessment, EPA 600/8-89-043, 1989.
EPA91 Risk Assessment Guidance for Superfund, Volume 1: Human Health Evaluation Manual, Supplemental Guidance "Standard Default Exposure Factors", OSWER Directive 9285.6-03, 1991.
EPA91b Risk Assessment Guidance for Superfund, Volume 1: Human Health Evaluation Manual, Part B Publication 9285.7-01B, 1991.

DOE
Reference: DOE92 Data Collection Handbook for Establishing Residual Radioactive Material Guidelines with RESRAD 1992.

NRC
References: NRC92 Residual Radioactive Contamination from Decommissioning NUREG/CR-5512, PNL-7994, 1992.
NRC77 Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR 50, Appendix 2 Reg Guide 1.109, 1977.

Other
References: IAEA82 Generic Models and Parameters for Assessing the Environmental Transfer of Radionuclides from Routine Releases: Exposure of Critical Groups Safety Series No. 57, 1982.
IAEA92 Handbook of Parameter Values for the Prediction of Radionuclide Transfer in Temperate Environment 9th Draft, 1992.
NCRP91 Screening Models for Releases of Radionuclides to Air, Surface Water, and Ground Water draft document, 1991.

Table B-3. Default Soil Transfer Factors for Plants, Fish, Beef and Milk*

Radionuclide	Transfer Factors from Soil to			
	Plant	Fish (L/kg)	Beef (d/kg)	Milk (d/L)
Ac-227+D	2.50E-03	1.50E+01	2.00E-05	2.00E-05
Ag-108m+D	1.50E-01	5.00E+00	3.00E-03	2.50E-02
Ag-110m+D	1.50E-01	5.00E+00	3.00E-03	2.50E-02
Am-241	1.00E-03	3.00E+01	5.00E-05	2.00E-06
Am-243+D	1.00E-03	3.00E+01	5.00E-05	2.00E-06
Bi-207	1.00E-01	1.50E+01	2.00E-03	5.00E-04
C-14	5.50E+00	5.00E+04	3.10E-02	1.20E-02
Cd-109	3.00E-01	2.00E+02	4.00E-04	1.00E-03
Ce-144+D	2.00E-03	3.00E+01	2.00E-05	3.00E-05
Cl-36	2.00E+01	1.00E+03	6.00E-02	2.00E-02
Cm-243	1.00E-03	3.00E+01	2.00E-05	2.00E-06
Cm-244	1.00E-03	3.00E+01	2.00E-05	2.00E-06
Cm-248	1.00E-03	3.00E+01	2.00E-05	2.00E-06
Co-57	8.00E-02	3.00E+02	2.00E-02	2.00E-03
Co-60	8.00E-02	3.00E+02	2.00E-02	2.00E-03
Cs-134	4.00E-02	2.00E+03	3.00E-02	8.00E-03
Cs-135	4.00E-02	2.00E+03	3.00E-02	8.00E-03
Cs-137+D	4.00E-02	2.00E+03	3.00E-02	8.00E-03
Eu-152	2.50E-03	5.00E+01	2.00E-03	2.00E-05
Eu-154	2.50E-03	5.00E+01	2.00E-03	2.00E-05
Eu-155	2.50E-03	5.00E+01	2.00E-03	2.00E-05
Fe-55	1.00E-03	2.00E+02	2.00E-02	3.00E-04
Gd-153	2.50E-03	2.50E+01	2.00E-03	2.00E-05
H-3	4.80E+00	1.00E+00	1.20E-02	1.00E-02
I-129	2.00E-02	4.00E+01	7.00E-03	1.00E-02
K-40	3.00E-01	1.00E+03	2.00E-02	7.00E-03
Mn-54	3.00E-01	4.00E+02	5.00E-04	3.00E-04
Na-22	5.00E-02	2.00E+01	8.00E-02	4.00E-02

Table B-3 (Continued)

Radionuclide	Transfer Factors from Soil to			
	Plant	Fish (L/kg)	Beef (d/kg)	Milk (d/L)
Ac-227+D	2.50E-03	1.50E+01	2.00E-05	2.00E-05
Nb-94	1.00E-02	3.00E+02	3.00E-07	2.00E-06
Ni-59	5.00E-02	1.00E+02	5.00E-03	2.00E-02
Ni-63	5.00E-02	1.00E+02	5.00E-03	2.00E-02
Np-237+D	2.00E-02	3.00E+01	1.00E-03	5.00E-06
Pa-231	1.00E-02	1.00E+01	5.00E-03	5.00E-06
Pb-210+D	1.00E-02	3.00E+02	8.00E-04	3.00E-04
Pm-147	2.50E-03	3.00E+01	2.00E-03	2.00E-05
Pu-238	1.00E-03	3.00E+01	1.00E-04	1.00E-06
Pu-239	1.00E-03	3.00E+01	1.00E-04	1.00E-06
Pu-240	1.00E-03	3.00E+01	1.00E-04	1.00E-06
Pu-241+D	1.00E-03	3.00E+01	1.00E-04	1.00E-06
Pu-242	1.00E-03	3.00E+01	1.00E-04	1.00E-06
Pu-244+D	1.00E-03	3.00E+01	1.00E-04	1.00E-06
Ra-226 (+Rn)	4.00E-02	5.00E+01	1.00E-03	1.00E-03
Ra-226 (-Rn)	4.00E-02	5.00E+01	1.00E-03	1.00E-03
Ra-228+D	4.00E-02	5.00E+01	1.00E-03	1.00E-03
Ru-106+D	3.00E-02	1.00E+01	2.00E-03	3.30E-06
Sb-125+D	1.00E-02	1.00E+02	1.00E-03	1.00E-04
Sm-147	2.50E-03	2.50E+01	2.00E-03	2.00E-05
Sm-151	2.50E-03	2.50E+01	2.00E-03	2.00E-05
Sr-90+D	3.00E-01	6.00E+01	8.00E-03	2.00E-03
Tc-99	5.00E+00	2.00E+01	1.00E-04	1.00E-03
Th-228+D	1.00E-03	1.00E+02	1.00E-04	5.00E-06
Th-229+D	1.00E-03	1.00E+02	1.00E-04	5.00E-06
Th-230	1.00E-03	1.00E+02	1.00E-04	5.00E-06
Th-232+D	1.00E-03	1.00E+02	1.00E-04	5.00E-06

Table B-3 (Continued)

Radionuclide	Transfer Factors from Soil to			
	Plant	Fish (L/kg)	Beef (d/kg)	Milk (d/L)
Ac-227+D	2.50E-03	1.50E+01	2.00E-05	2.00E-05
Tl-204	2.00E-01	1.00E+04	2.00E-03	3.00E-03
U-232	2.50E-03	1.00E+01	3.40E-04	6.00E-04
U-233	2.50E-03	1.00E+01	3.40E-04	6.00E-04
U-234	2.50E-03	1.00E+01	3.40E-04	6.00E-04
U-235+D	2.50E-03	1.00E+01	3.40E-04	6.00E-04
U-236	2.50E-03	1.00E+01	3.40E-04	6.00E-04
U-238+D	2.50E-03	1.00E+01	3.40E-04	6.00E-04
Zn-65	4.00E-01	1.00E+03	1.00E-01	1.00E-02

Source: C. Yu, et al. (1993), "A Manual for Implementing Residual Radioactive Material Guidelines Using RESRAD, Version 5.0," Argonne National Laboratory, September (Final Draft).

APPENDIX C

MODIFIED RAGS HHEM EQUATIONS

EQUATIONS FOR CALCULATING EXTERNAL EXPOSURE RISK

(a) RURAL RESIDENTIAL EXPOSURE:

$$Risk_{external} = [RS \times SF_e \times \frac{EF_r}{365} \times ED_r] \times [ET_{ro} + (ET_{ri} \times GSF)] \quad (1a)$$

(b) COMMERCIAL/INDUSTRIAL EXPOSURE:

$$Risk_{external} = [RS \times SF_e \times \frac{EF_c}{365} \times ED_c] \times [ET_{co} + (ET_{ci} \times GSF)] \quad (1b)$$

where:

Parameter	Definition (units)	Default Value
RS	Radionuclide soil concentration (pCi/g)	1
SF _e	External exposure slope factor (risk/yr per pCi/g)	radionuclide-specific
GSF	Gamma shielding factor - indoor (unitless)	0.8 (20% shielding)
ET _{ro}	Exposure time fraction - residential, outdoor (unitless)	0.02 (0.439 hr/24 hr)
ET _{co}	Exposure time fraction - commercial/industrial, outdoor (unitless)	0.02 (0.5 hr/24 hr)
ET _{ri}	Exposure time fraction - residential, indoor (unitless)	0.62 (14.93 hr/24 hr)
ET _{ci}	Exposure time fraction - commercial/industrial, indoor (unitless)	0.31 (7.5 hr/24 hr)
EF _r	Exposure frequency - residential (d/yr)	350
EF _c	Exposure frequency - commercial/industrial (d/yr)	250
ED _r	Exposure duration - residential (yr)	30
ED _c	Exposure duration - commercial/industrial (yr)	25

EQUATIONS FOR CALCULATING FUGITIVE DUST INHALATION RISK

(a) RURAL RESIDENTIAL EXPOSURE:

$$sk_{dust} = [RS \times SF_i \times IR_i \times PEF \times CF_{PEF} \times EF_r \times ED_r] \times [ET_{ro} + (ET_{ri} \times DF_i)] \quad (2a)$$

(b) COMMERCIAL/INDUSTRIAL EXPOSURE:

$$sk_{dust} = [RS \times SF_i \times IR_i \times PEF \times CF_{PEF} \times EF_c \times ED_c] \times [ET_{co} + (ET_{ci} \times DF_i)] \quad (2b)$$

where:

Parameter	Definition (units)	Default Value
RS	Radionuclide soil concentration (pCi/g)	1
SF _i	Inhalation slope factor (risk/pCi)	radionuclide-specific
IR _i	Inhalation rate (m ³ /d)	20
CF _i	Conversion factor - inhalation (liter/m ³)	1,000
PEF	Particulate emission factor (μg/m ³)	200
CF _{PEF}	Conversion factor - PEF (g/μg)	1E-06
DF _i	Dilution factor for indoor inhalation (unitless)	0.4
ET _{ro}	Exposure time fraction - residential, outdoors (unitless)	0.02 (0.439 hr/24 hr)
ET _{co}	Exposure time fraction - commercial/industrial, outdoors (unitless)	0.02 (0.5 hr/24 hr)
ET _{ri}	Exposure time fraction - residential, indoors (unitless)	0.62 (14.93 hr/24 hr)
ET _{ci}	Exposure time fraction - commercial/industrial, indoors (unitless)	0.31 (7.5 hr/24 hr)
EF _r	Exposure frequency - residential (d/yr)	350
EF _c	Exposure frequency - commercial/industrial (d/yr)	250
ED _r	Exposure duration - residential (yr)	30
ED _c	Exposure duration - commercial/industrial (yr)	25

EQUATIONS FOR CALCULATING RADON INHALATION RISK

(a) RURAL RESIDENTIAL EXPOSURE:

Equation (3a) for Ra-226 and Rn-222 (Radon):

$$Risk_{Rn-222} = [RS_{Ra-226} \times SFi_{Rn-222} \times IR_i \times EF_r \times ED_r] \times [(ET_{ro} \times VFO_{Rn-222}) + ((ET_{ri} \times VFi_{Rn-222}))]$$

Equation (3b) for Ra-224 and Rn-220 (Thoron):

$$Risk_{Rn-220} = [RS_{Ra-224} \times SFi_{Rn-220} \times IR_i \times EF_r \times ED_r] \times [(ET_{ro} \times VFO_{Rn-220}) + ((ET_{ri} \times VFi_{Rn-220}))]$$

(b) COMMERCIAL/INDUSTRIAL EXPOSURE:

Equation (3c) for Ra-226 and Rn-222 (Radon):

$$Risk_{Rn-222} = [RS_{Ra-226} \times SFi_{Rn-222} \times IR_i \times EF_c \times ED_c] \times [(ET_{co} \times VFO_{Rn-222}) + ((ET_{ci} \times VFi_{Rn-222}))]$$

Equation (3d) for Ra-224 and Rn-220 (Thoron):

$$Risk_{Rn-220} = [RS_{Ra-224} \times SFi_{Rn-220} \times IR_i \times EF_c \times ED_c] \times [(ET_{co} \times VFO_{Rn-220}) + ((ET_{ci} \times VFi_{Rn-220}))]$$

where:

Parameter	Definition (units)	Default Value
RS _{Ra-226}	Ra-226 soil concentration (pCi/g)	1
RS _{Ra-224}	Ra-224 soil concentration (pCi/g)	1
SFi _{Rn-222}	Inhalation slope factor for Rn-222+D (risk/pCi)	7.7E-12
SFi _{Rn-220}	Inhalation slope factor for Rn-220+D (risk/pCi)	1.2E-13
IR _i	Inhalation rate (m ³ /d)	20
VFO _{Rn-222}	Volatilization factor for Rn-222 - outdoor (pCi/m ³ /pCi/g)	120
VFO _{Rn-220}	Volatilization factor for Rn-220 - outdoor (pCi/m ³ /pCi/g)	5
VFi _{Rn-222}	Volatilization factor for Rn-222 - indoor (pCi/m ³ /pCi/g)	1,250
VFi _{Rn-220}	Volatilization factor for Rn-220 - indoor (pCi/m ³ /pCi/g)	5
ET _{ro}	Exposure time fraction - residential, outdoors (unitless)	0.02 (0.439 hr/24 hr)
ET _{co}	Exposure time fraction - commercial/industrial, outdoors (unitless)	0.02 (0.5 hr/24 hr)
ET _{ri}	Exposure time fraction - residential, indoors (unitless)	0.62 (14.93 hr/24 hr)
ET _{ci}	Exposure time fraction - commercial/industrial, indoors (unitless)	0.31 (7.5 hr/24 hr)
EF _r	Exposure frequency - residential (d/yr)	350
EF _c	Exposure frequency - commercial/industrial (d/yr)	250
ED _r	Exposure duration - residential (yr)	30
ED _c	Exposure duration - commercial/industrial (yr)	25

EQUATIONS FOR CALCULATING PLANT UPTAKE/INGESTION RISK

(a) RURAL RESIDENTIAL EXPOSURE:

$$Risk_{plant} = RS \times SF_{ing} \times (IR_{vf} + IR_{lv}) \times CF_p \times TF_p \times ED_r \quad (4)$$

(b) COMMERCIAL/INDUSTRIAL EXPOSURE:

***** Not Applicable Exposure Pathway *****

where:

Parameter	Definition (units)	Default Value
RS	Radionuclide soil concentration (pCi/g)	1
SF _{ing}	Ingestion slope factor (risk/pCi)	radionuclide-specific
IR _{vf}	Ingestion rate - vegetables and fruit (kg/yr)	42.7
IR _{lv}	Ingestion rate - leafy vegetables (kg/yr)	14
CF _p	Conversion factor - plant (g/kg)	1,000
TF _p	Soil-to-plant transfer factor (pCi/g plant per pCi/g soil)	radionuclide-specific
ED _r	Exposure duration - residential (yr)	30

EQUATIONS FOR CALCULATING MEAT UPTAKE/INGESTION RISK

(a) RURAL RESIDENTIAL EXPOSURE:

$$sk_{meat} = [RS \times SF_{ing} \times IR_m \times CF_m \times ED_r] \times [(PTF_m \times FI_m \times TF_p) + (PTF_m \times FI_s) + (PTF_m \times FI_{wm} \times \frac{1}{(Kd + \sigma \times (\frac{S}{\rho}))}) \times (\frac{1}{DF_v})] \quad (5)$$

(b) COMMERCIAL/INDUSTRIAL EXPOSURE:

***** Not Applicable Exposure Pathway *****

where:

Parameter	Definition (units)	Default Value
RS	Radionuclide soil concentration (pCi/g)	1
SF _{ing}	Ingestion slope factor (risk/pCi)	radionuclide-specific
IR _m	Ingestion rate - meat & poultry (kg/yr)	63
CF _m	Conversion factor - meat (g/kg)	1,000
PTF _m	Plant-to-meat transfer factor (pCi/kg per pCi/d)	radionuclide-specific
TF _p	Soil-to-plant transfer factor (pCi/g plant per pCi/g soil)	radionuclide-specific
FI _m	Fodder intake rate for meat (kg/d)	68
FI _s	Livestock soil intake rate (kg/d)	0.5
FI _{wm}	Beef cattle water intake rate (L/d)	50
Kd	Distribution coefficient (ml/g)	radionuclide-specific (Ch. 3)
S	Fraction water content (l water/l pore space)	0.3
σ	Total soil porosity (l pore space/l soil)	0.5
ρ	Soil bulk density (kg/l soil)	1.5
DF _w	Dilution factor for drinking water (unitless)	10
ED _r	Exposure duration - residential (yr)	30

EQUATIONS FOR CALCULATING MILK UPTAKE/INGESTION RISK

(a) RURAL RESIDENTIAL EXPOSURE:

$$i k_{milk} = [RS \times SF_{ing} \times IR_{mk} \times ED_r] \times [(PTF_{mk} \times FI_{mk} \times TF_p) + (PTF_{mk} \times FI_s) + (PTF_{mk} \times FI_{wmk} \times \frac{1}{(Kd + \sigma \times (\frac{S}{\rho}))}) \times (\frac{1}{DF_w})] \quad (6)$$

(b) COMMERCIAL/INDUSTRIAL EXPOSURE:

***** Not Applicable Exposure Pathway *****

where:

Parameter	Definition (units)	Default Value
RS	Radionuclide soil concentration (pCi/g)	1
SF _{ing}	Ingestion slope factor (risk/pCi)	radionuclide-specific
IR _{mk}	Ingestion rate - milk (l/yr)	92
PTF _{mk}	Plant-to-milk transfer factor (pCi/L per pCi/d)	radionuclide-specific
TF _p	Soil-to-plant transfer factor (pCi/g plant per pCi/g soil)	radionuclide-specific
FI _{mk}	Fodder intake rate for milk (kg/d)	55
FI _s	Livestock soil intake rate (kg/d)	0.5
FI _{wmk}	Milk cattle water intake rate (L/day)	160
Kd	Distribution coefficient (ml/g)	radionuclide-specific (Ch. 3)
S	Fraction water content (l water/l pore space)	0.3
σ	Total soil porosity (l water/l pore space)	0.5
ρ	Soil bulk density (kg/l soil)	1.5
DF _w	Dilution factor for drinking water (unitless)	10
ED _r	Exposure duration - residential (yr)	30

EQUATIONS FOR CALCULATING SOIL INGESTION RISK

(a) RURAL RESIDENTIAL EXPOSURE:

$$Risk_{soil} = RS \times SF_i \times IR_{sr} \times CF_s \times EF_r \times ED_r \quad (7a)$$

(b) COMMERCIAL/INDUSTRIAL EXPOSURE:

$$Risk_{soil} = RS \times SF_i \times IR_{sc} \times CF_s \times EF_c \times ED_c \quad (7b)$$

where:

Parameter	Definition (units)	Default Value
RS	Radionuclide soil concentration (pCi/g)	1
SF _i	Ingestion slope factor (Risk/pCi)	radionuclide-specific
IR _{sr}	Soil ingestion rate - residential (mg/d)	120 (age-averaged)
IR _{sc}	Soil ingestion rate - commercial/industrial (mg/d)	50
CF _s	Conversion factor - soil (g/mg)	0.001
EF _r	Exposure frequency - residential (d/yr)	350
EF _c	Exposure frequency - commercial/industrial (d/yr)	250
ED _r	Exposure duration - residential (yr)	30
ED _c	Exposure duration - commercial/industrial (yr)	25

EQUATIONS FOR CALCULATING DRINKING WATER INGESTION RISK

(a) RURAL RESIDENTIAL EXPOSURE:

$$Risk_{soil} = RS \times SF_i \times \frac{1}{(Kd + \sigma \times (\frac{S}{\rho}))} \times (\frac{1}{DF_w}) \times IR_{wr} \times CF_w \times EF_r \times ED_r \quad (8a)$$

(b) COMMERCIAL/INDUSTRIAL EXPOSURE:

$$Risk_{soil} = RS \times SF_i \times \frac{1}{(Kd + \sigma \times (\frac{S}{\rho}))} \times (\frac{1}{DF_w}) \times IR_{wc} \times CF_w \times EF_c \times ED_c \quad (8b)$$

where:

Parameter	Definition (units)	Default Value
RS	Radionuclide soil concentration (pCi/g)	1
SF _i	Ingestion slope factor (risk/pCi)	radionuclide-specific
IR _{wr}	Water ingestion rate - residential (l/d)	2
IR _{wc}	Water ingestion rate - commercial/industrial (l/d)	1
CF _s	Conversion factor - water (ml/l)	1,000
Kd	Distribution coefficient (ml/g)	radionuclide-specific (Ch. 3)
EF _r	Exposure frequency - residential (d/yr)	350
EF _c	Exposure frequency - commercial/industrial (d/yr)	250
DF _w	Dilution factor for drinking water (unitless)	10
ED _r	Exposure duration - residential (yr)	30
ED _c	Exposure duration - commercial/industrial (yr)	25
S	Fraction water content (l water/l pore space)	0.3
σ	Total soil porosity (l pore space/l soil)	0.5
ρ	Soil bulk density (kg/l soil)	1.5

EQUATIONS FOR CALCULATING FISH UPTAKE/INGESTION RISK

(a) RURAL RESIDENTIAL EXPOSURE:

$$Risk_{fish} = RS \times SF_i \times \frac{1}{(Kd + \sigma \times (\frac{S}{\rho}))} \times IR_f \times CF_f \times TF_f \times \frac{A_s}{A_w} \times ED \quad (9)$$

(b) COMMERCIAL/INDUSTRIAL EXPOSURE:

*****Not Applicable Exposure Pathway*****

where:

Parameter	Definition (units)	Default Value
RS	Radionuclide soil concentration (pCi/g)	1
SF _i	Ingestion slope factor (risk/pCi)	radionuclide-specific
IR _f	Ingestion rate - fish (g/yr)	2,300
CF _f	Conversion factor - water (ml/l)	1,000
Kd	Distribution coefficient (ml/g)	radionuclide-specific (Ch. 3)
TF _f	Water-to-fish transfer factor (pCi/kg per pCi/L)	radionuclide-specific
A _s	Surface area of contaminated site	10,000 m ²
A _w	Surface area of watershed	100,000 m ²
ED _r	Exposure duration - residential (yr)	30
S	Fraction water content (l water/l pore space)	0.3
σ	Total soil porosity (l pore space/l soil)	0.5
ρ	Soil bulk density (kg/l soil)	1.5

EQUATIONS FOR CALCULATING RADIONUCLIDE SOIL CONCENTRATIONS

(a) RURAL RESIDENTIAL EXPOSURE (Eq. 10a):

$$Tot. Risk_{resid.} = \frac{TR}{Risk_{external} + Risk_{dust} + Risk_{radon} + Risk_{plant} + Risk_{meat} + Risk_{milk} + Risk_{soil} + Risk_{water}}$$

(b) COMMERCIAL/INDUSTRIAL EXPOSURE (Eq. 10b):

$$Tot. Risk_{comm./indust.} = \frac{TR}{Risk_{external} + Risk_{dust} + Risk_{radon} + Risk_{soil} + Risk_{water}}$$

where:

Parameter	Definition (units)	Default Value
TR	Target risk level	1E-04

Table C-1. EPA RAGS/HHEM Part B Risk Modeling Exposure Assumptions

Parameter	Definition	Value	Units
TR	Target risk level	1.00E-04	lifetime risk
RS	Radionuclide soil concentration	1	pCi/g
IRi	Inhalation rate	20	m ³ /day
IRs	Soil ingestion rate - residential	120	mg/day
IRsc	Soil ingestion rate - commercial/industrial	50	mg/day
IRw	Water ingestion rate - residential	2	L/day
IRwc	Water ingestion rate - commercial/industrial	1	L/day
IRv	Veg./fruit/grain ingestion rate	61,250	g/yr
IRv2	Leafy vegetables intake rate	6,650	g/yr
IRm	Meat & poultry intake rate	63,000	g/yr
IRmk	Milk ingestion rate	92,000	mL/yr
IRf	Fish ingestion rate	2,300	g/yr
Flm	Fodder intake rate for meat	68	kg/d
Flmk	Fodder intake rate for milk	55	kg/d
Flwm	Livestock water intake for meat	50	L/d (or kg/d)
Flwmilk	Livestock water intake for milk	160	L/d (or kg/d)
Fls	Livestock soil intake rate	0.5	kg/d
QSRs	Fodder/soil ratio for soil intake	1.0	(unitless)
ETo	Outdoor exposure time - residential	0.02	(0.439 hrs/24 hrs)
ETi	Indoor exposure time - residential	0.62	(14.93 hrs/24 hrs)
EToc	Outdoor exposure time - commercial/industrial	0.02	(0.5 hrs/24 hrs)
ETic	Indoor exposure time - commercial/industrial	0.31	(7.5 hrs/24 hrs)
EFr	Exposure frequency - residential	350	days/yr
EFc	Exposure frequency - commercial/industrial	250	days/yr
EDr	Exposure duration - residential	30	yrs
EDc	Exposure duration - commercial/industrial	25	yrs
VFo	Volitalization factor - outdoor radon	120	(120 pCi/m ³ /1 pCi/g)
VFi	Volitalization factor - indoor radon	1250	(1250 pCi/m ³ /1 pCi/g)
PEF	Particulate emission factor	2.00E-04	(g/m ³)
Gsf	Gamma shielding factor	0.8	(20% shielding)
DFi	Dilution factor for inhalation indoors	0.4	(unitless)
DFw	Dilution factor for drinking water	10	(unitless)
Theta	Total soil porosity	0.5	(Lpore/Lsoil)
S	Fraction water content	0.3	(Lwater/Lpore)
BD	Soil bulk density	1.5	kg/Lsoil
Aw	Surface Area of Water Shed	1.00E+06	m ²
As	Surface Area of Site	1.00E+04	m ²
SFr	Inhalation Slope Factor - Rn-222+D	1.00E-11	Risk/pCi
DCFr	Inhalation Dose Conversion Factor - Rn-222+D	2.50E+02	mrem/yr per pCi/L Rn (50% Eq.)
SFt	Inhalation Slope Factor - Rn-220	1.20E-13	Risk/pCi
QWRs	Fodder/water ratio for water intake	1	(unitless)

**Table C-2. EPA RAGS/HHEM Part B Risk Modeling
Cancer Slope Factors, Kd Values and Transfer Factors**

Radionuclide	EPA 30-yr Slope Factors (Revised 1994)			DOE Dose Factors (RESRAD 1994)			Transfer Factors (RESRAD 5.01)			
	External	Inhalation	Ingestion	External	Inhalation	Ingestion	Plant	Fish (L/kg)	Beef (d/kg)	Milk (d/L)
Ac-227+D	1.64E-06	1.08E-07	8.44E-10	1.99E+00	6.70E+00	1.50E-02	2.50E-03	1.50E+01	2.00E-05	2.00E-05
Ag-108m+D	9.89E-06	1.08E-10	1.17E-11	8.01E+00	2.00E-04	7.50E-06	1.50E-01	5.00E+00	3.00E-03	2.50E-02
Ag-110m+D	1.86E-05	5.40E-11	1.64E-11	1.39E+01	5.30E-05	1.10E-05	1.50E-01	5.00E+00	3.00E-03	2.50E-02
Am-241	8.29E-09	2.92E-08	2.70E-10	3.41E-02	5.20E-01	4.50E-03	1.00E-03	3.00E+01	5.00E-05	2.00E-06
Am-243+D	4.73E-07	2.85E-08	2.76E-10	7.77E-01	5.20E-01	4.50E-03	1.00E-03	3.00E+01	5.00E-05	2.00E-06
Bi-207	9.69E-06	1.65E-11	1.05E-11	7.02E+00	1.40E-05	4.90E-06	1.00E-01	1.50E+01	2.00E-03	5.00E-04
C-14	0.00E+00	1.18E-14	1.77E-12	0.00E+00	2.10E-06	2.10E-06	5.50E+00	5.00E+04	3.10E-02	1.20E-02
Cd-109	1.07E-09	2.89E-11	1.37E-11	8.44E-03	1.00E-04	1.20E-05	3.00E-01	2.00E+02	4.00E-04	1.00E-03
Ce-144+D	2.76E-07	1.74E-10	6.34E-11	2.26E-01	3.50E-04	2.00E-05	2.00E-03	3.00E+01	2.00E-05	3.00E-05
Cl-36	0.00E+00	2.22E-12	3.96E-12	7.38E-04	2.00E-05	3.00E-06	2.00E+01	1.00E+03	6.00E-02	2.00E-02
Cm-243	3.03E-07	2.60E-08	2.50E-10	3.42E-01	3.07E-01	2.51E-03	1.00E-03	3.00E+01	2.00E-05	2.00E-06
Cm-244	4.03E-11	2.36E-08	2.24E-10	9.83E-04	2.70E-01	2.30E-03	1.00E-03	3.00E+01	2.00E-05	2.00E-06
Cm-248	2.86E-11	1.10E-07	1.15E-09	4.41E-06	1.90E+00	1.60E-02	1.00E-03	3.00E+01	2.00E-05	2.00E-06
Co-57	3.69E-07	4.74E-12	1.83E-12	3.64E-01	7.50E-06	1.10E-06	8.00E-02	3.00E+02	2.00E-02	2.00E-03
Co-60	1.72E-05	1.12E-10	3.34E-11	1.63E+01	1.50E-04	2.60E-05	8.00E-02	3.00E+02	2.00E-02	2.00E-03
Cs-134	1.04E-05	5.03E-11	8.18E-11	7.79E+00	4.70E-05	7.40E-05	4.00E-02	2.00E+03	3.00E-02	8.00E-03
Cs-135	0.00E+00	4.63E-12	7.66E-12	0.00E+00	4.50E-06	7.10E-06	4.00E-02	2.00E+03	3.00E-02	8.00E-03
Cs-137+D	3.68E-06	3.31E-11	5.40E-11	3.62E+00	3.20E-05	5.00E-05	4.00E-02	2.00E+03	3.00E-02	8.00E-03
Eu-152	7.18E-06	1.08E-10	1.15E-11	7.14E+00	2.20E-04	6.00E-06	2.50E-03	5.00E+01	2.00E-03	2.00E-05
Eu-154	8.21E-06	1.25E-10	1.92E-11	7.91E+00	2.60E-04	9.10E-06	2.50E-03	5.00E+01	2.00E-03	2.00E-05
Eu-155	1.09E-07	1.26E-11	3.45E-12	1.19E-01	3.90E-05	1.30E-06	2.50E-03	5.00E+01	2.00E-03	2.00E-05
Fe-55	0.00E+00	9.29E-13	6.14E-13	3.21E-06	2.60E-06	5.80E-07	1.00E-03	2.00E+02	2.00E-02	3.00E-04
Gd-153	1.29E-07	5.07E-12	2.78E-12	1.53E-01	2.10E-05	1.10E-06	2.50E-03	2.50E+01	2.00E-03	2.00E-05
H-3	0.00E+00	1.69E-13	1.29E-13	0.00E+00	6.30E-08	6.30E-08	4.80E+00	1.00E+00	1.20E-02	1.00E-02
H-129	4.92E-09	2.30E-10	3.46E-10	2.31E-02	1.80E-04	2.80E-04	2.00E-02	4.00E+01	7.00E-03	1.00E-02
K-40	1.08E-06	1.28E-11	2.16E-11	8.46E-01	1.20E-05	1.90E-05	3.00E-01	1.00E+03	2.00E-02	7.00E-03
Mn-54	5.74E-06	6.40E-12	3.74E-12	4.25E+00	6.40E-06	2.70E-06	3.00E-01	4.00E+02	5.00E-04	3.00E-04
Na-22	1.44E-05	8.25E-12	1.37E-11	1.11E+01	8.00E-06	1.20E-05	5.00E-02	2.00E+01	8.00E-02	4.00E-02
Nb-94	1.07E-05	1.25E-10	1.42E-11	1.02E+01	3.30E-04	5.10E-06	1.00E-02	3.00E+02	3.00E-07	2.00E-06
Ni-59	0.00E+00	6.66E-13	3.52E-13	3.89E-06	2.70E-06	2.00E-07	5.00E-02	1.00E+02	5.00E-03	2.00E-02
Ni-63	0.00E+00	1.70E-12	1.08E-12	0.00E+00	6.30E-06	5.40E-07	5.00E-02	1.00E+02	5.00E-03	2.00E-02
Np-237+D	8.17E-07	2.58E-08	2.50E-10	1.16E+00	4.90E-01	3.90E-03	2.00E-02	3.00E+01	1.00E-03	5.00E-06
Pa-231	4.81E-08	2.81E-08	1.10E-10	1.59E-01	1.30E+00	1.10E-02	1.00E-02	1.00E+01	5.00E-03	5.00E-06
Pb-210+D	2.65E-10	5.27E-09	1.29E-09	3.27E-03	2.10E-02	6.70E-03	1.00E-02	3.00E+02	8.00E-04	3.00E-04
Pm-147	1.13E-11	1.15E-11	3.02E-12	1.06E-05	3.40E-05	9.50E-07	2.50E-03	3.00E+01	2.00E-03	2.00E-05
Pu-238	3.77E-11	3.13E-08	2.57E-10	1.00E-03	4.60E-01	3.80E-03	1.00E-03	3.00E+01	1.00E-04	1.00E-06
Pu-239	2.41E-11	3.02E-08	2.55E-10	5.40E-04	5.10E-01	4.30E-03	1.00E-03	3.00E+01	1.00E-04	1.00E-06
Pu-240	3.62E-11	3.02E-08	2.55E-10	9.52E-04	5.10E-01	4.30E-03	1.00E-03	3.00E+01	1.00E-04	1.00E-06
Pu-241	0.00E+00	1.43E-10	2.59E-12	3.46E-06	8.25E-03	6.85E-05	1.00E-03	3.00E+01	1.00E-04	1.00E-06
Pu-242	3.01E-11	2.87E-08	2.42E-10	7.96E-04	4.80E-01	4.10E-03	1.00E-03	3.00E+01	1.00E-04	1.00E-06
Pu-244+D	6.44E-06	2.91E-08	2.82E-10	1.61E+00	4.80E-01	4.00E-03	1.00E-03	3.00E+01	1.00E-04	1.00E-06
Ra-226 (+Rn)	1.19E-05	4.30E-09	4.78E-10	1.12E+01	7.90E-03	1.10E-03	4.00E-02	5.00E+01	1.00E-03	1.00E-03
Ra-226 (-Rn)	1.19E-05	4.30E-09	4.78E-10	1.12E+01	7.90E-03	1.10E-03	4.00E-02	5.00E+01	1.00E-03	1.00E-03
Ra-228+D	5.77E-06	1.56E-09	4.03E-10	5.89E+00	4.50E-03	1.20E-03	4.00E-02	5.00E+01	1.00E-03	1.00E-03
Ru-106+D	1.33E-06	1.87E-10	7.22E-11	9.77E-01	4.40E-04	2.16E-05	3.00E-02	1.00E+01	2.00E-03	3.30E-06
Sb-125+D	2.36E-06	1.02E-11	7.33E-12	2.03E+00	1.13E-05	3.40E-06	1.00E-02	1.00E+02	1.00E-03	1.00E-04
Sm-147	0.00E+00	6.96E-09	3.54E-11	0.00E+00	7.10E-02	1.80E-04	2.50E-03	2.50E+01	2.00E-03	2.00E-05
Sm-151	5.59E-13	4.55E-12	9.73E-13	3.94E-07	2.90E-05	3.40E-07	2.50E-03	2.50E+01	2.00E-03	2.00E-05
Sr-90+D	0.00E+00	7.56E-11	7.94E-11	0.00E+00	1.30E-03	1.40E-04	3.00E-01	6.00E+01	8.00E-03	2.00E-03
Tc-99	1.11E-12	4.92E-12	2.89E-12	1.21E-06	7.50E-06	1.30E-06	5.00E+00	2.00E+01	1.00E-04	1.00E-03
Th-228+D	1.09E-05	1.47E-07	4.52E-10	9.59E+00	3.10E-01	7.50E-04	1.00E-03	1.00E+02	1.00E-04	5.00E-06
Th-229+D	1.36E-06	1.19E-07	6.49E-10	1.58E+00	2.00E+00	4.30E-03	1.00E-03	1.00E+02	1.00E-04	5.00E-06
Th-230	8.21E-11	2.31E-08	5.92E-11	1.44E-03	3.20E-01	5.30E-04	1.00E-03	1.00E+02	1.00E-04	5.00E-06
Th-232+D	3.74E-11	2.56E-08	5.11E-11	8.84E-04	1.60E+00	2.80E-03	1.00E-03	1.00E+02	1.00E-04	5.00E-06
Th-Sep (+Rn)										
Th-Sep (-Rn)										
Th-Series (+Rn)										
Th-Series (-Rn)										
Tl-204	1.56E-09	1.94E-12	3.43E-12	1.59E-03	2.30E-06	3.20E-06	2.00E-01	1.00E+04	2.00E-03	3.00E-03
U-232	6.51E-11	7.77E-08	1.20E-10	1.45E-03	6.70E-01	1.30E-03	2.50E-03	1.00E+01	3.40E-04	6.00E-04
U-233	6.55E-11	2.12E-08	7.47E-11	9.70E-04	1.30E-01	2.50E-05	2.50E-03	1.00E+01	3.40E-04	6.00E-04
U-234	4.11E-11	2.09E-08	7.44E-11	1.03E-03	1.30E-01	2.60E-04	2.50E-03	1.00E+01	3.40E-04	6.00E-04
U-235+D	4.70E-07	1.95E-08	8.01E-11	6.42E-01	1.20E-01	2.50E-04	2.50E-03	1.00E+01	3.40E-04	6.00E-04
U-236	3.32E-11	1.98E-08	7.03E-11	8.69E-04	1.20E-01	2.50E-04	2.50E-03	1.00E+01	3.40E-04	6.00E-04
U-238+D	1.01E-07	1.87E-08	1.10E-10	9.12E-02	1.20E-01	2.50E-04	2.50E-03	1.00E+01	3.40E-04	6.00E-04
DU (+Rn)										
DU (-Rn)										
U-Sep (+Rn)										
U-Sep (-Rn)										
U-Series (+Rn)										
U-Series (-Rn)										
Zn-65	4.00E-06	1.70E-11	1.73E-11	2.68E+00	1.80E-05	1.40E-05	4.00E-01	1.00E+03	1.00E-01	1.00E-02

APPENDIX D

DESCRIPTION OF TERMINOLOGY USED BY THE CENSUS BUREAU

Appendix D

Description of Terminology Used by the Census Bureau

One responsibility of the Bureau of Census is to provide data regarding population statistics throughout the Nation. The Census Bureau has categorized all areas of the United States into either urban, rural, or an urban subdivision termed "extended cities." The Census Bureau definitions for these three categories of populations are presented below:

D.1 URBAN AND RURAL DEFINITIONS

The Census Bureau defines "urban" for the 1990 census as comprising all territory, population, and housing units in urbanized areas and in places (both incorporated places and census designated places) of 2,500 or more persons outside urbanized areas. More specifically, "urban" consists of territory, persons, and housing units in:

- Incorporated place of 2,500 or more persons, but excluding the rural portions of "extended cities."
- Census designated places of 2,500 or more persons.
- Other territory, incorporated or unincorporated, included in urbanized areas.

An urbanized area comprises a central place(s) and the adjacent densely-settled surrounding territory both inside and outside of places that together have a minimum population of 50,000 people. The densely-settled surrounding territory generally reflects an area of continuous residential development with an overall population density of at least 1,000 persons per square mile. Places that meet the criteria for qualification in an urbanized area generally are included in their entirety (extended cities are the exception).

Territory, population, and housing units not classified as urban constitute "rural."

D.1.1 Extended Cities

For 1970 census, the Census Bureau developed the concept of the "extended city" and applied it to incorporated places within urban areas only. An extended city is one with either 25 percent of its land area or at least 25 square miles classified as "sparsely-settles." The sparsely-settled area must consist of at least one group of one or more contiguous census blocks. Each group must be at least 5 square miles in area and have an overall population density of less than 100 persons per square mile.

The Census Bureau is required by Public Law 94-171 to deliver to State governors and legislature population and demographic data for use in redrawing Sate legislative districts. In 1990, the Census Bureau provided census population counts for more than 39,000 governmental units. The governmental units include States, counties, incorporated places, county subdivisions, census tract/block areas, and metropolitan areas. The definition of these governmental units, as specified by the Census Bureau, are cited below:

STATE

States are the primary governmental divisions of the United States. The District of Columbia is treated as a statistical equivalent of a State for census purposes.

The Census Bureau treats the outlying areas as State equivalents for the 1990 census. The outlying areas are American Samoa, Guam, the Northern Mariana Islands, Palau, Puerto Rico, and the Virgin Islands of the United States.

COUNTY

The primary political divisions of most States are termed "counties." In Louisiana, these divisions are known as "parishes."

PLACE

Places, for the reporting of decennial census data, include census designated places and incorporated places.

D.1.2 Census Designated Place (CDP)

Census designated places (CDP's) are delineated for the decennial census as the statistical counterparts of incorporated places. CDP's comprise densely settled concentrations of population that are identifiable by name, but are not legally incorporated places. Their boundaries, which usually coincide with visible features or the boundary of an adjacent incorporated place, have no legal status, nor do these places have officials elected to serve traditional municipal functions.

To qualify as a CDP for the 1990 census, an unincorporated community must have met the following criteria:

- 1,000 or more persons if outside the boundaries of an urbanized area (UA) delineated for the 1980 census or a subsequent special census.
- 2,500 or more persons if inside the boundaries of a UA delineated for the 1980 census or a subsequent special census.
- 250 or more persons if outside the boundaries of a UA delineated for the 1980 census or a subsequent special census, and within the official boundaries of an American Indian reservation recognized for the 1990 census.

D.1.3 Consolidated City

A consolidated government is a unit of local government for which the functions of an incorporated place and its county or minor civil division (MCD) (defined below) have merged.

D.1.4 Incorporated Place

Incorporated places recognized in 1990 census data products are those reported to the Census Bureau as legally in existence on January 1, 1990 under the laws of their respective States as cities, boroughs, towns, and villages, with the following exceptions: the towns in the New England States, New York, and Wisconsin, and the boroughs in New York are recognized as minor civil divisions for census purposes; the boroughs in Alaska are county equivalents.

METROPOLITAN AREA

The general concept of a metropolitan area (MA) is one of a large population nucleus, together with adjacent communities that have a high degree of economic and social integration with that nucleus. Some MA's are defined around two or more nuclei.

- Each MA must contain either a place with a minimum population of 50,000;
- A Census Bureau-defined urbanized area and a total MA population of at least 100,000 (75,000 in New England).

Table D-1. County Population Density for DOE/DOD Sites

Site	Town	1990	1980	Delta	County	1990	1980	Delta	Area (km ²)	Density (ind/km ²)
Argonne	Woodridge, IL	26,256	21,763	20.6	Champaign	173,025	168,392	2.8	2,590	67
Aberdeen ~20 km NE	Aberdeen PG, MD	5,267	5,722	-8.0	Harford	182,132	145,930	24.8	1,160	157
	Aberdeen, MD	13,087	11,533	13.5						
	Edgewood, MD	23,903	19,455	22.9						
	Baltimore	736,014								
Brookhaven	Patchogue, NY	11,060	11,291	-2.0	Nassau	1,287,444	1,321,582	-2.6	743	1,733
Fermi ~25 km E	Batavia, IL	17,076	12,574	35.8	Kane	317,471	278,405	14.0	1,347	236
	Chicago	2,783,726								
Fernald ~20 km NW	Fernald, OH	---	---	---	Hamilton	866,228	873,203	-0.8	1,067	831
	Cincinnati	364,114								
Idaho	Idaho Falls, ID	43,929	39,739	10.5	Bonneville	72,207	65,980	9.4	4,766	15
Hanford	Richland, WA	32,315	33,578	-3.8	Benton	112,560	109,444	2.8	4,442	25
Lawr/Berkley ~30 km E	Berkley, CA	102,724	103,328	-0.6	Contra Costa	803,732	656,331	22.5	1,891	425
	San Francisco	723,959								
Los Alamos	Los Alamos, NM	11,455	11,039	3.8	Los Alamos	18,115	17,599	2.9	282	64
Maywood	Maywood, NJ	9,536	9,895	-3.6	Bergen	825,380	845,385	-2.4	614	1,344
Mound	Miamisburg, OH	17,834	15,304	16.5	Montgomery	573,809	571,697	0.4	1,186	484
Nevada Test	Beatty, NV	1,623	---	---	Nye	17,781	9,048	96.5	46,786	0.4
Oak Ridge	Oak Ridge, TN	27,310	27,662	-1.3	Knox	335,749	319,694	5.0	1,311	256
Paducah	Paducah, KY	27,256	29,315	-7.0	McCracken	62,879	61,310	2.6	650	97
Pantex ~27 km NE	Panhandle, TX	2,353	2,226	5.7	Carson	6,576	6,672	-1.4	2,393	3
	Amarillo	157,571								
Portsmouth	Piketon, OH	1,717	1,726	-0.5	Pike	24,249	22,802	6.3	1,147	21
Rocky Flats ~27 km NW	Boulder, CO	83,295	76,685	8.6	Boulder	225,339	189,625	18.8	1,922	117
	Denver	467,610								
Sandia ~65 km E	Livermore, CA	56,741	48,349	17.4	Alameda	1,276,702	1,105,379	15.5	1,906	670
	San Francisco	723,959								
Savannah Riv ~25 km NE	Barnwell, SC	5,255	5,572	-5.7	Aiken	120,991	105,630	14.5	2,828	43
	Augusta GA	44,639			Barnwell	20,293	19,868	2.1	1,445	14
Weldon Spring ~40 km W	Weldon Spring, MO	1,470	---	---	St. Charles	212,751	143,455	48.3	1,445	147
	St. Louis	396,685								

D.2 POPULATION DISTRIBUTION AROUND NUCLEAR POWER FACILITIES IN THE UNITED STATES

The following information was extracted from a report to the U.S Nuclear Regulatory Commission in 1992 titled, An Analysis of Potassium Iodide (KI) Prophylaxis for the General Public in the Event of a Nuclear Accident, under NRC Contract No. NRC-04-90-070. This document will be published as and Nuclear Regulatory Commission NUREG report in the near future.

For risk analyses, it is common practice to use a constant population density estimate that may be expressed as the number of individuals per square mile. Even if such a single value represents an empirically derived average value, it will lead to erroneous results and conclusions if the population is, in fact, not homogeneously distributed.

To date, comprehensive information regarding population densities around nuclear facilities does not exist in the open literature. A suitable alternative was to construct a "Reference LWR Population" density distribution from Final Safety Analysis Reports (FSARs) filed by utilities as part of the NRC licensing process. At the time of filing, FSARs typically contain the most current population data, as well as projected data, typically at 10-year intervals, taking into account national and regional population trends.

From the NRC's Public Document Room, FSAR population data were obtained from all currently licensed facilities. For some licensees, however, population data were either insufficiently detailed or formatted in such a way that the data could not be collated with that of other utilities. In total, usable population data were obtained for 55 facilities representing 26 BWRs and 60 PWRs. Population data for 16 sectors were added to yield total population values for each successive annular area starting at the exclusion zone of a facility and out to a 50-mile radius. These facility-specific data are presented in Table D-2.

Table D-2. Population Distribution Around United States Nuclear Power Plants

Site	< 1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50	Reactor
#1	0	55	470	465	1,095	34,020	126,880	188,525	336,980	147,780	Browns Ferry
#2	81	610	3,270	857	1,082	11,712	91,715	70,604	35,330	66,880	Brunswick
#3	3	30	389	227	281	1,598	18,887	34,465	33,100	93,288	Cooper
#4	443	5,052	3,486	5,164	4,387	83,201	349,674	2,020,402	2,855,963	1,961,502	Fermi
#5	3	405	808	1,588	3,548	44,662	68,731	131,168	523,320	422,590	Fitzpatrick
#6	51	143	116	146	1,709	5,412	17,857	74,970	104,459	95,598	Grand Gulf
#7	54	69	146	242	377	4,405	40,295	40,177	60,870	118,600	Hatch
#8	0	0	0	299	1,026	21,550	341,000	623,300	1,992,600	2,367,200	Hope Creek
#9	219	105	111	250	647	14,837	83,972	132,041	327,697	545,504	LaSalle
#10	527	6,082	13,523	34,781	19,671	98,276	767,384	2,371,936	2,217,772	1,356,901	Limerick
#11	1,027	9,200	7,179	2,726	5,673	99,157	296,754	575,046	1,594,268	2,380,116	Oyster Creek
#12	0	1,718	3,095	2,835	5,275	102,137	260,268	574,520	1,089,403	1,207,703	Perry
#13	53	140	235	1,206	5,797	21,671	304,832	121,065	104,601	136,070	Quad Cities
#14	45	322	514	1,490	728	19,416	71,322	389,315	162,360	212,057	River Bend
#15	248	1,177	1,532	2,531	9,450	46,400	261,400	351,200	419,000	553,600	Susquehanna
#16	630	1,500	1,300	1,100	3,800	27,179	101,897	132,813	373,620	835,442	Vt. Yankee
#17	0	0	0	20	464	98	62,192	62,434	43,841	85,775	WNP-2
#18	6	12	44	77	245	4,755	71,919	310,777	131,436	144,419	Vogtle
#19	133	912	1,666	2,934	5,120	28,910	61,081	96,680	116,634	196,675	Arkansas One
#20	1,025	8,800	4,098	4,093	3,483	204,000	416,000	1,517,000	1,586,000	1,274,000	Beaver Valley
#21	25	62	98	150	508	8,969	29,907	123,452	132,247	122,505	Callaway
#22	173	844	2,812	1,860	2,050	34,372	98,146	190,043	484,858	2,913,440	Catwalk Cliffs
#23	112	824	3,974	6,843	5,025	64,903	490,593	336,713	294,339	343,853	Catawba
#24	0	0	10	40	489	14,245	9,899	17,796	96,327	128,091	Crystal River
#25	181	410	459	367	585	13,659	109,707	911,289	575,558	1,388,284	Davis Besse
#26	0	4	2	18	52	6,826	111,460	90,500	78,800	56,600	Diablo Canyon
#27	107	1,360	2,996	3,479	3,565	63,147	179,898	526,176	275,281	640,942	D.C. Cook
#28	450	370	1,210	5,270	5,420	11,550	276,950	407,100	91,200	72,704	Ft. Calhoun
#29	577	1,111	2,310	2,955	6,126	23,275	58,940	177,180	202,410	308,857	Robinson
#30	23	39	222	636	1,959	9,500	82,505	57,430	116,652	115,316	Farley
#31	396	2,521	3,516	3,432	2,951	59,776	511,649	1,398,599	1,779,321	1,190,051	Haddam Neck
#32	1,599	16,037	19,198	27,633	45,905	549,818	2,068,626	5,130,383	8,235,939	5,011,505	Indian Point
#33	20	175	413	605	1,104	13,626	115,262	214,294	201,162	294,107	Kewaunee
#34	39	494	1,063	1,325	2,207	75,399	707,673	409,946	375,475	318,597	McGuire
#35	98	507	691	1,840	1,975	23,689	63,600	150,600	206,400	128,000	Maine Yankee
#36	0	170	523	592	640	9,017	41,290	175,450	513,190	440,520	North Anna
#37	0	486	1,128	1,488	1,554	41,576	68,752	300,207	205,258	203,306	Onconee
#38	41	494	1,391	1,390	2,468	29,643	81,632	96,130	281,580	407,146	Palisades
#39	21	0	141	157	175	3,080	11,075	9,645	110,555	1,047,595	Palo Verde
#40	57	252	375	425	524	28,048	88,765	171,360	256,607	260,493	Point Beach
#41	106	330	292	571	1,123	17,040	118,110	387,100	1,333,400	1,132,143	Prairie Is.
#42	32	85	144	34	129	6,687	231,574	1,703,641	337,822	575,545	Rancho Seco
#43	0	0	0	602	1,910	34,618	412,757	562,662	1,967,403	2,409,169	PSE&G
#44	0	32	362	792	1,016	19,120	258,350	455,570	381,710	403,760	Shearon Harris
#45	0	2,050	6,460	8,200	10,750	55,390	421,500	756,790	2,021,000	3,251,000	San Onofre
#46	0	4	75	480	665	2,905	31,201	40,636	161,802	203,839	S. Texas
#47	135	1,590	2,265	4,913	5,035	51,502	433,340	163,598	198,253	150,193	Sequoyah
#48	0	908	1,395	5,748	16,323	100,323	101,342	111,697	143,634	319,227	St. Lucie
#49	4	121	207	336	457	5,578	76,704	393,938	191,163	289,707	V.C. Summer
#50	0	7	69	134	467	160,777	295,789	335,906	610,098	631,214	Surry
#51	736	2,436	8,169	11,004	10,848	160,912	661,598	497,692	313,703	832,235	Three Mile Is.
#52	284	407	2,522	2,415	3,828	80,103	55,230	148,643	815,022	543,495	Trojan
#53	0	0	0	0	0	168,258	710,158	946,133	723,650	396,115	Turkey Point
#54	98	131	329	512	548	16,036	82,801	160,414	345,835	790,932	Yankee Rowe
#55	289	15,217	12,676	4,462	6,599	194,937	321,086	544,362	460,537	4,226,596	Zion
AVG	185	1,560	2,172	2,977	3,979	55,122	240,581	507,664	702,317	831,796	
STD	314	3,365	3,698	6,019	6,969	84,811	318,939	809,435	1,228,789	1,062,887	
/MI²	63	166	138	135	141	234	255	323	320	294	

Table D-3 shows the average values and the standard deviations for each population cell. In all cases, the standard deviations of the mean exceeded their mean values. Population densities were determined by dividing the average number of individuals within each cell by the corresponding area. The first 5 miles yield population densities of about 140 individuals per square mile. Beyond 5 miles, the average population density essentially doubled in value (Table D-3).

Table D-3. Average Population Distribution for U.S. Nuclear Facilities

Distance (miles)	Average No. Individuals \pm 1 SD	Population Density (No. Ind./Mile ²)
< 1	185 \pm 314	63
1 - 2	1560 \pm 3365	166
2 - 3	2172 \pm 3698	138
3 - 4	2977 \pm 6019	135
4 - 5	3979 \pm 6969	141
5 - 10	55,122 \pm 84,811	234
10 - 20	240,581 \pm 318,939	255
20 - 30	507,664 \pm 809,435	323
30 - 40	702,317 \pm 1,228,789	320
40 - 50	831,796 \pm 1,062,887	294

Population densities beyond the 50-mile radius are not defined in FSARs and had to be derived by alternate means. All States in which at least one licensed commercial nuclear facility exists or whose borders are within 50 miles of a reactor facility were identified. The average population density was defined for each State by dividing the 1990 State population by the State's area defined in square miles. States with multiple reactors were weighted proportionately. An overall population density of about 200 individuals per square mile was thus obtained. This value was used to represent population density beyond a 50-mile radius.

Table D-4 provides the population distribution of the Reference LWR facility.

Table D-4. Population Distribution for Reference LWR

Distance Interval (miles)	Mean Population		
	Density (person/mile ²)	Total (person)	
		Radial Segment	Cumulative
< 1	63	185	185
1 - 5	138	10,406	10,591
5 - 10	234	55,142	65,733
10 - 25	284	468,472	534,205
25 - 50	309	1,820,396	2,354,601
50 - 100	200	4,713,000	7,067,601
100 - 150	200	7,855,000	14,922,601
150 - 200	200	10,994,000	25,919,601
200 - 350	200	51,843,000	77,762,601
350 - 500	200	80,121,000	157,883,601

Table D-5. Population Distribution for Six Urban DOE Sites

DOE SITE	POPULATION													
	0-5 km	0-.5 km	.5-1 km	1-2 km	2-3 km	3-4 km	4-5 km	5-10 km	10-20 km	20-30 km	30-40 km	40-50 km	50-60 km	60-80 km
Argonne	42,696	8	64	1,658	9,433	14,296	17,237	175,543	823,938	2,221,065	2,493,059	1,012,231	473,794	1,267,632
Brookhaven	16,276	1	36	307	2,249	5,199	8,484	69,813	331,046	235,097	317,340	848,291	940,197	8,148,922
Fermi	24,294	0	0	210	2,638	6,572	14,874	119,637	563,256	737,826	1,241,077	2,429,818	1,733,907	1,862,198
Lawrence Berkley	165,054	1,156	5,020	31,007	36,306	49,039	42,526	258,406	884,630	1,213,782	738,144	699,893	493,494	2,960,292
Mound	30,190	355	1,956	6,624	6,096	5,716	9,443	78,926	413,703	292,956	323,175	423,017	665,702	1,117,573
Rocky Flats	147	0	0	1	4	19	123	54,045	491,415	509,053	563,350	225,266	79,475	291,087
Average	46,443	253	1,179	6,635	9,454	13,474	15,448	126,061	584,665	868,297	946,024	939,753	731,095	2,607,951
Std.Dev.	54,606	424	1,857	11,136	12,383	16,446	13,268	71,387	204,098	686,462	758,640	715,187	516,543	2,606,664
Pop/km ²	592	323	501	704	602	613	547	535	621	553	430	333	212	297

Table D-6. Population Distribution for Eleven Rural DOE Sites

DOE SITE	POPULATION													
	0-5 km	0-.5 km	.5-1 km	1-2 km	2-3 km	3-4 km	4-5 km	5-10 km	10-20 km	20-30 km	30-40 km	40-50 km	50-60 km	60-80 km
Fernald	5,146	153	360	1,141	1,196	923	1,373	25,827	136,278	537,222	561,041	268,298	232,731	1,493,358
Hanford	0	0	0	0	0	0	0	11	4,549	40,070	67,253	72,576	33,997	250,842
Idaho	0	0	0	0	0	0	0	4	54	1,509	1,119	1,757	7,834	188,512
Los Alamos	6,511	13	44	306	1,365	2,870	1,913	11,411	4,124	25,740	81,167	13,225	10,303	496,181
Nevada Tst	10	1	0	0	2	2	5	25	110	162	138	304	1,645	7,746
Oak Ridge	11,181	93	436	1,676	1,958	2,997	4,021	43,476	248,544	128,395	141,487	65,746	83,487	464,297
Paducah	684	6	10	31	76	168	393	13,564	46,737	30,076	36,309	41,307	57,950	474,597
Pantext	39	0	0	3	6	11	19	136	5,427	61,459	123,373	14,767	34,040	68,876
Portsmouth	2,867	8	25	49	237	1,144	1,404	6,228	25,391	34,234	118,395	53,163	68,793	866,265
Sandia	17,070	6	62	696	3,993	4,057	8,256	41,710	67,265	299,477	916,050	1,771,512	1,069,122	2,972,941
Savannah River	0	0	0	0	0	0	0	43	10,447	53,259	209,736	126,116	58,497	649,614
Average	3,955	26	85	355	803	1,107	1,580	12,949	49,902	110,146	205,097	220,797	150,764	721,203
Std.Dev.	5,409	48	150	548	1,208	1,427	2,422	15,970	74,152	157,332	269,153	495,837	296,667	815,181
Pop/km ²	50	32	36	38	51	50	56	55	53	70	93	78	44	82

Table D-7. Population Distribution for Seventeen DOE Sites

DOE SITE	POPULATION													
	0-5 km	0-.5 km	0.5-1 km	1-2 km	2-3 km	3-4 km	4-5 km	5-10 km	10-20 km	20-30 km	30-40 km	40-50 km	50-60 km	60-80 km
Argonne	42,696	8	64	1,658	9,433	14,296	17,237	175,543	823,938	2,221,065	2,493,059	1,012,231	473,794	1,267,632
Brookhaven	16,276	1	36	307	2,249	5,199	8,484	69,813	331,046	235,097	317,340	848,291	940,197	8,148,922
Fermi	24,294	0	0	210	2,638	6,572	14,874	119,637	563,256	737,826	1,241,077	2,429,818	1,733,907	1,862,198
Fernald	5,146	153	360	1,141	1,196	923	1,373	25,827	136,278	537,222	561,041	268,298	232,731	1,493,358
Hanford	0	0	0	0	0	0	0	11	4,549	40,070	67,253	72,576	33,997	250,842
Idaho	0	0	0	0	0	0	0	4	54	1,509	1,119	1,757	7,834	188,512
Lawrence Berkley	165,054	1,156	5,020	31,007	36,306	49,039	42,526	258,406	884,630	1,213,782	738,144	699,893	493,494	2,960,292
Los Alamos	6,511	13	44	306	1,365	2,870	1,913	11,411	4,124	25,740	81,167	13,225	10,303	496,181
Mound	30,190	355	1,956	6,624	6,096	5,716	9,443	78,926	413,703	292,956	323,175	423,017	665,702	1,117,573
Nevada Tst	10	1	0	0	2	2	5	25	110	162	138	304	1,645	7,746
Oak Ridge	11,181	93	436	1,676	1,958	2,997	4,021	43,476	248,544	128,395	141,487	65,746	83,487	464,297
Paducah	684	6	10	31	76	168	393	13,564	46,737	30,076	36,309	41,307	57,950	474,597
Pantext	39	0	0	3	6	11	19	136	5,427	61,459	123,373	14,767	34,040	68,876
Portsmouth	2,867	8	25	49	237	1,144	1,404	6,228	25,391	34,234	118,395	53,163	68,793	866,265
Rocky Flats	147	0	0	1	4	19	123	54,045	491,415	509,053	563,350	225,266	79,475	291,087
Sandia	17,070	6	62	696	3,993	4,057	8,256	41,710	67,265	299,477	916,050	1,771,512	1,069,122	2,972,941
Savannah River	0	0	0	0	0	0	0	43	10,447	53,259	209,736	126,116	58,497	649,614
AVERAGE	18,951	106	471	2,571	3,856	5,471	6,475	52,871	238,642	377,728	466,601	474,546	355,586	1,387,114
STD	38,517	277	1,227	7,278	8,494	11,477	10,481	69,897	289,082	560,001	612,680	676,502	477,527	1,908,162
POP/KM ²	241	135	200	273	246	249	229	225	253	241	212	168	103	158

Table D-8. Population Distribution for Reference Light Water Reactor

Radial Distance (miles)	Population Density (person/mi ²)	Standard Deviation (person/mi ²)	Population Density (person/km ²)	Standard Deviation (person/km ²)
0-1	59	100	23	39
0-5	139	237	54	93
0-10	210	320	82	125
0-30	298	418	116	163
0-50	299	408	117	159

Table D-9. Population Distribution for DOE Sites

Radial Distance (km)	11 Rural Sites		6 Urban/Suburban Sites		Combined 17 Sites	
	Population Density (person/km ²)	Standard Deviation (person/km ²)	Population Density (person/km ²)	Standard Deviation (person/km ²)	Population Density (person/km ²)	Standard Deviation (person/km ²)
0-2	37.1	58.5	642.3	1,065.8	250	698
0-5	50.4	68.9	591.6	695.6	241	491
0-10	53.8	67.0	549.4	393.0	229	337
0-30	62.6	78.8	575.2	337.2	244	323
0-50	76.8	113.9	447.3	248.5	207	248
0-80	73.4	98.6	340.9	153.1	168	176

APPENDIX E

METHODOLOGY FOR DERIVING POPULATION IMPACTS

Appendix E

E.1 METHODOLOGY FOR DERIVING POPULATION IMPACTS

A site where the soil is contaminated with radioactive materials could cause population impacts through 4 principal exposure pathways: direct radiation, inhalation of suspended dust, ingestion of groundwater, and ingestion of contaminated crops. In addition, exposure to indoor radon is also a potentially important exposure pathway specifically for sites where the soil is contaminated with Ra-226.

Population doses are usually performed on a site specific basis, taking into consideration the unique land use and demography. However, the population doses required in support of a cleanup rule for soil need to be generic. As such, they must be based on bounding assumptions that apply to most sites. This attachment describes the methodology employed by this study to calculate the population doses and risks from contaminated soil for various exposure periods. In addition to the general equation used for each pathway, a normalized equation is derived based on a set of bounding assumptions. The results for the normalized equations can be scaled using site specific data.

For example, the population dose and risk from direct radiation can be derived from these values for typical unpopulated (<10/km²), rural (10 to 100/km²), suburban (100 to 1,000/km²), and urban (>1,000/km²) locations given a unit concentration of the radionuclide in soil and size of the contaminated area. Unit population dose factors can be developed, expressed in terms of person-rem per pCi/g per m² of contamination. The population dose can be later be estimated when the actual radionuclide concentration and area of contamination is determined for a site.

E.1.1 Direct Radiation

Standard dose conversion factors for direct radiation from radionuclides in soil have been developed and published in numerous peer-reviewed reports and journals (NRC 77, Till 83, Koc 85). These dose conversion factors are expressed in units of dose per unit time per unit concentration of a radionuclide in soil (e.g., rem/yr per pCi/g).

A bounding estimate of the time integrated population dose from direct radiation for long-lived radionuclides in soil can be derived as follows:

$$PE_i = C_i \left(\frac{pCi}{g} \right) * DCF_{ext_i} \left(\frac{mrem-cm^3}{yr-pCi} \right) * .001 \left(\frac{rem}{mrem} \right) * \rho \left(\frac{g}{cm^3} \right) * DF[\rho, T_{cz}] * A (m^2) * N \left(\frac{People}{m^2} \right) * OAF * \int_0^t \exp^{(-\lambda_{eff_i} \left(\frac{1}{yr} \right) + t (yr))} dt$$

$$= \frac{C_i \left(\frac{\text{pCi}}{\text{g}} \right) * \text{DCF}_{\text{ext}_i} \left(\frac{\text{mrem-cm}^3}{\text{yr-pCi}} \right) * .001 \left(\frac{\text{rem}}{\text{mrem}} \right) * \rho \left(\frac{\text{g}}{\text{cm}^3} \right) * \text{DF}[\rho, T_{cz}] * A (\text{m}^2) * N \left(\frac{\text{People}}{\text{m}^2} \right) * \text{OAF} * (1 - \exp^{(-\lambda_{\text{eff}1_i} \left(\frac{1}{\text{yr}} \right) * t (\text{yr}))})}{\lambda_{\text{eff}1_i} \left(\frac{1}{\text{yr}} \right)}$$

where:

PE_i = The time integrated population dose from direct radiation (person-rem),

C_i = The concentration of the i th radionuclide in soil (pCi/g),

$\text{DCF}_{\text{ext}_i}$ = External dose conversion factor for exposure to uniformly contaminated ground of infinite depth and lateral extent (mrem/yr per pCi/cm³ of the i th radionuclide),

ρ = Soil density (g/cm³),
= 1.6 g/cm³,

$\text{DF}(\rho, T_{cz})$ = Depth factor: used to adjust the external dose correction factor for uniformly contaminated ground of infinite depth to one for a specified contaminated zone thickness (dimensionless),

$$= 1 - \exp \left(\frac{\ln(1 - \text{DF}[\rho \left(\frac{\text{g}}{\text{cm}^3} \right), 0.15(\text{m})])}{(0.15(\text{m}) * \rho \left(\frac{\text{g}}{\text{cm}^3} \right) * 1000 \left(\frac{\text{kg-cm}^3}{\text{g-m}^3} \right)) * \rho \left(\frac{\text{g}}{\text{cm}^3} \right) * 1,000 \left(\frac{\text{kg-cm}^3}{\text{g-m}^3} \right) * T_{cz}(\text{m})} \right)$$

T_{cz} = Thickness of the contaminated zone (m),

A = Contaminated area (m²),

N = Assumed population density (persons/m²),
= 0.001 persons/m² (i.e., an urban setting with 1,000 people/km²),

OAF = Occupancy Adjustment Factor

$$= \text{EF} \left(\frac{\text{days}}{365 \text{ days}} \right) * \left(\text{OET} \left(\frac{\text{hours}}{24 \text{ hours}} \right) + \text{IET} \left(\frac{\text{hours}}{24 \text{ hours}} \right) * \text{SF} \right)$$

= 0.495

EF = Exposure Frequency
= 350 days per 365 days
= 0.959

OET = Outdoor Exposure Time
 = 0.439 hours per 24 hours
 = 0.0183

IET = Indoor Exposure Time
 = 14.9 hours per 24 hours
 = 0.622

SF = Gamma Shielding Factor
 = 0.8

$$\lambda_{\text{eff}i} = \frac{I \left(\frac{m}{Yr} \right)}{MD(m) * \theta * R_i} + \lambda_i \left(\frac{1}{Yr} \right) \quad (1/yr),$$

I = Infiltration rate (m/yr),
 = 1 m/yr,

MD = Soil contaminant mixing depth (0.15 m). This is the plow layer where it is assumed that the concentration in the soil will be uniform. It is also the assumed boundary below which radionuclides are assumed to no longer be capable of being suspended,

θ = Volumetric water content (dimensionless),

$$= \theta_{\text{sat}} * \left(\frac{I \left(\frac{m}{Yr} \right) \frac{1}{(2*b+3)}}{K_{\text{sat}} \left(\frac{m}{Yr} \right)} \right)$$

= 0.325,

θ_{sat} = Saturated water content (dimensionless),
 = 0.485,

K_{sat} = Saturated hydraulic conductivity (m/yr),
 = 227 m/yr,

b = soil-specific exponential parameter (dimensionless),
 = 5.3,

R_i = Retardation factor for the ith radionuclide (dimensionless),

$$= 1 + \frac{\left(\rho \left(\frac{g}{cm^3} \right) * Kd_i \left(\frac{cm^3}{g} \right) \right)}{\theta}$$

- Kd_i = Distribution coefficient for the i th principal radionuclide (cm^3/g),
- λ_i = Radioactive decay constant for the i th radionuclide ($1/\text{yr}$), and
- t = Time over which population dose is integrated (yrs).

This equation can be simplified and expressed on a normalized basis as follows:

$$PE_i(\text{nor}) =$$

$$1 \left(\frac{\text{pCi}}{\text{g}} \right) * DCF_{\text{ext } i} \left(\frac{\text{mrem-cc}}{\text{pCi-yr}} \right) * .001 \left(\frac{\text{rem}}{\text{mrem}} \right) * 1.6 \left(\frac{\text{g}}{\text{cc}} \right) * DF \left[\frac{1.6 \text{ g}}{\text{cc}}, 1 \text{ m} \right] * 1 \text{ m}^2 * .001 \left(\frac{\text{Person}}{\text{m}^2} \right) * .495 * (1 - \exp^{-\lambda_{\text{eff}i} (\text{yr}^{-1}) * t (\text{yrs})})$$

$$\lambda_{\text{eff}i} (\text{yr}^{-1})$$

$$= \frac{7.9 \text{E-}7 \left(\frac{\text{Person-rem-pCi}}{\text{mrem-cc}} \right) * DCF_{\text{ext } i} \left(\frac{\text{mrem-cc}}{\text{pCi-yr}} \right) * DF \left[\frac{1.6 \text{ g}}{\text{cc}}, 1 \text{ m} \right] * (1 - \exp^{-\lambda_{\text{eff}i} (\text{yr}^{-1}) * t (\text{yr})})}{\lambda_{\text{eff}i} (\text{yr}^{-1})}$$

where:

$PE_i(\text{nor})$ = The normalized time integrated population dose for external radiation for the i th radionuclide (Person-rem per pCi/g per m^2 for a 1 m thick contaminated zone)

Once $PE_i(\text{nor})$ is determined, the value is multiplied by the radionuclide concentration in soil (pCi/g), the area of contamination (m^2), and the population density (people/ m^2) to obtain the time integrated population dose in person-rem.

Inherent in this equation is the assumption that over the period of concern, there is no daughter ingrowth.

The period of concern (T_i) is defined as the median residence time of radionuclide in the mixing zone, which is estimated as follows:

$$T_i = 1/\lambda_{\text{eff}i}$$

In this equation, removal of radionuclides from the mixing zone is assumed to be due to leaching and radioactive decay. Soil erosion is not included as a removal process because erosion will just redeposit the radionuclide at another location. Accordingly, by neglecting erosion, the equation effectively accounts for offsite exposure due to erosion. For a humid environment, the infiltration rate is about 0.4 m/yr. For a dry environment, there is little infiltration.

E.1.2 Dust Inhalation

E.1.2.1 All Radionuclides Excluding C-14 and H-3

Radionuclides contained in soil can result in inhalation exposures due to the airborne suspension of particulates from natural (e.g., wind) and manmade processes (vehicles). A typical time averaged dust loading is about 50 $\mu\text{g}/\text{m}^3$ (NRC 92). On this basis, the time integrated inhalation population dose can be calculated as follows:

$$\begin{aligned}
 \text{PI}_i &= C_i \left(\frac{\text{pCi}}{\text{g}} \right) * \text{DL} \left(\frac{\mu\text{g}}{\text{m}^3} \right) * 1\text{E}-6 \left(\frac{\text{g}}{\mu\text{g}} \right) * \text{B} \left(\frac{\text{m}^3}{\text{yr}} \right) * \text{A} \left(\text{m}^2 \right) * \text{N} \left(\frac{\text{Persons}}{\text{m}^2} \right) * \text{DCFinh}_i \left(\frac{\text{mrem}}{\text{pCi}} \right) * 1\text{E}-3 \left(\frac{\text{rem}}{\text{mrem}} \right) * \int_0^t \left(\exp^{-\lambda_{\text{eff}i} \left(\frac{1}{\text{yrs}} \right) * t \left(\text{yrs} \right)} \right) dt \\
 &= \frac{C_i \left(\frac{\text{pCi}}{\text{g}} \right) * \text{DL} \left(\frac{\mu\text{g}}{\text{m}^3} \right) * 1\text{E}-6 \left(\frac{\text{g}}{\mu\text{g}} \right) * \text{B} \left(\frac{\text{m}^3}{\text{yr}} \right) * \text{A} \left(\text{m}^2 \right) * \text{N} \left(\frac{\text{Persons}}{\text{m}^2} \right) * \text{DCFinh}_i \left(\frac{\text{mrem}}{\text{pCi}} \right) * 1\text{E}-3 \left(\frac{\text{rem}}{\text{mrem}} \right) * \left(1 - \exp^{-\lambda_{\text{eff}i} \left(\frac{1}{\text{yrs}} \right) * t \left(\text{yrs} \right)} \right)}{\lambda_{\text{eff}i} \left(\frac{1}{\text{yrs}} \right)}
 \end{aligned}$$

where:

- PI_i = Time integrated population dose for the *i*th radionuclide (person-rem),
- C_i = The concentration of the *i*th radionuclide in soil (pCi/g),
- DL = Average annual dust loading,
= 50 $\mu\text{g}/\text{m}^3$ (Value is based on a review of this topic provided in NRC 92),
- MD = Soil contaminant mixing depth (0.15 m). This is the plow layer where it is assumed that the concentration in the soil will be uniform. It is also the assumed boundary below which radionuclides are assumed to no longer be capable of being suspended,
- B = Breathing rate (m^3/yr),
= 8,400 m^3/yr (Value is based on RESRAD 5.0 default),
- A = Contaminated area (m^2). This model is based on the assumption that the contaminated area is large and all the airborne dust over the area is from contaminated soil,
- N = Population density (persons/ m^2),
= 0.001 persons/ m^2 (i.e., an urban setting with 1,000 people/ km^2),
- DCFinh_i = Inhalation dose conversion factor (mrem/pCi inhaled),

$$\lambda_{eff1_i} = \frac{I \left(\frac{m}{yr} \right)}{MD(m) * \theta * R_i} + \lambda_i \left(\frac{1}{yr} \right) \quad (1/yr)$$

I = Infiltration rate (m/yr),
= 1 m/yr,

θ = Volumetric water content (dimensionless),

$$= \theta_{sat} * \left(\frac{I \left(\frac{m}{YR} \right)}{K_{sat} \left(\frac{m}{YR} \right)} \right)^{\frac{1}{(2*b+3)}}$$

θ_{sat} = Saturated water content (dimensionless),
= 0.485,

K_{sat} = Saturated hydraulic conductivity (m/yr),
= 227 m/yr,

b = soil-specific exponential parameter (dimensionless),
= 5.3,

Ri = Retardation factor for the ith radionuclide (dimensionless),

$$= 1 + \frac{\left(\rho \left(\frac{g}{cm^3} \right) * Kd_i \left(\frac{cm^3}{g} \right) \right)}{\theta}$$

Kd_i = Distribution coefficient for the ith principal radionuclide (cm³/g),

λ_i = Radioactive decay constant for the ith radionuclide (1/yr), and

t = Time over which the population dose is integrated (yrs).

In this model, it is assumed that removal of radionuclides from surface soil is by leachate migration and radioactive decay. Once the radionuclides are transported to below the mixing zone, it is assumed that they are no longer available for suspension.

The normalized time integrated population dose (person-rem per pCi/g per m² of contamination) for the dust inhalation pathway is derived as follows:

PI_i(nor) =

$$\frac{1 \left(\frac{pCi}{g} \right) * 50 \left(\frac{\mu g}{m^3} \right) * 1E-6 \left(\frac{g}{\mu g} \right) * 7300 \left(\frac{m^3}{yr} \right) * 1 \left(m^2 \right) * 0.001 \left(\frac{Persons}{m^2} \right) * DCF_{inh_i} \left(\frac{mrem}{pCi} \right) * 1E-3 \left(\frac{rem}{mrem} \right) * \left(1 - \exp \left(-\lambda_{eff1_i} \left(\frac{1}{YRS} \right) * t \left(YRS \right) \right) \right)}{\lambda_{eff1_i} \left(YRS \right)}$$

$$= \frac{4.2E-7 \left(\frac{\text{Person-rem-pCi}}{\text{mrem-yr}} \right) * DCF_{inh_i} \left(\frac{\text{mrem}}{\text{pCi}} \right) * (1 - \exp^{-\lambda_{eff1_i}(1/\text{yrs}) * t(\text{yrs})})}{\lambda_{eff1_i} \left(\frac{1}{\text{yrs}} \right)}$$

Once $PI_i(\text{nor})$ is determined, the value is multiplied by the radionuclide concentration in soil (pCi/g), and the area of contamination (m^2) to obtain the time integrated population dose in person-rem. Inherent in this equation is the assumption that there is no daughter ingrowth. It is plausible that suspended dust can be transported offsite and cause additional population exposures. This population pathway of exposure is indirectly addressed in this analysis by not including an erosion term.

E.1.2.2 H-3 Inhalation Dose

Tritium (H-3) has essentially the same chemical behavior as stable isotopes of hydrogen. It occurs in organisms throughout the ecosystem in concentrations that depend on the ratio of tritium to stable hydrogen in the environment. When released to the environment, tritium rapidly converts to the oxide form and disperses like ordinary water. The mass difference between H_2O and HTO influence tritium properties but, in general, the circulation of tritium closely follows that of water.

The relationship between H_2O and HTO implies that the tritium concentration in air and soil will depend on the ratio of water vapor in air to the water content in the soil. Per RESRAD 5.0, the equilibrium tritium concentration in air resulting from an infinitely large contaminated area can be related to the stable hydrogen content in air and soil in proportion to the tritium concentration in soil water as follows:

$$C_{\text{air}_{\text{H-3}}}^{\text{eqm}} = [C_{\text{w}_{\text{H-3}}} (\text{pCi}/\text{cm}^3) * C_{\text{air}_{\text{H}}} (\text{g}/\text{m}^3)] / W_{\text{H}} (\text{g}/\text{cm}^3)$$

where

$$C_{\text{air}_{\text{H-3}}}^{\text{eqm}} = \text{Equilibrium tritium concentration in air resulting from an infinitely large contaminated area (pCi}/\text{cm}^3),$$

$$\begin{aligned} C_{\text{w}_{\text{H-3}}} &= \text{Concentration of tritium in soil water in the contaminated zone (pCi}/\text{cm}^3), \\ &= [C_{\text{s}_{\text{H-3}}} (\text{pCi}/\text{g}) * \rho (\text{g}/\text{cm}^3)] / \theta \end{aligned}$$

$$C_{\text{s}_{\text{H-3}}} = \text{The concentration of tritium in soil (pCi}/\text{g}),$$

$$\begin{aligned} \rho &= \text{Soil density (g}/\text{cm}^3), \\ &= 1.6 \text{ g}/\text{cm}^3, \end{aligned}$$

θ = Volumetric water content (dimensionless),

$$= \theta_{sat} * \left(\frac{I \left(\frac{m}{yr} \right)^{\frac{1}{(2*b+3)}}}{K_{sat} \left(\frac{m}{yr} \right)} \right)$$

$$= 0.325,$$

where

θ_{sat} = Saturated water content (dimensionless),
= 0.485,

I = Infiltration rate (m/yr),
= 1 m/yr,

K_{sat} = Saturated hydraulic conductivity (m/yr),
= 227 m/yr,

b = soil-specific exponential parameter (dimensionless),
= 5.3,

C_{air_H} (g/m³) = Average equilibrium concentration of hydrogen in water (g/m³),
= $1/9 * H_a$ g/m³,

H_a = average absolute humidity in air (g/m³),
= 8 g/m³,

W_H = mass fraction of hydrogen in water,
= 1 g H per 9 cm³ H₂O,

therefore;

$$\begin{aligned} C_{air_{H-3}}^{eqm} &= [C_{W_{H-3}} (pCi/cm^3) * 1/9 * H_a (g/m^3)] / 1/9 (g/cm^3) \\ &= [C_{W_{H-3}} (pCi/cm^3) * H_a (g/m^3)] / 1 (g/cm^3) \end{aligned}$$

If $C_{S_{H-3}} = 1$ pCi/g and I = 1 m/yr then

$$\begin{aligned} C_{W_{H-3}} &= [1 (pCi/g) * 1.6 (g/cm^3)] / .325 \\ &= 4.92 pCi/cm^3 \end{aligned}$$

and

$$\begin{aligned} \text{Cair}_{\text{H-3}}^{\text{eqm}} &= [[1 (\text{pCi/g}) * 1.6 (\text{g/cm}^3)] / .325] * 8 \text{ g/m}^3 / 1 (\text{g/cm}^3) \\ &= 39.4 \text{ pCi/m}^3 \end{aligned}$$

For a contaminated zone with a finite area, A, the tritium concentration in air can be estimated by using the following approximation:

$$\text{Cair}_{\text{H-3}}^{\text{finite}} = \frac{3.17\text{E-}8 \left(\frac{\text{YRS}}{\text{sec}} \right) * F_w * \text{EVS}_{\text{H-3}} \left(\frac{\text{pCi}}{\text{m}^2\text{-yr}} \right) * (A (\text{m}^2))^{1/2}}{\text{Hmix}_{\text{inh}} (\text{m}) * U \left(\frac{\text{m}}{\text{sec}} \right)}$$

where:

$\text{Cair}_{\text{H-3}}^{\text{finite}}$ = Tritium air concentration in the air above a finite contaminated area (pCi/m³),

F_w = Fraction of time the wind blows towards the receptor (dimensionless),

A = Contaminated area (m²),

Hmix_{inh} = Height at which tritium water vapor is uniformly mixed (m),
= 2 m for the inhalation pathway,

U = Average wind speed (m/sec),
= 2 m/sec.

$\text{EVS}_{\text{H-3}}$ = Tritium flux (evasion rate) from the contaminated area (pCi /m²-yr),

$$= 1\text{E}+6 \left(\frac{\text{CC}}{\text{m}^3} \right) * C_{\text{W}_{\text{H-3}}} \left(\frac{\text{pCi}}{\text{CC}} \right) * [C_e * [(1-C_r) * P_r \left(\frac{\text{m}}{\text{YR}} \right) + I_{\text{rr}} \left(\frac{\text{m}}{\text{YR}} \right)]]$$

$$= 1\text{E}+6 \left(\frac{\text{CC}}{\text{m}^3} \right) * C_{\text{W}_{\text{H-3}}} \left(\frac{\text{pCi}}{\text{CC}} \right) * [0.5 * [(1-.2) * 1 \left(\frac{\text{m}}{\text{YR}} \right) + .2 \left(\frac{\text{m}}{\text{YR}} \right)]]$$

$$= 5\text{E}+5 \left(\frac{\text{CC}}{\text{m}^2\text{-yr}} \right) * C_{\text{W}_{\text{H-3}}} \left(\frac{\text{pCi}}{\text{CC}} \right)$$

where

C_e = Evaporation coefficient (dimensionless),
= 0.5,

C_r = Runoff coefficient (dimensionless),
= 0.2,

$$P_r = \text{Annual rainfall (m/yr)},$$

$$= 1 \text{ m/yr},$$

$$I_{ir} = \text{Irrigation rate (m/yr)},$$

$$= 0.2 \text{ m/yr},$$

$$C_{air_{H-3}} = C_{air_{H-3}}^{finite} \text{ if } C_{air_{H-3}}^{finite} < C_{air_{H-3}}^{eqm}$$

else

$$C_{air_{H-3}} = C_{air_{H-3}}^{eqm}$$

Assuming $I = 1 \text{ m/yr}$ and

$$C_{w_{H-3}} = [1 \text{ (pCi/g)} * 1.6 \text{ (g/cm}^3\text{)}] / .325$$

$$= 4.92 \text{ pCi/cm}^3$$

then

$$EVS_{N_{H-3}} = 5E+5 \left(\frac{cc}{m^2-yr} \right) * C_{w_{H-3}} \left(\frac{pCi}{cc} \right)$$

$$= 2.46E+6 \text{ pCi/(m}^2\text{-yr)}$$

$$C_{air_{H-3}}^{finite} = \frac{3.17E-8 \left(\frac{yrs}{sec} \right) * .5 * 2.46E+6 \left(\frac{pCi}{m^2-yr} \right) * (1 \text{ (m}^2\text{)})^{1/2}}{2 \text{ (m)} * 2 \left(\frac{m}{sec} \right)}$$

$$= 9.75E-3 \text{ pCi/m}^3$$

Given the above assumptions, the normalized time integrated population dose from inhalation of tritium (person-rem per pCi/g per m² of contamination) for the inhalation pathway is derived as follows:

$$PI_{H-3}(nor) =$$

$$\frac{9.75E-3 \left(\frac{pCi \ H-3}{m^3} \right) * 8400 \left(\frac{m^3}{yr} \right) * 1 \text{ (m}^2\text{)} * 1E-3 \left(\frac{Persons}{m^2} \right) * DCF_{inh_{H-3}} \left(\frac{mrem}{pCi} \right) * 1E-3 \left(\frac{rem}{mrem} \right) * (1 - \exp^{(-\lambda_{eff1_{H-3}} \left(\frac{1}{yrs} \right) * t(yrs))})}{\lambda_{eff1_{H-3}} \left(\frac{1}{yrs} \right)}$$

$$= \frac{8.2E-5 \left(\frac{\text{Person-rem-pCi}}{\text{mrem-yr}} \right) * DCF_{inh_{H-3}} \left(\frac{\text{mrem}}{\text{pCi}} \right) * (1 - \exp^{(-\lambda_{eff1_{H-3}} \left(\frac{1}{\text{yr}} \right) * t(\text{yrs}))})}{\lambda_{eff1_{H-3}} \left(\frac{1}{\text{yr}} \right)}$$

E.1.2.3 Carbon-14 Inhalation Dose

Inorganic and organic reactions in the soil will convert most forms of soil carbon to CO₂ which in turn escapes to the air above the soil. The concentration of C-14 in the air above a contaminated area will depend on the evasion rate of the carbon from the soil, the size of the source area, and meteorological conditions.

For a contaminated zone with a finite area, A, the C-14 concentration in air can be estimated by using the following approximation:

$$\text{Cair}_{\text{C-14}}^{\text{finite}} = \frac{3.17E-8 \left(\frac{\text{yrs}}{\text{sec}} \right) * F_w * EVSN_{\text{C-14}} \left(\frac{\text{pCi}}{\text{m}^2\text{-yr}} \right) * (A \text{ (m}^2\text{)})^{1/2}}{H_{\text{mix}_{inh}} \text{ (m)} * U \left(\frac{\text{m}}{\text{sec}} \right)}$$

where:

$\text{Cair}_{\text{C-14}}^{\text{finite}}$ = Carbon-14 air concentration in the air above a finite contaminated area (pCi/m³),

F_w = Fraction of time the wind blows towards the receptor (dimensionless)
= 0.5,

A = Contaminated area (m²),

$H_{\text{mix}_{inh}}$ = Height at which C-14 water vapor is uniformly mixed (m),
= 2 m for the inhalation pathway,

U = Average wind speed (m/sec),
= 2 m/sec.

$EVSN_{\text{C-14}}$ = C-14 flux (evasion rate) from the contaminated area (pCi /m²-yr),

$$= 1E+6 \left(\frac{\text{CC}}{\text{m}^3} \right) * CS_{\text{C-14}} \left(\frac{\text{pCi}}{\text{g}} \right) * E_{\text{C-14}} \left(\frac{1}{\text{yr}} \right) * \rho \left(\frac{\text{g}}{\text{CC}} \right) * d_{\text{ref}} \text{ (m)}$$

where:

$C_{S_{C-14}}$ = The concentration of C-14 in soil (pCi/g),

E_{C-14} = C-14 evasion loss rate constant (1/yr),
= 22 1/yr (RESRAD 5.0 value),

ρ = Soil density (g/cm³),
= 1.6 g/cm³,

d_{ref} = Reference evasion depth (m),
= 0.3 m.

For an infinitely large source area, the ratio of C-14 in air to C-14 in the soil is assumed to be the similar to the ratio of stable carbon in air and soil. Therefore:

$$Ca_{C-14}^{eqm} = Ca_{C-12} * \frac{E_{C-14} * Cs_{C-14}}{E_{C-12} * Fs_{C-12}}$$

where

Ca_{C-14}^{eqm} = equilibrium concentration of C-14 in air (pCi/m³),

Ca_{C-12}^{eqm} = equilibrium concentration of C-12 in air (pCi/m³),

E_{C-14} = C-14 evasion loss rate constant (1/yr),
= 22 1/yr (RESRAD 5.0 value),

E_{C-12} = C-12 evasion loss rate constant (1/yr),
= 0.0032 1/yr (RESRAD 5.0 value),

$C_{S_{C-14}}$ = The concentration of C-14 in soil (pCi/g),

$F_{S_{C-12}}$ = fraction of soil that is stable carbon (dimensionless),
= 0.03 (RESRAD 5.0 value)

Assuming a concentration of C-14 in the soil of 1 pCi/g, the equilibrium concentration of C-14 in air above an infinitely large area is:

$$Ca_{C-14}^{eqm} = 0.16 \text{ (g/m}^3\text{)} * [22 \text{ (1/yr)} * 1 \text{ (pCi/g)}] / [0.0032 \text{ (1/yr)} * 0.03]$$
$$= 3.67E+4 \text{ pCi/m}^3$$

Assuming an area of 1 m², the C-14 concentration above a finite area of contamination is calculated as follows:

$$\begin{aligned} \text{EVS}_{\text{C-14}} &= 1\text{E}+6 \text{ (cc/m}^3\text{)} * 1 \text{ (pCi/g)} * 22 \text{ (1/yr)} * 1.6 \text{ (g/cc)} * 0.3 \text{ (m)} \\ &= 1.06\text{E}+7 \text{ pCi/m}^2\text{-yr} \end{aligned}$$

and

$$\begin{aligned} \text{Cair}_{\text{C-14}}^{\text{finite}} &= [3.17\text{E}-8 \text{ (yr/sec)} * 0.5 * 1.06\text{E}+7 \text{ (pCi/m}^2\text{-yr)} * (1 \text{ m}^2)^{1/2}] / [2 \text{ (m)} * 2 \text{ (m/sec)}] \\ &= 4.20\text{E}-2 \text{ pCi/m}^3 \end{aligned}$$

The concentration of C-14 in air above a contaminated area of finite size should always be less than the value calculated assuming an infinitely large area.

Given the above assumptions, the normalized time integrated population dose from inhalation of C-14 (person-rem per pCi/g per m² of contamination) for the inhalation pathway is derived as follows:

$$\text{PI}_{\text{C-14}}(\text{nor}) =$$

$$\begin{aligned} & \frac{4.20\text{E}-2 \left(\frac{\text{pCi C-14}}{\text{m}^3} \right) * 8400 \left(\frac{\text{m}^3}{\text{yr}} \right) * 1 \text{ (m}^2\text{)} * 1\text{E}-3 \left(\frac{\text{Persons}}{\text{m}^2} \right) * \text{DCF}_{\text{inh C-14}} \left(\frac{\text{mrem}}{\text{pCi}} \right) * 1\text{E}-3 \left(\frac{\text{rem}}{\text{mrem}} \right) * (1 - \exp^{(-\lambda_{\text{eff1 C-14}} \left(\frac{1}{\text{yrs}} \right) * t(\text{yrs}))})}{\lambda_{\text{eff1 C-14}} \left(\frac{1}{\text{yrs}} \right)} \\ &= \frac{3.5\text{E}-4 \left(\frac{\text{Person-rem-pCi}}{\text{mrem-yr}} \right) * \text{DCF}_{\text{inh C-14}} \left(\frac{\text{mrem}}{\text{pCi}} \right) * (1 - \exp^{(-\lambda_{\text{eff1 C-14}} \left(\frac{1}{\text{yr}} \right) * t(\text{yrs}))})}{\lambda_{\text{eff1 C-14}} \left(\frac{1}{\text{yr}} \right)} \end{aligned}$$

E.1.3 Groundwater

E.1.3.1 All Radionuclides Excluding H-3

Radionuclides contained in soil can result in a population dose if the leachate migrates to the groundwater. The size of the population dose will depend on the size of the population consuming contaminated groundwater. However, it is possible to place an upper bound on the population dose by simply assuming that most of the radionuclides leaching to groundwater are withdrawn for domestic use. Of this, some fraction is consumed. "The Water Encyclopedia" indicates that up to 1% of the water withdrawn for domestic purposes is consumed. This assumption would be unrealistic for many sites. However, in support of a

rulemaking, such an approach is reasonable because it places an upper bound on the benefits of cleanup.

The cumulative population dose rate (PWR_i) from groundwater is estimated as follows:

$$PWR_i = C_i \left(\frac{pCi}{g} \right) * A (m^2) * DCFing_i \left(\frac{mrem}{pCi} \right) * 1E-3 \left(\frac{rem}{mrem} \right) * T_{cz} * m * F1 * F2 * \rho \left(\frac{g}{cc} \right) * 1E+6 \left(\frac{cc}{m^3} \right) * \int_0^t \lambda_r * \exp^{(-\lambda_i (\frac{1}{yrs}) * t (yrs))} * \exp^{(-\lambda_r (\frac{1}{yrs}) * (t-T) (yrs))} dt$$

$$C_i \left(\frac{pCi}{g} \right) * A (m^2) * DCFing_i \left(\frac{mrem}{pCi} \right) * 1E-3 \left(\frac{rem}{mrem} \right) * T_{cz} * m * F1 * F2 * \rho \left(\frac{g}{cc} \right) * 1E+6 \left(\frac{cc}{m^3} \right) * \left(\exp^{(-\lambda_i (\frac{1}{yr}) * t (yr))} - \exp^{(-\lambda_i (\frac{1}{yr}) * (t-T) (yr) - \lambda_r (\frac{1}{yr}) * t (yr))} \right)$$

where:

PWR_i = Population dose (person-rem) due to the i th radionuclide in groundwater,

C_i = Concentration of the i th radionuclide in soil (pCi/g),

A = Contaminated area (m^2),

$DCFing_i$ = Dose conversion factor (rem/Ci ingested) for the i th radionuclide (rem/Ci ingested),

T_{cz} = Thickness of the contaminated zone (m),

$F1$ = Fraction of leachate captured by wells (a value of 0.5 is assumed)

$F2$ = Fraction of withdrawn water that is consumed (a conservative value of 0.01 is used based on U.S. daily water usage of between 380 to 950 L/day and a consumption rate of 2 L/day)

ρ = Soil density (g/cm^3),
= 1.6 g/cm^3 ,

$$\lambda_r = \frac{I \left(\frac{m}{yr} \right)}{T_{cz} (m) * \theta * R_i} \quad (1/yr),$$

I = Infiltration rate (m/yr),
= 1 m/yr,

θ = Volumetric water content (dimensionless),

$$= \theta_{sat} * \left(\frac{I \left(\frac{m}{yr} \right)}{K_{sat} \left(\frac{m}{yr} \right)} \right)^{\frac{1}{(2*b+3)}}$$

$$= 0.325,$$

R_i = Retardation factor for the ith radionuclide (dimensionless),

$$= 1 + \frac{\left(\rho \left(\frac{g}{cm^3} \right) * Kd \left(\frac{cm^3}{g} \right) \right)}{\theta}$$

Kd_i = Distribution coefficient for the ith principal radionuclide (cm³/g),

$$T_i = \lambda_r + \lambda_i$$

λ_i = Radioactive decay constant for the ith radionuclide (1/yr),

T = Time required for the contaminant to reach the aquifer (yrs),

$$= \frac{T_{uz} (m) * \theta * R_i}{I \left(\frac{m}{yr} \right)} \quad (yr),$$

T_{uz} = Thickness of the unsaturated zone (m),

t = Time over which the population dose is integrated (yrs).

These impacts will begin when the radionuclide migrates to the underlying aquifer (T) and will continue until it is depleted from the soil.

The equation for calculating PWR_i reduces to the following on a normalized basis:

$$PWR_i = \frac{1 \left(\frac{pCi}{g} \right) * 1 (m^2) * DCFing_i \left(\frac{mrem}{pCi} \right) * 1E-3 \left(\frac{rem}{mrem} \right) * 1m * .5 * .01 * 1.6 \left(\frac{g}{cc} \right) * 1E+6 \left(\frac{cc}{m^3} \right) * \frac{\lambda_r}{T_i}}{\left(\exp^{(-\lambda_i \left(\frac{1}{yr} \right) * t (yr))} - \exp^{(-\lambda_r \left(\frac{1}{yr} \right) * (t-T) (yr) - \lambda_i \left(\frac{1}{yr} \right) * t (yr))} \right)}$$

$$= 8.0 \frac{pCi-rem}{mrem} * DCFing_i \left(\frac{mrem}{pCi} \right) * \frac{\lambda_r}{T_i} * \left(\exp^{(-\lambda_i \left(\frac{1}{yr} \right) * t (yr))} - \exp^{(-\lambda_r \left(\frac{1}{yr} \right) * (t-T) (yr) - \lambda_i \left(\frac{1}{yr} \right) * t (yr))} \right)$$

where:

PWi(nor) = The normalized population dose (person-rem per pCi/g per m² of contamination for a 1 m deep contaminated zone.

A bounding estimate of the population dose from drinking groundwater is obtained by inserting the actual thickness of the contaminated zone (T_{cz} meters) into the equation for λ_r and then multiplying PWi(nor) by the actual radionuclide concentration in the soil (pCi/g) and the area of contamination (m²). The value obtained is appropriate for sites where daughter ingrowth is small compared to the residence time of the radionuclide in the soil.

E.1.3.2 Dose from Ingestion of H-3 Contaminated Ground Water

$$C_{w_{H-3}} = \text{Concentration of tritium in the soil water (pCi/cm}^3\text{)}$$

$$= \frac{C_{S_{H-3}} \left(\frac{\text{pCi}}{\text{g}} \right) * \rho \left(\frac{\text{g}}{\text{cc}} \right)}{\theta}$$

C_{S_{H-3}} = The concentration of tritium in soil (pCi/g),

ρ = Soil density
= 1.6 g/cm³,

θ = Volumetric water content (dimensionless),

$$= \theta_{sat} * \left(\frac{I \left(\frac{m}{Yr} \right) \frac{1}{(2*b+3)}}{K_{sat} \left(\frac{m}{Yr} \right)} \right)$$

= 0.325

θ_{sat} = Saturated water content(dimensionless),
= 0.485

I = Infiltration rate (m/yr),
= 1 m/yr,

K_{sat} = Saturated hydraulic conductivity (m/yr),
= 227 m/yr,

b = soil-specific exponential parameter (dimensionless)
= 5.3.

Assuming 1 pCi/g H-3 contamination of the soil,

$$C_{W_{H-3}} = \frac{1 \left(\frac{pCi}{g} \right) * 1.6 \left(\frac{g}{cc} \right)}{0.325}$$

$$= 4.92 \text{ pCi/cm}^3$$

The equation for the normalized population dose from tritium contamination in the soil then becomes:

$$PW_{H-3} =$$

$$PW_{H-3} = \frac{4.92 \left(\frac{pCi \text{ H-3}}{cc} \right) * 1 (m^2) * DCFing_{H-3} \left(\frac{mrem}{pCi} \right) * 1E-3 \left(\frac{rem}{mrem} \right) * 1m * .5 * .01 * 1E+6 \left(\frac{cc}{m^3} \right) * \frac{\lambda_{H-3}}{T_{iH-3}} * \left(\exp^{(-\lambda_{H-3} \left(\frac{1}{yr} \right) * t (yr))} - \exp^{(-\lambda_{H-3} \left(\frac{1}{yr} \right) * (t-T) (yr) - \lambda_{H-3} \left(\frac{1}{yr} \right) * t (yr))} \right)}{24.6 \frac{pCi-rem}{mrem} * DCFing_i \left(\frac{mrem}{pCi} \right) * \frac{\lambda_{H-3}}{T_{H-3}} * \left(\exp^{(-\lambda_{H-3} \left(\frac{1}{yr} \right) * t (yr))} - \exp^{(-\lambda_{H-3} \left(\frac{1}{yr} \right) * (t-T) (yr) - \lambda_{H-3} \left(\frac{1}{yr} \right) * t (yr))} \right)}$$

where:

$PW_{H-3}(\text{nor})$ = The normalized population dose (person-rem per pCi/g per m² of H-3 contamination,

$$\lambda_{\text{eff}2_{H-3}} = \left(\frac{I \left(\frac{m}{yr} \right)}{T_{cz} (m) * \theta * R_i} + E_c \left(\frac{m}{yr} \right) + \lambda_i \left(\frac{m}{yr} \right) \right) * R_i \quad (1/yr),$$

I = Infiltration rate (m/yr),
= 1 m/yr,

T_{cz} = Thickness of the contaminated zone (m),

θ = Volumetric water content (dimensionless),

$$= \theta_{sat} * \left(\frac{I \left(\frac{m}{yr} \right)^{\frac{1}{(2*b+3)}}}{K_{sat} \left(\frac{m}{yr} \right)} \right)$$

$$= 0.325$$

when

$$\theta_{sat} = \text{Saturated water content (dimensionless),}$$

$$= 0.485$$

$$K_{sat} = \text{Saturated hydraulic conductivity (m/yr)}$$

$$= 227 \text{ m/yr,}$$

$$b = \text{soil-specific exponential parameter (dimensionless)}$$

$$= 5.3,$$

$$Ri = \text{Retardation factor for tritium (dimensionless),}$$

$$= 1 + \frac{\left(\rho \left(\frac{g}{cm^3} \right) * Kd \left(\frac{cm^3}{g} \right) \right)}{\theta}$$

$$= 1$$

when

$$Kd = \text{Distribution coefficient for the } i\text{th principal radionuclide (cm}^3\text{/g)}$$

$$= 0,$$

$$\lambda_i = \text{Radioactive decay constant for tritium (1/yr)}$$

$$E_c = \text{Evasion rate (1/yr),}$$

$$= 0, d_{ref} - C_d < 0$$

$$= E_{H-3} * (d_{ref} - C_d) / T, 0 \leq d_{ref} - C_d \leq T$$

$$= E_{H-3}, d_{ref} - C_d > T$$

where

$$E_{H-3} = \frac{1E-6 \left(\frac{m^3}{cc} \right) * EVSN_{H-3} \left(\frac{pCi}{m^2-yr} \right)}{\rho \left(\frac{g}{cc} \right) * CS_{H-3} \left(\frac{pCi}{g} \right) * d_{ref} (m)}$$

where

$$\begin{aligned} \rho &= \text{Soil density (g/cm}^3\text{),} \\ &= 1.6 \text{ g/cm}^3, \end{aligned}$$

$$C_{S_{H-3}} = \text{Concentration of H-3 in the soil (pCi/g),}$$

$$\begin{aligned} d_{\text{ref}} &= \text{Reference evasion depth (m),} \\ &= 0.3 \text{ m,} \end{aligned}$$

$$EVS_{N_{H-3}} = \text{Tritium flux (evasion rate) from the contaminated area (pCi /m}^2\text{-yr),}$$

$$\begin{aligned} &= 1E+6 \left(\frac{\text{cm}^3}{\text{m}^3} \right) * C_{W_{H-3}} \left(\frac{\text{pCi}}{\text{cm}^3} \right) * [C_e * [(1 - C_r) * P_r \left(\frac{\text{m}}{\text{yr}} \right) + I_{\text{rr}} \left(\frac{\text{m}}{\text{yr}} \right)]] \\ &= 1E+6 \left(\frac{\text{cm}^3}{\text{m}^3} \right) * C_{W_{H-3}} \left(\frac{\text{pCi}}{\text{cm}^3} \right) * [0.5 * [(1 - .2) * 1 \left(\frac{\text{m}}{\text{yr}} \right) + .2 \left(\frac{\text{m}}{\text{yr}} \right)]] \\ &= 5E+5 \left(\frac{\text{cm}^3}{\text{m}^2\text{-yr}} \right) * C_{W_{H-3}} \left(\frac{\text{pCi}}{\text{cm}^3} \right) \end{aligned}$$

where

$$C_{W_{H-3}} = \text{Concentration of tritium in the soil water (pCi/cm}^3\text{),}$$

$$\begin{aligned} C_e &= \text{Evaporation coefficient (dimensionless),} \\ &= 0.5, \end{aligned}$$

$$\begin{aligned} C_r &= \text{Runoff coefficient (dimensionless),} \\ &= 0.2, \end{aligned}$$

$$\begin{aligned} P_r &= \text{Annual rainfall (m/yr),} \\ &= 1 \text{ m/yr, and} \end{aligned}$$

$$\begin{aligned} I_{\text{rr}} &= \text{Irrigation rate (m/yr),} \\ &= 0.2 \text{ m/yr,} \end{aligned}$$

To account for tritium lost to air from the contaminated zone, $\lambda_{\text{eff}2_{H-3}}$ includes an evasion rate, E_c , for tritium in addition to the rates for leaching and radioactive decay.

E.1.4 Food Ingestion Pathways

In addition to the drinking water pathway, a significant population dose could be delivered from the vegetable ingestion pathway if the property is used as a farm. Based on EPA 89, a crop production rate of 0.716 kg fresh weight per m² per year is used for this calculation.

The initial concentration of radionuclides in these crops is estimated using a typical soil-to-plant concentration factor, expressed in units of pCi/g fresh weight of plant per pCi/g of dry weight soil (see EPA 89). Accordingly, the initial population dose rate per m² of contaminated soil is the product of the initial soil contamination, times the crop production rate per m², times the soil-to-plant concentration factor, times the ingestion dose conversion factor. The health impact is obtained by simply replacing the ingestion dose conversion factor with the ingestion slope factor.

The total integrated population dose is estimated by integrating over time as follows:

$$\begin{aligned}
 PV_i &= \\
 & C_i \left(\frac{pCi}{g} \right) * FCF(T_{cz}) * Biv_i * PR \left(\frac{kg}{m^2-yr} \right) * 1000 \left(\frac{g}{kg} \right) * A \left(m^2 \right) * DCFing_i \left(\frac{mrem}{pCi} \right) * 1E-3 \left(\frac{rem}{mrem} \right) * \int_0^t \left(\exp^{(-\lambda_{eff3_i} \left(\frac{1}{yrs} \right) * t(yrs))} \right) dt \\
 &= \\
 & \frac{C_i \left(\frac{pCi}{g} \right) * FCF(T_{cz}) * Biv_i * PR \left(\frac{kg}{m^2-yr} \right) * 1000 \left(\frac{g}{kg} \right) * A \left(m^2 \right) * DCFing_i \left(\frac{mrem}{pCi} \right) * 1E-3 \left(\frac{rem}{mrem} \right) * \left(1 - \exp^{(-\lambda_{eff3_i} \left(\frac{1}{yrs} \right) * t(yrs))} \right)}{\lambda_{eff3_i} \left(\frac{1}{yrs} \right)}
 \end{aligned}$$

where:

- PV_i = The time integrated population dose (person-rem) from the ingestion of vegetables grown in contaminated soil,
- C_i = Concentration of the ith radionuclide in soil (pCi/g),
- $FCF(T_{cz})$ = Food Concentration Correction Factor
 = $T_{cz} / 0.9$ if $T_{cz} < 0.9$ m and
 = 1.0 if $T_{cz} > 0.9$ m,
- T_{cz} = Thickness of the contaminated zone (m),
- Biv_i = The soil-to-plant reconcentration factor for the ith radionuclide (dimensionless) (Values used are from EPA 89 for all radionuclides other than C-14 and H-3. The Biv's for C-14 and H-3 are calculated per the methodology used in RESRAD 5.0. This methodology is described below.),
- PR = The production rate of vegetables (kg/m²-yr),
 = 0.716 kg/m²-yr,
- A = Contaminated area (m²)

DCFing_i = Ingestion dose conversion factor for the ith radionuclide (rem/Ci ingested)

$$\lambda_{\text{eff}3_i} = \frac{I \left(\frac{m}{yr} \right)}{0.9(m) * \theta * R_i} + \lambda_i \left(\frac{1}{yr} \right) \quad (1/yr),$$

I = Infiltration rate (m/yr),
= 1 m/yr,

θ = Volumetric water content (dimensionless),
= $\theta_{\text{sat}} * \left(\frac{I \left(\frac{m}{yr} \right)}{K_{\text{sat}} \left(\frac{m}{yr} \right)} \right)^{\frac{1}{(2*b+3)}}$
= 0.325,

when

θ_{sat} = Saturated water content (dimensionless),
= 0.485,

K_{sat} = Saturated hydraulic conductivity (m/yr),
= 227 m/yr,

b = soil-specific exponential parameter (dimensionless),
= 5.3,

R_i = Retardation factor for the ith radionuclide (dimensionless),

$$= 1 + \frac{\left(\rho \left(\frac{g}{cm^3} \right) * Kd_i \left(\frac{cm^3}{g} \right) \right)}{\theta}$$

ρ = Soil density (g/cm³),
= 1.6 g/cm³,

Kd_i = Distribution coefficient for the ith principal radionuclide (cm³/g),

λ_i = Radioactive decay constant for the ith radionuclide (1/yr), and

t = Time over which the population dose is integrated (yrs).

In this equation, it is assumed that the radionuclide concentration in the soil is the average radionuclide concentration in the soil within the root zone.

The normalized time integrated population dose is obtained as follows:

$$\begin{aligned}
 PV_i(\text{nor}) &= \frac{1 \left(\frac{\text{pCi}}{\text{g}} \right) * 1 * Biv_i * .716 \left(\frac{\text{kg}}{\text{m}^2\text{-yr}} \right) * 1000 \left(\frac{\text{g}}{\text{kg}} \right) * 1 (\text{m}^2) * DCFing_i \left(\frac{\text{mrem}}{\text{pCi}} \right) * 1E-3 \left(\frac{\text{rem}}{\text{mrem}} \right) * (1 - \exp^{-\lambda_{eff3_i} \left(\frac{1}{\text{yr}} \right) * t(\text{yr})})}{\lambda_{eff3_i} \left(\frac{1}{\text{yr}} \right)} \\
 &= \frac{.716 \left(\frac{\text{pCi-rem}}{\text{mrem-yr}} \right) * 1 * Biv_i * DCFing_i \left(\frac{\text{mrem}}{\text{pCi}} \right) * (1 - \exp^{-\lambda_{eff3_i} \left(\frac{1}{\text{yr}} \right) * t(\text{yr})})}{\lambda_{eff3_i} \left(\frac{1}{\text{yr}} \right)}
 \end{aligned}$$

where:

$PV_i(\text{nor})$ = The normalized time integrated population dose for the i th radionuclide (person-rem per pCi/g per m^2 of contamination for a 1 m thick contaminated zone)

To obtain the integrated population dose for a specific site, this value is multiplied by the actual radionuclide concentration in the soil (pCi/g) and the area of the contaminated zone (m^2).

For all radionuclides other than C-14 and H-3, the values for the soil-to-plant recontamination factor are taken from EPA 89. The Biv values for C-14 and H-3 are calculated using the methodology utilized by RESRAD 5.0. The equations used to calculate Biv_{C-14} and Biv_{H-3} are as follows:

$$Biv_{C-14} = C_{V_C} * \left[F_a * \left(\frac{1E-3 \left(\frac{\text{kg}}{\text{g}} \right) * Cair_{C-14} \left(\frac{\text{pCi}}{\text{m}^3} \right)}{Cs_{C-14} \left(\frac{\text{pCi}}{\text{g}} \right) * Cair_C \left(\frac{\text{kg}}{\text{m}^3} \right)} \right) + \left(\frac{F_s}{S_C} \right) \right]$$

where

Biv_{C-14} = The soil-to-plant recontamination factor for C-14 (dimensionless),

C_{V_C} = Fraction of stable carbon in plants (dimensionless),
= 0.09 (Table L.3 of RESRAD5.0),

F_a = Fraction of C in plants derived from C in air (dimensionless),
= 0.98,

F_s = Fraction of C in plants derived from C in soil (dimensionless),
= 0.02,

$C_{air_{C-14}}$ = Concentration of C-14 in air (pCi/m³),

$C_{S_{C-14}}$ = Concentration of C-14 in soil (pCi/g),

C_{air_C} = Density of C in air (kg/m³),
= 1.6E-4 kg/m³,

S_C = Fraction of soil that is stable carbon (dimensionless),
= 0.03.

$$Biv_{H-3} = \frac{\left(\frac{C_h}{W_h \left(\frac{g}{cm^3} \right)} \right) * \rho \left(\frac{g}{cm^3} \right)}{\theta + \left(\rho \left(\frac{g}{cm^3} \right) * Kd \left(\frac{cm^3}{g} \right) \right)}$$

where:

Biv_{H-3} = The soil-to-plant reconcentration factor for H-3 (dimensionless),

C_h = Mass fraction of hydrogen in plants (dimensionless)
= 0.1,

W_H = mass fraction of hydrogen in water (g/cm³),
= 1 g H per 9 cm³ H₂O,

ρ = Soil density (g/cm³),
= 1.6 g/cm³,

θ = Volumetric water content (dimensionless),

$$= \theta_{sat} * \left(\frac{I \left(\frac{m}{yr} \right) \frac{1}{(2*b+3)}}{K_{sat} \frac{m}{yr}} \right)$$

= 0.325

when

θ_{sat} = Saturated water content(dimensionless),
= 0.485

I = Infiltration rate (m/yr),
= 1 m/yr,

K_{sat} = Saturated hydraulic conductivity (m/yr),
= 227 m/yr,

b = soil-specific exponential parameter (dimensionless)
= 5.3.

Kd_i = Distribution coefficient for the i th principal radionuclide (cm^3/g),

E.1.5 Radon Inhalation

For soil contaminated with Ra-226, the dose from indoor exposure to radon (Rn-222) must be included. The general equation used to calculate the dose from radon is as follows:

$$PR_{Ra-226} = C_{Ra-226} \left(\frac{pCi}{g} \right) * RCCF(T_{cz}) * DCF_{radon} \left(\frac{rem/yr}{pCi/g \text{ soil}} \right) * A(m^2) * N \left(\frac{People}{m^2} \right) * \int_0^t \left(\exp^{-\lambda_{eff4} \left(\frac{1}{yrs} \right) * t(yrs)} \right) dt$$

$$= \frac{C_{Ra-226} \left(\frac{pCi}{g} \right) * RCCF(T_{cz}) * DCF_{radon} \left(\frac{rem/yr}{pCi/g \text{ soil}} \right) * A(m^2) * N \left(\frac{People}{m^2} \right) * \left(1 - \exp^{-\lambda_{eff4Ra-226} \left(\frac{1}{yrs} \right) * t(yrs)} \right)}{\lambda_{eff4Ra-226} \left(\frac{1}{yrs} \right)}$$

where

PR_{Ra-226} = The time integrated population dose from indoor radon inhalation (person-rem),

C_{Ra-226} = The concentration of Ra-226 in soil (pCi/g),

$RCCF(T_{cz})$ = Radon Concentration Correction Factor
= $T_{cz} / 5$ if $T_{cz} < 5$ m and
= 1.0 if $T_{cz} > 5$ m,

T_{cz} = Thickness of the contaminated zone (m),

DCF_{radon} = Dose conversion factor for exposure to indoor radon (rem/yr per pCi/g Ra-226 in the soil),
= 0.313 rem/yr per pCi/g Ra-226 in the soil,

A = Contaminated area (m^2). This model is based on the assumption that the contaminated area is large and all the airborne dust over the area is from contaminated soil,

N = Population density (persons/m²),
 = 0.001 persons/m² (i.e., an urban setting with 1,000 people/km²),

$$\lambda_{\text{eff}4_{\text{Ra-226}}} = \frac{I \left(\frac{m}{Yr} \right)}{5(m) * \theta * R_{\text{Ra-226}}} + \lambda_{\text{Ra-226}} \left(\frac{1}{Yr} \right)$$

I = Infiltration rate (m/yr),
 = 1 m/yr,

θ = Volumetric water content (dimensionless),

$$= \theta_{\text{sat}} * \left(\frac{I \left(\frac{m}{Yr} \right) \frac{1}{(2*b+3)}}{K_{\text{sat}} \left(\frac{m}{Yr} \right)} \right)$$

$$= 0.325,$$

θ_{sat} = Saturated water content (dimensionless),
 = 0.485,

K_{sat} = Saturated hydraulic conductivity (m/yr),
 = 227 m/yr,

b = soil-specific exponential parameter (dimensionless).
 = 5.3,

$R_{\text{Ra-226}}$ = Retardation factor for Ra-226 (dimensionless),

$$= 1 + \frac{(\rho \left(\frac{g}{\text{cm}^3} \right) * Kd_{\text{Ra-226}} \left(\frac{\text{cm}^3}{g} \right))}{\theta}$$

ρ = Soil density (g/cm³),
 = 1.6 g/cm³,

$Kd_{\text{Ra-226}}$ = Distribution coefficient for Ra-226 (cm³/g),

$\lambda_{\text{Ra-226}}$ = Radioactive decay constant for Ra-226 (1/yr),

In general, the relationship between Ra-226 in soil and indoor radon is 1.25 pCi/l of radon indoors per pCi/g of Ra-226 in the soil beneath a home. This translates 0.006 WL in each home, or an exposure of about 0.196 WLM per year for each individual at the site per pCi/g of Ra-226 in soil. The dose factor for radon is 760 mrem/yr per WLM (RESRAD). Therefore, the dose rate per pCi/g is equal to:

$$\frac{1.25 \frac{pCi}{L}}{\frac{pCi}{g}} * \frac{WL}{98.3 \frac{pCi}{L}} * 0.5 \text{ equal.Fract.} * \frac{51.56WLM}{year} * \frac{14.93hrs}{24hrs} * \frac{350days}{365days} * \frac{0.76rem/yr}{WLM}$$

$$= 0.149 \text{ rem/yr EDE per person per pCi/g}$$

Lung cancer incidences are based on a risk conversion factor of 236 excess lung cancers per 1E6 WLM (Nel 94) of which 95 percent are considered to be fatal.

This equation can be simplified and expressed on a normalized basis as follows for a contaminated zone 1 m deep:

$$PR_{Ra-226}(\text{nor}) = \frac{1 \left(\frac{pCi}{g} \right) * \frac{1}{5} * .149 \left(\frac{rem/yr}{pCi/g \text{ soil}} \right) * 1 (m^2) * .001 \left(\frac{People}{m^2} \right) * \left(1 - \exp^{(-\lambda_{eff4Ra-226} \left(\frac{1}{yrs} \right) * t (yrs))} \right)}{\lambda_{eff4Ra-226} \left(\frac{1}{yrs} \right)}$$

$$= \frac{2.98E-5 \left(\frac{person-rem}{yr} \right) * \left(1 - \exp^{(-\lambda_{eff4Ra-226} \left(\frac{1}{yrs} \right) * t (yrs))} \right)}{\lambda_{eff4Ra-226} \left(\frac{1}{yrs} \right)}$$

E.2 SUMMARY OF THE DERIVATION OF NORMALIZED POPULATION IMPACTS

The above derivations result in the following equations for the normalized time integrated population doses for the principal pathways of exposure:

Direct Radiation from Contaminated Soil

$$PE_i(\text{nor}) = \frac{7.9E-7 \left(\frac{\text{Person-rem-pCi}}{\text{mrem-cc}} \right) * DCF_{\text{ext}_i} \left(\frac{\text{mrem-cc}}{\text{pCi-yr}} \right) * DF \left[\frac{1.6g}{cc}, 1m \right] * (1 - \exp^{-\lambda_{\text{eff}1_i} (yr^{-1}) * t(yr)})}{\lambda_{\text{eff}1_i} (yr^{-1})}$$

Inhalation of Suspended Particulates: Radionuclides Other Than H-3 and C-14

$$PI_i(\text{nor}) = \frac{4.2E-4 \left(\frac{\text{Person-rem-pCi}}{\text{mrem-yr}} \right) * DCF_{\text{inh}_i} \left(\frac{\text{mrem}}{\text{pCi}} \right) * (1 - \exp^{(-\lambda_{\text{eff}1_i} (\frac{1}{yr}) * t(yr))})}{\lambda_{\text{eff}1_i} (\frac{1}{yr})}$$

Inhalation of H-3

$$PI_{H-3}(\text{nor}) = \frac{8.2E-5 \left(\frac{\text{Person-rem-pCi}}{\text{mrem-yr}} \right) * DCF_{\text{inh}_{H-3}} \left(\frac{\text{mrem}}{\text{pCi}} \right) * (1 - \exp^{(-\lambda_{\text{eff}1_{H-3}} (\frac{1}{yr}) * t(yr))})}{\lambda_{\text{eff}1_{H-3}} (\frac{1}{yr})}$$

Inhalation of C-14

$$PI_{C-14}(\text{nor}) = \frac{3.5E-4 \left(\frac{\text{Person-rem-pCi}}{\text{mrem-yr}} \right) * DCF_{\text{inh}_{C-14}} \left(\frac{\text{mrem}}{\text{pCi}} \right) * (1 - \exp^{(-\lambda_{\text{eff}1_{C-14}} (\frac{1}{yr}) * t(yr))})}{\lambda_{\text{eff}1_{C-14}} (\frac{1}{yr})}$$

Ingestion of Contaminated Groundwater: Radionuclides Other Than H-3

$$PW_i(\text{nor}) = \frac{8.0 \frac{\text{pCi-rem}}{\text{mrem}} * DCFing_i \left(\frac{\text{mrem}}{\text{pCi}} \right) * \frac{\lambda_r}{T_i} * \left(\exp^{(-\lambda_i \left(\frac{1}{yr} \right) * t(yr))} - \exp^{(-\lambda_r \left(\frac{1}{yr} \right) * (t-T)(yr) - \lambda_i \left(\frac{1}{yr} \right) * t(yr))} \right)}$$

Ingestion of Ground Water Contaminated with H-3

$$PW_{H-3} = \frac{24.6 \frac{\text{pCi-rem}}{\text{mrem}} * DCFing_i \left(\frac{\text{mrem}}{\text{pCi}} \right) * \frac{\lambda_{rH-3}}{T_{H-3}} * \left(\exp^{(-\lambda_{H-3} \left(\frac{1}{yr} \right) * t(yr))} - \exp^{(-\lambda_{rH-3} \left(\frac{1}{yr} \right) * (t-T)(yr) - \lambda_{H-3} \left(\frac{1}{yr} \right) * t(yr))} \right)}$$

Ingestion of Contaminated Crops

$$PV_i(\text{nor}) = \frac{.716 \left(\frac{\text{pCi-rem}}{\text{mrem-yr}} \right) * 1 * Biv_i * DCFing_i \left(\frac{\text{mrem}}{\text{pCi}} \right) * \left(1 - \exp^{(-\lambda_{eff3_i} \left(\frac{1}{yr} \right) * t(yr))} \right)}{\lambda_{eff3_i} \left(\frac{1}{yr} \right)}$$

Radon Inhalation

$$PR_{Ra-226}(\text{nor}) = \frac{2.98E-5 \left(\frac{\text{person-rem}}{\text{yr}} \right) * \left(1 - \exp^{(-\lambda_{eff4_{Ra-226}} \left(\frac{1}{yrs} \right) * t(yrs))} \right)}{\lambda_{eff4_{Ra-226}} \left(\frac{1}{yrs} \right)}$$

E.3 METHODOLOGY FOR DERIVING NORMALIZED POPULATION HEALTH EFFECTS

The basic equations presented in Section 2 are also used to derive total cancers. For both the external exposure and internal exposure pathways, the dose conversion factors are replaced by slope factors obtained from the USEPA (Nel 94).

E.4 RADIONUCLIDE AND ELEMENT DEPENDENT PARAMETER VALUES

Table E-1 presents the values used for the radionuclide and element dependent parameters that are not presented in Section E-1. All dose conversion factors and half-lives are from RESRAD Version 5.0. The soil-to-plant reconcentration factors (Bivs) are from EPA 89. The values for the distribution coefficients (K_d s) are from She 90.

E.5 INGROWTH OF PROGENY

The effect of ingrowth of progeny has been taken into account for Th-230, Th-232, and U-234 as follows:

For the direct exposure, inhalation, and food ingestion pathways, the dose or risk from the progeny are calculated by replacing

$$\frac{(1 - \exp(-\lambda_{eff_a} * t))}{\lambda_{eff_a}}$$

in the equation for the parent with

$$\frac{\lambda_b}{\lambda_{eff_b} - \lambda_{eff_a}} * \left[\frac{1 - \exp(-\lambda_{eff_a} * t)}{\lambda_{eff_a}} - \frac{1 - \exp(-\lambda_{eff_b} * t)}{\lambda_{eff_b}} \right]$$

for the first progeny and with

$$\lambda_b * \lambda_c * \left[\frac{\exp(-\lambda_{eff_a} * t)}{(\lambda_{eff_b} - \lambda_{eff_a}) * (\lambda_{eff_c} - \lambda_{eff_a})} + \frac{\exp(-\lambda_{eff_b} * t)}{(\lambda_{eff_a} - \lambda_{eff_b}) * (\lambda_{eff_c} - \lambda_{eff_b})} + \frac{\exp(-\lambda_{eff_c} * t)}{(\lambda_{eff_a} - \lambda_{eff_c}) * (\lambda_{eff_b} - \lambda_{eff_c})} \right]$$

for the second progeny.

For the ground water pathway, the dose or risk from the progeny are calculated by replacing

$$\frac{\lambda_{r_a}}{\lambda_{eff_a}} * \left[\exp(-\lambda_a * T) - \exp(-\lambda_{r_a} * (t-T) - \lambda_a * t) \right]$$

in the equation for the parent with

$$\frac{\lambda_b * \lambda_{r_a} * \exp(\lambda_{r_a} * T)}{\lambda_b - \lambda_a} * \left[\frac{\exp(-\lambda_{eff_a} * T) - \exp(-\lambda_{eff_a} * t)}{\lambda_{eff_a}} - \frac{\exp(-(\lambda_b + \lambda_{r_a}) * T) - \exp(-(\lambda_b + \lambda_{r_a}) * t)}{\lambda_b + \lambda_{r_a}} \right]$$

for the first progeny and with

$$\lambda_b * \lambda_c * \lambda_{r_a} * \exp(\lambda_{r_a} * T) * \left[\frac{\exp(-\lambda_{eff_a} * T) - \exp(-\lambda_{eff_a} * t)}{\lambda_{eff_a} * (\lambda_b - \lambda_a) * (\lambda_c - \lambda_a)} + \frac{\exp(-(\lambda_b + \lambda_{r_a}) * T) - \exp(-(\lambda_b + \lambda_{r_a}) * t)}{(\lambda_b + \lambda_{r_a}) * (\lambda_b - \lambda_a) * (\lambda_c - \lambda_a)} + \frac{\exp(-(\lambda_c + \lambda_{r_a}) * T) - \exp(-(\lambda_c + \lambda_{r_a}) * t)}{(\lambda_c + \lambda_{r_a}) * (\lambda_c - \lambda_a) * (\lambda_c - \lambda_b)} \right]$$

for the second progeny.

The following definitions apply in each of the above equations:

λ_a = Radioactive decay constant for the parent radionuclide (1/yr),

λ_b = Radioactive decay constant for the first progeny (1/yr),

λ_c = Radioactive decay constant for the second progeny (1/yr),

λ_{eff_a} = $\lambda_a + \lambda_{ra}$

λ_{eff_b} = $\lambda_b + \lambda_{rb}$

λ_{eff_c} = $\lambda_c + \lambda_{rc}$

λ_{ra} = Parent's leach rate constant (1/yr),

λ_{rb} = First progeny's leach rate constant (1/yr),

λ_{rc} = Second progeny's leach rate constant (1/yr),

t = Time over which the population risk is integrated (yrs),

T = Time required for the contaminate to reach the aquifer (yrs).

The dose factors and slope factors for all progeny with half-lives less than six months are combined with the long lived parent. Therefore, the three decay chains for which progeny ingrowth was considered were treated as follows:

Parent	1st Progeny	2nd Progeny
Th-230	Ra-226	Pb-210
Th-232	Ra-228	Th-228
U-234	Th-230	Ra-226

Table E-1. Radionuclide and Element Dependent Parameter Values.

Table E-1. Radionuclide and Element Dependent Parameter Values (continued).

Table E-1. Radionuclide and Element Dependent Parameter Values (continued).

Table E-1. Radionuclide and Element Dependent Parameter Values (continued).

Table E-1. Radionuclide and Element Dependent Parameter Values (continued).

Table E-1. Radionuclide and Element Dependent Parameter Values (continued).

Table E-1. Radionuclide and Element Dependent Parameter Values (continued).

Table E-1. Radionuclide and Element Dependent Parameter Values (continued).

E.6 REFERENCES

- EPA 89 U.S. Environmental Protection Agency, "Risk Assessment Methodology - Environmental Impact Statement - NESHAPS for Radionuclides - Background Information Document - Volume 1," EPA/520/1-89-005, September 1989.
- EPA 92 U.S. Environmental Protection Agency, "Health Effects Assessment Summary Tables," OHEA ECAO-CIN-821, March 1992.
- Koc 85 Kocher, D.C. and A. L. Sjoreen, "Dose Rate Conversion Factors for External Exposure to Photon Emitters in Soil," Health Physics, 48(2), 193-205, 1985.
- Nel 94 Personal communication with Chris Nelson, U.S. Environmental Protection Agency, Criterion and Standards Division, July 1994.
- NRC 77 U.S. Regulatory Commission, Regulatory Guide 1.109, Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR 50, Appendix I, Revision 1, October 1977.
- NRC 92 U.S. Regulatory Commission, Residual Radioactive Contamination from Decommissioning, NUREG/CR-5512, October 1992.
- RESRAD Yu, C. et al., "Manual for Implementing Residual Radioactive Material Guidelines Using RESRAD, Version 5.0," Argonne National Laboratory, Environmental Assessment and Information Sciences Division, September 1993.
- She 90 Sheppard and Thibult, Health Physics 59, 1990.
- Till 83 Till, J.E. and H.R. Meyer, eds., "Radiological Assessment - A Textbook on Environmental Dose Analysis," NUREG/CR-3332, ORNL-5968, September 1983.

APPENDIX F

COMPARISON OF HEALTH RISKS ARISING FROM THE RADIOLOGICAL AND CHEMICAL TOXICITY OF URANIUM

Appendix F

Comparison of Health Risks Arising From the Radiological and Chemical Toxicity of Uranium

F.1 INTRODUCTION

The chemical toxicity of uranium in the kidney has been a past concern in establishing health protection standards for workers and the public (ICRP, 1964; 1979). In a recent rulemaking on radionuclides in drinking water, EPA proposed a Maximum Contaminant Level (MCL) for uranium based upon threshold toxicity rather than cancer risk (EPA, 1991 a). Fundamental to the development of this MCL was the application of an oral reference dose (RfD) derived from animal bioassays with large uncertainties and a background source adjustment, called the relative source contribution factor, which accounted for the threshold nature of kidney toxicity.

For the present rulemaking concerning residual radionuclide levels in soils, it is necessary to consider whether to base the standard on the RfD and relative source contribution or on radiation dose and lifetime cancer incidence. This issue should be considered for the isotopes of uranium and possibly certain other elements. This appendix considers the issue with respect to uranium only.

The purpose of this appendix is threefold. First, the uranium RfD is evaluated in terms of kidney toxicity and pharmacokinetic modeling. This will help benchmark an RfD derived from uncertain animal bioassays. Secondly, the relative source contribution of uranium intake is analyzed with respect to what is known about uranium intake sources. This will help determine if uranium intakes from background sources must be accounted for in deriving a standard based on threshold toxicity. Lastly, a discussion is provided which compares the use of kidney toxicity or cancer risk as the limiting adverse health effect, especially in light of the various uncertainties associated with quantifying each.

F.2 EVALUATION OF THE URANIUM REFERENCE DOSE (RfD)

In 1989 EPA derived an oral RfD of 0.003 mgU/kg/day for the soluble salts of uranium. This was an estimate of the daily uranium exposure to humans (including sensitive subgroups) that was likely to be ingested without causing an appreciable risk of adverse effects during a lifetime.

The RfD was developed from the Lowest Observable Adverse Effect Level (LOAEL) using the results of a subchronic rabbit bioassay reported in Maynard and Hodge, 1949 (EPA, 1989). Rabbits were fed dietary levels of uranyl nitrate hexahydrate of 0.02, 0.1 or 5% for 30 days. Making some assumptions for rabbit food intake and body weight, EPA calculated equivalent doses of 2.8, 14 and 71 mgU/kg/day. Renal damage was observed to be moderate at the lowest dose level. Therefore, 2.8 mgU/Kg/day was judged to be the LOAEL. This value was subsequently rounded to 3.0 mgU/kg/day.

EPA then reduced this LOAEL by three orders of magnitude to derive the RfD. This reduction reflected the intra- and interspecies variability to the toxicity of the chemical in lieu of specific data and the uncertainty from using animal studies for human effects. This reduction did not include an extra factor for less-than-lifetime exposure since experiments of acute and subacute duration have been shown to be adequately sensitive for determining doses which cause chronic nephrotoxicity (EPA, 1989). Equation 1 represents the RfD derivation:

$$\text{RfD} = \frac{\text{LOAEL}}{\text{Uncertainty factor}} = \frac{3.0\text{mg/kg/day}}{1000} = 0.003\text{mg/kg/day}. \quad (1)$$

This RfD can be benchmarked by first estimating the uranium threshold kidney burden and then applying a pharmacokinetic model to calculate the intake rate which results in the threshold burden. Several investigators have attempted to define what might constitute a threshold concentration of uranium in the human kidney. Threshold, in this context, is defined as the level above which adverse effects can be expected to occur. A threshold value adopted by the ICRP (1964) was 3 µg/g and assumed that impairment of physiological functioning or cell killing in epithelial tissue was an appropriate end points for defining toxicity (Ko 89). This level was believed to be sufficient to prevent serious kidney damage to people who were occupationally exposed and were monitored with urine bioassays.

Extensive animal studies, reviewed by Spoor and Hursh (1973), suggested a nephrotoxicity threshold in the kidney of 3 µg/g. Considerable variability in uranium toxicity was observed, and mild damage was occasionally seen at 0.1 to 0.4 µg/g (ATSDR, 1990). More recent reports (summarized in ATSDR, 1990) suggest that the nephrotoxicity threshold should be lowered by a factor of 10 or more because of biochemical evidence of damage (e.g. elevated levels of proteins and amino acids in urine). Applying a safety factor of 10, Kocher (Ko 89) suggested a kidney threshold limit of 0.1 µg/g. Wrenn et al. (Wr 85) suggested a limit to the kidney of 0.02

µg/g from intakes in drinking water. This concentration was derived by applying a safety factor of 50 to a threshold of 1.0 µg/g to provide protection of average individuals in large population groups. This safety factor was also used to protect those individuals who may develop higher kidney burdens per unit intake than the population average. Therefore, the kidney concentrations thought to be safe have ranged over about two orders of magnitude from 0.02 to 3 µg/g.

By assuming uranium intake at the RfD, kidney burdens of uranium can be calculated using the following pharmacokinetic model described in Wrenn et al. (Wr 85):

$$A = TI \times \left(\frac{f_1}{.693} \right) \times (\alpha T) \quad (2)$$

w h e r e :

A	=	Kidney burden (µg)
TI	=	Intake rate of uranium (µg/d)
f ₁	=	Gastrointestinal transfer fraction
.693	=	Natural log of 2
α	=	Blood to kidney transfer fraction
T	=	Biological half life in kidney (d)

Table F-1 lists the kidney burdens calculated using this model for various gastrointestinal transfer fractions (f₁). The results in Table F-1 show that for f₁ values greater than 1%, the RfD does indeed result in kidney burdens within the range of reported threshold concentration (0.02 to 3.0 µg/g). The ICRP (1979) recommends an f₁ of 0.05 for water-soluble inorganic compounds of uranium and 0.002 for relatively insoluble uranium compounds, and has reported f₁ values as high as 0.2.

EPA (1989) states that: "the RfD is an estimate (with uncertainty spanning perhaps an order of magnitude) of the daily exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime." Considering this, the modeling results suggest that the RfD for soluble uranium salts is reasonable. The results also suggest that for insoluble salts, the uranium RfD could be about an order of magnitude greater if these salts behave as modeled once they are transferred to the blood.

F.3 EVALUATION OF THE RELATIVE SOURCE CONTRIBUTION

Uranium kidney toxicity is considered a threshold. Only after a certain amount of uranium accumulates in the kidney will damage occur. Because threshold effects are dependent upon the total amount of uranium taken in from all sources and routes of entry, a standard for uranium in soil must also account for uranium intake sources other than soil.

Uranium is naturally occurring and exists in food, water, and air. Therefore, background intakes from these natural sources must be estimated to determine if a standard for residual soil levels needs to account for these background sources. If maximum background intakes are large compared to an acceptable intake, then background sources must be factored into any health protection standard. If maximum background uranium intakes are small compared to the acceptable intake, then background contributions can be ignored.

A total uranium exposure analysis from background sources was performed by EPA (EPA, 1991 b). Ignoring respiratory exposure because the available literature indicated that the respiratory intake of ambient uranium was negligible, EPA estimated frequency distributions for uranium intake through drinking water and food ingestion. Information from the National Inorganics and Radionuclide Survey, Welford and Baird (We 67) and Meglen (Me 85) was used to develop these distributions.

Using a Monte Carlo simulation, a frequency distribution for total uranium exposure was developed. The results are described in Table F-2. As can be seen from this table, 95% of the total US population have background uranium intake rates about two orders of magnitude less than the RfD. The results of this analysis suggest that background uranium intake could be ignored when setting a threshold residual soil level because intakes are very small compared to the RfD.

F.4 KIDNEY TOXICITY OR CANCER RISK AS THE LIMITING ADVERSE HEALTH EFFECT

The uranium reference dose (RfD) for the protection against kidney damage is 0.003 mg/kg/day. By converting this mass quantity to radioactivity and applying the cancer slope factors found in EPA's Health Effects Assessment Summary Tables (HEAST) for uranium isotopes, cancer risk can be calculated. This would be the excess lifetime cancer risk associated with ingesting

uranium at the RfD. If this risk is below one in ten thousand (1×10^{-4} , the maximum risk acceptable under CERCLA), then kidney toxicity is more limiting than cancer incidence for uranium.

The cancer risk results for the RfD are presented in Table F-3. This table shows that the cancer risk is almost 5 times greater for natural uranium as compared to a single uranium isotope such as U-238. This is because natural uranium has more than two times the amount of radioactivity per unit mass due to the presence of both U-238 and U-234 in secular equilibrium. This increased radioactivity also produces about two times greater cancer potency. In addition, depending upon the assumed exposure duration, the risks can vary by more than a factor of two. In any event, all cancer risks calculated for the RfD are less than or equal to 1×10^{-4} . This suggests that threshold toxicity, not increased cancer incidence, is the limiting adverse health effect.

Even though cancer risk from the RfD suggests that kidney toxicity is the limiting health effect for uranium by as much as a factor of ten (Table F-3), this difference is small compared to the magnitude of uncertainty in quantifying uranium impacts. For example, modeling uranium intake from soil shows that almost all of the intake occurs through ingestion (Section 3). The chemical toxicity and increased cancer risk from uranium intake are both dependent on the amounts of uranium that enter the blood and reach the various body organs. As Table F-1 shows, uranium transfer across the gut to the blood can vary by a factor of one hundred depending upon the chemical form. In addition, researchers have reported safe kidney burdens ranged over about two orders of magnitude (see above). Lastly, the use of a linear extrapolation from high dose cancer incidence results to low dose cancer risk estimates is very uncertain although it is accepted as being health protective.

Uranium intakes which therefore cause kidney damage or unacceptable risk are nearly the same when accounting for the large uncertainties in quantifying both kidney damage and risk. This, however, should not preclude the consideration of uranium kidney toxicity as the limiting health effect when developing a standard for residual uranium in soil. Since a residual level standard (as a concentration or a dose) is numerical, it should be based on the most health protective quantity.

Table F-1. Resulting Kidney Burdens Assuming Intake at the RfD for Different Gastrointestinal Uptake Fractions (f_1)

f_1	<u>Kidney Burden $\mu\text{g/g}$ ⁽¹⁾</u>
0.2	0.3
0.05 (soluble)	0.08
0.01	0.02
0.002 (insoluble)	0.003

⁽¹⁾ Assumes the following:

- Adult body weight = 70 kg
- Adult kidney weight = 310 g (ICRP, 1975)
- $\alpha = .11$ (Wr 85)
- T = 15 days (Wr 85)

Table F-2. Summary Statistics for the Total Exposure Distribution for Uranium (EPA, 1991b)

<u>Statistic</u>	<u>Value (mg/kg.d) ⁽¹⁾</u>
Mean	4.86x10 ⁻⁵
Minimum	1.17x10 ⁻⁵
25th Percentile	1.56x10 ⁻⁵
50th Percentile (median)	1.96x10 ⁻⁵
75th Percentile	3.03x10 ⁻⁵
95th Percentile	5.86x10 ⁻⁵

⁽¹⁾ Values converted from µg/day to mg/kg/day assuming 70kg adult body weight

Table F-3. Resulting Excess Lifetime Cancer Risk Assuming Intake at the RfD.

<u>Radionuclide</u>	<u>Cancer Risk</u>	
	<u>Exposure Duration</u>	
	<u>30 yrs</u>	<u>70 yrs</u>
Natural Uranium ⁽¹⁾	4.9x10 ⁻⁵	1.1x10 ⁻⁴
U-238 ⁽²⁾	1.2x10 ⁻⁵	2.9x10 ⁻⁵

⁽¹⁾ Assumes 757 pCi per mg U - natural

⁽²⁾ Assumes 337 pCi per mg U - 238

F.5 REFERENCES

- ATSDR,1990 Toxicological Profile for Uranium. Agency for Toxic Substances and Disease Registry. U.S. Department of Health and Human Services. December, 1990.
- EPA, 1989 Integrated Risk Information System (IRIS). Reference dose for oral exposure to uranium (soluble salts). Cincinnati, OH: Office of Health and Environmental Assessment, U.S. EPA.
- EPA, 1991a National Primary Drinking Water Regulations; Radionuclides, US EPA 40 CER Parts 141, 142. Federal Register, Vol. 56: 138 pg 33050 - 33127.
- EPA, 1991b Drinking Water Criteria Document for Uranium. US EPA, Washington, DC, June, 1991.
- ICRP, 1964 Recommendations of the International Commission on Radiological Protection. Publication 6, Oxford: Pergamon Press.
- ICRP, 1975 Report of the Task Group on Reference Man. International Commission on Radiological Protection, Publication 23. Oxford: Pergamon Press.
- ICRP, 1979 Limits for Intakes of Radionuclides by Workers. International Commission on Radiological Protection, Publication 30. Oxford: Pergamon Press.
- Ko 49 Kocher, D. 1989. Relationship between kidney burdens and radiation dose from chronic ingestion of U: implications for radiation standards for the public. Health Physics, Vol. 57: 1, pp 9-15.
- Ma 49 Maynard, E.A. and H.C. Hodge, 1949. Studies of the toxicity of various uranium compounds when fed to H.C. Hodge, 1949 experimental animals. In: Voegtlin, I.C. and H.C. Hodge eds. Pharmacology and toxicology of uranium compounds, National Nuclear Energy Series (VI). New York, NY: McGraw-Hill, 309-376.
- Me 85 Meglen, R.R. 1985 Dietary intake computations for radionuclides. Prepared from monitoring data provided by Science Applications International Corp. Prepared by Robert R. Meglen, Center for Environmental Sciences, University of Colorado, Denver. December, 1985.

- Sp 73 Spoor, N.L. and J.M. Hursh, 1973. Protection criteria. In: Hodge et al. ed: Handbook of experimental pharmacology Vol. 36. Berlin: Springer, Verlag, 241.
- We 67 Welford, G.A. and Health R. Baird, 1967. Uranium levels in human diet and biological materials. 7 Physics, 13: 1321.
- Wr 85 Wrenn, M.E., P.W. Durbin, B. Howard et al. 1985. Metabolism of ingested U and Ra. Health Physics, 48: 601-633.

APPENDIX G

PRESTO-CPG INPUT PARAMETERS

Appendix G

PRESTO-CPG Input Parameters

LINE 1 Run Identification

TITLE **Baseline Analysis for Contaminated Soil**

LINE 2 Location and Site Description

LOCATE **Generic Test Site**

LINE 3 Time, Nuclides, and Farming Control Parameters

MAXYR The number of years for which the simulation will run.
1000 Years

NONCLD The number of radionuclides which are used in the
simulation. **61**

LEAOPT The leaching option. Radionuclides will be removed
from trench in different manners depending on the value
of LEAOPT. Must be one of the following calculation
methods.

Option Leach Calculation Method

- 1 Total contact, distribution coefficient
- 2 Immersed fraction, distribution coefficient**
- 3 Total contact, solubility
- 4 Immersed fraction, solubility
- 5 Release fraction

NYR1, NYR2 Beginning and ending years of trench cap failure. No
trench cap is used for these calculations. **0, 0**

IOPVWV Option for direct farming in the waste.

- < 0 no on-site farming
- = 0 on-site farming**
- = 1 on-site farming with vegetation decay

IOPSAT Flag for area source calculation. The area source is approximated by a series of nine point sources. **1**

IPRT1, IPRT2, IDELT Output control parameters not used for these calculations. **0, 1000, 1000**

IRRES1, IRRES2 Beginning and ending year for the mechanical suspension of contaminated soil into atmosphere. Not used for these calculations. **0, 0**

LIND Option used for selecting maximally-exposed individual (0) or general population (1). **0**

IAVG1, IAVG2 Beginning and ending years for averaging nuclide concentration values. **1, 1000**

IDISP Mode of disposal. Shallow land burial is used to simulate contaminated soil.

<u>Option</u>	<u>Disposal Method</u>
1	Shallow Land Burial
2	Deep Well Injection
3	Hydrofracture
4	Deep Geologic Disposal

LINE 4 External Exposures and Time Duration Parameters

IBSMT The beginning year for the basement correction factor for surface gamma exposure calculations. A value of -1 indicates that no correction is calculated. **0**

IAQSTF Control parameter for aquifer to stream flow. A blank field (0) defaults to calculations under the assumption that the flow takes place. **0**

IRST Number of years of restricted site use after site closure. **0**

ITWO Secondary year for which an organ dose summary table will be output. **0**

INSITE Flag for farming on the waste site. A value of zero indicates that farming does not take place. **1**

IORG Flag for dose equivalent output by organ. If IORG = 0 doses are not printed for individual organs. If IORG = 1 doses are printed for individual organs. **0**

LINE 5 Water Infiltration and Use

PCT1, PCT2 The fraction of the trench cap that is assumed to fail between the years NYR1 and NYR2. Since no trench cap is assumed, these parameters are not used. **0, 0**

WWATL Fraction of irrigation water supplied by contaminated water from well (1 if all water comes from well, 0 if none). **1**

WWATA Fraction of animal drinking water supplied by contaminated water from well (1 if all water comes from well, 0 if none). **1**

WWATH Fraction of human drinking water supplied by contaminated water from well (1 if all water comes from well, 0 if none). **1**

SWATL Fraction of irrigation water supplied by contaminated water from stream (1 if all water comes from stream, 0 if none). **0**

SWATA Fraction of animal drinking water supplied by contaminated water from stream (1 if all water comes from stream, 0 if none). **0**

SWATH Fraction of human drinking water supplied by contaminated water from stream (1 if all water comes from stream, 0 if none). **0**

LINE 6-12 Comments and References

COMMENTS

LINE 13 LLW Site Characteristics

TAREA	The total combined radioactive waste surface area for the facility being simulated (m ²). 10,000
TDEPTH	Thickness of the contaminated zone (m). 2
OVER	Thickness of trench overburden (m). 0
PORT	Total porosity of material within the contaminated zone. 0.485
DENCON	Mean density of soil in the contaminated zone (g/cm ³). 1.5
RELFAC	Not used. Set equal to 1.0.
CPRJ	Complement to one for the fraction of underground water flowing to the stream (0 means 100 percent to the regional basin river). 0
SINFL	Annual infiltration rate for the site and for local farm-land (m/yr). 0.5

LINE 14 Groundwater Saturation

SSAT	Fraction of water saturation in the ground formation beneath the buried waste. If SSAT = 0 or if left blank, the fraction of saturation is calculated internally by the code. PRESTO calculates 0.459 internally based on an assumed b exponent of 0.5. A value of 0.638 is calculated using a b exponent of 5.3. 0.638
RESAT	Fraction of residual saturation, equals the fraction of water saturation (SSAT) times the total porosity (PORT). 0.31

LINE 15 Site Operations and Waste Containers

PERMT	Hydraulic conductivity in the contaminated zone (m/yr). 227
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FACTIM	Number of years of active operation of the waste site. 0
TMN	Number of years of active maintenance after site closure. No nuclide migration is initiated during the maintenance period, although radioactive decay takes place. 0
CFT1	Number of years before waste containers begin failing. It is assumed there are no waste containers used for these calculations. 0
DCFT	Number of years after CFT1 that containers fail completely. At time CFT1+DCFT all containers have failed. 0
FGAM	External gamma shielding factor. This is the ratio of the external gamma radiation level indoors to the radiation level outdoors. 0.8

LINE 16 Transport Parameters

DTRAQ	Thickness of the unsaturated zone (m). DTRAQ + TDEPTH should equal the aquifer depth below the surface. 2
DWELL	Distance from the center of the trench to the well used for irrigation and drinking (m). The well is assumed to be at the edge of a square site. 50
GWV	Velocity of the groundwater in the aquifer (m/yr). The groundwater velocity is equal to the hydraulic conductivity in the aquifer times the gradient divided by the porosity of the aquifer. 555
AQTHK	Thickness of the aquifer at the location of the well (m). This is set equal to the well-depth used for RESRAD calculations. 3
AQDISP	Dispersion angle of the pollutant plume in the aquifer (radians). This value is set equal to zero to minimize dilution in the aquifer and to allow direct comparison with RESRAD's non-dispersion aquifer model. 0

PORA Effective porosity of the aquifer. **0.2**

PORV Total porosity of the unsaturated zone. **0.485**

PERMV Hydraulic conductivity of the unsaturated zone (m/yr).
227

LINE 17 Groundwater Parameters

VWV Vertical water velocity (m/yr). If a value of 0. is input, VWV is calculated internally. **0**

HGRAD Vertical hydraulic gradient (dimensionless). If a value of 0.0 is input, HGRAD is assigned the default value 1.0. **0**

FRACB Fraction of waste impacted by chemical exchange leaching ($0. \leq \text{FRACB} \leq 1.0$). The default value is 1.0.
1

BDENV Density of the unsaturated zone (g/cm^3).

LINE 18 Atmospheric Parameters

H Atmospheric source height of radionuclides (m). One meter is chosen because most resuspension rate measurements are expressed for that height. Not used for these calculations. **1**

VG Settling velocity of contaminated soil particles due to gravity (m/s). Set equal to VD. **0.001**

U Annual average wind speed (m/s) in the direction of interest. For population calculations this is the wind speed toward the population centroid. Not used for these calculations. **2**

VD Deposition velocity (m/s). Nominal generic value is 0.01 m/s. RESRAD has default values of 0.1 for H-3 and C-14, 0.01 for I-129 and Cl-36, and 0.001 for all other radionuclides. **0.001**

XG	Distance (m) from source (trench) to population or individual of interest. If XG is less than PD, the adjacent farming option will be triggered. The geometric mean of the dilution length defined for RESRAD was assigned to this parameter. 3
HLID	Height of the inversion layer or lid (m). Not used for these calculations. 300
ROUGH	Huskers roughness parameter (m). Not used for these calculations. 0.01

LINE 19 Atmospheric Parameters

FTWIND	Fraction of the time the wind blows toward the population or individual of interest. Not used for these calculations. 0.25
CHIQ	User specified atmospheric transport parameter which may be calculated by an external atmospheric dispersion code (s/m ³). A non-zero value will override any calculation of atmospheric dispersion performed within code. Not used for these calculations. 0
RE1, RE2, RE3	Factors (including algebraic signs) used in the resuspension rate equation. Not used for these calculations because a resuspension factor is defined (RR below). 1x10⁻⁶, -0.15, 1x10⁻¹¹
RMECH	The resuspension rate RR (sec ⁻¹) during the period of mechanical resuspension (between years IRRES1 and IRRES2). Not used for these calculations. 0
FTMECH	The fraction of the year mechanical disturbance occurs. Not used for these calculations. 0

LINE 20 Atmospheric Stability

RR	Dust loading (resuspension factor) for on-site reclaimer (g/m ³). 1.5x10⁻⁶ for Suburban, 2x10⁻⁴ for Rural Residential and Commercial/Industrial Exposures.
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FTRR	Fraction of year on-site reclaimer is exposed to dust. Used to correct for filtration of indoor air and set equal to RESRAD Inhalation Shielding Factor. 0.4
IT	Indicator variable for the type of atmospheric stability class formation. Suggested formation is Pasquill-Gifford, IT = 1. IT=2 selects the Biggs-Smith formation. Not used for these calculations. 1
IS	Stability category indicator. Values of 1 to 6 correspond to stability categories of A-F. A single value represents the most common stability category from nearest meteorology station to site of interest. Not used for these calculations. 4

LINE 21 Precipitation Parameters

RAINF	The rainfall factor (R/yr). 1
ERODF	The soil-erodibility factor has units of tons/acre-R, where R = RAINF given above. 1.1 for Suburban, 4.6 for Rural Residential, and 8.1 for Commercial/Industrial exposures.
STPLNG	The slope steepness-length factor. 1
COVER	The crop management factor. 1
CONTRL	The erosion control practices factor. 1
SEDELR	The sediment delivery ratio. This ratio is intended to apply to fouling of waterways from construction activity. 1

This section concerns soil migration through erosion. The migration of radioactively contaminated soil and associated host soils through erosion is largely a result of rain and/or wind. A number of interrelated factors contribute to soil migration through erosion including climate (precipitation, temperature, humidity, wind pattern), soil characteristics (particle size and density, texture, structural stability), surface roughness, vegetation cover, and length and grade of eroding surface. The Universal Soil Loss Equation (Co90, Be72, Fi86, Mo79) has been developed from empirical data resulting from years of field and laboratory experimentation and is given as follows:

$$\text{Soil Loss} = \text{RAINF} \times \text{ERODF} \times \text{STPLNG} \times \text{COVER} \times \text{CONTRL}$$

The major focus of soil erosion has been on cropland and most statistical information is based on the annual soil loss as calculated and reported by state. The national average of soil loss is 1.4 tons/acre/year (DOC82). The actual soil erosion rate varies widely in specific locations across the nation and a single national average does not represent a meaningful number.

An average soil erosion rate for suburban, rural residential, and commercial/industrial sites has been calculated by incorporating the preliminary information for the reference sites described in Chapter 4 in the Universal Soil Loss Equation.

<u>Factor</u>	<u>Range</u>	<u>Est. Value</u>
RAINF	20 - 600	178
ERODF	0.02 - 0.69	0.35
STPLNG	0.1 - 6	0.25
COVER	0.003 - 0.45	***
CONTRL	0.25 - 1	0.6

*** The crop management factor varies for suburban, rural residential, and commercial/industrial sites. A value of 0.003 represents grass covering 95 to 100% of a surface, while 0.45 is the factor for bare ground (Co90). A suburban site is assumed to have a mixture of 60% grass, 30% shrubs, and 10% trees. A rural residential site is assumed to be cropland, while a commercial/industrial site is assumed to have a mix of bare ground and sporadic weed cover.

The soil loss factors have been calculated for the three scenarios and the factor has been input as ERODF. The remaining factors have been set to unity so that the results of the calculations are not affected. The suburban site has a soil loss rate of 1.1 tons/acre/year, rural residential is 4.6, and commercial/industrial is 8.1. For comparison purposes bare ground has an estimated soil loss of 15.7 tons/acre/year (Fi86).

LINE 22 Soil and Surface Water

PORS	Porosity of the surface soil. Set equal to the porosity of the contaminated zone. 0.485
BDENS	Bulk density of the soil (g/cm ³). 1.5
STFLOW	Annual flow rate of the nearest stream (m ³ /yr). Calculated the average flow rate for major streams near the reference sites described in Chapter 4 and corrected

the flow rates for a watershed area of $1 \times 10^6 \text{ m}^2$. **190,000**

EXTENT The cross slope extent of the surface region contaminated by operational spillage (m). Represents the length of the site parallel to the nearest stream, and is set equal to the square root of the site area. **100**

ADEPTH The active depth of soil in the surface- contaminated region. Used for the calculation of radionuclide concentration in both surface soil and surface water. Set equal to the plow depth. **0.15**

LINE 23 Surface Water Runoff

PD Distance from the trench to nearest stream (m). If PD is greater than XG, the adjacent farming option will be triggered. Set equal to the distance from the center of the site to the edge of the site, also equals distance to the well. **50**

PPN Total annual precipitation (m). **1**

RUNOFF Fraction of the annual precipitation that run off. Set equal to RESRAD default value. **0.2**

SEEP Fraction of the total annual precipitation (PPN) that ultimately becomes deep infiltration. **0.5**

LINE 24 Agricultural Data

Y1, Y2 Agricultural productivity for pasture grass and other consumed vegetation respectively (kg/m^2). Set equal to RESRAD default value for pasture grass, and the sum of leafy vegetables and fruits and non-leafy vegetables. **1.1, 2.2**

PP Surface density of soil (kg/m^2). Assumes a 15 cm plow depth. For farming scenario, this value should be in agreement with the value of BDENS. **225**

XAMBWE	The weathering removal decay constant for atmospheric deposition onto food crops (hr^{-1}). Set equal to RESRAD default value of two weeks. 0.0023
TE1, TE2	Period of time that pasture grass or crops and leafy vegetables, respectively, are exposed to contaminated air during each growing season (hr). Set equal to RESRAD default values. 700, 2190

LINE 25 Agricultural Delay Times and Fractions

TH1 - TH6	These six variables represent the delay time between harvest and consumption by animal or man. No guidance was provided so reasonably conservative assumptions are listed.
TH1	Pasture grass (hr). 0
TH2	Stored feed (hr). 2190
TH3	Leafy vegetables for maximum individual doses (hr). 24
TH4	Produce for maximum individual doses (hr). 24
TH5	Leafy vegetables for general population exposures (hr). 120
TH6	Produce for general population exposures (hr). 120
FP	Fraction of each year that animals graze on pasture grass. 1
FS	Fraction of an animal's daily feed that is fresh grass for the period of time animals are in pasture. 0.8

LINE 26 Animal Feed Data

QFC	The amount of feed consumed daily by cattle (kg). Set equal to the amount of contaminated feed consumed daily (68 kg) divided by the correction factor in the code of 0.243. 280
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QFG	The amount of feed consumed daily by dairy goats (kg). Not used for these calculations. 0
TF1, TF2	The transport time (hr) from animal feed into milk and into the receptor human for the maximum individual and the general population exposures, respectively. 48, 96
TS	Length of time between slaughter of animals and human consumption of the resultant meat (hr). 120
ABSH	The absolute humidity of the atmosphere (g/m^3). Used for specific activity food-chain calculations for tritium concentrations in foodstuffs. Set equal to absolute humidity value in RESRAD calculations. 8
P14	The fractional equilibrium ratio for C-14. A value of 1 suggested for PRESTO assumes the fraction of stable carbon in plants equals 0.11, where RESRAD assumes 0.09. 1

LINE 27 Plant Root Parameters

XRTM	Maximum root depth for on-site farming scenario (m). Set equal to RESRAD default value. 0.9
RTGR	Root growth rate constant (yr^{-1}). RESRAD does not include this correction. 0

LINE 28 Irrigation Water Data

FI	Fraction of the year that crops are irrigated. Application time is set equivalent to the number of frost-free days for the area. 1
WIRATE	Irrigation rate ($\text{L/m}^2\text{-hr}$). Set equal to RESRAD value of 1 m/yr. 0.023
QCW, QGW, QBW	Values for the amount of water (L/d) consumed by milk cows, milk goats, and beef cattle, respectively. Set equal to RESRAD default values. 160, 0, 50

LINE 29 Human Food Uptake

ULEAFY	The human uptake of leafy vegetables (kg/yr). Set equal to annual ingestion of contaminated leafy vegetables (4.55 suburban, 6.65 rural residential) divided by the correction factor 0.066 included in the code. 69 for Suburban, 100 for Rural Residential exposures.
UPROD	The human uptake of produce (kg/yr). Set equal to annual ingestion of contaminated fruits and non-leafy vegetables (22.75 suburban, 61.25 rural residential) divided by the correction factor 0.187 included in the code. 121.7 for Suburban, 328 for Rural Residential exposures.
UCMILK	The human uptake of cow milk (L/yr). Used only for rural residential exposures. Set equal to annual ingestion of contaminated milk. 92
UGMILK	The human uptake of goat milk (L/yr). No goat milk is ingested for these calculations. 0
UMEAT	The human uptake of meat (kg/yr). Used only for rural residential exposures. Set equal to annual ingestion of contaminated meat. 63
UWAT	The human uptake of drinking water (L/yr). Set equal to 2 L for each full day on site (350 suburban and rural residential) and 1 L for each work day on site (250 commercial/industrial). 700 Suburban and Rural Residential, 250 Commercial/Industrial exposures.
UAIR	The inhalation rate (m ³ /yr). 7300
POP	Local population, each scenario assumes reasonable maximum exposure to an individual. 1

LINE 30 Release Fractions

RELFR(1)	The release fraction for the absorbing waste. This array element is currently not used and is set equal to 0.0. 0
RELFR(2)	The release fraction for the activated metals. 0

RELFRC(3)	The release fraction for the trash. 0
RELFRC(4)	The release fraction for the solidified waste. 0
RELFRC(5)	The release fraction for the incinerated/ solidified waste. 0
FTRAB	The fraction of trash waste that will be leached as absorbing material. The complement of trash waste will be subject to leaching by a user specified leaching rate. 1
FRTRSH	The fraction of waste that is not in water-tight containers. No containers are used for these calculations. 1

LINE 31 Spillage Fractions

SPLAW	Spillage fraction for absorbing waste (fraction of CIAW(I)). 0
SPLAM	Spillage fraction for activated metals (fraction of CIAM(I)). 0
SPLTR	Spillage fraction for trash (fraction of CITR(I)). 0
SPLSW	Spillage fraction for solidified waste (fraction of CISW(I)). 0
SPLIS	Spillage fraction for incinerated solidified waste (fraction of CIIS(I)). 0

LINE 32 Nuclide Specific Data

NUCLID(I)	The name of the radionuclide used in the code. Must be left justified and with no embedded blanks and with a hyphen separating the alphameric for the element and the numeric for the isotope.
CIAW(I)	Amount of the radionuclide in the absorbing waste (Ci). Absorbing waste is the category most similar to soil for these calculations. 0.03

CIAM(I)	Amount of the radionuclide in the activated metals (Ci). 0
CITR(I)	Amount of the radionuclide in the trash (Ci). 0
CISW(I)	Amount of the radionuclide in the solidified waste (Ci). 0
CIIS(I)	Amount of the radionuclide in the incinerated solidified waste (Ci). 0

NOTE: LINE 32 is repeated for each radionuclide in the simulation.

LINE 33 Nuclide Specific Data

NUCLID(I)	Radionuclide name.
RA(I)	Radionuclide retention factor for air. This is the fraction of the radionuclide deposited from air on the plant surface that is absorbed into the plant. Set equal to RESRAD default value. 0.25
RW(I)	Radionuclide retention factor for water. This the fraction of the radionuclide deposited on the plant surface by irrigation that is absorbed into the plant. Set equal to RESRAD default value. 0.25
STAM(I)	The amount of radioactivity in the stream nearest the site at the beginning of the simulation (Ci). 0
ATAM(I)	The amount of radioactivity of each radio- nuclide suspended in the air directly above the trench at the beginning of the simulation (Ci). 0
DECAY(I)	The radiological decay constant (yr^{-1}). The constant is equal to 0.6931 divided by the radiological half-life in years. Radionuclide half-lives were obtained from RESRAD guidance to be consistent with the RESRAD results.
SOL(I)	The solubility of the radionuclide contaminating waste in the trench (g/ml). Not used for these calculations. 0

LINE 34 Nuclide Transport Parameters

NU	Radionuclide name (same as on Card 32).
XKD(1,I)	Surface soil K_d of radionuclide I (ml/g). Set equal to aquifer K_d .
XKD(2,I)	Contaminated zone K_d of radionuclide I (ml/g). Set equal to aquifer K_d .
XKD(3,I)	Unsaturated zone K_d of radionuclide I (ml/g). Set equal to aquifer K_d .
XKD(4,I)	Aquifer K_d of radionuclide I (ml/g). See Table 3-13.

LINE 35 Agricultural Data for Nuclides

NU	Radionuclide name (same as Card 32).
BV(I)	Radionuclide soil-to-plant uptake factor for vegetative parts. Used RESRAD default values listed in Appendix ?.
BR(I)	Radionuclide soil-to-plant uptake factor for grain. Set equal to BV(I).
FMC(I)	Radionuclide forage-to-milk transfer factor for cows (d/l). Used RESRAD default values listed in Appendix ?.
FMG(I)	Radionuclide forage-to-milk transfer factor for goats (d/l). Not used for these calculations.
FF(I)	Radionuclide forage-to-beef transfer factor (d/kg). Used RESRAD default values listed in Appendix ?.

NOTE: Lines 33, 34 and 35 are repeated, in sequence, for each radionuclide in the simulation.

APPENDIX H

RESULTS OF RESRAD VERSION 5.19 PARAMETER SENSITIVITY ANALYSES

Ac-227+D

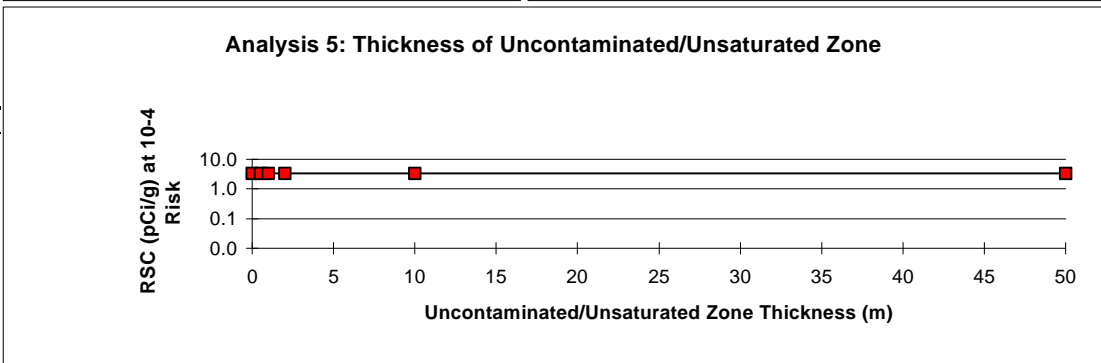
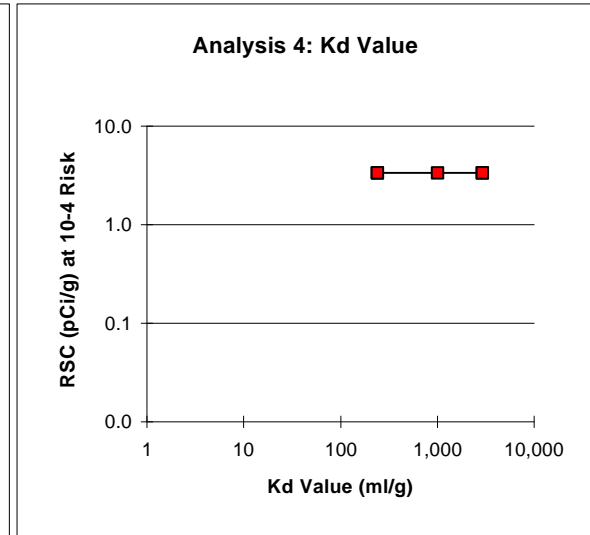
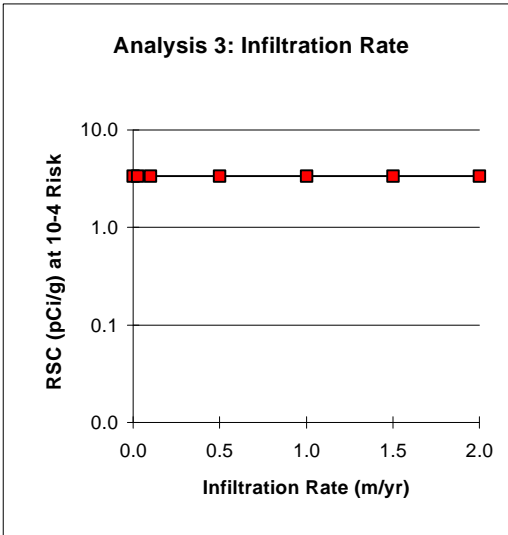
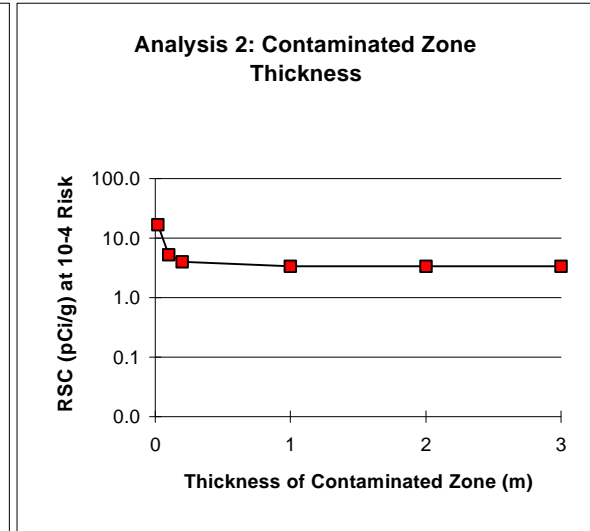
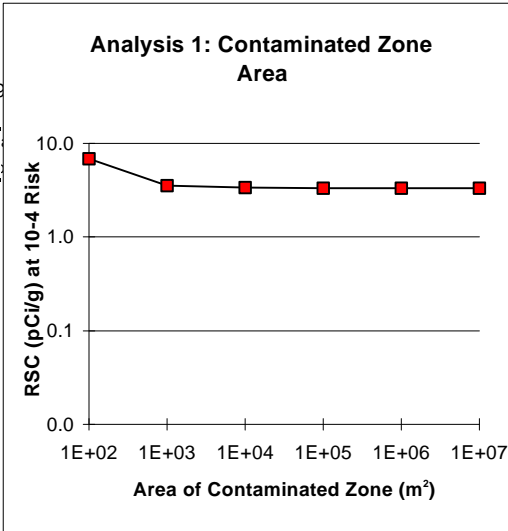
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5.19) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	1.46E-05	6.8	0
	1E+03	2.84E-05	3.5	0
	1E+04	2.98E-05	3.4	0
	1E+05	2.99E-05	3.3	0
	1E+06	2.99E-05	3.3	0
	1E+07	2.99E-05	3.3	0
#2 Contaminated Zone Thickness (m)	0.02	5.93E-06	16.9	0
	0.1	1.92E-05	5.2	0
	0.2	2.49E-05	4.0	0
	1	2.98E-05	3.4	0
	2	2.98E-05	3.4	0
	3	2.98E-05	3.4	0
#3 Infiltration Rate (m/yr)	0.001	2.98E-05	3.4	0
	0.025	2.98E-05	3.4	0
	0.100	2.98E-05	3.4	0
	0.500	2.98E-05	3.4	0
	1	2.98E-05	3.4	0
	1.5	2.98E-05	3.4	0
#4 Distribution Coefficient (Kd) (ml/g)	240	2.98E-05	3.4	0
	240	2.98E-05	3.4	0
	1,000	2.98E-05	3.4	0
	2,900	2.98E-05	3.4	0
	2,900	2.98E-05	3.4	0
#5 Uncontaminated Zone Thickness (m)	0	2.98E-05	3.4	0
	1	2.98E-05	3.4	0
	1	2.98E-05	3.4	0
	2	2.98E-05	3.4	0
	10	2.98E-05	3.4	0
	50	2.98E-05	3.4	0

Note: See text for a detailed discussion of these analyses.

- Parameter values assumed for base case analysis:
- * Agricultural Land Use Exposure Scenario
- * Area of Contaminated Zone = 10,000 m²
- * Thickness of Contaminated Zone = 2 m
- * Infiltration Rate = 0.5 m/yr
- * Kd = 240
- * Thickness of Uncontaminated Zone = 2 m
- * Well Depth Below Water Table = 3 m
- * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10-4.



Ag-108m+D

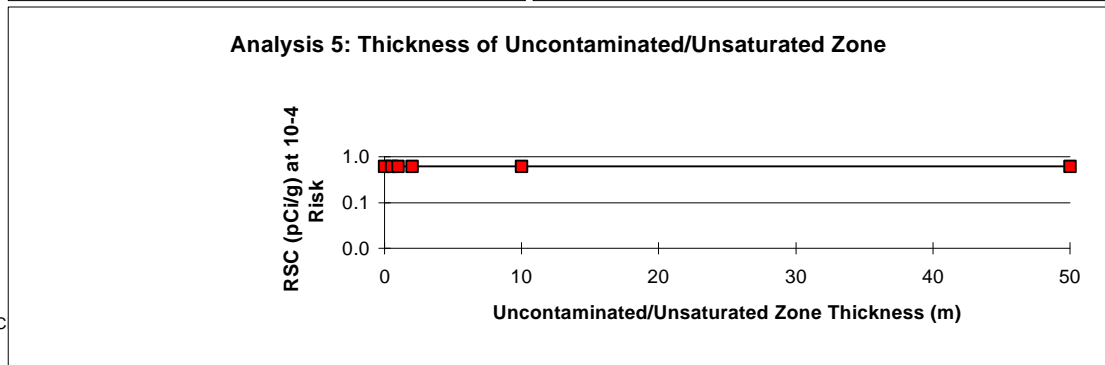
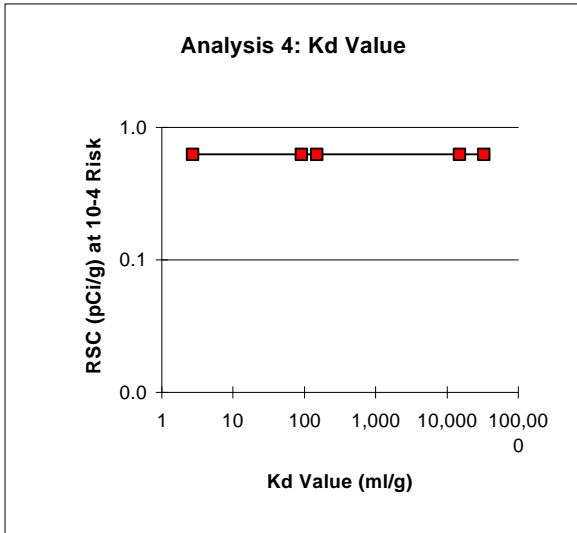
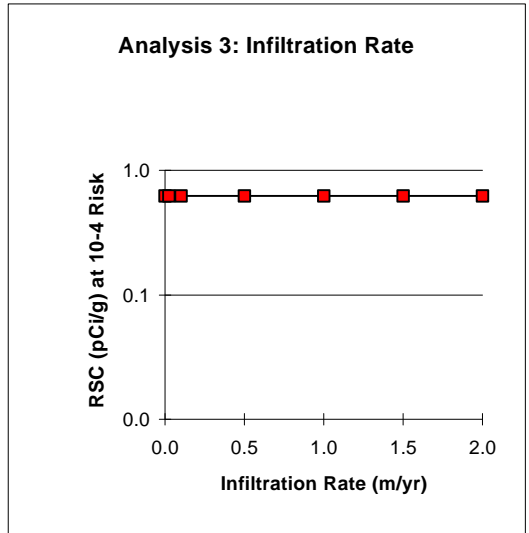
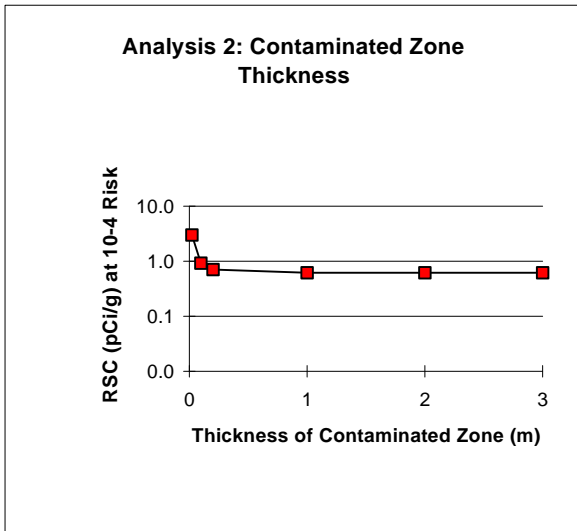
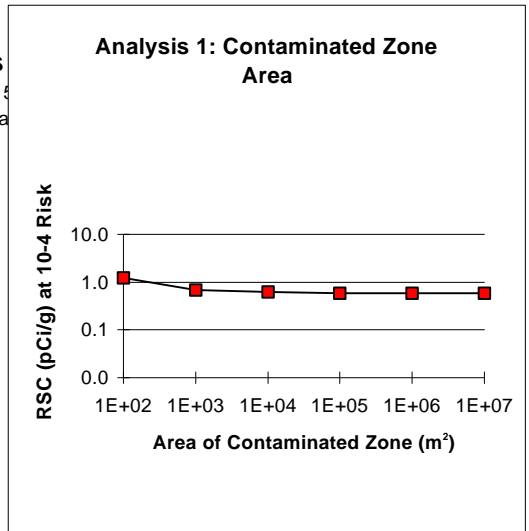
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	8.21E-05	1.2	0
	1E+03	1.45E-04	0.7	0
	1E+04	1.60E-04	0.6	0
	1E+05	1.68E-04	0.6	0
	1E+06	1.68E-04	0.6	0
	1E+07	1.68E-04	0.6	0
#2 Contaminated Zone Thickness (m)	0.02	3.38E-05	3.0	0
	0.1	1.09E-04	0.9	0
	0.2	1.40E-04	0.7	0
	1	1.60E-04	0.6	0
	2	1.60E-04	0.6	0
#3 Infiltration Rate (m/yr)	0.001	1.60E-04	0.6	0
	0.025	1.60E-04	0.6	0
	0.100	1.60E-04	0.6	0
	0.500	1.60E-04	0.6	0
	1	1.60E-04	0.6	0
	1.5	1.60E-04	0.6	0
#4 Distribution Coefficient (Kd) (ml/g)	3	1.60E-04	0.6	0
	90	1.60E-04	0.6	0
	150	1.60E-04	0.6	0
	15,000	1.60E-04	0.6	0
	33,000	1.60E-04	0.6	0
#5 Uncontaminated Unsat. Zone Thickness (m)	0	1.60E-04	0.6	0
	1	1.60E-04	0.6	0
	1	1.60E-04	0.6	0
	2	1.60E-04	0.6	0
	10	1.60E-04	0.6	0
50	1.60E-04	0.6	0	

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 90
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Ag-110m+D

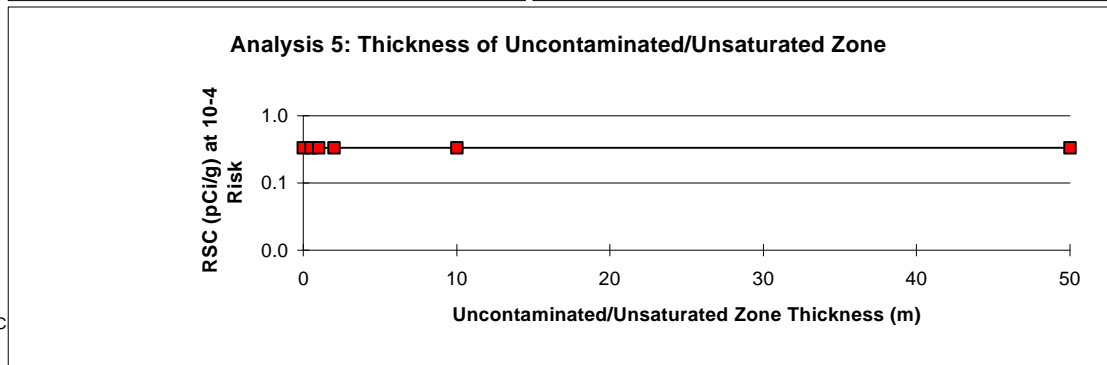
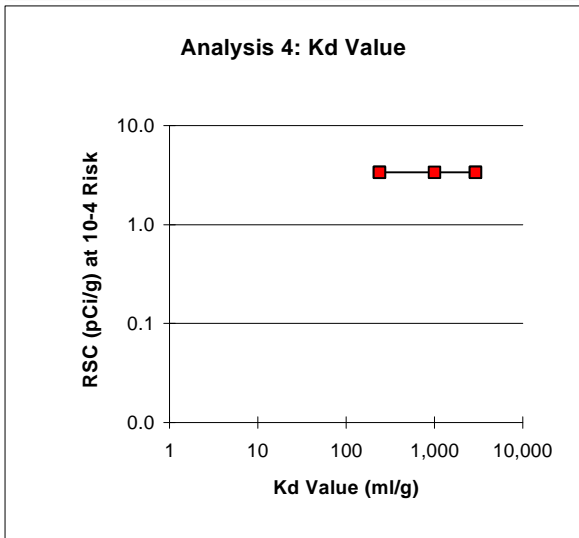
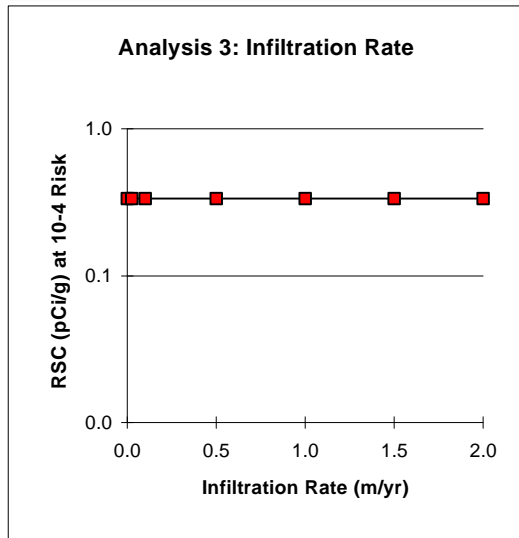
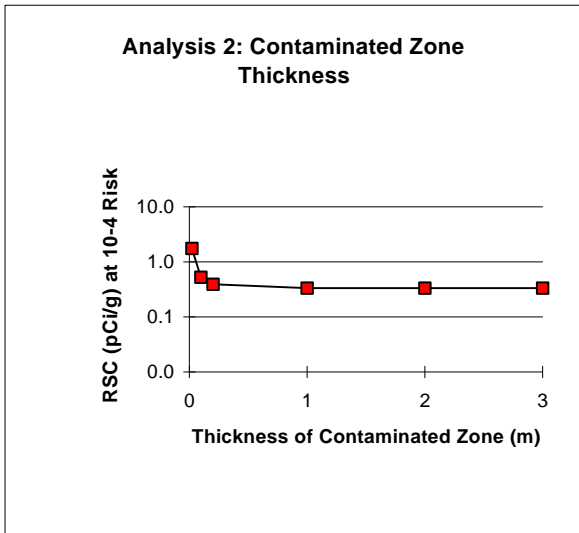
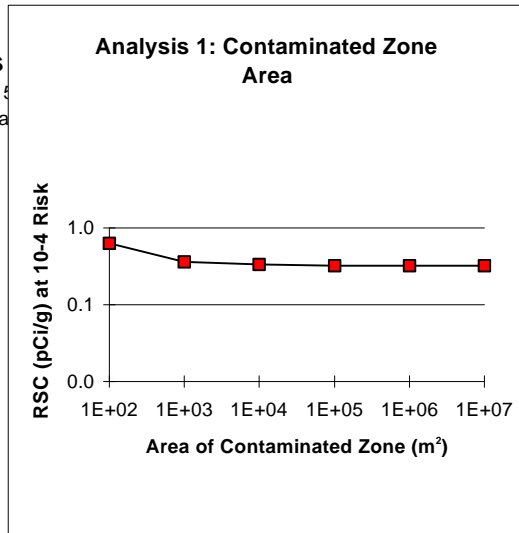
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	1.57E-04	0.6	0
	1E+03	2.75E-04	0.4	0
	1E+04	2.99E-04	0.3	0
	1E+05	3.09E-04	0.3	0
	1E+06	3.09E-04	0.3	0
	1E+07	3.09E-04	0.3	0
#2 Contaminated Zone Thickness (m)	0.02	5.67E-05	1.8	0
	0.1	1.92E-04	0.5	0
	0.2	2.57E-04	0.4	0
	1	2.99E-04	0.3	0
	2	2.99E-04	0.3	0
#3 Infiltration Rate (m/yr)	0.001	2.99E-04	0.3	0
	0.025	2.99E-04	0.3	0
	0.100	2.99E-04	0.3	0
	0.500	2.99E-04	0.3	0
	1	2.99E-04	0.3	0
	1.5	2.99E-04	0.3	0
#4 Distribution Coefficient (Kd) (ml/g)	3	2.99E-04	0.3	0
	90	2.99E-04	0.3	0
	150	2.99E-04	0.3	0
	15,000	2.99E-04	0.3	0
	33,000	2.99E-04	0.3	0
#5 Uncontaminated Unsat. Zone Thickness (m)	0	2.99E-04	0.3	0
	1	2.99E-04	0.3	0
	1	2.99E-04	0.3	0
	2	2.99E-04	0.3	0
	10	2.99E-04	0.3	0
	50	2.99E-04	0.3	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 90
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Am-241

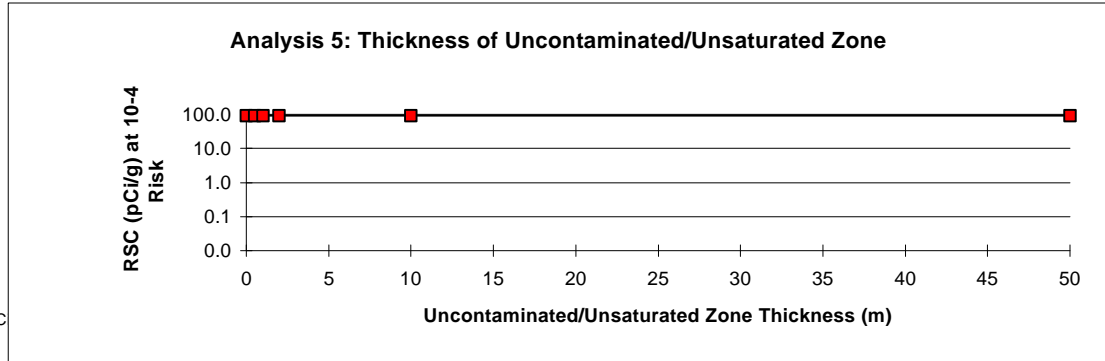
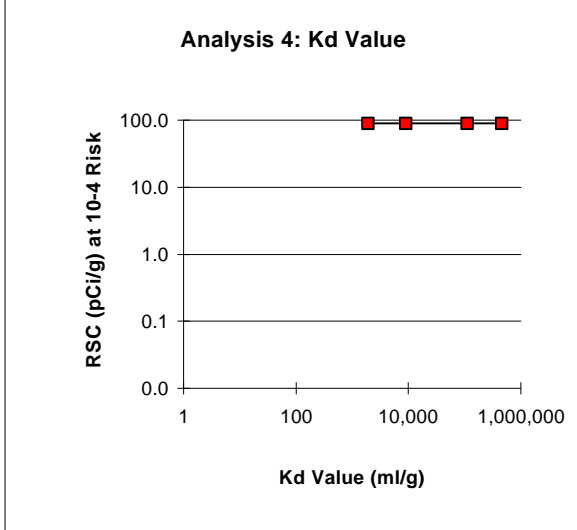
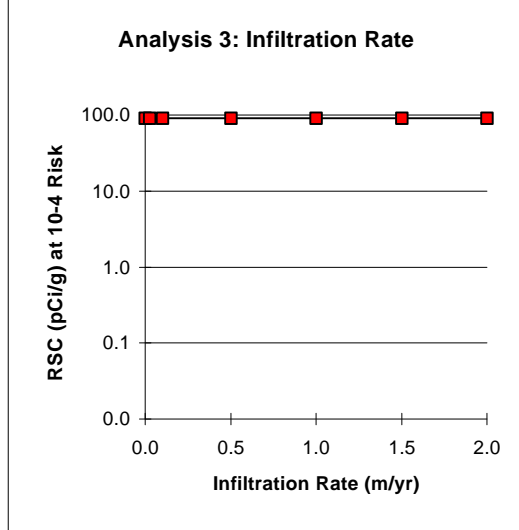
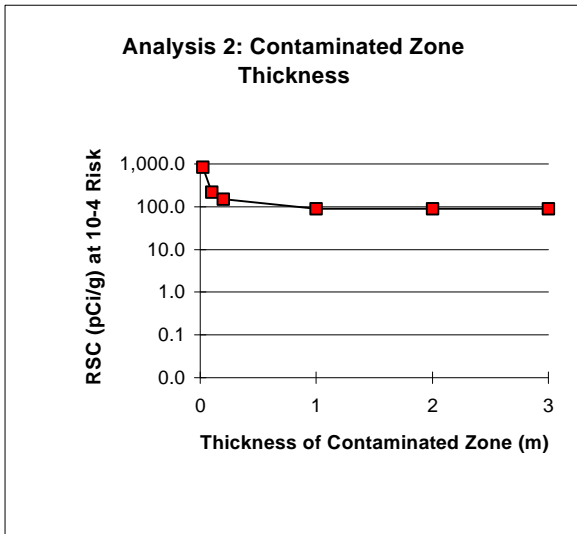
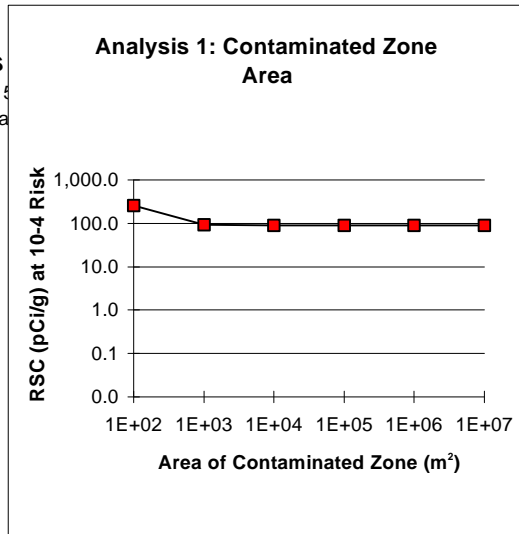
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	3.87E-07	258.3	0
	1E+03	1.07E-06	93.7	0
	1E+04	1.11E-06	90.3	0
	1E+05	1.13E-06	88.6	0
	1E+06	1.13E-06	88.4	0
	1E+07	1.13E-06	88.3	0
#2 Contaminated Zone Thickness (m)	0.02	1.19E-07	839.6	0
	0.1	4.63E-07	216.1	0
	0.2	6.77E-07	147.8	0
	1	1.11E-06	90.3	0
	2	1.11E-06	90.3	0
#3 Infiltration Rate (m/yr)	0.001	1.11E-06	90.3	0
	0.025	1.11E-06	90.3	0
	0.100	1.11E-06	90.3	0
	0.500	1.11E-06	90.3	0
	1	1.11E-06	90.3	0
	1.5	1.11E-06	90.3	0
#4 Distribution Coefficient (Kd) (ml/g)	1	NC	NC	NC
	1,900	1.11E-06	90.3	0
	9,000	1.11E-06	90.3	0
	110,000	1.11E-06	90.3	0
#5 Uncontaminated Unsat. Zone Thickness (m)	450,000	1.11E-06	90.3	0
	0	1.11E-06	90.3	0
	1	1.11E-06	90.3	0
	1	1.11E-06	90.3	0
	2	1.11E-06	90.3	0
#5 Uncontaminated Unsat. Zone Thickness (m)	10	1.11E-06	90.3	0
	50	1.11E-06	90.3	0

Note: See text for a detailed discussion of these analyses.

- Parameter values assumed for base case analysis
- * Agricultural Land Use Exposure Scenario
- * Area of Contaminated Zone = 10,000 m²
- * Thickness of Contaminated Zone = 2 m
- * Infiltration Rate = 0.5 m/yr
- * Kd = 1,900
- * Thickness of Unsat. Zone = 2 m
- * Well Depth Below Water Table = 3 m
- * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Am-243+D

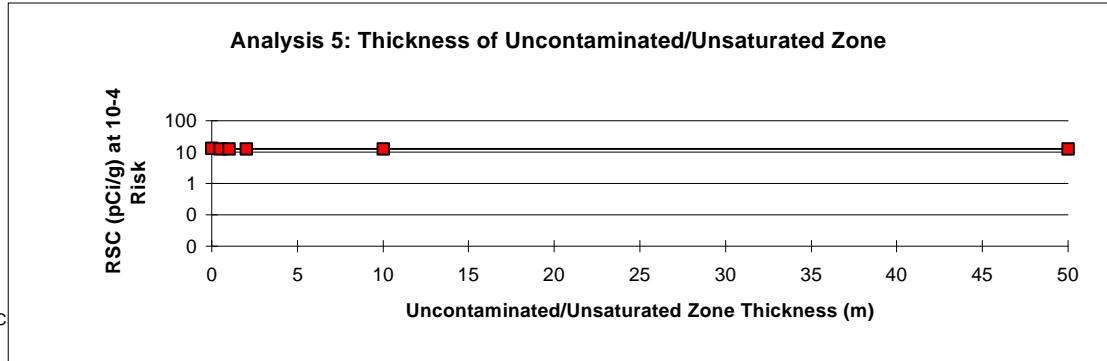
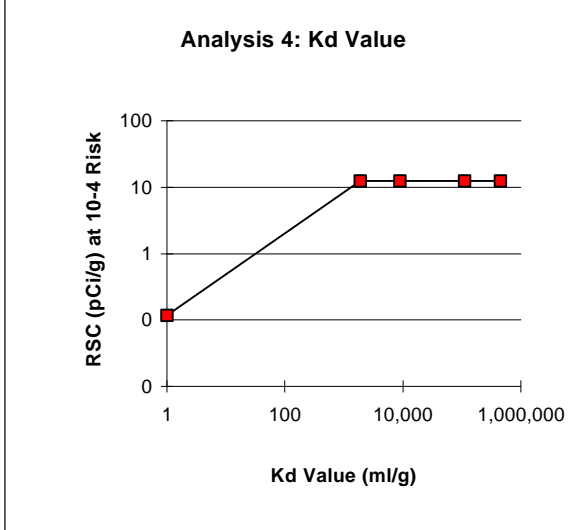
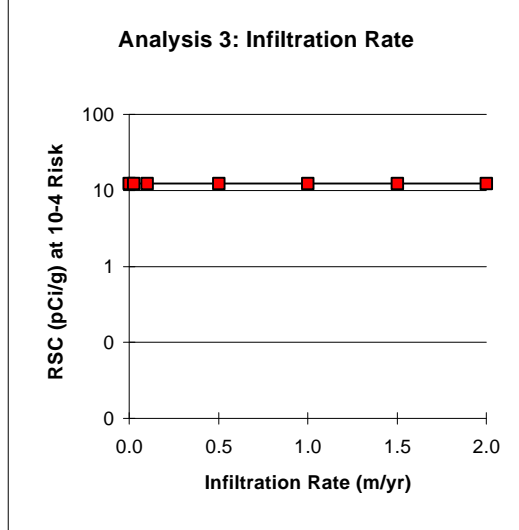
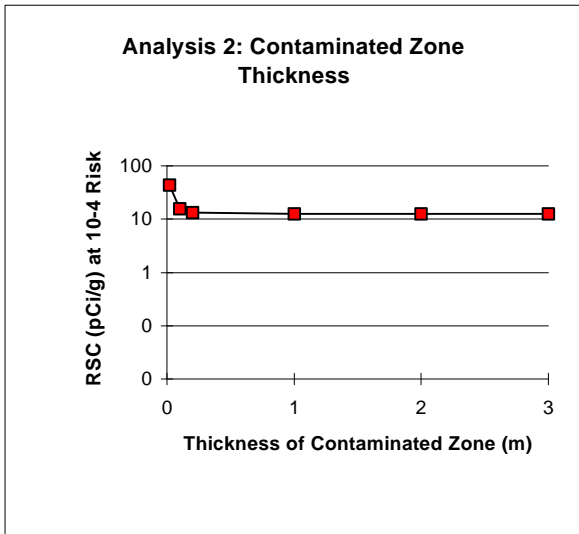
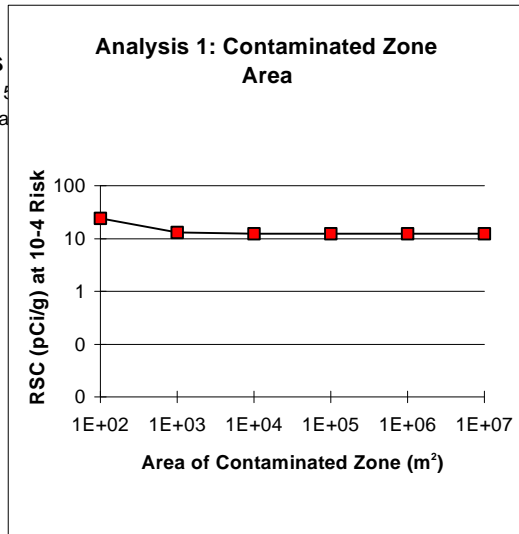
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	4.20E-06	24	0
	1E+03	7.62E-06	13	0
	1E+04	8.06E-06	12	0
	1E+05	8.06E-06	12	0
	1E+06	8.06E-06	12	0
#2 Contaminated Zone Thickness (m)	0.02	2.32E-06	43	0
	0.1	6.37E-06	16	0
	0.2	7.46E-06	13	0
	1	8.06E-06	12	0
	2	8.06E-06	12	0
#3 Infiltration Rate (m/yr)	0.001	8.06E-06	12	0
	0.025	8.06E-06	12	0
	0.100	8.06E-06	12	0
	0.500	8.06E-06	12	0
	1	8.06E-06	12	0
#4 Distribution Coefficient (Kd) (ml/g)	1	8.51E-04	0	4
	1,900	8.06E-06	12	0
	9,000	8.06E-06	12	0
	110,000	8.06E-06	12	0
	450,000	8.06E-06	12	0
#5 Uncontaminated Unsat. Zone Thickness (m)	0	7.65E-06	13	396
	1	8.06E-06	12	0
	1	8.06E-06	12	0
	2	8.06E-06	12	0
	10	8.06E-06	12	0
	50	8.06E-06	12	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 1,900
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Bi-207

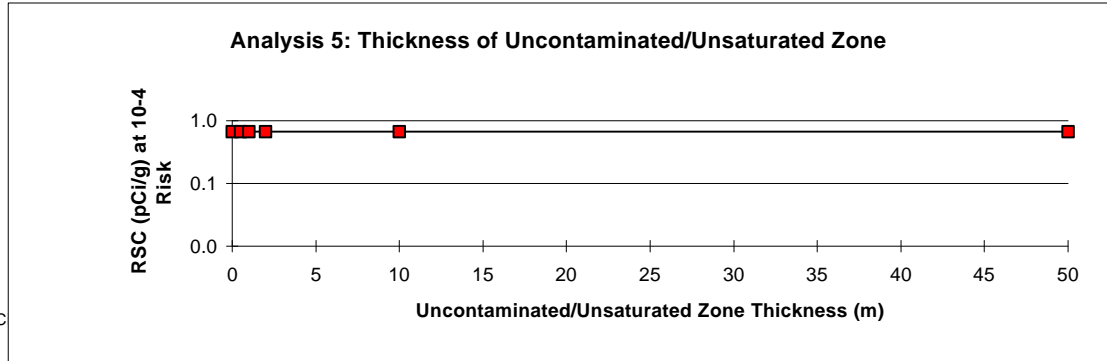
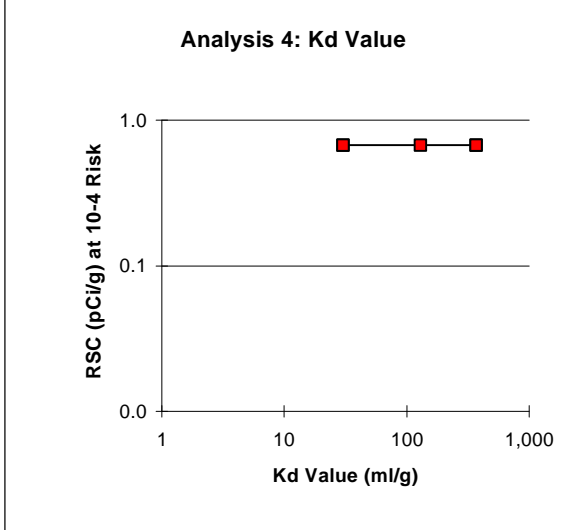
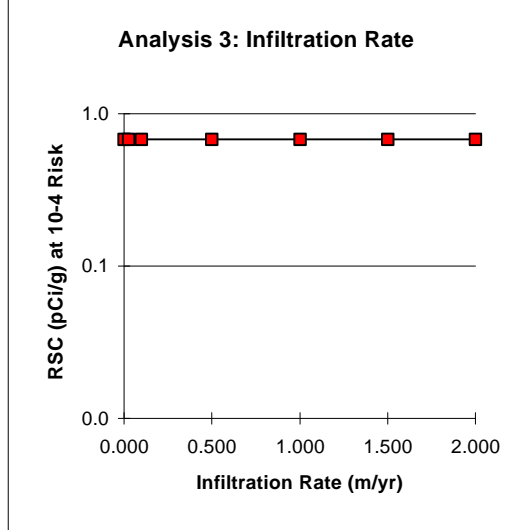
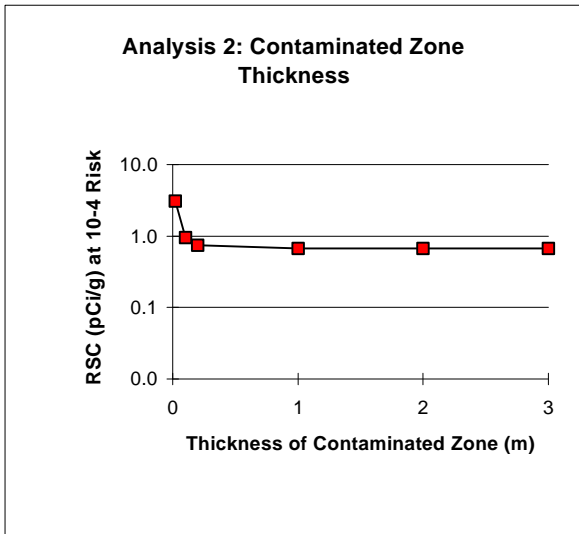
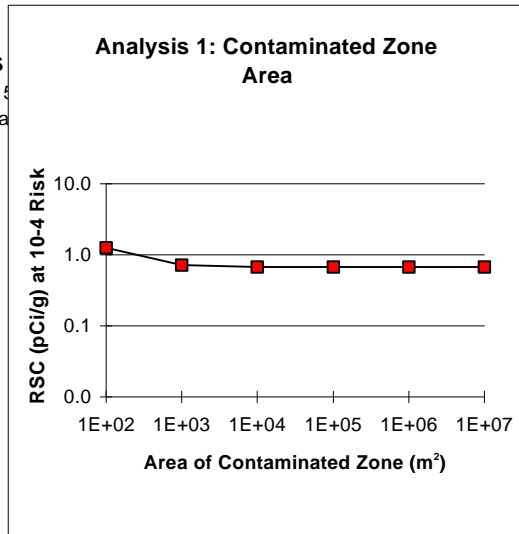
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	8.02E-05	1.2	0
	1E+03	1.39E-04	0.7	0
	1E+04	1.48E-04	0.7	0
	1E+05	1.48E-04	0.7	0
	1E+06	1.48E-04	0.7	0
	1E+07	1.48E-04	0.7	0
#2 Contaminated Zone Thickness (m)	0.02	3.24E-05	3.1	0
	0.1	1.04E-04	1.0	0
	0.2	1.34E-04	0.7	0
	1	1.48E-04	0.7	0
	2	1.48E-04	0.7	0
#3 Infiltration Rate (m/yr)	0.001	1.48E-04	0.7	0
	0.025	1.48E-04	0.7	0
	0.1	1.48E-04	0.7	0
	0.5	1.48E-04	0.7	0
	1	1.48E-04	0.7	0
	1.5	1.48E-04	0.7	0
#4 Distribution Coefficient (Kd) (ml/g)	30	1.48E-04	0.7	0
	30	1.48E-04	0.7	0
	130	1.48E-04	0.7	0
	370	1.48E-04	0.7	0
	370	1.48E-04	0.7	0
#5 Uncontaminated Unsat. Zone Thickness (m)	0	1.48E-04	0.7	0
	1	1.48E-04	0.7	0
	1	1.48E-04	0.7	0
	2	1.48E-04	0.7	0
	10	1.48E-04	0.7	0
	50	1.48E-04	0.7	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 30
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



C-14

RESRAD Parameter Sensitivity Analyses

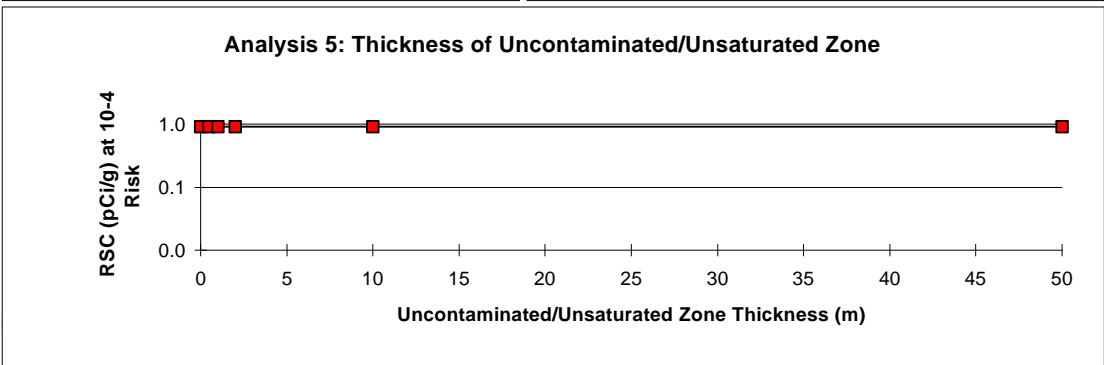
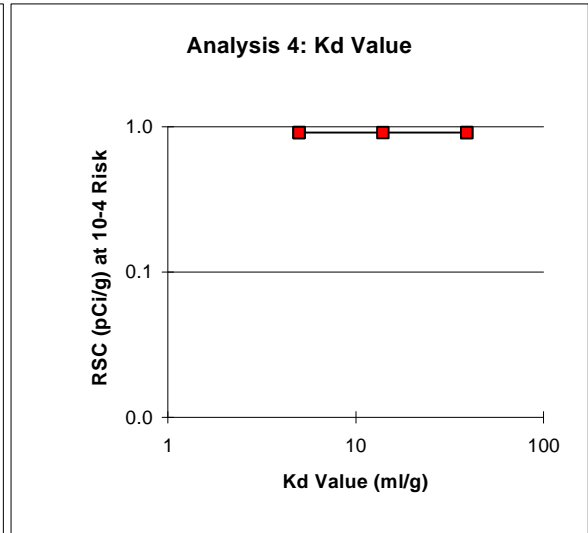
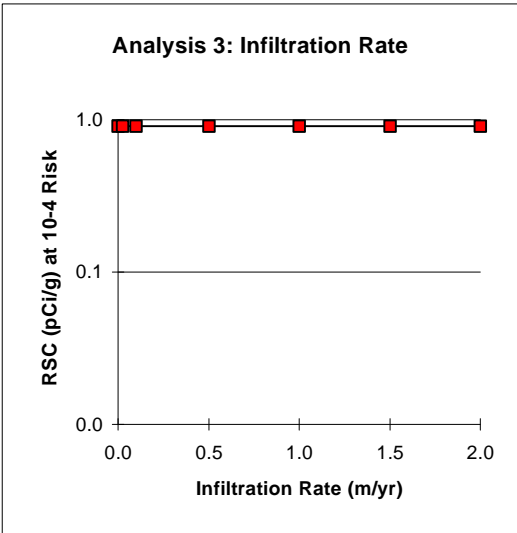
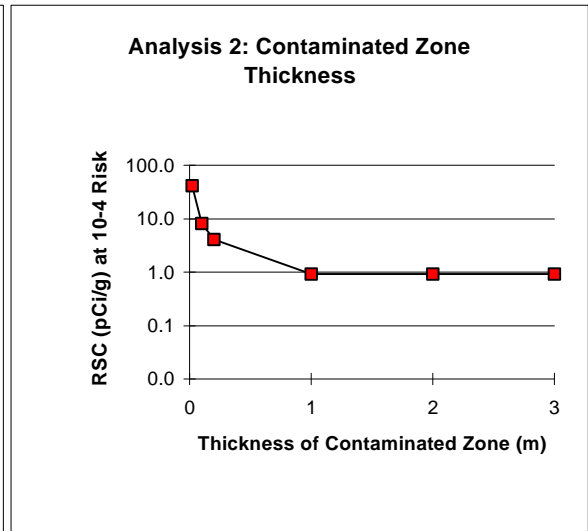
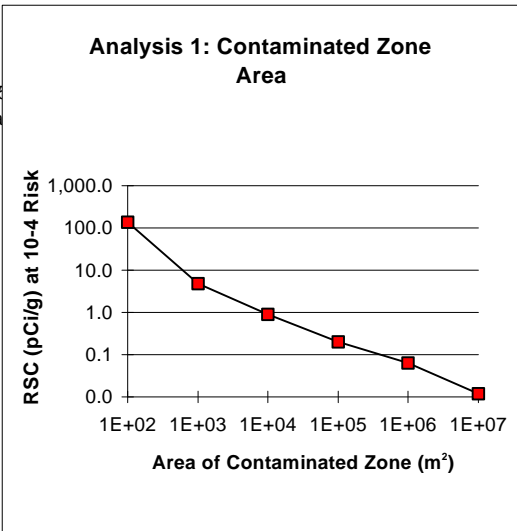
Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	7.31E-07	136.9	0
	1E+03	2.09E-05	4.8	0
	1E+04	1.10E-04	0.9	0
	1E+05	5.02E-04	0.2	0
	1E+06	1.58E-03	0.1	0
	1E+07	8.33E-03	0.0	37
#2 Contaminated Zone Thickness (m)	0.02	2.44E-06	40.9	0
	0.1	1.22E-05	8.2	0
	0.2	2.44E-05	4.1	0
	1	1.10E-04	0.9	0
	2	1.10E-04	0.9	0
#3 Infiltration Rate (m/yr)	0.001	1.10E-04	0.9	0
	0.025	1.10E-04	0.9	0
	0.100	1.10E-04	0.9	0
	0.500	1.10E-04	0.9	0
	1	1.10E-04	0.9	0
#4 Distribution Coefficient (Kd) (ml/g)	1.5	1.10E-04	0.9	0
	2	1.10E-04	0.9	0
	5	1.10E-04	0.9	0
	14	1.10E-04	0.9	0
	39	1.10E-04	0.9	0
#5 Uncontaminated Unsat. Zone Thickness (m)	39	1.10E-04	0.9	0
	0	1.10E-04	0.9	0
	1	1.10E-04	0.9	0
	2	1.10E-04	0.9	0
	10	1.10E-04	0.9	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:

- * Agricultural Land Use Exposure Scenario
- * Area of Contaminated Zone = 10,000 m²
- * Thickness of Contaminated Zone = 2 m
- * Infiltration Rate = 0.5 m/yr
- * Kd = 5
- * Thickness of Unsat. Zone = 2 m
- * Well Depth Below Water Table = 3 m
- * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Cd-109

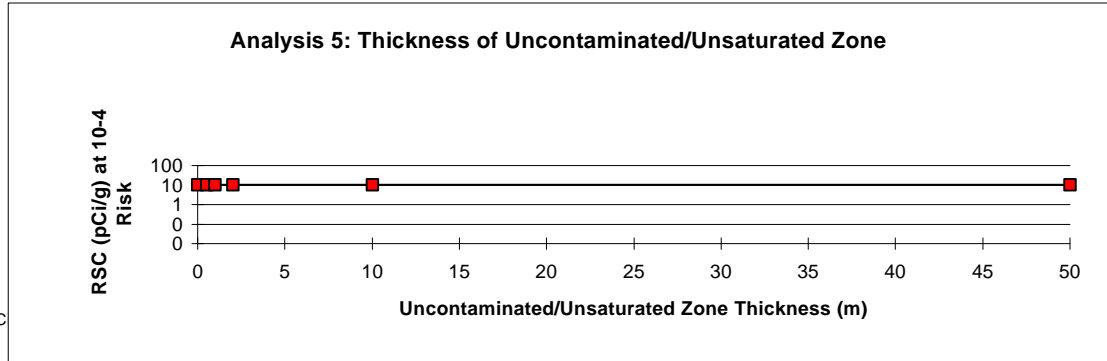
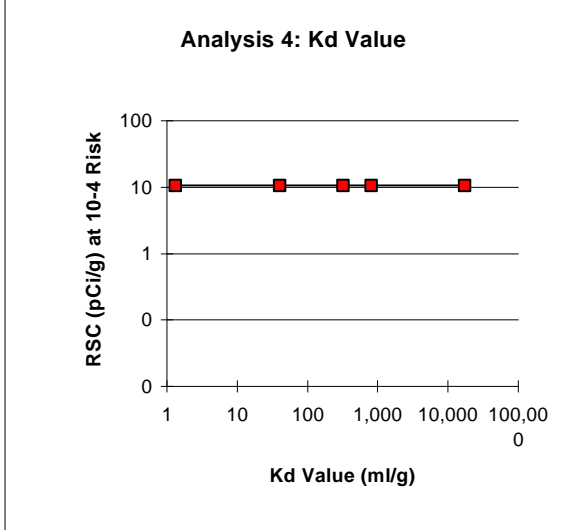
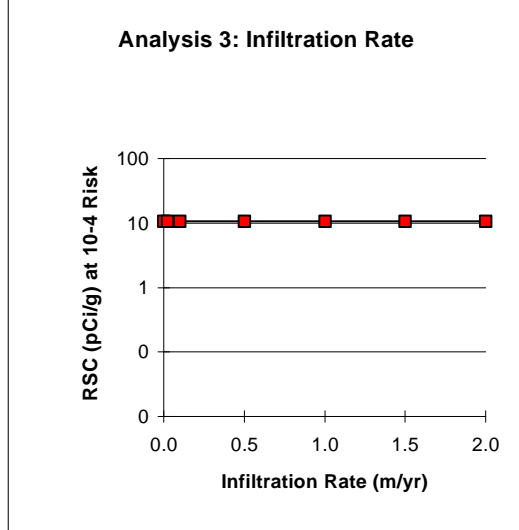
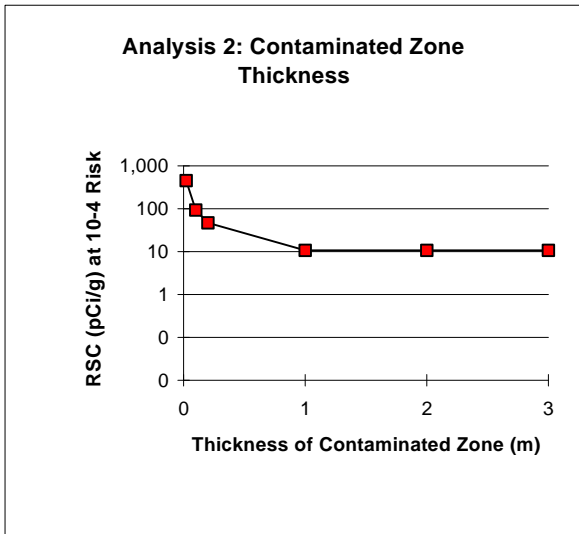
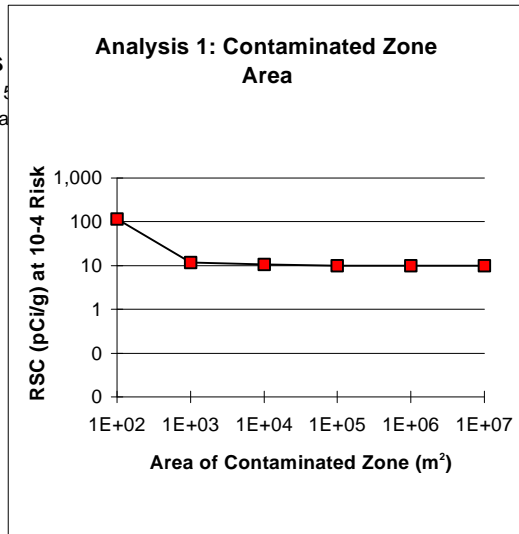
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	8.72E-07	115	0
	1E+03	8.65E-06	12	0
	1E+04	9.38E-06	11	0
	1E+05	1.02E-05	10	0
	1E+06	1.02E-05	10	0
	1E+07	1.02E-05	10	0
#2 Contaminated Zone Thickness (m)	0.02	2.19E-07	457	0
	0.1	1.07E-06	93	0
	0.2	2.12E-06	47	0
	1	9.38E-06	11	0
	2	9.38E-06	11	0
#3 Infiltration Rate (m/yr)	0.001	9.38E-06	11	0
	0.025	9.38E-06	11	0
	0.100	9.38E-06	11	0
	0.500	9.38E-06	11	0
	1	9.38E-06	11	0
#4 Distribution Coefficient (Kd) (ml/g)	1	9.38E-06	11	0
	40	9.38E-06	11	0
	320	9.38E-06	11	0
	800	9.38E-06	11	0
	17,000	9.38E-06	11	0
#5 Uncontaminated Unsat. Zone Thickness (m)	0	9.38E-06	11	0
	1	9.38E-06	11	0
	1	9.38E-06	11	0
	2	9.38E-06	11	0
	10	9.38E-06	11	0
	50	9.38E-06	11	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 40
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Ce-144+D

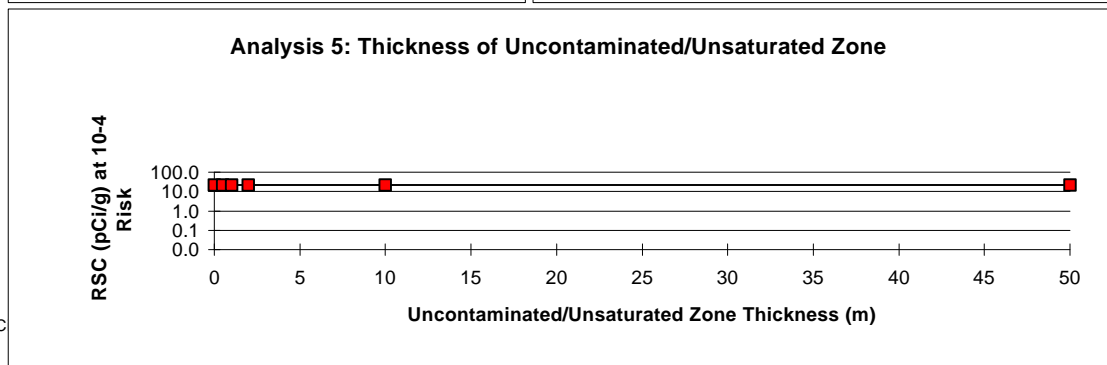
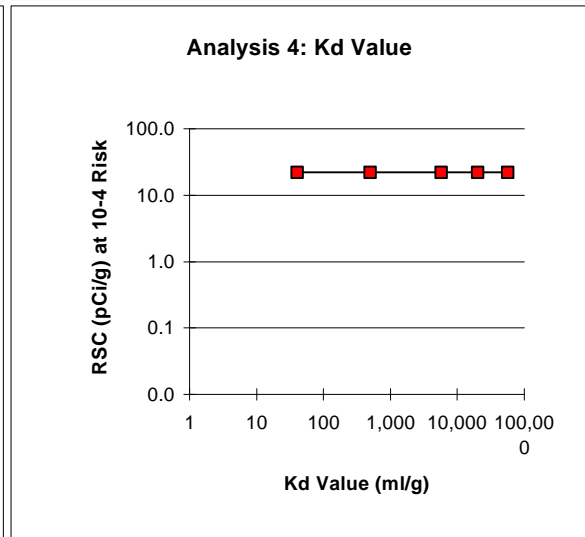
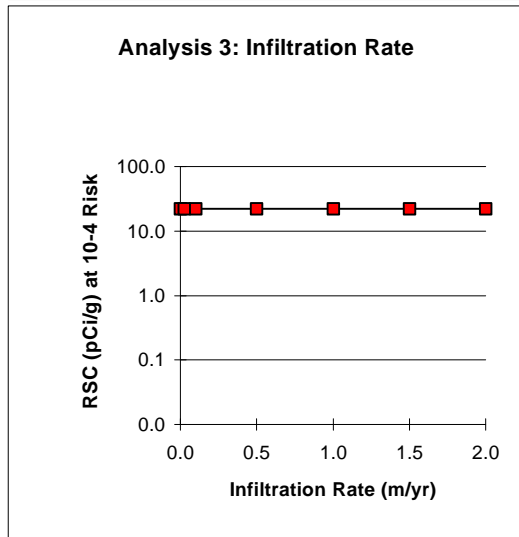
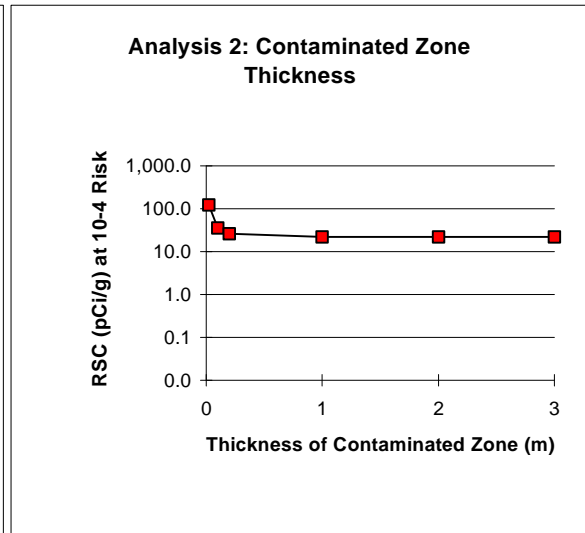
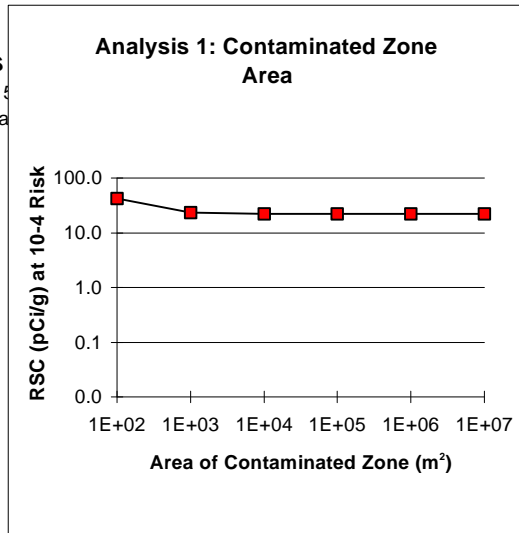
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	2.34E-06	43	0
	1E+03	4.24E-06	24	0
	1E+04	4.49E-06	22	0
	1E+05	4.49E-06	22	0
	1E+06	4.49E-06	22	0
#2 Contaminated Zone Thickness (m)	0.02	8.04E-07	124	0
	0.1	2.78E-06	36	0
	0.2	3.77E-06	27	0
	1	4.49E-06	22	0
	2	4.49E-06	22	0
#3 Infiltration Rate (m/yr)	0.001	4.49E-06	22	0
	0.025	4.49E-06	22	0
	0.100	4.49E-06	22	0
	0.500	4.49E-06	22	0
	1	4.49E-06	22	0
#4 Distribution Coefficient (Kd) (ml/g)	40	4.49E-06	22	0
	500	4.49E-06	22	0
	5,700	4.49E-06	22	0
	20,000	4.49E-06	22	0
	56,000	4.49E-06	22	0
#5 Uncontaminated Unsat. Zone Thickness (m)	0	4.49E-06	22	0
	1	4.49E-06	22	0
	1	4.49E-06	22	0
	2	4.49E-06	22	0
	10	4.49E-06	22	0
	50	4.49E-06	22	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 500
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



CI-36

RESRAD Parameter Sensitivity Analyses

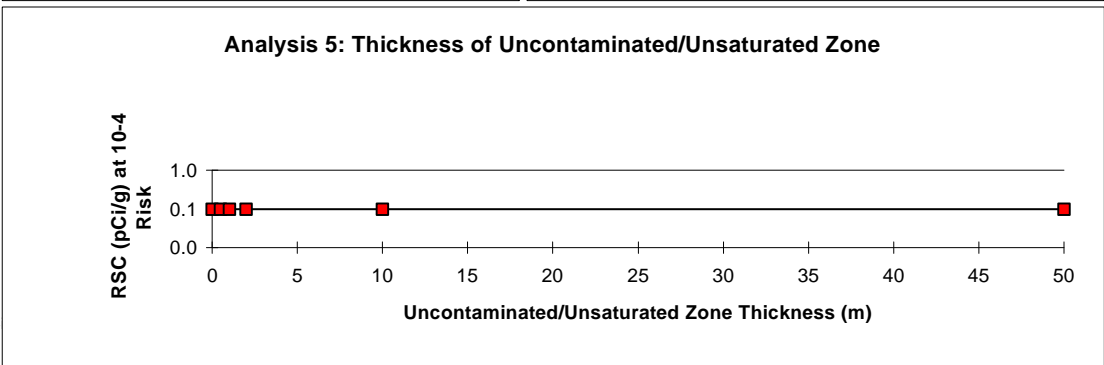
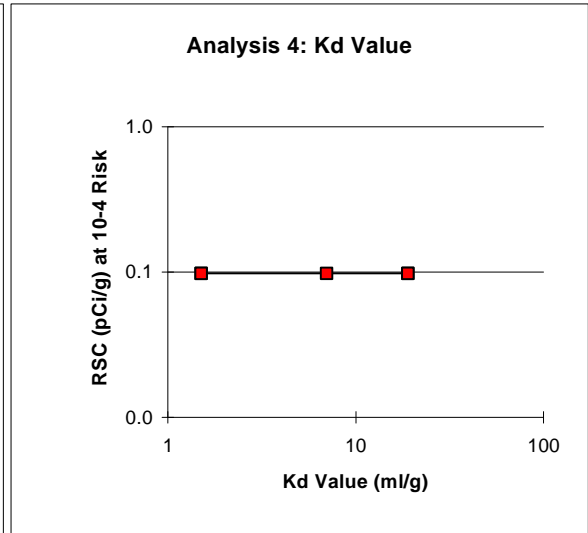
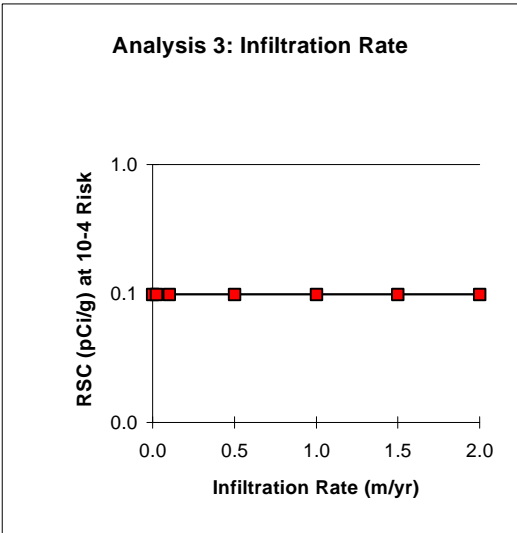
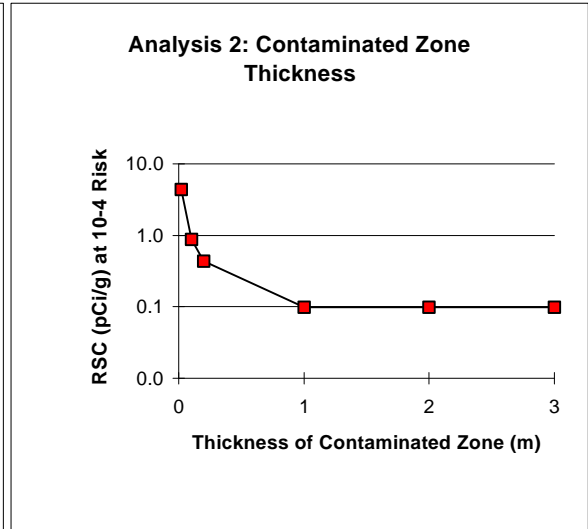
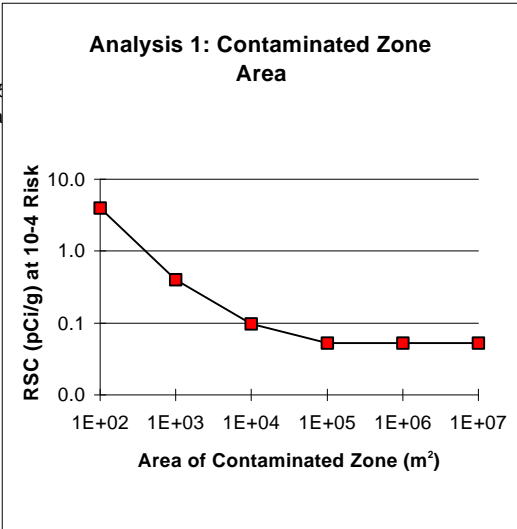
Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	2.49E-05	4.0	0
	1E+03	2.49E-04	0.4	0
	1E+04	1.02E-03	0.1	0
	1E+05	1.88E-03	0.1	0
	1E+06	1.88E-03	0.1	0
#2 Contaminated Zone Thickness (m)	0.02	2.28E-05	4.4	0
	0.1	1.14E-04	0.9	0
	0.2	2.28E-04	0.4	0
	1	1.02E-03	0.1	0
	2	1.02E-03	0.1	0
#3 Infiltration Rate (m/yr)	0.001	1.02E-03	0.1	0
	0.025	1.02E-03	0.1	0
	0.100	1.02E-03	0.1	0
	0.500	1.02E-03	0.1	0
	1	1.02E-03	0.1	0
#4 Distribution Coefficient (Kd) (ml/g)	1.5	1.02E-03	0.1	0
	2	1.02E-03	0.1	0
	2	1.02E-03	0.1	0
	7	1.02E-03	0.1	0
	19	1.02E-03	0.1	0
#5 Uncontaminated/Unsat. Zone Thickness (m)	19	1.02E-03	0.1	0
	0	1.02E-03	0.1	0
	1	1.02E-03	0.1	0
	1	1.02E-03	0.1	0
	2	1.02E-03	0.1	0
	10	1.02E-03	0.1	0
	50	1.02E-03	0.1	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:

- * Agricultural Land Use Exposure Scenario
- * Area of Contaminated Zone = 10,000 m²
- * Thickness of Contaminated Zone = 2 m
- * Infiltration Rate = 0.5 m/yr
- * Kd = 2
- * Thickness of Unsat. Zone = 2 m
- * Well Depth Below Water Table = 3 m
- * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Cm-243

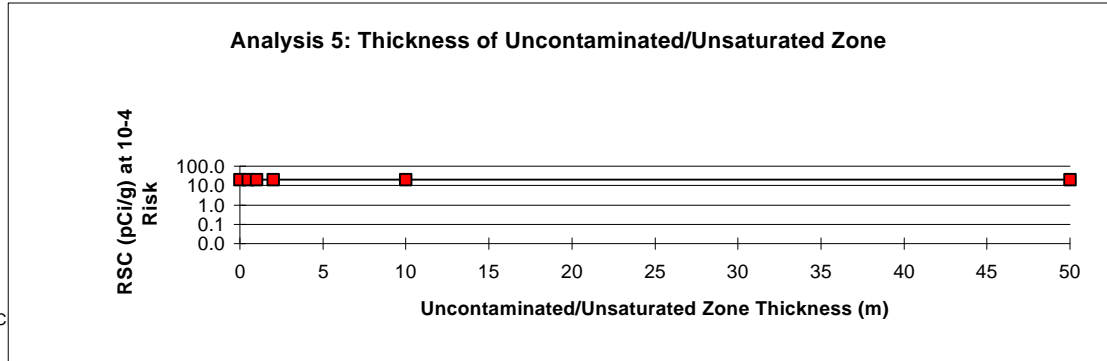
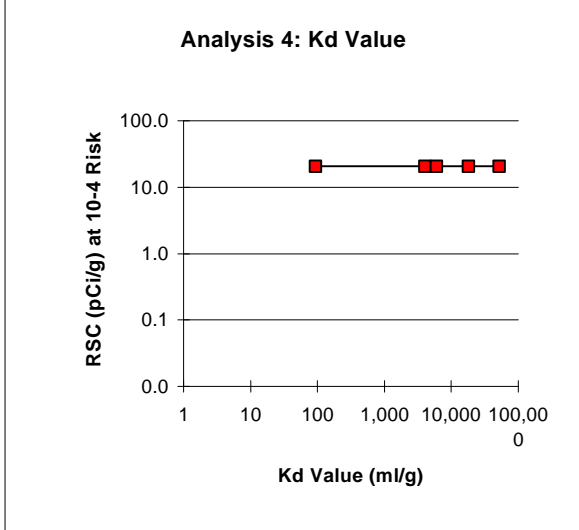
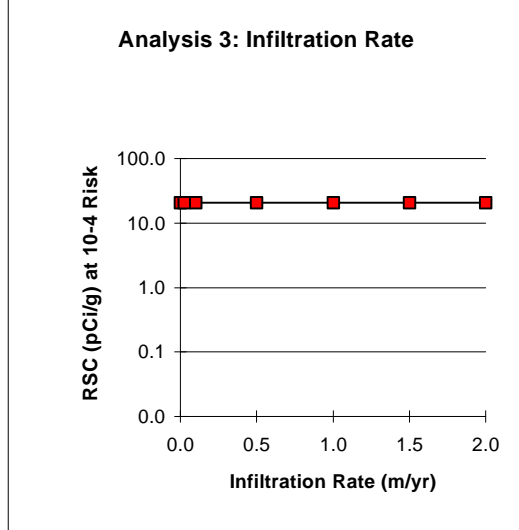
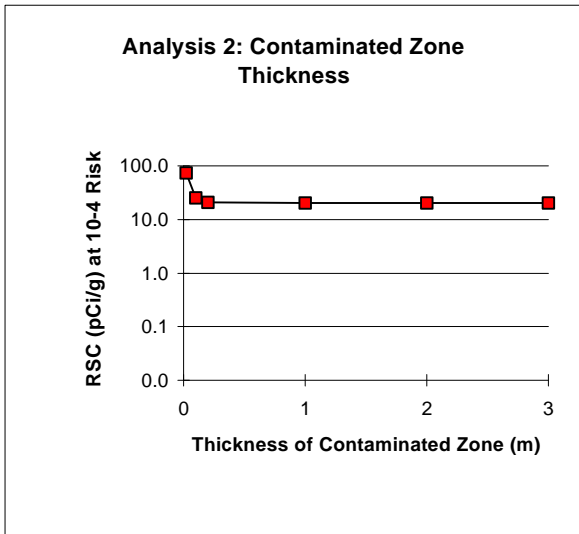
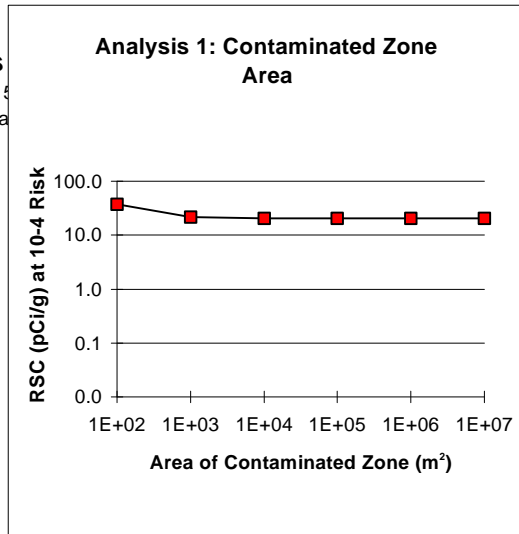
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	2.71E-06	37	0
	1E+03	4.60E-06	22	0
	1E+04	4.87E-06	21	0
	1E+05	4.88E-06	20	0
	1E+06	4.88E-06	20	0
	1E+07	4.88E-06	20	0
#2 Contaminated Zone Thickness (m)	0.02	1.37E-06	73	0
	0.1	3.96E-06	25	0
	0.2	4.73E-06	21	0
	1	4.87E-06	21	0
	2	4.87E-06	21	0
#3 Infiltration Rate (m/yr)	0.001	4.87E-06	21	0
	0.025	4.87E-06	21	0
	0.100	4.87E-06	21	0
	0.500	4.87E-06	21	0
	1	4.87E-06	21	0
#4 Distribution Coefficient (Kd) (ml/g)	1.5	4.87E-06	21	0
	2	4.87E-06	21	0
	93	4.87E-06	21	0
	4,000	4.87E-06	21	0
	6,000	4.87E-06	21	0
#5 Uncontaminated/Unsat. Zone Thickness (m)	18,000	4.87E-06	21	0
	52,000	4.87E-06	21	0
	0	4.87E-06	21	0
	1	4.87E-06	21	0
	1	4.87E-06	21	0
Thickness (m)	2	4.87E-06	21	0
	10	4.87E-06	21	0
	50	4.87E-06	21	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 4,000
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Cm-244

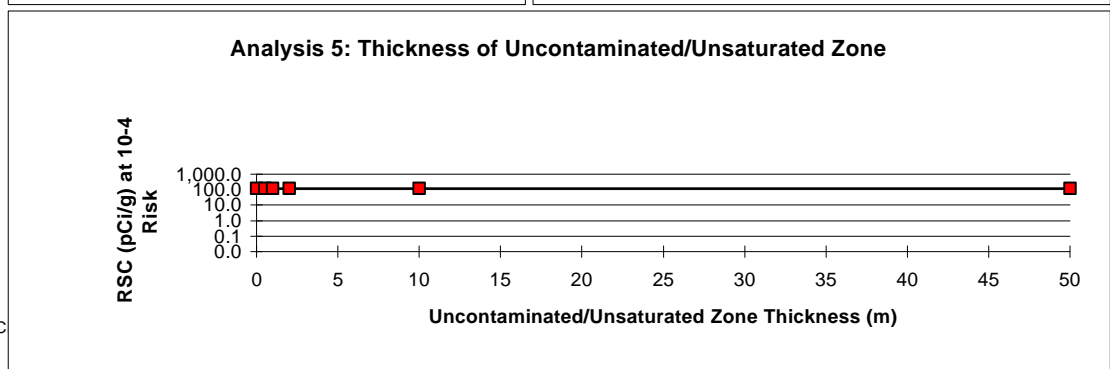
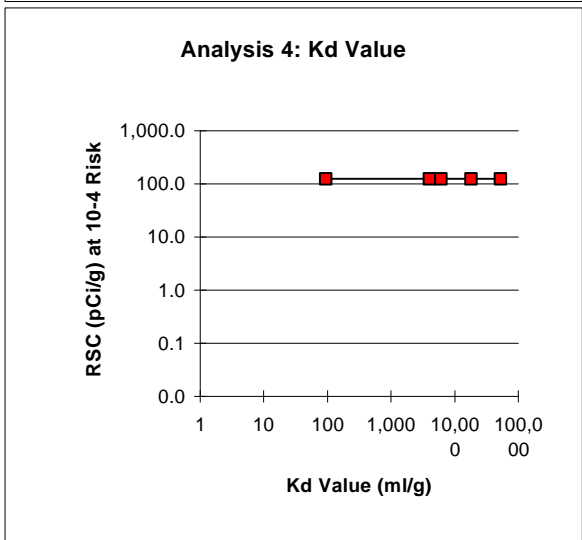
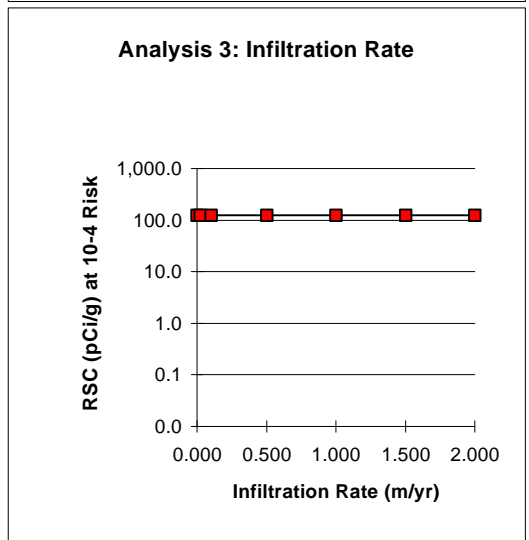
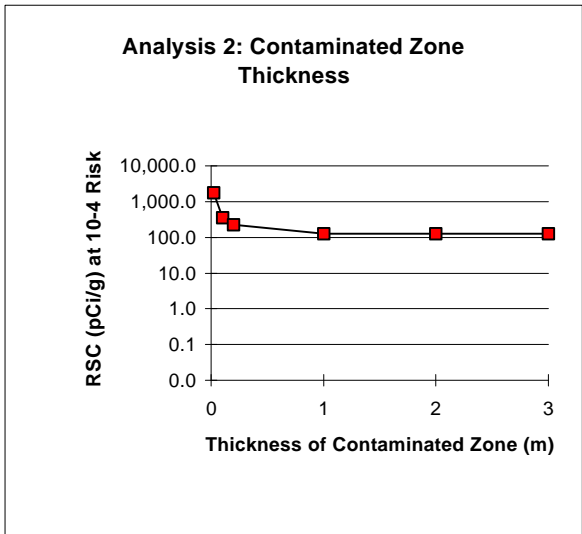
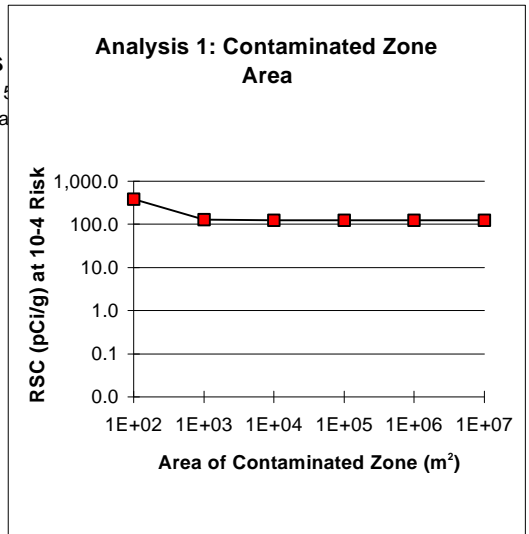
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	2.63E-07	380	0
	1E+03	7.77E-07	129	0
	1E+04	7.98E-07	125	0
	1E+05	8.09E-07	124	0
	1E+06	8.11E-07	123	0
	1E+07	8.11E-07	123	0
#2 Contaminated Zone Thickness (m)	0.02	5.67E-08	1,764	0
	0.1	2.83E-07	354	0
	0.2	4.49E-07	223	0
	1	7.98E-07	125	0
	2	7.98E-07	125	0
#3 Infiltration Rate (m/yr)	0.001	7.98E-07	125	0
	0.025	7.98E-07	125	0
	0.100	7.98E-07	125	0
	0.500	7.98E-07	125	0
	1	7.98E-07	125	0
#4 Distribution Coefficient (Kd) (ml/g)	1.5	7.98E-07	125	0
	2	7.98E-07	125	0
	93	7.98E-07	125	0
	4,000	7.98E-07	125	0
	6,000	7.98E-07	125	0
#5 Uncontaminated Unsat. Zone Thickness (m)	18,000	7.98E-07	125	0
	52,000	7.98E-07	125	0
	0	7.98E-07	125	0
	1	7.98E-07	125	0
	1	7.98E-07	125	0
Thickness (m)	2	7.98E-07	125	0
	10	7.98E-07	125	0
	50	7.98E-07	125	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 4,000
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Cm-248

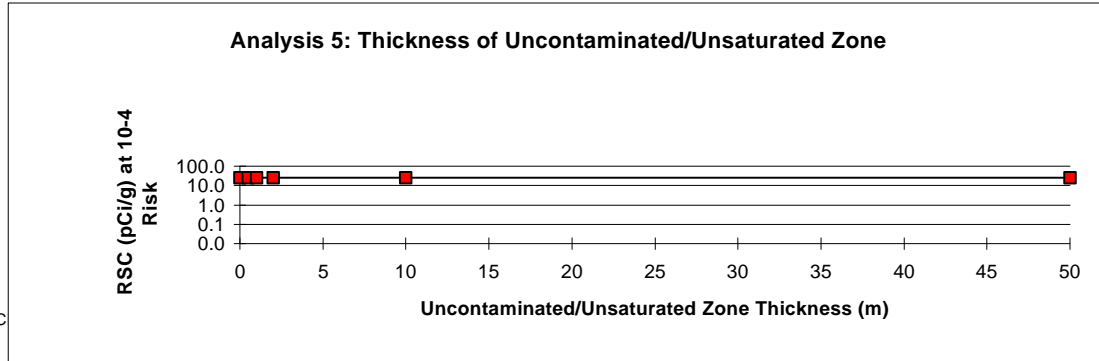
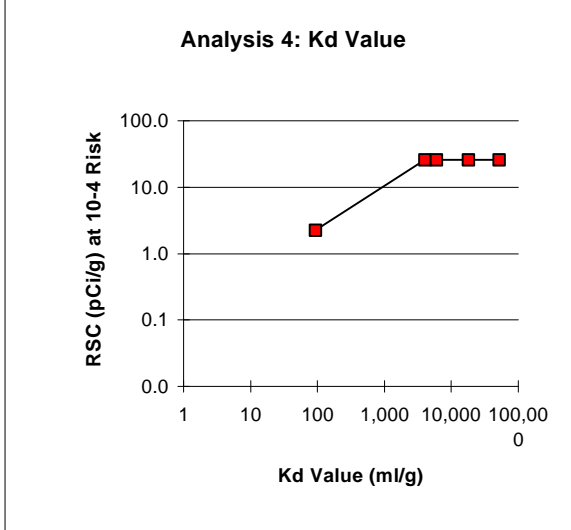
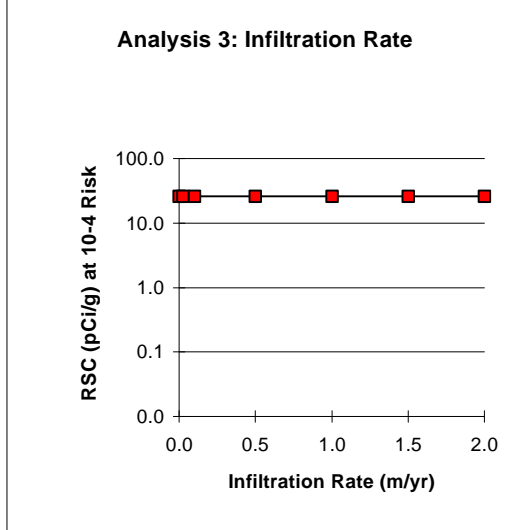
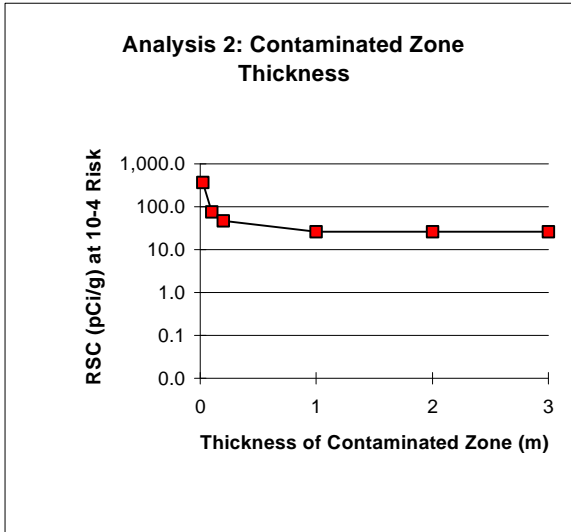
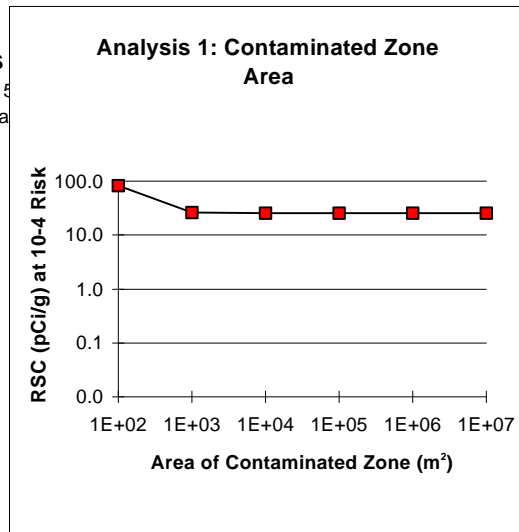
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	1.23E-06	81	0
	1E+03	3.78E-06	26	0
	1E+04	3.88E-06	26	0
	1E+05	3.93E-06	25	0
	1E+06	3.94E-06	25	0
#2 Contaminated Zone Thickness (m)	0.02	2.68E-07	374	0
	0.1	1.34E-06	75	0
	0.2	2.13E-06	47	0
	1	3.88E-06	26	0
	2	3.88E-06	26	0
#3 Infiltration Rate (m/yr)	0.001	3.88E-06	26	0
	0.025	3.88E-06	26	0
	0.100	3.88E-06	26	0
	0.500	3.88E-06	26	0
	1	3.88E-06	26	0
#4 Distribution Coefficient (Kd) (ml/g)	1.5	3.88E-06	26	0
	2	3.88E-06	26	0
	93	4.47E-05	2	303
	4,000	3.88E-06	26	0
	6,000	3.88E-06	26	0
#5 Uncontaminated/Unsat. Zone Thickness (m)	18,000	3.88E-06	26	0
	52,000	3.88E-06	26	0
	0	3.97E-06	25	1,000
	1	3.88E-06	26	0
	1	3.88E-06	26	0
#5 Uncontaminated/Unsat. Zone Thickness (m)	2	3.88E-06	26	0
	10	3.88E-06	26	0
	50	3.88E-06	26	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 4,000
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Co-57

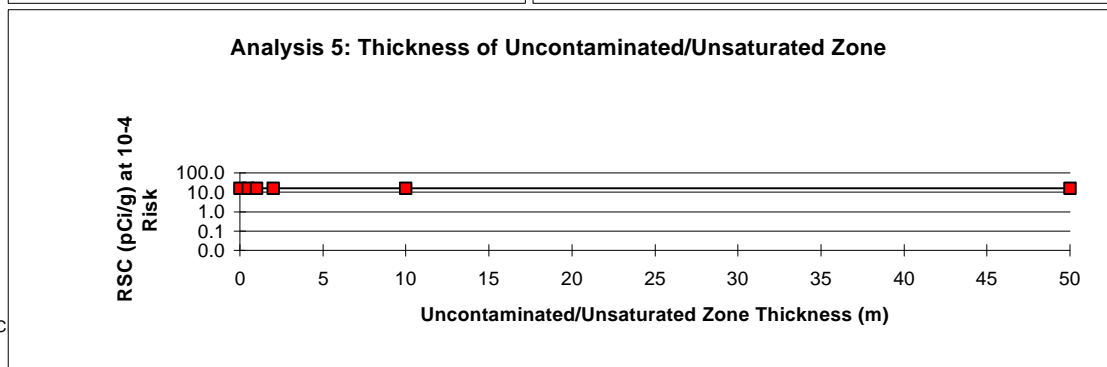
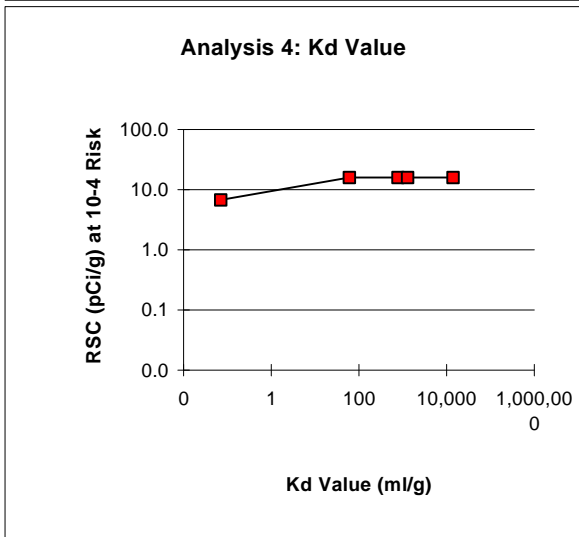
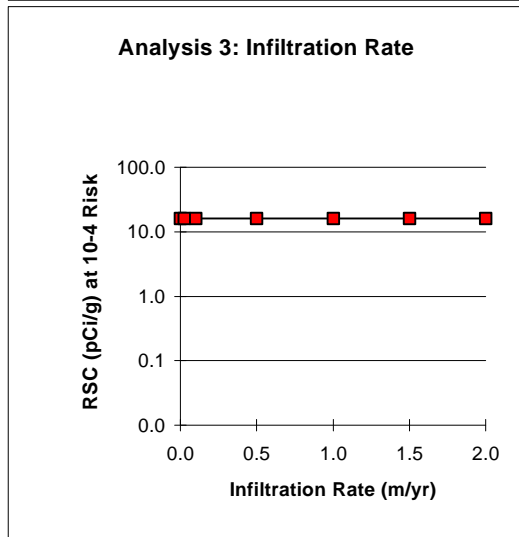
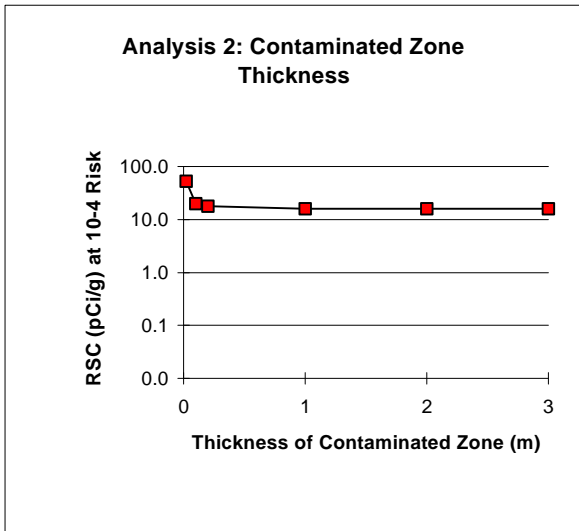
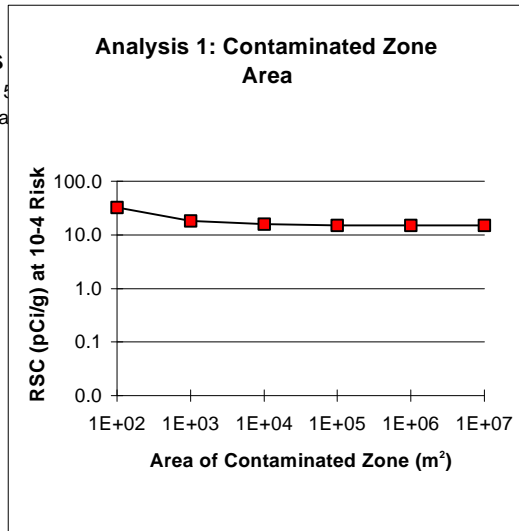
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5.0) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	3.09E-06	32	0
	1E+03	5.57E-06	18	0
	1E+04	6.25E-06	16	0
	1E+05	6.65E-06	15	0
	1E+06	6.65E-06	15	0
#2 Contaminated Zone Thickness (m)	0.02	1.91E-06	52	0
	0.1	4.96E-06	20	0
	0.2	5.65E-06	18	0
	1	6.25E-06	16	0
	2	6.25E-06	16	0
#3 Infiltration Rate (m/yr)	0.001	6.25E-06	16	0
	0.025	6.25E-06	16	0
	0.100	6.25E-06	16	0
	0.500	6.25E-06	16	0
	1	6.25E-06	16	0
#4 Distribution Coefficient (Kd) (ml/g)	0	1.48E-05	7	1
	60	6.25E-06	16	0
	780	6.25E-06	16	0
	1,300	6.25E-06	16	0
	14,000	6.25E-06	16	0
#5 Uncontaminated Unsat. Zone Thickness (m)	0	6.25E-06	16	0
	1	6.25E-06	16	0
	1	6.25E-06	16	0
	2	6.25E-06	16	0
	10	6.25E-06	16	0
	50	6.25E-06	16	0

Note: See text for a detailed discussion of these analyses.

Parameter * Agricultural Land Use Exposure Scenario values assumed * Area of Contaminated Zone = 10,000 m² for base case * Thickness of Contaminated Zone = 2 m analysis: * Infiltration Rate = 0.5 m/yr * Kd = 60 * Thickness of Unsat. Zone = 2 m * Well Depth Below Water Table = 3 m *RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10-4.



Co-60

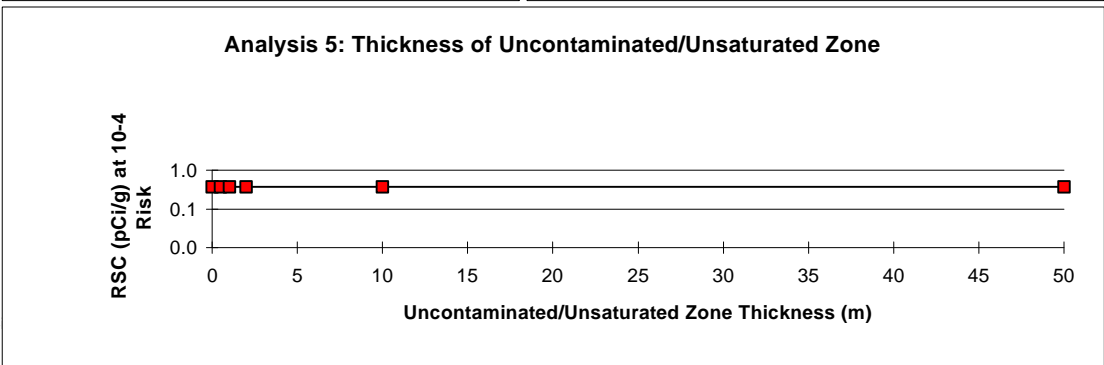
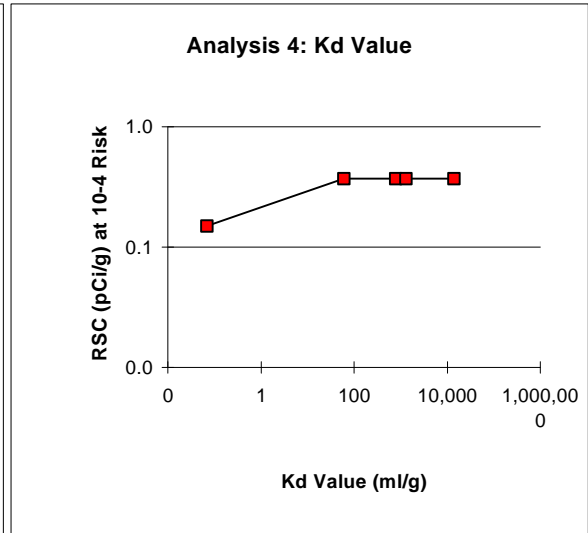
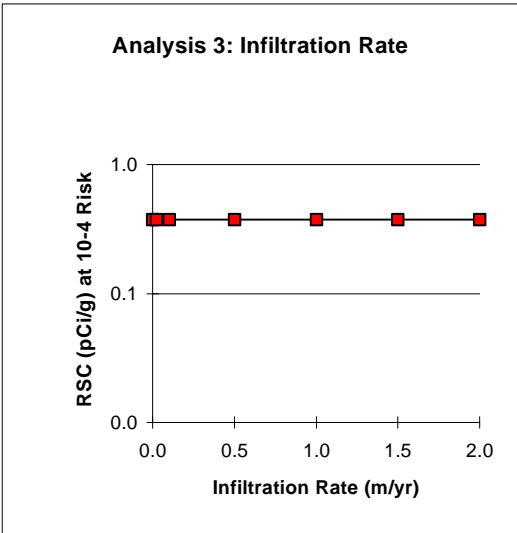
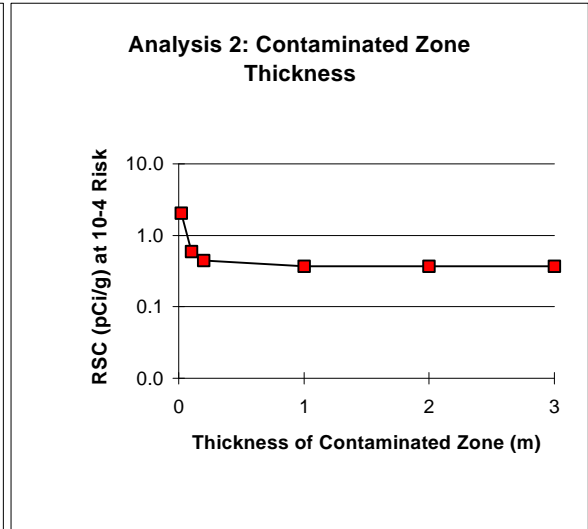
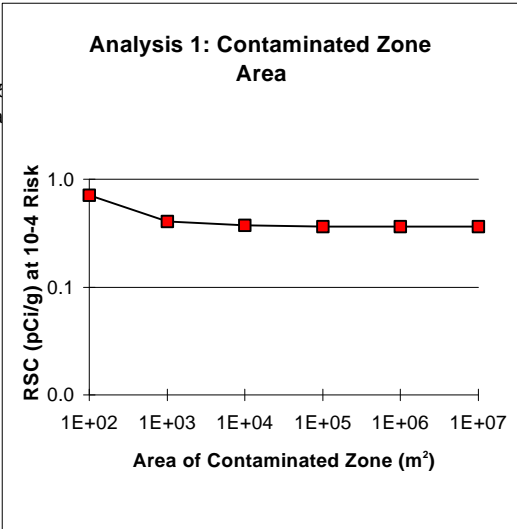
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	1.41E-04	0.7	0
	1E+03	2.47E-04	0.4	0
	1E+04	2.69E-04	0.4	0
	1E+05	2.77E-04	0.4	0
	1E+06	2.77E-04	0.4	0
	1E+07	2.77E-04	0.4	0
#2 Contaminated Zone Thickness (m)	0.02	4.86E-05	2.1	0
	0.1	1.68E-04	0.6	0
	0.2	2.27E-04	0.4	0
	1	2.69E-04	0.4	0
	2	2.69E-04	0.4	0
#3 Infiltration Rate (m/yr)	0.001	2.69E-04	0.4	0
	0.025	2.69E-04	0.4	0
	0.100	2.69E-04	0.4	0
	0.500	2.69E-04	0.4	0
	1	2.69E-04	0.4	0
	1.5	2.69E-04	0.4	0
#4 Distribution Coefficient (Kd) (ml/g)	0	6.65E-04	0.2	1
	60	2.69E-04	0.4	0
	780	2.69E-04	0.4	0
	1,300	2.69E-04	0.4	0
	14,000	2.69E-04	0.4	0
#5 Uncontaminated Unsat. Zone Thickness (m)	0	2.69E-04	0.4	0
	1	2.69E-04	0.4	0
	1	2.69E-04	0.4	0
	2	2.69E-04	0.4	0
	10	2.69E-04	0.4	0
50	2.69E-04	0.4	0	

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 60
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Cs-134

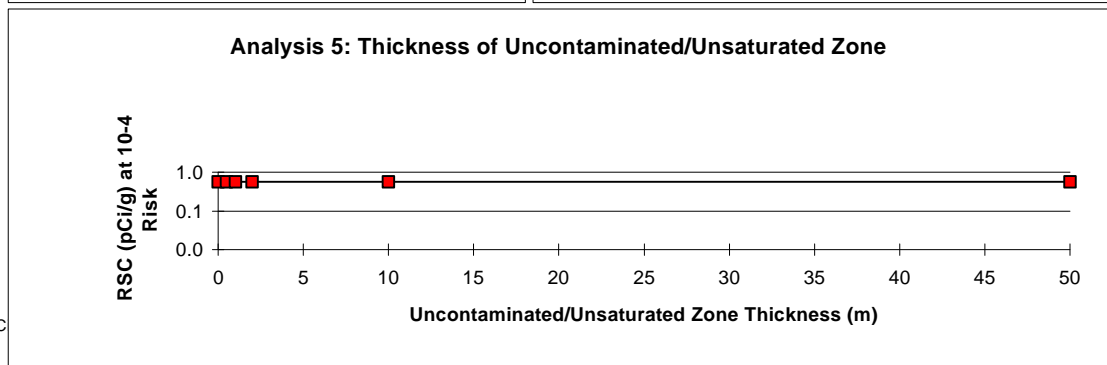
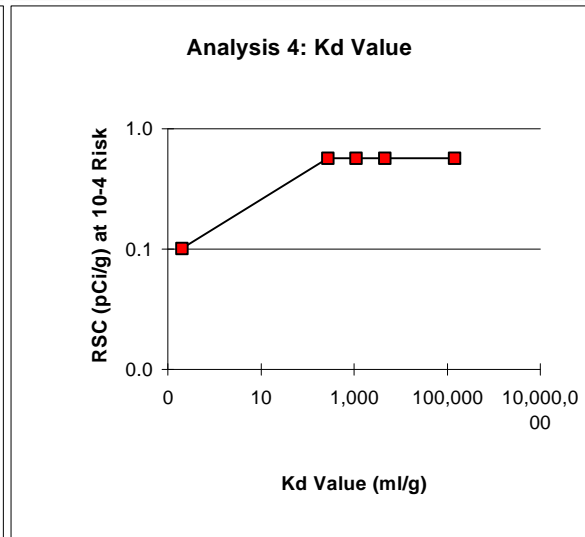
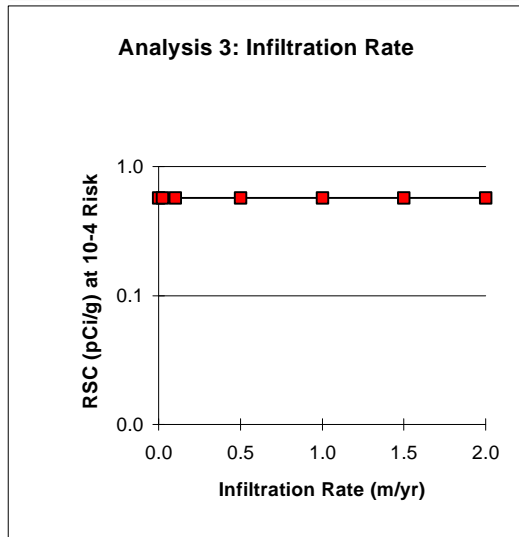
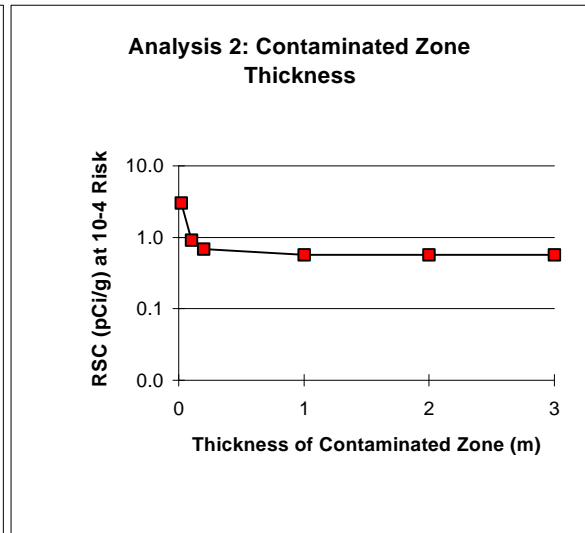
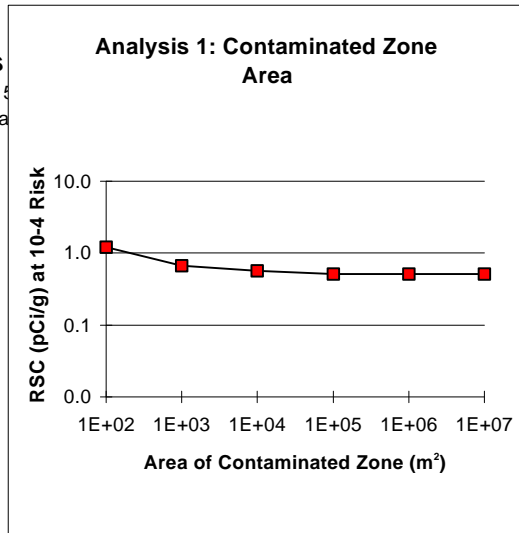
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	8.34E-05	1.2	0
	1E+03	1.50E-04	0.7	0
	1E+04	1.76E-04	0.6	0
	1E+05	1.95E-04	0.5	0
	1E+06	1.95E-04	0.5	0
	1E+07	1.95E-04	0.5	0
#2 Contaminated Zone Thickness (m)	0.02	3.32E-05	3.0	0
	0.1	1.10E-04	0.9	0
	0.2	1.45E-04	0.7	0
	1	1.76E-04	0.6	0
	2	1.76E-04	0.6	0
#3 Infiltration Rate (m/yr)	0.001	1.76E-04	0.6	0
	0.025	1.76E-04	0.6	0
	0.100	1.76E-04	0.6	0
	0.500	1.76E-04	0.6	0
	1	1.76E-04	0.6	0
	1.5	1.76E-04	0.6	0
#4 Distribution Coefficient (Kd) (ml/g)	0	9.92E-04	0.1	1
	270	1.76E-04	0.6	0
	1,100	1.76E-04	0.6	0
	4,600	1.76E-04	0.6	0
	145,000	1.76E-04	0.6	0
#5 Uncontaminated Unsat. Zone Thickness (m)	0	1.76E-04	0.6	0
	1	1.76E-04	0.6	0
	1	1.76E-04	0.6	0
	2	1.76E-04	0.6	0
	10	1.76E-04	0.6	0
50	1.76E-04	0.6	0	

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 270
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Cs-135

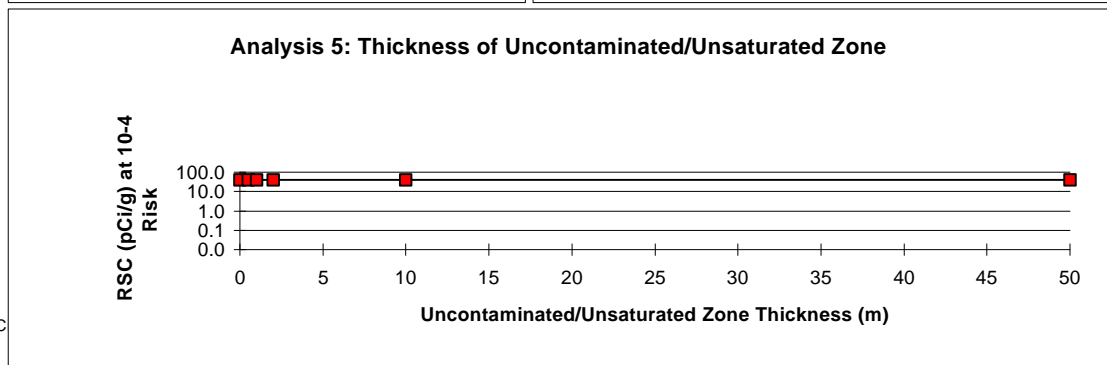
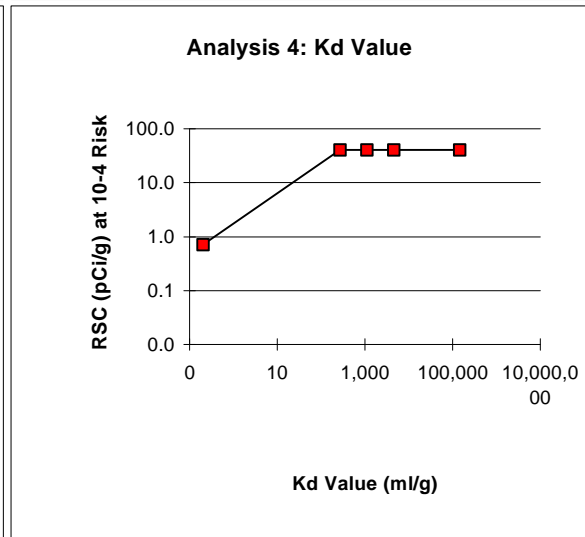
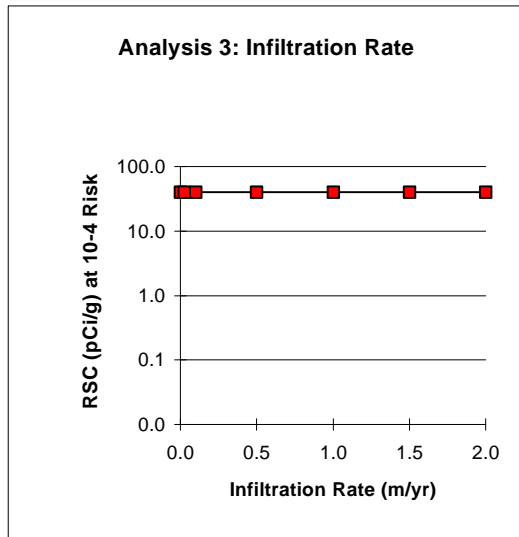
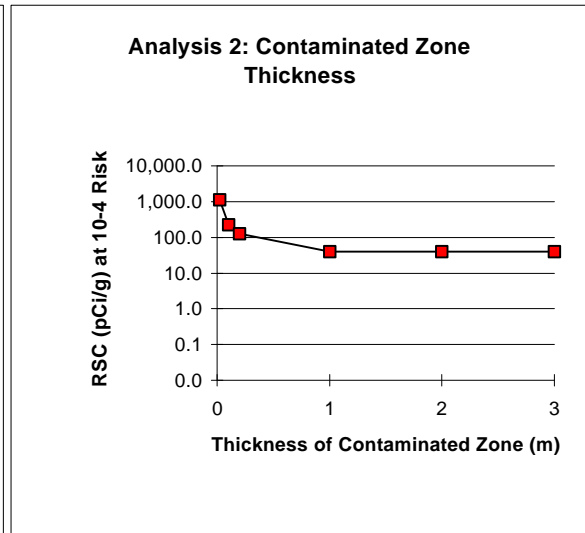
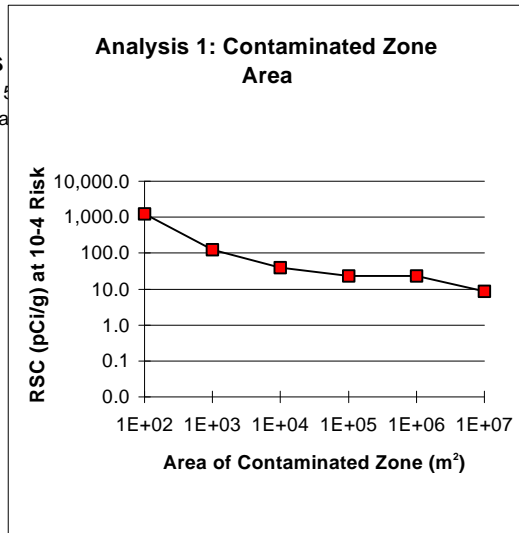
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	8.17E-08	1,223.8	0
	1E+03	8.17E-07	122.4	0
	1E+04	2.50E-06	40.1	0
	1E+05	4.36E-06	22.9	0
	1E+06	4.36E-06	22.9	0
	1E+07	1.15E-05	8.7	1,000
#2 Contaminated Zone Thickness (m)	0.02	8.96E-08	1,116.1	0
	0.1	4.48E-07	223.2	0
	0.2	7.94E-07	126.0	0
	1	2.50E-06	40.1	0
	2	2.50E-06	40.1	0
#3 Infiltration Rate (m/yr)	0.001	2.50E-06	40.1	0
	0.025	2.50E-06	40.1	0
	0.100	2.50E-06	40.1	0
	0.500	2.50E-06	40.1	0
	1	2.50E-06	40.1	0
	1.5	2.50E-06	40.1	0
#4 Distribution Coefficient (Kd) (ml/g)	0	1.41E-04	0.7	1
	270	2.50E-06	40.1	0
	1,100	2.50E-06	40.1	0
	4,600	2.50E-06	40.1	0
	145,000	2.50E-06	40.1	0
#5 Uncontaminated Unsat. Zone Thickness (m)	0	2.50E-06	40.1	0
	1	2.50E-06	40.1	0
	1	2.50E-06	40.1	0
	2	2.50E-06	40.1	0
	10	2.50E-06	40.1	0
50	2.50E-06	40.1	0	

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 270
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Cs-137

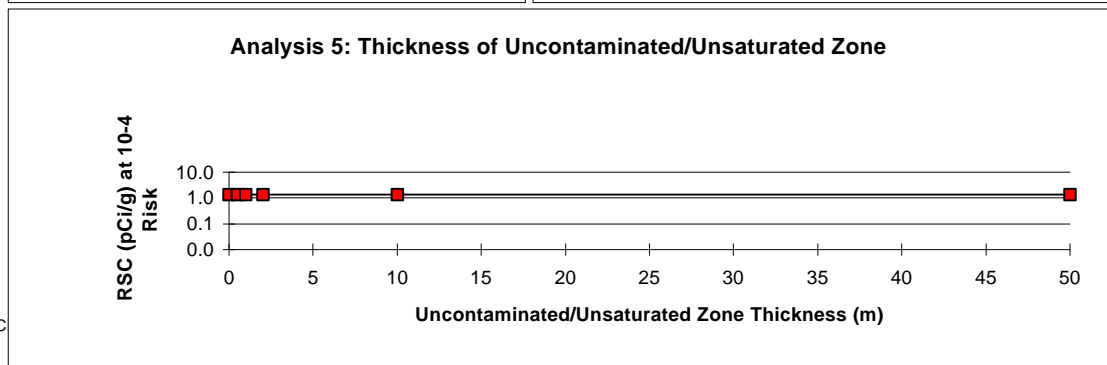
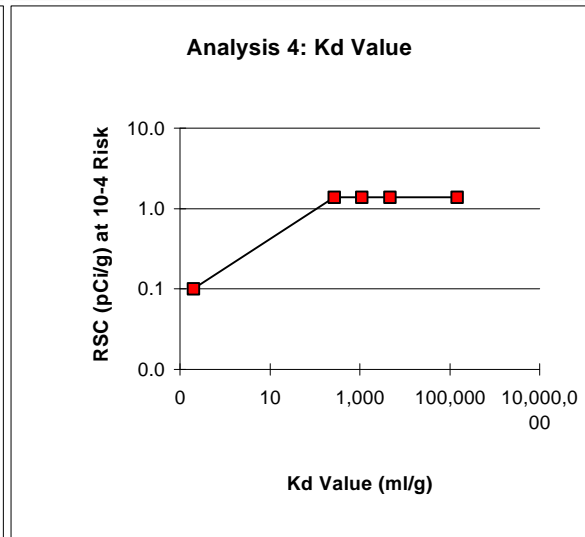
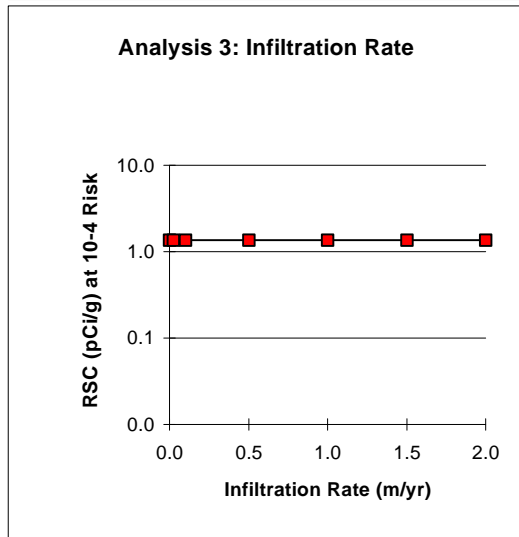
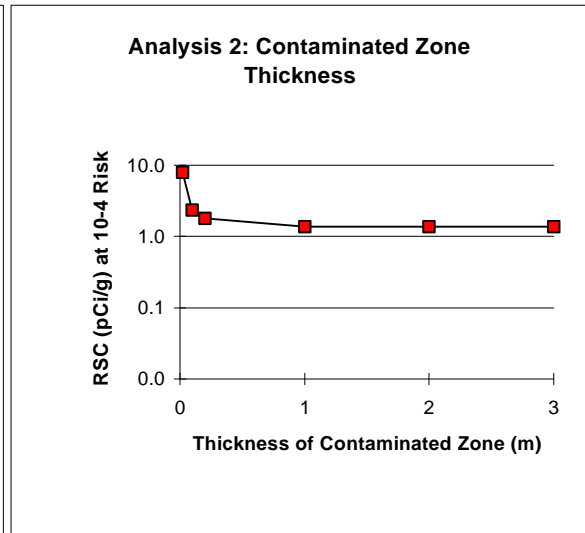
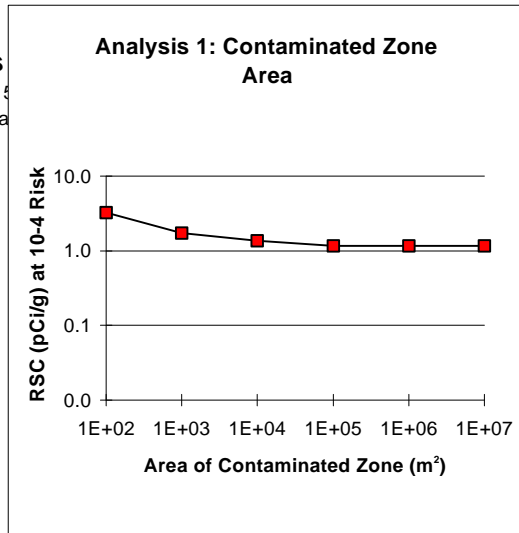
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	3.11E-05	3.2	0
	1E+03	5.81E-05	1.7	0
	1E+04	7.30E-05	1.4	0
	1E+05	8.60E-05	1.2	0
	1E+06	8.60E-05	1.2	0
	1E+07	8.60E-05	1.2	0
#2 Contaminated Zone Thickness (m)	0.02	1.26E-05	7.9	0
	0.1	4.22E-05	2.4	0
	0.2	5.62E-05	1.8	0
	1	7.30E-05	1.4	0
	2	7.30E-05	1.4	0
#3 Infiltration Rate (m/yr)	0.001	7.30E-05	1.4	0
	0.025	7.30E-05	1.4	0
	0.100	7.30E-05	1.4	0
	0.500	7.30E-05	1.4	0
	1	7.30E-05	1.4	0
	1.5	7.30E-05	1.4	0
#4 Distribution Coefficient (Kd) (ml/g)	0	9.86E-04	0.1	1
	270	7.30E-05	1.4	0
	1,100	7.30E-05	1.4	0
	4,600	7.30E-05	1.4	0
	145,000	7.30E-05	1.4	0
#5 Uncontaminated Unsat. Zone Thickness (m)	0	7.30E-05	1.4	0
	1	7.30E-05	1.4	0
	1	7.30E-05	1.4	0
	2	7.30E-05	1.4	0
	10	7.30E-05	1.4	0
50	7.30E-05	1.4	0	

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 270
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 *RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Eu-152

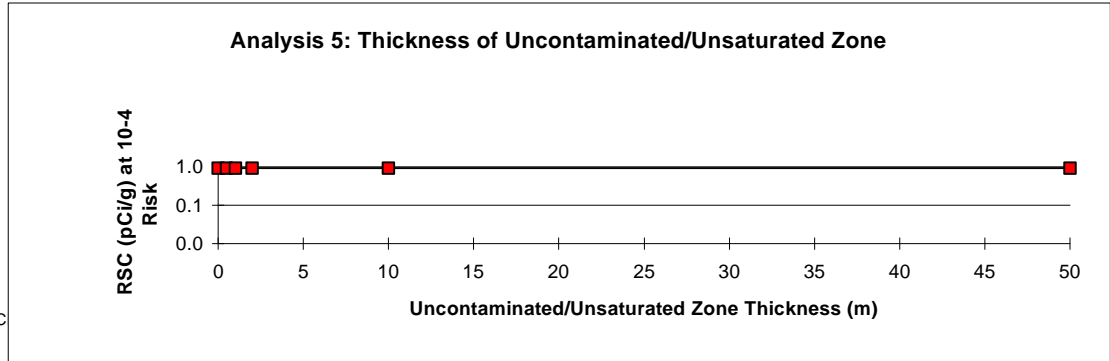
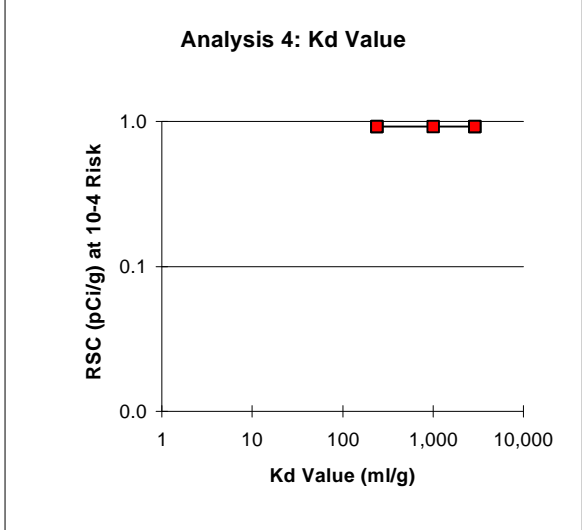
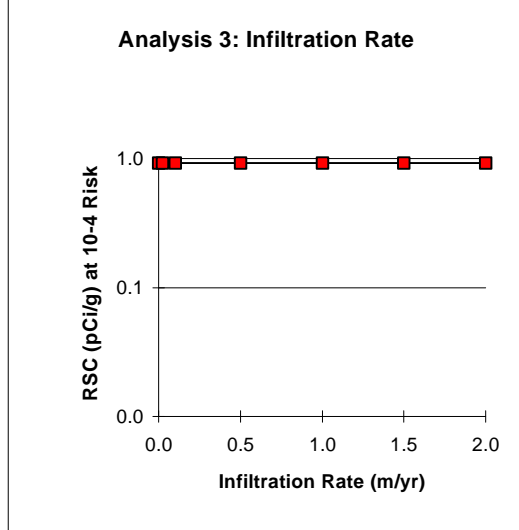
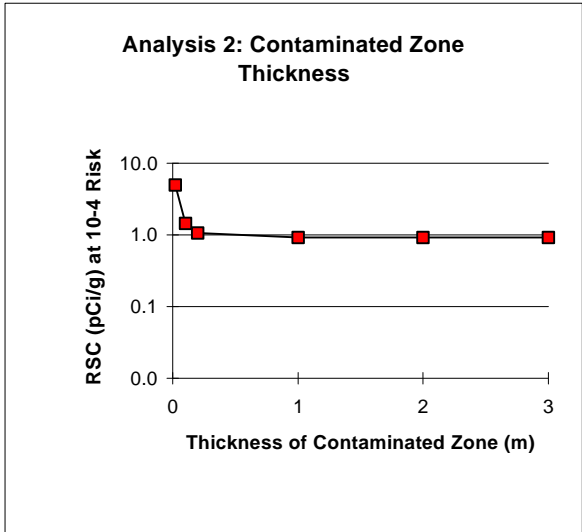
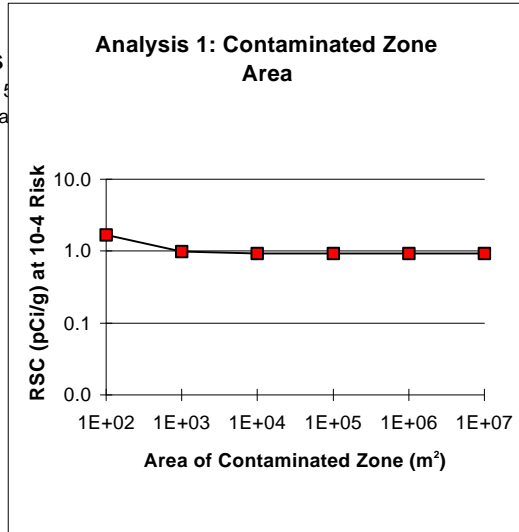
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	5.94E-05	1.7	0
	1E+03	1.02E-04	1.0	0
	1E+04	1.08E-04	0.9	0
	1E+05	1.08E-04	0.9	0
	1E+06	1.08E-04	0.9	0
	1E+07	1.08E-04	0.9	0
#2 Contaminated Zone Thickness (m)	0.02	2.01E-05	5.0	0
	0.1	6.94E-05	1.4	0
	0.2	9.42E-05	1.1	0
	1	1.08E-04	0.9	0
	2	1.08E-04	0.9	0
#3 Infiltration Rate (m/yr)	0.001	1.08E-04	0.9	0
	0.025	1.08E-04	0.9	0
	0.100	1.08E-04	0.9	0
	0.500	1.08E-04	0.9	0
	1	1.08E-04	0.9	0
#4 Distribution Coefficient (Kd) (ml/g)	1.5	1.08E-04	0.9	0
	2	1.08E-04	0.9	0
	240	1.08E-04	0.9	0
	240	1.08E-04	0.9	0
	2,900	1.08E-04	0.9	0
#5 Uncontaminated Unsat. Zone Thickness (m)	2,900	1.08E-04	0.9	0
	0	1.08E-04	0.9	0
	1	1.08E-04	0.9	0
	1	1.08E-04	0.9	0
	2	1.08E-04	0.9	0
	10	1.08E-04	0.9	0
	50	1.08E-04	0.9	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 240
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 *RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Eu-154

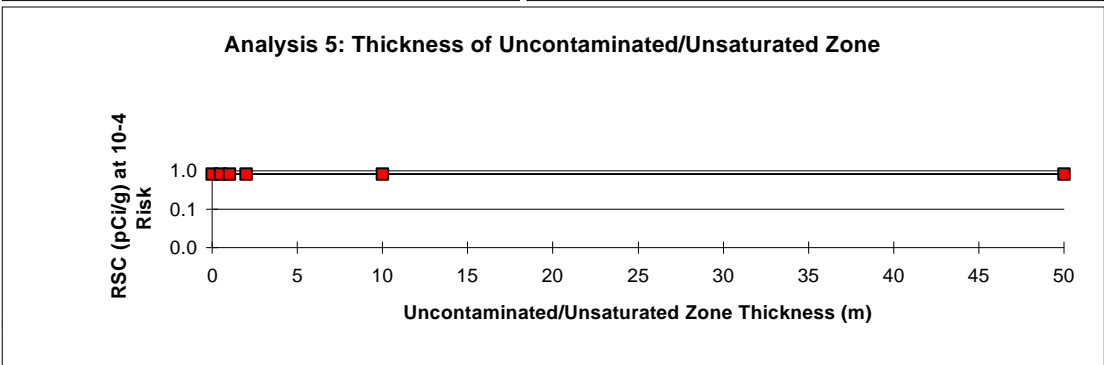
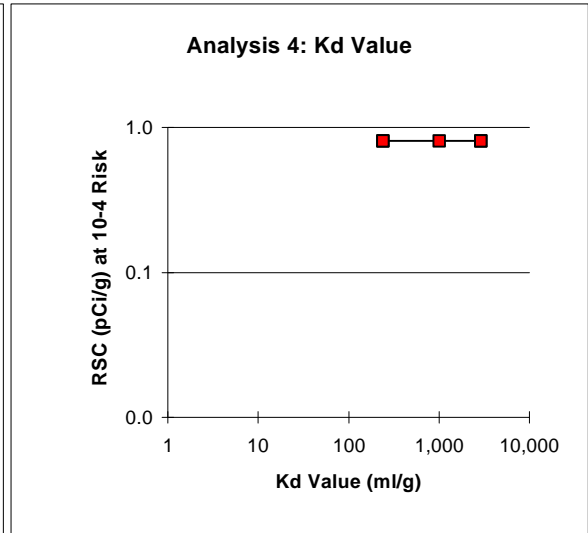
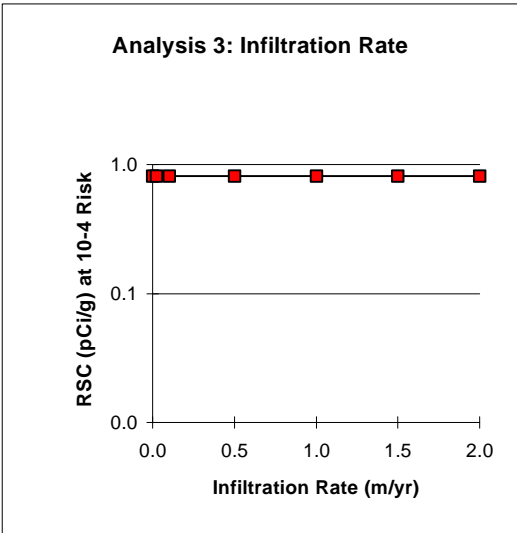
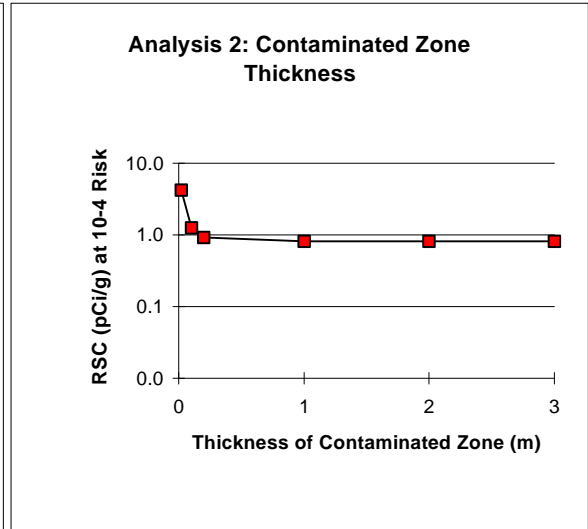
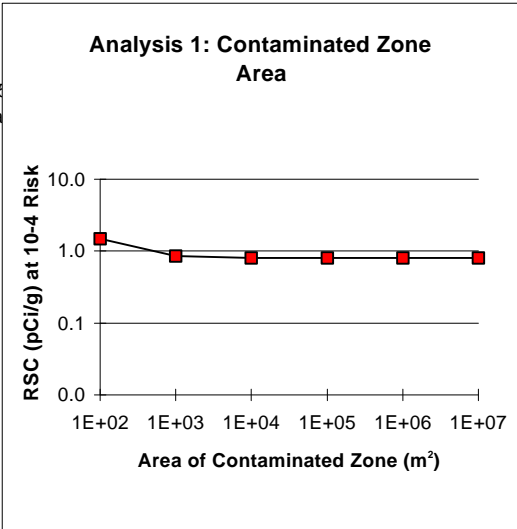
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	6.77E-05	1.5	0
	1E+03	1.16E-04	0.9	0
	1E+04	1.23E-04	0.8	0
	1E+05	1.23E-04	0.8	0
	1E+06	1.23E-04	0.8	0
	1E+07	1.23E-04	0.8	0
#2 Contaminated Zone Thickness (m)	0.02	2.35E-05	4.3	0
	0.1	8.05E-05	1.2	0
	0.2	1.08E-04	0.9	0
	1	1.23E-04	0.8	0
	2	1.23E-04	0.8	0
#3 Infiltration Rate (m/yr)	0.001	1.23E-04	0.8	0
	0.025	1.23E-04	0.8	0
	0.100	1.23E-04	0.8	0
	0.500	1.23E-04	0.8	0
	1	1.23E-04	0.8	0
#4 Distribution Coefficient (Kd) (ml/g)	1.5	1.23E-04	0.8	0
	2	1.23E-04	0.8	0
	240	1.23E-04	0.8	0
	240	1.23E-04	0.8	0
	2,900	1.23E-04	0.8	0
#5 Uncontaminated Unsaturated Zone Thickness (m)	2,900	1.23E-04	0.8	0
	0	1.23E-04	0.8	0
	1	1.23E-04	0.8	0
	1	1.23E-04	0.8	0
	2	1.23E-04	0.8	0
	10	1.23E-04	0.8	0
	50	1.23E-04	0.8	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 240
 * Thickness of Unsaturated Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Eu-155

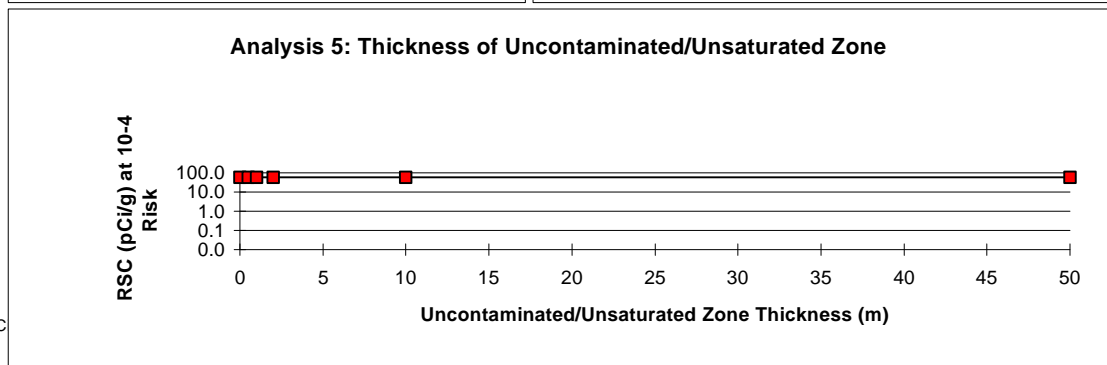
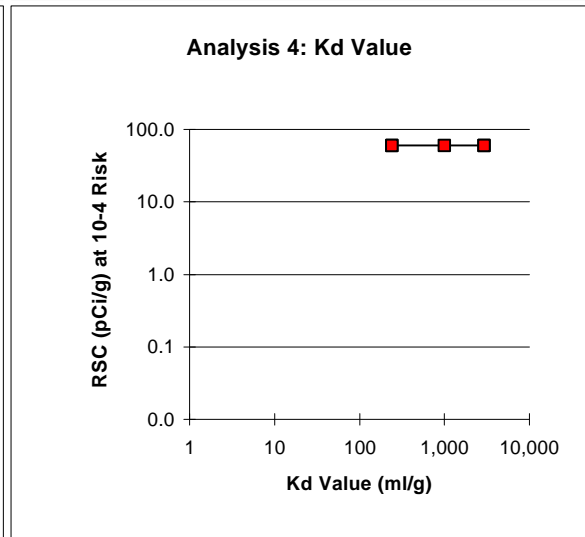
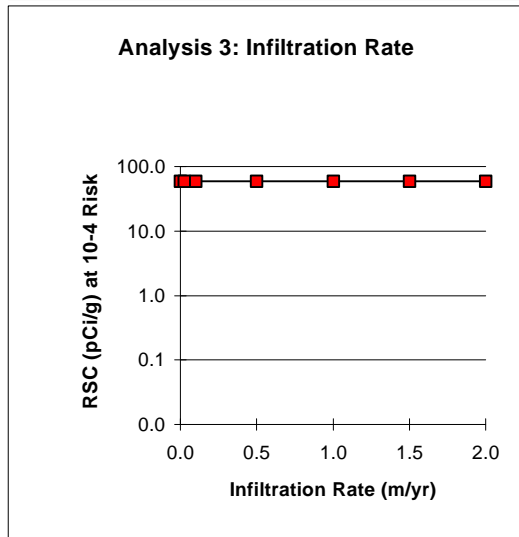
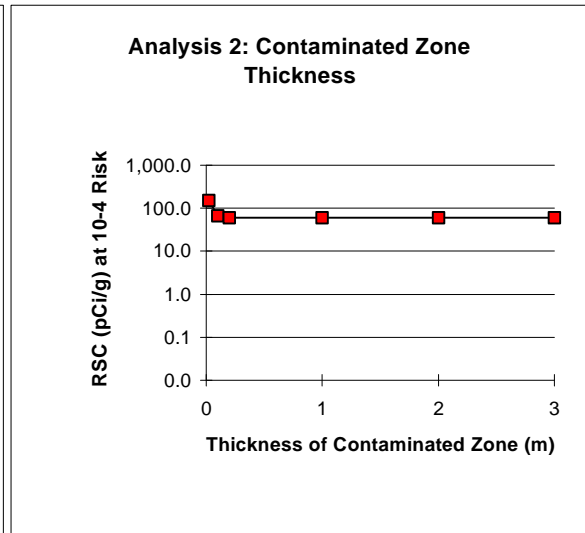
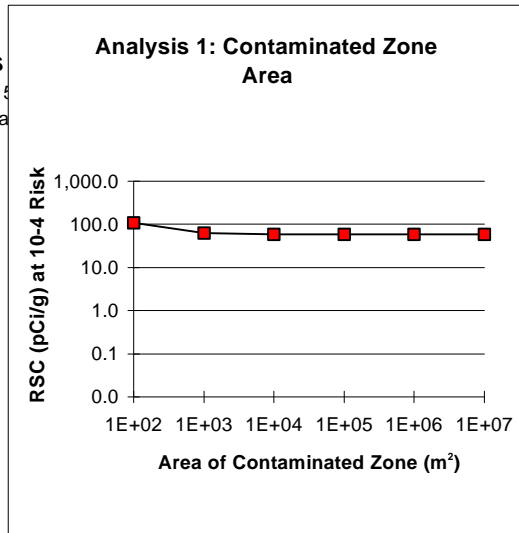
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	9.10E-07	109.9	0
	1E+03	1.58E-06	63.5	0
	1E+04	1.68E-06	59.6	0
	1E+05	1.69E-06	59.3	0
	1E+06	1.69E-06	59.3	0
	1E+07	1.69E-06	59.3	0
#2 Contaminated Zone Thickness (m)	0.02	6.50E-07	153.8	0
	0.1	1.52E-06	65.7	0
	0.2	1.65E-06	60.6	0
	1	1.68E-06	59.6	0
	2	1.68E-06	59.6	0
#3 Infiltration Rate (m/yr)	0.001	1.68E-06	59.6	0
	0.025	1.68E-06	59.6	0
	0.100	1.68E-06	59.6	0
	0.500	1.68E-06	59.6	0
	1	1.68E-06	59.6	0
#4 Distribution Coefficient (Kd) (ml/g)	1.5	1.68E-06	59.6	0
	2	1.68E-06	59.6	0
	240	1.68E-06	59.6	0
	240	1.68E-06	59.6	0
	1,000	1.68E-06	59.6	0
#5 Uncontaminated Unsat. Zone Thickness (m)	2,900	1.68E-06	59.6	0
	2,900	1.68E-06	59.6	0
	0	1.68E-06	59.6	0
	1	1.68E-06	59.6	0
	1	1.68E-06	59.6	0
Thickness (m)	2	1.68E-06	59.6	0
	10	1.68E-06	59.6	0
	50	1.68E-06	59.6	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 240
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Fe-55

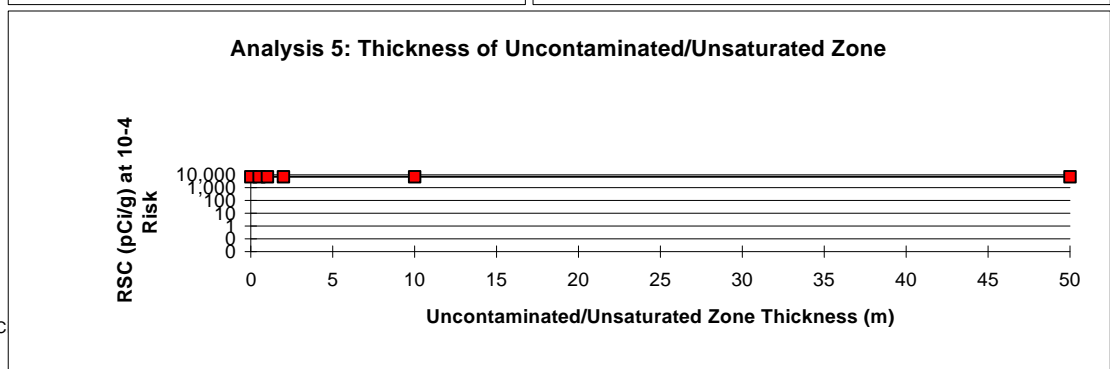
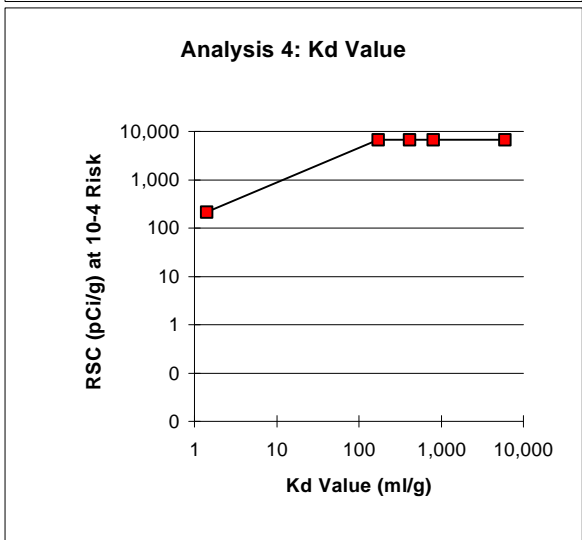
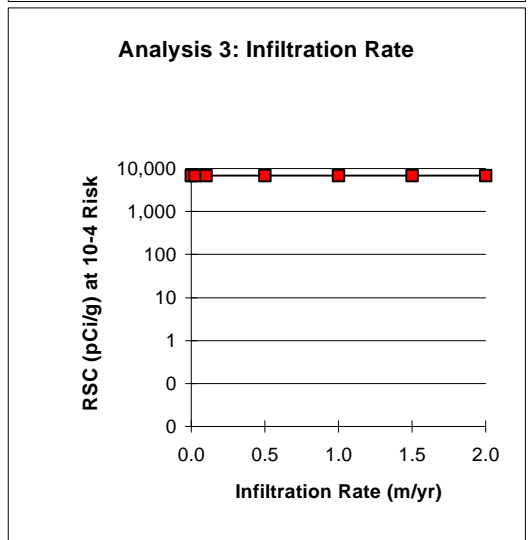
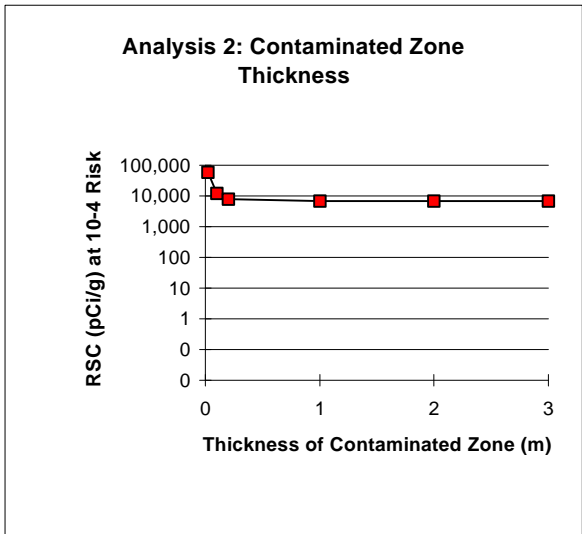
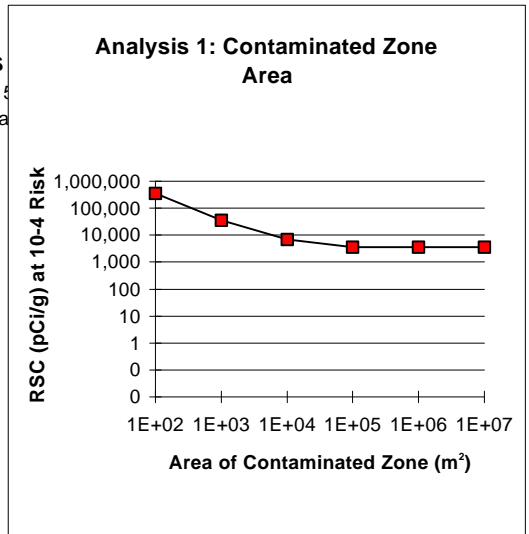
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	2.87E-10	348,432	0
	1E+03	2.80E-09	35,714	0
	1E+04	1.48E-08	6,761	0
	1E+05	2.81E-08	3,556	0
	1E+06	2.81E-08	3,556	0
	1E+07	2.81E-08	3,556	0
#2 Contaminated Zone Thickness (m)	0.02	1.66E-09	60,132	0
	0.1	8.32E-09	12,024	0
	0.2	1.26E-08	7,918	0
	1	1.48E-08	6,761	0
	2	1.48E-08	6,761	0
#3 Infiltration Rate (m/yr)	0.001	1.48E-08	6,761	0
	0.025	1.48E-08	6,761	0
	0.100	1.48E-08	6,761	0
	0.500	1.48E-08	6,761	0
	1	1.48E-08	6,761	0
#4 Distribution Coefficient (Kd) (ml/g)	1	4.71E-07	212	5
	170	1.48E-08	6,761	0
	410	1.48E-08	6,761	0
	800	1.48E-08	6,761	0
	6,000	1.48E-08	6,761	0
#5 Uncontaminated/Unsat. Zone Thickness (m)	0	1.48E-08	6,761	0
	1	1.48E-08	6,761	0
	1	1.48E-08	6,761	0
	2	1.48E-08	6,761	0
	10	1.48E-08	6,761	0
50	1.48E-08	6,761	0	

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 170
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10-4.



Gd-153

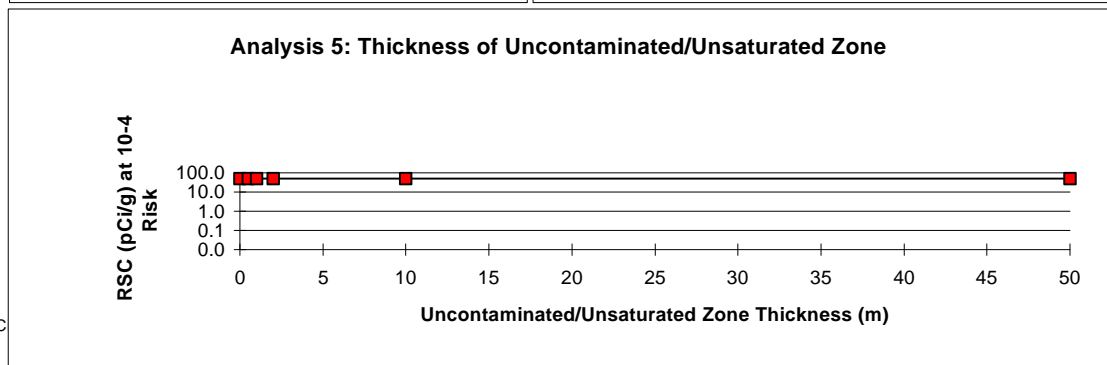
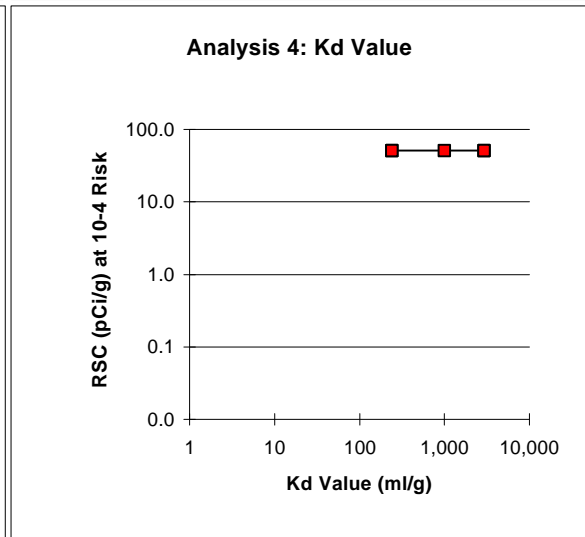
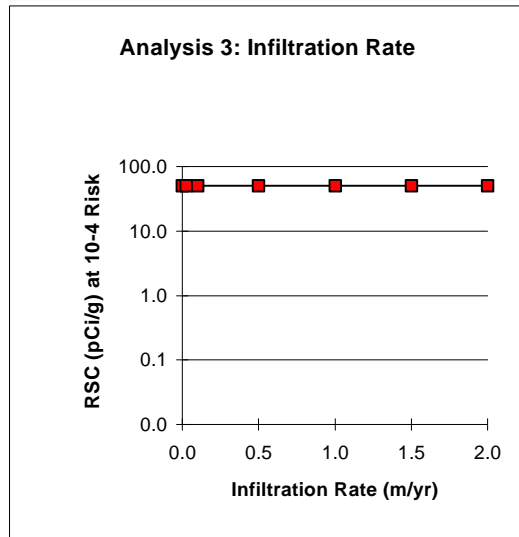
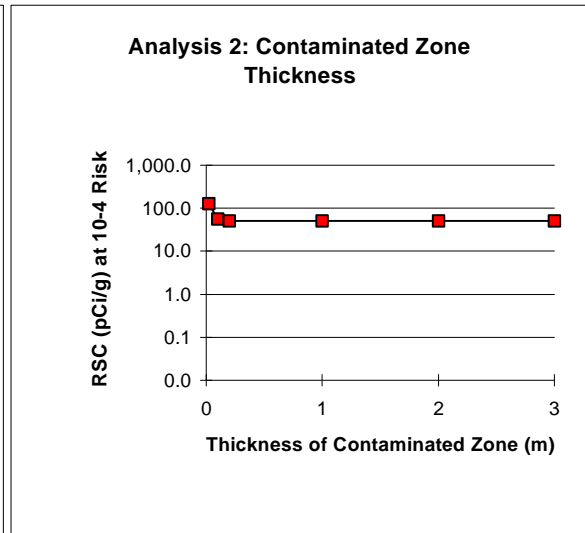
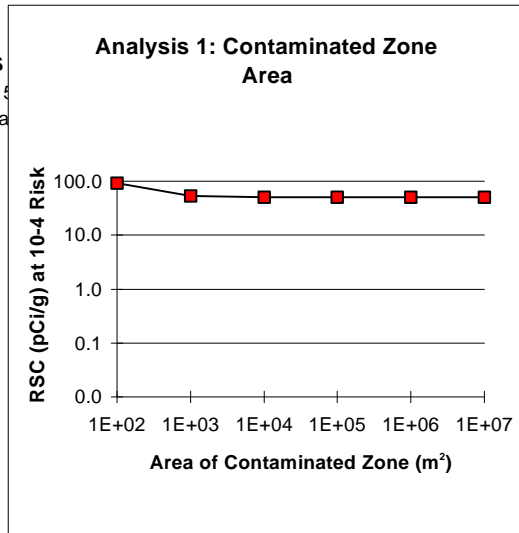
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	1.07E-06	93	0
	1E+03	1.86E-06	54	0
	1E+04	1.97E-06	51	0
	1E+05	1.98E-06	51	0
	1E+06	1.98E-06	51	0
#2 Contaminated Zone Thickness (m)	0.02	7.69E-07	130	0
	0.1	1.80E-06	56	0
	0.2	1.95E-06	51	0
	1	1.97E-06	51	0
	2	1.97E-06	51	0
#3 Infiltration Rate (m/yr)	0.001	1.97E-06	51	0
	0.025	1.97E-06	51	0
	0.100	1.97E-06	51	0
	0.500	1.97E-06	51	0
	1	1.97E-06	51	0
#4 Distribution Coefficient (Kd) (ml/g)	1.5	1.97E-06	51	0
	2	1.97E-06	51	0
	240	1.97E-06	51	0
	240	1.97E-06	51	0
	1,000	1.97E-06	51	0
#5 Uncontaminated Unsat. Zone Thickness (m)	2,900	1.97E-06	51	0
	2,900	1.97E-06	51	0
	0	1.97E-06	51	0
	1	1.97E-06	51	0
	1	1.97E-06	51	0
#5 Uncontaminated Unsat. Zone Thickness (m)	2	1.97E-06	51	0
	10	1.97E-06	51	0
	50	1.97E-06	51	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 240
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



H-3

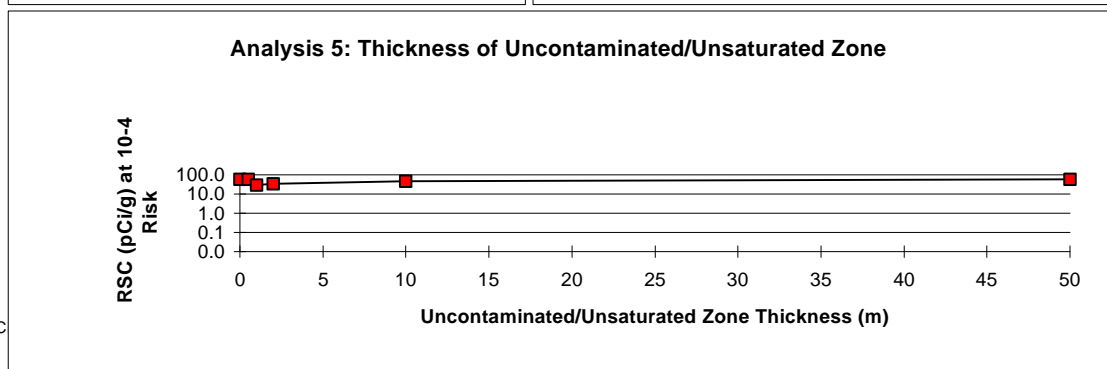
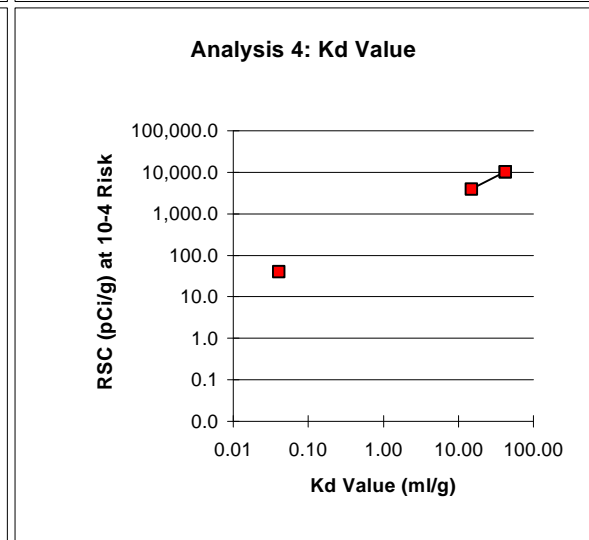
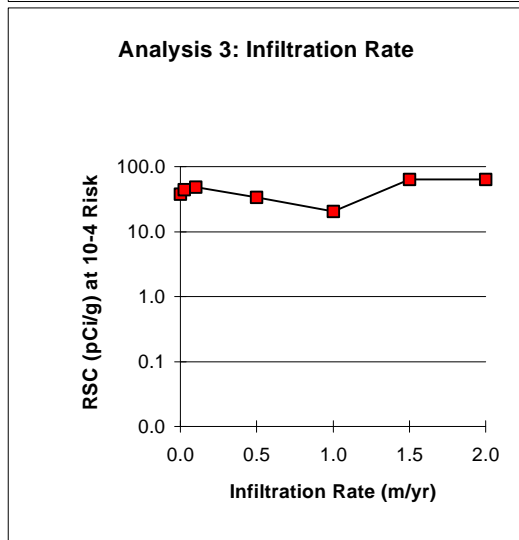
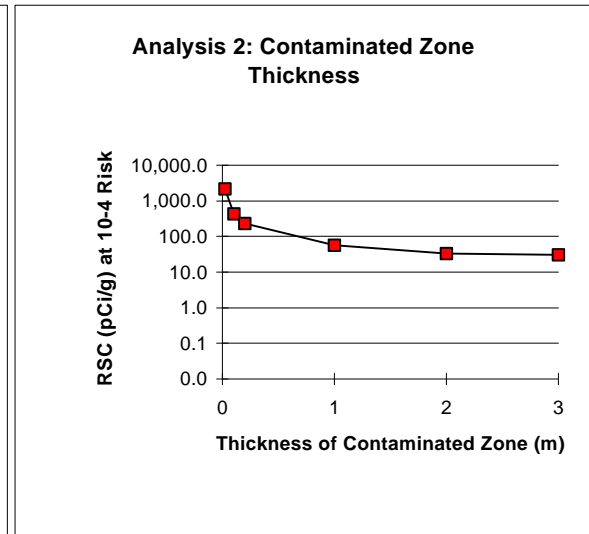
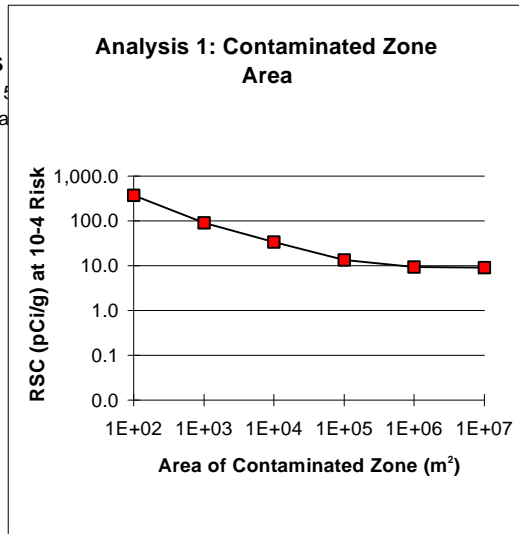
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	2.68E-07	373	1
	1E+03	1.11E-06	90	0
	1E+04	2.98E-06	34	1
	1E+05	7.43E-06	13	1
	1E+06	1.07E-05	9	2
	1E+07	1.10E-05	9	2
#2 Contaminated Zone Thickness (m)	0.02	4.56E-08	2,191	0
	0.1	2.28E-07	438	0
	0.2	4.38E-07	228	0
	1	1.78E-06	56	0
	2	2.98E-06	34	1
#3 Infiltration Rate (m/yr)	0.001	2.68E-06	37	0
	0.025	2.28E-06	44	0
	0.100	2.05E-06	49	0
	0.500	2.98E-06	34	1
	1	4.86E-06	21	0
#4 Distribution Coefficient (Kd) (ml/g)	1.5	1.59E-06	63	0
	2	1.56E-06	64	0
	0.04	2.47E-06	40	1
	0	2.98E-06	34	1
	15	2.50E-08	3,994	0
#5 Uncontaminated/Unsat. Zone Thickness (m)	42	9.56E-09	10,461	0
	42	9.56E-09	10,461	0
	0	1.78E-06	56	0
	1	1.78E-06	56	0
	1	3.30E-06	30	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 0
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



I-129

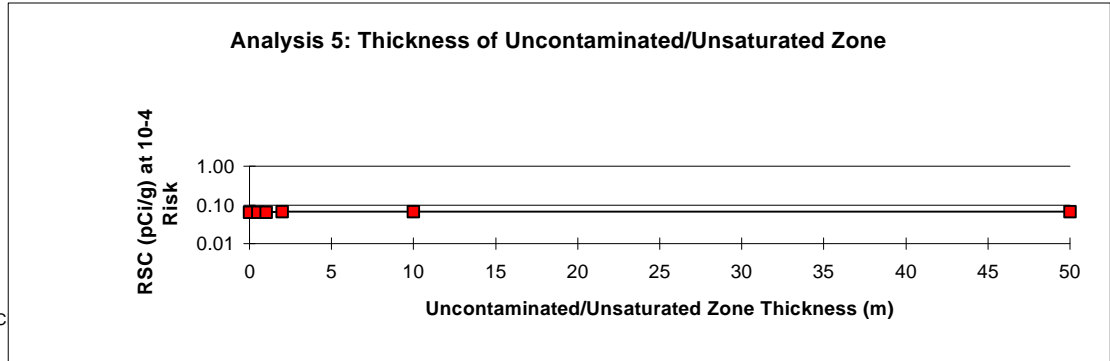
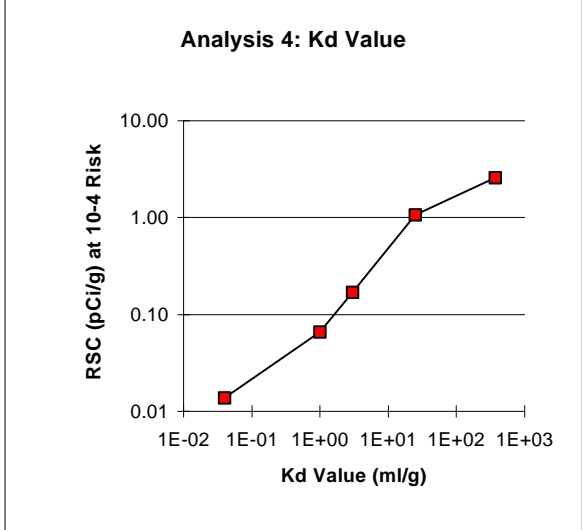
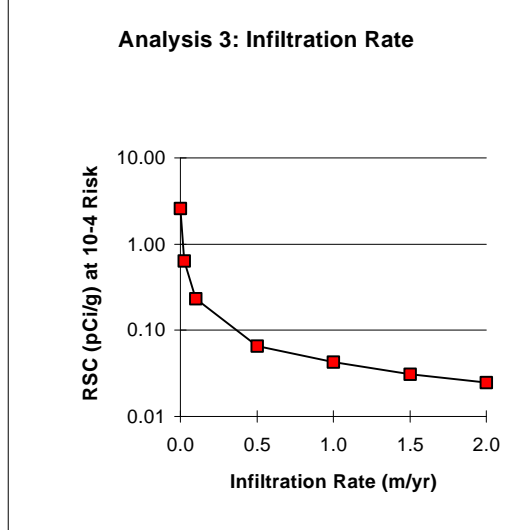
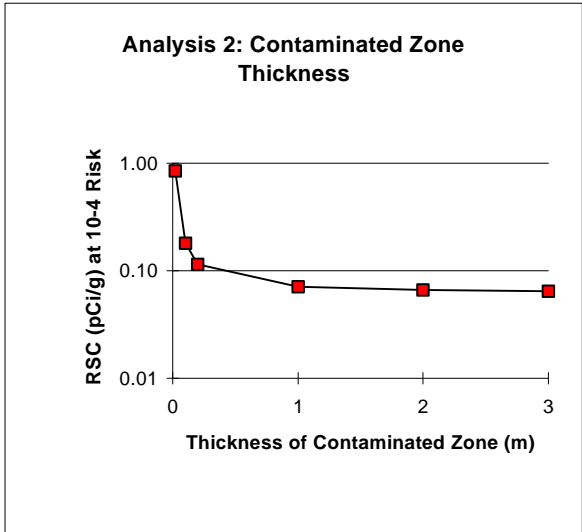
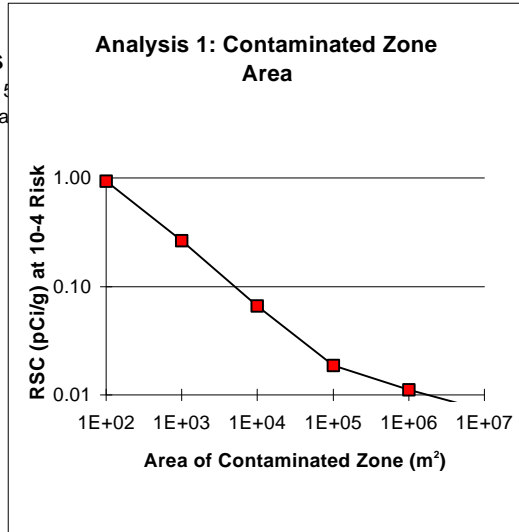
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	1.06E-04	0.94	3
	1E+03	3.77E-04	0.27	3
	1E+04	1.52E-03	0.07	4
	1E+05	5.38E-03	0.02	6
	1E+06	8.93E-03	0.01	9
	1E+07	1.39E-02	0.01	9
#2 Contaminated Zone Thickness (m)	0.02	1.18E-04	0.85	4
	0.1	5.51E-04	0.18	4
	0.2	8.76E-04	0.11	4
	1	1.41E-03	0.07	4
	2	1.52E-03	0.07	4
#3 Infiltration Rate (m/yr)	0.001	3.88E-05	2.58	0
	0.025	1.57E-04	0.64	59
	0.100	4.33E-04	0.23	16
	0.500	1.52E-03	0.07	4
	1	2.34E-03	0.04	2
#4 Distribution Coefficient (Kd) (ml/g)	1.5	3.26E-03	0.03	2
	2	4.07E-03	0.02	2
	0.04	7.27E-03	0.01	1
	1	1.52E-03	0.07	4
	3	5.86E-04	0.17	10
#5 Uncontaminated/Unsat. Zone Thickness (m)	25	9.41E-05	1.06	82
	370	3.88E-05	2.58	0
	0	1.53E-03	0.07	1
	1	1.53E-03	0.07	2
	1	1.52E-03	0.07	2
Thickness (m)	2	1.52E-03	0.07	4
	10	1.50E-03	0.07	16
	50	1.49E-03	0.07	76

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 1
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



K-40

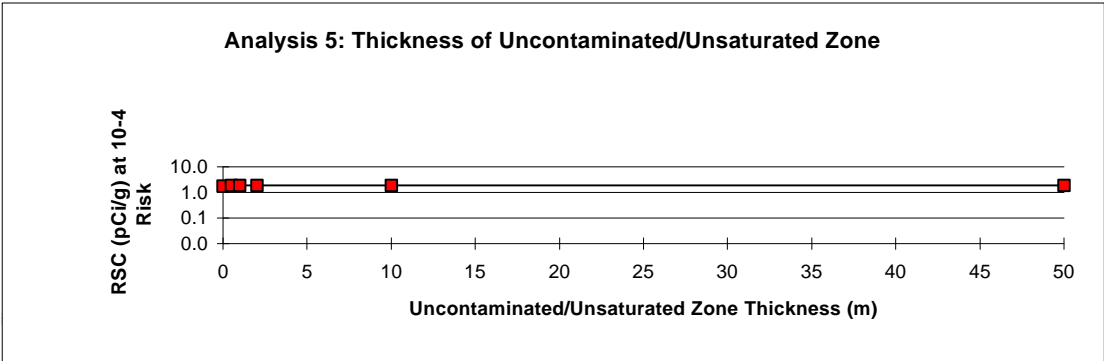
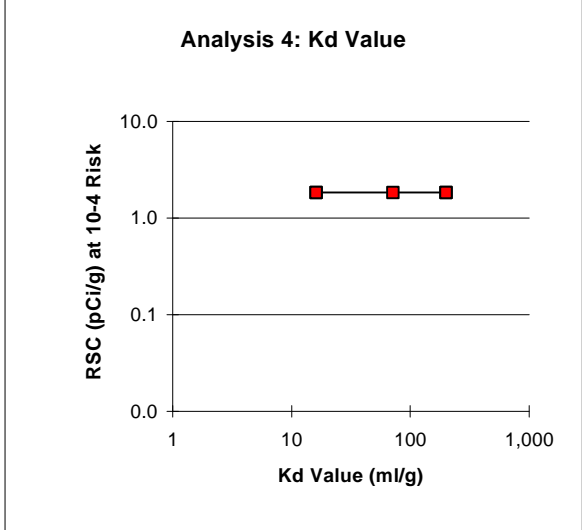
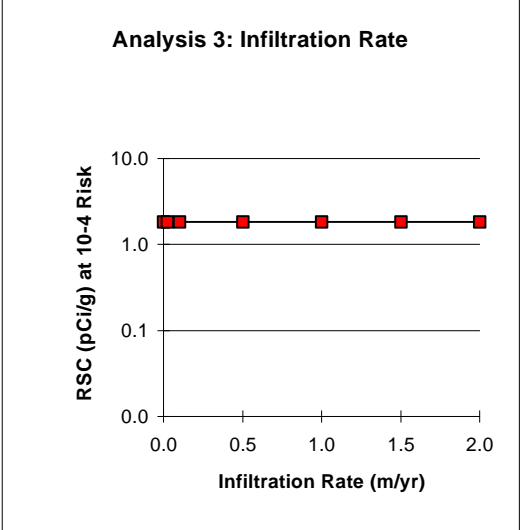
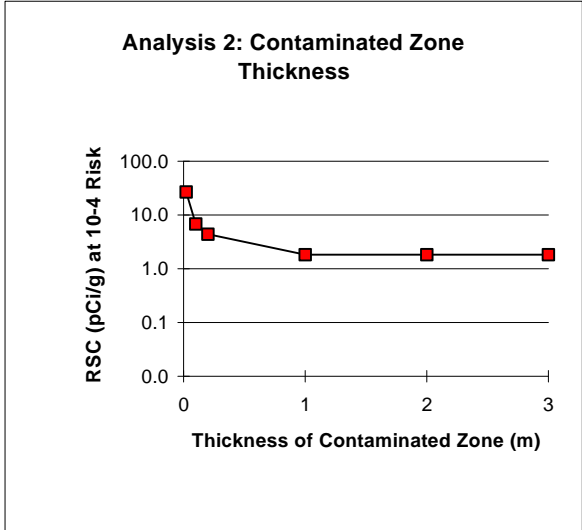
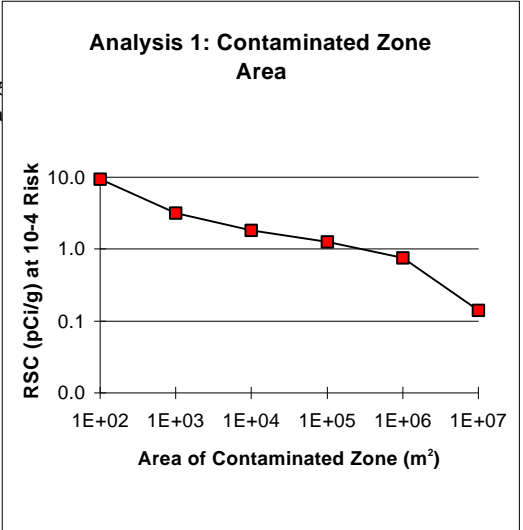
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	1.07E-05	9.4	0
	1E+03	3.15E-05	3.2	0
	1E+04	5.46E-05	1.8	0
	1E+05	7.92E-05	1.3	0
	1E+06	1.32E-04	0.8	114
	1E+07	7.12E-04	0.1	114
#2 Contaminated Zone Thickness (m)	0.02	3.77E-06	26.6	0
	0.1	1.47E-05	6.8	0
	0.2	2.30E-05	4.4	0
	1	5.46E-05	1.8	0
	2	5.46E-05	1.8	0
#3 Infiltration Rate (m/yr)	0.001	5.46E-05	1.8	0
	0.025	5.46E-05	1.8	0
	0.100	5.46E-05	1.8	0
	0.500	5.46E-05	1.8	0
	1	5.46E-05	1.8	0
#4 Distribution Coefficient (Kd) (ml/g)	16	5.46E-05	1.8	0
	16	5.46E-05	1.8	0
	71	5.46E-05	1.8	0
	200	5.46E-05	1.8	0
	200	5.46E-05	1.8	0
#5 Uncontaminated Unsat. Zone Thickness (m)	0	5.63E-05	1.8	13
	1	5.46E-05	1.8	0
	1	5.46E-05	1.8	0
	2	5.46E-05	1.8	0
	10	5.46E-05	1.8	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 16
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Mn-54

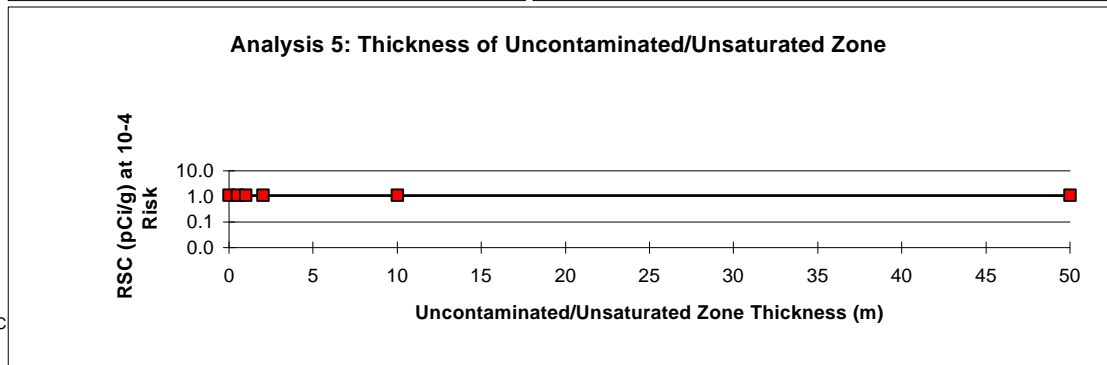
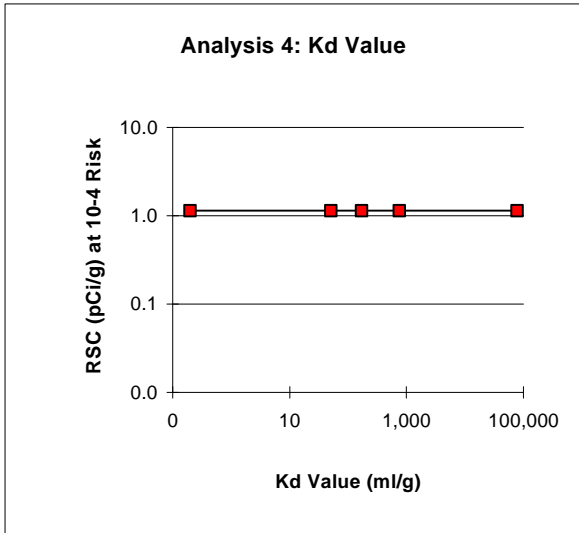
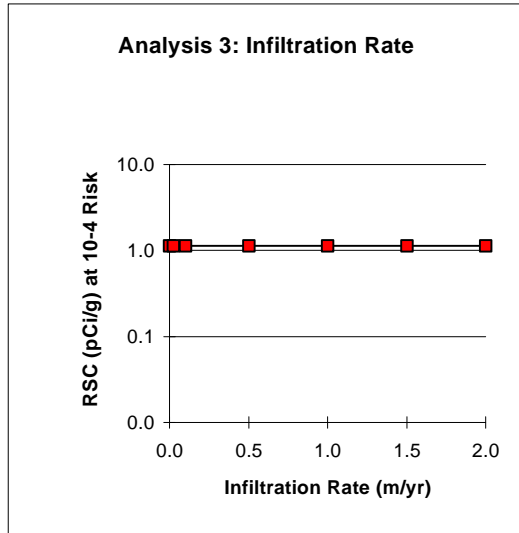
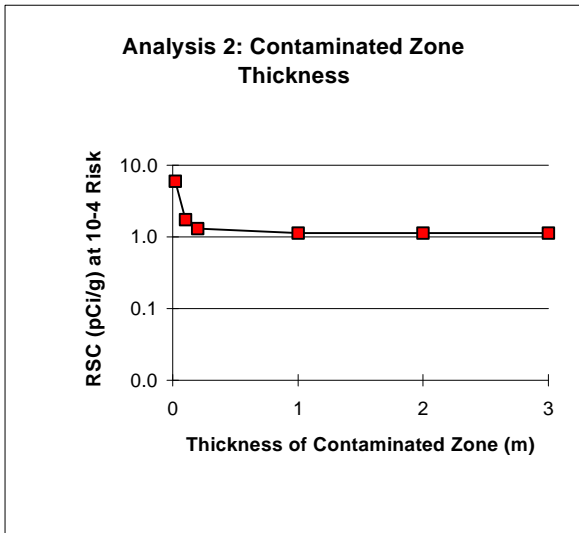
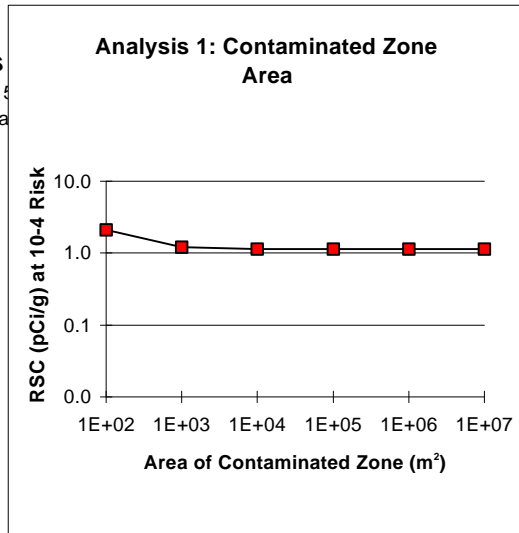
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	4.73E-05	2.1	0
	1E+03	8.29E-05	1.2	0
	1E+04	8.79E-05	1.1	0
	1E+05	8.80E-05	1.1	0
	1E+06	8.80E-05	1.1	0
	1E+07	8.80E-05	1.1	0
#2 Contaminated Zone Thickness (m)	0.02	1.68E-05	5.9	0
	0.1	5.71E-05	1.8	0
	0.2	7.64E-05	1.3	0
	1	8.79E-05	1.1	0
	2	8.79E-05	1.1	0
#3 Infiltration Rate (m/yr)	0.001	8.79E-05	1.1	0
	0.025	8.79E-05	1.1	0
	0.100	8.79E-05	1.1	0
	0.500	8.79E-05	1.1	0
	1	8.79E-05	1.1	0
#4 Distribution Coefficient (Kd) (ml/g)	1.5	8.79E-05	1.1	0
	2	8.79E-05	1.1	0
	0	8.79E-05	1.1	0
	50	8.79E-05	1.1	0
	170	8.79E-05	1.1	0
#5 Uncontaminated Unsaturated Zone Thickness (m)	750	8.79E-05	1.1	0
	77,000	8.79E-05	1.1	0
	0	8.79E-05	1.1	0
	1	8.79E-05	1.1	0
	1	8.79E-05	1.1	0
#5 Uncontaminated Unsaturated Zone Thickness (m)	2	8.79E-05	1.1	0
	10	8.79E-05	1.1	0
	50	8.79E-05	1.1	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 50
 * Thickness of Unsaturated Zone = 2 m
 * Well Depth Below Water Table = 3 m
 *RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Na-22

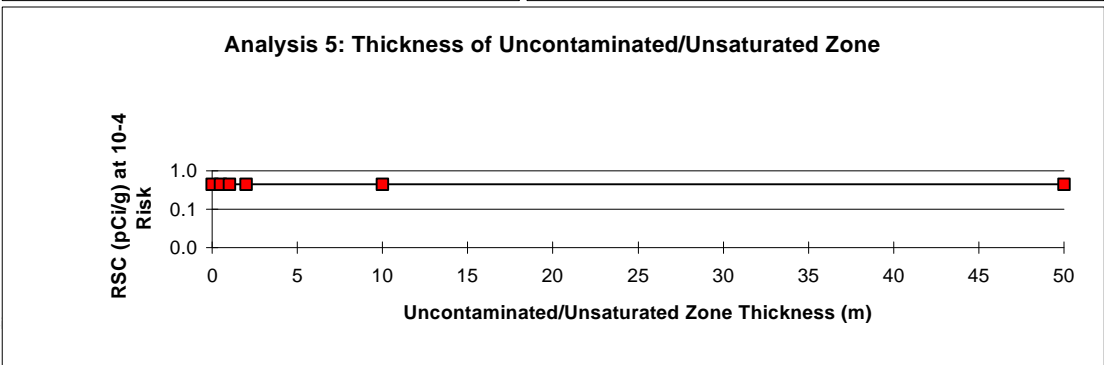
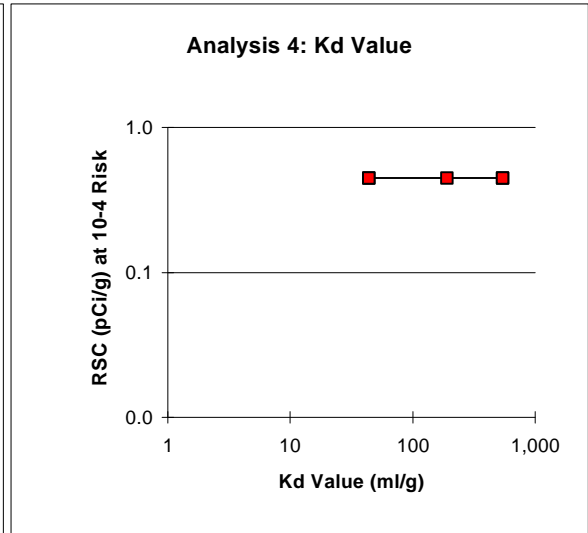
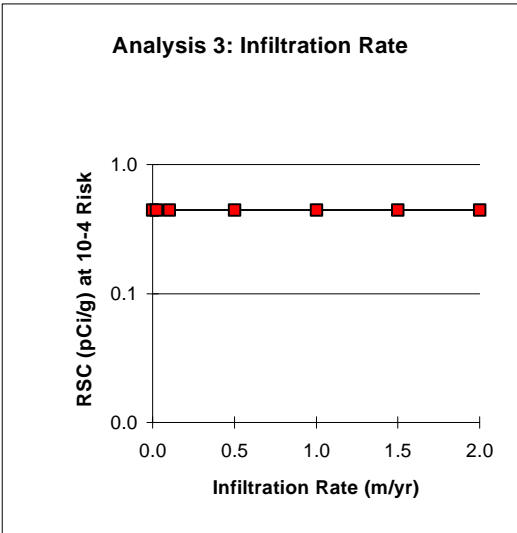
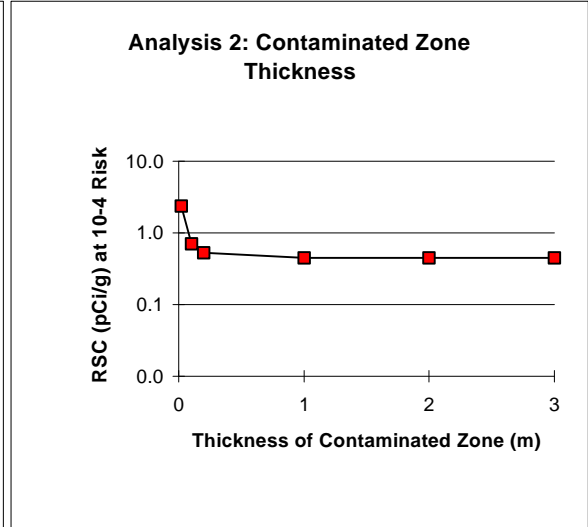
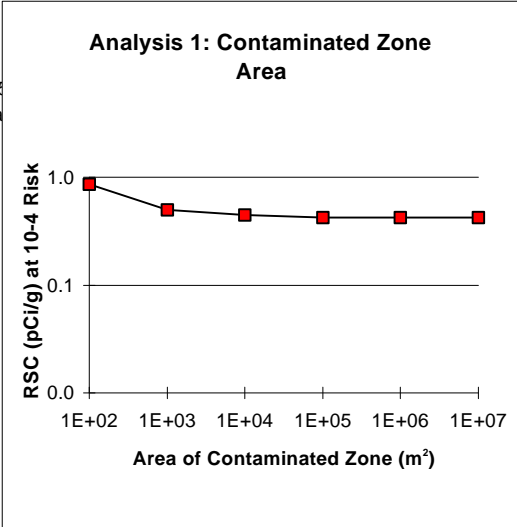
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	1.16E-04	0.9	0
	1E+03	2.01E-04	0.5	0
	1E+04	2.24E-04	0.4	0
	1E+05	2.37E-04	0.4	0
	1E+06	2.37E-04	0.4	0
	1E+07	2.37E-04	0.4	0
#2 Contaminated Zone Thickness (m)	0.02	4.18E-05	2.4	0
	0.1	1.42E-04	0.7	0
	0.2	1.91E-04	0.5	0
	1	2.24E-04	0.4	0
	2	2.24E-04	0.4	0
#3 Infiltration Rate (m/yr)	0.001	2.24E-04	0.4	0
	0.025	2.24E-04	0.4	0
	0.100	2.24E-04	0.4	0
	0.500	2.24E-04	0.4	0
	1	2.24E-04	0.4	0
	1.5	2.24E-04	0.4	0
#4 Distribution Coefficient (Kd) (ml/g)	2	2.24E-04	0.4	0
	44	2.24E-04	0.4	0
	44	2.24E-04	0.4	0
	190	2.24E-04	0.4	0
	540	2.24E-04	0.4	0
#5 Uncontaminated Unsat. Zone Thickness (m)	540	2.24E-04	0.4	0
	0	2.24E-04	0.4	0
	1	2.24E-04	0.4	0
	1	2.24E-04	0.4	0
	2	2.24E-04	0.4	0
	10	2.24E-04	0.4	0
	50	2.24E-04	0.4	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 44
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Nb-94

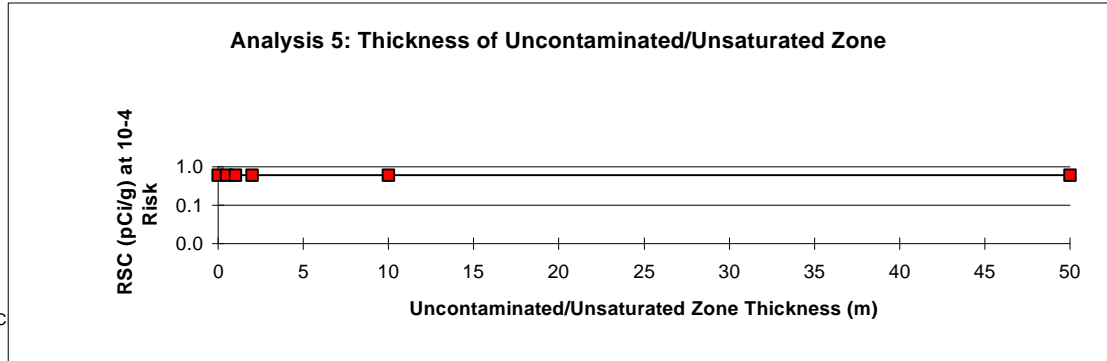
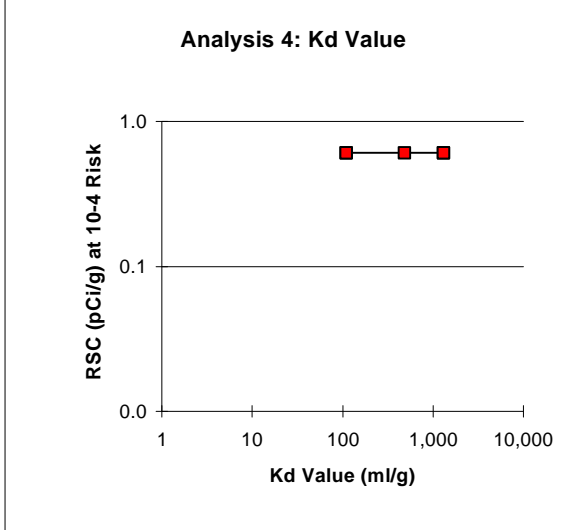
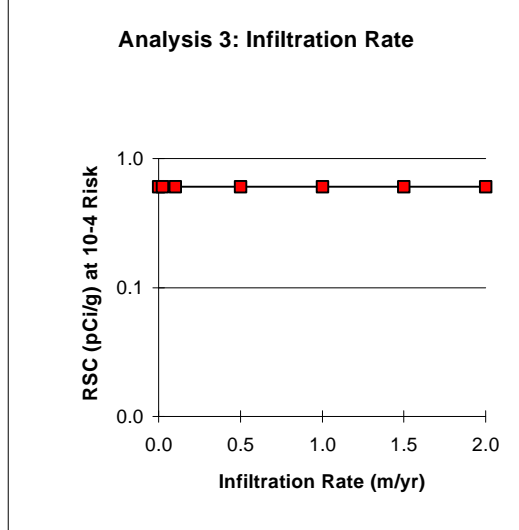
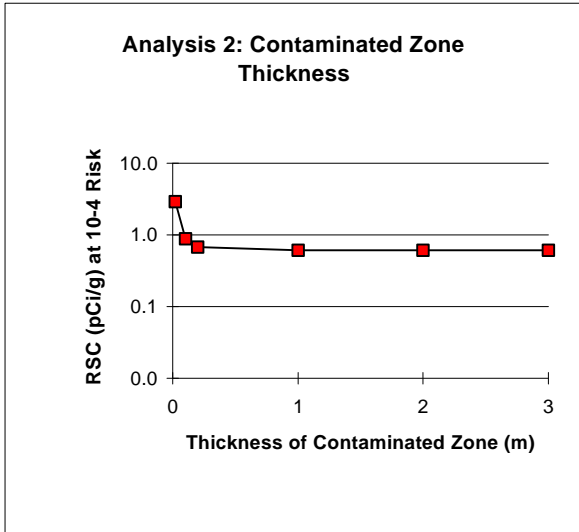
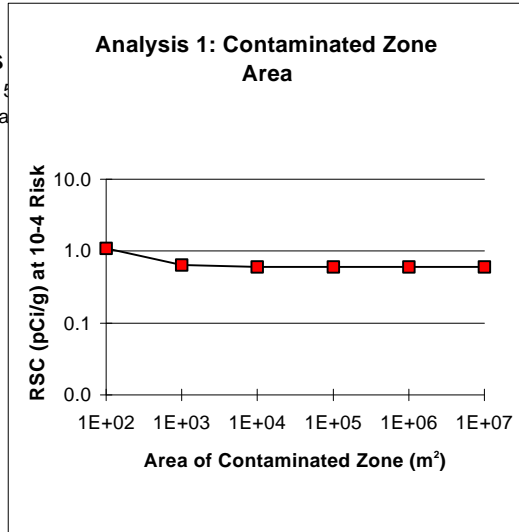
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	9.08E-05	1.1	0
	1E+03	1.56E-04	0.6	0
	1E+04	1.65E-04	0.6	0
	1E+05	1.65E-04	0.6	0
	1E+06	1.65E-04	0.6	0
	1E+07	1.65E-04	0.6	0
#2 Contaminated Zone Thickness (m)	0.02	3.44E-05	2.9	0
	0.1	1.14E-04	0.9	0
	0.2	1.49E-04	0.7	0
	1	1.65E-04	0.6	0
	2	1.65E-04	0.6	0
#3 Infiltration Rate (m/yr)	0.001	1.65E-04	0.6	0
	0.025	1.65E-04	0.6	0
	0.100	1.65E-04	0.6	0
	0.500	1.65E-04	0.6	0
	1	1.65E-04	0.6	0
#4 Distribution Coefficient (Kd) (ml/g)	1.5	1.65E-04	0.6	0
	2	1.65E-04	0.6	0
	110	1.65E-04	0.6	0
	480	1.65E-04	0.6	0
	1,300	1.65E-04	0.6	0
#5 Uncontaminated Unsat. Zone Thickness (m)	1,300	1.65E-04	0.6	0
	0	1.65E-04	0.6	0
	1	1.65E-04	0.6	0
	1	1.65E-04	0.6	0
	2	1.65E-04	0.6	0
	10	1.65E-04	0.6	0
	50	1.65E-04	0.6	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 110
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 *RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Ni-59

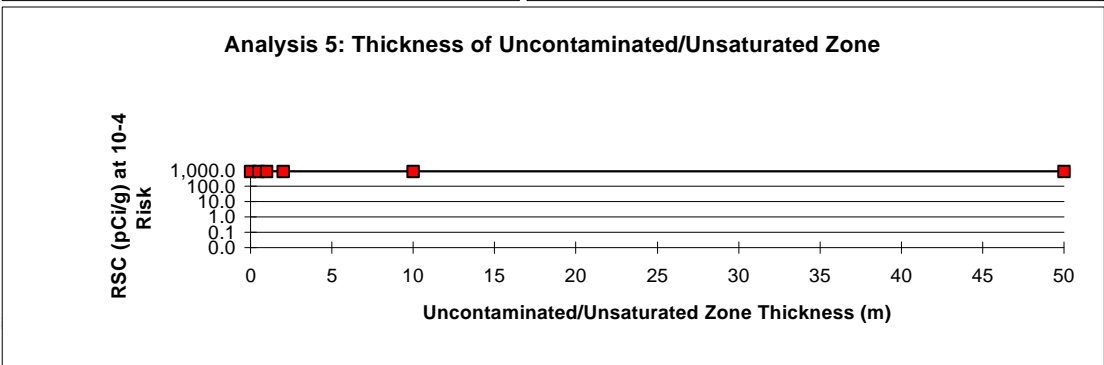
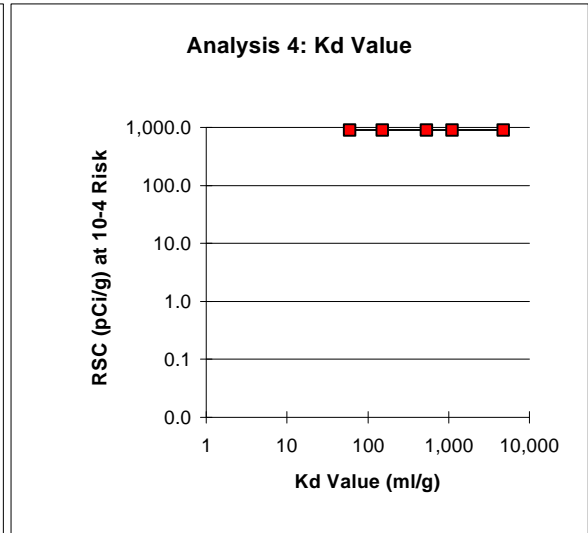
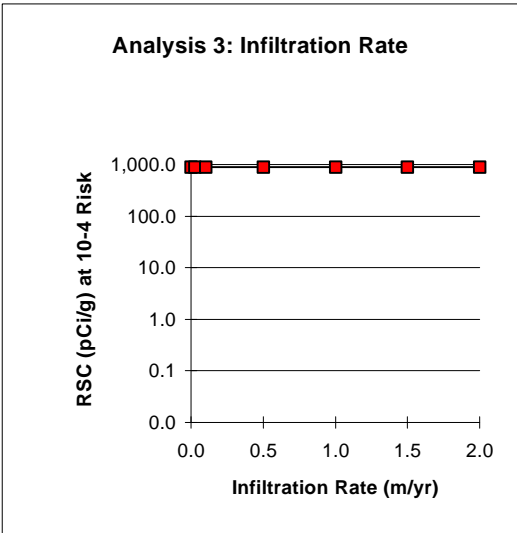
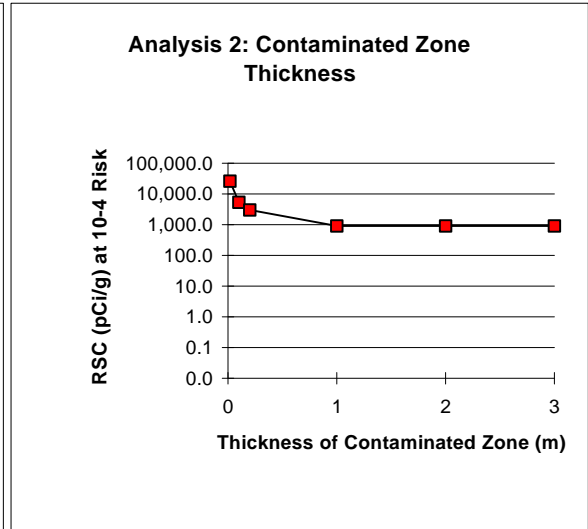
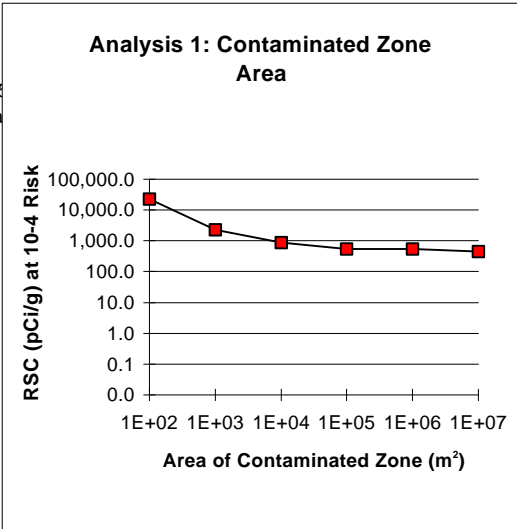
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	4.34E-09	23,041	0
	1E+03	4.34E-08	2,307	0
	1E+04	1.12E-07	897	0
	1E+05	1.87E-07	534	0
	1E+06	1.87E-07	534	0
	1E+07	2.24E-07	447	1,000
#2 Contaminated Zone Thickness (m)	0.02	3.75E-09	26,638	0
	0.1	1.88E-08	5,328	0
	0.2	3.37E-08	2,966	0
	1	1.12E-07	897	0
	2	1.12E-07	897	0
#3 Infiltration Rate (m/yr)	0.001	1.12E-07	897	0
	0.025	1.12E-07	897	0
	0.100	1.12E-07	897	0
	0.500	1.12E-07	897	0
	1	1.12E-07	897	0
	1.5	1.12E-07	897	0
#4 Distribution Coefficient (Kd) (ml/g)	60	1.12E-07	897	0
	150	1.12E-07	897	0
	530	1.12E-07	897	0
	1,100	1.12E-07	897	0
	4,700	1.12E-07	897	0
#5 Uncontaminated Unsaturated Zone Thickness (m)	0	1.12E-07	893	116
	1	1.12E-07	897	0
	1	1.12E-07	897	0
	2	1.12E-07	897	0
	10	1.12E-07	897	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 150
 * Thickness of Unsaturated Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Ni-63

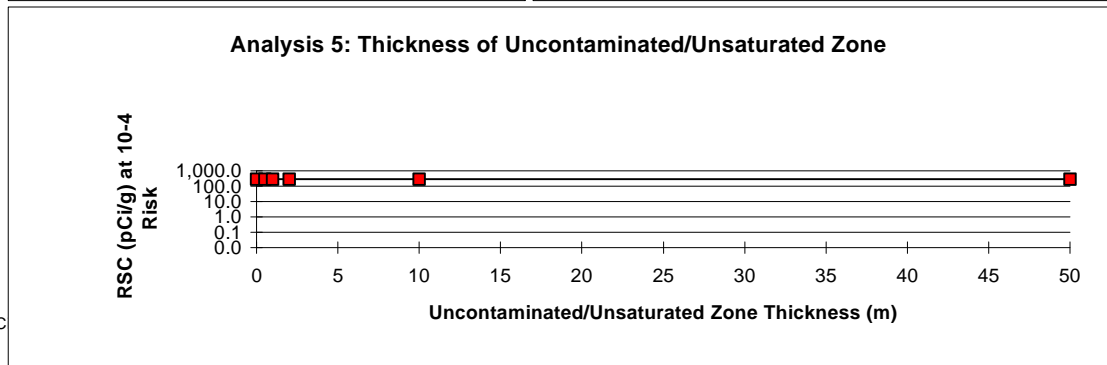
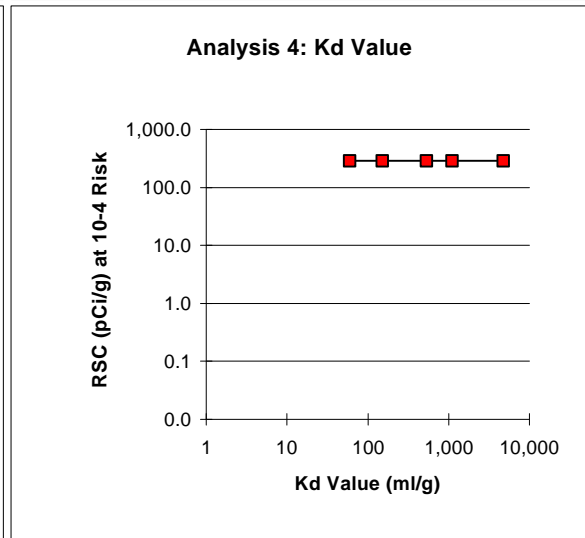
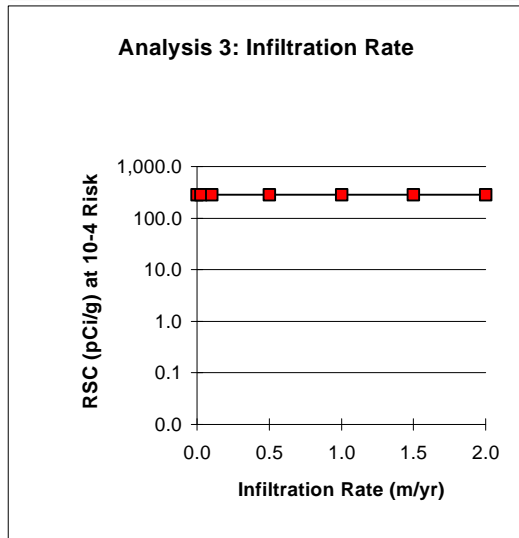
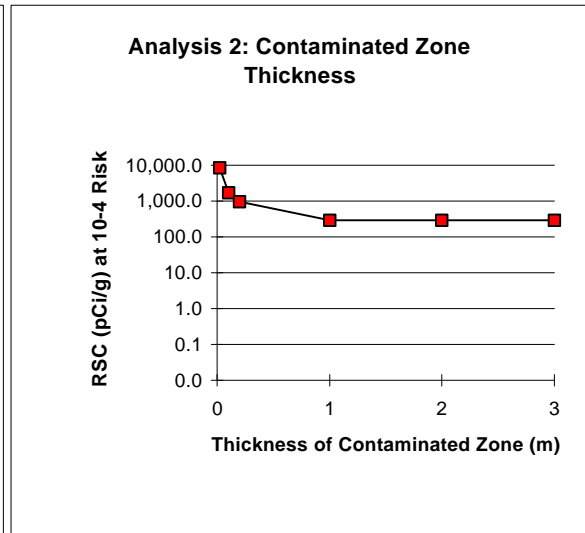
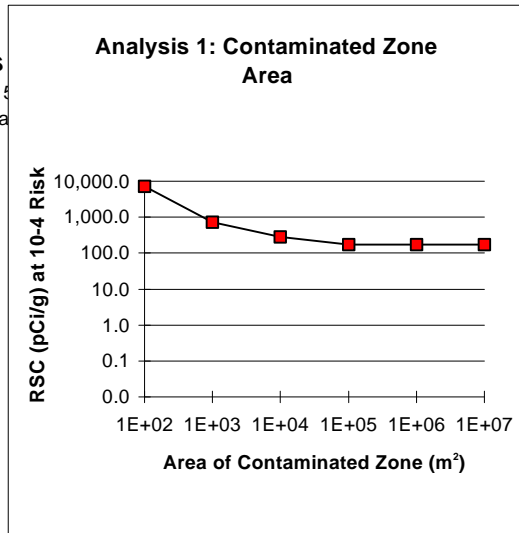
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	1.36E-08	7,337	0
	1E+03	1.36E-07	734	0
	1E+04	3.50E-07	285	0
	1E+05	5.88E-07	170	0
	1E+06	5.88E-07	170	0
	1E+07	5.88E-07	170	0
#2 Contaminated Zone Thickness (m)	0.02	1.18E-08	8,482	0
	0.1	5.90E-08	1,696	0
	0.2	1.06E-07	944	0
	1	3.50E-07	285	0
	2	3.50E-07	285	0
#3 Infiltration Rate (m/yr)	0.001	3.50E-07	285	0
	0.025	3.50E-07	285	0
	0.100	3.50E-07	285	0
	0.500	3.50E-07	285	0
	1	3.50E-07	285	0
#4 Distribution Coefficient (Kd) (ml/g)	1.5	3.50E-07	285	0
	2	3.50E-07	285	0
	60	3.50E-07	285	0
	150	3.50E-07	285	0
	530	3.50E-07	285	0
#5 Uncontaminated Unsat. Zone Thickness (m)	1,100	3.50E-07	285	0
	4,700	3.50E-07	285	0
	0	3.50E-07	285	0
	1	3.50E-07	285	0
	1	3.50E-07	285	0
Thickness (m)	2	3.50E-07	285	0
	10	3.50E-07	285	0
	50	3.50E-07	285	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 150
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Np-237+D

RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

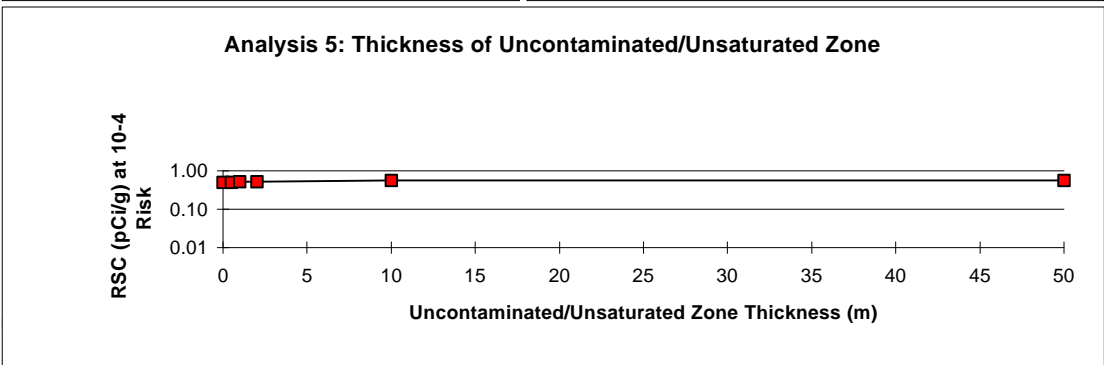
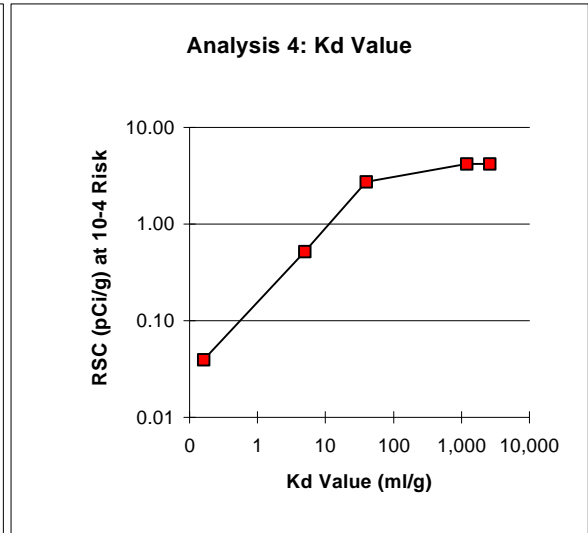
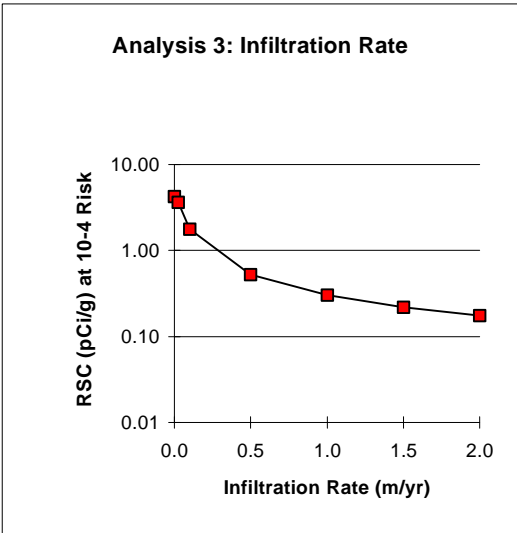
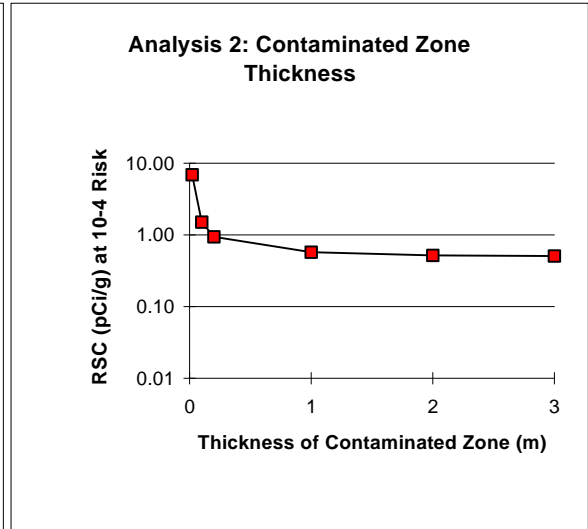
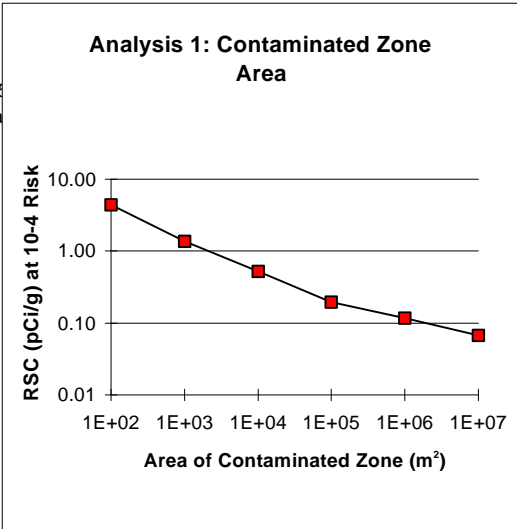
Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	2.26E-05	4.43	13
	1E+03	7.24E-05	1.38	14
	1E+04	1.92E-04	0.52	17
	1E+05	5.14E-04	0.19	26
	1E+06	8.61E-04	0.12	37
	1E+07	1.48E-03	0.07	37
#2 Contaminated Zone Thickness (m)	0.02	1.44E-05	6.96	17
	0.1	6.67E-05	1.50	17
	0.2	1.05E-04	0.95	17
	1	1.75E-04	0.57	17
	2	1.92E-04	0.52	17
#3 Infiltration Rate (m/yr)	0.001	2.38E-05	4.21	0
	0.025	2.76E-05	3.63	260
	0.100	5.66E-05	1.77	68
	0.500	1.92E-04	0.52	17
	1	3.28E-04	0.31	11
#4 Distribution Coefficient (Kd) (ml/g)	1.5	4.55E-04	0.22	8
	2	5.67E-04	0.18	7
	0	2.52E-03	0.04	1
	5	1.92E-04	0.52	17
	40	3.67E-05	2.72	131
#5 Uncontaminated/Unsat. Zone Thickness (m)	1,200	2.38E-05	4.21	0
	2,600	2.38E-05	4.21	0
	0	1.99E-04	0.50	4
	1	1.97E-04	0.51	7
	1	1.95E-04	0.51	11

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:

- * Agricultural Land Use Exposure Scenario
- * Area of Contaminated Zone = 10,000 m²
- * Thickness of Contaminated Zone = 2 m
- * Infiltration Rate = 0.5 m/yr
- * Kd = 5
- * Thickness of Unsat. Zone = 2 m
- * Well Depth Below Water Table = 3 m

*RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Pa-231

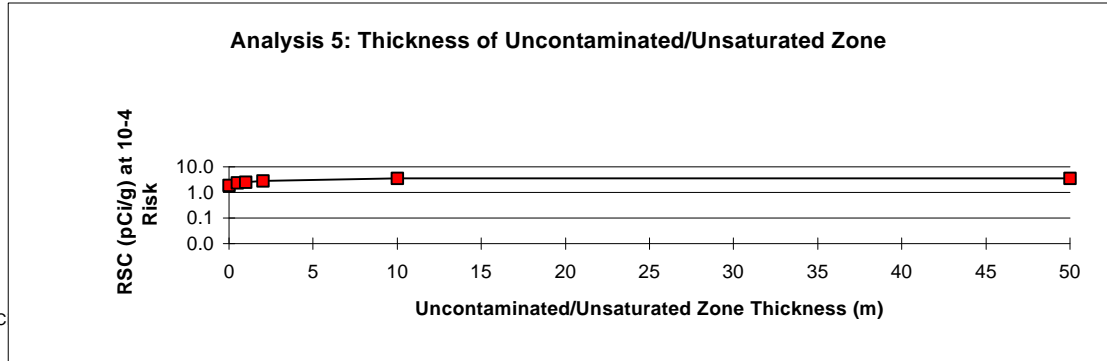
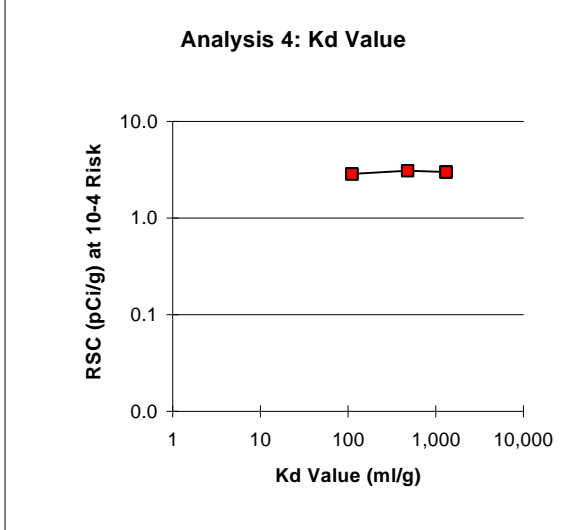
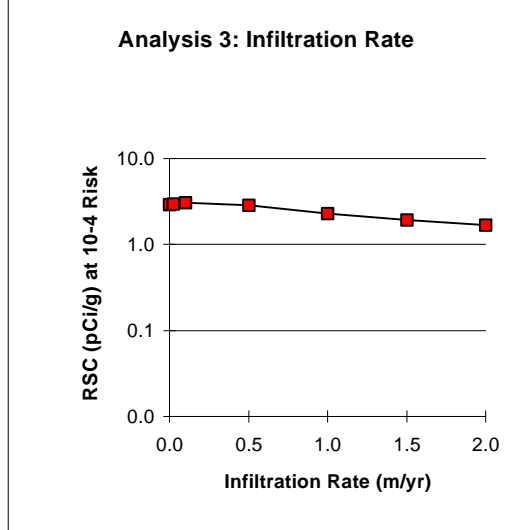
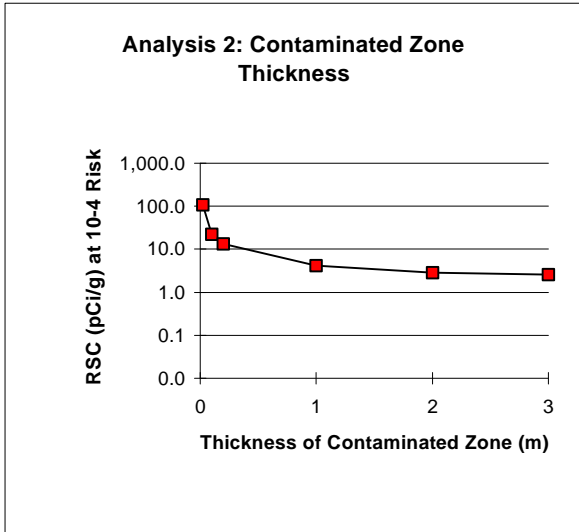
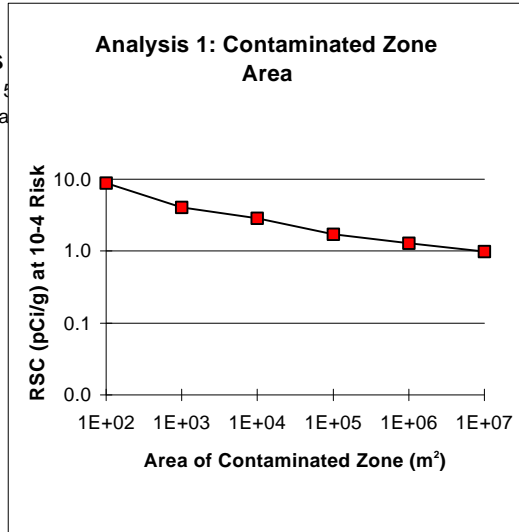
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	1.13E-05	8.9	306
	1E+03	2.46E-05	4.1	321
	1E+04	3.47E-05	2.9	364
	1E+05	5.80E-05	1.7	542
	1E+06	7.79E-05	1.3	775
	1E+07	1.01E-04	1.0	775
#2 Contaminated Zone Thickness (m)	0.02	9.34E-07	107.1	358
	0.1	4.52E-06	22.1	358
	0.2	7.57E-06	13.2	358
	1	2.43E-05	4.1	358
	2	3.47E-05	2.9	364
#3 Infiltration Rate (m/yr)	0.001	3.42E-05	2.9	191
	0.025	3.37E-05	3.0	149
	0.100	3.25E-05	3.1	112
	0.500	3.47E-05	2.9	364
	1	4.39E-05	2.3	227
#4 Distribution Coefficient (Kd) (ml/g)	1.5	5.19E-05	1.9	176
	2	5.96E-05	1.7	154
	110	3.47E-05	2.9	364
	480	3.23E-05	3.1	108
	1,300	3.34E-05	3.0	136
#5 Uncontaminated Unsaturated Zone Thickness (m)	1,300	3.34E-05	3.0	136
	0	5.22E-05	1.9	186
	1	4.20E-05	2.4	159
	1	3.94E-05	2.5	227
	2	3.47E-05	2.9	364
	10	2.82E-05	3.5	65
	50	2.82E-05	3.5	65

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 110
 * Thickness of Unsaturated Zone = 2 m
 * Well Depth Below Water Table = 3 m
 *RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Pb-210+D

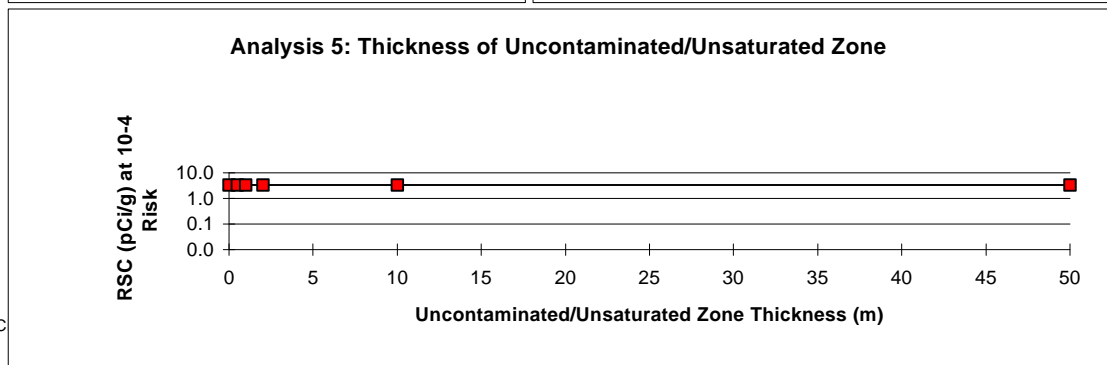
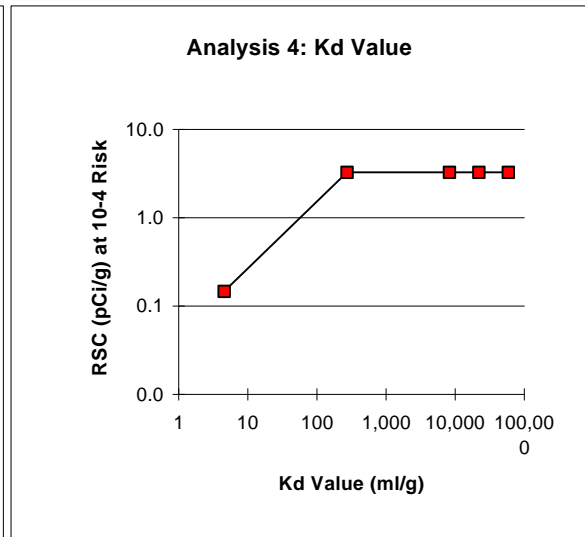
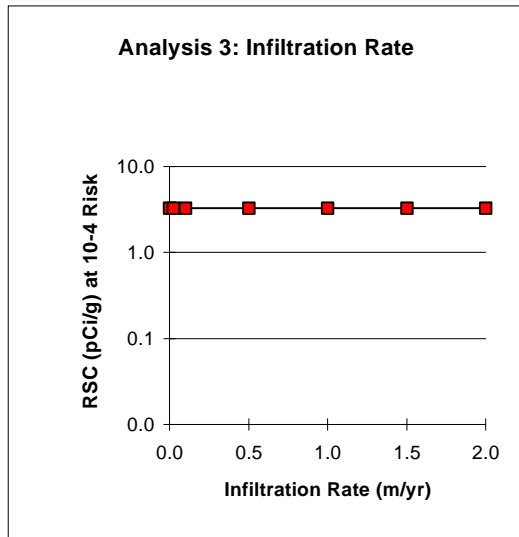
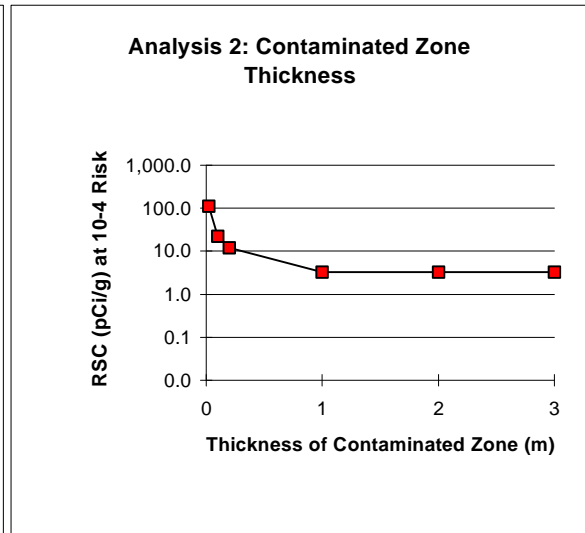
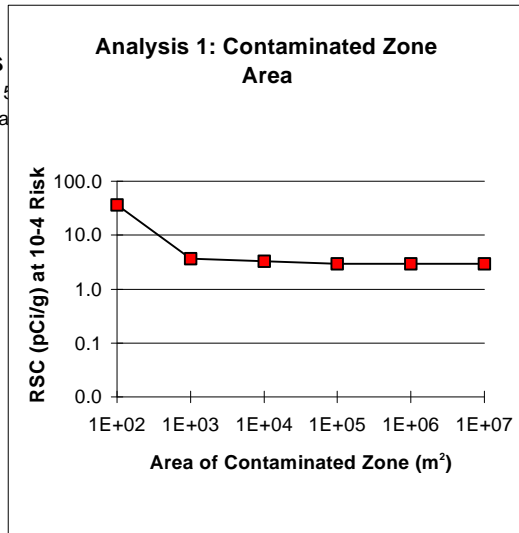
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	2.78E-06	36.0	0
	1E+03	2.73E-05	3.7	0
	1E+04	3.05E-05	3.3	0
	1E+05	3.39E-05	2.9	0
	1E+06	3.39E-05	2.9	0
	1E+07	3.39E-05	2.9	0
#2 Contaminated Zone Thickness (m)	0.02	9.05E-07	110.5	0
	0.1	4.52E-06	22.1	0
	0.2	8.36E-06	12.0	0
	1	3.05E-05	3.3	0
	2	3.05E-05	3.3	0
#3 Infiltration Rate (m/yr)	0.001	3.05E-05	3.3	0
	0.025	3.05E-05	3.3	0
	0.100	3.05E-05	3.3	0
	0.500	3.05E-05	3.3	0
	1	3.05E-05	3.3	0
	1.5	3.05E-05	3.3	0
#4 Distribution Coefficient (Kd) (ml/g)	5	6.81E-04	0.1	15
	270	3.05E-05	3.3	0
	8,300	3.05E-05	3.3	0
	22,000	3.05E-05	3.3	0
	59,000	3.05E-05	3.3	0
#5 Uncontaminated Unsat. Zone Thickness (m)	0	3.05E-05	3.3	0
	1	3.05E-05	3.3	0
	1	3.05E-05	3.3	0
	2	3.05E-05	3.3	0
	10	3.05E-05	3.3	0
50	3.05E-05	3.3	0	

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 270
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Pm-147

RESRAD Parameter Sensitivity Analyses

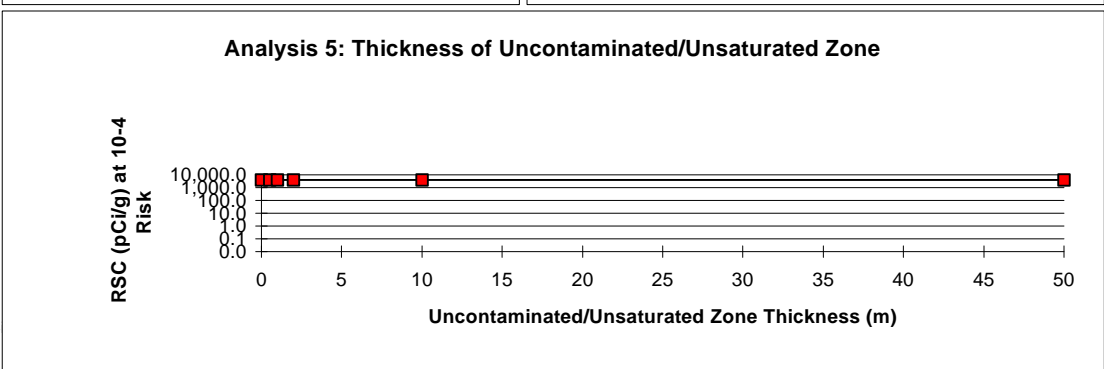
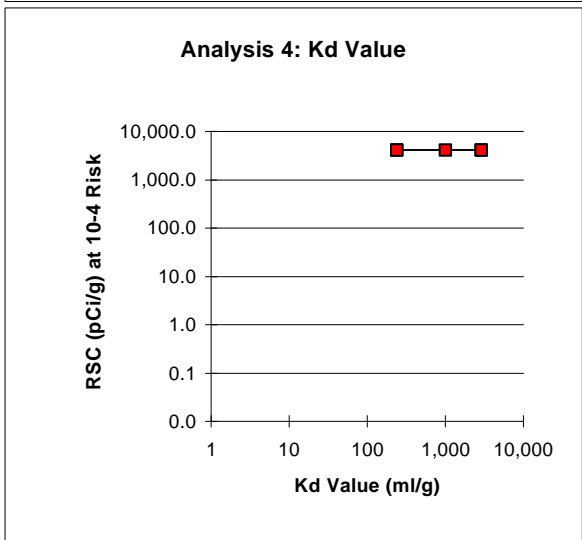
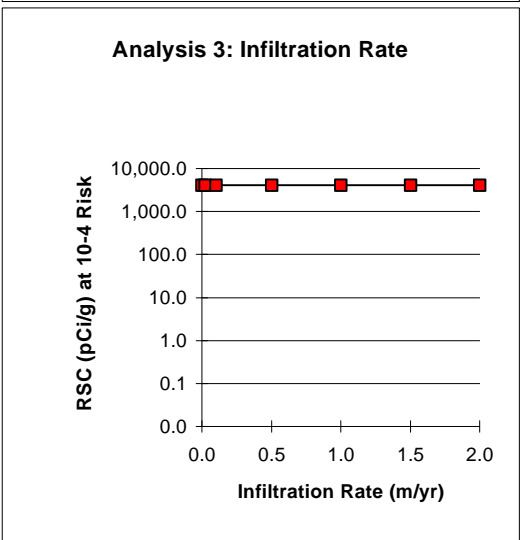
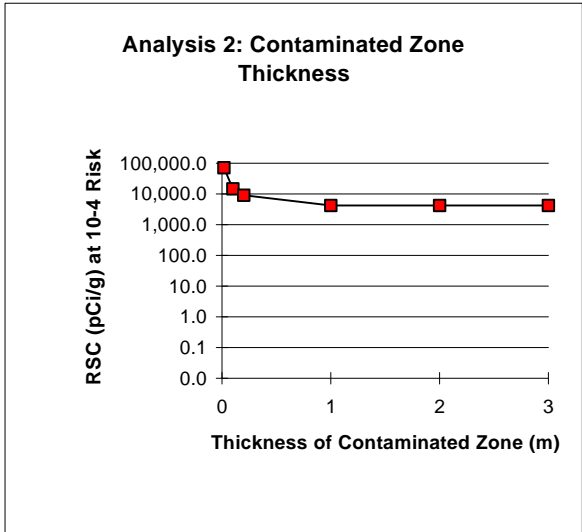
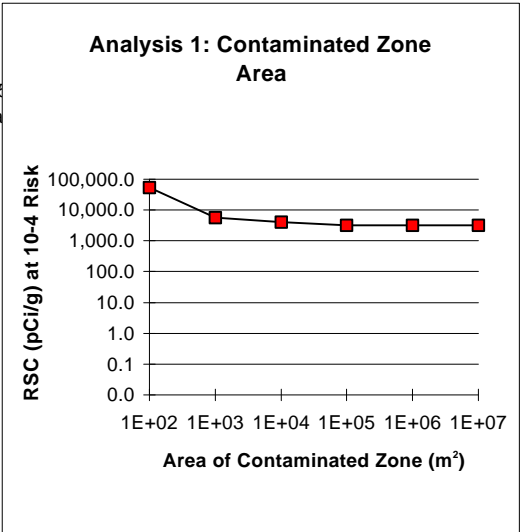
Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	1.91E-09	52,493	0
	1E+03	1.74E-08	5,754	0
	1E+04	2.43E-08	4,120	0
	1E+05	3.19E-08	3,134	0
	1E+06	3.19E-08	3,134	0
#2 Contaminated Zone Thickness (m)	0.02	1.37E-09	73,206	0
	0.1	6.69E-09	14,952	0
	0.2	1.09E-08	9,149	0
	1	2.43E-08	4,120	0
	2	2.43E-08	4,120	0
#3 Infiltration Rate (m/yr)	0.001	2.43E-08	4,120	0
	0.025	2.43E-08	4,120	0
	0.100	2.43E-08	4,120	0
	0.500	2.43E-08	4,120	0
	1	2.43E-08	4,120	0
#4 Distribution Coefficient (Kd) (ml/g)	1.5	2.43E-08	4,120	0
	2	2.43E-08	4,120	0
	240	2.43E-08	4,120	0
	240	2.43E-08	4,120	0
	1,000	2.43E-08	4,120	0
#5 Uncontaminated/Unsat. Zone Thickness (m)	2,900	2.43E-08	4,120	0
	2,900	2.43E-08	4,120	0
	0	2.43E-08	4,120	0
	1	2.43E-08	4,120	0
	1	2.43E-08	4,120	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:

- * Agricultural Land Use Exposure Scenario
- * Area of Contaminated Zone = 10,000 m²
- * Thickness of Contaminated Zone = 2 m
- * Infiltration Rate = 0.5 m/yr
- * Kd = 240
- * Thickness of Unsat. Zone = 2 m
- * Well Depth Below Water Table = 3 m
- * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Pu-238

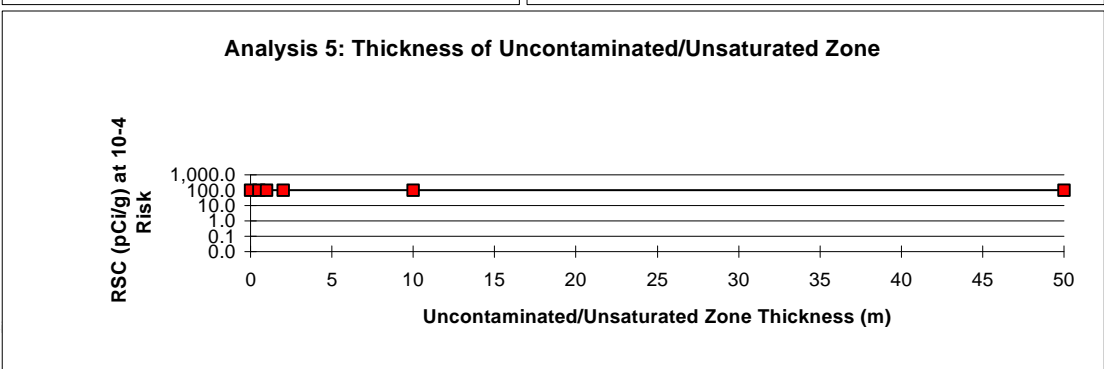
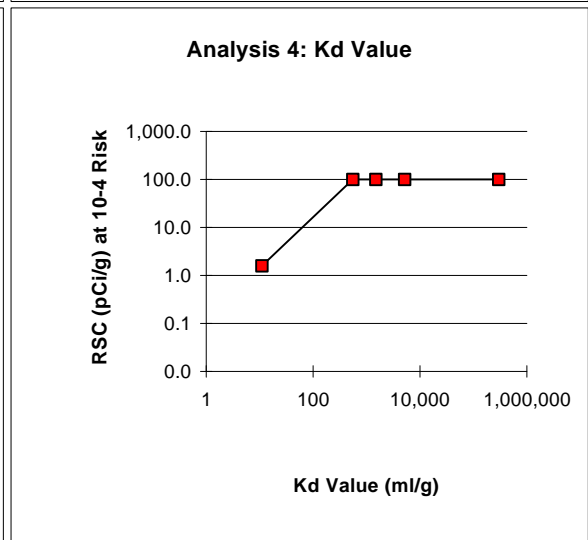
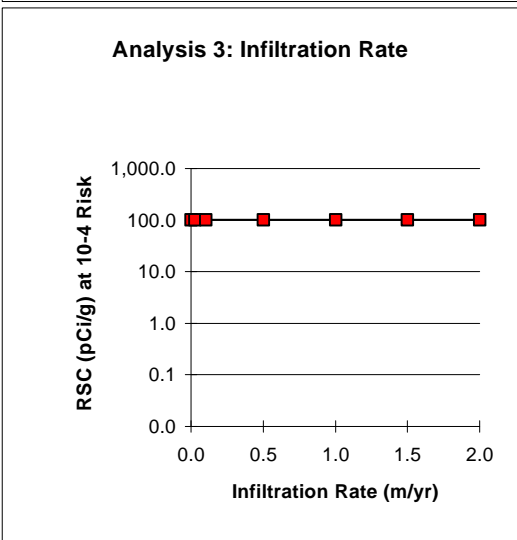
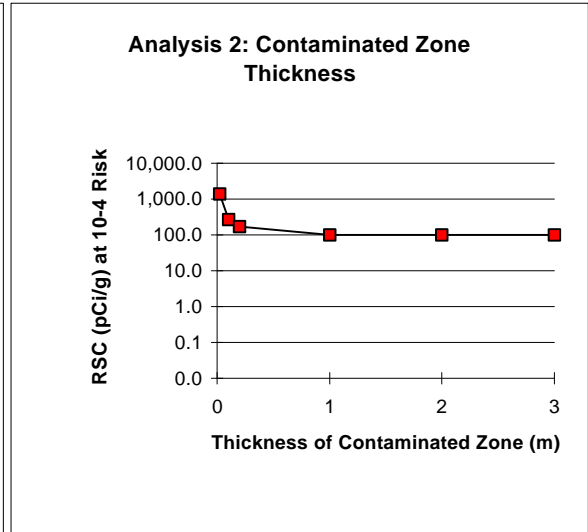
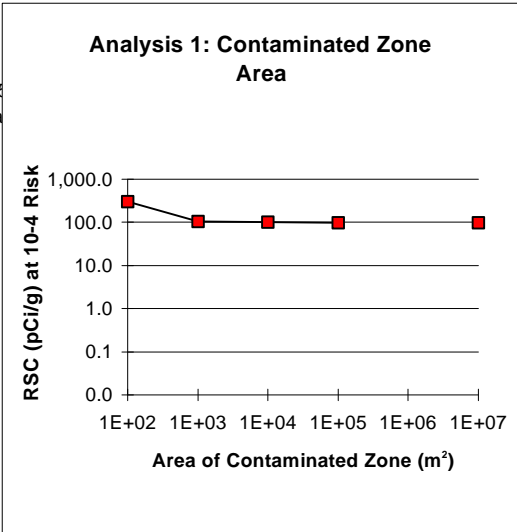
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	3.34E-07	299	0
	1E+03	9.48E-07	105	0
	1E+04	9.94E-07	101	0
	1E+05	1.03E-06	97	0
	1E+06	NC	NC	NC
	1E+07	1.03E-06	97	0
#2 Contaminated Zone Thickness (m)	0.02	7.35E-08	1,361	0
	0.1	3.67E-07	273	0
	0.2	5.79E-07	173	0
	1	9.94E-07	101	0
	2	9.94E-07	101	0
#3 Infiltration Rate (m/yr)	0.001	9.94E-07	101	0
	0.025	9.94E-07	101	0
	0.100	9.94E-07	101	0
	0.500	9.94E-07	101	0
	1	9.94E-07	101	0
	1.5	9.94E-07	101	0
#4 Distribution Coefficient (Kd) (ml/g)	11	6.40E-05	2	36
	550	9.94E-07	101	0
	1,500	9.94E-07	101	0
	5,100	9.94E-07	101	0
#5 Uncontaminated/Unsat. Zone Thickness (m)	300,000	9.94E-07	101	0
	0	9.94E-07	101	0
	1	9.94E-07	101	0
	1	9.94E-07	101	0
	2	9.94E-07	101	0
#5 Uncontaminated/Unsat. Zone Thickness (m)	10	9.94E-07	101	0
	50	9.94E-07	101	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 550
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Pu-239

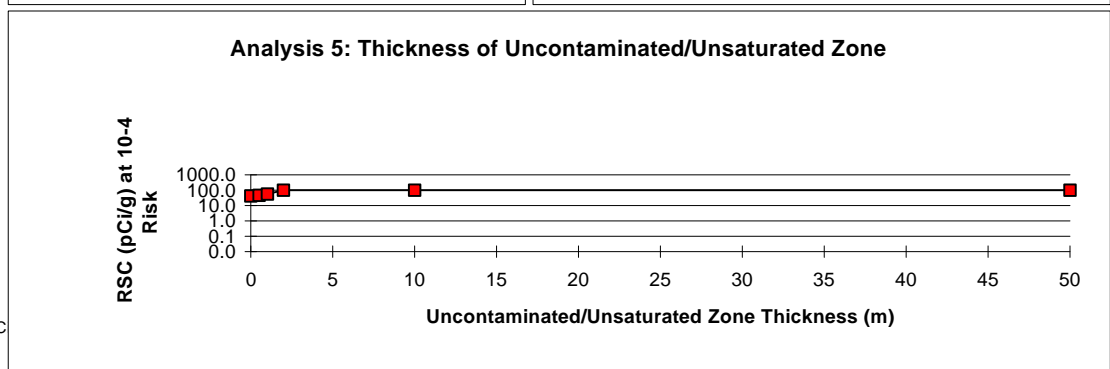
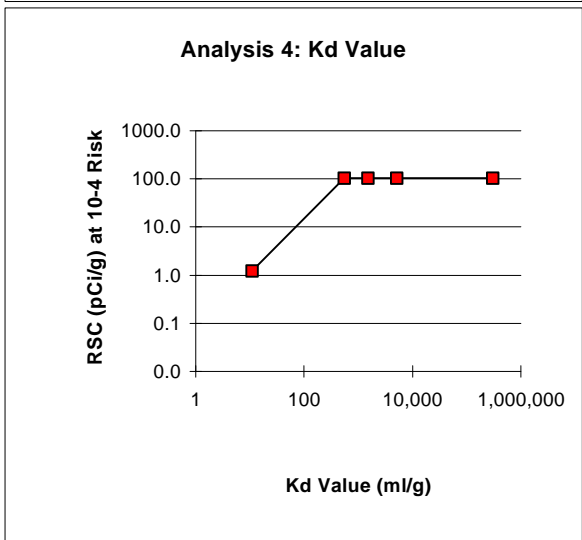
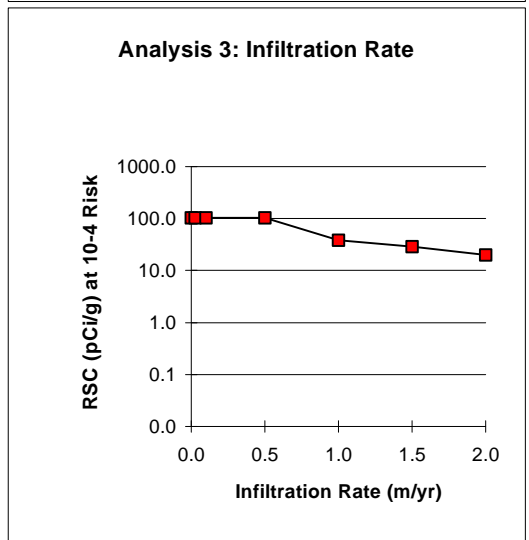
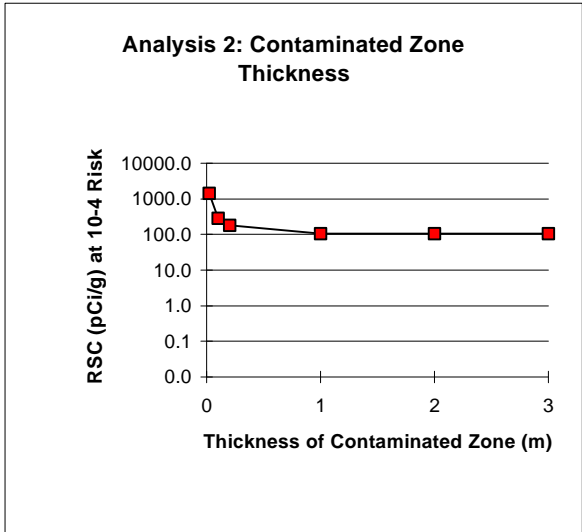
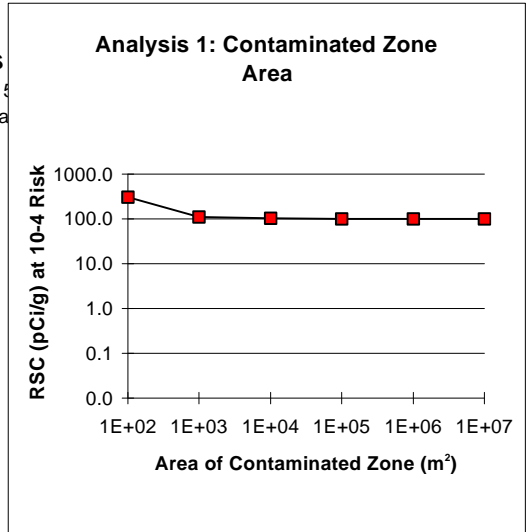
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	3.23E-07	309.6	0
	1E+03	9.13E-07	109.5	0
	1E+04	9.58E-07	104.4	0
	1E+05	9.92E-07	100.8	0
	1E+06	9.94E-07	100.6	0
	1E+07	9.95E-07	100.5	0
#2 Contaminated Zone Thickness (m)	0.02	7.08E-08	1411.6	0
	0.1	3.54E-07	282.6	0
	0.2	5.59E-07	178.9	0
	1	9.58E-07	104.4	0
	2	9.58E-07	104.4	0
#3 Infiltration Rate (m/yr)	0.001	9.58E-07	104.4	0
	0.025	9.58E-07	104.4	0
	0.100	9.58E-07	104.4	0
	0.500	9.58E-07	104.4	0
	1	2.58E-06	38.7	1,000
#4 Distribution Coefficient (Kd) (ml/g)	1.5	3.46E-06	28.9	1,000
	2	5.04E-06	19.8	766
	11	8.20E-05	1.2	36
	550	9.58E-07	104.4	0
	1,500	9.58E-07	104.4	0
#5 Uncontaminated/Unsat. Zone Thickness (m)	5,100	9.58E-07	104.4	0
	300,000	9.58E-07	104.4	0
	0	2.31E-06	43.4	426
	1	2.20E-06	45.4	766
	1	1.82E-06	54.8	1,000

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 550
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Pu-240

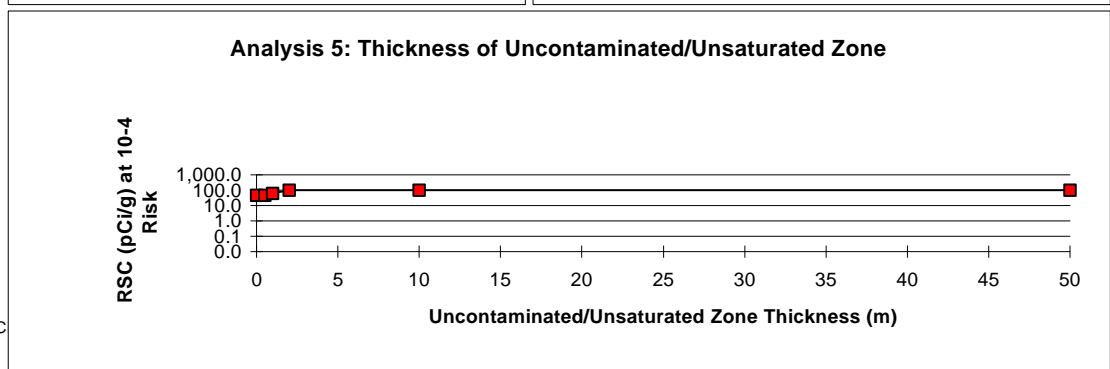
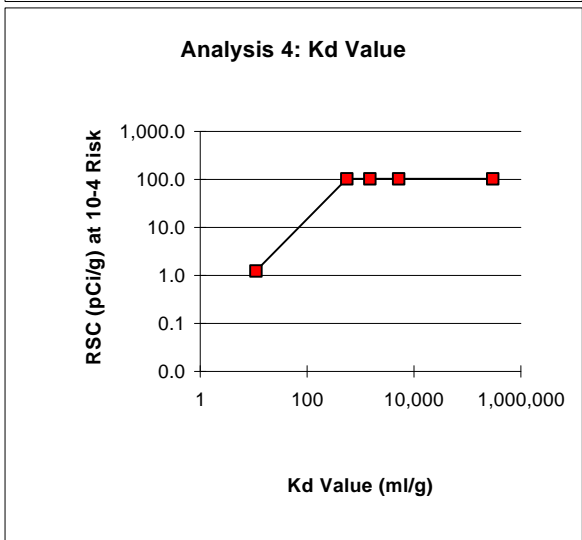
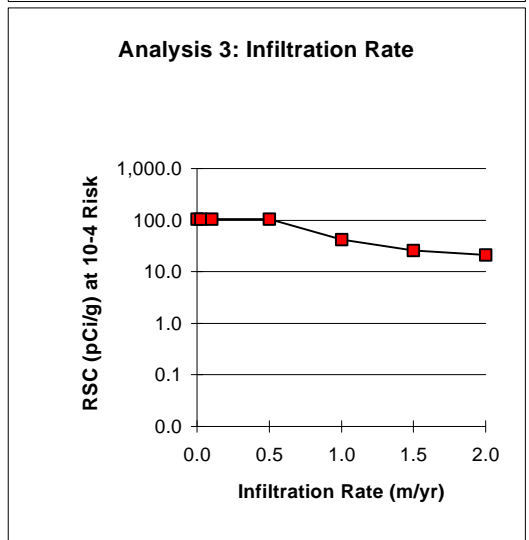
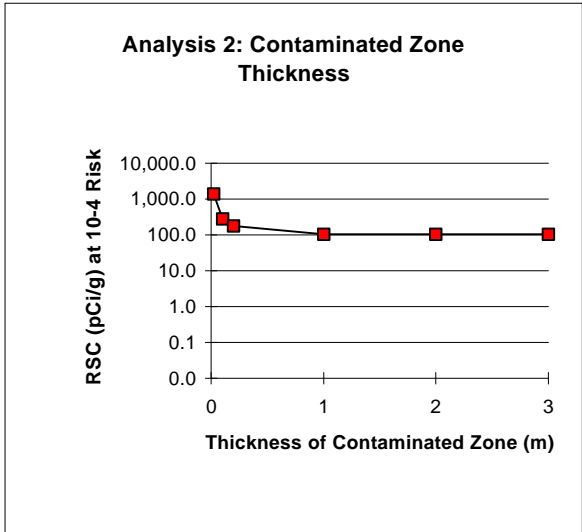
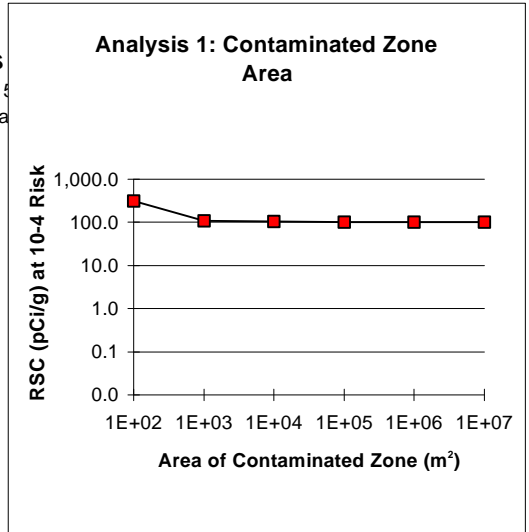
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	3.23E-07	309.5	0
	1E+03	9.13E-07	109.5	0
	1E+04	9.58E-07	104.4	0
	1E+05	9.92E-07	100.8	0
	1E+06	9.94E-07	100.6	0
	1E+07	9.95E-07	100.5	0
#2 Contaminated Zone Thickness (m)	0.02	7.09E-08	1,410.2	0
	0.1	3.54E-07	282.5	0
	0.2	5.59E-07	178.8	0
	1	9.58E-07	104.4	0
	2	9.58E-07	104.4	0
#3 Infiltration Rate (m/yr)	0.001	9.58E-07	104.4	0
	0.025	9.58E-07	104.4	0
	0.100	9.58E-07	104.4	0
	0.500	9.58E-07	104.4	0
	1	2.39E-06	41.8	1,000
	1.5	3.85E-06	26.0	879
#4 Distribution Coefficient (Kd) (ml/g)	11	8.18E-05	1.2	36
	550	9.58E-07	104.4	0
	1,500	9.58E-07	104.4	0
	5,100	9.58E-07	104.4	0
	300,000	9.58E-07	104.4	0
#5 Uncontaminated Unsat. Zone Thickness (m)	0	2.23E-06	44.8	425
	1	2.08E-06	48.1	766
	1	1.69E-06	59.2	1,000
	2	9.58E-07	104.4	0
	10	9.58E-07	104.4	0
50	9.58E-07	104.4	0	

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 550
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Pu-241+D

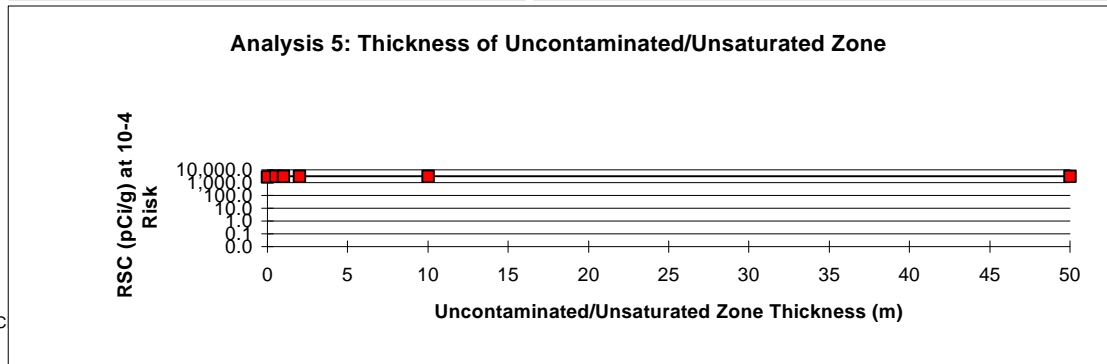
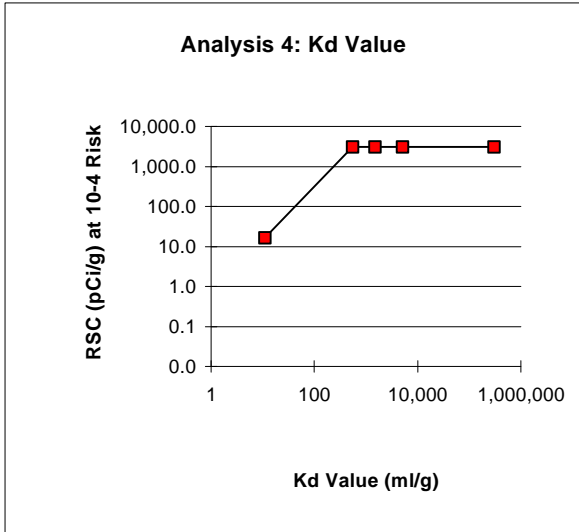
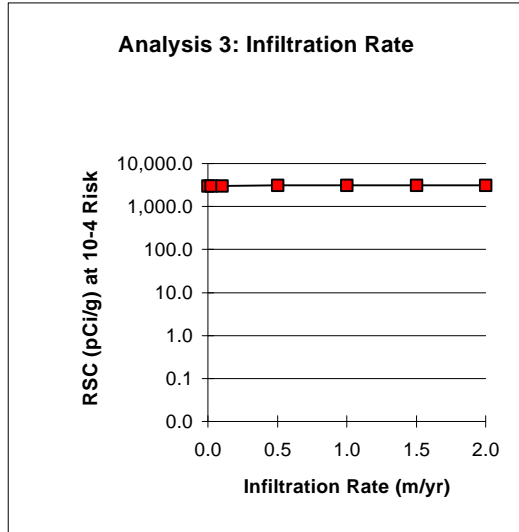
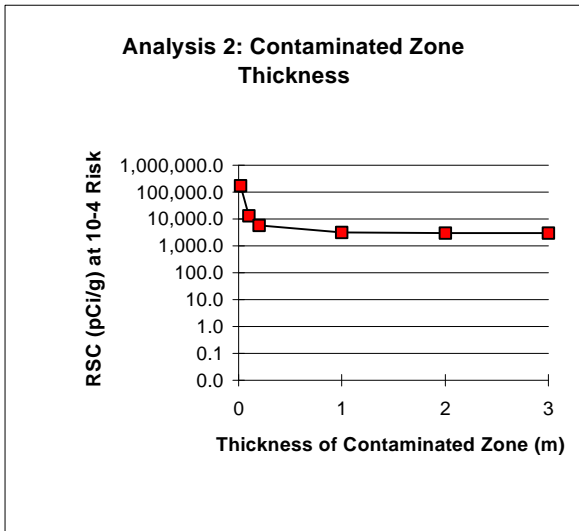
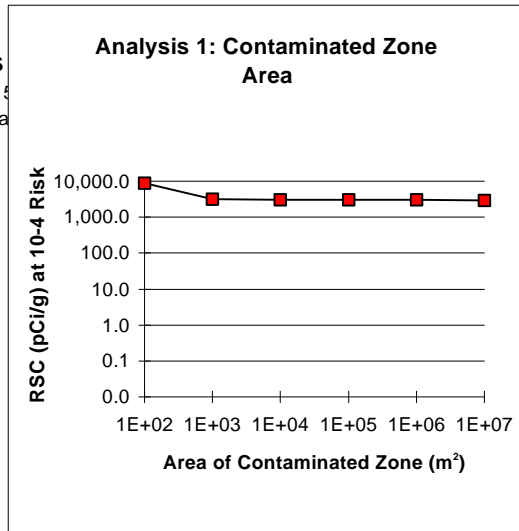
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	1.14E-08	8,802.8	62
	1E+03	3.13E-08	3,194.9	67
	1E+04	3.25E-08	3,076.0	68
	1E+05	3.32E-08	3,009.3	68
	1E+06	3.34E-08	2,994.9	69
	1E+07	3.36E-08	2,979.7	70
#2 Contaminated Zone Thickness (m)	0.02	5.83E-10	171,526.6	2
	0.1	7.74E-09	12,916.6	20
	0.2	1.72E-08	5,814.0	46
	1	3.22E-08	3,109.5	66
	2	3.25E-08	3,076.0	68
#3 Infiltration Rate (m/yr)	0.001	3.28E-08	3,047.9	69
	0.025	3.28E-08	3,049.7	69
	0.100	3.27E-08	3,054.4	68
	0.500	3.25E-08	3,076.0	68
	1	3.22E-08	3,106.6	66
#4 Distribution Coefficient (Kd) (ml/g)	1.5	3.19E-08	3,137.7	65
	2	3.16E-08	3,169.6	64
	11	6.14E-06	16.3	15
	550	3.25E-08	3,076.0	68
	1,500	3.27E-08	3,057.2	68
#5 Uncontaminated/Unsat. Zone Thickness (m)	5,100	3.28E-08	3,049.7	69
	300,000	3.28E-08	3,047.9	69
	0	3.38E-08	2,956.0	73
	1	3.25E-08	3,076.0	67
	1	3.25E-08	3,076.0	67
Thickness (m)	2	3.25E-08	3,076.0	68
	10	3.25E-08	3,079.8	67
	50	3.25E-08	3,079.8	67

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 550
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Pu-242+D

RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

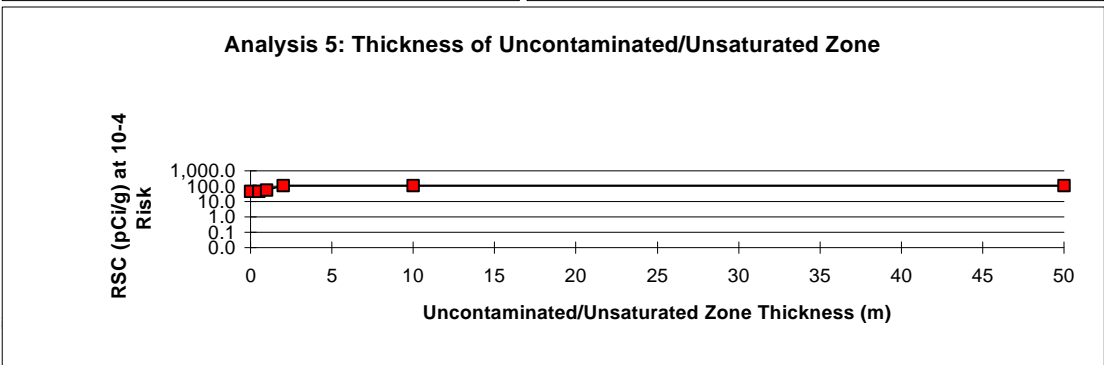
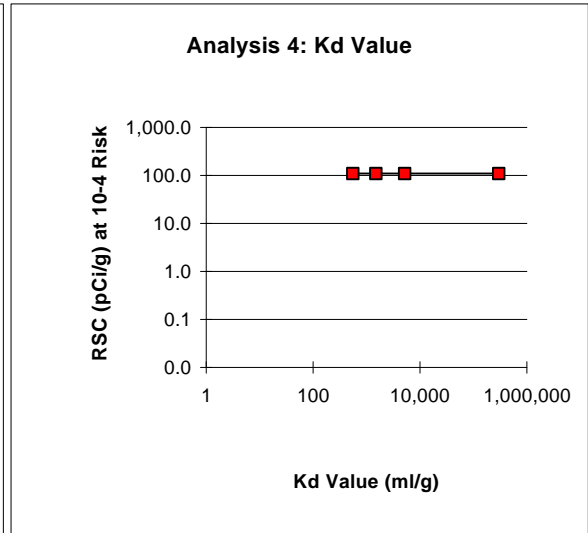
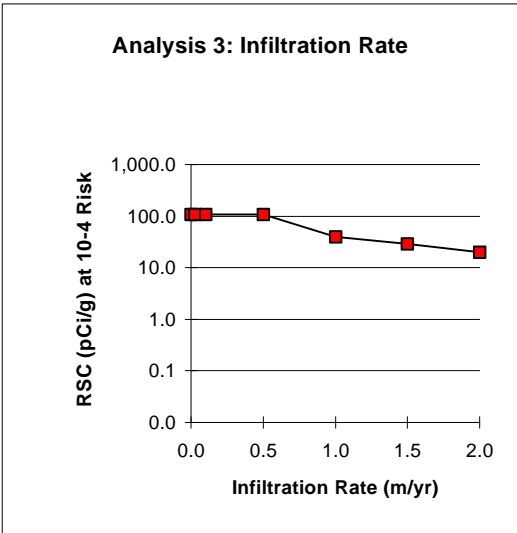
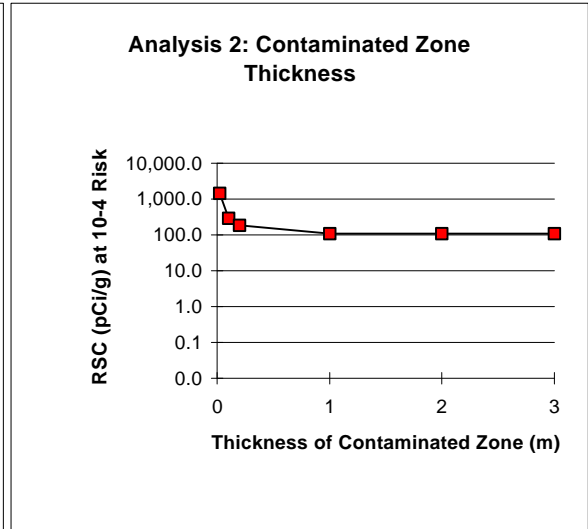
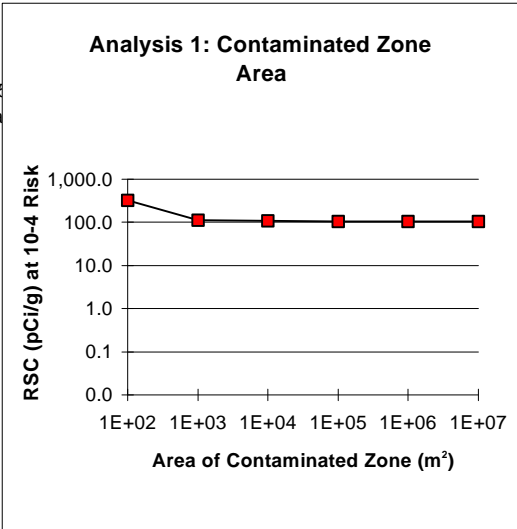
Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	3.12E-07	320.6	0
	1E+03	8.79E-07	113.8	0
	1E+04	9.22E-07	108.5	0
	1E+05	9.55E-07	104.8	0
	1E+06	9.57E-07	104.5	0
	1E+07	9.57E-07	104.4	0
#2 Contaminated Zone Thickness (m)	0.02	6.84E-08	1,462.8	0
	0.1	3.41E-07	293.0	0
	0.2	5.39E-07	185.5	0
	1	9.22E-07	108.5	0
	2	9.22E-07	108.5	0
#3 Infiltration Rate (m/yr)	0.001	9.22E-07	108.5	0
	0.025	9.22E-07	108.5	0
	0.100	9.22E-07	108.5	0
	0.500	9.22E-07	108.5	0
	1	2.55E-06	39.2	1,000
	1.5	3.41E-06	29.3	1,000
#4 Distribution Coefficient (Kd) (ml/g)	11	NC	NC	NC
	550	9.22E-07	108.5	0
	1,500	9.22E-07	108.5	0
	5,100	9.22E-07	108.5	0
#5 Uncontaminated Unsat. Zone Thickness (m)	300,000	9.22E-07	108.5	0
	0	2.24E-06	44.6	426
	1	2.16E-06	46.3	766
	1	1.80E-06	55.5	1,000
	2	9.22E-07	108.5	0
	10	9.22E-07	108.5	0
	50	9.22E-07	108.5	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:

- * Agricultural Land Use Exposure Scenario
- * Area of Contaminated Zone = 10,000 m²
- * Thickness of Contaminated Zone = 2 m
- * Infiltration Rate = 0.5 m/yr
- * Kd = 550
- * Thickness of Unsat. Zone = 2 m
- * Well Depth Below Water Table = 3 m

*RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Pu-244+D

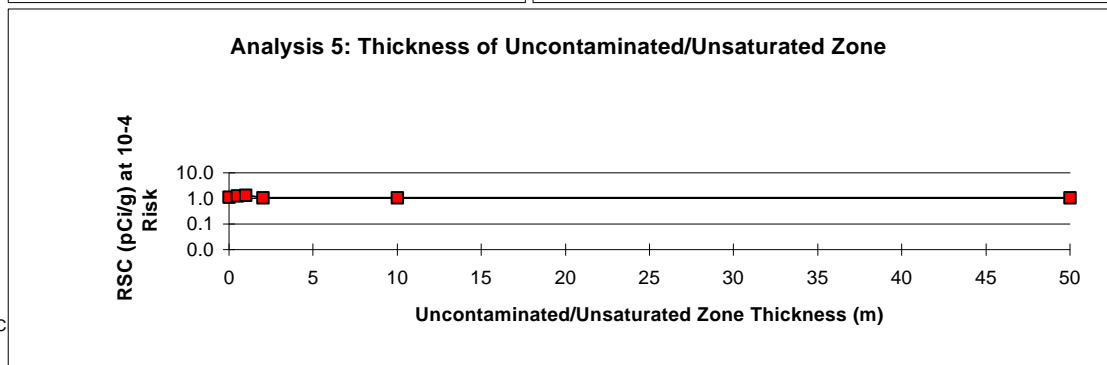
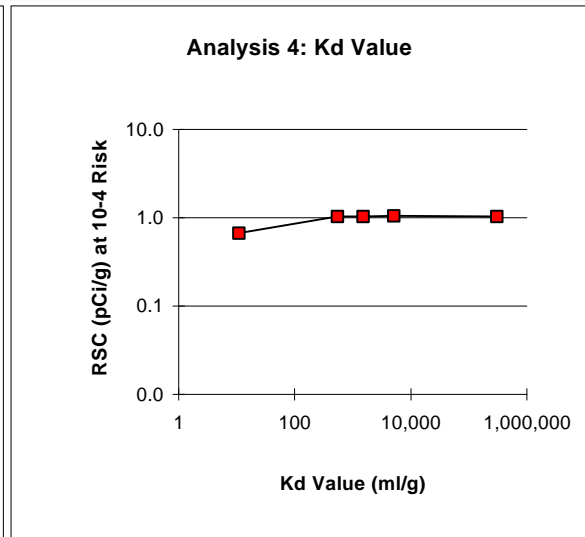
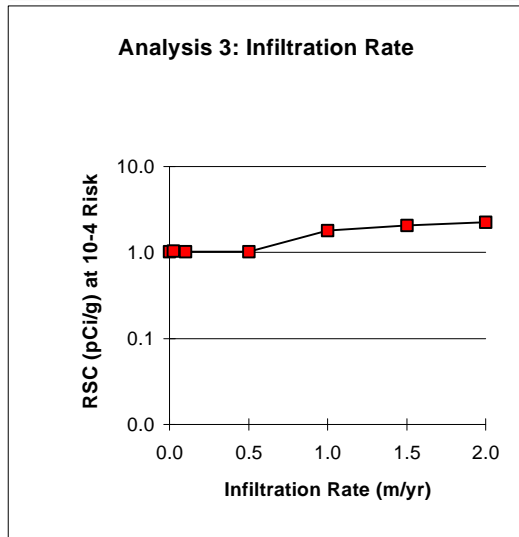
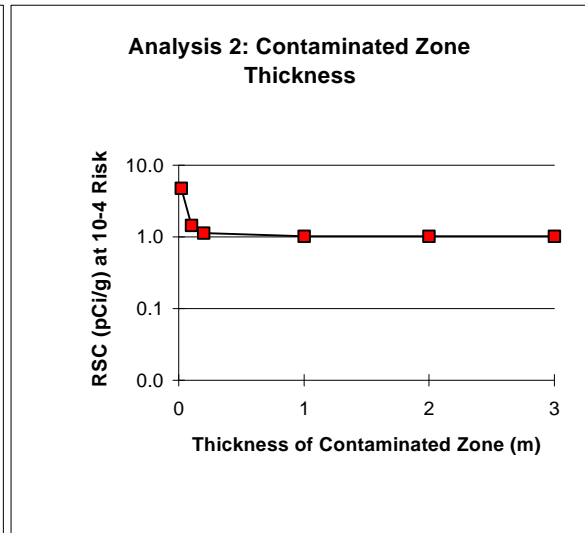
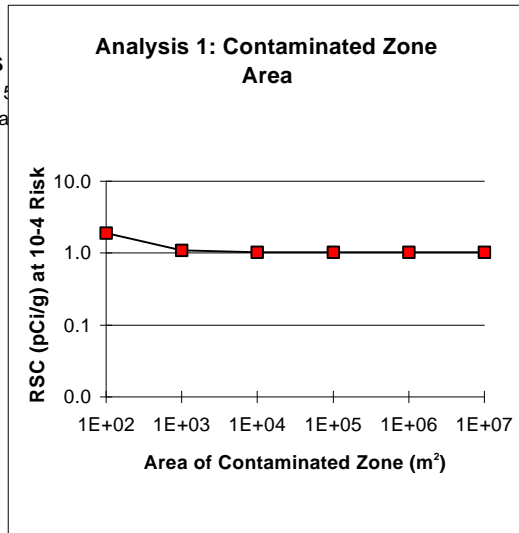
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	5.31E-05	1.9	0
	1E+03	9.15E-05	1.1	0
	1E+04	9.70E-05	1.0	0
	1E+05	9.71E-05	1.0	0
	1E+06	9.71E-05	1.0	0
	1E+07	9.71E-05	1.0	0
#2 Contaminated Zone Thickness (m)	0.02	2.11E-05	4.7	0
	0.1	6.84E-05	1.5	0
	0.2	8.84E-05	1.1	0
	1	9.70E-05	1.0	0
	2	9.70E-05	1.0	0
#3 Infiltration Rate (m/yr)	0.001	9.70E-05	1.0	1,000
	0.025	9.57E-05	1.0	1,000
	0.100	9.70E-05	1.0	0
	0.500	9.70E-05	1.0	0
	1	5.56E-05	1.8	1,000
	1.5	4.83E-05	2.1	880
#4 Distribution Coefficient (Kd) (ml/g)	2	4.41E-05	2.3	766
	11	1.48E-04	0.7	36
	550	9.70E-05	1.0	0
	1,500	9.70E-05	1.0	0
#5 Uncontaminated Unsat. Zone Thickness (m)	5,100	9.58E-05	1.0	397
	300,000	9.71E-05	1.0	1,000
	0	8.71E-05	1.1	425
	1	7.88E-05	1.3	766
	1	7.32E-05	1.4	1,000
Thickness (m)	2	9.70E-05	1.0	0
	10	9.70E-05	1.0	0
	50	9.70E-05	1.0	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 550
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 *RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Ra-226+D

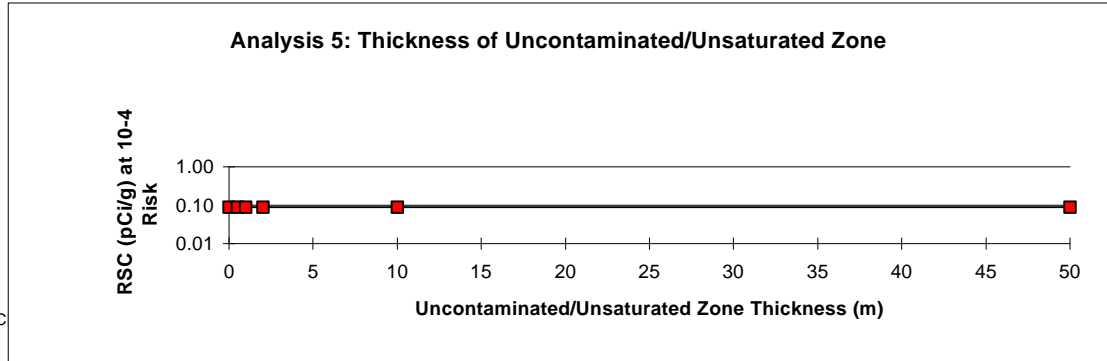
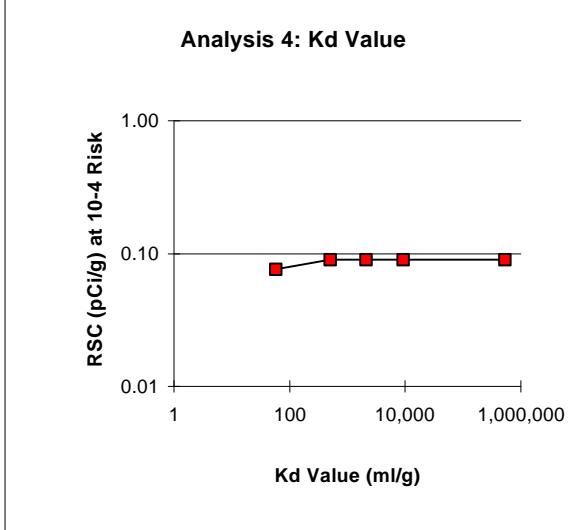
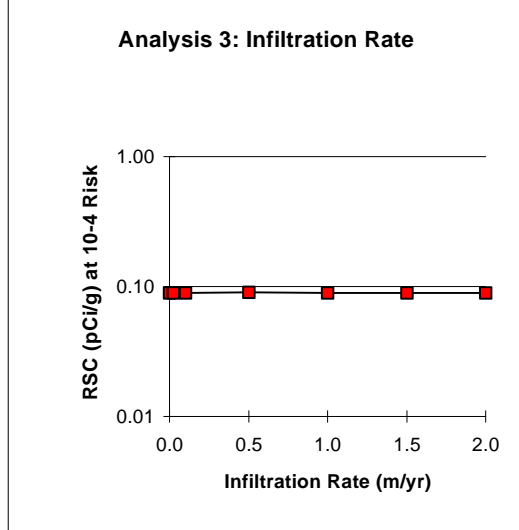
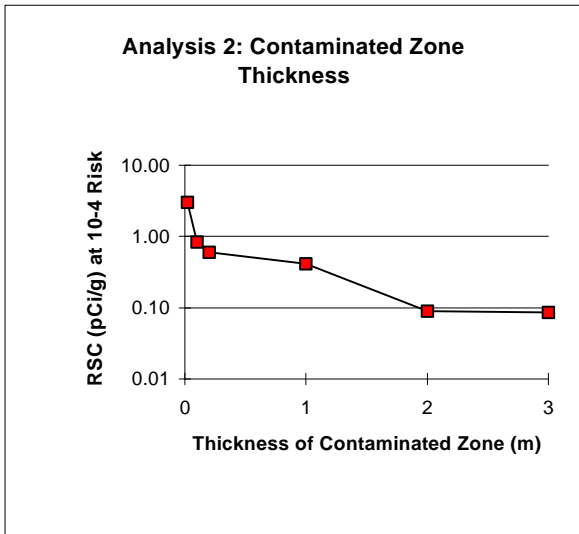
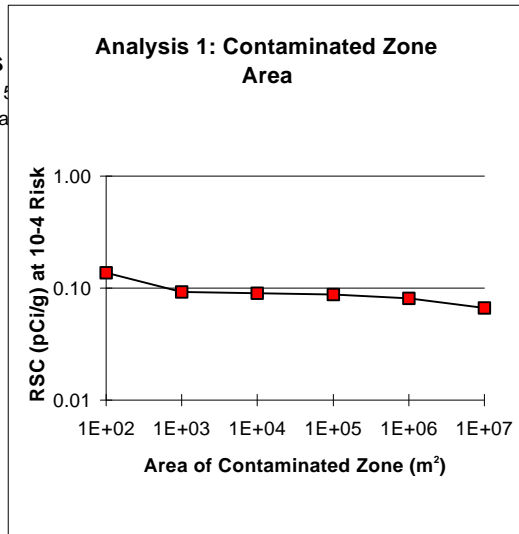
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	7.30E-04	0.14	0
	1E+03	1.09E-03	0.09	8
	1E+04	1.11E-03	0.09	11
	1E+05	1.15E-03	0.09	14
	1E+06	1.23E-03	0.08	11
	1E+07	1.50E-03	0.07	5
#2 Contaminated Zone Thickness (m)	0.02	3.33E-05	3.01	0
	0.1	1.19E-04	0.84	0
	0.2	1.68E-04	0.59	0
	1	2.43E-04	0.41	67
	2	1.11E-03	0.09	11
#3 Infiltration Rate (m/yr)	0.001	1.12E-03	0.09	27
	0.025	1.12E-03	0.09	26
	0.100	1.11E-03	0.09	23
	0.500	1.11E-03	0.09	11
	1	1.11E-03	0.09	1
#4 Distribution Coefficient (Kd) (ml/g)	1.5	1.11E-03	0.09	0
	2	1.11E-03	0.09	0
	57	1.31E-03	0.08	57
	500	1.11E-03	0.09	11
	2,100	1.11E-03	0.09	22
#5 Uncontaminated/Unsat. Zone Thickness (m)	9,100	1.12E-03	0.09	26
	530,000	1.12E-03	0.09	26
	0	1.11E-03	0.09	14
	1	1.11E-03	0.09	11
	1	1.11E-03	0.09	11
#5 Uncontaminated/Unsat. Zone Thickness (m)	2	1.11E-03	0.09	11
	10	1.11E-03	0.09	11
	50	1.11E-03	0.09	11

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 500
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 *RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Ra-228+D

RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

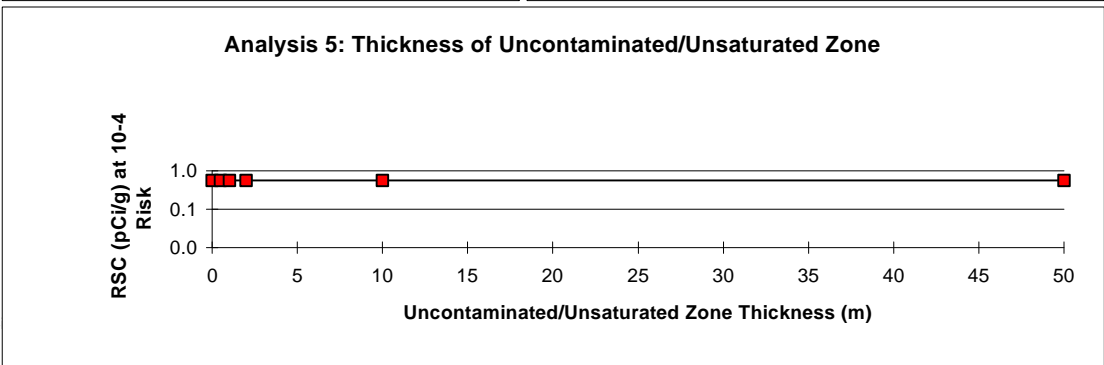
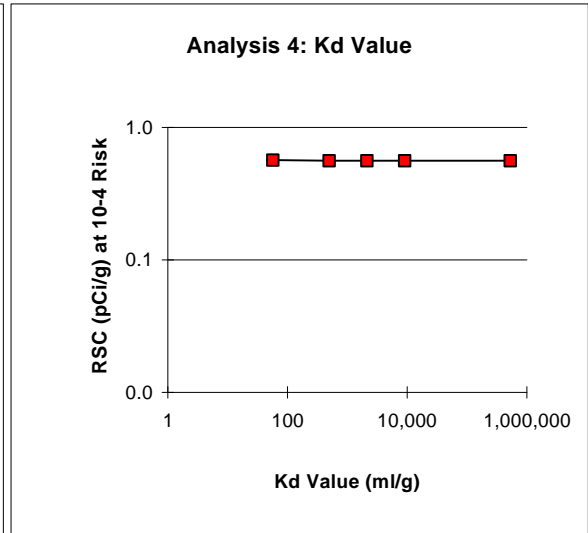
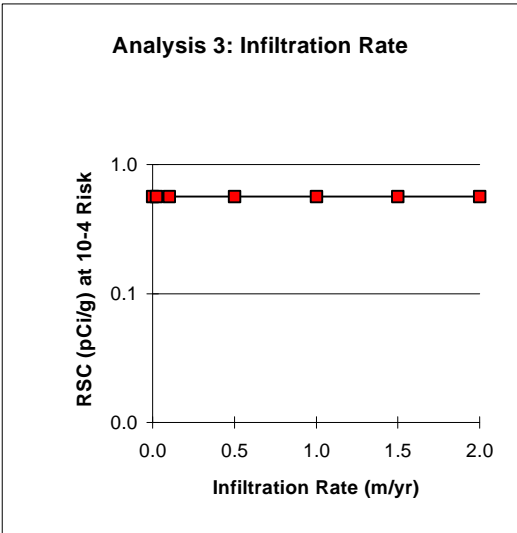
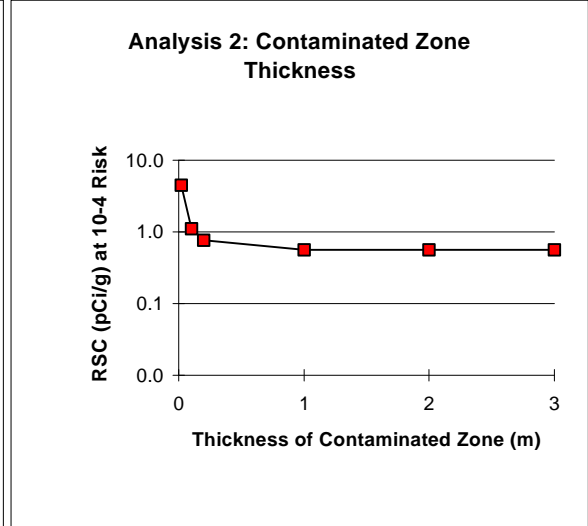
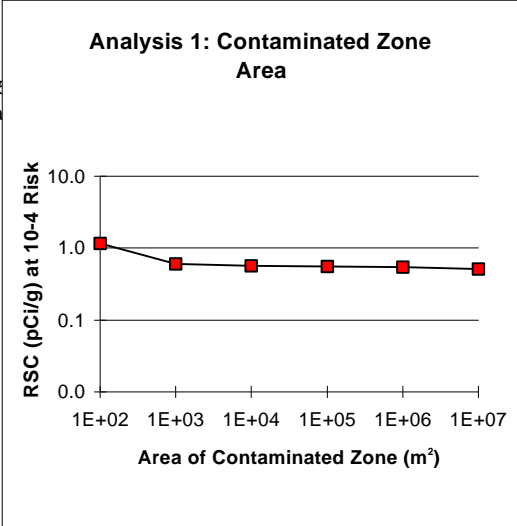
Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	8.55E-05	1.2	3
	1E+03	1.65E-04	0.6	2
	1E+04	1.78E-04	0.6	2
	1E+05	1.82E-04	0.6	2
	1E+06	1.85E-04	0.5	2
	1E+07	1.96E-04	0.5	3
#2 Contaminated Zone Thickness (m)	0.02	2.24E-05	4.5	2
	0.1	9.04E-05	1.1	3
	0.2	1.31E-04	0.8	3
	1	1.78E-04	0.6	2
	2	1.78E-04	0.6	2
#3 Infiltration Rate (m/yr)	0.001	1.78E-04	0.6	2
	0.025	1.78E-04	0.6	2
	0.100	1.78E-04	0.6	2
	0.500	1.78E-04	0.6	2
	1	1.78E-04	0.6	2
#4 Distribution Coefficient (Kd) (ml/g)	1.5	1.77E-04	0.6	2
	2	1.77E-04	0.6	2
	57	1.77E-04	0.6	2
	500	1.78E-04	0.6	2
	2,100	1.78E-04	0.6	2
#5 Uncontaminated Unsat. Zone Thickness (m)	9,100	1.78E-04	0.6	2
	530,000	1.78E-04	0.6	2
	0	1.78E-04	0.6	2
	1	1.78E-04	0.6	2
	1	1.78E-04	0.6	2
Thickness (m)	2	1.78E-04	0.6	2
	10	1.78E-04	0.6	2
	50	1.78E-04	0.6	2

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:

- * Agricultural Land Use Exposure Scenario
- * Area of Contaminated Zone = 10,000 m²
- * Thickness of Contaminated Zone = 2 m
- * Infiltration Rate = 0.5 m/yr
- * Kd = 500
- * Thickness of Unsat. Zone = 2 m
- * Well Depth Below Water Table = 3 m

*RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Ru-106

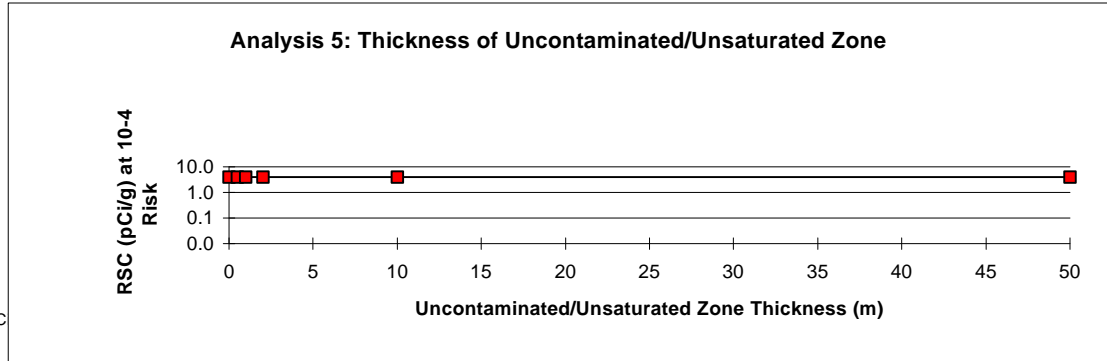
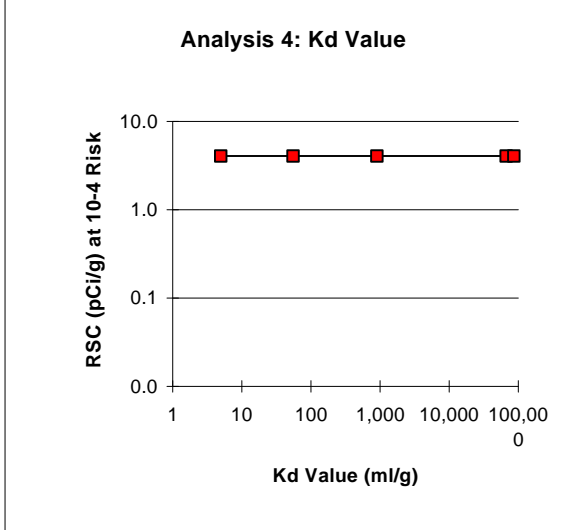
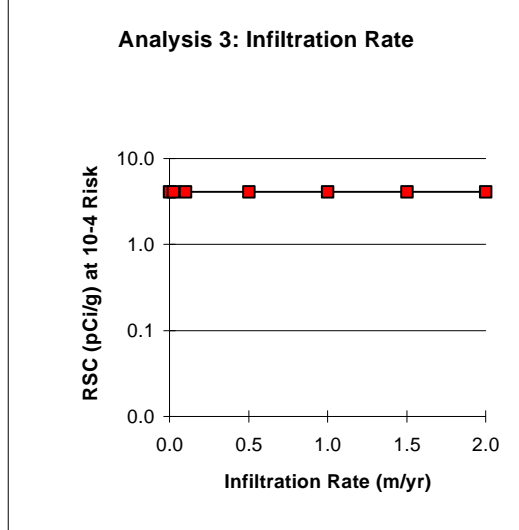
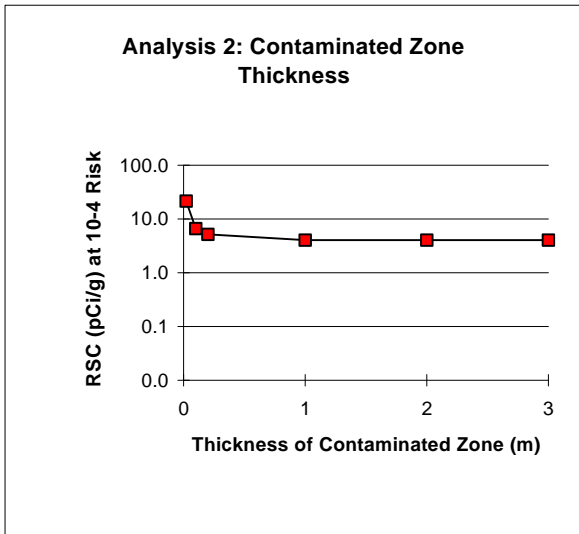
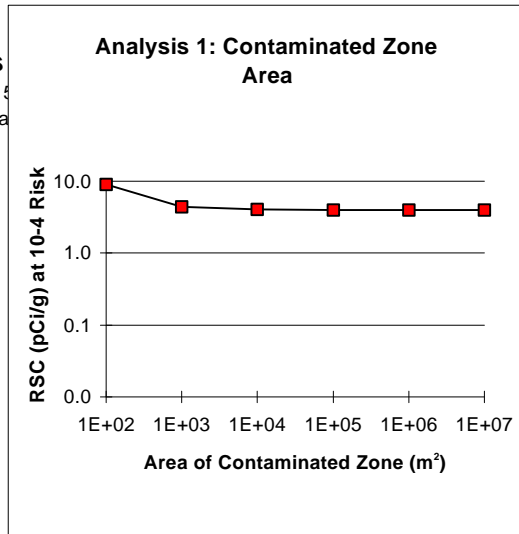
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	1.12E-05	9.0	0
	1E+03	2.29E-05	4.4	0
	1E+04	2.46E-05	4.1	0
	1E+05	2.52E-05	4.0	0
	1E+06	2.52E-05	4.0	0
#2 Contaminated Zone Thickness (m)	0.02	4.65E-06	21.5	0
	0.1	1.49E-05	6.7	0
	0.2	1.94E-05	5.2	0
	1	2.46E-05	4.1	0
	2	2.46E-05	4.1	0
#3 Infiltration Rate (m/yr)	0.001	2.46E-05	4.1	0
	0.025	2.46E-05	4.1	0
	0.100	2.46E-05	4.1	0
	0.500	2.46E-05	4.1	0
	1	2.46E-05	4.1	0
#4 Distribution Coefficient (Kd) (ml/g)	1.5	2.46E-05	4.1	0
	2	2.46E-05	4.1	0
	5	2.46E-05	4.1	0
	55	2.46E-05	4.1	0
	900	2.46E-05	4.1	0
#5 Uncontaminated Unsat. Zone Thickness (m)	66,000	2.46E-05	4.1	0
	87,000	2.46E-05	4.1	0
	0	2.46E-05	4.1	0
	1	2.46E-05	4.1	0
	1	2.46E-05	4.1	0
#5 Uncontaminated Unsat. Zone Thickness (m)	2	2.46E-05	4.1	0
	10	2.46E-05	4.1	0
	50	2.46E-05	4.1	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 55
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 *RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Sb-125+D

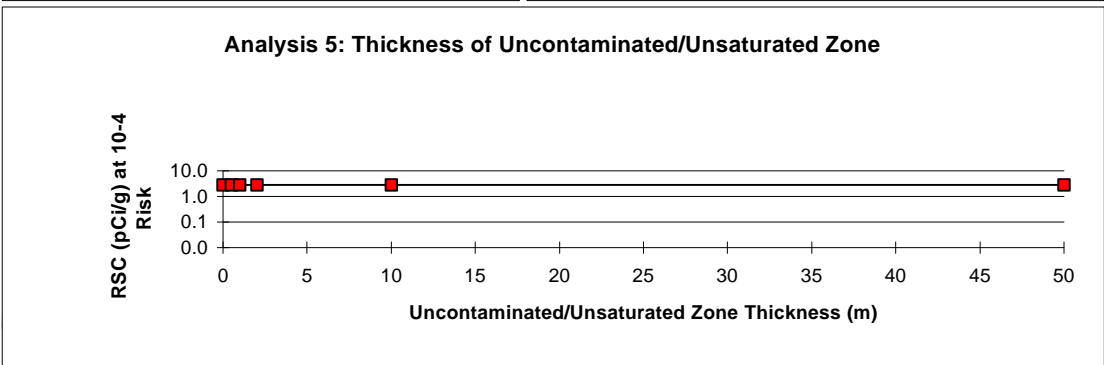
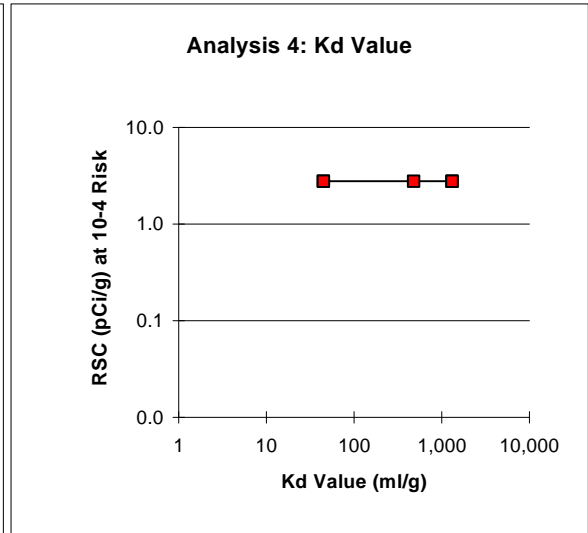
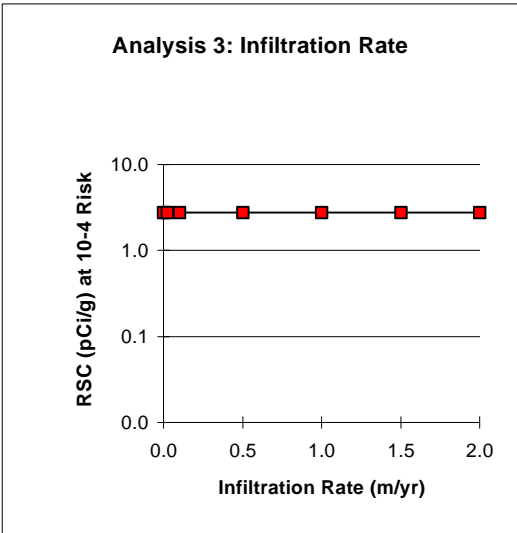
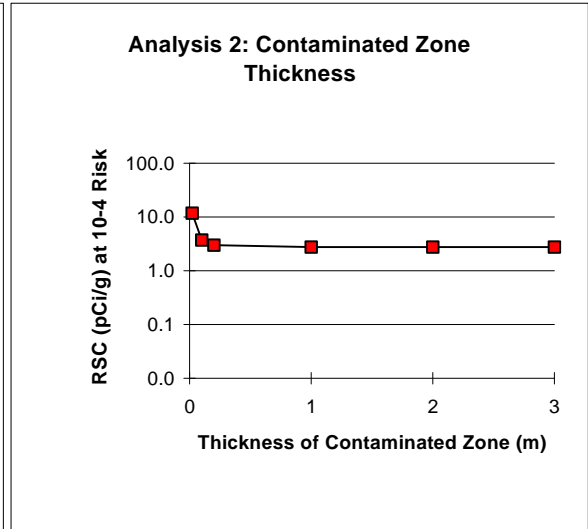
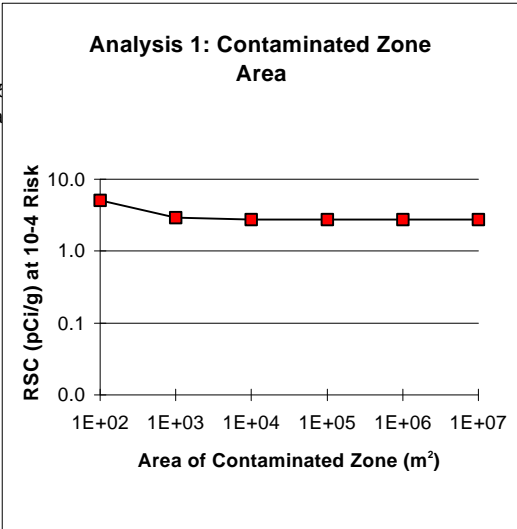
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	1.98E-05	5.0	0
	1E+03	3.41E-05	2.9	0
	1E+04	3.62E-05	2.8	0
	1E+05	3.62E-05	2.8	0
	1E+06	3.62E-05	2.8	0
	1E+07	3.62E-05	2.8	0
#2 Contaminated Zone Thickness (m)	0.02	8.47E-06	11.8	0
	0.1	2.66E-05	3.8	0
	0.2	3.36E-05	3.0	0
	1	3.62E-05	2.8	0
	2	3.62E-05	2.8	0
#3 Infiltration Rate (m/yr)	0.001	3.62E-05	2.8	0
	0.025	3.62E-05	2.8	0
	0.100	3.62E-05	2.8	0
	0.500	3.62E-05	2.8	0
	1	3.62E-05	2.8	0
#4 Distribution Coefficient (Kd) (ml/g)	1.5	3.62E-05	2.8	0
	2	3.62E-05	2.8	0
	45	3.62E-05	2.8	0
	480	3.62E-05	2.8	0
	1,300	3.62E-05	2.8	0
#5 Uncontaminated Unsat. Zone Thickness (m)	1,300	3.62E-05	2.8	0
	0	3.62E-05	2.8	0
	1	3.62E-05	2.8	0
	1	3.62E-05	2.8	0
	2	3.62E-05	2.8	0
	10	3.62E-05	2.8	0
	50	3.62E-05	2.8	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 45
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 *RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Sm-147

RESRAD Parameter Sensitivity Analyses

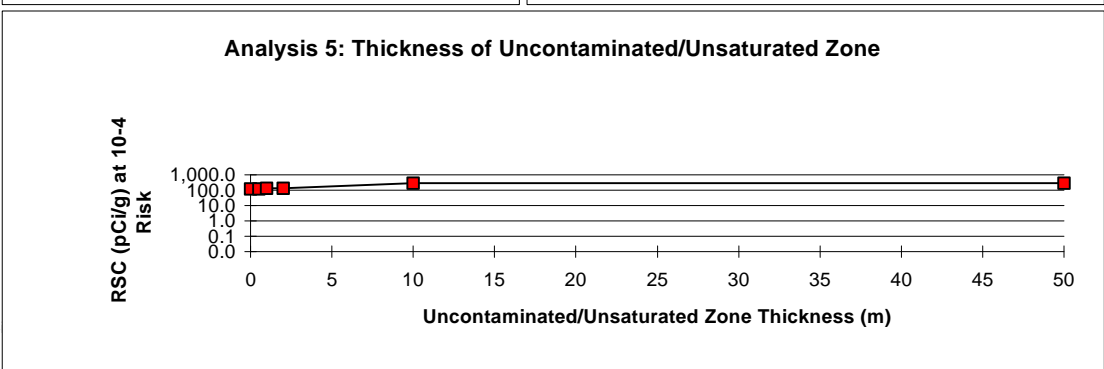
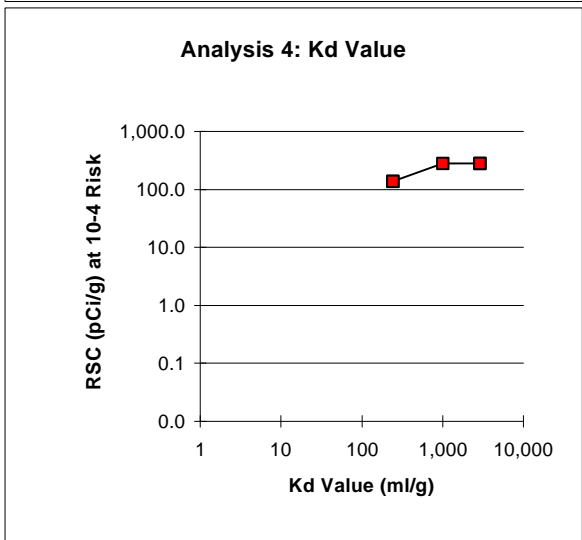
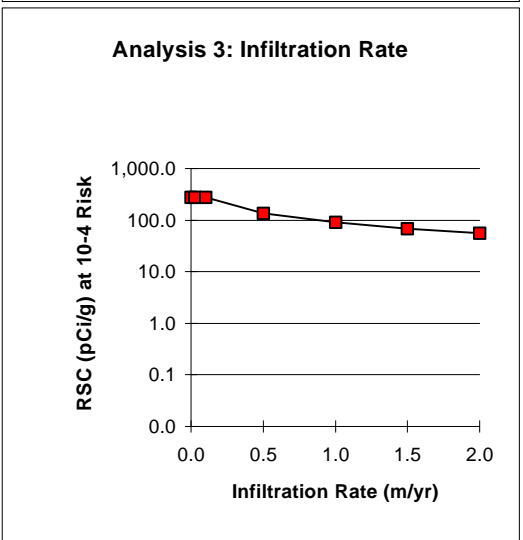
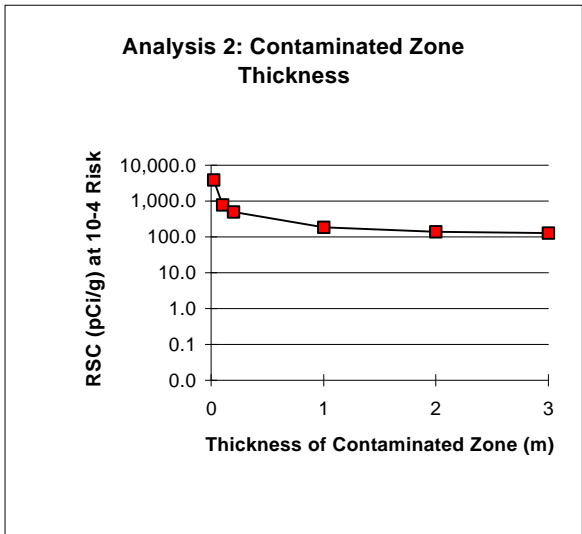
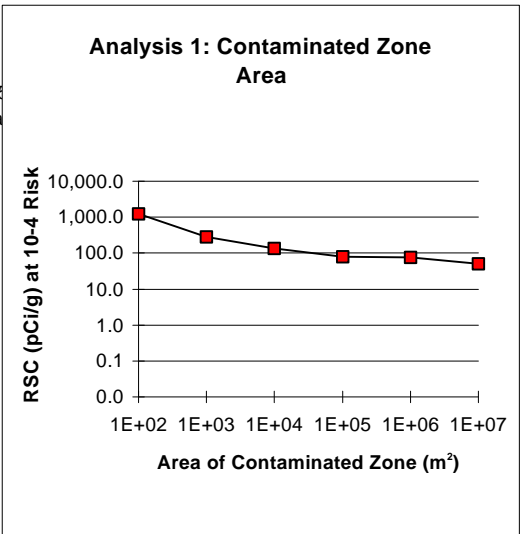
Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	8.13E-08	1,230.3	0
	1E+03	3.48E-07	287.7	654
	1E+04	7.32E-07	136.7	780
	1E+05	1.27E-06	78.9	1,000
	1E+06	1.33E-06	75.4	1,000
	1E+07	1.99E-06	50.3	1,000
#2 Contaminated Zone Thickness (m)	0.02	2.54E-08	3,932.4	0
	0.1	1.27E-07	786.2	0
	0.2	2.02E-07	495.3	0
	1	5.39E-07	185.6	780
	2	7.32E-07	136.7	780
#3 Infiltration Rate (m/yr)	0.001	3.58E-07	279.2	0
	0.025	3.58E-07	279.2	0
	0.100	3.58E-07	279.2	0
	0.500	7.32E-07	136.7	780
	1	1.11E-06	90.5	483
#4 Distribution Coefficient (Kd) (ml/g)	1.5	1.46E-06	68.4	384
	2	1.78E-06	56.3	334
	240	7.32E-07	136.7	780
	2,900	3.58E-07	279.2	0
#5 Uncontaminated/Unsat. Zone Thickness (m)	2,900	3.58E-07	279.2	0
	0	8.38E-07	119.3	186
	1	8.07E-07	123.9	334
	1	7.80E-07	128.3	483
	2	7.32E-07	136.7	780
10	3.58E-07	279.2	0	
50	3.58E-07	279.2	0	

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:

- * Agricultural Land Use Exposure Scenario
- * Area of Contaminated Zone = 10,000 m²
- * Thickness of Contaminated Zone = 2 m
- * Infiltration Rate = 0.5 m/yr
- * Kd = 240
- * Thickness of Unsat. Zone = 2 m
- * Well Depth Below Water Table = 3 m
- * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Sm-151

RESRAD Parameter Sensitivity Analyses

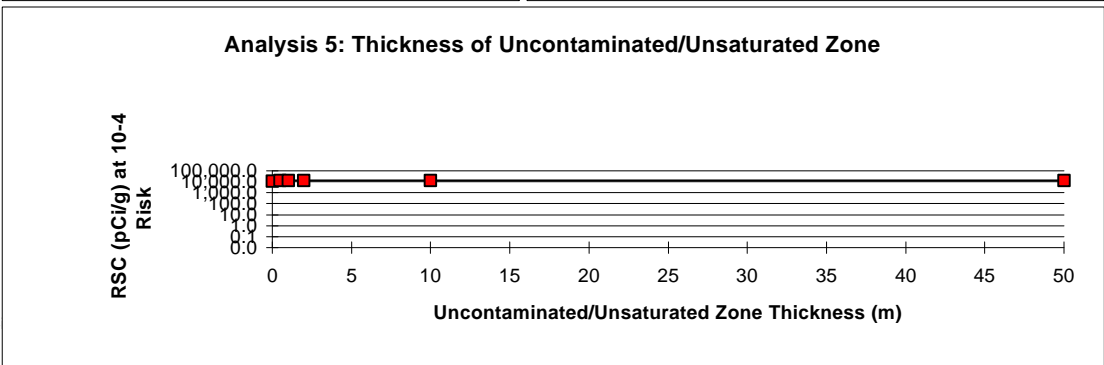
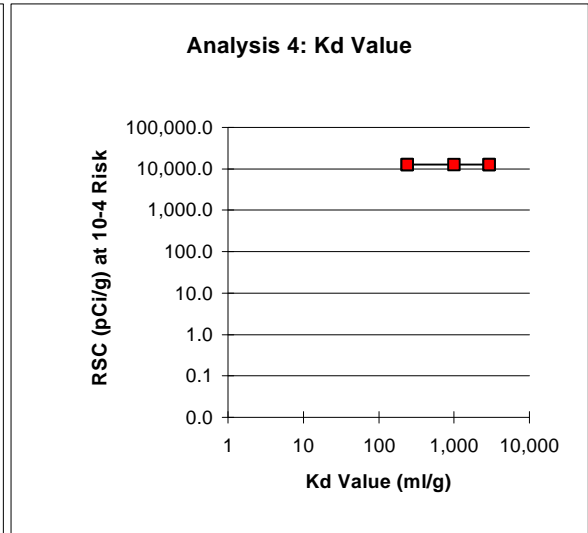
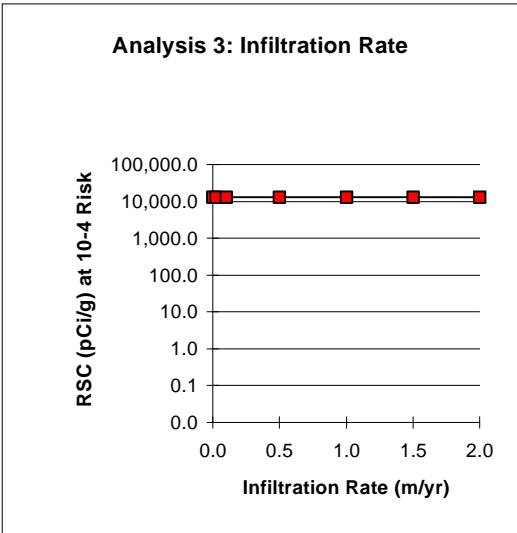
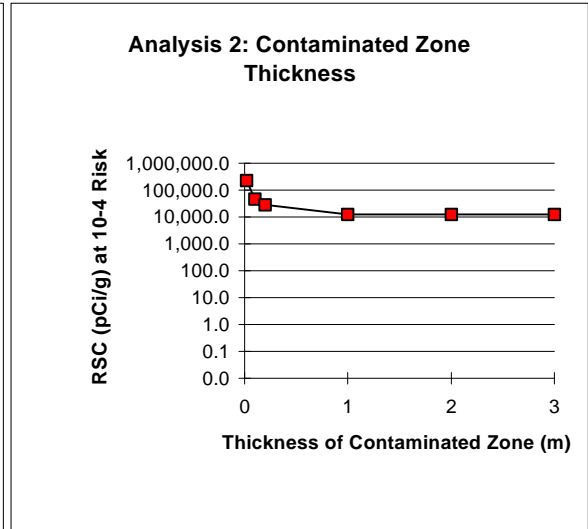
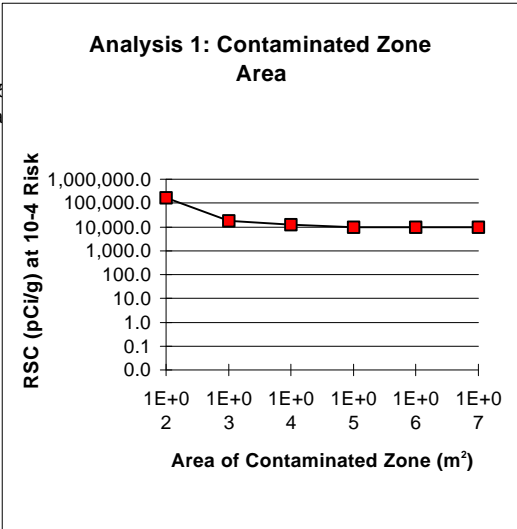
Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	5.98E-10	167,196.1	0
	1E+03	5.59E-09	17,889.1	0
	1E+04	7.84E-09	12,751.8	0
	1E+05	1.03E-08	9,671.2	0
	1E+06	1.03E-08	9,671.2	0
	1E+07	1.03E-08	9,671.2	0
#2 Contaminated Zone Thickness (m)	0.02	4.30E-10	232,666.4	0
	0.1	2.14E-09	46,816.5	0
	0.2	3.51E-09	28,490.0	0
	1	7.84E-09	12,751.8	0
	2	7.84E-09	12,751.8	0
#3 Infiltration Rate (m/yr)	0.001	7.84E-09	12,751.8	0
	0.025	7.84E-09	12,751.8	0
	0.100	7.84E-09	12,751.8	0
	0.500	7.84E-09	12,751.8	0
	1	7.84E-09	12,751.8	0
#4 Distribution Coefficient (Kd) (ml/g)	1.5	7.84E-09	12,751.8	0
	2	7.84E-09	12,751.8	0
	240	7.84E-09	12,751.8	0
	240	7.84E-09	12,751.8	0
	1,000	7.84E-09	12,751.8	0
#5 Uncontaminated/Unsat. Zone Thickness (m)	2,900	7.84E-09	12,751.8	0
	2,900	7.84E-09	12,751.8	0
	0	8.10E-09	12,341.1	19
	1	7.84E-09	12,751.8	0
	1	7.84E-09	12,751.8	0
#5 Uncontaminated/Unsat. Zone Thickness (m)	2	7.84E-09	12,751.8	0
	10	7.84E-09	12,751.8	0
	50	7.84E-09	12,751.8	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:

- * Agricultural Land Use Exposure Scenario
- * Area of Contaminated Zone = 10,000 m²
- * Thickness of Contaminated Zone = 2 m
- * Infiltration Rate = 0.5 m/yr
- * Kd = 240
- * Thickness of Unsat. Zone = 2 m
- * Well Depth Below Water Table = 3 m
- * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Sr-90+D

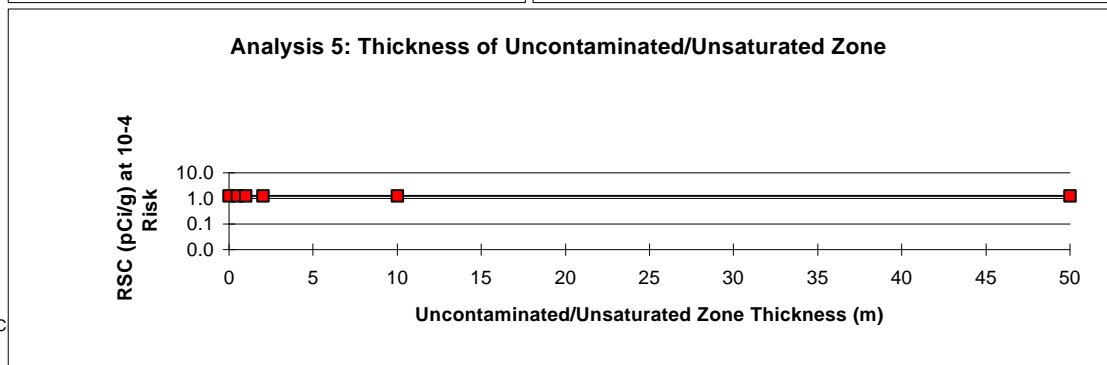
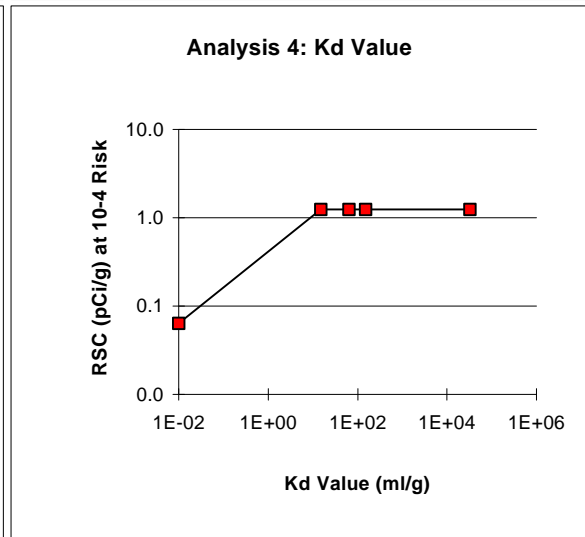
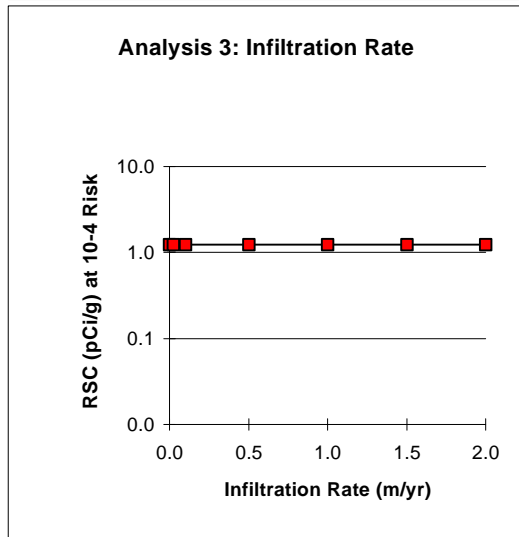
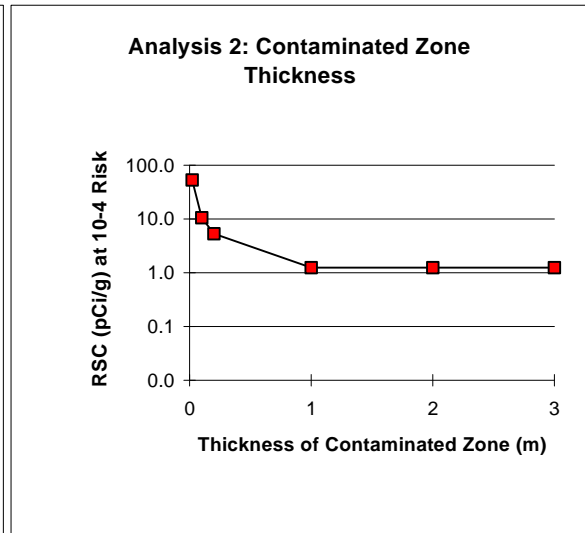
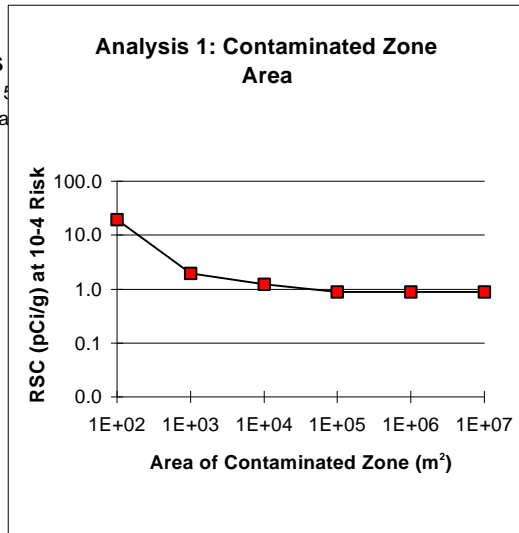
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	5.15E-06	19.4	0
	1E+03	5.15E-05	1.9	0
	1E+04	8.06E-05	1.2	0
	1E+05	1.13E-04	0.9	0
	1E+06	1.13E-04	0.9	0
	1E+07	1.13E-04	0.9	0
#2 Contaminated Zone Thickness (m)	0.02	1.89E-06	53.1	0
	0.1	9.42E-06	10.6	0
	0.2	1.86E-05	5.4	0
	1	8.06E-05	1.2	0
	2	8.06E-05	1.2	0
#3 Infiltration Rate (m/yr)	0.001	8.06E-05	1.2	0
	0.025	8.06E-05	1.2	0
	0.100	8.06E-05	1.2	0
	0.500	8.06E-05	1.2	0
	1	8.06E-05	1.2	0
	1.5	8.06E-05	1.2	0
#4 Distribution Coefficient (Kd) (ml/g)	0	1.58E-03	0.1	1
	15	8.06E-05	1.2	0
	65	8.06E-05	1.2	0
	150	8.06E-05	1.2	0
	32,000	8.06E-05	1.2	0
#5 Uncontaminated/Unsat. Zone Thickness (m)	0	8.06E-05	1.2	0
	1	8.06E-05	1.2	0
	1	8.06E-05	1.2	0
	2	8.06E-05	1.2	0
	10	8.06E-05	1.2	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 15
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 *RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Tc-99

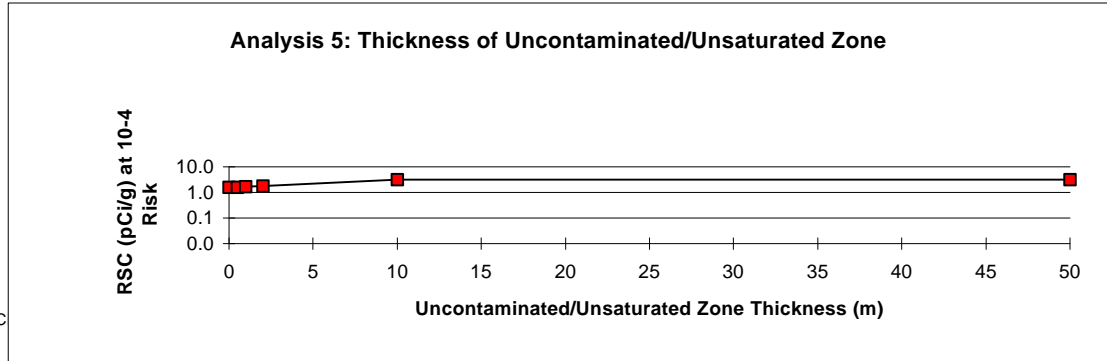
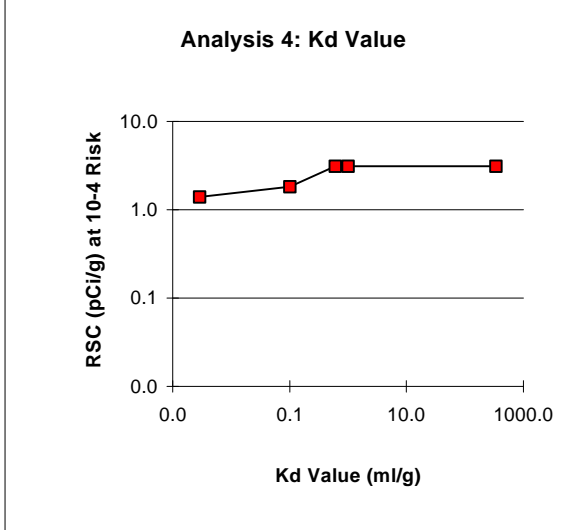
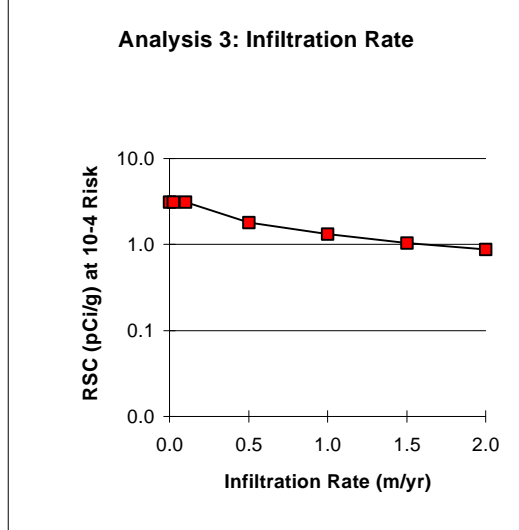
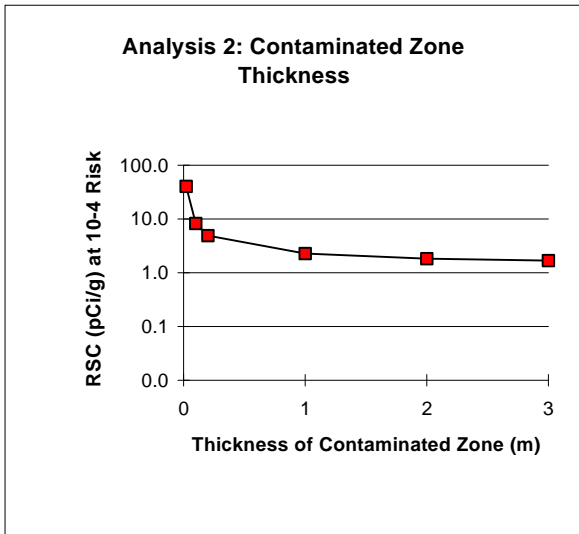
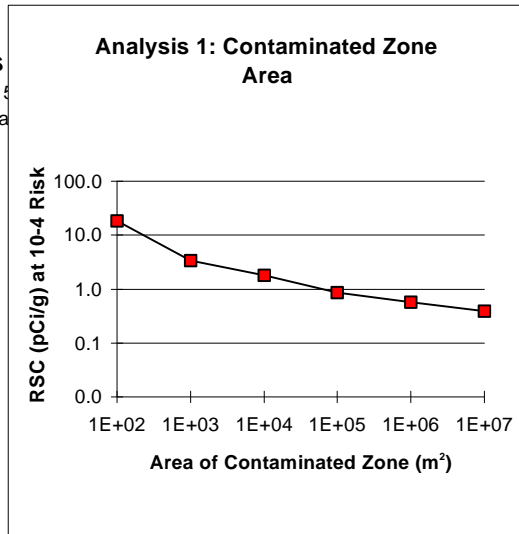
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	5.38E-06	18.6	1
	1E+03	2.98E-05	3.4	0
	1E+04	5.51E-05	1.8	1
	1E+05	1.18E-04	0.8	2
	1E+06	1.77E-04	0.6	2
	1E+07	2.55E-04	0.4	2
#2 Contaminated Zone Thickness (m)	0.02	2.50E-06	40.0	1
	0.1	1.21E-05	8.3	1
	0.2	2.01E-05	5.0	1
	1	4.45E-05	2.2	1
	2	5.51E-05	1.8	1
#3 Infiltration Rate (m/yr)	0.001	3.19E-05	3.1	0
	0.025	3.19E-05	3.1	0
	0.100	3.19E-05	3.1	0
	0.500	5.51E-05	1.8	1
	1	7.59E-05	1.3	1
#4 Distribution Coefficient (Kd) (ml/g)	1.5	9.65E-05	1.0	1
	2	1.14E-04	0.9	0
	0	7.17E-05	1.4	1
	0	5.51E-05	1.8	1
	1	3.19E-05	3.1	0
#5 Uncontaminated Unsat. Zone Thickness (m)	1	3.19E-05	3.1	0
	340	3.19E-05	3.1	0
	0	6.44E-05	1.6	0
	1	6.17E-05	1.6	0
	1	5.93E-05	1.7	1
#5 Uncontaminated Unsat. Zone Thickness (m)	2	5.51E-05	1.8	1
	10	3.19E-05	3.1	0
	50	3.19E-05	3.1	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 0
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 *RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Th-228+D

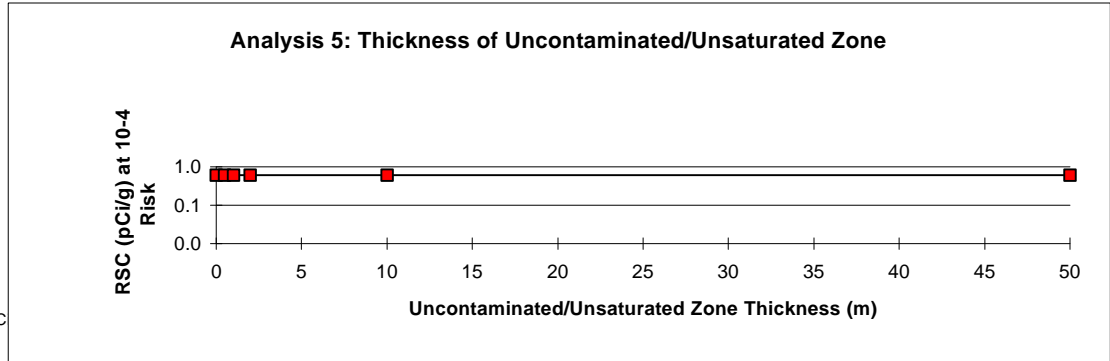
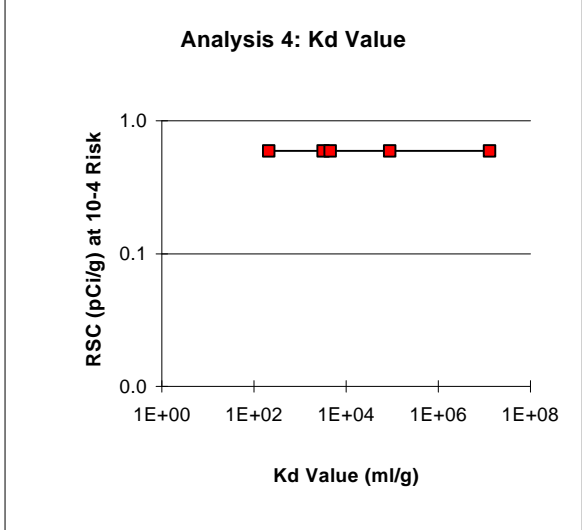
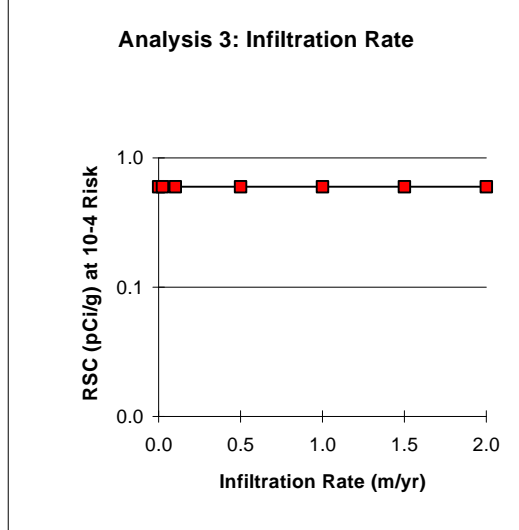
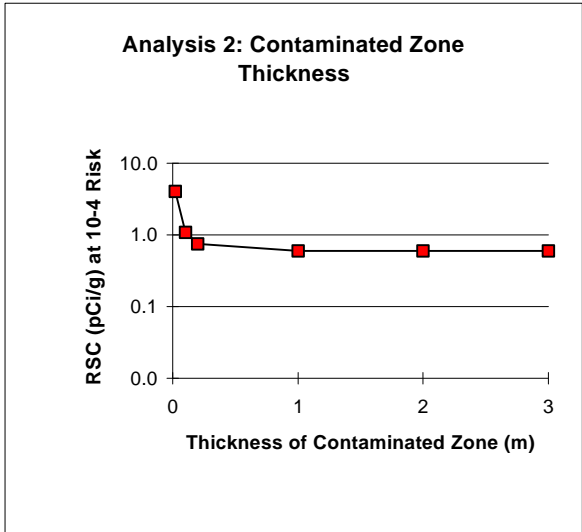
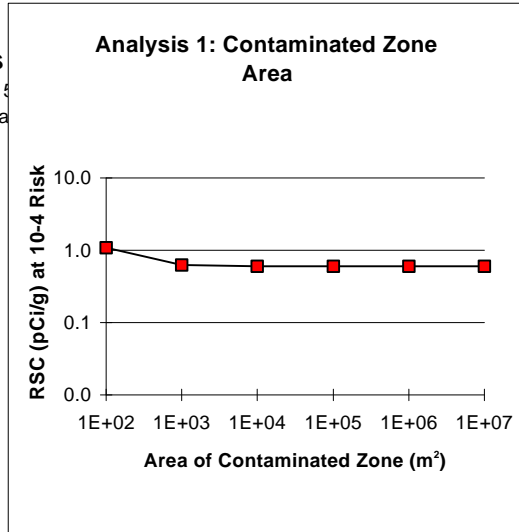
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	9.22E-05	1.1	0
	1E+03	1.58E-04	0.6	0
	1E+04	1.68E-04	0.6	0
	1E+05	1.68E-04	0.6	0
	1E+06	1.68E-04	0.6	0
	1E+07	1.68E-04	0.6	0
#2 Contaminated Zone Thickness (m)	0.02	2.46E-05	4.1	0
	0.1	9.20E-05	1.1	0
	0.2	1.34E-04	0.7	0
	1	1.68E-04	0.6	0
	2	1.68E-04	0.6	0
#3 Infiltration Rate (m/yr)	0.001	1.68E-04	0.6	0
	0.025	1.68E-04	0.6	0
	0.100	1.68E-04	0.6	0
	0.500	1.68E-04	0.6	0
	1	1.68E-04	0.6	0
#4 Distribution Coefficient (Kd) (ml/g)	1.5	1.68E-04	0.6	0
	2	1.68E-04	0.6	0
	207	1.68E-04	0.6	0
	3,200	1.68E-04	0.6	0
	4,500	1.68E-04	0.6	0
#5 Uncontaminated/Unsat. Zone Thickness (m)	89,000	1.68E-04	0.6	0
	1.30E+07	1.68E-04	0.6	0
	0	1.68E-04	0.6	0
	1	1.68E-04	0.6	0
	1	1.68E-04	0.6	0
#5 Uncontaminated/Unsat. Zone Thickness (m)	2	1.68E-04	0.6	0
	10	1.68E-04	0.6	0
	50	1.68E-04	0.6	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 3,200
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 *RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10-4.



Th-229+D

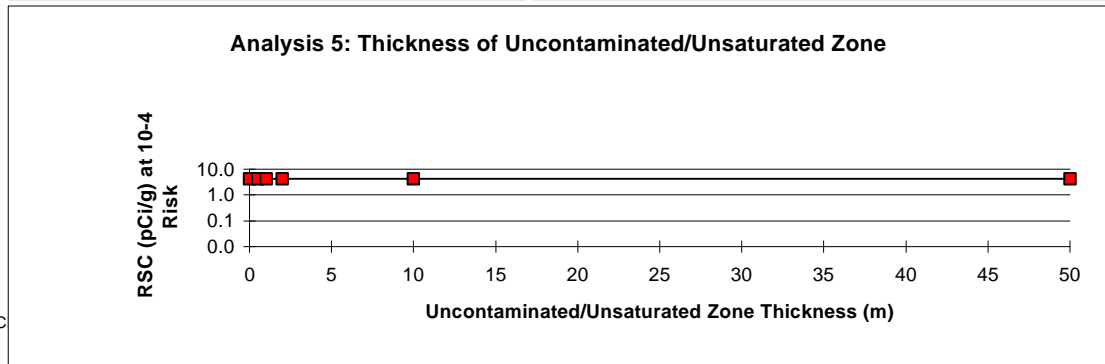
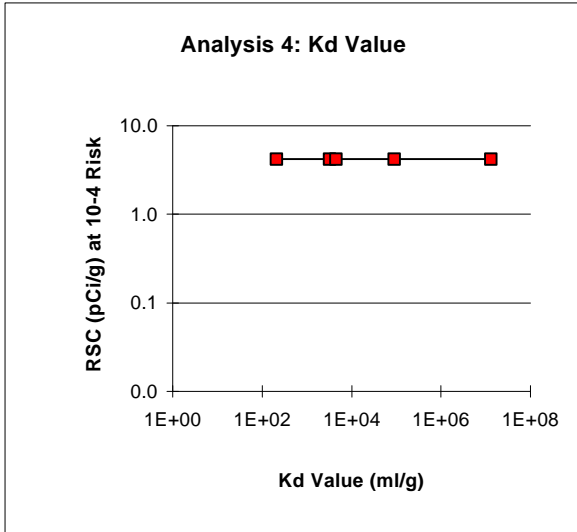
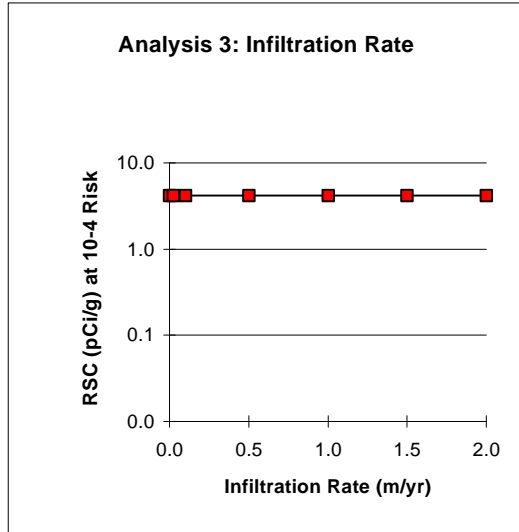
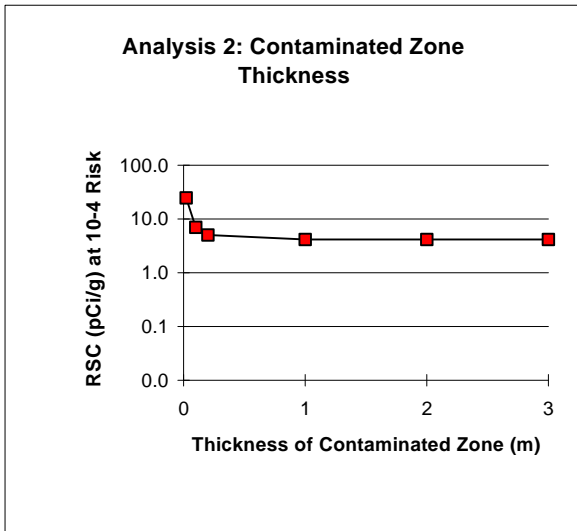
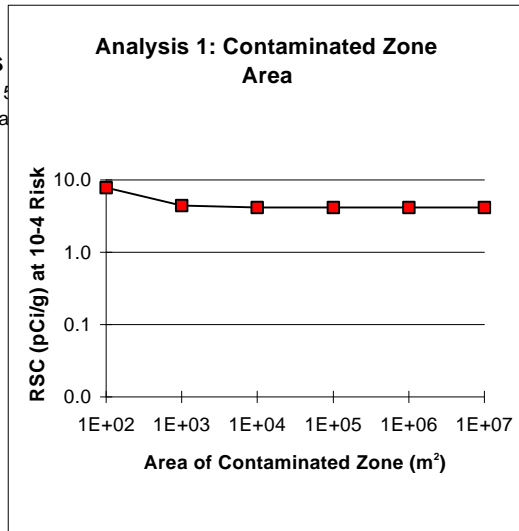
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	1.28E-05	7.8	0
	1E+03	2.26E-05	4.4	0
	1E+04	2.40E-05	4.2	0
	1E+05	2.41E-05	4.2	0
	1E+06	2.41E-05	4.2	0
	1E+07	2.41E-05	4.2	0
#2 Contaminated Zone Thickness (m)	0.02	4.03E-06	24.8	0
	0.1	1.45E-05	6.9	0
	0.2	2.01E-05	5.0	0
	1	2.40E-05	4.2	0
	2	2.40E-05	4.2	0
#3 Infiltration Rate (m/yr)	0.001	2.40E-05	4.2	0
	0.025	2.40E-05	4.2	0
	0.100	2.40E-05	4.2	0
	0.500	2.40E-05	4.2	0
	1	2.40E-05	4.2	0
	1.5	2.40E-05	4.2	0
#4 Distribution Coefficient (Kd) (ml/g)	207	2.36E-05	4.2	673
	3,200	2.40E-05	4.2	0
	4,500	2.40E-05	4.2	0
	89,000	2.40E-05	4.2	0
	1.30E+07	2.40E-05	4.2	0
#5 Uncontaminated Unsat. Zone Thickness (m)	0	2.40E-05	4.2	0
	1	2.40E-05	4.2	0
	1	2.40E-05	4.2	0
	2	2.40E-05	4.2	0
	10	2.40E-05	4.2	0
50	2.40E-05	4.2	0	

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 3,200
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Th-230

RESRAD Parameter Sensitivity Analyses

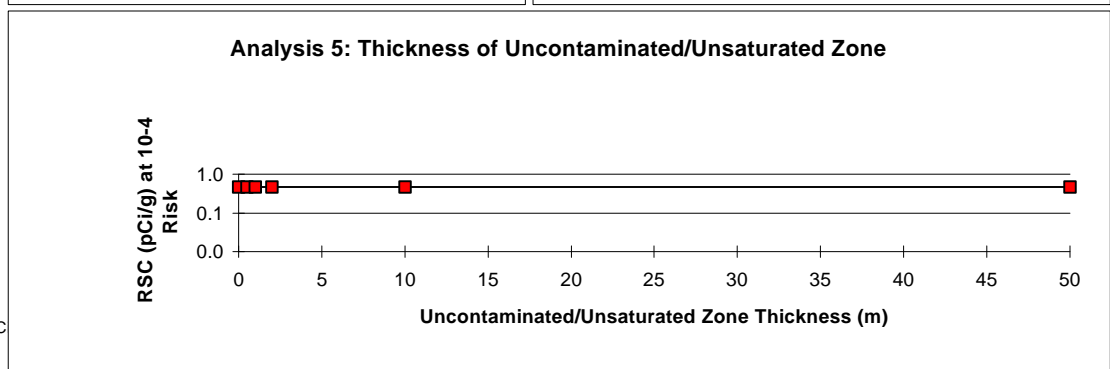
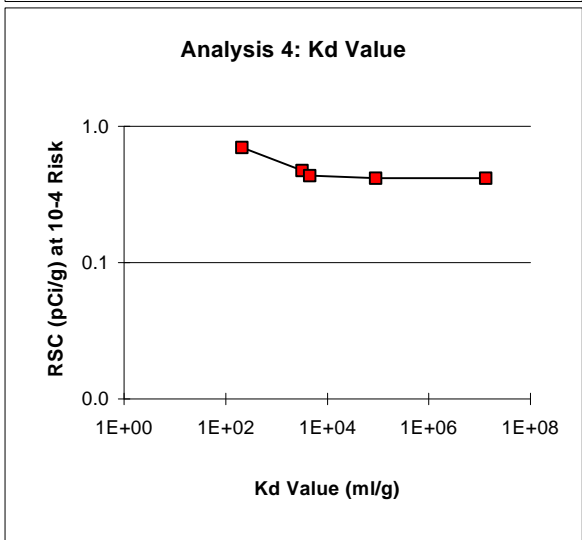
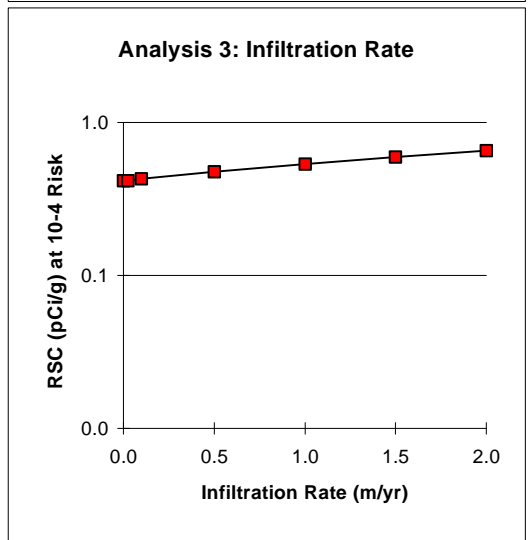
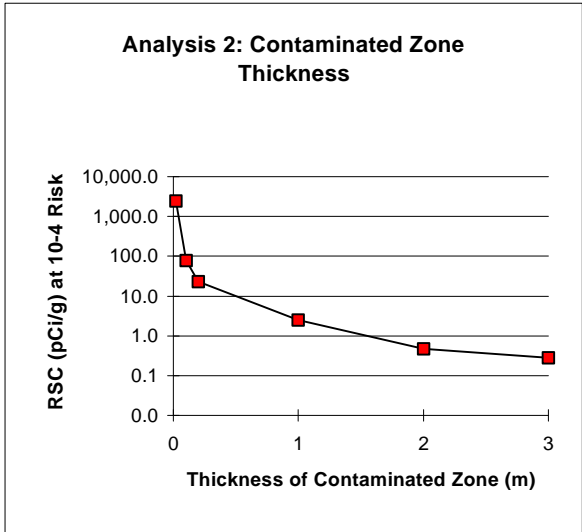
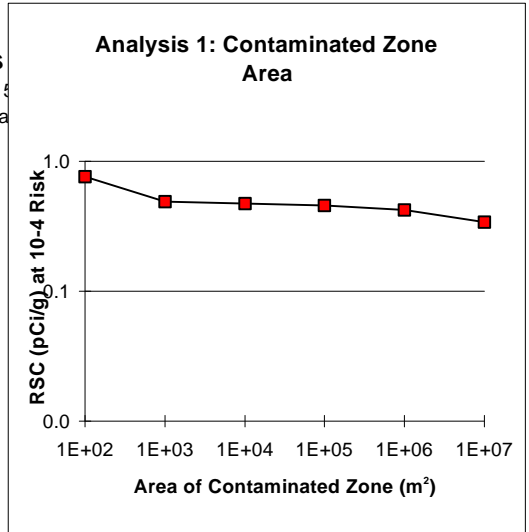
Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	1.32E-04	0.8	681
	1E+03	2.05E-04	0.5	691
	1E+04	2.11E-04	0.5	694
	1E+05	2.19E-04	0.5	701
	1E+06	2.37E-04	0.4	709
	1E+07	2.93E-04	0.3	731
#2 Contaminated Zone Thickness (m)	0.02	4.07E-08	2,458.8	0
	0.1	1.27E-06	78.6	32
	0.2	4.32E-06	23.1	86
	1	4.04E-05	2.5	629
	2	2.11E-04	0.5	694
	3	3.55E-04	0.3	1,000
#3 Infiltration Rate (m/yr)	0.001	2.41E-04	0.4	717
	0.025	2.39E-04	0.4	716
	0.100	2.34E-04	0.4	712
	0.500	2.11E-04	0.5	694
	1	1.86E-04	0.5	677
	1.5	1.68E-04	0.6	664
#4 Distribution Coefficient (Kd) (ml/g)	207	1.44E-04	0.7	467
	3,200	2.11E-04	0.5	694
	4,500	2.31E-04	0.4	712
	89,000	2.39E-04	0.4	716
	1.30E+07	2.41E-04	0.4	716
#5 Uncontaminated/Unsat. Zone Thickness (m)	0	2.13E-04	0.5	697
	1	2.13E-04	0.5	701
	1	2.11E-04	0.5	696
	2	2.11E-04	0.5	694
	10	2.11E-04	0.5	694
50	2.11E-04	0.5	694	

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:

- * Agricultural Land Use Exposure Scenario
- * Area of Contaminated Zone = 10,000 m²
- * Thickness of Contaminated Zone = 2 m
- * Infiltration Rate = 0.5 m/yr
- * Kd = 3,200
- * Thickness of Unsat. Zone = 2 m
- * Well Depth Below Water Table = 3 m
- * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Th-232

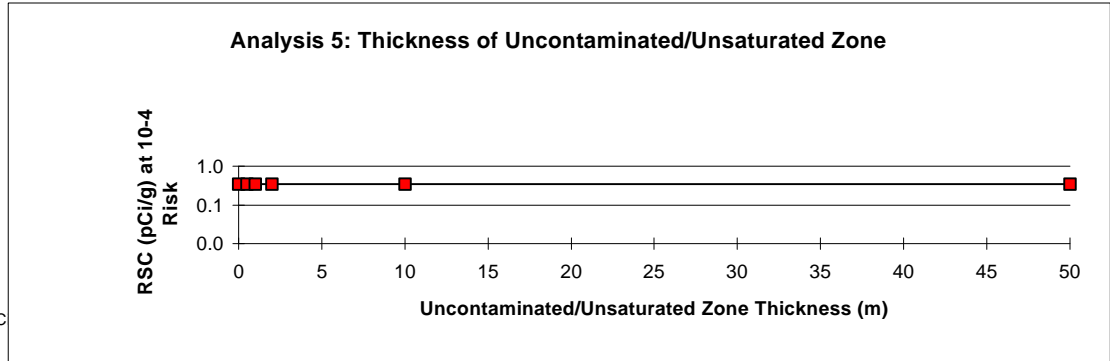
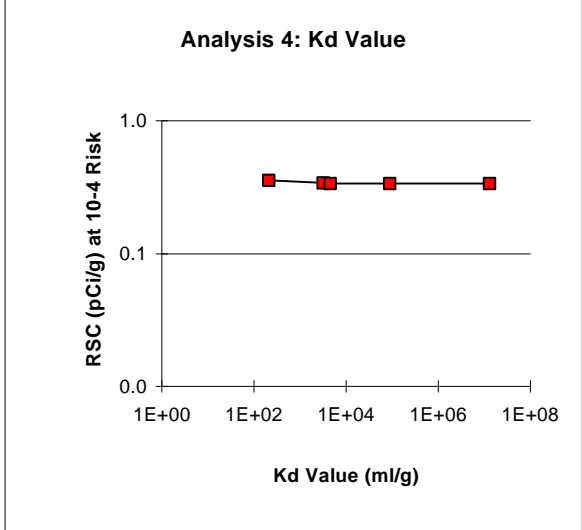
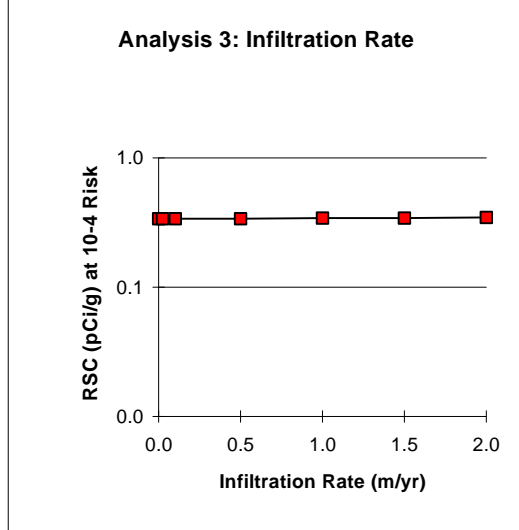
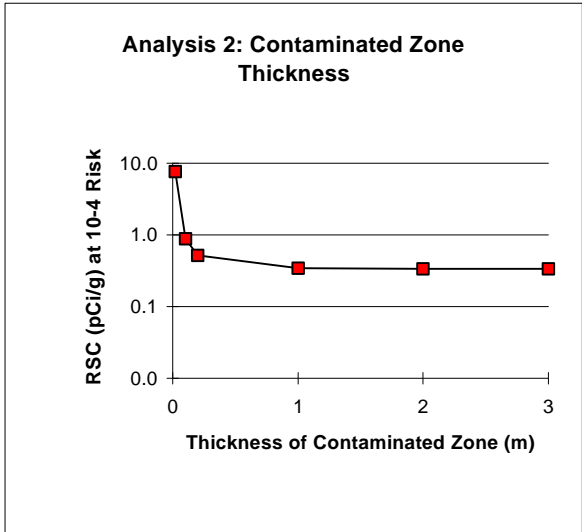
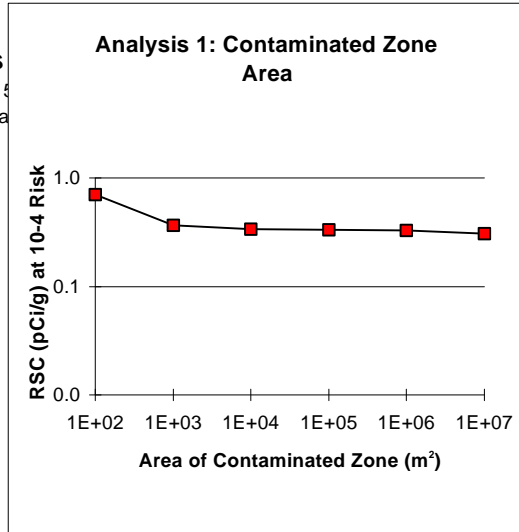
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	1.43E-04	0.7	66
	1E+03	2.73E-04	0.4	65
	1E+04	2.95E-04	0.3	66
	1E+05	3.02E-04	0.3	66
	1E+06	3.06E-04	0.3	66
	1E+07	3.25E-04	0.3	66
#2 Contaminated Zone Thickness (m)	0.02	1.30E-05	7.7	8
	0.1	1.14E-04	0.9	22
	0.2	1.94E-04	0.5	32
	1	2.93E-04	0.3	59
	2	2.95E-04	0.3	66
#3 Infiltration Rate (m/yr)	0.001	2.97E-04	0.3	119
	0.025	2.97E-04	0.3	91
	0.100	2.96E-04	0.3	79
	0.500	2.95E-04	0.3	66
	1	2.93E-04	0.3	60
	1.5	2.92E-04	0.3	56
#4 Distribution Coefficient (Kd) (ml/g)	207	2.80E-04	0.4	42
	3,200	2.95E-04	0.3	66
	4,500	2.96E-04	0.3	68
	89,000	2.97E-04	0.3	94
	1.30E+07	2.97E-04	0.3	131
#5 Uncontaminated Unsat. Zone Thickness (m)	0	2.95E-04	0.3	68
	1	2.95E-04	0.3	66
	1	2.95E-04	0.3	66
	2	2.95E-04	0.3	66
	10	2.95E-04	0.3	66
50	2.95E-04	0.3	66	

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 3,200
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



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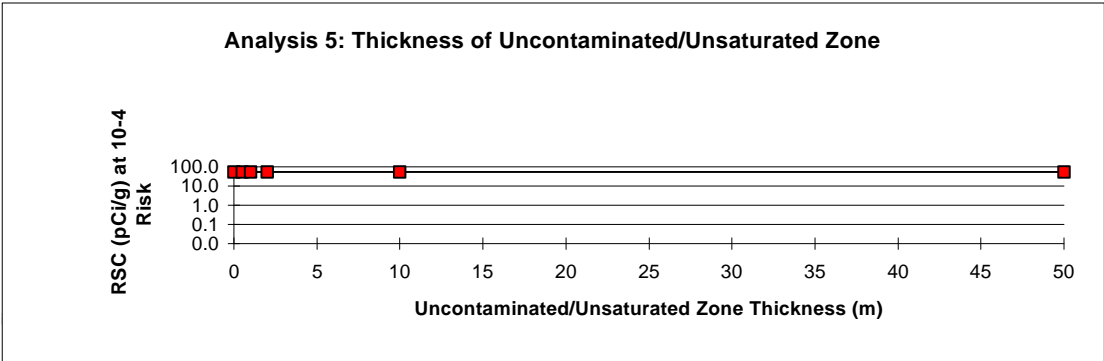
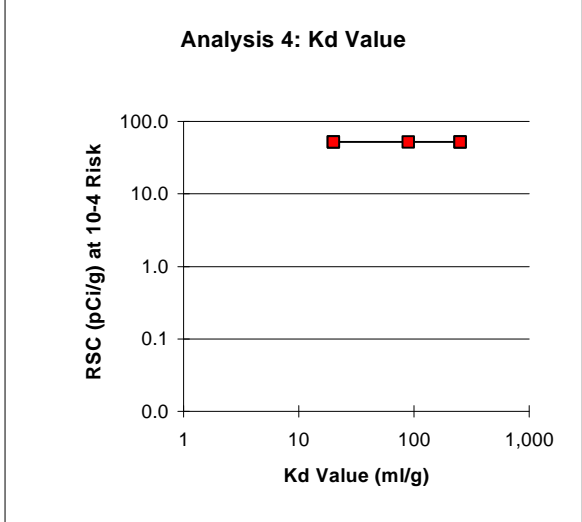
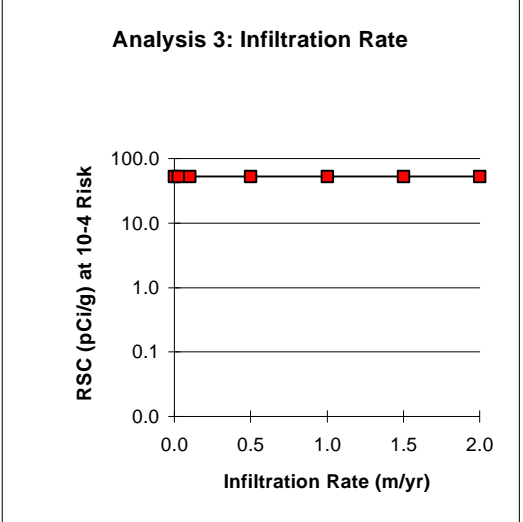
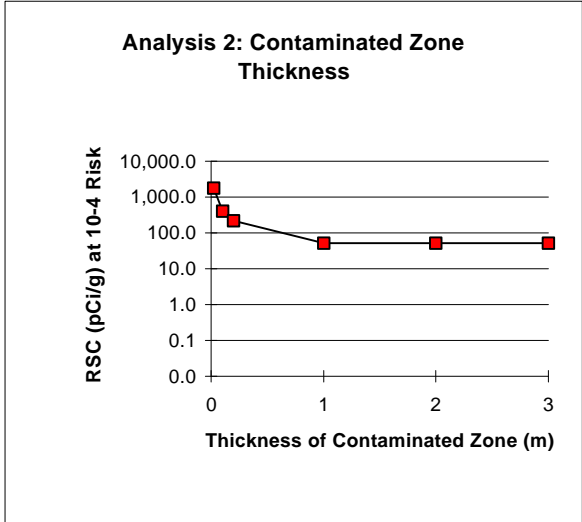
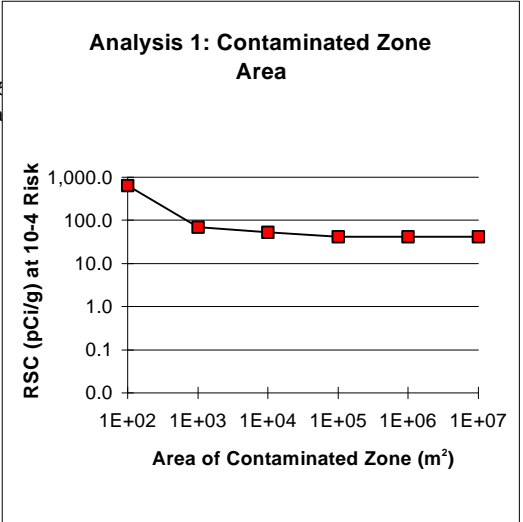
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	1.57E-07	638.2	0
	1E+03	1.46E-06	68.6	0
	1E+04	1.90E-06	52.5	0
	1E+05	2.40E-06	41.7	0
	1E+06	2.40E-06	41.7	0
#2 Contaminated Zone Thickness (m)	0.02	5.60E-08	1,787.3	0
	0.1	2.44E-07	409.7	0
	0.2	4.59E-07	218.1	0
	1	1.90E-06	52.5	0
	2	1.90E-06	52.5	0
#3 Infiltration Rate (m/yr)	0.001	1.90E-06	52.5	0
	0.025	1.90E-06	52.5	0
	0.100	1.90E-06	52.5	0
	0.500	1.90E-06	52.5	0
	1	1.90E-06	52.5	0
#4 Distribution Coefficient (Kd) (ml/g)	1.5	1.90E-06	52.5	0
	2	1.90E-06	52.5	0
	20	1.90E-06	52.5	0
	89	1.90E-06	52.5	0
	250	1.90E-06	52.5	0
#5 Uncontaminated/Unsat. Zone Thickness (m)	250	1.90E-06	52.5	0
	0	1.90E-06	52.5	0
	1	1.90E-06	52.5	0
	1	1.90E-06	52.5	0
	2	1.90E-06	52.5	0

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 20
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



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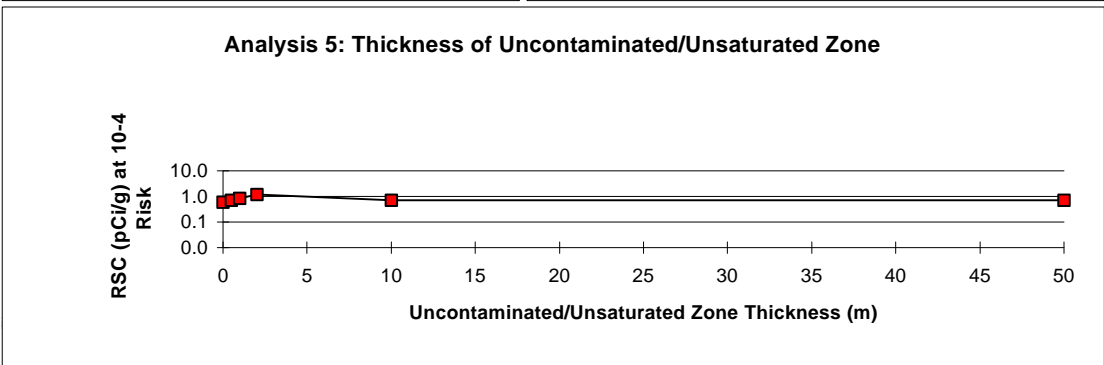
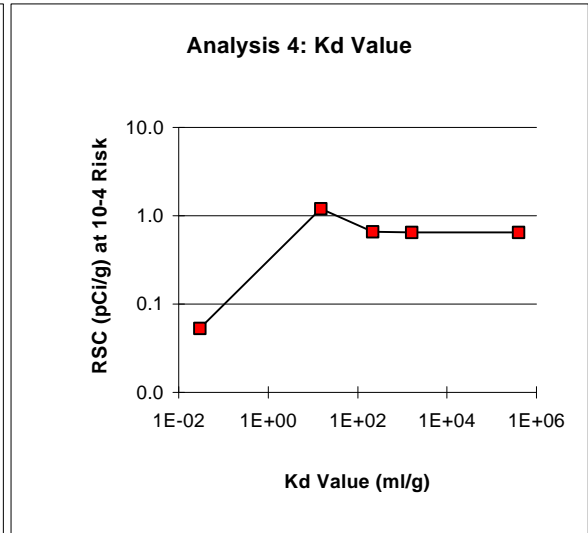
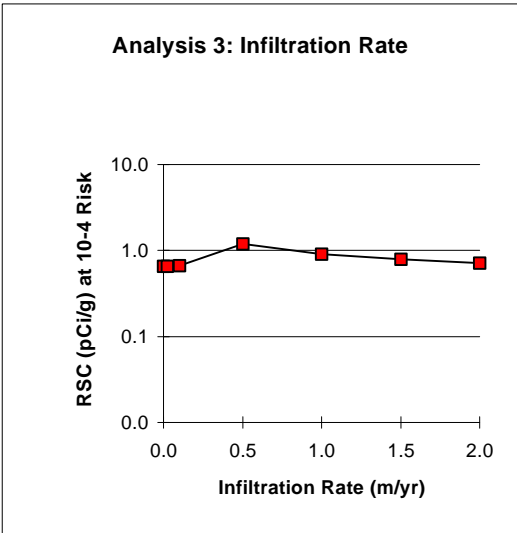
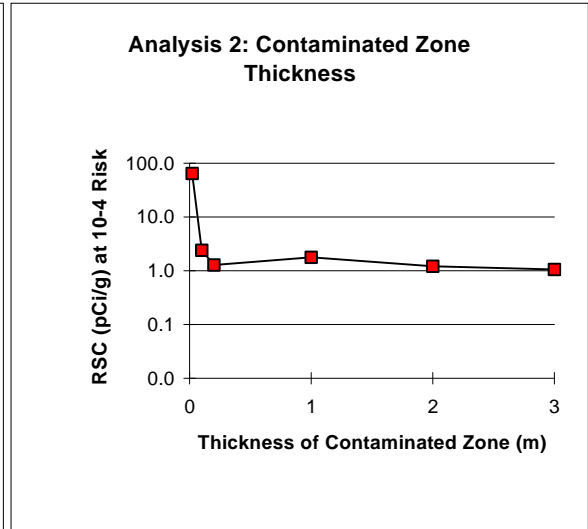
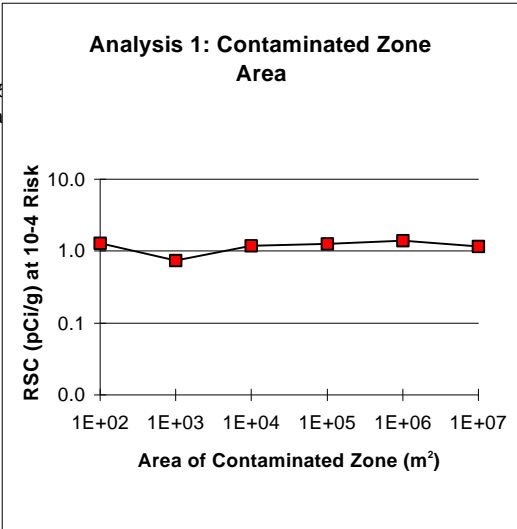
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	7.82E-05	1.3	8
	1E+03	1.34E-04	0.7	8
	1E+04	8.35E-05	1.2	49
	1E+05	7.97E-05	1.3	75
	1E+06	7.16E-05	1.4	101
	1E+07	8.53E-05	1.2	102
#2 Contaminated Zone Thickness (m)	0.02	1.56E-06	64.0	42
	0.1	4.11E-05	2.4	3
	0.2	7.73E-05	1.3	4
	1	5.64E-05	1.8	49
	2	8.35E-05	1.2	49
#3 Infiltration Rate (m/yr)	0.001	1.54E-04	0.7	10
	0.025	1.53E-04	0.7	10
	0.100	1.51E-04	0.7	10
	0.500	8.35E-05	1.2	49
	1	1.10E-04	0.9	31
#4 Distribution Coefficient (Kd) (ml/g)	1.5	1.27E-04	0.8	24
	2	1.41E-04	0.7	21
	0	1.89E-03	0.1	1
	15	8.35E-05	1.2	49
	220	1.53E-04	0.7	10
#5 Uncontaminated/Unsat. Zone Thickness (m)	1,600	1.53E-04	0.7	10
	400,000	1.54E-04	0.7	10
	0	1.65E-04	0.6	12
	1	1.40E-04	0.7	21
	1	1.18E-04	0.8	31

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 15
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 *RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



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RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

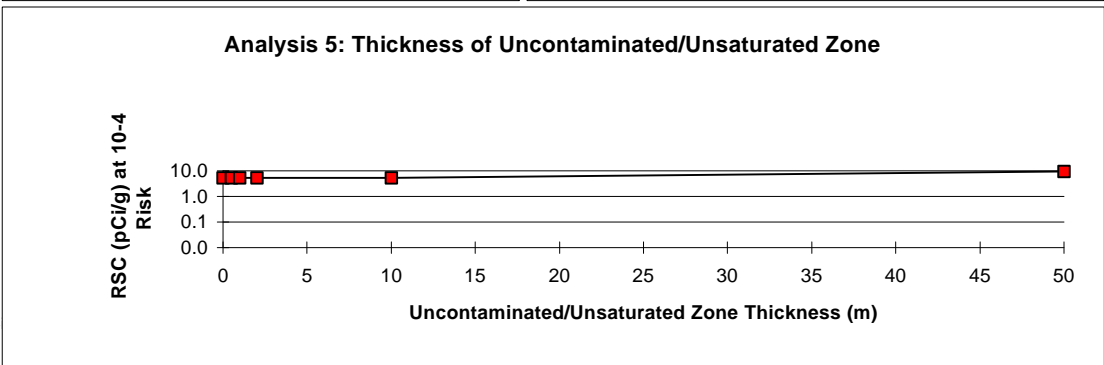
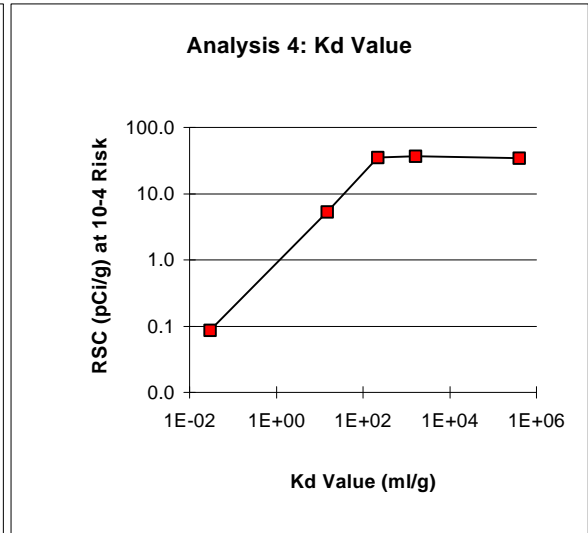
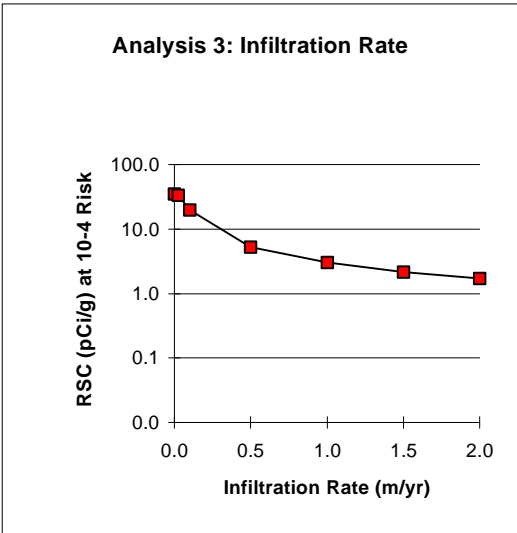
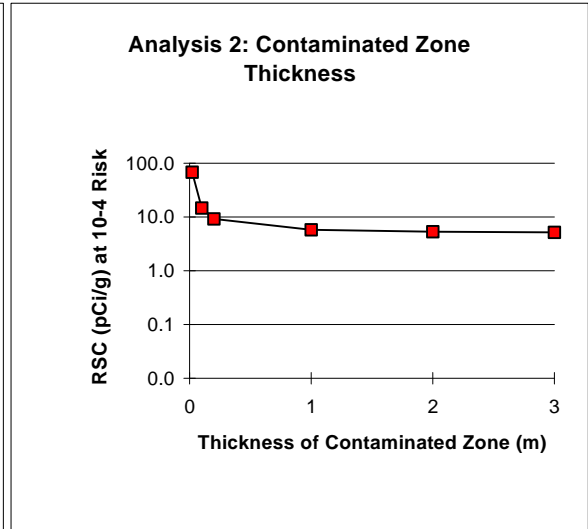
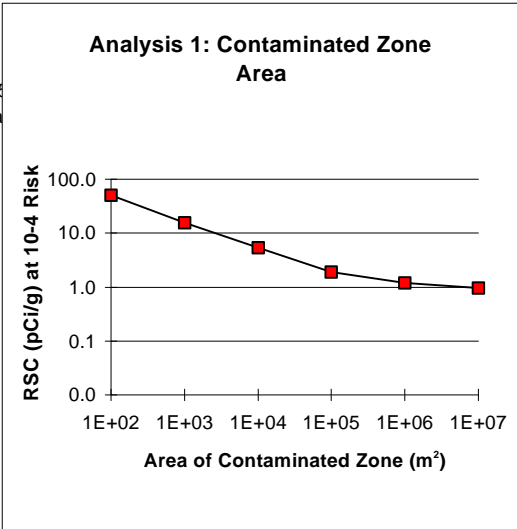
Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	1.97E-06	50.9	39
	1E+03	6.46E-06	15.5	41
	1E+04	1.89E-05	5.3	49
	1E+05	5.23E-05	1.9	75
	1E+06	8.41E-05	1.2	107
	1E+07	1.05E-04	1.0	107
#2 Contaminated Zone Thickness (m)	0.02	1.45E-06	69.1	49
	0.1	6.76E-06	14.8	49
	0.2	1.08E-05	9.3	49
	1	1.75E-05	5.7	49
	2	1.89E-05	5.3	49
#3 Infiltration Rate (m/yr)	0.001	2.86E-06	34.9	1,000
	0.025	3.01E-06	33.2	762
	0.100	5.04E-06	19.8	200
	0.500	1.89E-05	5.3	49
	1	3.31E-05	3.0	31
#4 Distribution Coefficient (Kd) (ml/g)	1.5	4.64E-05	2.2	24
	2	5.81E-05	1.7	21
	0	1.17E-03	0.1	1
	15	1.89E-05	5.3	49
#5 Uncontaminated Unsat. Zone Thickness (m)	220	2.85E-06	35.1	715
	1,600	2.73E-06	36.6	1,000
	400,000	2.92E-06	34.3	1,000
	0	1.90E-05	5.3	12
#5 Uncontaminated Unsat. Zone Thickness (m)	1	1.90E-05	5.3	21
	1	1.90E-05	5.3	31
	2	1.89E-05	5.3	49
	10	1.85E-05	5.4	200
	50	1.08E-05	9.3	1,000

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:

- * Agricultural Land Use Exposure Scenario
- * Area of Contaminated Zone = 10,000 m²
- * Thickness of Contaminated Zone = 2 m
- * Infiltration Rate = 0.5 m/yr
- * Kd = 15
- * Thickness of Unsat. Zone = 2 m
- * Well Depth Below Water Table = 3 m

*RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



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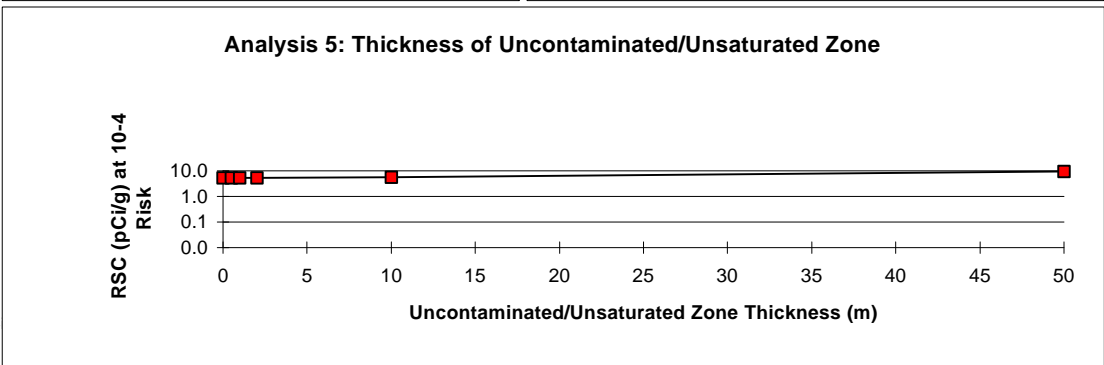
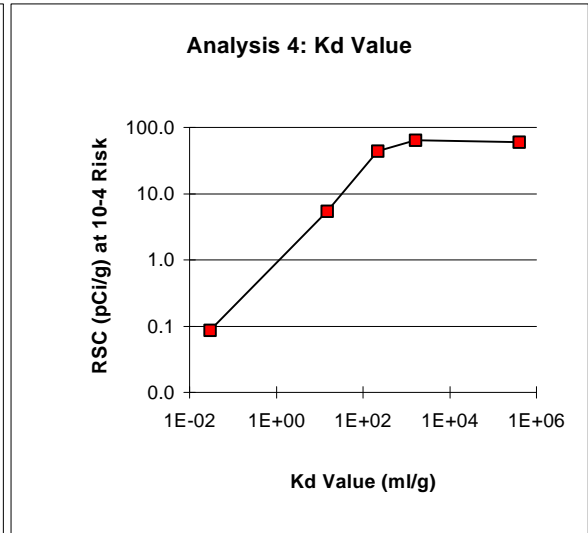
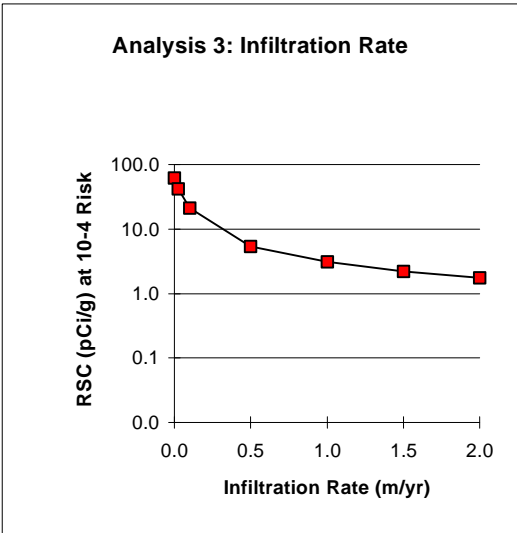
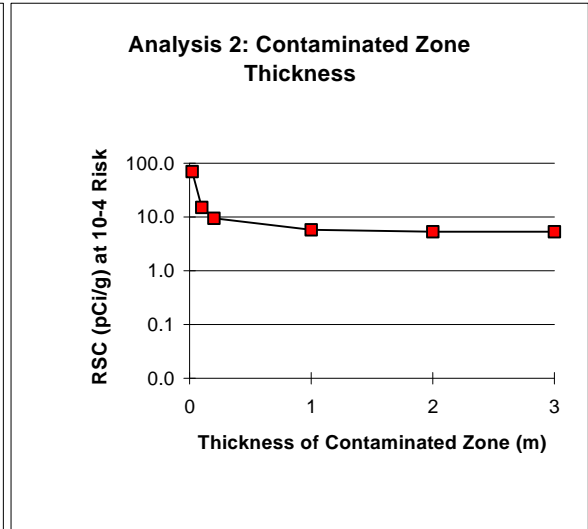
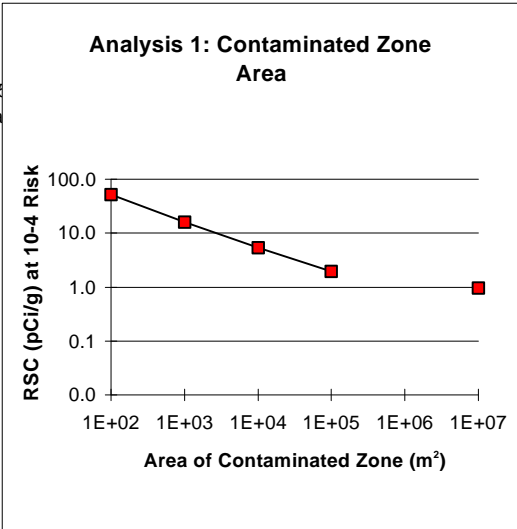
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	1.91E-06	52.5	39
	1E+03	6.30E-06	15.9	41
	1E+04	1.85E-05	5.4	49
	1E+05	5.15E-05	1.9	75
	1E+06	NC	NC	NC
	1E+07	1.04E-04	1.0	107
#2 Contaminated Zone Thickness (m)	0.02	1.43E-06	70.0	49
	0.1	6.66E-06	15.0	49
	0.2	1.06E-05	9.4	49
	1	1.72E-05	5.8	49
	2	1.85E-05	5.4	49
	3	1.90E-05	5.3	49
#3 Infiltration Rate (m/yr)	0.001	1.63E-06	61.3	817
	0.025	2.39E-06	41.9	762
	0.100	4.69E-06	21.3	200
	0.500	1.85E-05	5.4	49
	1	3.26E-05	3.1	31
	1.5	4.58E-05	2.2	24
#4 Distribution Coefficient (Kd) (ml/g)	0	1.15E-03	0.1	1
	15	1.85E-05	5.4	49
	220	2.30E-06	43.5	716
	1,600	1.56E-06	63.9	813
	400,000	1.66E-06	60.4	820
#5 Uncontaminated Unsat. Zone Thickness (m)	0	1.88E-05	5.3	12
	1	1.87E-05	5.3	21
	1	1.86E-05	5.4	31
	2	1.85E-05	5.4	49
	10	1.82E-05	5.5	200
	50	1.05E-05	9.5	1,000

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 15
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 *RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



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RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

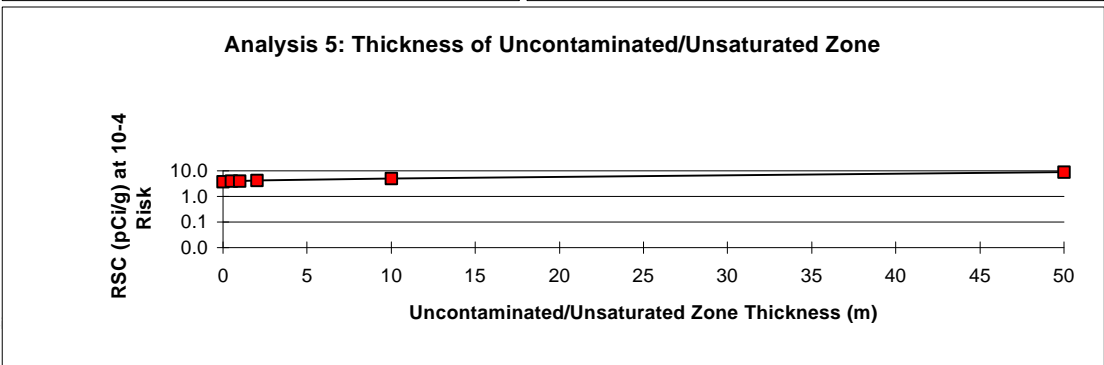
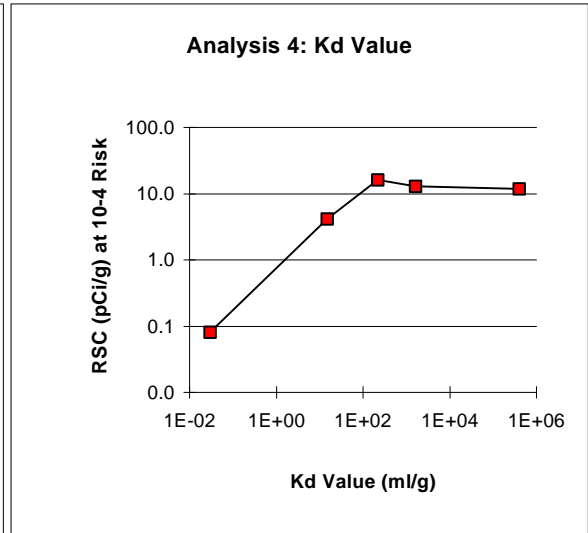
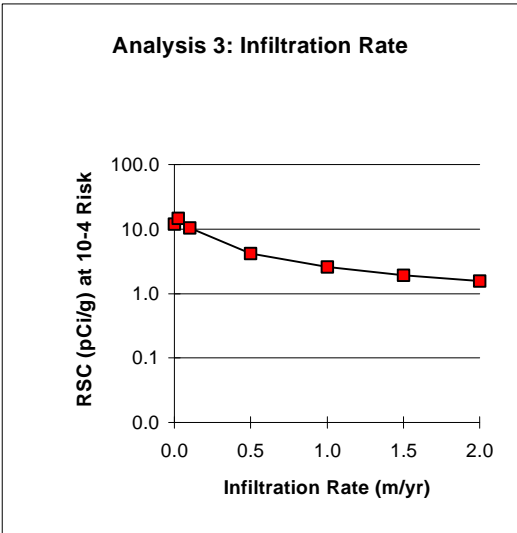
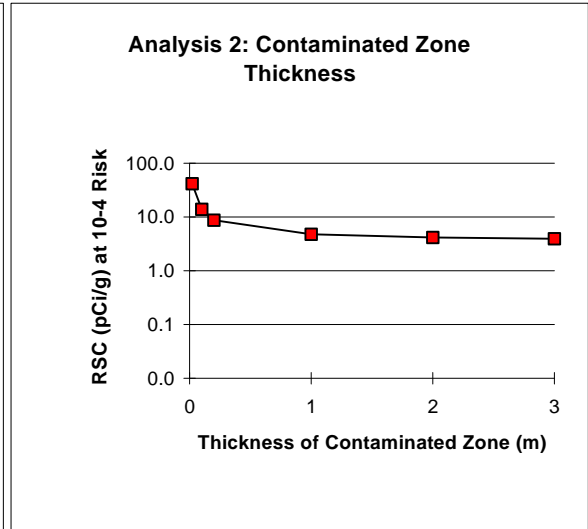
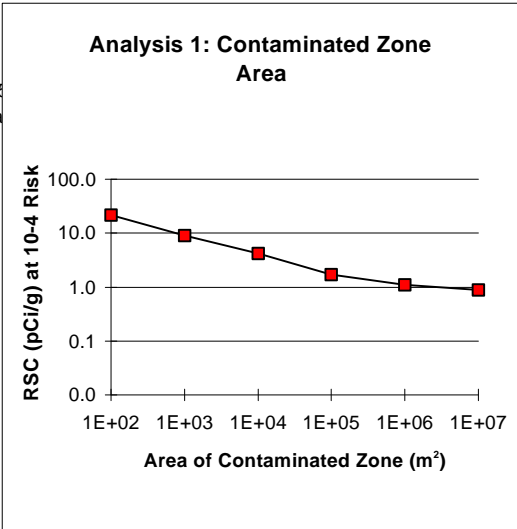
Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	4.58E-06	21.8	39
	1E+03	1.10E-05	9.1	41
	1E+04	2.41E-05	4.1	49
	1E+05	5.88E-05	1.7	75
	1E+06	9.18E-05	1.1	107
	1E+07	1.14E-04	0.9	107
#2 Contaminated Zone Thickness (m)	0.02	2.39E-06	41.8	0
	0.1	7.21E-06	13.9	49
	0.2	1.15E-05	8.7	49
	1	2.10E-05	4.8	49
	2	2.41E-05	4.1	49
#3 Infiltration Rate (m/yr)	0.001	8.29E-06	12.1	1,000
	0.025	6.81E-06	14.7	762
	0.100	9.62E-06	10.4	200
	0.500	2.41E-05	4.1	49
	1	3.89E-05	2.6	31
	1.5	5.26E-05	1.9	24
#4 Distribution Coefficient (Kd) (ml/g)	0	1.25E-03	0.1	1
	15	2.41E-05	4.1	49
	220	6.20E-06	16.1	716
	1,600	7.68E-06	13.0	1,000
	400,000	8.48E-06	11.8	1,000
#5 Uncontaminated/Unsat. Zone Thickness (m)	0	2.65E-05	3.8	12
	1	2.58E-05	3.9	21
	1	2.52E-05	4.0	31
	2	2.41E-05	4.1	49
	10	2.05E-05	4.9	200
50	1.14E-05	8.8	1,000	

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:

- * Agricultural Land Use Exposure Scenario
- * Area of Contaminated Zone = 10,000 m²
- * Thickness of Contaminated Zone = 2 m
- * Infiltration Rate = 0.5 m/yr
- * Kd = 15
- * Thickness of Unsat. Zone = 2 m
- * Well Depth Below Water Table = 3 m

*RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



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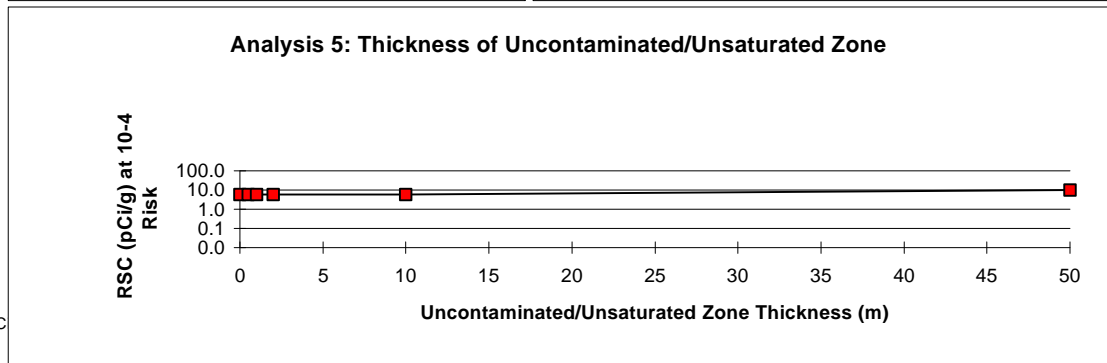
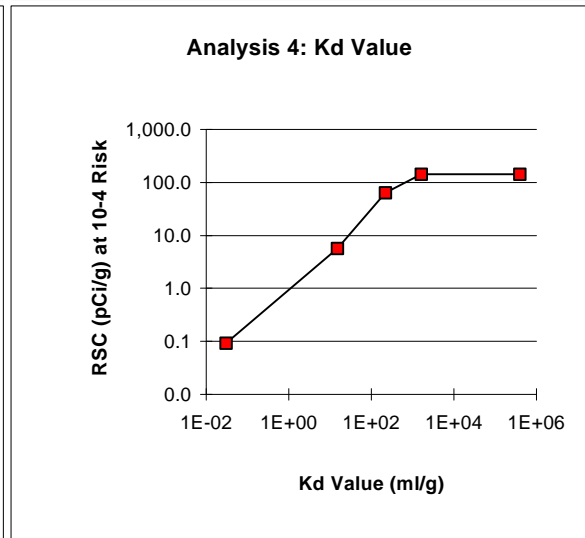
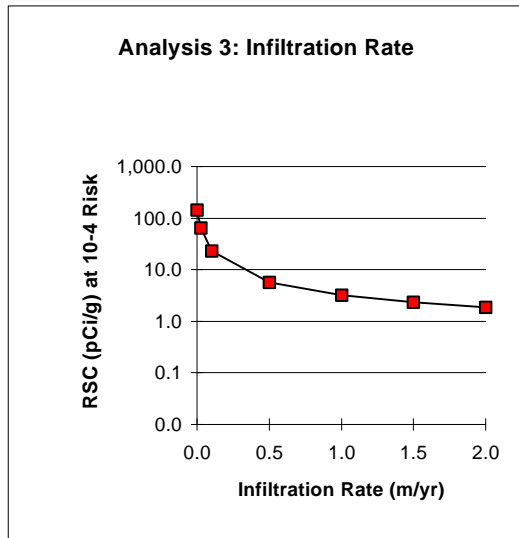
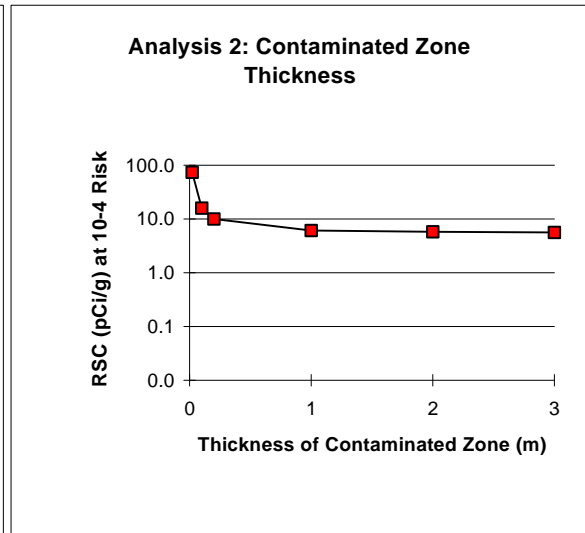
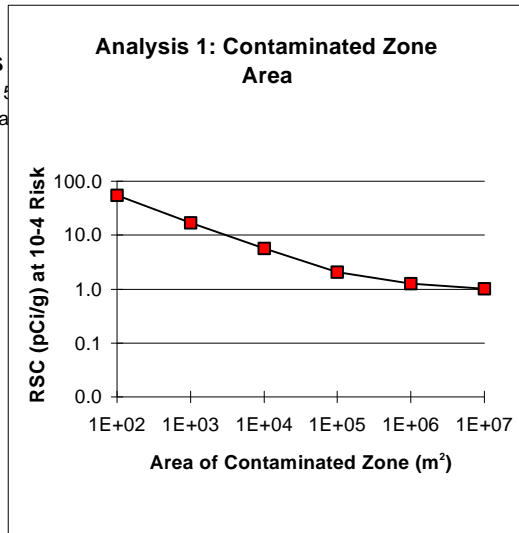
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	1.80E-06	55.5	39
	1E+03	5.96E-06	16.8	41
	1E+04	1.75E-05	5.7	49
	1E+05	4.87E-05	2.1	75
	1E+06	7.84E-05	1.3	107
	1E+07	9.80E-05	1.0	107
#2 Contaminated Zone Thickness (m)	0.02	1.35E-06	74.0	49
	0.1	6.30E-06	15.9	49
	0.2	1.00E-05	10.0	49
	1	1.63E-05	6.1	49
	2	1.75E-05	5.7	49
#3 Infiltration Rate (m/yr)	0.001	7.07E-07	141.4	0
	0.025	1.55E-06	64.6	762
	0.100	4.36E-06	22.9	200
	0.500	1.75E-05	5.7	49
	1	3.09E-05	3.2	31
#4 Distribution Coefficient (Kd) (ml/g)	1.5	4.33E-05	2.3	24
	2	5.42E-05	1.8	21
	0	1.09E-03	0.1	1
	15	1.75E-05	5.7	49
#5 Uncontaminated Unsat. Zone Thickness (m)	220	1.55E-06	64.6	715
	1,600	7.07E-07	141.4	0
	400,000	7.07E-07	141.4	0
	0	1.78E-05	5.6	12
#5 Uncontaminated Unsat. Zone Thickness (m)	1	1.77E-05	5.7	21
	1	1.76E-05	5.7	31
	2	1.75E-05	5.7	49
	10	1.72E-05	5.8	200
	50	9.92E-06	10.1	1,000

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 15
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



U-238+D

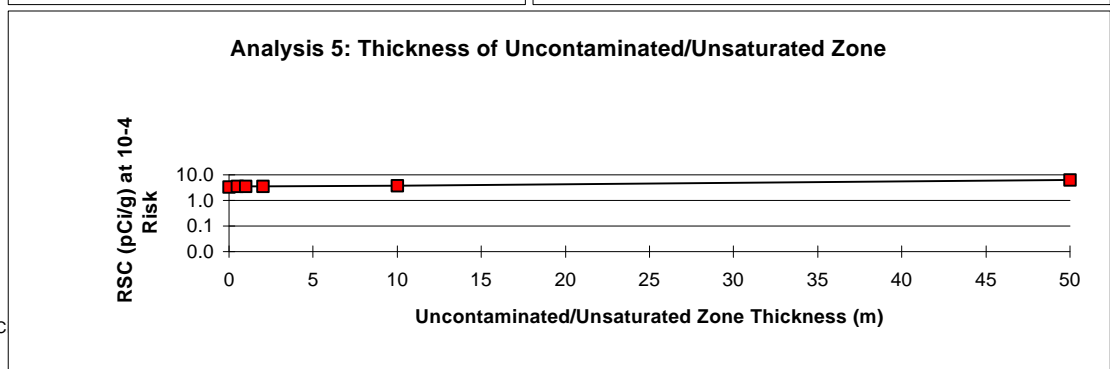
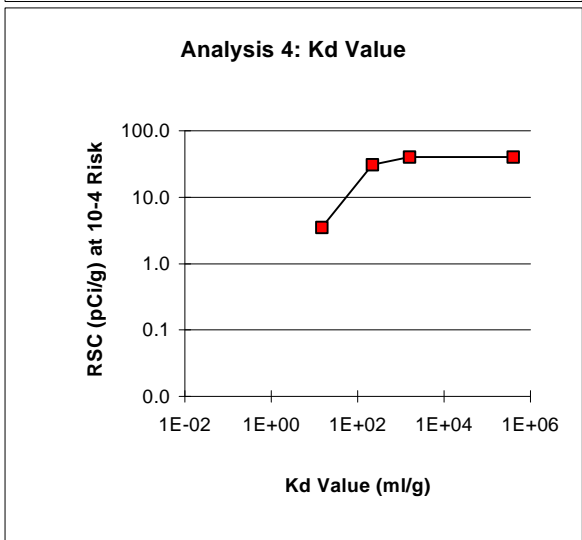
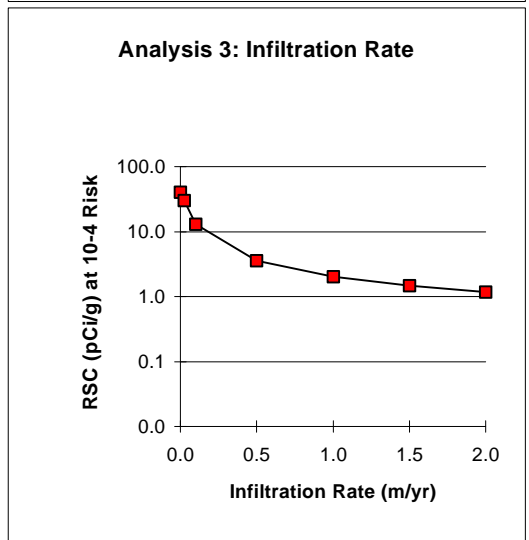
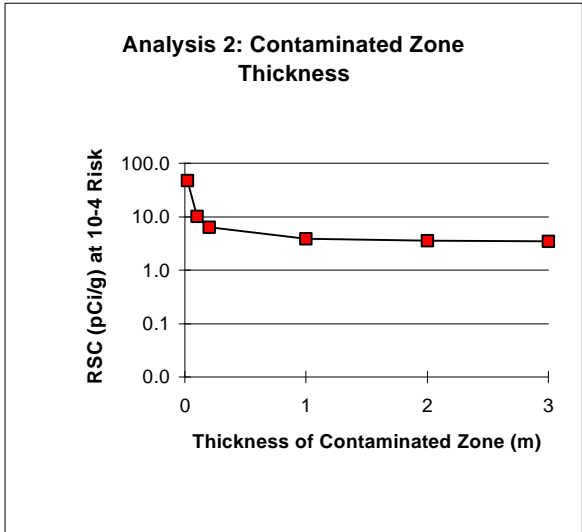
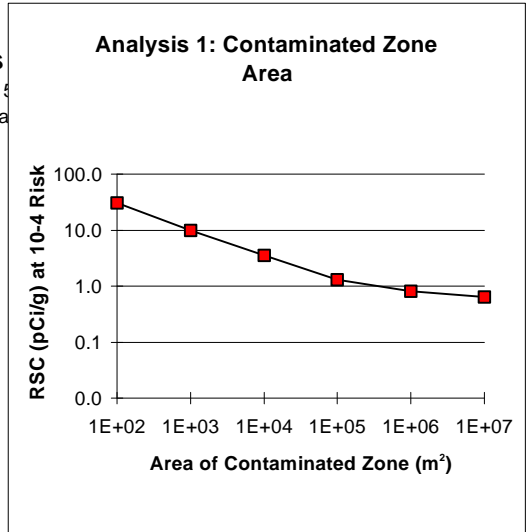
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	3.30E-06	30.3	39
	1E+03	1.02E-05	9.8	41
	1E+04	2.84E-05	3.5	49
	1E+05	7.71E-05	1.3	75
	1E+06	1.24E-04	0.8	107
	1E+07	1.55E-04	0.6	107
#2 Contaminated Zone Thickness (m)	0.02	2.12E-06	47.1	49
	0.1	9.91E-06	10.1	49
	0.2	1.58E-05	6.3	49
	1	2.60E-05	3.8	49
	2	2.84E-05	3.5	49
#3 Infiltration Rate (m/yr)	0.001	2.47E-06	40.4	0
	0.025	3.33E-06	30.0	762
	0.100	7.75E-06	12.9	200
	0.500	2.84E-05	3.5	49
	1	4.92E-05	2.0	31
#4 Distribution Coefficient (Kd) (ml/g)	1.5	6.86E-05	1.5	24
	2	8.57E-05	1.2	21
	0	NC	NC	NC
	15	2.84E-05	3.5	49
#5 Uncontaminated/Unsat. Zone Thickness (m)	220	3.23E-06	31.0	716
	1,600	2.47E-06	40.4	0
	400,000	2.48E-06	40.4	1,000
	0	2.91E-05	3.4	12
	1	2.89E-05	3.5	21
Unsat. Zone Thickness (m)	1	2.87E-05	3.5	31
	2	2.84E-05	3.5	49
	10	2.72E-05	3.7	200
	50	1.56E-05	6.4	1,000

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 15
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 *RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



Zn-65

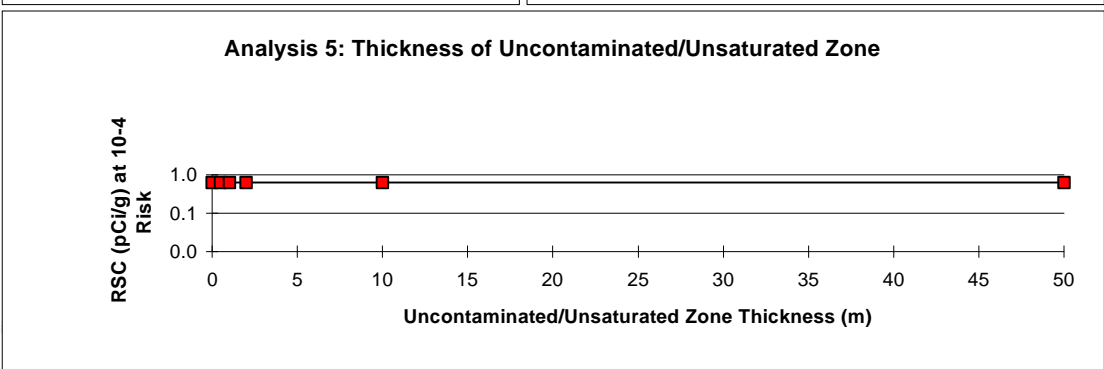
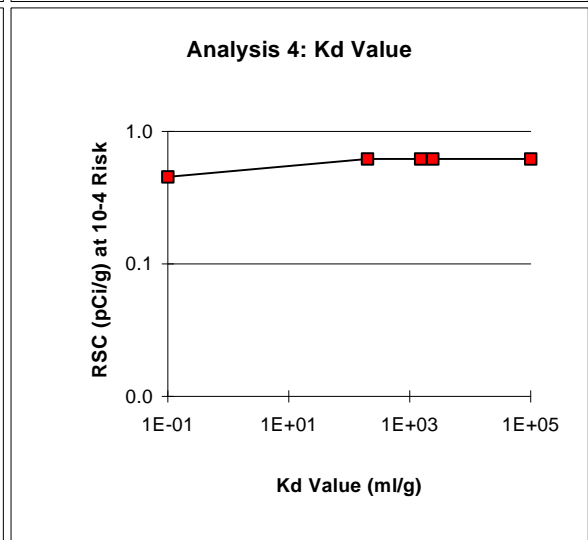
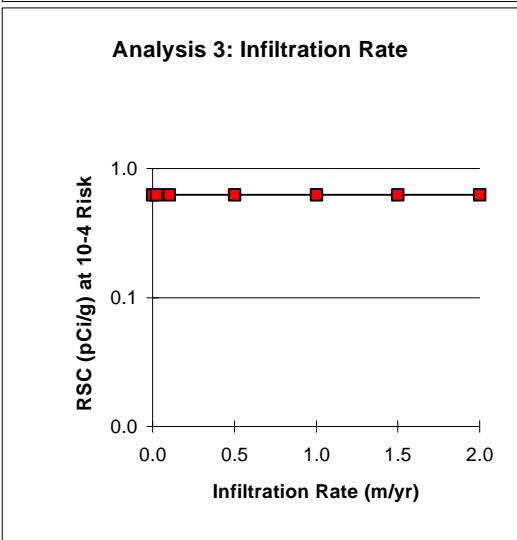
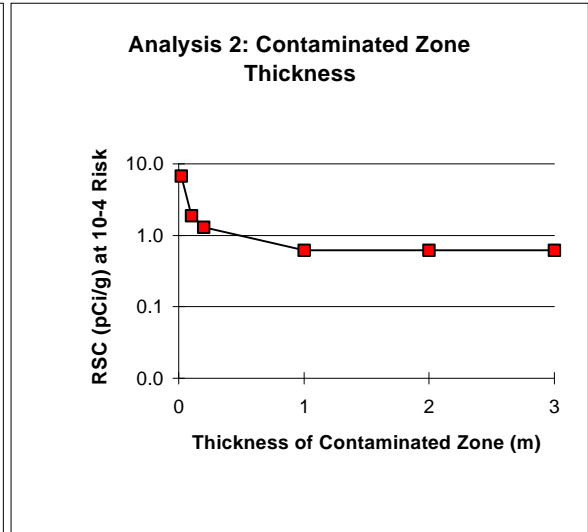
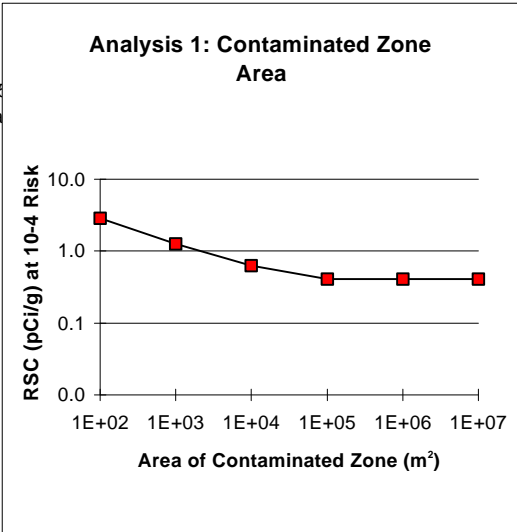
RESRAD Parameter Sensitivity Analyses

Performed using the DOE RESRAD computer code (Version 5) assuming generic site conditions. Parameters varied individually.

Sensitivity Analysis	Parameter Value	Lifetime Risk per pCi/g	RSC (pCi/g) at 10-4 Risk	Time of Max. Risk (yr)
#1 Contaminated Zone Area (m ²)	1E+02	3.53E-05	2.8	0
	1E+03	7.91E-05	1.3	0
	1E+04	1.61E-04	0.6	0
	1E+05	2.47E-04	0.4	0
	1E+06	2.47E-04	0.4	0
	1E+07	2.47E-04	0.4	0
#2 Contaminated Zone Thickness (m)	0.02	1.48E-05	6.8	0
	0.1	5.33E-05	1.9	0
	0.2	7.78E-05	1.3	0
	1	1.61E-04	0.6	0
	2	1.61E-04	0.6	0
#3 Infiltration Rate (m/yr)	0.001	1.61E-04	0.6	0
	0.025	1.61E-04	0.6	0
	0.100	1.61E-04	0.6	0
	0.500	1.61E-04	0.6	0
	1	1.61E-04	0.6	0
	1.5	1.61E-04	0.6	0
#4 Distribution Coefficient (Kd) (ml/g)	0	2.19E-04	0.5	1
	200	1.61E-04	0.6	0
	1,500	1.61E-04	0.6	0
	2,400	1.61E-04	0.6	0
	100,000	1.61E-04	0.6	0
#5 Uncontaminated Unsat. Zone Thickness (m)	0	1.61E-04	0.6	0
	1	1.61E-04	0.6	0
	1	1.61E-04	0.6	0
	2	1.61E-04	0.6	0
	10	1.61E-04	0.6	0
50	1.61E-04	0.6	0	

Note: See text for a detailed discussion of these analyses.

Parameter values assumed for base case analysis:
 * Agricultural Land Use Exposure Scenario
 * Area of Contaminated Zone = 10,000 m²
 * Thickness of Contaminated Zone = 2 m
 * Infiltration Rate = 0.5 m/yr
 * Kd = 200
 * Thickness of Unsat. Zone = 2 m
 * Well Depth Below Water Table = 3 m
 * RSC = Radionuclide-specific soil concentration (in pCi/g) corresponding to a lifetime risk level of 10⁻⁴.



APPENDIX I

RAGS/HHEM UNCERTAINTY ANALYSIS

Appendix I

Synopsis of RAGS/HHEM Monte Carlo Uncertainty Analysis

I.1 PURPOSE

The purpose of this analysis is to assess the uncertainty associated with single-value generic test site soil cleanup concentrations by: (1) assessing input probability distributions in place of discrete values for uncertain model parameters; (2) using Monte Carlo techniques and RAGS/HHEM equations (Appendix C) to generate output probability distributions for each radionuclide in units of lifetime risk per pCi/g.

I.2 METHOD

An Excel™ spreadsheet was created containing RAGS/HHEM equations for evaluating the nine soil exposure pathways described in Chapter 2 for rural residential exposures:

- External radiation exposure from photon-emitting radionuclides in soil
- Inhalation of resuspended dust containing radionuclides
- Inhalation of radon (Rn-222 and Rn-220) and radon decay products from soil containing radium (Ra-226 and Ra-228)
- Incidental ingestion of soil containing radionuclides
- Ingestion of drinking water containing radionuclides transported from soil to potable groundwater sources
- Ingestion of home-grown produce (*i.e.*, fruits and vegetables) contaminated with radionuclides taken up from soil
- Ingestion of meat (*i.e.*, beef) containing radionuclides taken up by cows grazing on contaminated plants (*i.e.*, fodder)
- Ingestion of milk containing radionuclides taken up by cows grazing on contaminated plants (*i.e.*, fodder)
- Ingestion of locally caught fish containing radionuclides

Initial input probability distributions were assigned for a number of RAGS/HHEM parameters based primarily on current EPA guidance as described in Chapters 2 and 3. Table I-1 shows the probability distributions selected for this analysis.

@RISK™, a Monte Carlo sampling program, was used to generate output probability distributions for approximately 70 radionuclides and radionuclide combinations. Table I-2 lists the results of the uncertainty analysis for each radionuclide.

The results of these calculations can be presented (in lifetime risk per pCi/g) as ascending cumulative probability curves. Figure I-1 shows the probability distribution for U-238+D.

The initial results of the uncertainty analysis should be considered preliminary and are subject to revision pending review and refinement of input probability functions for the model parameters. These initial results are based on pre-1994 EPA slope factors, and the RAGS/HHEM model used to characterize the generic test site in Chapters 2 and 3 has been updated to include ingestion of contaminated water by beef cattle and milk cows. The results of the preliminary uncertainty analysis are presented here for example purposes only.

Table I-1. Input Probability Functions for Selected
RAGS/HHEM Model Parameters

Parameter	Definition	Units	Static Value	Probability Dist. Function	Arguments			
					A-1	A-2	A-3	A-4
TR	Target Risk Level	lifetime risk	1x10 ⁻⁴	Constant				
RS	Radionuclide soil concentration	pCi/g	1	Constant				
IRi	Inhalation rate	m ³ /d	20	T-Normal	20	1.2	18.8	21.2
	Soil ingestion rate - child residential	mg/d	200	T-Lognormal	105	82	0	800
	Soil ingestion rate - adult residential	mg/d	100	T-Lognormal	71	77	0	800
IRs	Soil ingestion rate - residential	mg/d	120	Calculated: Weighted average				
IRsc	Soil ingestion rate - commercial/industrial	mg/d	50	Triangular	50	0.5	480	
IRw	Water ingestion rate - residential	L/d	2	T-Lognormal	1.4	0.4	0.3	3
IRwc	Water ingestion rate - commercial/industrial	L/d	1	Calculated: 1/2 residential				
	Non-leafy vegetable ingestion rate	g/d	200	T-Lognormal	200	83	26	510
	Fraction contaminated	unitless	0.4	Constant				
	Fruit ingestion rate	g/d	140	T-Lognormal	140	58	30	487
	Fraction contaminated	unitless	0.3	Constant				
	Grain ingestion rate	g/d	105	Constant				
	Fraction contaminated	unitless	0.5	Constant				
IRv	Vegetable and fruit ingestion rate	g/yr	61,250	T-Lognormal: Calculated as sum of above values				
	Leafy vegetables intake rate	g/d	38	T-Lognormal	38	15	3	200
	Fraction contaminated	unitless	0.5	Constant				
IRv2	Leafy vegetable ingestion rate	g/yr	6,650	T-Lognormal: Calculated as sum of above values				
	Meat & poultry intake rate	g/d	180	T-Lognormal	180	2	34	952
	Fraction contaminated	unitless	1	Constant				
IRm	Meat & poultry ingestion rate	g/yr	63,000	T-Lognormal: Calculated as sum of above values				
	Milk intake rate	L/d	0.26	T-Lognormal	0.26	0.26	0.13	1
	Fraction contaminated	unitless	1	Constant				
IRmk	Milk ingestion rate	L/yr	92	T-Lognormal: Calculated as sum of above values				
	Fish intake rate	g/d	15.43	T-Lognormal	15.43	12	0	140
	Fraction contaminated	unitless	0.5	Constant				
IRf	Fish ingestion rate	g/yr	2,700	T-Lognormal: Calculated as sum of above values				
Flm	Fodder intake rate for meat	kg/d	68	T-Normal	68	37	31	105
Flmk	Fodder intake rate for milk	kg/d	55	T-Normal	55	48	7	103
Flwm	Livestock water intake rate for meat	L/d	50	Constant				
Flwmk	Livestock water intake rate for milk	L/d	160	Constant				
Fls	Livestock soil intake rate	kg/d	0.5	T-Lognormal	0.6	0.7	0.2	2.9

Table I-1. (continued)

Parameter	Definition	Units	Static Value	Probability Dist. Function	Arguments			
					A-1	A-2	A-3	A-4
QSRs	Fodder/soil ratio for soil intake	unitless	1	Constant				
ETo	Outdoor exposure time - residential	hrs/24 hrs	0.02	T-Lognormal	0.03	0.04	0	1
ETi	Indoor exposure time - residential	hrs/24 hrs	0.62	T-Lognormal	0.59	0.10	0.08	1
EToc	Outdoor exposure time - commercial/industrial	hrs/24 hrs	0.02	T-Lognormal	0.02	0.03	0	0.32
ETic	Indoor exposure time - commercial/industrial	hrs/24 hrs	0.31	T-Lognormal	0.31	0.29	0	0.67
EFr	Exposure frequency - residential	d/yr	350	Constant				
EFc	Exposure frequency - commercial/industrial	d/yr	250	Constant				
EDr	Exposure duration - residential	yr	30	Constant				
EDc	Exposure duration - commercial/industrial	yr	25	Constant				
VFo	Volatilization factor - outdoor radon	pCi/m ³ /pCi/g	120	T-Lognormal	120	110	20	500
VFi	Volatilization factor - indoor radon	pCi/m ³ /pCi/g	1,250	T-Lognormal	1,250	3,110	400	30,000
PEF	Particulate emission factor	g/m ³	2x10 ⁻⁴	Constant				
Gsf	Gamma shielding factor	unitless	0.8	Triangular	0.33	0.8	1	
DFi	Dilution factor for inhalation indoors	unitless	0.4	Triangular	0	0.4	1	
DFw	Dilution factor for drinking water	unitless	10	Triangular	1	10	100	
Theta	Total soil porosity	Lpore/Lsoil	0.5	Constant				
S	Fraction water content	Lwater/Lpore	0.3	Constant				
BD	Bulk soil density	kg/Lsoil	1.5	Constant				
Aw	Surface area of watershed	m ²	1x10 ⁶	Constant				
As	Surface area of site	m ²	1x10 ⁴	Constant				
SFr	Inhalation slope factor - Rn-222+D	risk/pCi	8x10 ⁻⁴	T-Lognormal	8x10 ⁻¹²	1.4	4x10 ⁻¹²	2x10 ⁻¹¹
SFt	Inhalation slope factor - Rn-220	risk/pCi	1x10 ⁻¹³	T-Lognormal	1x10 ⁻¹³	1.4	6x10 ⁻¹⁴	2x10 ⁻¹³

Notes:

T-Normal = Truncated normal distribution: A-1=mean; A-2=std. dev.; A-3=minimum; A-4=maximum

T-Lognormal = Truncated lognormal distribution: A-1=geometric mean; A-2=geom. std. dev.; A-3=minimum; A-4=maximum

Triangular = Triangular distribution: A-1=minimum; A-2=most likely; A-3=maximum

Table I-2. Results of RAGS/HHEM Monte Carlo Uncertainty Analysis

Simulation Statistics													
Date: 4/24/94 at 12:55													
Iterations: 1000													
Simulations: 1													
	Ac-227	Ag-108m	Ag-110m	Am-241	Am-243	Bi-207	C-14	Cd-109	Ce-144	Cl-36	Cm-243	Cm-244	Cm-248
Minimum=	1.6E-06	1.0E-05	1.6E-05	1.2E-07	6.1E-07	9.4E-06	5.5E-07	8.4E-08	2.4E-07	1.2E-06	5.9E-07	8.1E-08	4.7E-07
Maximum=	1.6E-04	4.5E-04	7.3E-04	5.4E-05	3.5E-05	3.1E-04	1.5E-02	4.3E-04	1.4E-05	2.1E-01	2.6E-05	2.1E-05	8.6E-05
Mean=	2.1E-05	7.7E-05	1.4E-04	3.0E-06	6.2E-06	7.2E-05	3.1E-04	2.0E-05	2.1E-06	3.6E-03	4.2E-06	1.6E-06	9.1E-06
Std Deviation=	1.7E-05	5.4E-05	9.2E-05	4.6E-06	4.6E-06	4.8E-05	9.9E-04	3.9E-05	1.4E-06	1.5E-02	3.4E-06	2.0E-06	1.1E-05
Variance=	2.8E-10	2.9E-09	8.4E-09	2.1E-11	2.1E-11	2.3E-09	9.9E-07	1.5E-09	1.9E-12	2.1E-04	1.1E-11	3.9E-12	1.2E-10
Skewness=	2.6E+00	1.8E+00	1.8E+00	4.3E+00	2.0E+00	1.5E+00	8.1E+00	4.3E+00	2.1E+00	1.1E+01	2.4E+00	3.3E+00	2.8E+00
Kurtosis=	1.4E+01	8.1E+00	7.9E+00	3.0E+01	8.2E+00	5.4E+00	8.9E+01	2.9E+01	1.1E+01	1.4E+02	1.1E+01	2.0E+01	1.3E+01
Percentile values													
5 perc=	5.2E-06	2.1E-05	4.2E-05	3.7E-07	1.5E-06	2.0E-05	2.7E-06	3.3E-07	6.3E-07	1.3E-05	1.1E-06	2.3E-07	1.2E-06
10 perc=	6.6E-06	2.7E-05	5.0E-05	5.0E-07	2.1E-06	2.5E-05	4.3E-06	4.9E-07	7.5E-07	2.6E-05	1.4E-06	2.9E-07	1.5E-06
15 perc=	7.6E-06	3.1E-05	5.8E-05	5.9E-07	2.4E-06	2.9E-05	6.3E-06	6.4E-07	8.8E-07	4.5E-05	1.6E-06	3.4E-07	2.0E-06
20 perc=	8.8E-06	3.5E-05	6.8E-05	6.8E-07	2.7E-06	3.3E-05	9.0E-06	8.5E-07	9.8E-07	6.7E-05	1.8E-06	4.0E-07	2.3E-06
25 perc=	9.9E-06	3.9E-05	7.6E-05	7.8E-07	3.0E-06	3.7E-05	1.2E-05	1.2E-06	1.1E-06	9.8E-05	2.0E-06	4.7E-07	2.7E-06
30 perc=	1.1E-05	4.3E-05	8.2E-05	8.9E-07	3.3E-06	4.1E-05	1.5E-05	1.6E-06	1.2E-06	1.3E-04	2.3E-06	5.4E-07	3.1E-06
35 perc=	1.2E-05	4.8E-05	9.0E-05	1.1E-06	3.6E-06	4.6E-05	1.9E-05	2.0E-06	1.3E-06	2.0E-04	2.6E-06	6.3E-07	3.4E-06
40 perc=	1.3E-05	5.2E-05	9.8E-05	1.2E-06	4.0E-06	5.0E-05	2.6E-05	2.6E-06	1.4E-06	2.4E-04	2.8E-06	7.2E-07	3.8E-06
45 perc=	1.4E-05	5.7E-05	1.1E-04	1.4E-06	4.4E-06	5.4E-05	3.7E-05	3.6E-06	1.6E-06	3.2E-04	3.0E-06	8.0E-07	4.2E-06
50 perc=	1.6E-05	6.3E-05	1.1E-04	1.5E-06	4.8E-06	5.8E-05	4.7E-05	4.8E-06	1.7E-06	4.4E-04	3.3E-06	9.0E-07	5.0E-06
55 perc=	1.7E-05	6.7E-05	1.2E-04	1.7E-06	5.3E-06	6.3E-05	6.0E-05	6.3E-06	1.8E-06	5.8E-04	3.7E-06	1.0E-06	5.6E-06
60 perc=	1.9E-05	7.3E-05	1.3E-04	2.0E-06	5.9E-06	6.8E-05	7.8E-05	8.2E-06	2.0E-06	7.5E-04	3.9E-06	1.2E-06	6.4E-06
65 perc=	2.1E-05	8.2E-05	1.5E-04	2.3E-06	6.3E-06	7.5E-05	1.1E-04	1.0E-05	2.1E-06	9.7E-04	4.3E-06	1.4E-06	7.5E-06
70 perc=	2.3E-05	9.0E-05	1.6E-04	2.7E-06	7.0E-06	8.3E-05	1.5E-04	1.4E-05	2.4E-06	1.4E-03	4.8E-06	1.6E-06	9.2E-06
75 perc=	2.6E-05	9.8E-05	1.8E-04	3.1E-06	7.7E-06	9.2E-05	1.9E-04	2.1E-05	2.7E-06	2.0E-03	5.3E-06	1.8E-06	1.1E-05
80 perc=	3.0E-05	1.1E-04	2.0E-04	3.9E-06	8.8E-06	1.0E-04	2.7E-04	2.8E-05	3.0E-06	2.8E-03	6.0E-06	2.2E-06	1.3E-05
85 perc=	3.5E-05	1.2E-04	2.3E-04	5.0E-06	1.0E-05	1.2E-04	3.8E-04	4.1E-05	3.3E-06	4.4E-03	6.8E-06	2.9E-06	1.7E-05
90 perc=	4.1E-05	1.5E-04	2.6E-04	6.8E-06	1.2E-05	1.4E-04	6.4E-04	5.4E-05	3.9E-06	6.3E-03	8.0E-06	4.1E-06	2.2E-05
95 perc=	5.1E-05	1.9E-04	3.1E-04	1.1E-05	1.5E-05	1.7E-04	1.5E-03	9.3E-05	4.7E-06	1.4E-02	1.0E-05	5.5E-06	3.1E-05
Target Values:													
1x10 ⁻⁴ risk	3.7E-04	7.6E-05	1.4E-04	1.4E-05	1.8E-05	7.3E-05	3.8E-04	9.3E-06	2.4E-06	3.7E-04	3.5E-06	9.6E-07	5.4E-06
Probability	100.00%	61.89%	62.60%	96.72%	97.17%	64.33%	85.03%	62.01%	69.34%	47.29%	52.62%	52.59%	53.34%

Table I-2. (continued)

Simulation Statistics													
Date: 4/24/94 at 12:55													
Iterations: 1000													
Simulations: 1													
	Co-57	Co-60	Cs-134	Cs-135	Cs-137	Eu-152	Eu-154	Eu-155	Fe-55	Gd-153	H-3	I-129	K-40
Minimum=	4.3E-07	1.7E-05	1.1E-05	2.1E-08	5.8E-06	5.7E-06	8.6E-06	1.2E-07	2.5E-10	1.3E-07	4.0E-08	9.7E-07	1.7E-06
Maximum=	7.7E-05	3.6E-03	7.6E-03	6.3E-04	4.4E-03	2.3E-04	2.9E-04	4.7E-06	1.1E-06	5.6E-06	3.6E-04	3.3E-03	8.0E-03
Mean=	4.3E-06	1.7E-04	1.6E-04	1.0E-05	1.0E-04	5.1E-05	5.8E-05	8.6E-07	3.4E-08	1.1E-06	7.9E-06	1.1E-04	1.4E-04
Std Deviation=	5.5E-06	2.0E-04	3.1E-04	4.1E-05	2.4E-04	3.4E-05	4.0E-05	5.8E-07	7.5E-08	7.5E-07	2.5E-05	2.6E-04	4.2E-04
Variance=	3.0E-11	3.9E-08	9.8E-08	1.7E-09	5.8E-08	1.2E-09	1.6E-09	3.4E-13	5.7E-15	5.7E-13	6.4E-10	6.6E-08	1.8E-07
Skewness=	6.7E+00	8.9E+00	1.5E+01	1.0E+01	9.7E+00	1.7E+00	1.7E+00	2.0E+00	7.0E+00	1.8E+00	9.2E+00	6.9E+00	1.1E+01
Kurtosis=	7.0E+01	1.3E+02	3.3E+02	1.2E+02	1.3E+02	6.8E+00	6.7E+00	9.3E+00	7.6E+01	7.3E+00	1.1E+02	6.3E+01	1.7E+02
Percentile values													
5 perc=	9.6E-07	4.2E-05	2.7E-05	8.0E-08	1.3E-05	1.5E-05	1.6E-05	2.5E-07	1.2E-09	3.1E-07	2.0E-07	4.5E-06	5.1E-06
10 perc=	1.2E-06	5.1E-05	3.4E-05	1.4E-07	1.6E-05	1.8E-05	2.0E-05	3.1E-07	1.9E-09	3.8E-07	2.8E-07	6.8E-06	6.9E-06
15 perc=	1.4E-06	6.1E-05	4.1E-05	2.1E-07	1.9E-05	2.1E-05	2.3E-05	3.6E-07	2.7E-09	4.5E-07	3.6E-07	8.9E-06	9.0E-06
20 perc=	1.6E-06	6.8E-05	4.8E-05	3.1E-07	2.2E-05	2.4E-05	2.7E-05	4.2E-07	3.4E-09	5.0E-07	4.6E-07	1.1E-05	1.1E-05
25 perc=	1.8E-06	7.6E-05	5.3E-05	4.1E-07	2.6E-05	2.7E-05	2.9E-05	4.7E-07	4.2E-09	5.5E-07	5.6E-07	1.4E-05	1.2E-05
30 perc=	2.0E-06	8.5E-05	5.8E-05	5.4E-07	2.9E-05	3.0E-05	3.2E-05	5.2E-07	4.9E-09	6.3E-07	6.9E-07	1.7E-05	1.4E-05
35 perc=	2.3E-06	9.6E-05	6.5E-05	6.7E-07	3.2E-05	3.3E-05	3.6E-05	5.6E-07	5.8E-09	6.9E-07	8.5E-07	2.1E-05	1.7E-05
40 perc=	2.5E-06	1.0E-04	7.3E-05	8.6E-07	3.5E-05	3.6E-05	3.9E-05	6.2E-07	7.1E-09	7.5E-07	1.0E-06	2.4E-05	2.0E-05
45 perc=	2.7E-06	1.2E-04	8.2E-05	1.1E-06	3.9E-05	3.9E-05	4.3E-05	6.7E-07	8.5E-09	8.1E-07	1.3E-06	3.0E-05	2.5E-05
50 perc=	2.9E-06	1.2E-04	9.0E-05	1.3E-06	4.5E-05	4.2E-05	4.6E-05	7.1E-07	1.0E-08	8.6E-07	1.6E-06	3.8E-05	3.0E-05
55 perc=	3.3E-06	1.4E-04	1.0E-04	1.8E-06	4.9E-05	4.5E-05	5.0E-05	7.8E-07	1.2E-08	9.3E-07	1.9E-06	4.4E-05	3.6E-05
60 perc=	3.6E-06	1.4E-04	1.1E-04	2.2E-06	5.6E-05	5.0E-05	5.5E-05	8.5E-07	1.5E-08	9.9E-07	2.5E-06	5.3E-05	4.6E-05
65 perc=	4.0E-06	1.6E-04	1.2E-04	2.9E-06	6.3E-05	5.5E-05	6.2E-05	9.0E-07	1.9E-08	1.1E-06	3.3E-06	6.3E-05	5.8E-05
70 perc=	4.4E-06	1.8E-04	1.4E-04	4.1E-06	7.0E-05	5.9E-05	6.8E-05	9.7E-07	2.5E-08	1.2E-06	4.4E-06	7.9E-05	7.2E-05
75 perc=	4.9E-06	2.0E-04	1.6E-04	5.4E-06	8.1E-05	6.5E-05	7.5E-05	1.1E-06	3.1E-08	1.3E-06	6.0E-06	9.8E-05	9.9E-05
80 perc=	5.5E-06	2.2E-04	1.9E-04	8.2E-06	1.0E-04	7.2E-05	8.4E-05	1.2E-06	4.1E-08	1.5E-06	8.2E-06	1.2E-04	1.3E-04
85 perc=	6.5E-06	2.6E-04	2.2E-04	1.2E-05	1.3E-04	8.3E-05	9.5E-05	1.4E-06	6.0E-08	1.7E-06	1.2E-05	1.6E-04	2.0E-04
90 perc=	8.1E-06	3.1E-04	2.8E-04	1.7E-05	2.0E-04	9.7E-05	1.1E-04	1.6E-06	8.6E-08	2.1E-06	1.7E-05	2.1E-04	3.4E-04
95 perc=	1.2E-05	3.9E-04	4.7E-04	4.0E-05	3.4E-04	1.2E-04	1.4E-04	1.9E-06	1.3E-07	2.6E-06	3.0E-05	3.5E-04	5.6E-04
Target Values:													
1x10 ⁻⁴ risk	3.1E-06	1.3E-04	9.0E-05	1.2E-06	3.8E-05	5.3E-05	6.1E-05	8.8E-07	3.1E-08	1.1E-06	2.1E-06	3.7E-03	4.0E-05
Probability	52.08%	54.59%	49.81%	48.52%	43.77%	63.38%	63.99%	62.76%	75.21%	65.30%	56.13%	100.00%	57.31%

Table I-2. (continued)

Simulation Statistics													
Date: 4/24/94 at 12:55													
Iterations: 1000													
Simulations: 1													
	Mn-54	Na-22	Nb-94	Ni-59	Ni-63	Np-237	Pa-231	Pb-210	Pm-147	Pu-238	Pu-239	Pu-240	Pu-241
Minimum=	3.8E-06	1.2E-05	1.0E-05	1.7E-10	8.3E-10	2.2E-06	3.2E-07	4.6E-07	2.9E-10	1.4E-07	1.8E-07	9.3E-08	1.2E-09
Maximum=	1.9E-04	3.3E-03	3.8E-04	2.5E-06	4.0E-06	1.2E-03	3.8E-04	2.8E-03	2.1E-07	2.9E-05	3.1E-05	3.1E-05	4.6E-07
Mean=	4.4E-05	1.5E-04	7.6E-05	7.4E-08	1.7E-07	5.1E-05	1.8E-05	6.5E-05	1.3E-08	2.8E-06	2.9E-06	2.9E-06	4.2E-08
Std Deviation=	2.9E-05	2.0E-04	5.1E-05	1.8E-07	3.3E-07	8.7E-05	3.5E-05	1.4E-04	2.0E-08	3.4E-06	3.5E-06	3.7E-06	5.8E-08
Variance=	8.3E-10	4.1E-08	2.6E-09	3.3E-14	1.1E-13	7.5E-09	1.2E-09	2.0E-08	3.8E-16	1.1E-11	1.2E-11	1.3E-11	3.3E-15
Skewness=	1.8E+00	8.1E+00	1.8E+00	7.7E+00	5.2E+00	5.3E+00	5.4E+00	9.4E+00	3.8E+00	3.3E+00	3.4E+00	3.4E+00	3.0E+00
Kurtosis=	7.0E+00	9.8E+01	7.5E+00	8.5E+01	4.3E+01	4.9E+01	4.4E+01	1.5E+02	2.3E+01	1.8E+01	1.9E+01	1.8E+01	1.5E+01
Percentile values													
5 perc=	1.3E-05	3.2E-05	2.2E-05	1.1E-09	2.7E-09	4.3E-06	9.3E-07	1.7E-06	9.3E-10	3.9E-07	4.3E-07	4.1E-07	4.6E-09
10 perc=	1.6E-05	4.3E-05	2.9E-05	1.7E-09	4.6E-09	5.6E-06	1.3E-06	2.6E-06	1.3E-09	5.4E-07	5.7E-07	5.4E-07	6.4E-09
15 perc=	1.9E-05	5.1E-05	3.3E-05	2.6E-09	6.5E-09	6.8E-06	1.6E-06	3.5E-06	1.6E-09	6.5E-07	6.8E-07	6.8E-07	7.5E-09
20 perc=	2.2E-05	5.9E-05	3.7E-05	3.5E-09	8.5E-09	8.0E-06	2.0E-06	4.3E-06	2.0E-09	7.5E-07	8.0E-07	8.0E-07	8.7E-09
25 perc=	2.3E-05	6.8E-05	4.1E-05	4.6E-09	1.1E-08	9.4E-06	2.4E-06	5.9E-06	2.4E-09	8.9E-07	9.4E-07	9.4E-07	1.0E-08
30 perc=	2.6E-05	7.4E-05	4.4E-05	5.8E-09	1.5E-08	1.1E-05	2.8E-06	7.3E-06	2.9E-09	1.0E-06	1.1E-06	1.0E-06	1.2E-08
35 perc=	2.9E-05	8.0E-05	4.9E-05	7.2E-09	2.0E-08	1.3E-05	3.6E-06	9.0E-06	3.4E-09	1.1E-06	1.2E-06	1.2E-06	1.4E-08
40 perc=	3.1E-05	8.8E-05	5.3E-05	9.8E-09	2.7E-08	1.4E-05	4.3E-06	1.2E-05	3.8E-09	1.3E-06	1.4E-06	1.3E-06	1.6E-08
45 perc=	3.4E-05	9.7E-05	5.7E-05	1.2E-08	3.3E-08	1.7E-05	5.3E-06	1.4E-05	4.5E-09	1.4E-06	1.6E-06	1.5E-06	1.8E-08
50 perc=	3.6E-05	1.1E-04	6.2E-05	1.6E-08	4.6E-08	2.0E-05	6.3E-06	1.8E-05	5.1E-09	1.6E-06	1.7E-06	1.8E-06	2.0E-08
55 perc=	3.9E-05	1.1E-04	6.8E-05	2.1E-08	5.9E-08	2.4E-05	7.4E-06	2.3E-05	6.1E-09	1.7E-06	1.9E-06	1.9E-06	2.3E-08
60 perc=	4.3E-05	1.3E-04	7.3E-05	3.0E-08	7.8E-08	2.9E-05	8.9E-06	3.0E-05	7.1E-09	2.0E-06	2.2E-06	2.2E-06	2.6E-08
65 perc=	4.6E-05	1.4E-04	8.0E-05	3.8E-08	9.7E-08	3.6E-05	1.1E-05	3.9E-05	8.5E-09	2.3E-06	2.5E-06	2.4E-06	3.1E-08
70 perc=	5.0E-05	1.5E-04	8.8E-05	4.9E-08	1.2E-07	4.6E-05	1.4E-05	5.1E-05	1.1E-08	2.7E-06	2.9E-06	2.8E-06	3.7E-08
75 perc=	5.4E-05	1.7E-04	9.8E-05	6.9E-08	1.7E-07	5.6E-05	1.8E-05	7.3E-05	1.4E-08	3.2E-06	3.4E-06	3.4E-06	4.7E-08
80 perc=	5.8E-05	2.0E-04	1.1E-04	9.2E-08	2.3E-07	7.2E-05	2.2E-05	9.9E-05	1.8E-08	3.9E-06	4.1E-06	3.9E-06	6.0E-08
85 perc=	6.9E-05	2.3E-04	1.2E-04	1.3E-07	3.1E-07	9.3E-05	3.1E-05	1.3E-04	2.3E-08	4.9E-06	4.9E-06	5.1E-06	7.8E-08
90 perc=	8.0E-05	2.8E-04	1.4E-04	2.0E-07	4.5E-07	1.3E-04	4.4E-05	1.8E-04	3.1E-08	6.3E-06	6.7E-06	6.4E-06	1.1E-07
95 perc=	1.1E-04	4.1E-04	1.7E-04	3.4E-07	7.0E-07	2.0E-04	7.3E-05	2.6E-04	4.9E-08	9.0E-06	9.7E-06	9.8E-06	1.7E-07
Target Values:													
1x10 ⁻⁴ risk	4.4E-05	1.1E-04	8.0E-05	1.5E-08	4.0E-08	1.1E-04	4.2E-05	1.7E-04	3.1E-08	3.5E-06	3.7E-06	3.7E-06	5.3E-08
Probability	62.81%	53.92%	65.17%	48.66%	47.12%	87.65%	89.15%	89.25%	89.65%	77.32%	77.23%	77.68%	77.27%

Table I-2. (continued)

Simulation Statistics													
Date: 4/24/94 at 12:55													
Iterations: 1000													
Simulations: 1													
	Pu-242	Pu-244	Ra-226(+Rn)	Ra-226(-Rn)	Ra-228	Ru-106	Sb-125	Sm-147	Sm-151	Sr-90	Tc-99	Th-228	Th-229
Minimum=	1.1E-07	2.5E-06	9.1E-05	1.1E-05	1.1E-05	1.5E-06	1.8E-06	2.8E-08	1.1E-10	6.4E-07	2.5E-07	1.2E-05	1.8E-06
Maximum=	3.8E-05	8.1E-05	4.4E-02	9.6E-04	1.7E-03	9.3E-05	6.8E-05	3.0E-05	6.6E-08	7.7E-03	8.6E-04	7.4E-04	5.8E-05
Mean=	2.9E-06	1.6E-05	2.5E-03	1.3E-04	1.2E-04	1.3E-05	1.6E-05	7.7E-07	4.2E-09	2.2E-04	5.4E-05	1.2E-04	1.1E-05
Std Deviation=	3.8E-06	1.1E-05	3.9E-03	1.2E-04	1.3E-04	1.0E-05	1.1E-05	1.5E-06	6.8E-09	5.3E-04	9.3E-05	9.1E-05	7.6E-06
Variance=	1.4E-11	1.2E-10	1.5E-05	1.4E-08	1.7E-08	1.0E-10	1.2E-10	2.4E-12	4.6E-17	2.8E-07	8.7E-09	8.4E-09	5.7E-11
Skewness=	4.1E+00	1.8E+00	4.6E+00	2.6E+00	4.8E+00	2.7E+00	1.6E+00	9.9E+00	4.2E+00	6.6E+00	3.7E+00	2.3E+00	1.7E+00
Kurtosis=	2.8E+01	6.9E+00	3.3E+01	1.3E+01	4.5E+01	1.5E+01	6.0E+00	1.5E+02	2.8E+01	6.6E+01	2.2E+01	1.0E+01	7.4E+00
Percentile values													
5 perc=	4.1E-07	4.5E-06	2.9E-04	2.9E-05	2.4E-05	3.0E-06	4.6E-06	8.0E-08	2.7E-10	2.5E-06	1.5E-06	2.9E-05	3.3E-06
10 perc=	5.2E-07	5.5E-06	3.8E-04	3.8E-05	3.0E-05	3.9E-06	6.0E-06	1.1E-07	3.7E-10	4.6E-06	2.2E-06	3.7E-05	3.9E-06
15 perc=	6.5E-07	6.5E-06	4.6E-04	4.6E-05	3.5E-05	4.7E-06	6.9E-06	1.4E-07	4.7E-10	6.6E-06	2.8E-06	4.4E-05	4.8E-06
20 perc=	7.7E-07	7.3E-06	5.4E-04	5.2E-05	4.1E-05	5.2E-06	7.8E-06	1.6E-07	6.2E-10	9.2E-06	3.5E-06	5.0E-05	5.5E-06
25 perc=	9.2E-07	8.2E-06	6.4E-04	5.9E-05	4.7E-05	6.1E-06	8.6E-06	1.9E-07	7.4E-10	1.2E-05	4.4E-06	5.6E-05	6.1E-06
30 perc=	1.0E-06	9.1E-06	7.3E-04	6.7E-05	5.3E-05	6.7E-06	9.4E-06	2.2E-07	9.0E-10	1.6E-05	5.6E-06	6.3E-05	6.8E-06
35 perc=	1.2E-06	1.0E-05	8.3E-04	7.5E-05	5.9E-05	7.4E-06	1.0E-05	2.4E-07	1.1E-09	2.2E-05	7.2E-06	7.0E-05	7.4E-06
40 perc=	1.3E-06	1.1E-05	9.4E-04	8.1E-05	6.7E-05	8.0E-06	1.1E-05	2.9E-07	1.3E-09	3.0E-05	9.2E-06	7.7E-05	8.0E-06
45 perc=	1.4E-06	1.2E-05	1.1E-03	9.0E-05	7.2E-05	9.0E-06	1.2E-05	3.3E-07	1.5E-09	4.0E-05	1.2E-05	8.4E-05	8.7E-06
50 perc=	1.6E-06	1.3E-05	1.2E-03	1.0E-04	8.1E-05	9.8E-06	1.3E-05	3.8E-07	1.8E-09	5.1E-05	1.6E-05	9.1E-05	9.3E-06
55 perc=	1.8E-06	1.4E-05	1.3E-03	1.1E-04	9.0E-05	1.1E-05	1.4E-05	4.3E-07	2.2E-09	6.7E-05	2.0E-05	1.0E-04	1.0E-05
60 perc=	2.0E-06	1.5E-05	1.5E-03	1.2E-04	1.0E-04	1.2E-05	1.6E-05	5.0E-07	2.7E-09	8.8E-05	2.7E-05	1.1E-04	1.1E-05
65 perc=	2.4E-06	1.6E-05	1.8E-03	1.3E-04	1.1E-04	1.3E-05	1.7E-05	5.7E-07	3.1E-09	1.2E-04	3.6E-05	1.2E-04	1.2E-05
70 perc=	2.7E-06	1.8E-05	2.1E-03	1.4E-04	1.3E-04	1.4E-05	1.9E-05	6.7E-07	3.8E-09	1.6E-04	4.7E-05	1.3E-04	1.3E-05
75 perc=	3.2E-06	2.0E-05	2.4E-03	1.6E-04	1.5E-04	1.6E-05	2.1E-05	7.8E-07	4.7E-09	2.0E-04	6.3E-05	1.4E-04	1.4E-05
80 perc=	3.8E-06	2.2E-05	3.1E-03	1.9E-04	1.7E-04	1.8E-05	2.4E-05	9.5E-07	5.8E-09	2.8E-04	8.3E-05	1.7E-04	1.6E-05
85 perc=	5.0E-06	2.6E-05	3.9E-03	2.3E-04	2.1E-04	2.0E-05	2.7E-05	1.2E-06	7.6E-09	3.8E-04	1.1E-04	1.9E-04	1.8E-05
90 perc=	6.5E-06	3.0E-05	5.5E-03	2.6E-04	2.5E-04	2.5E-05	3.1E-05	1.6E-06	1.0E-08	5.8E-04	1.5E-04	2.3E-04	2.1E-05
95 perc=	9.7E-06	3.9E-05	9.5E-03	3.6E-04	3.4E-04	3.1E-05	3.8E-05	2.5E-06	1.6E-08	9.7E-04	2.2E-04	2.9E-04	2.6E-05
Target Values:													
1x10 ⁻⁴ risk	3.5E-06	1.7E-05	1.4E-03	1.4E-04	1.0E-04	1.1E-05	1.8E-05	3.6E-07	2.0E-09	5.8E-05	3.4E-05	1.0E-04	1.1E-05
Probability	77.53%	68.70%	56.55%	66.80%	60.51%	57.00%	67.15%	48.13%	52.30%	52.34%	63.92%	57.75%	60.41%

Table I-2. (continued)

Simulation Statistics													
Date: 4/24/94 at 12:55													
Iterations: 1000													
Simulations: 1													
	Th-230	Th-232	Th-Sep(+Rn)	Th-Sep(-Rn)	Th-Ser(+Rn)	Th-Ser(-Rn)	TI-204	U-232	U-233	U-234	U-235	U-236	U-238
Minimum=	1.5E-08	8.3E-06	2.2E-05	1.4E-05	3.6E-05	2.0E-05	1.6E-08	9.8E-08	7.4E-08	6.0E-08	7.1E-07	5.5E-08	1.7E-07
Maximum=	2.9E-06	6.8E-04	1.4E-03	5.0E-04	2.7E-03	1.8E-03	9.8E-05	1.8E-05	8.5E-06	1.4E-05	2.2E-05	7.3E-06	9.7E-06
Mean=	5.5E-07	8.0E-05	2.0E-04	1.2E-04	3.2E-04	2.0E-04	4.1E-06	1.9E-06	8.7E-07	8.4E-07	4.3E-06	8.4E-07	1.7E-06
Std Deviation=	4.4E-07	7.5E-05	1.6E-04	7.7E-05	2.7E-04	1.5E-04	8.3E-06	1.8E-06	8.6E-07	9.1E-07	2.9E-06	8.2E-07	1.3E-06
Variance=	1.9E-13	5.7E-09	2.7E-08	5.9E-09	7.5E-08	2.3E-08	6.8E-11	3.2E-12	7.5E-13	8.2E-13	8.4E-12	6.8E-13	1.6E-12
Skewness=	1.8E+00	3.1E+00	2.7E+00	1.5E+00	3.0E+00	3.0E+00	4.6E+00	3.0E+00	3.6E+00	5.1E+00	1.8E+00	2.7E+00	2.1E+00
Kurtosis=	7.1E+00	1.7E+01	1.4E+01	5.4E+00	1.7E+01	2.2E+01	3.3E+01	1.8E+01	2.3E+01	5.5E+01	7.9E+00	1.4E+01	8.9E+00
Percentile values													
5 perc=	1.1E-07	1.8E-05	4.7E-05	3.6E-05	7.7E-05	5.9E-05	7.1E-08	3.3E-07	1.8E-07	1.5E-07	1.2E-06	1.6E-07	4.6E-07
10 perc=	1.6E-07	2.2E-05	6.3E-05	4.6E-05	9.6E-05	7.1E-05	1.1E-07	4.3E-07	2.2E-07	2.0E-07	1.6E-06	2.1E-07	5.8E-07
15 perc=	1.9E-07	2.7E-05	7.4E-05	5.4E-05	1.2E-04	8.2E-05	1.6E-07	5.5E-07	2.8E-07	2.4E-07	1.8E-06	2.5E-07	6.7E-07
20 perc=	2.3E-07	3.2E-05	8.5E-05	5.9E-05	1.3E-04	9.3E-05	2.0E-07	6.8E-07	3.2E-07	2.8E-07	2.1E-06	2.9E-07	7.6E-07
25 perc=	2.6E-07	3.7E-05	9.5E-05	6.6E-05	1.5E-04	1.0E-04	2.6E-07	7.6E-07	3.5E-07	3.2E-07	2.3E-06	3.3E-07	8.3E-07
30 perc=	2.9E-07	4.0E-05	1.1E-04	7.2E-05	1.6E-04	1.2E-04	3.3E-07	8.4E-07	3.9E-07	3.8E-07	2.5E-06	3.7E-07	9.0E-07
35 perc=	3.1E-07	4.4E-05	1.2E-04	7.9E-05	1.8E-04	1.3E-04	4.1E-07	9.4E-07	4.4E-07	4.1E-07	2.7E-06	4.1E-06	9.9E-07
40 perc=	3.4E-07	4.8E-05	1.3E-04	8.7E-05	2.0E-04	1.4E-04	5.8E-07	1.0E-06	5.0E-07	4.5E-07	3.0E-06	4.5E-06	1.1E-06
45 perc=	3.8E-07	5.2E-05	1.4E-04	9.5E-05	2.1E-04	1.5E-04	7.7E-07	1.1E-06	5.6E-07	5.1E-07	3.2E-06	4.9E-06	1.2E-06
50 perc=	4.2E-07	5.6E-05	1.5E-04	1.0E-04	2.3E-04	1.6E-04	1.0E-06	1.3E-06	6.2E-07	5.7E-07	3.5E-06	5.6E-07	1.3E-06
55 perc=	4.6E-07	6.2E-05	1.6E-04	1.1E-04	2.6E-04	1.8E-04	1.3E-06	1.4E-06	6.8E-07	6.4E-07	3.8E-06	6.2E-07	1.4E-06
60 perc=	5.1E-07	6.9E-05	1.8E-04	1.2E-04	2.8E-04	1.9E-04	1.7E-06	1.6E-06	7.7E-07	7.1E-07	4.1E-06	7.1E-07	1.5E-06
65 perc=	5.6E-07	7.5E-05	1.9E-04	1.3E-04	3.2E-04	2.1E-04	2.3E-06	1.8E-06	8.4E-07	8.1E-07	4.5E-06	8.3E-07	1.7E-06
70 perc=	6.3E-07	8.3E-05	2.1E-04	1.4E-04	3.5E-04	2.3E-04	3.1E-06	2.1E-06	9.3E-07	9.5E-07	5.1E-06	9.3E-07	1.8E-06
75 perc=	7.2E-07	9.5E-05	2.4E-04	1.5E-04	3.8E-04	2.6E-04	4.2E-06	2.4E-06	1.1E-06	1.1E-06	5.5E-06	1.1E-06	2.1E-06
80 perc=	8.1E-07	1.1E-04	2.7E-04	1.7E-04	4.5E-04	2.9E-04	5.5E-06	2.7E-06	1.3E-06	1.2E-06	6.1E-06	1.3E-06	2.4E-06
85 perc=	9.4E-07	1.3E-04	3.2E-04	1.9E-04	5.1E-04	3.2E-04	7.5E-06	3.2E-06	1.5E-06	1.5E-06	7.1E-06	1.4E-06	2.8E-06
90 perc=	1.1E-06	1.6E-04	3.9E-04	2.3E-04	6.1E-04	3.8E-04	1.1E-05	3.7E-06	1.7E-06	1.7E-06	8.2E-06	1.7E-06	3.3E-06
95 perc=	1.5E-06	2.1E-04	4.8E-04	2.8E-04	8.2E-04	4.9E-04	1.7E-05	5.1E-06	2.2E-06	2.2E-06	9.8E-06	2.5E-06	4.1E-06
Target Values:													
1x10 ⁻⁴ risk	3.8E-07	6.3E-05	1.7E-04	1.3E-04	2.7E-04	2.1E-04	1.2E-06	1.6E-05	7.0E-06	7.0E-06	1.1E-05	6.6E-06	9.4E-06
Probability	45.01%	56.49%	56.77%	64.40%	56.81%	64.44%	53.47%	99.90%	99.72%	99.86%	95.98%	99.93%	99.96%

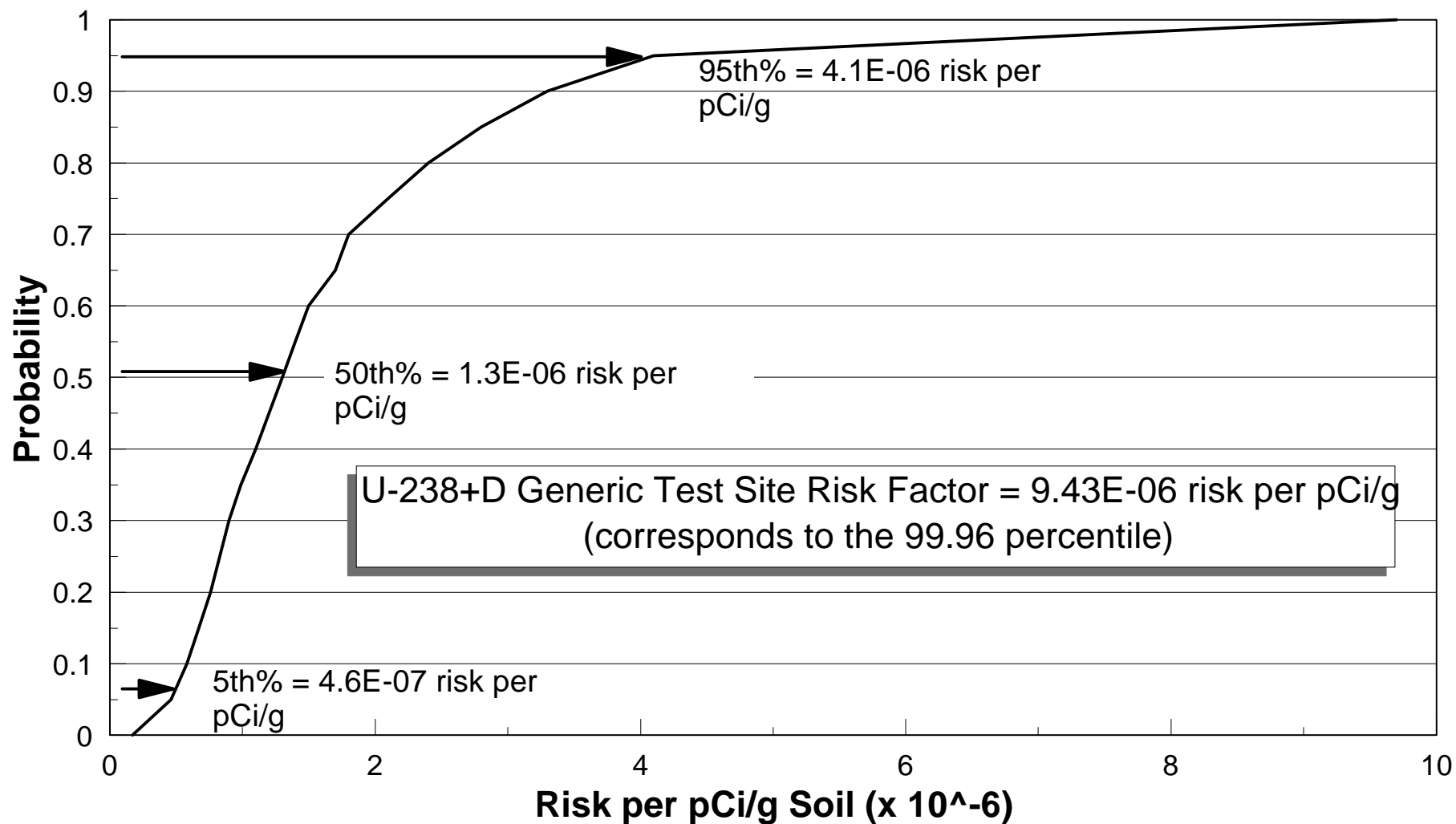
Table I-2. (continued)

Simulation Statistics							
Date: 4/24/94 at 12:55							
Iterations: 1000							
Simulations: 1							
	DU(+Rn)	DU(-Rn)	U-Sep(+Rn)	U-Sep(-Rn)	U-Ser(+Rn)	U-Ser(-Rn)	Zn-65
Minimum=	1.9E-07	1.9E-07	3.0E-07	3.0E-07	1.3E-04	2.5E-05	6.4E-06
Maximum=	9.9E-06	9.9E-06	1.9E-05	1.9E-05	5.8E-02	1.7E-03	2.8E-02
Mean=	1.8E-06	1.8E-06	2.7E-06	2.7E-06	2.8E-03	2.1E-04	5.6E-04
Std Deviation=	1.3E-06	1.3E-06	1.9E-06	1.9E-06	4.7E-03	2.0E-04	1.9E-03
Variance=	1.7E-12	1.7E-12	3.7E-12	3.7E-12	2.2E-05	4.0E-08	3.7E-06
Skewness=	2.0E+0	2.0E+00	2.0E+00	2.0E+00	5.3E+00	2.5E+00	8.6E+00
Kurtosis=	8.6E+00	8.6E+00	1.1E+01	1.1E+01	4.2E+01	1.1E+01	9.8E+01
Percentile values							
5 perc=	4.9E-07	4.9E-07	7.9E-07	7.9E-07	3.5E-04	4.5E-05	1.6E-05
10 perc=	6.2E-07	6.2E-07	9.8E-07	9.8E-07	4.5E-04	5.6E-05	2.0E-05
15 perc=	7.2E-07	7.2E-07	1.1E-06	1.1E-06	5.5E-04	6.9E-05	2.5E-05
20 perc=	8.2E-07	8.2E-07	1.3E-06	1.3E-06	6.5E-04	8.0E-05	3.0E-05
25 perc=	8.8E-07	8.8E-07	1.4E-06	1.4E-06	7.5E-04	8.9E-05	3.6E-05
30 perc=	9.6E-07	9.6E-07	1.5E-06	1.5E-06	8.5E-04	1.0E-04	4.2E-05
35 perc=	1.0E-06	1.0E-06	1.7E-06	1.7E-06	9.5E-04	1.1E-04	4.9E-05
40 perc=	1.2E-06	1.2E-06	1.8E-06	1.8E-06	1.1E-03	1.2E-04	5.8E-05
45 perc=	1.3E-06	1.3E-06	2.0E-06	2.0E-06	1.2E-03	1.3E-04	6.8E-05
50 perc=	1.4E-06	1.4E-06	2.2E-06	2.2E-06	1.3E-03	1.5E-04	8.2E-05
55 perc=	1.5E-06	1.5E-06	2.4E-06	2.4E-06	1.5E-03	1.6E-04	1.0E-04
60 perc=	1.6E-06	1.6E-06	2.6E-06	2.6E-06	1.7E-03	1.8E-04	1.3E-04
65 perc=	1.8E-06	1.8E-06	2.9E-06	2.9E-06	2.1E-03	2.1E-04	1.7E-04
70 perc=	1.9E-06	1.9E-06	3.2E-06	3.2E-06	2.4E-03	2.3E-04	2.0E-04
75 perc=	2.2E-06	2.2E-06	3.5E-06	3.5E-06	2.9E-03	2.6E-04	2.9E-04
80 perc=	2.6E-06	2.6E-06	3.9E-06	3.9E-06	3.5E-03	3.0E-04	4.4E-04
85 perc=	3.0E-06	3.0E-06	4.4E-06	4.4E-06	4.6E-03	3.5E-04	6.9E-04
90 perc=	3.5E-06	3.5E-06	5.2E-06	5.2E-06	6.2E-03	4.5E-04	1.1E-03
95 perc=	4.3E-06	4.3E-06	6.6E-06	6.6E-06	9.8E-03	6.3E-04	2.2E-03
Target Values:							
1x10 ⁻⁴ risk	9.7E-06	9.7E-06	1.7E-05	1.7E-05	1.6E-03	3.4E-04	8.2E-05
Probability	99.98%	99.98%	99.90%	99.90%	56.70%	84.06%	50.06%

Table I-3. Summary of RAGS/HHEM Monte Carlo Uncertainty Analysis Results

Radionuclides With Generic Test Site Risk Factors That Fall Within the Following Percent Probability Ranges										
>40-50	>50-55	>55-60	>60-65	>65-70	>70-75	>75-80	>80-85	>85-90	>90-95	>95-100
Cl-36	Cm-243	H-3	Ag-108m+D	Ce-144+D		Fe-55	U-Ser(-Rn)	C-14		Ac-227+D
Cs-134	Cm-244	K-40	Ag-110m+D	Gd-153		Pu-238		Np-237+D		Am-241
Cs-135	Cm-248	Ra-226(+Rn)	Bi-207	Nb-94		Pu-239		Pa-231		Am-243+D
Cs-137	Co-57	Th-228+D	Cd-109	Pu-244+D		Pu-240		Pb-210+D		I-129
Ni-59	Co-60	Th-232+D	Eu-152	Sb-125+D		Pu-241+D		Pm-147		U-232
Ni-63	Na-22	Th-Sep(+Rn)	Eu-154			Pu-242				U-233
Sm-147	Ru-106+D	Th-Ser(+Rn)	Eu-155							U-234
Th-230	Sm-151	U-Ser(+Rn)	Mn-54							U-235+D
	Sr-90+D		Ra-226(-Rn)							U-236
	Tl-204		Ra-228+D							U-238+D
	Zn-65		Tc-99							DU(+Rn)
			Th-229+D							DU(-Rn)
			Th-Sep(-Rn)							U-Sep(+Rn)
			Th-Ser(-Rn)							U-Sep(-Rn)
Total Number of Radionuclides in Each Percentile Range										
8	11	8	14	5	0	6	1	5	0	14
Percentage of Radionuclides (n=72) in Each Percentile Range										
11%	15%	11%	19%	7%	0%	8%	1%	7%	0%	19%

Figure I-1. U-238+D Monte Carlo Uncertainty Analysis Results (Based on 1,000 Iterations) Lifetime Cancer Risk per pCi/g Soil - Cumulative Probability Distribution



APPENDIX J

ANALYSIS OF AERIAL RADIOLOGICAL SURVAYS

Appendix J

Analysis of Aerial Radiological Surveys

A set of 61 aerial radiological survey reports were examined for the purpose of constructing a site-by-site histogram of contaminated area according to mass activity concentration (1-10, 10-100, 100-1,000, >1,000 pCi/g). Only a fraction of the reports contained the information necessary to determine the distributions. This appendix contains a discussion of methods and limitations. The results of the examination are presented in Tables J-1 and J-2.

The aerial surveys were conducted by EG&G Energy Measurements typically using a helicopter outfitted with an array of 20 NaI(Tl) detectors. A flight pattern was flown over the survey area at an altitude of approximately 46 meters, with flight lines spaced 76 meters apart. The raw data consists of geo-referenced gamma spectra recorded every 100' of flight path. The relevant data presented in the reports are typically isopleths of: 1) count rate; 2) exposure rate; 3) annual dose; 4) area activity concentration; or 5) mass activity concentration. The mass activity concentration (number 5) was presented as: 1) total gamma; 2) terrestrial gamma; 3) man-made gamma; or 4) specific radionuclide(s) presented superimposed on aerial photographs of the survey area.

In the rare cases that mass activity isopleths (pCi/g) were presented, no conversions were required. In the case of area activity isopleths ($\mu\text{Ci}/\text{m}^2$), a conversion was made assuming a particular soil density and a depth of uniform distribution. Specific values are indicated for each conversion. Soil densities used were either 1.2 or 1.5 g/cm^3 and a depth of 5 cm was assumed for depth of contamination when site-specific data were not available.

For isopleths not given in mass or area activity concentration, a conversion was possible only in the cases where the isopleths were for a specific radionuclide. This is the case because the particular radionuclide conversion factors published in the reports are for a specific energy window centered on the relevant photopeak and can only be used for data produced from that particular energy window alone. Generally, only one conversion factor (pCi/g per cps) is presented in the reports for each radionuclide, although in some cases a number of values are presented for various relaxation lengths.

The procedure for producing the area-activity concentration histograms for figures that allow such calculations was as follows. The figure containing the isopleths superimposed on an aerial photograph was photocopied onto plain paper. The photocopy was then overlaid with a sheet of quadrille paper (10 squares per inch) and secured with adhesive tape. The pair was then placed on a light box and the appropriate isopleths, scale, and survey boundary were traced by hand. After tracing, the number of grid elements bounded by the appropriate isopleths were counted and recorded on a sheet. An area per grid element conversion was determined from the scale copied onto the quadrille sheet. For each set of isopleths conservatively corresponding to the desired activity concentration intervals (1-10, 10-100, 100-1,000, >1,000 pCi/g), the number of grid elements was multiplied by the area conversion factor to produce total areas in square meters.

A number of large DOE sites, such as Hanford and the Idaho National Engineering Laboratory, required multiple figures. It is not necessarily the case that either all areas or all contaminated areas have been identified and included. The figures used were the ones available that allowed the required conversions.

The detector arrays used in these surveys were not collimated, and see a very large area on the ground from a height of 46 meters. For example, for Cs-137 90% of the photon flux measured originates from a surface area 230 m in diameter. Consequently, point or line sources are considerably broadened in the isopleth presentations resulting in an overstating of contaminated areas.

Table J-1. Areas (m²) by Activity Concentration Calculated From Aerial Surveys

Site	Isotopes	<1 pCi/g	1-10 pCi/g	10-100 pCi/g	100-1000 pCi/g	>1000 pCi/g
Hanford	Cs-137		1.7E7	6.8E6	9.2E5	4.6E4
INEL	Cs-137		1.3E7	3.7E6	1.1E6	2.7E5
Los Alamos	Cs-137, *		3.8E5	3.8E5	1.1E4	
NV Test Site	Cs-137, Co-60, transuranics		1.3E8	9.0E8	4.1E6	3.1E5
Oak Ridge	Cs-137, *		3.6E6	2.0E6	1.1E6	
Portsmouth	*					
Rocky Flats	Am-241			4.2E5	1.5E5	2.7E4
Sandia	Co-60		2.9E5	5.7E4		
Western Nuclear Mill	Bi-214		1.3E6	1.1E6	8E4	
West Valley Demo. Project	Cs-137		2.1E6	8.4E5	2.5E5	
	Total (m ²)		1.6E8	9.1E8	7.7E6	6.5E5

* Pa-234m not included in total

Table J-2. Areas (m²) by Activity Concentration Calculated From Aerial Surveys for Pa-234m

Site	<1 pCi/g	1-10 pCi/g	10-100 pCi/g	100-1000 pCi/g	>1000 pCi/g
Los Alamos				3.0E5	2.3E4
Oak Ridge				1.1E6	5.5E5
Portsmouth				6.8E5	8.3E5
Total (m ²)				2.1E6	1.4E6

APPENDIX K

REFERENCE SITE ANALYSES OF SITE-SPECIFIC RISK FACTORS

TABLE K-1. CLEANUP VOLUMES (m**3)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.00E+6	5.00E+6	5.00E+6	1.53E+6	1.53E+6	1.53E+6	4.66E+5	4.66E+5	4.66E+5	9.30E+4	9.30E+4	9.30E+4	8.82E+3	8.82E+3	8.82E+3
II	1.89E+6	1.91E+6	1.91E+6	1.35E+6	1.36E+6	1.36E+6	9.17E+5	9.36E+5	9.36E+5	7.81E+5	7.90E+5	7.90E+5	6.64E+5	6.71E+5	6.71E+5
III	8.44E+5	8.44E+5	8.44E+5	7.99E+5	7.99E+5	7.99E+5	4.63E+5	4.63E+5	4.63E+5	6.65E+4	6.65E+4	6.65E+4	.00E+0	.00E+0	.00E+0
IV	2.55E+5	2.55E+5	2.55E+5	9.73E+4	9.73E+4	9.73E+4	3.71E+4	3.71E+4	3.71E+4	1.42E+4	1.42E+4	1.42E+4	.00E+0	.00E+0	.00E+0
V	1.51E+7	1.51E+7	1.51E+7	1.05E+7	1.05E+7	1.05E+7	6.02E+6	6.02E+6	6.02E+6	2.26E+6	2.26E+6	2.26E+6	3.93E+5	3.93E+5	3.93E+5
VI	5.56E+5	5.56E+5	5.56E+5	3.96E+5	3.96E+5	3.96E+5	2.36E+5	2.36E+5	2.36E+5	1.06E+5	1.06E+5	1.06E+5	2.96E+4	2.96E+4	2.96E+4
VII	3.80E+7	3.80E+7	3.80E+7	9.26E+6	9.26E+6	9.26E+6	3.67E+6	3.67E+6	3.67E+6	1.96E+6	1.96E+6	1.96E+6	.00E+0	.00E+0	.00E+0
IX	1.65E+5	1.65E+5	1.65E+5	2.96E+4	2.96E+4	2.96E+4	1.98E+3	1.98E+3	1.98E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	8.33E+5	8.33E+5	8.33E+5	7.18E+5	7.82E+5	7.82E+5	4.03E+5	5.88E+5	5.88E+5	1.49E+5	1.82E+5	1.82E+5	3.31E+4	3.62E+4	3.62E+4
XII	6.88E+3	6.88E+3	6.88E+3	1.70E+3	1.70E+3	1.70E+3	1.41E+3	1.41E+3	1.41E+3	7.01E+2	7.01E+2	7.01E+2	4.94E+2	4.94E+2	4.94E+2
XIIIA	2.49E+3	2.49E+3	2.49E+3	6.89E+2	6.89E+2	6.89E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.49E+3	2.49E+3	2.49E+3	6.89E+2	6.89E+2	6.89E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.49E+3	2.49E+3	2.49E+3	6.89E+2	6.89E+2	6.89E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.27E+3	1.27E+3	1.27E+3	1.11E+3	1.11E+3	1.11E+3	9.41E+2	9.41E+2	9.41E+2	6.14E+2	6.14E+2	6.14E+2	2.50E+2	2.50E+2	2.50E+2
XVIB	1.27E+3	1.27E+3	1.27E+3	1.11E+3	1.11E+3	1.11E+3	9.41E+2	9.41E+2	9.41E+2	6.14E+2	6.14E+2	6.14E+2	2.50E+2	2.50E+2	2.50E+2
XVIC	1.27E+3	1.27E+3	1.27E+3	1.11E+3	1.11E+3	1.11E+3	9.41E+2	9.41E+2	9.41E+2	6.14E+2	6.14E+2	6.14E+2	2.50E+2	2.50E+2	2.50E+2
XVIIIA	5.92E+2	5.92E+2	5.92E+2	5.89E+2	5.89E+2	5.89E+2	5.80E+2	5.80E+2	5.80E+2	4.56E+2	4.56E+2	4.56E+2	1.69E+2	1.69E+2	1.69E+2
XVIIIB	5.92E+2	5.92E+2	5.92E+2	5.89E+2	5.89E+2	5.89E+2	5.80E+2	5.80E+2	5.80E+2	4.56E+2	4.56E+2	4.56E+2	1.69E+2	1.69E+2	1.69E+2
XVIIIC	5.92E+2	5.92E+2	5.92E+2	5.89E+2	5.89E+2	5.89E+2	5.80E+2	5.80E+2	5.80E+2	4.56E+2	4.56E+2	4.56E+2	1.69E+2	1.69E+2	1.69E+2
XXA	4.74E+5	4.94E+5	4.94E+5	5.50E+4	7.97E+4	7.97E+4	2.26E+3	5.68E+3	5.68E+3	3.00E+1	4.26E+1	4.26E+1	.00E+0	2.61E+0	2.61E+0
XXB	4.74E+5	4.74E+5	4.74E+5	5.50E+4	5.50E+4	5.50E+4	2.26E+3	2.26E+3	2.26E+3	3.00E+1	3.00E+1	3.00E+1	.00E+0	.00E+0	.00E+0
XXC	4.74E+5	4.74E+5	4.74E+5	5.50E+4	5.50E+4	5.50E+4	2.26E+3	2.26E+3	2.26E+3	3.00E+1	3.00E+1	3.00E+1	.00E+0	.00E+0	.00E+0
XXIA	3.45E+4	3.45E+4	3.45E+4	3.42E+4	3.42E+4	3.42E+4	3.18E+4	3.18E+4	3.18E+4	2.02E+4	2.02E+4	2.02E+4	4.60E+3	4.60E+3	4.60E+3
XXIB	3.45E+4	3.45E+4	3.45E+4	3.42E+4	3.42E+4	3.42E+4	3.18E+4	3.18E+4	3.18E+4	2.02E+4	2.02E+4	2.02E+4	4.60E+3	4.60E+3	4.60E+3
XXIC	3.45E+4	3.45E+4	3.45E+4	3.42E+4	3.42E+4	3.42E+4	3.18E+4	3.18E+4	3.18E+4	2.02E+4	2.02E+4	2.02E+4	4.60E+3	4.60E+3	4.60E+3
XXII	2.61E+6	2.61E+6	2.61E+6	1.96E+6	1.96E+6	1.96E+6	1.31E+6	1.31E+6	1.31E+6	7.42E+5	7.62E+5	7.62E+5	3.05E+5	3.35E+5	3.35E+5
DOE	9.28E+7	9.28E+7	9.28E+7	4.69E+7	4.70E+7	4.70E+7	2.64E+7	2.66E+7	2.66E+7	1.09E+7	1.11E+7	1.11E+7	3.87E+6	4.10E+6	4.10E+6
DOD	2.81E+4	2.81E+4	2.81E+4	7.55E+3	7.55E+3	7.55E+3	1.41E+3	1.41E+3	1.41E+3	7.01E+2	7.01E+2	7.01E+2	4.94E+2	4.94E+2	4.94E+2
NRC	7.59E+6	7.68E+6	7.68E+6	1.70E+6	1.81E+6	1.81E+6	8.85E+5	9.01E+5	9.01E+5	5.51E+5	5.51E+5	5.51E+5	1.43E+5	1.43E+5	1.43E+5
Total	1.00E+8	1.00E+8	1.00E+8	4.86E+7	4.88E+7	4.88E+7	2.73E+7	2.75E+7	2.75E+7	1.15E+7	1.17E+7	1.17E+7	4.02E+6	4.24E+6	4.24E+6

TABLE K-2. CLEANUP VOLUMES (m**3)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.66E+5	4.66E+5	4.66E+5	3.03E+5	3.03E+5	3.03E+5	2.26E+5	2.26E+5	2.26E+5	1.56E+5	1.56E+5	1.56E+5	1.21E+5	1.21E+5	1.21E+5	9.30E+4	9.30E+4	9.30E+4
II	9.17E+5	9.36E+5	9.36E+5	8.60E+5	9.03E+5	9.03E+5	8.17E+5	8.72E+5	8.72E+5	7.95E+5	8.18E+5	8.18E+5	7.90E+5	7.97E+5	7.97E+5	7.81E+5	7.90E+5	7.90E+5
III	4.63E+5	4.63E+5	4.63E+5	2.52E+5	2.52E+5	2.52E+5	1.72E+5	1.72E+5	1.72E+5	1.31E+5	1.31E+5	1.31E+5	9.99E+4	9.99E+4	9.99E+4	6.65E+4	6.65E+4	6.65E+4
IV	3.71E+4	3.71E+4	3.71E+4	2.96E+4	2.96E+4	2.96E+4	2.57E+4	2.57E+4	2.57E+4	2.08E+4	2.08E+4	2.08E+4	1.76E+4	1.76E+4	1.76E+4	1.42E+4	1.42E+4	1.42E+4
V	6.02E+6	6.02E+6	6.02E+6	4.66E+6	4.66E+6	4.66E+6	3.95E+6	3.95E+6	3.95E+6	3.23E+6	3.23E+6	3.23E+6	2.76E+6	2.76E+6	2.76E+6	2.26E+6	2.26E+6	2.26E+6
VI	2.36E+5	2.36E+5	2.36E+5	1.89E+5	1.89E+5	1.89E+5	1.62E+5	1.62E+5	1.62E+5	1.37E+5	1.37E+5	1.37E+5	1.22E+5	1.22E+5	1.22E+5	1.06E+5	1.06E+5	1.06E+5
VII	3.67E+6	3.67E+6	3.67E+6	1.48E+6	1.48E+6	1.48E+6	7.26E+5	7.26E+5	7.26E+5	2.98E+5	2.98E+5	2.98E+5	1.40E+5	1.40E+5	1.40E+5	1.96E+4	1.96E+4	1.96E+4
IX	1.98E+3	1.98E+3	1.98E+3	5.83E+2	5.83E+2	5.83E+2	2.51E+2	2.51E+2	2.51E+2	6.98E+1	6.98E+1	6.98E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	4.03E+5	5.88E+5	5.88E+5	2.98E+5	4.58E+5	4.58E+5	2.50E+5	3.77E+5	3.77E+5	2.00E+5	2.78E+5	2.78E+5	1.73E+5	2.26E+5	2.26E+5	1.49E+5	1.82E+5	1.82E+5
XII	1.41E+3	1.41E+3	1.41E+3	1.13E+3	1.13E+3	1.13E+3	9.87E+2	9.87E+2	9.87E+2	8.36E+2	8.36E+2	8.36E+2	7.49E+2	7.49E+2	7.49E+2	7.01E+2	7.01E+2	7.01E+2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.41E+2	9.41E+2	9.41E+2	8.83E+2	8.83E+2	8.83E+2	8.10E+2	8.10E+2	8.10E+2	7.09E+2	7.09E+2	7.09E+2	6.50E+2	6.50E+2	6.50E+2	6.14E+2	6.14E+2	6.14E+2
XVIB	9.41E+2	9.41E+2	9.41E+2	8.83E+2	8.83E+2	8.83E+2	8.10E+2	8.10E+2	8.10E+2	7.09E+2	7.09E+2	7.09E+2	6.50E+2	6.50E+2	6.50E+2	6.14E+2	6.14E+2	6.14E+2
XVIC	9.41E+2	9.41E+2	9.41E+2	8.83E+2	8.83E+2	8.83E+2	8.10E+2	8.10E+2	8.10E+2	7.09E+2	7.09E+2	7.09E+2	6.50E+2	6.50E+2	6.50E+2	6.14E+2	6.14E+2	6.14E+2
XVIIIA	5.80E+2	5.80E+2	5.80E+2	5.57E+2	5.57E+2	5.57E+2	5.38E+2	5.38E+2	5.38E+2	5.15E+2	5.15E+2	5.15E+2	5.00E+2	5.00E+2	5.00E+2	4.56E+2	4.56E+2	4.56E+2
XVIIIB	5.80E+2	5.80E+2	5.80E+2	5.57E+2	5.57E+2	5.57E+2	5.38E+2	5.38E+2	5.38E+2	5.15E+2	5.15E+2	5.15E+2	5.00E+2	5.00E+2	5.00E+2	4.56E+2	4.56E+2	4.56E+2
XVIIIC	5.80E+2	5.80E+2	5.80E+2	5.57E+2	5.57E+2	5.57E+2	5.38E+2	5.38E+2	5.38E+2	5.15E+2	5.15E+2	5.15E+2	5.00E+2	5.00E+2	5.00E+2	4.56E+2	4.56E+2	4.56E+2
XXA	2.26E+3	5.68E+3	5.68E+3	1.24E+2	5.98E+2	5.98E+2	8.67E+1	1.23E+2	1.23E+2	5.53E+1	7.84E+1	7.84E+1	4.11E+1	5.83E+1	5.83E+1	3.00E+1	4.26E+1	4.26E+1
XXB	2.26E+3	2.26E+3	2.26E+3	1.24E+2	1.24E+2	1.24E+2	8.67E+1	8.67E+1	8.67E+1	5.53E+1	5.53E+1	5.53E+1	4.11E+1	4.11E+1	4.11E+1	3.00E+1	3.00E+1	3.00E+1
XXC	2.26E+3	2.26E+3	2.26E+3	1.24E+2	1.24E+2	1.24E+2	8.67E+1	8.67E+1	8.67E+1	5.53E+1	5.53E+1	5.53E+1	4.11E+1	4.11E+1	4.11E+1	3.00E+1	3.00E+1	3.00E+1
XXIA	3.18E+4	3.18E+4	3.18E+4	2.84E+4	2.84E+4	2.84E+4	2.64E+4	2.64E+4	2.64E+4	2.38E+4	2.38E+4	2.38E+4	2.21E+4	2.21E+4	2.21E+4	2.02E+4	2.02E+4	2.02E+4
XXIB	3.18E+4	3.18E+4	3.18E+4	2.84E+4	2.84E+4	2.84E+4	2.64E+4	2.64E+4	2.64E+4	2.38E+4	2.38E+4	2.38E+4	2.21E+4	2.21E+4	2.21E+4	2.02E+4	2.02E+4	2.02E+4
XXIC	3.18E+4	3.18E+4	3.18E+4	2.84E+4	2.84E+4	2.84E+4	2.64E+4	2.64E+4	2.64E+4	2.38E+4	2.38E+4	2.38E+4	2.21E+4	2.21E+4	2.21E+4	2.02E+4	2.02E+4	2.02E+4
XXII	1.31E+6	1.31E+6	1.31E+6	1.11E+6	1.13E+6	1.13E+6	1.00E+6	1.03E+6	1.03E+6	8.59E+5	8.95E+5	8.95E+5	8.09E+5	8.22E+5	8.22E+5	7.42E+5	7.62E+5	7.62E+5
DOE	2.64E+7	2.66E+7	2.66E+7	1.99E+7	2.02E+7	2.02E+7	1.68E+7	1.72E+7	1.72E+7	1.39E+7	1.42E+7	1.42E+7	1.25E+7	1.26E+7	1.26E+7	1.09E+7	1.11E+7	1.11E+7
DOD	1.41E+3	1.41E+3	1.41E+3	1.13E+3	1.13E+3	1.13E+3	9.87E+2	9.87E+2	9.87E+2	8.36E+2	8.36E+2	8.36E+2	7.49E+2	7.49E+2	7.49E+2	7.01E+2	7.01E+2	7.01E+2
NRC	8.85E+5	9.01E+5	9.01E+5	7.73E+5	7.75E+5	7.75E+5	7.17E+5	7.17E+5	7.17E+5	6.45E+5	6.45E+5	6.45E+5	5.99E+5	5.99E+5	5.99E+5	5.51E+5	5.51E+5	5.51E+5
Total	2.73E+7	2.75E+7	2.75E+7	2.07E+7	2.10E+7	2.10E+7	1.75E+7	1.79E+7	1.79E+7	1.45E+7	1.49E+7	1.49E+7	1.31E+7	1.32E+7	1.32E+7	1.15E+7	1.17E+7	1.17E+7

TABLE K-3. CLEANUP VOLUMES (m**3)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.66E+6	2.66E+6	2.66E+6	8.12E+5	8.12E+5	8.12E+5	2.06E+5	2.06E+5	2.06E+5	3.59E+4	3.59E+4	3.59E+4	1.70E+3	1.70E+3	1.70E+3
II	1.55E+6	1.55E+6	1.55E+6	9.91E+5	9.99E+5	9.99E+5	8.01E+5	8.58E+5	8.58E+5	7.37E+5	7.46E+5	7.46E+5	4.14E+5	4.27E+5	4.27E+5
III	8.32E+5	8.32E+5	8.32E+5	6.91E+5	6.91E+5	6.91E+5	1.62E+5	1.62E+5	1.62E+5	5.53E+3	5.53E+3	5.53E+3	.00E+0	.00E+0	.00E+0
IV	1.48E+5	1.48E+5	1.48E+5	5.65E+4	5.65E+4	5.65E+4	2.38E+4	2.38E+4	2.38E+4	1.72E+3	1.72E+3	1.72E+3	.00E+0	.00E+0	.00E+0
V	1.27E+7	1.27E+7	1.27E+7	8.13E+6	8.13E+6	8.13E+6	3.77E+6	3.77E+6	3.77E+6	7.88E+5	7.88E+5	7.88E+5	2.99E+4	2.99E+4	2.99E+4
VI	4.71E+5	4.71E+5	4.71E+5	3.11E+5	3.11E+5	3.11E+5	1.54E+5	1.54E+5	1.54E+5	5.41E+4	5.41E+4	5.41E+4	1.08E+4	1.08E+4	1.08E+4
VII	1.62E+7	1.62E+7	1.62E+7	6.66E+6	6.66E+6	6.66E+6	5.41E+5	5.41E+5	5.41E+5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	6.21E+4	6.21E+4	6.21E+4	7.06E+3	7.06E+3	7.06E+3	1.45E+2	1.45E+2	1.45E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	7.85E+5	8.00E+5	8.00E+5	5.65E+5	7.47E+5	7.47E+5	2.61E+5	4.07E+5	4.07E+5	8.97E+4	1.02E+5	1.02E+5	1.33E+4	1.41E+4	1.41E+4
XII	2.17E+3	2.17E+3	2.17E+3	1.55E+3	1.55E+3	1.55E+3	8.06E+2	8.06E+2	8.06E+2	5.73E+2	5.73E+2	5.73E+2	8.26E+1	8.26E+1	8.26E+1
XIIIA	1.41E+3	1.41E+3	1.41E+3	1.92E+2	1.92E+2	1.92E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.41E+3	1.41E+3	1.41E+3	1.92E+2	1.92E+2	1.92E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.41E+3	1.41E+3	1.41E+3	1.92E+2	1.92E+2	1.92E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.19E+3	1.19E+3	1.19E+3	1.03E+3	1.03E+3	1.03E+3	7.95E+2	7.95E+2	7.95E+2	4.56E+2	4.56E+2	4.56E+2	8.87E+1	8.87E+1	8.87E+1
XVIB	1.19E+3	1.19E+3	1.19E+3	1.03E+3	1.03E+3	1.03E+3	7.95E+2	7.95E+2	7.95E+2	4.56E+2	4.56E+2	4.56E+2	8.87E+1	8.87E+1	8.87E+1
XVIC	1.19E+3	1.19E+3	1.19E+3	1.03E+3	1.03E+3	1.03E+3	7.95E+2	7.95E+2	7.95E+2	4.56E+2	4.56E+2	4.56E+2	8.87E+1	8.87E+1	8.87E+1
XVIIIA	5.92E+2	5.92E+2	5.92E+2	5.84E+2	5.84E+2	5.84E+2	5.30E+2	5.30E+2	5.30E+2	2.97E+2	2.97E+2	2.97E+2	5.97E+1	5.97E+1	5.97E+1
XVIIIB	5.92E+2	5.92E+2	5.92E+2	5.84E+2	5.84E+2	5.84E+2	5.30E+2	5.30E+2	5.30E+2	2.97E+2	2.97E+2	2.97E+2	5.97E+1	5.97E+1	5.97E+1
XVIIIC	5.92E+2	5.92E+2	5.92E+2	5.84E+2	5.84E+2	5.84E+2	5.30E+2	5.30E+2	5.30E+2	2.97E+2	2.97E+2	2.97E+2	5.97E+1	5.97E+1	5.97E+1
XXA	1.11E+5	1.87E+5	1.87E+5	1.12E+4	2.17E+4	2.17E+4	5.84E+1	9.53E+1	9.53E+1	6.51E+0	1.31E+1	1.31E+1	.00E+0	.00E+0	.00E+0
XXB	1.11E+5	1.58E+5	1.58E+5	1.12E+4	1.76E+4	1.76E+4	5.84E+1	8.12E+1	8.12E+1	6.51E+0	1.10E+1	1.10E+1	.00E+0	.00E+0	.00E+0
XXC	1.11E+5	1.11E+5	1.11E+5	1.12E+4	1.12E+4	1.12E+4	5.84E+1	5.84E+1	5.84E+1	6.51E+0	6.51E+0	6.51E+0	.00E+0	.00E+0	.00E+0
XXIA	3.44E+4	3.44E+4	3.44E+4	3.36E+4	3.36E+4	3.36E+4	2.57E+4	2.57E+4	2.57E+4	1.04E+4	1.04E+4	1.04E+4	1.10E+3	1.10E+3	1.10E+3
XXIB	3.44E+4	3.44E+4	3.44E+4	3.36E+4	3.36E+4	3.36E+4	2.57E+4	2.57E+4	2.57E+4	1.04E+4	1.04E+4	1.04E+4	1.10E+3	1.10E+3	1.10E+3
XXIC	3.44E+4	3.44E+4	3.44E+4	3.36E+4	3.36E+4	3.36E+4	2.57E+4	2.57E+4	2.57E+4	1.04E+4	1.04E+4	1.04E+4	1.10E+3	1.10E+3	1.10E+3
XXII	2.26E+6	2.26E+6	2.26E+6	1.61E+6	1.61E+6	1.61E+6	9.71E+5	1.01E+6	1.01E+6	5.16E+5	5.24E+5	5.24E+5	.00E+0	.00E+0	.00E+0
DOE	6.12E+7	6.12E+7	6.12E+7	3.61E+7	3.63E+7	3.63E+7	1.60E+7	1.65E+7	1.65E+7	6.45E+6	6.53E+6	6.53E+6	7.07E+5	7.20E+5	7.20E+5
DOD	1.41E+4	1.41E+4	1.41E+4	3.18E+3	3.18E+3	3.18E+3	8.06E+2	8.06E+2	8.06E+2	5.73E+2	5.73E+2	5.73E+2	8.26E+1	8.26E+1	8.26E+1
NRC	2.50E+6	3.08E+6	3.08E+6	1.06E+6	1.14E+6	1.14E+6	6.98E+5	6.98E+5	6.98E+5	3.05E+5	3.05E+5	3.05E+5	3.90E+4	3.90E+4	3.90E+4
Total	6.37E+7	6.43E+7	6.43E+7	3.72E+7	3.75E+7	3.75E+7	1.67E+7	1.72E+7	1.72E+7	6.76E+6	6.84E+6	6.84E+6	7.46E+5	7.59E+5	7.59E+5

TABLE K-4. CLEANUP VOLUMES (m**3)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.06E+5	2.06E+5	2.06E+5	1.24E+5	1.24E+5	1.24E+5	9.14E+4	9.14E+4	9.14E+4	6.36E+4	6.36E+4	6.36E+4	5.22E+4	5.22E+4	5.22E+4	3.59E+4	3.59E+4	3.59E+4
II	8.01E+5	8.58E+5	8.58E+5	7.90E+5	7.97E+5	7.97E+5	7.81E+5	7.90E+5	7.90E+5	7.65E+5	7.75E+5	7.75E+5	7.53E+5	7.62E+5	7.62E+5	7.37E+5	7.46E+5	7.46E+5
III	1.62E+5	1.62E+5	1.62E+5	1.02E+5	1.02E+5	1.02E+5	6.45E+4	6.45E+4	6.45E+4	2.57E+4	2.57E+4	2.57E+4	1.02E+4	1.02E+4	1.02E+4	5.53E+3	5.53E+3	5.53E+3
IV	2.38E+4	2.38E+4	2.38E+4	1.71E+4	1.71E+4	1.71E+4	1.33E+4	1.33E+4	1.33E+4	8.37E+3	8.37E+3	8.37E+3	5.14E+3	5.14E+3	5.14E+3	1.72E+3	1.72E+3	1.72E+3
V	3.77E+6	3.77E+6	3.77E+6	2.80E+6	2.80E+6	2.80E+6	2.22E+6	2.22E+6	2.22E+6	1.50E+6	1.50E+6	1.50E+6	1.03E+6	1.03E+6	1.03E+6	7.88E+5	7.88E+5	7.88E+5
VI	1.54E+5	1.54E+5	1.54E+5	1.23E+5	1.23E+5	1.23E+5	1.05E+5	1.05E+5	1.05E+5	8.30E+4	8.30E+4	8.30E+4	6.85E+4	6.85E+4	6.85E+4	5.41E+4	5.41E+4	5.41E+4
VII	5.41E+5	5.41E+5	5.41E+5	1.22E+5	1.22E+5	1.22E+5	1.02E+4	1.02E+4	1.02E+4	8.70E+2	8.70E+2	8.70E+2	2.40E+2	2.40E+2	2.40E+2	.00E+0	.00E+0	.00E+0
IX	1.45E+2	1.45E+2	1.45E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	2.61E+5	4.07E+5	4.07E+5	1.94E+5	2.70E+5	2.70E+5	1.63E+5	2.10E+5	2.10E+5	1.30E+5	1.56E+5	1.56E+5	1.08E+5	1.28E+5	1.28E+5	8.97E+4	1.02E+5	1.02E+5
XII	8.06E+2	8.06E+2	8.06E+2	6.91E+2	6.91E+2	6.91E+2	6.59E+2	6.59E+2	6.59E+2	6.21E+2	6.21E+2	6.21E+2	5.97E+2	5.97E+2	5.97E+2	5.73E+2	5.73E+2	5.73E+2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	7.95E+2	7.95E+2	7.95E+2	6.57E+2	6.57E+2	6.57E+2	6.17E+2	6.17E+2	6.17E+2	5.66E+2	5.66E+2	5.66E+2	5.26E+2	5.26E+2	5.26E+2	4.56E+2	4.56E+2	4.56E+2
XVIB	7.95E+2	7.95E+2	7.95E+2	6.57E+2	6.57E+2	6.57E+2	6.17E+2	6.17E+2	6.17E+2	5.66E+2	5.66E+2	5.66E+2	5.26E+2	5.26E+2	5.26E+2	4.56E+2	4.56E+2	4.56E+2
XVIC	7.95E+2	7.95E+2	7.95E+2	6.57E+2	6.57E+2	6.57E+2	6.17E+2	6.17E+2	6.17E+2	5.66E+2	5.66E+2	5.66E+2	5.26E+2	5.26E+2	5.26E+2	4.56E+2	4.56E+2	4.56E+2
XVIIIA	5.30E+2	5.30E+2	5.30E+2	4.98E+2	4.98E+2	4.98E+2	4.47E+2	4.47E+2	4.47E+2	3.84E+2	3.84E+2	3.84E+2	3.42E+2	3.42E+2	3.42E+2	2.97E+2	2.97E+2	2.97E+2
XVIIIB	5.30E+2	5.30E+2	5.30E+2	4.98E+2	4.98E+2	4.98E+2	4.47E+2	4.47E+2	4.47E+2	3.84E+2	3.84E+2	3.84E+2	3.42E+2	3.42E+2	3.42E+2	2.97E+2	2.97E+2	2.97E+2
XVIIIC	5.30E+2	5.30E+2	5.30E+2	4.98E+2	4.98E+2	4.98E+2	4.47E+2	4.47E+2	4.47E+2	3.84E+2	3.84E+2	3.84E+2	3.42E+2	3.42E+2	3.42E+2	2.97E+2	2.97E+2	2.97E+2
XXA	5.84E+1	9.53E+1	9.53E+1	3.17E+1	5.18E+1	5.18E+1	2.22E+1	3.62E+1	3.62E+1	1.46E+1	2.31E+1	2.31E+1	1.07E+1	1.72E+1	1.72E+1	6.51E+0	1.31E+1	1.31E+1
XXB	5.84E+1	8.12E+1	8.12E+1	3.17E+1	4.41E+1	4.41E+1	2.22E+1	3.09E+1	3.09E+1	1.46E+1	1.97E+1	1.97E+1	1.07E+1	1.51E+1	1.51E+1	6.51E+0	1.10E+1	1.10E+1
XXC	5.84E+1	5.84E+1	5.84E+1	3.17E+1	3.17E+1	3.17E+1	2.22E+1	2.22E+1	2.22E+1	1.46E+1	1.46E+1	1.46E+1	1.07E+1	1.07E+1	1.07E+1	6.51E+0	6.51E+0	6.51E+0
XXIA	2.57E+4	2.57E+4	2.57E+4	2.21E+4	2.21E+4	2.21E+4	2.01E+4	2.01E+4	2.01E+4	1.71E+4	1.71E+4	1.71E+4	1.36E+4	1.36E+4	1.36E+4	1.04E+4	1.04E+4	1.04E+4
XXIB	2.57E+4	2.57E+4	2.57E+4	2.21E+4	2.21E+4	2.21E+4	2.01E+4	2.01E+4	2.01E+4	1.71E+4	1.71E+4	1.71E+4	1.36E+4	1.36E+4	1.36E+4	1.04E+4	1.04E+4	1.04E+4
XXIC	2.57E+4	2.57E+4	2.57E+4	2.21E+4	2.21E+4	2.21E+4	2.01E+4	2.01E+4	2.01E+4	1.71E+4	1.71E+4	1.71E+4	1.36E+4	1.36E+4	1.36E+4	1.04E+4	1.04E+4	1.04E+4
XXII	9.71E+5	1.01E+6	1.01E+6	8.12E+5	8.30E+5	8.30E+5	7.36E+5	7.63E+5	7.63E+5	6.10E+5	6.28E+5	6.28E+5	5.45E+5	5.59E+5	5.59E+5	5.16E+5	5.24E+5	5.24E+5
DOE	1.60E+7	1.65E+7	1.65E+7	1.26E+7	1.28E+7	1.28E+7	1.08E+7	1.11E+7	1.11E+7	8.60E+6	8.76E+6	8.76E+6	7.28E+6	7.41E+6	7.41E+6	6.45E+6	6.53E+6	6.53E+6
DOD	8.06E+2	8.06E+2	8.06E+2	6.91E+2	6.91E+2	6.91E+2	6.59E+2	6.59E+2	6.59E+2	6.21E+2	6.21E+2	6.21E+2	5.97E+2	5.97E+2	5.97E+2	5.73E+2	5.73E+2	5.73E+2
NRC	6.98E+5	6.98E+5	6.98E+5	6.01E+5	6.01E+5	6.01E+5	5.47E+5	5.47E+5	5.47E+5	4.72E+5	4.72E+5	4.72E+5	3.88E+5	3.88E+5	3.88E+5	3.05E+5	3.05E+5	3.05E+5
Total	1.67E+7	1.72E+7	1.72E+7	1.32E+7	1.34E+7	1.34E+7	1.14E+7	1.16E+7	1.16E+7	9.07E+6	9.23E+6	9.23E+6	7.67E+6	7.80E+6	7.80E+6	6.76E+6	6.84E+6	6.84E+6

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 TABLE K-5. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.16E+4	2.35E+4	2.35E+4	2.12E+4	2.30E+4	2.30E+4	2.01E+4	2.18E+4	2.18E+4	1.61E+4	1.75E+4	1.75E+4	7.21E+3	7.83E+3	7.83E+3
II	5.03E+5	4.89E+6	3.96E+7	5.02E+5	4.89E+6	3.96E+7	5.02E+5	4.89E+6	3.96E+7	5.02E+5	4.88E+6	3.91E+7	4.95E+5	4.79E+6	3.78E+7
III	9.48E+3	1.05E+4	1.05E+4	9.47E+3	1.05E+4	1.05E+4	8.83E+3	9.78E+3	9.78E+3	4.68E+3	5.18E+3	5.18E+3	.00E+0	.00E+0	.00E+0
IV	2.82E+3	7.34E+3	8.21E+4	2.79E+3	7.25E+3	8.11E+4	2.66E+3	6.92E+3	7.74E+4	2.09E+3	5.45E+3	6.10E+4	.00E+0	.00E+0	.00E+0
V	5.61E+5	6.08E+5	6.08E+5	5.60E+5	6.08E+5	6.08E+5	5.54E+5	6.01E+5	6.01E+5	5.07E+5	5.50E+5	5.50E+5	3.33E+5	3.61E+5	3.61E+5
VI	1.52E+5	9.32E+5	5.70E+6	1.52E+5	9.32E+5	5.70E+6	1.52E+5	9.31E+5	5.70E+6	1.50E+5	9.25E+5	5.67E+6	1.34E+5	8.56E+5	5.28E+6
VII	8.24E+5	7.40E+6	6.01E+7	6.74E+5	6.01E+6	4.88E+7	4.89E+5	4.36E+6	3.54E+7	1.26E+4	1.12E+5	9.13E+5	.00E+0	.00E+0	.00E+0
IX	3.79E+3	3.41E+4	2.17E+5	2.76E+3	2.48E+4	1.58E+5	9.46E+2	8.50E+3	5.42E+4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.39E+3	1.86E+4	2.50E+4	1.39E+3	1.86E+4	2.50E+4	1.39E+3	1.80E+4	2.41E+4	1.35E+3	1.21E+4	1.60E+4	1.19E+3	5.59E+3	7.21E+3
XII	5.11E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.03E+2	1.54E+3	1.58E+3	4.75E+2	1.45E+3	1.49E+3
XIIIA	2.13E+0	6.96E+0	1.86E+1	1.53E+0	4.99E+0	1.33E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.71E+0	3.08E+0	1.06E+1	1.23E+0	2.21E+0	7.64E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.13E+0	1.36E+0	4.69E+1	8.10E-1	9.78E-1	3.36E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E+1	3.84E+1	3.84E+1	3.65E+1	3.84E+1	3.84E+1	3.65E+1	3.84E+1	3.84E+1	3.61E+1	3.80E+1	3.80E+1	3.18E+1	3.36E+1	3.36E+1
XVIB	3.61E+1	3.79E+1	3.79E+1	3.61E+1	3.79E+1	3.79E+1	3.61E+1	3.78E+1	3.78E+1	3.57E+1	3.75E+1	3.75E+1	3.14E+1	3.31E+1	3.31E+1
XVIC	3.52E+1	3.67E+1	3.67E+1	3.52E+1	3.67E+1	3.67E+1	3.52E+1	3.67E+1	3.67E+1	3.48E+1	3.64E+1	3.64E+1	3.06E+1	3.21E+1	3.21E+1
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.02E+2	1.13E+2	1.13E+2	8.93E+1	9.88E+1	9.88E+1
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.00E+2	1.11E+2	1.11E+2	8.78E+1	9.70E+1	9.70E+1
XVIIIC	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.72E+1	1.06E+2	1.06E+2	8.50E+1	9.27E+1	9.27E+1
XXA	3.03E+1	1.51E+2	1.63E+4	1.91E+1	1.05E+2	1.13E+4	3.98E+0	3.39E+1	3.66E+3	9.37E-1	5.18E+0	5.62E+2	.00E+0	9.93E-1	1.09E+2
XXB	2.44E+1	8.87E+1	1.12E+4	1.54E+1	5.59E+1	7.04E+3	3.21E+0	1.17E+1	1.47E+3	7.56E-1	2.76E+0	3.50E+2	.00E+0	.00E+0	.00E+0
XXC	1.61E+1	5.85E+1	1.31E+4	1.02E+1	3.69E+1	8.27E+3	2.12E+0	7.69E+0	1.73E+3	4.99E-1	1.83E+0	4.11E+2	.00E+0	.00E+0	.00E+0
XXIA	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.81E+2	2.92E+3	2.77E+4	1.91E+2	1.99E+3	1.88E+4
XXIB	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.96E+3	2.57E+4	2.79E+2	2.89E+3	2.50E+4	1.90E+2	1.96E+3	1.70E+4
XXIC	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.85E+3	2.07E+4	2.76E+2	2.78E+3	2.02E+4	1.87E+2	1.89E+3	1.37E+4
XXII	1.55E+4	1.73E+5	3.82E+5	1.55E+4	1.73E+5	3.82E+5	1.54E+4	1.73E+5	3.81E+5	1.50E+4	1.68E+5	3.71E+5	1.07E+4	1.27E+5	2.80E+5
DOE	5.49E+6	3.53E+7	2.33E+8	5.34E+6	3.39E+7	2.21E+8	5.14E+6	3.22E+7	2.08E+8	4.55E+6	2.77E+7	1.72E+8	3.94E+6	2.55E+7	1.60E+8
DOD	5.25E+2	1.59E+3	1.82E+3	5.20E+2	1.58E+3	1.75E+3	5.10E+2	1.56E+3	1.60E+3	5.03E+2	1.54E+3	1.58E+3	4.75E+2	1.45E+3	1.49E+3
NRC	1.75E+4	7.78E+4	7.50E+5	1.73E+4	7.73E+4	6.85E+5	1.72E+4	7.66E+4	5.92E+5	1.69E+4	7.46E+4	5.52E+5	1.36E+4	5.30E+4	3.74E+5
Total	5.51E+6	3.54E+7	2.33E+8	5.36E+6	3.40E+7	2.22E+8	5.16E+6	3.23E+7	2.08E+8	4.57E+6	2.78E+7	1.72E+8	3.96E+6	2.55E+7	1.60E+8

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 TABLE K-6. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.01E+4	2.18E+4	2.18E+4	1.92E+4	2.09E+4	2.09E+4	1.86E+4	2.02E+4	2.02E+4	1.76E+4	1.91E+4	1.91E+4	1.69E+4	1.84E+4	1.84E+4	1.61E+4	1.75E+4	1.75E+4
II	5.02E+5	4.89E+6	3.95E+7	5.02E+5	4.89E+6	3.95E+7	5.02E+5	4.89E+6	3.94E+7	5.02E+5	4.88E+6	3.93E+7	5.02E+5	4.88E+6	3.92E+7	5.02E+5	4.88E+6	3.91E+7
III	8.83E+3	9.78E+3	9.78E+3	7.70E+3	8.53E+3	8.53E+3	7.01E+3	7.76E+3	7.76E+3	6.41E+3	7.10E+3	7.10E+3	5.72E+3	6.34E+3	6.34E+3	4.68E+3	5.18E+3	5.18E+3
IV	2.66E+3	6.92E+3	7.74E+4	2.59E+3	6.75E+3	7.54E+4	2.53E+3	6.58E+3	7.36E+4	2.40E+3	6.26E+3	7.00E+4	2.28E+3	5.94E+3	6.64E+4	2.09E+3	5.45E+3	6.10E+4
V	5.54E+5	6.01E+5	6.01E+5	5.47E+5	5.94E+5	5.94E+5	5.41E+5	5.87E+5	5.87E+5	5.31E+5	5.77E+5	5.77E+5	5.22E+5	5.66E+5	5.66E+5	5.07E+5	5.50E+5	5.50E+5
VI	1.52E+5	9.31E+5	5.70E+6	1.52E+5	9.31E+5	5.70E+6	1.52E+5	9.30E+5	5.69E+6	1.51E+5	9.29E+5	5.69E+6	1.51E+5	9.27E+5	5.68E+6	1.50E+5	9.25E+5	5.67E+6
VII	4.89E+5	4.36E+6	3.54E+7	3.23E+5	2.88E+6	2.34E+7	2.28E+5	2.03E+6	1.65E+7	1.39E+5	1.24E+6	1.01E+7	7.84E+4	7.03E+5	5.71E+6	1.26E+4	1.12E+5	9.13E+5
IX	9.46E+2	8.50E+3	5.42E+4	4.52E+2	4.06E+3	2.59E+4	2.68E+2	2.40E+3	1.53E+4	9.44E+1	8.49E+2	5.41E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.39E+3	1.80E+4	2.41E+4	1.38E+3	1.70E+4	2.28E+4	1.38E+3	1.60E+4	2.14E+4	1.37E+3	1.44E+4	1.91E+4	1.36E+3	1.32E+4	1.76E+4	1.35E+3	1.21E+4	1.60E+4
XII	5.10E+2	1.56E+3	1.60E+3	5.08E+2	1.55E+3	1.59E+3	5.08E+2	1.55E+3	1.59E+3	5.06E+2	1.55E+3	1.59E+3	5.04E+2	1.54E+3	1.58E+3	5.03E+2	1.54E+3	1.58E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E+1	3.84E+1	3.84E+1	3.64E+1	3.83E+1	3.83E+1	3.64E+1	3.83E+1	3.83E+1	3.63E+1	3.82E+1	3.82E+1	3.62E+1	3.81E+1	3.81E+1	3.61E+1	3.80E+1	3.80E+1
XVIB	3.61E+1	3.78E+1	3.78E+1	3.60E+1	3.78E+1	3.78E+1	3.60E+1	3.78E+1	3.78E+1	3.59E+1	3.77E+1	3.77E+1	3.58E+1	3.76E+1	3.76E+1	3.57E+1	3.75E+1	3.75E+1
XVIC	3.52E+1	3.67E+1	3.67E+1	3.52E+1	3.67E+1	3.67E+1	3.51E+1	3.67E+1	3.67E+1	3.50E+1	3.65E+1	3.65E+1	3.49E+1	3.64E+1	3.64E+1	3.48E+1	3.64E+1	3.64E+1
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.13E+2	1.13E+2	1.02E+2	1.13E+2	1.13E+2
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.11E+2	1.11E+2	1.01E+2	1.11E+2	1.11E+2	1.00E+2	1.11E+2	1.11E+2
XVIIIC	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.78E+1	1.07E+2	1.07E+2	9.77E+1	1.07E+2	1.07E+2	9.76E+1	1.06E+2	1.06E+2	9.72E+1	1.06E+2	1.06E+2
XXA	3.98E+0	3.39E+1	3.66E+3	1.33E+0	1.03E+1	1.11E+3	1.24E+0	6.61E+0	7.16E+2	1.12E+0	6.03E+0	6.53E+2	1.03E+0	5.63E+0	6.10E+2	9.37E-1	5.18E+0	5.62E+2
XXB	3.21E+0	1.17E+1	1.47E+3	1.07E+0	3.91E+0	4.95E+2	9.99E-1	3.64E+0	4.61E+2	9.00E-1	3.29E+0	4.16E+2	8.31E-1	3.04E+0	3.85E+2	7.56E-1	2.76E+0	3.50E+2
XXC	2.12E+0	7.69E+0	1.73E+3	7.09E-1	2.58E+0	5.81E+2	6.60E-1	2.41E+0	5.41E+2	5.95E-1	2.17E+0	4.88E+2	5.49E-1	2.01E+0	4.51E+2	4.99E-1	1.83E+0	4.11E+2
XXIA	2.89E+2	3.00E+3	2.84E+4	2.88E+2	2.99E+3	2.83E+4	2.87E+2	2.98E+3	2.83E+4	2.86E+2	2.97E+3	2.81E+4	2.84E+2	2.95E+3	2.79E+4	2.81E+2	2.92E+3	2.77E+4
XXIB	2.87E+2	2.96E+3	2.57E+4	2.86E+2	2.96E+3	2.56E+4	2.85E+2	2.95E+3	2.55E+4	2.84E+2	2.93E+3	2.54E+4	2.82E+2	2.91E+3	2.52E+4	2.79E+2	2.89E+3	2.50E+4
XXIC	2.83E+2	2.85E+3	2.07E+4	2.82E+2	2.85E+3	2.07E+4	2.82E+2	2.84E+3	2.06E+4	2.80E+2	2.82E+3	2.05E+4	2.78E+2	2.80E+3	2.04E+4	2.76E+2	2.78E+3	2.02E+4
XXII	1.54E+4	1.73E+5	3.81E+5	1.54E+4	1.72E+5	3.80E+5	1.53E+4	1.71E+5	3.78E+5	1.52E+4	1.70E+5	3.76E+5	1.51E+4	1.69E+5	3.73E+5	1.50E+4	1.68E+5	3.71E+5
DOE	5.14E+6	3.22E+7	2.08E+8	4.96E+6	3.07E+7	1.96E+8	4.85E+6	2.99E+7	1.89E+8	4.74E+6	2.90E+7	1.82E+8	4.65E+6	2.84E+7	1.77E+8	4.55E+6	2.77E+7	1.72E+8
DOD	5.10E+2	1.56E+3	1.60E+3	5.08E+2	1.55E+3	1.59E+3	5.08E+2	1.55E+3	1.59E+3	5.06E+2	1.55E+3	1.59E+3	5.04E+2	1.54E+3	1.58E+3	5.03E+2	1.54E+3	1.58E+3
NRC	1.72E+4	7.66E+4	5.92E+5	1.71E+4	7.63E+4	5.69E+5	1.71E+4	7.60E+4	5.65E+5	1.70E+4	7.56E+4	5.61E+5	1.70E+4	7.52E+4	5.57E+5	1.69E+4	7.46E+4	5.52E+5
Total	5.16E+6	3.23E+7	2.08E+8	4.98E+6	3.08E+7	1.96E+8	4.87E+6	2.99E+7	1.89E+8	4.75E+6	2.91E+7	1.82E+8	4.67E+6	2.85E+7	1.78E+8	4.57E+6	2.78E+7	1.72E+8

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 TABLE K-7. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.15E+4	2.33E+4	2.33E+4	2.08E+4	2.25E+4	2.25E+4	1.84E+4	1.99E+4	1.99E+4	1.23E+4	1.34E+4	1.34E+4	3.14E+3	3.41E+3	3.41E+3
II	5.02E+5	4.89E+6	3.96E+7	5.02E+5	4.89E+6	3.96E+7	5.02E+5	4.88E+6	3.94E+7	5.01E+5	4.86E+6	3.87E+7	4.25E+5	4.12E+6	3.19E+7
III	9.48E+3	1.05E+4	1.05E+4	9.38E+3	1.04E+4	1.04E+4	6.90E+3	7.64E+3	7.64E+3	1.10E+3	1.22E+3	1.22E+3	.00E+0	.00E+0	.00E+0
IV	2.81E+3	7.31E+3	8.17E+4	2.73E+3	7.12E+3	7.97E+4	2.49E+3	6.48E+3	7.24E+4	4.46E+2	1.16E+3	1.30E+4	.00E+0	.00E+0	.00E+0
V	5.61E+5	6.08E+5	6.08E+5	5.58E+5	6.06E+5	6.06E+5	5.39E+5	5.85E+5	5.85E+5	4.17E+5	4.52E+5	4.52E+5	1.17E+5	1.27E+5	1.27E+5
VI	1.52E+5	9.32E+5	5.70E+6	1.52E+5	9.32E+5	5.70E+6	1.51E+5	9.30E+5	5.69E+6	1.44E+5	8.98E+5	5.51E+6	1.01E+5	6.78E+5	4.21E+6
VII	7.49E+5	6.71E+6	5.45E+7	6.15E+5	5.48E+6	4.45E+7	1.96E+5	1.75E+6	1.42E+7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	3.28E+3	2.95E+4	1.88E+5	1.71E+3	1.54E+4	9.79E+4	1.77E+2	1.59E+3	1.02E+4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.39E+3	1.86E+4	2.50E+4	1.39E+3	1.86E+4	2.49E+4	1.38E+3	1.64E+4	2.20E+4	1.31E+3	9.28E+3	1.22E+4	1.06E+3	3.53E+3	4.43E+3
XII	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.05E+2	1.54E+3	1.58E+3	4.94E+2	1.51E+3	1.55E+3	1.59E+2	4.86E+2	4.99E+2
XIIIA	1.93E+0	6.31E+0	1.69E+1	7.40E-1	2.42E+0	6.45E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.56E+0	2.79E+0	9.66E+0	5.96E-1	1.07E+0	3.70E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.03E+0	1.24E+0	4.25E+1	3.93E-1	4.74E-1	1.63E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E+1	3.84E+1	3.84E+1	3.65E+1	3.84E+1	3.84E+1	3.64E+1	3.83E+1	3.83E+1	3.52E+1	3.70E+1	3.70E+1	1.95E+1	2.07E+1	2.07E+1
XVIB	3.61E+1	3.79E+1	3.79E+1	3.61E+1	3.79E+1	3.79E+1	3.60E+1	3.78E+1	3.78E+1	3.48E+1	3.65E+1	3.65E+1	1.93E+1	2.04E+1	2.04E+1
XVIC	3.52E+1	3.67E+1	3.67E+1	3.52E+1	3.67E+1	3.67E+1	3.51E+1	3.66E+1	3.66E+1	3.39E+1	3.54E+1	3.54E+1	1.88E+1	1.97E+1	1.97E+1
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	9.85E+1	1.09E+2	1.09E+2	6.76E+1	7.48E+1	7.48E+1
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	9.68E+1	1.07E+2	1.07E+2	6.64E+1	7.34E+1	7.34E+1
XVIIIC	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.78E+1	1.07E+2	1.07E+2	9.37E+1	1.02E+2	1.02E+2	6.43E+1	7.01E+1	7.01E+1
XXA	2.29E+1	1.27E+2	1.37E+4	9.97E+0	6.80E+1	7.33E+3	1.13E+0	6.28E+0	6.81E+2	4.23E-1	3.31E+0	3.61E+2	.00E+0	.00E+0	.00E+0
XXB	1.85E+1	7.26E+1	9.14E+3	8.04E+0	3.66E+1	4.61E+3	9.12E-1	3.59E+0	4.55E+2	3.41E-1	1.78E+0	2.27E+2	.00E+0	.00E+0	.00E+0
XXC	1.22E+1	4.43E+1	9.93E+3	5.31E+0	1.93E+1	4.32E+3	6.03E-1	2.20E+0	4.95E+2	2.26E-1	8.29E-1	1.87E+2	.00E+0	.00E+0	.00E+0
XXIA	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.87E+2	2.98E+3	2.82E+4	2.47E+2	2.56E+3	2.43E+4	8.81E+1	9.16E+2	8.67E+3
XXIB	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.85E+2	2.94E+3	2.55E+4	2.45E+2	2.53E+3	2.19E+4	8.76E+1	9.04E+2	7.83E+3
XXIC	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.81E+2	2.83E+3	2.06E+4	2.42E+2	2.44E+3	1.77E+4	8.64E+1	8.71E+2	6.32E+3
XXII	1.55E+4	1.73E+5	3.82E+5	1.55E+4	1.73E+5	3.82E+5	1.53E+4	1.71E+5	3.78E+5	1.41E+4	1.59E+5	3.50E+5	.00E+0	.00E+0	.00E+0
DOE	5.42E+6	3.46E+7	2.27E+8	5.28E+6	3.34E+7	2.17E+8	4.81E+6	2.96E+7	1.86E+8	4.29E+6	2.68E+7	1.67E+8	2.85E+6	1.96E+7	1.28E+8
DOD	5.23E+2	1.59E+3	1.80E+3	5.15E+2	1.57E+3	1.67E+3	5.05E+2	1.54E+3	1.58E+3	4.94E+2	1.51E+3	1.55E+3	1.59E+2	4.86E+2	4.99E+2
NRC	1.74E+4	7.76E+4	7.14E+5	1.72E+4	7.70E+4	6.37E+5	1.71E+4	7.59E+4	5.64E+5	1.58E+4	6.65E+4	4.83E+5	8.49E+3	2.68E+4	1.74E+5
Total	5.44E+6	3.47E+7	2.28E+8	5.30E+6	3.35E+7	2.18E+8	4.83E+6	2.96E+7	1.87E+8	4.30E+6	2.69E+7	1.67E+8	2.85E+6	1.97E+7	1.28E+8

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 TABLE K-8. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.84E+4	1.99E+4	1.99E+4	1.70E+4	1.84E+4	1.84E+4	1.60E+4	1.74E+4	1.74E+4	1.48E+4	1.60E+4	1.60E+4	1.40E+4	1.52E+4	1.52E+4	1.23E+4	1.34E+4	1.34E+4
II	5.02E+5	4.88E+6	3.94E+7	5.02E+5	4.88E+6	3.92E+7	5.02E+5	4.88E+6	3.91E+7	5.02E+5	4.87E+6	3.90E+7	5.01E+5	4.87E+6	3.89E+7	5.01E+5	4.86E+6	3.87E+7
III	6.90E+3	7.64E+3	7.64E+3	5.79E+3	6.41E+3	6.41E+3	4.61E+3	5.10E+3	5.10E+3	2.71E+3	3.01E+3	3.01E+3	1.57E+3	1.74E+3	1.74E+3	1.10E+3	1.22E+3	1.22E+3
IV	2.49E+3	6.48E+3	7.24E+4	2.26E+3	5.89E+3	6.58E+4	2.03E+3	5.30E+3	5.92E+4	1.58E+3	4.12E+3	4.60E+4	1.13E+3	2.93E+3	3.28E+4	4.46E+2	1.16E+3	1.30E+4
V	5.39E+5	5.85E+5	5.85E+5	5.23E+5	5.67E+5	5.67E+5	5.06E+5	5.49E+5	5.49E+5	4.72E+5	5.13E+5	5.13E+5	4.39E+5	4.76E+5	4.76E+5	4.17E+5	4.52E+5	4.52E+5
VI	1.51E+5	9.30E+5	5.69E+6	1.51E+5	9.27E+5	5.68E+6	1.50E+5	9.25E+5	5.67E+6	1.48E+5	9.18E+5	5.63E+6	1.46E+5	9.10E+5	5.59E+6	1.44E+5	8.98E+5	5.51E+6
VII	1.96E+5	1.75E+6	1.42E+7	6.96E+4	6.23E+5	5.06E+6	6.66E+3	5.90E+4	4.78E+5	6.01E+2	5.13E+3	4.14E+4	1.69E+2	1.42E+3	1.14E+4	.00E+0	.00E+0	.00E+0
IX	1.77E+2	1.59E+3	1.02E+4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.38E+3	1.64E+4	2.20E+4	1.37E+3	1.42E+4	1.89E+4	1.36E+3	1.28E+4	1.70E+4	1.34E+3	1.12E+4	1.49E+4	1.33E+3	1.03E+4	1.36E+4	1.31E+3	9.28E+3	1.22E+4
XII	5.05E+2	1.54E+3	1.58E+3	5.03E+2	1.54E+3	1.58E+3	5.02E+2	1.53E+3	1.57E+3	4.99E+2	1.52E+3	1.57E+3	4.97E+2	1.52E+3	1.56E+3	4.94E+2	1.51E+3	1.55E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.64E+1	3.83E+1	3.83E+1	3.62E+1	3.81E+1	3.81E+1	3.61E+1	3.80E+1	3.80E+1	3.59E+1	3.78E+1	3.78E+1	3.57E+1	3.76E+1	3.76E+1	3.52E+1	3.70E+1	3.70E+1
XVIB	3.60E+1	3.78E+1	3.78E+1	3.58E+1	3.76E+1	3.76E+1	3.57E+1	3.75E+1	3.75E+1	3.55E+1	3.73E+1	3.73E+1	3.53E+1	3.71E+1	3.71E+1	3.48E+1	3.65E+1	3.65E+1
XVIC	3.51E+1	3.66E+1	3.66E+1	3.49E+1	3.65E+1	3.65E+1	3.48E+1	3.64E+1	3.64E+1	3.47E+1	3.62E+1	3.62E+1	3.44E+1	3.60E+1	3.60E+1	3.39E+1	3.54E+1	3.54E+1
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.13E+2	1.13E+2	1.02E+2	1.13E+2	1.13E+2	1.01E+2	1.12E+2	1.12E+2	1.00E+2	1.11E+2	1.11E+2	9.85E+1	1.09E+2	1.09E+2
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.11E+2	1.11E+2	1.00E+2	1.11E+2	1.11E+2	9.93E+1	1.10E+2	1.10E+2	9.83E+1	1.09E+2	1.09E+2	9.68E+1	1.07E+2	1.07E+2
XVIIIC	9.78E+1	1.07E+2	1.07E+2	9.76E+1	1.06E+2	1.06E+2	9.71E+1	1.06E+2	1.06E+2	9.62E+1	1.05E+2	1.05E+2	9.52E+1	1.04E+2	1.04E+2	9.37E+1	1.02E+2	1.02E+2
XXA	1.13E+0	6.28E+0	6.81E+2	9.53E-1	5.46E+0	5.92E+2	8.43E-1	4.95E+0	5.37E+2	7.04E-1	4.26E+0	4.63E+2	5.92E-1	3.79E+0	4.12E+2	4.23E-1	3.31E+0	3.61E+2
XXB	9.12E-1	3.59E+0	4.55E+2	7.69E-1	3.10E+0	3.92E+2	6.80E-1	2.79E+0	3.53E+2	5.68E-1	2.37E+0	3.01E+2	4.77E-1	2.11E+0	2.68E+2	3.41E-1	1.78E+0	2.27E+2
XXC	6.03E-1	2.20E+0	4.95E+2	5.08E-1	1.86E+0	4.18E+2	4.49E-1	1.64E+0	3.70E+2	3.75E-1	1.37E+0	3.10E+2	3.15E-1	1.16E+0	2.61E+2	2.26E-1	8.29E-1	1.87E+2
XXIA	2.87E+2	2.98E+3	2.82E+4	2.84E+2	2.95E+3	2.79E+4	2.81E+2	2.92E+3	2.76E+4	2.74E+2	2.85E+3	2.70E+4	2.62E+2	2.72E+3	2.58E+4	2.47E+2	2.56E+3	2.43E+4
XXIB	2.85E+2	2.94E+3	2.55E+4	2.82E+2	2.91E+3	2.52E+4	2.79E+2	2.88E+3	2.50E+4	2.72E+2	2.81E+3	2.44E+4	2.60E+2	2.69E+3	2.33E+4	2.45E+2	2.53E+3	2.19E+4
XXIC	2.81E+2	2.83E+3	2.06E+4	2.78E+2	2.81E+3	2.04E+4	2.75E+2	2.78E+3	2.02E+4	2.69E+2	2.71E+3	1.97E+4	2.57E+2	2.59E+3	1.88E+4	2.42E+2	2.44E+3	1.77E+4
XXII	1.53E+4	1.71E+5	3.78E+5	1.51E+4	1.69E+5	3.74E+5	1.49E+4	1.68E+5	3.71E+5	1.46E+4	1.64E+5	3.62E+5	1.43E+4	1.61E+5	3.55E+5	1.41E+4	1.59E+5	3.50E+5
DOE	4.81E+6	2.96E+7	1.86E+8	4.65E+6	2.83E+7	1.76E+8	4.54E+6	2.77E+7	1.71E+8	4.46E+6	2.74E+7	1.70E+8	4.38E+6	2.71E+7	1.69E+8	4.29E+6	2.68E+7	1.67E+8
DOD	5.05E+2	1.54E+3	1.58E+3	5.03E+2	1.54E+3	1.58E+3	5.02E+2	1.53E+3	1.57E+3	4.99E+2	1.52E+3	1.57E+3	4.97E+2	1.52E+3	1.56E+3	4.94E+2	1.51E+3	1.55E+3
NRC	1.71E+4	7.59E+4	5.64E+5	1.70E+4	7.52E+4	5.57E+5	1.69E+4	7.45E+4	5.51E+5	1.66E+4	7.29E+4	5.37E+5	1.63E+4	7.01E+4	5.14E+5	1.58E+4	6.65E+4	4.83E+5
Total	4.83E+6	2.96E+7	1.87E+8	4.66E+6	2.84E+7	1.77E+8	4.56E+6	2.77E+7	1.72E+8	4.48E+6	2.75E+7	1.70E+8	4.39E+6	2.72E+7	1.69E+8	4.30E+6	2.69E+7	1.67E+8

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 TABLE K-9. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.48E+0	9.22E+0	9.22E+0	8.33E+0	9.06E+0	9.06E+0	7.87E+0	8.56E+0	8.56E+0	6.32E+0	6.87E+0	6.87E+0	2.83E+0	3.08E+0	3.08E+0
II	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.67E+3	1.29E+4	1.70E+2	1.64E+3	1.25E+4
III	3.71E+0	4.11E+0	4.11E+0	3.70E+0	4.11E+0	4.11E+0	3.45E+0	3.83E+0	3.83E+0	1.83E+0	2.03E+0	2.03E+0	.00E+0	.00E+0	.00E+0
IV	6.06E-1	1.61E+0	2.48E+1	5.99E-1	1.59E+0	2.45E+1	5.71E-1	1.52E+0	2.34E+1	4.50E-1	1.20E+0	1.84E+1	.00E+0	.00E+0	.00E+0
V	2.20E+2	2.39E+2	2.39E+2	2.20E+2	2.38E+2	2.38E+2	2.18E+2	2.36E+2	2.36E+2	1.99E+2	2.16E+2	2.16E+2	1.31E+2	1.41E+2	1.41E+2
VI	3.50E+1	1.87E+2	1.65E+3	3.50E+1	1.87E+2	1.65E+3	3.49E+1	1.86E+2	1.65E+3	3.42E+1	1.85E+2	1.64E+3	2.94E+1	1.70E+2	1.52E+3
VII	5.51E+1	4.25E+2	3.30E+3	4.64E+1	3.47E+2	2.68E+3	3.43E+1	2.52E+2	1.94E+3	8.90E-1	6.51E+0	5.02E+1	.00E+0	.00E+0	.00E+0
IX	2.18E-1	1.92E+0	1.19E+1	1.59E-1	1.39E+0	8.65E+0	5.44E-2	4.78E-1	2.97E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.49E+0	5.07E+0	6.77E+0	1.49E+0	5.06E+0	6.77E+0	1.49E+0	4.94E+0	6.58E+0	1.45E+0	3.68E+0	4.74E+0	1.28E+0	2.20E+0	2.63E+0
XII	2.97E-2	9.20E-2	9.46E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.18E-2	9.44E-2	2.92E-2	9.07E-2	9.32E-2	2.76E-2	8.56E-2	8.80E-2
XIIIA	5.18E-4	1.70E-3	5.36E-3	3.71E-4	1.22E-3	3.84E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	4.17E-4	7.50E-4	3.12E-3	2.99E-4	5.38E-4	2.23E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.75E-4	3.33E-4	1.15E-2	1.97E-4	2.39E-4	8.26E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-2	1.53E-2	1.53E-2	1.46E-2	1.53E-2	1.53E-2	1.46E-2	1.53E-2	1.46E-2	1.44E-2	1.52E-2	1.52E-2	1.27E-2	1.34E-2	1.34E-2
XVIB	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.51E-2	1.51E-2	1.42E-2	1.49E-2	1.49E-2	1.25E-2	1.32E-2	1.32E-2
XVIC	1.40E-2	1.47E-2	1.47E-2	1.40E-2	1.47E-2	1.47E-2	1.40E-2	1.46E-2	1.46E-2	1.39E-2	1.45E-2	1.45E-2	1.22E-2	1.28E-2	1.28E-2
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.00E-2	4.42E-2	4.42E-2	3.50E-2	3.87E-2	3.87E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.93E-2	4.35E-2	4.35E-2	3.44E-2	3.81E-2	3.81E-2
XVIIIC	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.79E-2	4.14E-2	4.14E-2	3.31E-2	3.62E-2	3.62E-2
XXA	5.30E-3	3.42E-2	5.07E+0	3.34E-3	2.37E-2	3.52E+0	6.95E-4	7.67E-3	1.14E+0	1.63E-4	1.17E-3	1.75E-1	.00E+0	2.24E-4	3.39E-2
XXB	4.28E-3	2.19E-2	3.46E+0	2.70E-3	1.38E-2	2.18E+0	5.61E-4	2.88E-3	4.56E-1	1.31E-4	6.83E-4	1.09E-1	.00E+0	.00E+0	.00E+0
XXC	2.83E-3	1.56E-2	3.15E+0	1.79E-3	9.85E-3	1.99E+0	3.71E-4	2.05E-3	4.15E-1	8.70E-5	4.88E-4	9.88E-2	.00E+0	.00E+0	.00E+0
XXIA	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.10E-1	1.15E+0	1.08E+1	7.46E-2	7.78E-1	7.34E+0
XXIB	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.09E-1	1.13E+0	9.77E+0	7.40E-2	7.66E-1	6.64E+0
XXIC	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.07E-1	1.09E+0	7.91E+0	7.29E-2	7.38E-1	5.38E+0
XXII	5.51E+0	5.41E+1	1.23E+2	5.51E+0	5.41E+1	1.23E+2	5.48E+0	5.39E+1	1.23E+2	5.32E+0	5.25E+1	1.19E+2	3.79E+0	3.95E+1	8.99E+1
DOE	1.29E+3	6.97E+3	5.49E+4	1.29E+3	6.89E+3	5.43E+4	1.27E+3	6.79E+3	5.35E+4	1.19E+3	6.47E+3	5.12E+4	9.99E+2	5.91E+3	4.78E+4
DOD	3.31E-2	9.99E-2	1.51E-1	3.21E-2	9.75E-2	1.35E-1	2.96E-2	9.18E-2	9.44E-2	2.92E-2	9.07E-2	9.32E-2	2.76E-2	8.56E-2	8.80E-2
NRC	6.79E+0	3.03E+1	2.74E+2	6.76E+0	3.02E+1	2.55E+2	6.73E+0	3.00E+1	2.28E+2	6.63E+0	2.92E+1	2.15E+2	5.34E+0	2.08E+1	1.46E+2
Total	1.30E+3	7.00E+3	5.52E+4	1.29E+3	6.92E+3	5.45E+4	1.27E+3	6.82E+3	5.37E+4	1.20E+3	6.50E+3	5.14E+4	1.00E+3	5.94E+3	4.80E+4

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 TBALE K-10. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.87E+0	8.56E+0	8.56E+0	7.55E+0	8.21E+0	8.21E+0	7.29E+0	7.93E+0	7.93E+0	6.92E+0	7.52E+0	7.52E+0	6.64E+0	7.22E+0	7.22E+0	6.32E+0	6.87E+0	6.87E+0
II	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.67E+3	1.30E+4	1.72E+2	1.67E+3	1.30E+4	1.72E+2	1.67E+3	1.29E+4	1.72E+2	1.67E+3	1.29E+4
III	3.45E+0	3.83E+0	3.83E+0	3.01E+0	3.34E+0	3.34E+0	2.74E+0	3.04E+0	3.04E+0	2.51E+0	2.78E+0	2.78E+0	2.24E+0	2.48E+0	2.48E+0	1.83E+0	2.03E+0	2.03E+0
IV	5.71E-1	1.52E+0	2.34E+1	5.57E-1	1.48E+0	2.28E+1	5.43E-1	1.45E+0	2.22E+1	5.17E-1	1.38E+0	2.12E+1	4.90E-1	1.31E+0	2.01E+1	4.50E-1	1.20E+0	1.84E+1
V	2.18E+2	2.36E+2	2.36E+2	2.15E+2	2.33E+2	2.33E+2	2.13E+2	2.30E+2	2.30E+2	2.09E+2	2.26E+2	2.26E+2	2.05E+2	2.22E+2	2.22E+2	1.99E+2	2.16E+2	2.16E+2
VI	3.49E+1	1.86E+2	1.65E+3	3.48E+1	1.86E+2	1.65E+3	3.47E+1	1.86E+2	1.64E+3	3.45E+1	1.86E+2	1.64E+3	3.44E+1	1.85E+2	1.64E+3	3.42E+1	1.85E+2	1.64E+3
VII	3.43E+1	2.52E+2	1.94E+3	2.25E+1	1.66E+2	1.29E+3	1.57E+1	1.17E+2	9.07E+2	9.41E+0	7.16E+1	5.55E+2	5.31E+0	4.04E+1	3.14E+2	8.90E-1	6.51E+0	5.02E+1
IX	5.44E-2	4.78E-1	2.97E+0	2.60E-2	2.29E-1	1.42E+0	1.54E-2	1.35E-1	8.39E-1	5.43E-3	4.77E-2	2.96E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.49E+0	4.94E+0	6.58E+0	1.48E+0	4.73E+0	6.27E+0	1.48E+0	4.52E+0	5.97E+0	1.47E+0	4.17E+0	5.45E+0	1.46E+0	3.93E+0	5.10E+0	1.45E+0	3.68E+0	4.74E+0
XII	2.96E-2	9.18E-2	9.44E-2	2.95E-2	9.16E-2	9.42E-2	2.95E-2	9.14E-2	9.40E-2	2.94E-2	9.11E-2	9.37E-2	2.93E-2	9.09E-2	9.35E-2	2.92E-2	9.07E-2	9.32E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-2	1.53E-2	1.53E-2	1.46E-2	1.53E-2	1.53E-2	1.45E-2	1.53E-2	1.53E-2	1.45E-2	1.52E-2	1.52E-2	1.45E-2	1.52E-2	1.52E-2	1.44E-2	1.52E-2	1.52E-2
XVIB	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.50E-2	1.50E-2	1.43E-2	1.50E-2	1.50E-2	1.43E-2	1.50E-2	1.50E-2	1.42E-2	1.49E-2	1.49E-2
XVIC	1.40E-2	1.46E-2	1.46E-2	1.40E-2	1.46E-2	1.46E-2	1.40E-2	1.46E-2	1.46E-2	1.40E-2	1.46E-2	1.46E-2	1.39E-2	1.45E-2	1.45E-2	1.39E-2	1.45E-2	1.45E-2
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.02E-2	4.44E-2	4.44E-2	4.02E-2	4.44E-2	4.44E-2	4.00E-2	4.42E-2	4.42E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.95E-2	4.38E-2	4.38E-2	3.95E-2	4.37E-2	4.37E-2	3.95E-2	4.37E-2	4.37E-2	3.93E-2	4.35E-2	4.35E-2
XVIIIC	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.81E-2	4.17E-2	4.17E-2	3.81E-2	4.16E-2	4.16E-2	3.81E-2	4.16E-2	4.16E-2	3.79E-2	4.14E-2	4.14E-2
XXA	6.95E-4	7.67E-3	1.14E+0	2.32E-4	2.33E-3	3.47E-1	2.16E-4	1.49E-3	2.23E-1	1.94E-4	1.36E-3	2.04E-1	1.79E-4	1.27E-3	1.90E-1	1.63E-4	1.17E-3	1.75E-1
XXB	5.61E-4	2.88E-3	4.56E-1	1.87E-4	9.68E-4	1.54E-1	1.74E-4	9.02E-4	1.43E-1	1.57E-4	8.13E-4	1.29E-1	1.45E-4	7.51E-4	1.19E-1	1.31E-4	6.83E-4	1.09E-1
XXC	3.71E-4	2.05E-3	4.15E-1	1.24E-4	6.91E-4	1.40E-1	1.15E-4	6.43E-4	1.30E-1	1.04E-4	5.80E-4	1.17E-1	9.58E-5	5.36E-4	1.09E-1	8.70E-5	4.88E-4	9.88E-2
XXIA	1.13E-1	1.18E+0	1.11E+1	1.12E-1	1.17E+0	1.11E+1	1.12E-1	1.17E+0	1.10E+1	1.11E-1	1.16E+0	1.10E+1	1.11E-1	1.16E+0	1.09E+1	1.10E-1	1.15E+0	1.08E+1
XXIB	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.11E-1	1.15E+0	9.97E+0	1.11E-1	1.14E+0	9.91E+0	1.10E-1	1.14E+0	9.85E+0	1.09E-1	1.13E+0	9.77E+0
XXIC	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.11E+0	8.10E+0	1.10E-1	1.11E+0	8.08E+0	1.09E-1	1.10E+0	8.03E+0	1.08E-1	1.10E+0	7.98E+0	1.07E-1	1.09E+0	7.91E+0
XXII	5.48E+0	5.39E+1	1.23E+2	5.46E+0	5.37E+1	1.22E+2	5.44E+0	5.36E+1	1.22E+2	5.39E+0	5.32E+1	1.21E+2	5.37E+0	5.28E+1	1.20E+2	5.32E+0	5.25E+1	1.19E+2
DOE	1.27E+3	6.79E+3	5.35E+4	1.25E+3	6.69E+3	5.28E+4	1.24E+3	6.64E+3	5.24E+4	1.22E+3	6.57E+3	5.19E+4	1.21E+3	6.52E+3	5.16E+4	1.19E+3	6.47E+3	5.12E+4
DOD	2.96E-2	9.18E-2	9.44E-2	2.95E-2	9.16E-2	9.42E-2	2.95E-2	9.14E-2	9.40E-2	2.94E-2	9.11E-2	9.37E-2	2.93E-2	9.09E-2	9.35E-2	2.92E-2	9.07E-2	9.32E-2
NRC	6.73E+0	3.00E+1	2.28E+2	6.72E+0	2.99E+1	2.21E+2	6.71E+0	2.98E+1	2.20E+2	6.68E+0	2.96E+1	2.19E+2	6.66E+0	2.95E+1	2.17E+2	6.63E+0	2.92E+1	2.15E+2
Total	1.27E+3	6.82E+3	5.37E+4	1.26E+3	6.72E+3	5.30E+4	1.24E+3	6.66E+3	5.26E+4	1.23E+3	6.60E+3	5.21E+4	1.22E+3	6.55E+3	5.18E+4	1.20E+3	6.50E+3	5.14E+4

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 TABLE K-11. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.42E+0	9.15E+0	9.15E+0	8.15E+0	8.86E+0	8.86E+0	7.20E+0	7.83E+0	7.83E+0	4.83E+0	5.26E+0	5.26E+0	1.23E+0	1.34E+0	1.34E+0
II	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.67E+3	1.30E+4	1.72E+2	1.67E+3	1.28E+4	1.46E+2	1.41E+3	1.06E+4
III	3.71E+0	4.11E+0	4.11E+0	3.67E+0	4.07E+0	4.07E+0	2.70E+0	2.99E+0	2.99E+0	4.32E-1	4.79E-1	4.79E-1	.00E+0	.00E+0	.00E+0
IV	6.03E-1	1.61E+0	2.47E+1	5.88E-1	1.57E+0	2.41E+1	5.35E-1	1.42E+0	2.19E+1	9.58E-2	2.55E-1	3.92E+0	.00E+0	.00E+0	.00E+0
V	2.20E+2	2.39E+2	2.39E+2	2.19E+2	2.38E+2	2.38E+2	2.12E+2	2.29E+2	2.29E+2	1.64E+2	1.77E+2	1.77E+2	4.60E+1	4.99E+1	4.99E+1
VI	3.50E+1	1.87E+2	1.65E+3	3.50E+1	1.87E+2	1.65E+3	3.46E+1	1.86E+2	1.64E+3	3.23E+1	1.79E+2	1.59E+3	2.14E+1	1.33E+2	1.22E+3
VII	5.08E+1	3.86E+2	2.99E+3	4.29E+1	3.17E+2	2.45E+3	1.34E+1	1.01E+2	7.82E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	1.89E-1	1.66E+0	1.03E+1	9.83E-2	8.64E-1	5.36E+0	1.02E-2	8.96E-2	5.56E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.49E+0	5.07E+0	6.77E+0	1.49E+0	5.06E+0	6.76E+0	1.48E+0	4.61E+0	6.09E+0	1.41E+0	3.07E+0	3.86E+0	1.14E+0	1.66E+0	1.90E+0
XII	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.94E-2	9.10E-2	9.36E-2	2.87E-2	8.89E-2	9.15E-2	9.23E-3	2.86E-2	2.95E-2
XIIIA	4.70E-4	1.54E-3	4.86E-3	1.80E-4	5.92E-4	1.86E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.79E-4	6.80E-4	2.83E-3	1.45E-4	2.60E-4	1.08E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.50E-4	3.02E-4	1.05E-2	9.56E-5	1.16E-4	4.00E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-2	1.53E-2	1.53E-2	1.46E-2	1.53E-2	1.53E-2	1.45E-2	1.53E-2	1.53E-2	1.40E-2	1.48E-2	1.48E-2	7.79E-3	8.24E-3	8.24E-3
XVIB	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.51E-2	1.51E-2	1.43E-2	1.50E-2	1.50E-2	1.39E-2	1.45E-2	1.45E-2	7.68E-3	8.10E-3	8.10E-3
XVIC	1.40E-2	1.47E-2	1.47E-2	1.40E-2	1.47E-2	1.47E-2	1.40E-2	1.46E-2	1.46E-2	1.35E-2	1.41E-2	1.41E-2	7.49E-3	7.86E-3	7.86E-3
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.02E-2	4.45E-2	4.45E-2	3.86E-2	4.26E-2	4.26E-2	2.65E-2	2.93E-2	2.93E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.95E-2	4.38E-2	4.38E-2	3.79E-2	4.20E-2	4.20E-2	2.60E-2	2.88E-2	2.88E-2
XVIIIC	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.81E-2	4.17E-2	4.17E-2	3.65E-2	3.99E-2	3.99E-2	2.51E-2	2.74E-2	2.74E-2
XXA	4.01E-3	2.87E-2	4.27E+0	1.74E-3	1.54E-2	2.28E+0	1.97E-4	1.42E-3	2.12E-1	7.32E-5	7.47E-4	1.13E-1	.00E+0	.00E+0	.00E+0
XXB	3.24E-3	1.80E-2	2.84E+0	1.41E-3	9.06E-3	1.43E+0	1.59E-4	8.89E-4	1.41E-1	5.91E-5	4.41E-4	7.03E-2	.00E+0	.00E+0	.00E+0
XXC	2.15E-3	1.18E-2	2.39E+0	9.32E-4	5.15E-3	1.04E+0	1.05E-4	5.88E-4	1.19E-1	3.91E-5	2.22E-4	4.50E-2	.00E+0	.00E+0	.00E+0
XXIA	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.12E-1	1.17E+0	1.10E+1	9.63E-2	1.00E+0	9.47E+0	3.44E-2	3.59E-1	3.38E+0
XXIB	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.11E-1	1.15E+0	9.96E+0	9.55E-2	9.89E-1	8.56E+0	3.41E-2	3.53E-1	3.06E+0
XXIC	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.09E-1	1.11E+0	8.07E+0	9.40E-2	9.53E-1	6.94E+0	3.36E-2	3.40E-1	2.48E+0
XXII	5.51E+0	5.41E+1	1.23E+2	5.50E+0	5.40E+1	1.23E+2	5.43E+0	5.35E+1	1.22E+2	5.01E+0	4.95E+1	1.13E+2	.00E+0	.00E+0	.00E+0
DOE	1.29E+3	6.93E+3	5.46E+4	1.28E+3	6.86E+3	5.40E+4	1.23E+3	6.62E+3	5.22E+4	1.11E+3	6.26E+3	4.99E+4	6.79E+2	4.49E+3	3.82E+4
DOD	3.27E-2	9.91E-2	1.46E-1	3.08E-2	9.46E-2	1.14E-1	2.94E-2	9.10E-2	9.36E-2	2.87E-2	8.89E-2	9.15E-2	9.23E-3	2.86E-2	2.95E-2
NRC	6.77E+0	3.02E+1	2.64E+2	6.75E+0	3.01E+1	2.41E+2	6.70E+0	2.97E+1	2.20E+2	6.20E+0	2.60E+1	1.89E+2	3.33E+0	1.05E+1	6.82E+1
Total	1.30E+3	6.96E+3	5.48E+4	1.29E+3	6.89E+3	5.43E+4	1.24E+3	6.65E+3	5.25E+4	1.12E+3	6.28E+3	5.01E+4	6.82E+2	4.50E+3	3.83E+4

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 TABLE K-12. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.20E+0	7.83E+0	7.83E+0	6.66E+0	7.24E+0	7.24E+0	6.30E+0	6.85E+0	6.85E+0	5.80E+0	6.31E+0	6.31E+0	5.48E+0	5.96E+0	5.96E+0	4.83E+0	5.26E+0	5.26E+0
II	1.72E+2	1.67E+3	1.30E+4	1.72E+2	1.67E+3	1.29E+4	1.72E+2	1.67E+3	1.29E+4	1.72E+2	1.67E+3	1.29E+4	1.72E+2	1.67E+3	1.29E+4	1.72E+2	1.67E+3	1.28E+4
III	2.70E+0	2.99E+0	2.99E+0	2.26E+0	2.51E+0	2.51E+0	1.80E+0	2.00E+0	2.00E+0	1.06E+0	1.18E+0	1.18E+0	6.14E-1	6.80E-1	6.80E-1	4.32E-1	4.79E-1	4.79E-1
IV	5.35E-1	1.42E+0	2.19E+1	4.86E-1	1.29E+0	1.99E+1	4.37E-1	1.16E+0	1.79E+1	3.40E-1	9.05E-1	1.39E+1	2.42E-1	6.45E-1	9.91E+0	9.58E-2	2.55E-1	3.92E+0
V	2.12E+2	2.29E+2	2.29E+2	2.05E+2	2.22E+2	2.22E+2	1.99E+2	2.15E+2	2.15E+2	1.85E+2	2.01E+2	2.01E+2	1.72E+2	1.87E+2	1.87E+2	1.64E+2	1.77E+2	1.77E+2
VI	3.46E+1	1.86E+2	1.64E+3	3.44E+1	1.86E+2	1.64E+3	3.41E+1	1.85E+2	1.64E+3	3.36E+1	1.83E+2	1.63E+3	3.31E+1	1.82E+2	1.61E+3	3.23E+1	1.79E+2	1.59E+3
VII	1.34E+1	1.01E+2	7.82E+2	4.72E+0	3.59E+1	2.78E+2	4.79E-1	3.43E+0	2.63E+1	5.15E-2	3.07E-1	2.29E+0	1.54E-2	8.62E-2	6.33E-1	.00E+0	.00E+0	.00E+0
IX	1.02E-2	8.96E-2	5.56E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.48E+0	4.61E+0	6.09E+0	1.47E+0	4.14E+0	5.41E+0	1.46E+0	3.84E+0	4.98E+0	1.44E+0	3.51E+0	4.48E+0	1.43E+0	3.30E+0	4.19E+0	1.41E+0	3.07E+0	3.86E+0
XII	2.94E-2	9.10E-2	9.36E-2	2.92E-2	9.06E-2	9.32E-2	2.91E-2	9.04E-2	9.30E-2	2.90E-2	8.99E-2	9.25E-2	2.89E-2	8.95E-2	9.21E-2	2.87E-2	8.89E-2	9.15E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.45E-2	1.53E-2	1.53E-2	1.45E-2	1.52E-2	1.52E-2	1.44E-2	1.52E-2	1.52E-2	1.43E-2	1.51E-2	1.51E-2	1.43E-2	1.50E-2	1.50E-2	1.40E-2	1.48E-2	1.48E-2
XVIB	1.43E-2	1.50E-2	1.50E-2	1.43E-2	1.50E-2	1.50E-2	1.42E-2	1.49E-2	1.49E-2	1.42E-2	1.49E-2	1.49E-2	1.41E-2	1.48E-2	1.48E-2	1.39E-2	1.45E-2	1.45E-2
XVIC	1.40E-2	1.46E-2	1.46E-2	1.39E-2	1.45E-2	1.45E-2	1.39E-2	1.45E-2	1.45E-2	1.38E-2	1.44E-2	1.44E-2	1.37E-2	1.43E-2	1.43E-2	1.35E-2	1.41E-2	1.41E-2
XVIIIA	4.02E-2	4.45E-2	4.45E-2	4.02E-2	4.44E-2	4.44E-2	4.00E-2	4.42E-2	4.42E-2	3.96E-2	4.37E-2	4.37E-2	3.92E-2	4.33E-2	4.33E-2	3.86E-2	4.26E-2	4.26E-2
XVIIIB	3.95E-2	4.38E-2	4.38E-2	3.95E-2	4.37E-2	4.37E-2	3.93E-2	4.35E-2	4.35E-2	3.89E-2	4.30E-2	4.30E-2	3.85E-2	4.26E-2	4.26E-2	3.79E-2	4.20E-2	4.20E-2
XVIIIC	3.81E-2	4.17E-2	4.17E-2	3.81E-2	4.16E-2	4.16E-2	3.79E-2	4.14E-2	4.14E-2	3.75E-2	4.10E-2	4.10E-2	3.71E-2	4.05E-2	4.05E-2	3.65E-2	3.99E-2	3.99E-2
XXA	1.97E-4	1.42E-3	2.12E-1	1.66E-4	1.23E-3	1.85E-1	1.46E-4	1.12E-3	1.67E-1	1.22E-4	9.61E-4	1.44E-1	1.02E-4	8.54E-4	1.28E-1	7.32E-5	7.47E-4	1.13E-1
XXB	1.59E-4	8.89E-4	1.41E-1	1.34E-4	7.66E-4	1.22E-1	1.18E-4	6.89E-4	1.10E-1	9.85E-5	5.87E-4	9.35E-2	8.27E-5	5.23E-4	8.33E-2	5.91E-5	4.41E-4	7.03E-2
XXC	1.05E-4	5.88E-4	1.19E-1	8.86E-5	4.96E-4	1.01E-1	7.82E-5	4.39E-4	8.90E-2	6.52E-5	3.67E-4	7.45E-2	5.48E-5	3.09E-4	6.28E-2	3.91E-5	2.22E-4	4.50E-2
XXIA	1.12E-1	1.17E+0	1.10E+1	1.11E-1	1.16E+0	1.09E+1	1.10E-1	1.14E+0	1.08E+1	1.07E-1	1.12E+0	1.05E+1	1.02E-1	1.07E+0	1.03E+1	9.63E-2	1.00E+0	9.47E+0
XXIB	1.11E-1	1.15E+0	9.96E+0	1.10E-1	1.14E+0	9.86E+0	1.09E-1	1.13E+0	9.75E+0	1.06E-1	1.10E+0	9.52E+0	1.01E-1	1.05E+0	9.10E+0	9.55E-2	9.89E-1	8.56E+0
XXIC	1.09E-1	1.11E+0	8.07E+0	1.08E-1	1.10E+0	7.98E+0	1.07E-1	1.09E+0	7.90E+0	1.04E-1	1.06E+0	7.71E+0	9.99E-2	1.01E+0	7.37E+0	9.40E-2	9.53E-1	6.94E+0
XXII	5.43E+0	5.35E+1	1.22E+2	5.37E+0	5.29E+1	1.20E+2	5.32E+0	5.25E+1	1.19E+2	5.18E+0	5.12E+1	1.16E+2	5.07E+0	5.02E+1	1.14E+2	5.01E+0	4.95E+1	1.13E+2
DOE	1.23E+3	6.62E+3	5.22E+4	1.21E+3	6.52E+3	5.16E+4	1.19E+3	6.46E+3	5.12E+4	1.16E+3	6.40E+3	5.08E+4	1.14E+3	6.34E+3	5.05E+4	1.11E+3	6.26E+3	4.99E+4
DOD	2.94E-2	9.10E-2	9.36E-2	2.92E-2	9.06E-2	9.32E-2	2.91E-2	9.04E-2	9.30E-2	2.90E-2	8.99E-2	9.25E-2	2.89E-2	8.95E-2	9.21E-2	2.87E-2	8.89E-2	9.15E-2
NRC	6.70E+0	2.97E+1	2.20E+2	6.66E+0	2.95E+1	2.17E+2	6.62E+0	2.92E+1	2.15E+2	6.53E+0	2.86E+1	2.09E+2	6.39E+0	2.75E+1	2.00E+2	6.20E+0	2.60E+1	1.89E+2
Total	1.24E+3	6.65E+3	5.25E+4	1.22E+3	6.55E+3	5.18E+4	1.20E+3	6.49E+3	5.14E+4	1.17E+3	6.43E+3	5.10E+4	1.14E+3	6.36E+3	5.07E+4	1.12E+3	6.28E+3	5.01E+4

High Population Density Without Agriculture - 09-13-94 4:02p
 TABLE K-13. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.58E+0	6.07E+0	6.07E+0	5.48E+0	5.96E+0	5.96E+0	5.18E+0	5.64E+0	5.64E+0	4.16E+0	4.52E+0	4.52E+0	1.86E+0	2.03E+0	2.03E+0
II	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.13E+4	1.40E+2	1.36E+3	1.09E+4
III	2.45E+0	2.70E+0	2.70E+0	2.44E+0	2.70E+0	2.70E+0	2.28E+0	2.52E+0	2.52E+0	1.21E+0	1.33E+0	1.33E+0	.00E+0	.00E+0	.00E+0
IV	4.49E-1	1.21E+0	2.32E+1	4.43E-1	1.20E+0	2.30E+1	4.23E-1	1.15E+0	2.19E+1	3.33E-1	9.02E-1	1.73E+1	.00E+0	.00E+0	.00E+0
V	1.44E+2	1.57E+2	1.57E+2	1.44E+2	1.57E+2	1.57E+2	1.43E+2	1.55E+2	1.55E+2	1.30E+2	1.42E+2	1.42E+2	8.55E+1	9.33E+1	9.33E+1
VI	2.55E+1	1.41E+2	1.42E+3	2.55E+1	1.41E+2	1.42E+3	2.55E+1	1.41E+2	1.42E+3	2.50E+1	1.40E+2	1.41E+3	2.17E+1	1.29E+2	1.31E+3
VII	4.72E+1	3.80E+2	2.99E+3	3.94E+1	3.10E+2	2.43E+3	2.90E+1	2.25E+2	1.76E+3	7.52E-1	5.81E+0	4.54E+1	.00E+0	.00E+0	.00E+0
IX	1.95E-1	1.72E+0	1.08E+1	1.42E-1	1.25E+0	7.84E+0	4.86E-2	4.30E-1	2.69E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.80E-1	3.18E+0	4.61E+0	9.80E-1	3.18E+0	4.61E+0	9.77E-1	3.10E+0	4.48E+0	9.54E-1	2.32E+0	3.21E+0	8.38E-1	1.41E+0	1.77E+0
XII	2.64E-2	8.16E-2	8.39E-2	2.64E-2	8.15E-2	8.38E-2	2.63E-2	8.14E-2	8.38E-2	2.60E-2	8.04E-2	8.27E-2	2.46E-2	7.59E-2	7.81E-2
XIIIA	3.74E-4	1.23E-3	4.59E-3	2.68E-4	8.79E-4	3.29E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.01E-4	5.43E-4	2.77E-3	2.16E-4	3.89E-4	1.99E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.99E-4	2.42E-4	7.49E-3	1.42E-4	1.74E-4	5.37E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.57E-3	1.01E-2	1.01E-2	9.57E-3	1.01E-2	1.01E-2	9.56E-3	1.01E-2	1.01E-2	9.46E-3	9.95E-3	9.95E-3	8.32E-3	8.79E-3	8.79E-3
XVIB	9.47E-3	9.93E-3	9.93E-3	9.47E-3	9.93E-3	9.93E-3	9.47E-3	9.93E-3	9.93E-3	9.37E-3	9.83E-3	9.83E-3	8.24E-3	8.68E-3	8.68E-3
XVIC	9.23E-3	9.63E-3	9.63E-3	9.23E-3	9.63E-3	9.63E-3	9.22E-3	9.63E-3	9.63E-3	9.13E-3	9.53E-3	9.53E-3	8.02E-3	8.40E-3	8.40E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.63E-2	2.91E-2	2.91E-2	2.30E-2	2.55E-2	2.55E-2
XVIIIB	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.59E-2	2.86E-2	2.86E-2	2.27E-2	2.50E-2	2.50E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.51E-2	2.73E-2	2.73E-2	2.19E-2	2.39E-2	2.39E-2
XXA	4.13E-3	2.85E-2	4.78E+0	2.60E-3	1.98E-2	3.31E+0	5.42E-4	6.40E-3	1.07E+0	1.27E-4	9.78E-4	1.65E-1	.00E+0	1.88E-4	3.19E-2
XXB	3.33E-3	1.91E-2	3.29E+0	2.10E-3	1.21E-2	2.07E+0	4.37E-4	2.51E-3	4.33E-1	1.03E-4	5.96E-4	1.03E-1	.00E+0	.00E+0	.00E+0
XXC	2.20E-3	1.41E-2	2.57E+0	1.39E-3	8.91E-3	1.62E+0	2.89E-4	1.86E-3	3.39E-1	6.79E-5	4.42E-4	8.06E-2	.00E+0	.00E+0	.00E+0
XXIA	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.46E-2	7.79E-1	7.34E+0	7.26E-2	7.58E-1	7.14E+0	4.94E-2	5.15E-1	4.85E+0
XXIB	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.40E-2	7.66E-1	6.64E+0	7.21E-2	7.46E-1	6.46E+0	4.90E-2	5.07E-1	4.39E+0
XXIC	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.29E-2	7.39E-1	5.37E+0	7.10E-2	7.19E-1	5.23E+0	4.82E-2	4.89E-1	3.56E+0
XXII	4.25E+0	4.01E+1	9.41E+1	4.25E+0	4.01E+1	9.40E+1	4.23E+0	3.99E+1	9.37E+1	4.11E+0	3.89E+1	9.12E+1	2.95E+0	2.94E+1	6.91E+1
DOE	9.52E+2	5.43E+3	4.74E+4	9.44E+2	5.36E+3	4.68E+4	9.30E+2	5.27E+3	4.61E+4	8.75E+2	4.99E+3	4.41E+4	7.41E+2	4.59E+3	4.12E+4
DOD	2.89E-2	8.73E-2	1.26E-1	2.81E-2	8.56E-2	1.14E-1	2.63E-2	8.14E-2	8.38E-2	2.60E-2	8.04E-2	8.27E-2	2.46E-2	7.59E-2	7.81E-2
NRC	4.48E+0	2.01E+1	1.95E+2	4.47E+0	2.00E+1	1.78E+2	4.44E+0	1.98E+1	1.54E+2	4.37E+0	1.93E+1	1.43E+2	3.52E+0	1.37E+1	9.66E+1
Total	9.57E+2	5.45E+3	4.76E+4	9.48E+2	5.38E+3	4.70E+4	9.34E+2	5.29E+3	4.63E+4	8.79E+2	5.01E+3	4.42E+4	7.45E+2	4.60E+3	4.13E+4

High Population Density Without Agriculture - 09-13-94 4:02p
 TABLE K-14. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.18E+0	5.64E+0	5.64E+0	4.97E+0	5.40E+0	5.40E+0	4.79E+0	5.22E+0	5.22E+0	4.55E+0	4.95E+0	4.95E+0	4.37E+0	4.75E+0	4.75E+0	4.16E+0	4.52E+0	4.52E+0
II	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.39E+3	1.13E+4
III	2.28E+0	2.52E+0	2.52E+0	1.99E+0	2.19E+0	2.19E+0	1.81E+0	2.00E+0	2.00E+0	1.65E+0	1.83E+0	1.83E+0	1.48E+0	1.63E+0	1.63E+0	1.21E+0	1.33E+0	1.33E+0
IV	4.23E-1	1.15E+0	2.19E+1	4.12E-1	1.12E+0	2.13E+1	4.02E-1	1.09E+0	2.08E+1	3.83E-1	1.04E+0	1.98E+1	3.63E-1	9.83E-1	1.88E+1	3.33E-1	9.02E-1	1.73E+1
V	1.43E+2	1.55E+2	1.55E+2	1.41E+2	1.53E+2	1.53E+2	1.39E+2	1.52E+2	1.52E+2	1.37E+2	1.49E+2	1.49E+2	1.34E+2	1.46E+2	1.46E+2	1.30E+2	1.42E+2	1.42E+2
VI	2.55E+1	1.41E+2	1.42E+3	2.54E+1	1.41E+2	1.42E+3	2.53E+1	1.41E+2	1.41E+3	2.52E+1	1.41E+2	1.41E+3	2.51E+1	1.41E+2	1.41E+3	2.50E+1	1.40E+2	1.41E+3
VII	2.90E+1	2.25E+2	1.76E+3	1.91E+1	1.49E+2	1.16E+3	1.33E+1	1.05E+2	8.21E+2	8.03E+0	6.40E+1	5.02E+2	4.53E+0	3.62E+1	2.84E+2	7.52E-1	5.81E+0	4.54E+1
IX	4.86E-2	4.30E-1	2.69E+0	2.33E-2	2.06E-1	1.29E+0	1.38E-2	1.22E-1	7.60E-1	4.86E-3	4.29E-2	2.68E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.77E-1	3.10E+0	4.48E+0	9.73E-1	2.97E+0	4.27E+0	9.69E-1	2.84E+0	4.06E+0	9.64E-1	2.63E+0	3.71E+0	9.59E-1	2.47E+0	3.46E+0	9.54E-1	2.32E+0	3.21E+0
XII	2.63E-2	8.14E-2	8.38E-2	2.63E-2	8.12E-2	8.36E-2	2.62E-2	8.11E-2	8.34E-2	2.61E-2	8.08E-2	8.31E-2	2.61E-2	8.06E-2	8.29E-2	2.60E-2	8.04E-2	8.27E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.56E-3	1.01E-2	1.01E-2	9.56E-3	1.00E-2	1.00E-2	9.54E-3	1.00E-2	1.00E-2	9.51E-3	1.00E-2	1.00E-2	9.49E-3	9.97E-3	9.97E-3	9.46E-3	9.95E-3	9.95E-3
XVIB	9.47E-3	9.93E-3	9.93E-3	9.46E-3	9.92E-3	9.92E-3	9.45E-3	9.91E-3	9.91E-3	9.42E-3	9.88E-3	9.88E-3	9.39E-3	9.85E-3	9.85E-3	9.37E-3	9.83E-3	9.83E-3
XVIC	9.22E-3	9.63E-3	9.63E-3	9.22E-3	9.62E-3	9.62E-3	9.20E-3	9.61E-3	9.61E-3	9.17E-3	9.58E-3	9.58E-3	9.15E-3	9.55E-3	9.55E-3	9.13E-3	9.53E-3	9.53E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.64E-2	2.93E-2	2.93E-2	2.63E-2	2.91E-2	2.91E-2
XVIIIB	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.87E-2	2.87E-2	2.60E-2	2.87E-2	2.87E-2	2.60E-2	2.87E-2	2.87E-2	2.59E-2	2.86E-2	2.86E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.51E-2	2.73E-2	2.73E-2
XXA	5.42E-4	6.40E-3	1.07E+0	1.81E-4	1.94E-3	3.27E-1	1.68E-4	1.25E-3	2.10E-1	1.52E-4	1.14E-3	1.92E-1	1.40E-4	1.06E-3	1.79E-1	1.27E-4	9.78E-4	1.65E-1
XXB	4.37E-4	2.51E-3	4.33E-1	1.46E-4	8.45E-4	1.46E-1	1.36E-4	7.87E-4	1.36E-1	1.22E-4	7.09E-4	1.23E-1	1.13E-4	6.56E-4	1.13E-1	1.03E-4	5.96E-4	1.03E-1
XXC	2.89E-4	1.86E-3	3.39E-1	9.65E-5	6.25E-4	1.14E-1	8.98E-5	5.83E-4	1.06E-1	8.09E-5	5.25E-4	9.58E-2	7.47E-5	4.86E-4	8.86E-2	6.79E-5	4.42E-4	8.06E-2
XXIA	7.46E-2	7.79E-1	7.34E+0	7.44E-2	7.77E-1	7.31E+0	7.42E-2	7.74E-1	7.29E+0	7.37E-2	7.70E-1	7.25E+0	7.33E-2	7.65E-1	7.21E+0	7.26E-2	7.58E-1	7.14E+0
XXIB	7.40E-2	7.66E-1	6.64E+0	7.38E-2	7.64E-1	6.62E+0	7.36E-2	7.62E-1	6.60E+0	7.32E-2	7.57E-1	6.56E+0	7.27E-2	7.53E-1	6.52E+0	7.21E-2	7.46E-1	6.46E+0
XXIC	7.29E-2	7.39E-1	5.37E+0	7.27E-2	7.37E-1	5.36E+0	7.25E-2	7.34E-1	5.34E+0	7.20E-2	7.30E-1	5.31E+0	7.16E-2	7.26E-1	5.28E+0	7.10E-2	7.19E-1	5.23E+0
XXII	4.23E+0	3.99E+1	9.37E+1	4.21E+0	3.98E+1	9.34E+1	4.20E+0	3.97E+1	9.31E+1	4.16E+0	3.94E+1	9.24E+1	4.14E+0	3.91E+1	9.18E+1	4.11E+0	3.89E+1	9.12E+1
DOE	9.30E+2	5.27E+3	4.61E+4	9.16E+2	5.18E+3	4.55E+4	9.07E+2	5.13E+3	4.51E+4	8.96E+2	5.08E+3	4.47E+4	8.87E+2	5.04E+3	4.44E+4	8.75E+2	4.99E+3	4.41E+4
DOD	2.63E-2	8.14E-2	8.38E-2	2.63E-2	8.12E-2	8.36E-2	2.62E-2	8.11E-2	8.34E-2	2.61E-2	8.08E-2	8.31E-2	2.61E-2	8.06E-2	8.29E-2	2.60E-2	8.04E-2	8.27E-2
NRC	4.44E+0	1.98E+1	1.54E+2	4.43E+0	1.97E+1	1.47E+2	4.42E+0	1.97E+1	1.46E+2	4.41E+0	1.96E+1	1.45E+2	4.39E+0	1.95E+1	1.44E+2	4.37E+0	1.93E+1	1.43E+2
Total	9.34E+2	5.29E+3	4.63E+4	9.20E+2	5.20E+3	4.56E+4	9.11E+2	5.15E+3	4.53E+4	9.00E+2	5.10E+3	4.48E+4	8.91E+2	5.06E+3	4.45E+4	8.79E+2	5.01E+3	4.42E+4

High Population Density Without Agriculture - 09-13-94 4:02p
 TABLE K-15. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.54E+0	6.03E+0	6.03E+0	5.36E+0	5.83E+0	5.83E+0	4.74E+0	5.16E+0	5.16E+0	3.18E+0	3.46E+0	3.46E+0	8.10E-1	8.82E-1	8.82E-1
II	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.38E+3	1.11E+4	1.20E+2	1.17E+3	9.19E+3
III	2.45E+0	2.70E+0	2.70E+0	2.42E+0	2.67E+0	2.67E+0	1.78E+0	1.96E+0	1.96E+0	2.85E-1	3.14E-1	3.14E-1	.00E+0	.00E+0	.00E+0
IV	4.46E-1	1.21E+0	2.31E+1	4.35E-1	1.18E+0	2.25E+1	3.96E-1	1.07E+0	2.05E+1	7.10E-2	1.92E-1	3.67E+0	.00E+0	.00E+0	.00E+0
V	1.44E+2	1.57E+2	1.57E+2	1.44E+2	1.57E+2	1.57E+2	1.39E+2	1.51E+2	1.51E+2	1.07E+2	1.17E+2	1.17E+2	3.01E+1	3.29E+1	3.29E+1
VI	2.55E+1	1.41E+2	1.42E+3	2.55E+1	1.41E+2	1.42E+3	2.53E+1	1.41E+2	1.41E+3	2.36E+1	1.36E+2	1.37E+3	1.59E+1	1.01E+2	1.05E+3
VII	4.33E+1	3.45E+2	2.71E+3	3.63E+1	2.83E+2	2.21E+3	1.14E+1	9.03E+1	7.07E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	1.69E-1	1.49E+0	9.32E+0	8.79E-2	7.77E-1	4.86E+0	9.12E-3	8.06E-2	5.04E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.80E-1	3.18E+0	4.61E+0	9.80E-1	3.17E+0	4.60E+0	9.70E-1	2.89E+0	4.15E+0	9.25E-1	1.95E+0	2.61E+0	7.45E-1	1.06E+0	1.27E+0
XII	2.64E-2	8.15E-2	8.39E-2	2.64E-2	8.15E-2	8.38E-2	2.61E-2	8.07E-2	8.31E-2	2.55E-2	7.89E-2	8.11E-2	8.22E-3	2.54E-2	2.61E-2
XIIIA	3.39E-4	1.11E-3	4.16E-3	1.30E-4	4.26E-4	1.59E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.73E-4	4.93E-4	2.51E-3	1.05E-4	1.89E-4	9.62E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.80E-4	2.20E-4	6.80E-3	6.90E-5	8.42E-5	2.60E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.57E-3	1.01E-2	1.01E-2	9.56E-3	1.01E-2	1.01E-2	9.54E-3	1.00E-2	1.00E-2	9.22E-3	9.70E-3	9.70E-3	5.11E-3	5.41E-3	5.41E-3
XVIB	9.47E-3	9.93E-3	9.93E-3	9.47E-3	9.93E-3	9.93E-3	9.45E-3	9.91E-3	9.91E-3	9.13E-3	9.58E-3	9.58E-3	5.06E-3	5.34E-3	5.34E-3
XVIC	9.23E-3	9.63E-3	9.63E-3	9.22E-3	9.63E-3	9.63E-3	9.20E-3	9.60E-3	9.60E-3	8.89E-3	9.29E-3	9.29E-3	4.92E-3	5.16E-3	5.16E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.54E-2	2.81E-2	2.81E-2	1.74E-2	1.93E-2	1.93E-2
XVIIIB	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.87E-2	2.87E-2	2.50E-2	2.75E-2	2.75E-2	1.71E-2	1.89E-2	1.89E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.42E-2	2.64E-2	2.64E-2	1.66E-2	1.81E-2	1.81E-2
XXA	3.13E-3	2.40E-2	4.02E+0	1.36E-3	1.28E-2	2.15E+0	1.54E-4	1.19E-3	2.00E-1	5.73E-5	6.26E-4	1.06E-1	.00E+0	.00E+0	.00E+0
XXB	2.52E-3	1.57E-2	2.69E+0	1.10E-3	7.90E-3	1.36E+0	1.24E-4	7.76E-4	1.34E-1	4.62E-5	3.85E-4	6.67E-2	.00E+0	.00E+0	.00E+0
XXC	1.67E-3	1.07E-2	1.95E+0	7.25E-4	4.66E-3	8.48E-1	8.20E-5	5.32E-4	9.71E-2	3.06E-5	2.01E-4	3.67E-2	.00E+0	.00E+0	.00E+0
XXIA	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.41E-2	7.73E-1	7.28E+0	6.37E-2	6.65E-1	6.26E+0	2.28E-2	2.38E-1	2.24E+0
XXIB	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.35E-2	7.61E-1	6.59E+0	6.32E-2	6.54E-1	5.67E+0	2.26E-2	2.34E-1	2.03E+0
XXIC	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.24E-2	7.33E-1	5.34E+0	6.22E-2	6.31E-1	4.59E+0	2.22E-2	2.25E-1	1.64E+0
XXII	4.25E+0	4.01E+1	9.41E+1	4.24E+0	4.00E+1	9.40E+1	4.19E+0	3.96E+1	9.30E+1	3.86E+0	3.67E+1	8.60E+1	.00E+0	.00E+0	.00E+0
DOE	9.48E+2	5.39E+3	4.71E+4	9.40E+2	5.33E+3	4.66E+4	9.03E+2	5.12E+3	4.50E+4	8.17E+2	4.84E+3	4.30E+4	5.13E+2	3.51E+3	3.30E+4
DOD	2.86E-2	8.67E-2	1.22E-1	2.72E-2	8.35E-2	9.84E-2	2.61E-2	8.07E-2	8.31E-2	2.55E-2	7.89E-2	8.11E-2	8.22E-3	2.54E-2	2.61E-2
NRC	4.47E+0	2.00E+1	1.85E+2	4.45E+0	1.99E+1	1.65E+2	4.42E+0	1.97E+1	1.46E+2	4.09E+0	1.72E+1	1.25E+2	2.20E+0	6.95E+0	4.51E+1
Total	9.53E+2	5.41E+3	4.73E+4	9.44E+2	5.35E+3	4.68E+4	9.08E+2	5.14E+3	4.51E+4	8.21E+2	4.86E+3	4.31E+4	5.16E+2	3.52E+3	3.30E+4

High Population Density Without Agriculture - 09-13-94 4:02p
 TABLE K-16. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.74E+0	5.16E+0	5.16E+0	4.38E+0	4.77E+0	4.77E+0	4.14E+0	4.51E+0	4.51E+0	3.81E+0	4.15E+0	4.15E+0	3.61E+0	3.93E+0	3.93E+0	3.18E+0	3.46E+0	3.46E+0
II	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.39E+3	1.12E+4	1.42E+2	1.38E+3	1.12E+4	1.42E+2	1.38E+3	1.11E+4
III	1.78E+0	1.96E+0	1.96E+0	1.49E+0	1.65E+0	1.65E+0	1.19E+0	1.31E+0	1.31E+0	7.01E-1	7.74E-1	7.74E-1	4.05E-1	4.47E-1	4.47E-1	2.85E-1	3.14E-1	3.14E-1
IV	3.96E-1	1.07E+0	2.05E+1	3.60E-1	9.74E-1	1.86E+1	3.24E-1	8.76E-1	1.68E+1	2.51E-1	6.81E-1	1.30E+1	1.79E-1	4.85E-1	9.28E+0	7.10E-2	1.92E-1	3.67E+0
V	1.39E+2	1.51E+2	1.51E+2	1.34E+2	1.47E+2	1.47E+2	1.30E+2	1.42E+2	1.42E+2	1.22E+2	1.32E+2	1.32E+2	1.13E+2	1.23E+2	1.23E+2	1.07E+2	1.17E+2	1.17E+2
VI	2.53E+1	1.41E+2	1.41E+3	2.51E+1	1.41E+2	1.41E+3	2.49E+1	1.40E+2	1.41E+3	2.46E+1	1.39E+2	1.40E+3	2.42E+1	1.38E+2	1.39E+3	2.36E+1	1.36E+2	1.37E+3
VII	1.14E+1	9.03E+1	7.07E+2	4.02E+0	3.21E+1	2.52E+2	4.02E-1	3.05E+0	2.38E+1	4.14E-2	2.71E-1	2.06E+0	1.22E-2	7.58E-2	5.71E-1	.00E+0	.00E+0	.00E+0
IX	9.12E-3	8.06E-2	5.04E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.70E-1	2.89E+0	4.15E+0	9.63E-1	2.61E+0	3.67E+0	9.57E-1	2.42E+0	3.38E+0	9.47E-1	2.22E+0	3.04E+0	9.37E-1	2.09E+0	2.83E+0	9.25E-1	1.95E+0	2.61E+0
XII	2.61E-2	8.07E-2	8.31E-2	2.60E-2	8.04E-2	8.27E-2	2.59E-2	8.02E-2	8.25E-2	2.58E-2	7.98E-2	8.21E-2	2.57E-2	7.94E-2	8.17E-2	2.55E-2	7.89E-2	8.11E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.54E-3	1.00E-2	1.00E-2	9.49E-3	9.98E-3	9.98E-3	9.46E-3	9.95E-3	9.95E-3	9.42E-3	9.90E-3	9.90E-3	9.36E-3	9.85E-3	9.85E-3	9.22E-3	9.70E-3	9.70E-3
XVIB	9.45E-3	9.91E-3	9.91E-3	9.40E-3	9.86E-3	9.86E-3	9.37E-3	9.83E-3	9.83E-3	9.32E-3	9.78E-3	9.78E-3	9.27E-3	9.72E-3	9.72E-3	9.13E-3	9.58E-3	9.58E-3
XVIC	9.20E-3	9.60E-3	9.60E-3	9.15E-3	9.55E-3	9.55E-3	9.13E-3	9.53E-3	9.53E-3	9.08E-3	9.48E-3	9.48E-3	9.02E-3	9.42E-3	9.42E-3	8.89E-3	9.29E-3	9.29E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.64E-2	2.92E-2	2.92E-2	2.63E-2	2.91E-2	2.91E-2	2.60E-2	2.88E-2	2.88E-2	2.58E-2	2.85E-2	2.85E-2	2.54E-2	2.81E-2	2.81E-2
XVIIIB	2.61E-2	2.87E-2	2.87E-2	2.60E-2	2.87E-2	2.87E-2	2.59E-2	2.85E-2	2.85E-2	2.56E-2	2.83E-2	2.83E-2	2.54E-2	2.80E-2	2.80E-2	2.50E-2	2.75E-2	2.75E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.74E-2	2.74E-2	2.50E-2	2.73E-2	2.73E-2	2.48E-2	2.70E-2	2.70E-2	2.45E-2	2.68E-2	2.68E-2	2.42E-2	2.64E-2	2.64E-2
XXA	1.54E-4	1.19E-3	2.00E-1	1.29E-4	1.03E-3	1.74E-1	1.14E-4	9.34E-4	1.58E-1	9.54E-5	8.04E-4	1.36E-1	8.02E-5	7.15E-4	1.21E-1	5.73E-5	6.26E-4	1.06E-1
XXB	1.24E-4	7.76E-4	1.34E-1	1.04E-4	6.69E-4	1.16E-1	9.22E-5	6.02E-4	1.04E-1	7.69E-5	5.13E-4	8.87E-2	6.47E-5	4.56E-4	7.90E-2	4.62E-5	3.85E-4	6.67E-2
XXC	8.20E-5	5.32E-4	9.71E-2	6.91E-5	4.50E-4	8.20E-2	6.10E-5	3.98E-4	7.26E-2	5.09E-5	3.33E-4	6.08E-2	4.28E-5	2.80E-4	5.12E-2	3.06E-5	2.01E-4	3.67E-2
XXIA	7.41E-2	7.73E-1	7.28E+0	7.33E-2	7.65E-1	7.21E+0	7.25E-2	7.58E-1	7.13E+0	7.08E-2	7.39E-1	6.96E+0	6.77E-2	7.07E-1	6.65E+0	6.37E-2	6.65E-1	6.26E+0
XXIB	7.35E-2	7.61E-1	6.59E+0	7.28E-2	7.53E-1	6.52E+0	7.20E-2	7.45E-1	6.46E+0	7.02E-2	7.27E-1	6.30E+0	6.72E-2	6.95E-1	6.02E+0	6.32E-2	6.54E-1	5.67E+0
XXIC	7.24E-2	7.33E-1	5.34E+0	7.16E-2	7.26E-1	5.28E+0	7.09E-2	7.18E-1	5.23E+0	6.92E-2	7.01E-1	5.10E+0	6.61E-2	6.70E-1	4.88E+0	6.22E-2	6.31E-1	4.59E+0
XXII	4.19E+0	3.96E+1	9.30E+1	4.14E+0	3.92E+1	9.19E+1	4.10E+0	3.89E+1	9.12E+1	4.00E+0	3.79E+1	8.90E+1	3.91E+0	3.72E+1	8.72E+1	3.86E+0	3.67E+1	8.60E+1
DOE	9.03E+2	5.12E+3	4.50E+4	8.87E+2	5.04E+3	4.44E+4	8.74E+2	4.99E+3	4.40E+4	8.55E+2	4.94E+3	4.38E+4	8.37E+2	4.90E+3	4.34E+4	8.17E+2	4.84E+3	4.30E+4
DOD	2.61E+2	8.07E+2	8.31E+2	2.60E+2	8.04E+2	8.27E+2	2.59E+2	8.02E+2	8.25E+2	2.58E+2	7.98E+2	8.21E+2	2.57E+2	7.94E+2	8.17E+2	2.55E+2	7.89E+2	8.11E+2
NRC	4.42E+0	1.97E+1	1.46E+2	4.40E+0	1.95E+1	1.44E+2	4.37E+0	1.93E+1	1.43E+2	4.31E+0	1.89E+1	1.39E+2	4.22E+0	1.82E+1	1.33E+2	4.09E+0	1.72E+1	1.25E+2
Total	9.08E+2	5.14E+3	4.51E+4	8.91E+2	5.06E+3	4.45E+4	8.78E+2	5.01E+3	4.42E+4	8.59E+2	4.96E+3	4.39E+4	8.41E+2	4.92E+3	4.36E+4	8.21E+2	4.86E+3	4.31E+4

TABLE K-17. DOSE TO WORKERS (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.30E+1	1.30E+1	1.30E+1	1.28E+1	1.28E+1	1.28E+1	1.21E+1	1.21E+1	1.21E+1	9.69E+0	9.69E+0	9.69E+0	4.34E+0	4.34E+0	4.34E+0
II	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.63E+2	2.63E+2	2.63E+2	2.57E+2	2.58E+2	2.58E+2
III	5.36E+0	5.36E+0	5.36E+0	5.36E+0	5.36E+0	5.36E+0	5.00E+0	5.00E+0	5.00E+0	2.65E+0	2.65E+0	2.65E+0	.00E+0	.00E+0	.00E+0
IV	5.00E+0	5.00E+0	5.00E+0	4.94E+0	4.94E+0	4.94E+0	4.72E+0	4.72E+0	4.72E+0	3.72E+0	3.72E+0	3.72E+0	.00E+0	.00E+0	.00E+0
V	3.39E+2	3.39E+2	3.39E+2	3.39E+2	3.39E+2	3.39E+2	3.35E+2	3.35E+2	3.35E+2	3.07E+2	3.07E+2	3.07E+2	2.01E+2	2.01E+2	2.01E+2
VI	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.14E+2	1.14E+2	1.14E+2	1.13E+2	1.13E+2	1.13E+2	1.02E+2	1.02E+2	1.02E+2
VII	7.58E+2	7.58E+2	7.58E+2	6.19E+2	6.19E+2	6.19E+2	4.49E+2	4.49E+2	4.49E+2	1.16E+1	1.16E+1	1.16E+1	.00E+0	.00E+0	.00E+0
IX	2.98E+0	2.98E+0	2.98E+0	2.17E+0	2.17E+0	2.17E+0	7.43E-1	7.43E-1	7.43E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.03E+0	1.03E+0	1.03E+0	1.03E+0	1.03E+0	1.03E+0	8.98E-1	9.95E-1	9.95E-1	5.80E-1	6.41E-1	6.41E-1	2.51E-1	2.65E-1	2.65E-1
XII	8.81E+0	8.81E+0	8.81E+0	8.80E+0	8.80E+0	8.80E+0	8.79E+0	8.79E+0	8.79E+0	8.68E+0	8.68E+0	8.68E+0	8.20E+0	8.20E+0	8.20E+0
XIIIA	2.36E-3	2.36E-3	2.36E-3	1.69E-3	1.69E-3	1.69E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.36E-3	2.36E-3	2.36E-3	1.69E-3	1.69E-3	1.69E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.36E-3	2.36E-3	2.36E-3	1.69E-3	1.69E-3	1.69E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	9.19E-2	9.19E-2	9.19E-2
XVIB	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	9.19E-2	9.19E-2	9.19E-2
XVIC	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	9.19E-2	9.19E-2	9.19E-2
XVIIIA	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.80E-2	9.80E-2	9.80E-2	8.57E-2	8.57E-2	8.57E-2
XVIIIB	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.80E-2	9.80E-2	9.80E-2	8.57E-2	8.57E-2	8.57E-2
XVIIIC	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.80E-2	9.80E-2	9.80E-2	8.57E-2	8.57E-2	8.57E-2
XXA	3.38E-1	3.40E-1	3.40E-1	2.13E-1	2.36E-1	2.36E-1	4.44E-2	7.64E-2	7.64E-2	1.05E-2	1.17E-2	1.17E-2	.00E+0	2.25E-3	2.25E-3
XXB	3.38E-1	3.38E-1	3.38E-1	2.13E-1	2.13E-1	2.13E-1	4.44E-2	4.44E-2	4.44E-2	1.05E-2	1.05E-2	1.05E-2	.00E+0	.00E+0	.00E+0
XXC	3.38E-1	3.38E-1	3.38E-1	2.13E-1	2.13E-1	2.13E-1	4.44E-2	4.44E-2	4.44E-2	1.05E-2	1.05E-2	1.05E-2	.00E+0	.00E+0	.00E+0
XXIA	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.48E+0	2.48E+0	2.48E+0	1.68E+0	1.68E+0	1.68E+0
XXIB	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.48E+0	2.48E+0	2.48E+0	1.68E+0	1.68E+0	1.68E+0
XXIC	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.48E+0	2.48E+0	2.48E+0	1.68E+0	1.68E+0	1.68E+0
XXII	6.43E+1	6.43E+1	6.43E+1	6.42E+1	6.42E+1	6.42E+1	6.40E+1	6.40E+1	6.40E+1	6.22E+1	6.24E+1	6.24E+1	4.29E+1	4.57E+1	4.57E+1
DOE	4.44E+3	4.44E+3	4.44E+3	4.29E+3	4.29E+3	4.29E+3	4.11E+3	4.11E+3	4.11E+3	3.59E+3	3.60E+3	3.60E+3	3.07E+3	3.09E+3	3.09E+3
DOD	8.83E+0	8.83E+0	8.83E+0	8.81E+0	8.81E+0	8.81E+0	8.79E+0	8.79E+0	8.79E+0	8.68E+0	8.68E+0	8.68E+0	8.20E+0	8.20E+0	8.20E+0
NRC	8.10E+1	8.10E+1	8.10E+1	7.92E+1	7.93E+1	7.93E+1	7.88E+1	7.70E+1	7.70E+1	7.46E+1	7.46E+1	7.46E+1	5.39E+1	5.39E+1	5.39E+1
Total	4.52E+3	4.52E+3	4.52E+3	4.38E+3	4.38E+3	4.38E+3	4.20E+3	4.20E+3	4.20E+3	3.68E+3	3.68E+3	3.68E+3	3.14E+3	3.16E+3	3.16E+3

TABLE K-18. DOSE TO WORKERS (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.21E+1	1.21E+1	1.21E+1	1.16E+1	1.16E+1	1.16E+1	1.12E+1	1.12E+1	1.12E+1	1.06E+1	1.06E+1	1.06E+1	1.02E+1	1.02E+1	1.02E+1	9.69E+0	9.69E+0	9.69E+0
II	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.63E+2	2.64E+2	2.64E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2
III	5.00E+0	5.00E+0	5.00E+0	4.36E+0	4.36E+0	4.36E+0	3.96E+0	3.96E+0	3.96E+0	3.63E+0	3.63E+0	3.63E+0	3.24E+0	3.24E+0	3.24E+0	2.65E+0	2.65E+0	2.65E+0
IV	4.72E+0	4.72E+0	4.72E+0	4.59E+0	4.59E+0	4.59E+0	4.48E+0	4.48E+0	4.48E+0	4.27E+0	4.27E+0	4.27E+0	4.05E+0	4.05E+0	4.05E+0	3.72E+0	3.72E+0	3.72E+0
V	3.35E+2	3.35E+2	3.35E+2	3.31E+2	3.31E+2	3.31E+2	3.28E+2	3.28E+2	3.28E+2	3.22E+2	3.22E+2	3.22E+2	3.16E+2	3.16E+2	3.16E+2	3.07E+2	3.07E+2	3.07E+2
VI	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.13E+2	1.13E+2	1.13E+2
VII	4.49E+2	4.49E+2	4.49E+2	2.97E+2	2.97E+2	2.97E+2	2.09E+2	2.09E+2	2.09E+2	1.28E+2	1.28E+2	1.28E+2	7.21E+1	7.21E+1	7.21E+1	1.16E+1	1.16E+1	1.16E+1
IX	7.43E-1	7.43E-1	7.43E-1	3.55E-1	3.55E-1	3.55E-1	2.10E-1	2.10E-1	2.10E-1	7.42E-2	7.42E-2	7.42E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	8.98E-1	9.95E-1	9.95E-1	8.01E-1	9.35E-1	9.35E-1	7.43E-1	8.77E-1	8.77E-1	6.71E-1	7.78E-1	7.78E-1	6.26E-1	7.09E-1	7.09E-1	5.80E-1	6.41E-1	6.41E-1
XII	8.79E+0	8.79E+0	8.79E+0	8.77E+0	8.77E+0	8.77E+0	8.76E+0	8.76E+0	8.76E+0	8.73E+0	8.73E+0	8.73E+0	8.70E+0	8.70E+0	8.70E+0	8.68E+0	8.68E+0	8.68E+0
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1
XVIB	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1
XVIC	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1
XVIIIA	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2	9.85E-2	9.85E-2	9.85E-2	9.84E-2	9.84E-2	9.84E-2	9.80E-2	9.80E-2	9.80E-2
XVIIIB	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2	9.85E-2	9.85E-2	9.85E-2	9.84E-2	9.84E-2	9.84E-2	9.80E-2	9.80E-2	9.80E-2
XVIIIC	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2	9.85E-2	9.85E-2	9.85E-2	9.84E-2	9.84E-2	9.84E-2	9.80E-2	9.80E-2	9.80E-2
XXA	4.44E-2	7.64E-2	7.64E-2	1.49E-2	2.32E-2	2.32E-2	1.39E-2	1.49E-2	1.49E-2	1.25E-2	1.36E-2	1.36E-2	1.16E-2	1.27E-2	1.27E-2	1.05E-2	1.17E-2	1.17E-2
XXB	4.44E-2	4.44E-2	4.44E-2	1.49E-2	1.49E-2	1.49E-2	1.39E-2	1.39E-2	1.39E-2	1.25E-2	1.25E-2	1.25E-2	1.16E-2	1.16E-2	1.16E-2	1.05E-2	1.05E-2	1.05E-2
XXC	4.44E-2	4.44E-2	4.44E-2	1.49E-2	1.49E-2	1.49E-2	1.39E-2	1.39E-2	1.39E-2	1.25E-2	1.25E-2	1.25E-2	1.16E-2	1.16E-2	1.16E-2	1.05E-2	1.05E-2	1.05E-2
XXIA	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.53E+0	2.53E+0	2.53E+0	2.51E+0	2.51E+0	2.51E+0	2.50E+0	2.50E+0	2.50E+0	2.48E+0	2.48E+0	2.48E+0
XXIB	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.53E+0	2.53E+0	2.53E+0	2.51E+0	2.51E+0	2.51E+0	2.50E+0	2.50E+0	2.50E+0	2.48E+0	2.48E+0	2.48E+0
XXIC	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.53E+0	2.53E+0	2.53E+0	2.51E+0	2.51E+0	2.51E+0	2.50E+0	2.50E+0	2.50E+0	2.48E+0	2.48E+0	2.48E+0
XXII	6.40E+1	6.40E+1	6.40E+1	6.38E+1	6.38E+1	6.38E+1	6.35E+1	6.36E+1	6.36E+1	6.30E+1	6.32E+1	6.32E+1	6.28E+1	6.28E+1	6.28E+1	6.22E+1	6.24E+1	6.24E+1
DOE	4.11E+3	4.11E+3	4.11E+3	3.95E+3	3.95E+3	3.95E+3	3.85E+3	3.85E+3	3.85E+3	3.75E+3	3.75E+3	3.75E+3	3.68E+3	3.68E+3	3.68E+3	3.59E+3	3.60E+3	3.60E+3
DOD	8.79E+0	8.79E+0	8.79E+0	8.77E+0	8.77E+0	8.77E+0	8.76E+0	8.76E+0	8.76E+0	8.73E+0	8.73E+0	8.73E+0	8.70E+0	8.70E+0	8.70E+0	8.68E+0	8.68E+0	8.68E+0
NRC	7.68E+1	7.70E+1	7.70E+1	7.62E+1	7.63E+1	7.63E+1	7.60E+1	7.60E+1	7.60E+1	7.56E+1	7.56E+1	7.56E+1	7.52E+1	7.52E+1	7.52E+1	7.46E+1	7.46E+1	7.46E+1
Total	4.20E+3	4.20E+3	4.20E+3	4.03E+3	4.03E+3	4.03E+3	3.93E+3	3.94E+3	3.94E+3	3.84E+3	3.84E+3	3.84E+3	3.76E+3	3.76E+3	3.76E+3	3.68E+3	3.68E+3	3.68E+3

TABLE K-19. DOSE TO WORKERS (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.29E+1	1.29E+1	1.29E+1	1.25E+1	1.25E+1	1.25E+1	1.10E+1	1.10E+1	1.10E+1	7.42E+0	7.42E+0	7.42E+0	1.89E+0	1.89E+0	1.89E+0
II	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.63E+2	2.64E+2	2.64E+2	2.62E+2	2.62E+2	2.62E+2	2.16E+2	2.21E+2	2.21E+2
III	5.36E+0	5.36E+0	5.36E+0	5.31E+0	5.31E+0	5.31E+0	3.90E+0	3.90E+0	3.90E+0	6.24E-1	6.24E-1	6.24E-1	.00E+0	.00E+0	.00E+0
IV	4.98E+0	4.98E+0	4.98E+0	4.85E+0	4.85E+0	4.85E+0	4.41E+0	4.41E+0	4.41E+0	7.91E-1	7.91E-1	7.91E-1	.00E+0	.00E+0	.00E+0
V	3.39E+2	3.39E+2	3.39E+2	3.38E+2	3.38E+2	3.38E+2	3.26E+2	3.26E+2	3.26E+2	2.52E+2	2.52E+2	2.52E+2	7.09E+1	7.09E+1	7.09E+1
VI	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.14E+2	1.14E+2	1.14E+2	1.09E+2	1.09E+2	1.09E+2	7.83E+1	7.83E+1	7.83E+1
VII	6.89E+2	6.89E+2	6.89E+2	5.65E+2	5.65E+2	5.65E+2	1.80E+2	1.80E+2	1.80E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	2.58E+0	2.58E+0	2.58E+0	1.34E+0	1.34E+0	1.34E+0	1.39E-1	1.39E-1	1.39E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.03E+0	1.03E+0	1.03E+0	9.87E-1	1.03E+0	1.03E+0	7.57E-1	9.01E-1	9.01E-1	4.45E-1	4.78E-1	4.78E-1	1.44E-1	1.49E-1	1.49E-1
XII	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.72E+0	8.72E+0	8.72E+0	8.52E+0	8.52E+0	8.52E+0	2.74E+0	2.74E+0	2.74E+0
XIIIA	2.14E-3	2.14E-3	2.14E-3	8.19E-4	8.19E-4	8.19E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.14E-3	2.14E-3	2.14E-3	8.19E-4	8.19E-4	8.19E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.14E-3	2.14E-3	2.14E-3	8.19E-4	8.19E-4	8.19E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.07E-1	1.07E-1	1.07E-1	5.51E-2	5.51E-2	5.51E-2
XVIB	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.07E-1	1.07E-1	1.07E-1	5.51E-2	5.51E-2	5.51E-2
XVIC	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.07E-1	1.07E-1	1.07E-1	5.51E-2	5.51E-2	5.51E-2
XVIIIA	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2	9.45E-2	9.45E-2	9.45E-2	6.48E-2	6.48E-2	6.48E-2
XVIIIB	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2	9.45E-2	9.45E-2	9.45E-2	6.48E-2	6.48E-2	6.48E-2
XVIIIC	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2	9.45E-2	9.45E-2	9.45E-2	6.48E-2	6.48E-2	6.48E-2
XXA	2.56E-1	2.86E-1	2.86E-1	1.11E-1	1.53E-1	1.53E-1	1.27E-2	1.42E-2	1.42E-2	4.79E-3	7.50E-3	7.50E-3	.00E+0	.00E+0	.00E+0
XXB	2.56E-1	2.77E-1	2.77E-1	1.11E-1	1.39E-1	1.39E-1	1.27E-2	1.37E-2	1.37E-2	4.79E-3	6.81E-3	6.81E-3	.00E+0	.00E+0	.00E+0
XXC	2.56E-1	2.56E-1	2.56E-1	1.11E-1	1.11E-1	1.11E-1	1.27E-2	1.27E-2	1.27E-2	4.79E-3	4.79E-3	4.79E-3	.00E+0	.00E+0	.00E+0
XXIA	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.52E+0	2.52E+0	2.52E+0	2.17E+0	2.17E+0	2.17E+0	7.76E-1	7.76E-1	7.76E-1
XXIB	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.52E+0	2.52E+0	2.52E+0	2.17E+0	2.17E+0	2.17E+0	7.76E-1	7.76E-1	7.76E-1
XXIC	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.52E+0	2.52E+0	2.52E+0	2.17E+0	2.17E+0	2.17E+0	7.76E-1	7.76E-1	7.76E-1
XXII	6.43E+1	6.43E+1	6.43E+1	6.42E+1	6.42E+1	6.42E+1	6.34E+1	6.36E+1	6.36E+1	5.87E+1	5.89E+1	5.89E+1	.00E+0	.00E+0	.00E+0
DOE	4.36E+3	4.36E+3	4.36E+3	4.24E+3	4.24E+3	4.24E+3	3.82E+3	3.82E+3	3.82E+3	3.39E+3	3.40E+3	3.40E+3	2.07E+3	2.07E+3	2.07E+3
DOD	8.82E+0	8.82E+0	8.82E+0	8.81E+0	8.81E+0	8.81E+0	8.72E+0	8.72E+0	8.72E+0	8.52E+0	8.52E+0	8.52E+0	2.74E+0	2.74E+0	2.74E+0
NRC	7.98E+1	8.01E+1	8.01E+1	7.78E+1	7.81E+1	7.81E+1	7.59E+1	7.59E+1	7.59E+1	6.71E+1	6.71E+1	6.71E+1	2.80E+1	2.80E+1	2.80E+1
Total	4.45E+3	4.45E+3	4.45E+3	4.32E+3	4.32E+3	4.32E+3	3.90E+3	3.90E+3	3.90E+3	3.47E+3	3.47E+3	3.47E+3	2.10E+3	2.10E+3	2.10E+3

TABLE K-20. DOSE TO WORKERS (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.10E+1	1.10E+1	1.10E+1	1.02E+1	1.02E+1	1.02E+1	9.66E+0	9.66E+0	9.66E+0	8.90E+0	8.90E+0	8.90E+0	8.41E+0	8.41E+0	8.41E+0	7.42E+0	7.42E+0	7.42E+0
II	2.63E+2	2.64E+2	2.64E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.62E+2	2.62E+2	2.62E+2	2.62E+2	2.62E+2	2.62E+2
III	3.90E+0	3.90E+0	3.90E+0	3.27E+0	3.27E+0	3.27E+0	2.61E+0	2.61E+0	2.61E+0	1.54E+0	1.54E+0	1.54E+0	8.88E-1	8.88E-1	8.88E-1	6.24E-1	6.24E-1	6.24E-1
IV	4.41E+0	4.41E+0	4.41E+0	4.01E+0	4.01E+0	4.01E+0	3.61E+0	3.61E+0	3.61E+0	2.80E+0	2.80E+0	2.80E+0	2.00E+0	2.00E+0	2.00E+0	2.00E+0	2.00E+0	2.00E+0
V	3.26E+2	3.26E+2	3.26E+2	3.16E+2	3.16E+2	3.16E+2	3.06E+2	3.06E+2	3.06E+2	2.86E+2	2.86E+2	2.86E+2	2.66E+2	2.66E+2	2.66E+2	2.52E+2	2.52E+2	2.52E+2
VI	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.13E+2	1.13E+2	1.13E+2	1.12E+2	1.12E+2	1.12E+2	1.11E+2	1.11E+2	1.11E+2	1.09E+2	1.09E+2	1.09E+2
VII	1.80E+2	1.80E+2	1.80E+2	6.40E+1	6.40E+1	6.40E+1	6.10E+0	6.10E+0	6.10E+0	5.42E-1	5.42E-1	5.42E-1	1.51E-1	1.51E-1	1.51E-1	.00E+0	.00E+0	.00E+0
IX	1.39E-1	1.39E-1	1.39E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	7.57E-1	9.01E-1	9.01E-1	6.60E-1	7.69E-1	7.69E-1	6.07E-1	6.86E-1	6.86E-1	5.41E-1	5.93E-1	5.93E-1	4.93E-1	5.38E-1	5.38E-1	4.45E-1	4.78E-1	4.78E-1
XII	8.72E+0	8.72E+0	8.72E+0	8.68E+0	8.68E+0	8.68E+0	8.66E+0	8.66E+0	8.66E+0	8.61E+0	8.61E+0	8.61E+0	8.57E+0	8.57E+0	8.57E+0	8.52E+0	8.52E+0	8.52E+0
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.10E-1	1.10E-1	1.10E-1	1.09E-1	1.09E-1	1.09E-1	1.07E-1	1.07E-1	1.07E-1
XVIB	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.10E-1	1.10E-1	1.10E-1	1.09E-1	1.09E-1	1.09E-1	1.07E-1	1.07E-1	1.07E-1
XVIC	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.10E-1	1.10E-1	1.10E-1	1.09E-1	1.09E-1	1.09E-1	1.07E-1	1.07E-1	1.07E-1
XVIIIA	9.86E-2	9.86E-2	9.86E-2	9.84E-2	9.84E-2	9.84E-2	9.79E-2	9.79E-2	9.79E-2	9.69E-2	9.69E-2	9.69E-2	9.60E-2	9.60E-2	9.60E-2	9.45E-2	9.45E-2	9.45E-2
XVIIIB	9.86E-2	9.86E-2	9.86E-2	9.84E-2	9.84E-2	9.84E-2	9.79E-2	9.79E-2	9.79E-2	9.69E-2	9.69E-2	9.69E-2	9.60E-2	9.60E-2	9.60E-2	9.45E-2	9.45E-2	9.45E-2
XVIIIC	9.86E-2	9.86E-2	9.86E-2	9.84E-2	9.84E-2	9.84E-2	9.79E-2	9.79E-2	9.79E-2	9.69E-2	9.69E-2	9.69E-2	9.60E-2	9.60E-2	9.60E-2	9.45E-2	9.45E-2	9.45E-2
XXA	1.27E-2	1.42E-2	1.42E-2	1.07E-2	1.23E-2	1.23E-2	9.49E-3	1.12E-2	1.12E-2	7.94E-3	9.63E-3	9.63E-3	6.69E-3	8.57E-3	8.57E-3	4.79E-3	7.50E-3	7.50E-3
XXB	1.27E-2	1.37E-2	1.37E-2	1.07E-2	1.18E-2	1.18E-2	9.49E-3	1.06E-2	1.06E-2	7.94E-3	9.07E-3	9.07E-3	6.69E-3	8.07E-3	8.07E-3	4.79E-3	6.81E-3	6.81E-3
XXC	1.27E-2	1.27E-2	1.27E-2	1.07E-2	1.07E-2	1.07E-2	9.49E-3	9.49E-3	9.49E-3	7.94E-3	7.94E-3	7.94E-3	6.69E-3	6.69E-3	6.69E-3	4.79E-3	4.79E-3	4.79E-3
XXIA	2.52E+0	2.52E+0	2.52E+0	2.50E+0	2.50E+0	2.50E+0	2.47E+0	2.47E+0	2.47E+0	2.41E+0	2.41E+0	2.41E+0	2.31E+0	2.31E+0	2.31E+0	2.17E+0	2.17E+0	2.17E+0
XXIB	2.52E+0	2.52E+0	2.52E+0	2.50E+0	2.50E+0	2.50E+0	2.47E+0	2.47E+0	2.47E+0	2.41E+0	2.41E+0	2.41E+0	2.31E+0	2.31E+0	2.31E+0	2.17E+0	2.17E+0	2.17E+0
XXIC	2.52E+0	2.52E+0	2.52E+0	2.50E+0	2.50E+0	2.50E+0	2.47E+0	2.47E+0	2.47E+0	2.41E+0	2.41E+0	2.41E+0	2.31E+0	2.31E+0	2.31E+0	2.17E+0	2.17E+0	2.17E+0
XXII	6.34E+1	6.36E+1	6.36E+1	6.28E+1	6.29E+1	6.29E+1	6.21E+1	6.24E+1	6.24E+1	6.05E+1	6.08E+1	6.08E+1	5.94E+1	5.97E+1	5.97E+1	5.87E+1	5.89E+1	5.89E+1
DOE	3.82E+3	3.82E+3	3.82E+3	3.67E+3	3.67E+3	3.67E+3	3.59E+3	3.59E+3	3.59E+3	3.52E+3	3.52E+3	3.52E+3	3.46E+3	3.46E+3	3.46E+3	3.39E+3	3.40E+3	3.40E+3
DOD	8.72E+0	8.72E+0	8.72E+0	8.68E+0	8.68E+0	8.68E+0	8.66E+0	8.66E+0	8.66E+0	8.61E+0	8.61E+0	8.61E+0	8.57E+0	8.57E+0	8.57E+0	8.52E+0	8.52E+0	8.52E+0
NRC	7.59E+1	7.59E+1	7.59E+1	7.52E+1	7.52E+1	7.52E+1	7.45E+1	7.46E+1	7.46E+1	7.30E+1	7.30E+1	7.30E+1	7.05E+1	7.05E+1	7.05E+1	6.71E+1	6.71E+1	6.71E+1
Total	3.90E+3	3.90E+3	3.90E+3	3.76E+3	3.76E+3	3.76E+3	3.67E+3	3.67E+3	3.67E+3	3.60E+3	3.60E+3	3.60E+3	3.54E+3	3.54E+3	3.54E+3	3.47E+3	3.47E+3	3.47E+3

TABLE K-21. POTENTIAL CANCERS AMONG WORKERS--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.99E-3	8.99E-3	8.99E-3	8.83E-3	8.83E-3	8.83E-3	8.35E-3	8.35E-3	8.35E-3	6.70E-3	6.70E-3	6.70E-3	3.00E-3	3.00E-3	3.00E-3
II	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.52E-1	1.52E-1	1.52E-1
III	3.71E-3	3.71E-3	3.71E-3	3.70E-3	3.70E-3	3.70E-3	3.45E-3	3.45E-3	3.45E-3	1.83E-3	1.83E-3	1.83E-3	.00E+0	.00E+0	.00E+0
IV	7.33E-4	7.33E-4	7.33E-4	7.24E-4	7.24E-4	7.24E-4	6.91E-4	6.91E-4	6.91E-4	5.44E-4	5.44E-4	5.44E-4	.00E+0	.00E+0	.00E+0
V	2.35E-1	2.35E-1	2.35E-1	2.34E-1	2.34E-1	2.34E-1	2.32E-1	2.32E-1	2.32E-1	2.12E-1	2.12E-1	2.12E-1	1.39E-1	1.39E-1	1.39E-1
VI	2.61E-2	2.61E-2	2.61E-2	2.61E-2	2.61E-2	2.61E-2	2.60E-2	2.60E-2	2.60E-2	2.53E-2	2.53E-2	2.53E-2	2.11E-2	2.11E-2	2.11E-2
VII	6.01E-2	6.01E-2	6.01E-2	5.06E-2	5.06E-2	5.06E-2	3.74E-2	3.74E-2	3.74E-2	9.70E-4	9.70E-4	9.70E-4	.00E+0	.00E+0	.00E+0
IX	2.03E-4	2.03E-4	2.03E-4	1.48E-4	1.48E-4	1.48E-4	5.06E-5	5.06E-5	5.06E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.45E-4	1.45E-4	1.45E-4	1.45E-4	1.45E-4	1.45E-4	1.27E-4	1.40E-4	1.40E-4	8.18E-5	9.04E-5	9.04E-5	3.53E-5	3.72E-5	3.72E-5
XII	6.00E-4	6.00E-4	6.00E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.91E-4	5.91E-4	5.91E-4	5.58E-4	5.58E-4	5.58E-4
XIIIA	4.02E-7	4.02E-7	4.02E-7	2.88E-7	2.88E-7	2.88E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	4.02E-7	4.02E-7	4.02E-7	2.88E-7	2.88E-7	2.88E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	4.02E-7	4.02E-7	4.02E-7	2.88E-7	2.88E-7	2.88E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	7.93E-5	7.93E-5	7.93E-5	6.58E-5	6.58E-5	6.58E-5
XVIB	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	7.93E-5	7.93E-5	7.93E-5	6.58E-5	6.58E-5	6.58E-5
XVIC	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	7.93E-5	7.93E-5	7.93E-5	6.58E-5	6.58E-5	6.58E-5
XVIIIA	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.71E-5	6.71E-5	6.71E-5	5.87E-5	5.87E-5	5.87E-5
XVIIIB	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.71E-5	6.71E-5	6.71E-5	5.87E-5	5.87E-5	5.87E-5
XVIIIC	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.71E-5	6.71E-5	6.71E-5	5.87E-5	5.87E-5	5.87E-5
XXA	4.20E-5	4.23E-5	4.23E-5	2.65E-5	2.93E-5	2.93E-5	5.52E-6	9.50E-6	9.50E-6	1.31E-6	1.45E-6	1.45E-6	.00E+0	2.78E-7	2.78E-7
XXB	4.20E-5	4.20E-5	4.20E-5	2.65E-5	2.65E-5	2.65E-5	5.52E-6	5.52E-6	5.52E-6	1.31E-6	1.31E-6	1.31E-6	.00E+0	.00E+0	.00E+0
XXC	4.20E-5	4.20E-5	4.20E-5	2.65E-5	2.65E-5	2.65E-5	5.52E-6	5.52E-6	5.52E-6	1.31E-6	1.31E-6	1.31E-6	.00E+0	.00E+0	.00E+0
XXIA	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3	1.13E-3	1.13E-3	1.13E-3	7.71E-4	7.71E-4	7.71E-4
XXIB	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3	1.13E-3	1.13E-3	1.13E-3	7.71E-4	7.71E-4	7.71E-4
XXIC	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3	1.13E-3	1.13E-3	1.13E-3	7.71E-4	7.71E-4	7.71E-4
XXII	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.95E-2	2.95E-2	2.95E-2	2.86E-2	2.87E-2	2.87E-2	1.98E-2	2.11E-2	2.11E-2
DOE	1.26E+0	1.26E+0	1.26E+0	1.25E+0	1.25E+0	1.25E+0	1.23E+0	1.23E+0	1.23E+0	1.15E+0	1.15E+0	1.15E+0	9.10E-1	9.20E-1	9.20E-1
DOD	6.03E-4	6.03E-4	6.03E-4	6.02E-4	6.02E-4	6.02E-4	5.99E-4	5.99E-4	5.99E-4	5.91E-4	5.91E-4	5.91E-4	5.58E-4	5.58E-4	5.58E-4
NRC	4.06E-2	4.06E-2	4.06E-2	4.03E-2	4.04E-2	4.04E-2	4.00E-2	4.00E-2	4.00E-2	3.91E-2	3.91E-2	3.91E-2	2.89E-2	2.89E-2	2.89E-2
Total	1.30E+0	1.30E+0	1.30E+0	1.29E+0	1.29E+0	1.29E+0	1.27E+0	1.27E+0	1.27E+0	1.19E+0	1.19E+0	1.19E+0	9.40E-1	9.49E-1	9.49E-1

TABLE K-22. POTENTIAL CANCERS AMONG WORKERS--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.35E-3	8.35E-3	8.35E-3	8.00E-3	8.00E-3	8.00E-3	7.73E-3	7.73E-3	7.73E-3	7.34E-3	7.34E-3	7.34E-3	7.04E-3	7.04E-3	7.04E-3	6.70E-3	6.70E-3	6.70E-3
II	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1
III	3.45E-3	3.45E-3	3.45E-3	3.01E-3	3.01E-3	3.01E-3	2.74E-3	2.74E-3	2.74E-3	2.51E-3	2.51E-3	2.51E-3	2.24E-3	2.24E-3	2.24E-3	1.83E-3	1.83E-3	1.83E-3
IV	6.91E-4	6.91E-4	6.91E-4	6.73E-4	6.73E-4	6.73E-4	6.57E-4	6.57E-4	6.57E-4	6.25E-4	6.25E-4	6.25E-4	5.93E-4	5.93E-4	5.93E-4	5.44E-4	5.44E-4	5.44E-4
V	2.32E-1	2.32E-1	2.32E-1	2.29E-1	2.29E-1	2.29E-1	2.26E-1	2.26E-1	2.26E-1	2.22E-1	2.22E-1	2.22E-1	2.18E-1	2.18E-1	2.18E-1	2.12E-1	2.12E-1	2.12E-1
VI	2.60E-2	2.60E-2	2.60E-2	2.59E-2	2.59E-2	2.59E-2	2.58E-2	2.58E-2	2.58E-2	2.56E-2	2.56E-2	2.56E-2	2.55E-2	2.55E-2	2.55E-2	2.53E-2	2.53E-2	2.53E-2
VII	3.74E-2	3.74E-2	3.74E-2	2.45E-2	2.45E-2	2.45E-2	1.71E-2	1.71E-2	1.71E-2	1.03E-2	1.03E-2	1.03E-2	5.79E-3	5.79E-3	5.79E-3	9.70E-4	9.70E-4	9.70E-4
IX	5.06E-5	5.06E-5	5.06E-5	2.42E-5	2.42E-5	2.42E-5	1.43E-5	1.43E-5	1.43E-5	5.05E-6	5.05E-6	5.05E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.27E-4	1.40E-4	1.40E-4	1.13E-4	1.32E-4	1.32E-4	1.05E-4	1.24E-4	1.24E-4	9.46E-5	1.10E-4	1.10E-4	8.82E-5	1.00E-4	1.00E-4	8.18E-5	9.04E-5	9.04E-5
XII	5.99E-4	5.99E-4	5.99E-4	5.97E-4	5.97E-4	5.97E-4	5.96E-4	5.96E-4	5.96E-4	5.94E-4	5.94E-4	5.94E-4	5.92E-4	5.92E-4	5.92E-4	5.91E-4	5.91E-4	5.91E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	8.05E-5	8.05E-5	8.05E-5	8.04E-5	8.04E-5	8.04E-5	8.02E-5	8.02E-5	8.02E-5	7.99E-5	7.99E-5	7.99E-5	7.96E-5	7.96E-5	7.96E-5	7.93E-5	7.93E-5	7.93E-5
XVIB	8.05E-5	8.05E-5	8.05E-5	8.04E-5	8.04E-5	8.04E-5	8.02E-5	8.02E-5	8.02E-5	7.99E-5	7.99E-5	7.99E-5	7.96E-5	7.96E-5	7.96E-5	7.93E-5	7.93E-5	7.93E-5
XVIC	8.05E-5	8.05E-5	8.05E-5	8.04E-5	8.04E-5	8.04E-5	8.02E-5	8.02E-5	8.02E-5	7.99E-5	7.99E-5	7.99E-5	7.96E-5	7.96E-5	7.96E-5	7.93E-5	7.93E-5	7.93E-5
XVIIIA	6.76E-5	6.76E-5	6.76E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.74E-5	6.74E-5	6.74E-5	6.74E-5	6.74E-5	6.74E-5	6.71E-5	6.71E-5	6.71E-5
XVIIIB	6.76E-5	6.76E-5	6.76E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.74E-5	6.74E-5	6.74E-5	6.74E-5	6.74E-5	6.74E-5	6.71E-5	6.71E-5	6.71E-5
XVIIIC	6.76E-5	6.76E-5	6.76E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.74E-5	6.74E-5	6.74E-5	6.74E-5	6.74E-5	6.74E-5	6.71E-5	6.71E-5	6.71E-5
XXA	5.52E-6	9.50E-6	9.50E-6	1.85E-6	2.88E-6	2.88E-6	1.72E-6	1.85E-6	1.85E-6	1.55E-6	1.69E-6	1.69E-6	1.44E-6	1.57E-6	1.57E-6	1.31E-6	1.45E-6	1.45E-6
XXB	5.52E-6	5.52E-6	5.52E-6	1.85E-6	1.85E-6	1.85E-6	1.72E-6	1.72E-6	1.72E-6	1.55E-6	1.55E-6	1.55E-6	1.44E-6	1.44E-6	1.44E-6	1.31E-6	1.31E-6	1.31E-6
XXC	5.52E-6	5.52E-6	5.52E-6	1.85E-6	1.85E-6	1.85E-6	1.72E-6	1.72E-6	1.72E-6	1.55E-6	1.55E-6	1.55E-6	1.44E-6	1.44E-6	1.44E-6	1.31E-6	1.31E-6	1.31E-6
XXIA	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.15E-3	1.15E-3	1.15E-3	1.14E-3	1.14E-3	1.14E-3	1.13E-3	1.13E-3	1.13E-3
XXIB	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.15E-3	1.15E-3	1.15E-3	1.14E-3	1.14E-3	1.14E-3	1.13E-3	1.13E-3	1.13E-3
XXIC	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.15E-3	1.15E-3	1.15E-3	1.14E-3	1.14E-3	1.14E-3	1.13E-3	1.13E-3	1.13E-3
XXII	2.95E-2	2.95E-2	2.95E-2	2.94E-2	2.94E-2	2.94E-2	2.92E-2	2.93E-2	2.93E-2	2.90E-2	2.91E-2	2.91E-2	2.89E-2	2.89E-2	2.89E-2	2.86E-2	2.87E-2	2.87E-2
DOE	1.23E+0	1.23E+0	1.23E+0	1.21E+0	1.21E+0	1.21E+0	1.20E+0	1.20E+0	1.20E+0	1.18E+0	1.18E+0	1.18E+0	1.17E+0	1.17E+0	1.17E+0	1.15E+0	1.15E+0	1.15E+0
DOD	5.99E-4	5.99E-4	5.99E-4	5.97E-4	5.97E-4	5.97E-4	5.96E-4	5.96E-4	5.96E-4	5.94E-4	5.94E-4	5.94E-4	5.92E-4	5.92E-4	5.92E-4	5.91E-4	5.91E-4	5.91E-4
NRC	4.00E-2	4.00E-2	4.00E-2	3.99E-2	3.99E-2	3.99E-2	3.98E-2	3.98E-2	3.98E-2	3.96E-2	3.96E-2	3.96E-2	3.94E-2	3.94E-2	3.94E-2	3.91E-2	3.91E-2	3.91E-2
Total	1.27E+0	1.27E+0	1.27E+0	1.25E+0	1.25E+0	1.25E+0	1.24E+0	1.24E+0	1.24E+0	1.22E+0	1.22E+0	1.22E+0	1.21E+0	1.21E+0	1.21E+0	1.19E+0	1.19E+0	1.19E+0

TABLE K-23. POTENTIAL CANCERS AMONG WORKERS--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.93E-3	8.93E-3	8.93E-3	8.64E-3	8.64E-3	8.64E-3	7.64E-3	7.64E-3	7.64E-3	5.13E-3	5.13E-3	5.13E-3	1.31E-3	1.31E-3	1.31E-3
II	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.29E-1	1.31E-1	1.31E-1
III	3.71E-3	3.71E-3	3.71E-3	3.67E-3	3.67E-3	3.67E-3	2.70E-3	2.70E-3	2.70E-3	4.32E-4	4.32E-4	4.32E-4	.00E+0	.00E+0	.00E+0
IV	7.29E-4	7.29E-4	7.29E-4	7.11E-4	7.11E-4	7.11E-4	6.46E-4	6.46E-4	6.46E-4	1.16E-4	1.16E-4	1.16E-4	.00E+0	.00E+0	.00E+0
V	2.34E-1	2.34E-1	2.34E-1	2.34E-1	2.34E-1	2.34E-1	2.26E-1	2.26E-1	2.26E-1	1.74E-1	1.74E-1	1.74E-1	4.90E-2	4.90E-2	4.90E-2
VI	2.61E-2	2.61E-2	2.61E-2	2.60E-2	2.60E-2	2.60E-2	2.57E-2	2.57E-2	2.57E-2	2.36E-2	2.36E-2	2.36E-2	1.47E-2	1.47E-2	1.47E-2
VII	5.54E-2	5.54E-2	5.54E-2	4.68E-2	4.68E-2	4.68E-2	1.46E-2	1.46E-2	1.46E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	1.75E-4	1.75E-4	1.75E-4	9.14E-5	9.14E-5	9.14E-5	9.48E-6	9.48E-6	9.48E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.45E-4	1.45E-4	1.45E-4	1.39E-4	1.45E-4	1.45E-4	1.07E-4	1.27E-4	1.27E-4	6.27E-5	6.74E-5	6.74E-5	2.02E-5	2.10E-5	2.10E-5
XII	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.94E-4	5.94E-4	5.94E-4	5.80E-4	5.80E-4	5.80E-4	1.87E-4	1.87E-4	1.87E-4
XIIIA	3.65E-7	3.65E-7	3.65E-7	1.40E-7	1.40E-7	1.40E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.65E-7	3.65E-7	3.65E-7	1.40E-7	1.40E-7	1.40E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	3.65E-7	3.65E-7	3.65E-7	1.40E-7	1.40E-7	1.40E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.02E-5	8.02E-5	8.02E-5	7.64E-5	7.64E-5	7.64E-5	3.95E-5	3.95E-5	3.95E-5
XVIB	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.02E-5	8.02E-5	8.02E-5	7.64E-5	7.64E-5	7.64E-5	3.95E-5	3.95E-5	3.95E-5
XVIC	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.02E-5	8.02E-5	8.02E-5	7.64E-5	7.64E-5	7.64E-5	3.95E-5	3.95E-5	3.95E-5
XVIIIA	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.75E-5	6.75E-5	6.75E-5	6.47E-5	6.47E-5	6.47E-5	4.44E-5	4.44E-5	4.44E-5
XVIIIB	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.75E-5	6.75E-5	6.75E-5	6.47E-5	6.47E-5	6.47E-5	4.44E-5	4.44E-5	4.44E-5
XVIIIC	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.75E-5	6.75E-5	6.75E-5	6.47E-5	6.47E-5	6.47E-5	4.44E-5	4.44E-5	4.44E-5
XXA	3.18E-5	3.56E-5	3.56E-5	1.38E-5	1.90E-5	1.90E-5	1.57E-6	1.76E-6	1.76E-6	5.92E-7	9.27E-7	9.27E-7	.00E+0	.00E+0	.00E+0
XXB	3.18E-5	3.44E-5	3.44E-5	1.38E-5	1.73E-5	1.73E-5	1.57E-6	1.70E-6	1.70E-6	5.92E-7	8.41E-7	8.41E-7	.00E+0	.00E+0	.00E+0
XXC	3.18E-5	3.18E-5	3.18E-5	1.38E-5	1.38E-5	1.38E-5	1.57E-6	1.57E-6	1.57E-6	5.92E-7	5.92E-7	5.92E-7	.00E+0	.00E+0	.00E+0
XXIA	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3	9.94E-4	9.94E-4	9.94E-4	3.55E-4	3.55E-4	3.55E-4
XXIB	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3	9.94E-4	9.94E-4	9.94E-4	3.55E-4	3.55E-4	3.55E-4
XXIC	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3	9.94E-4	9.94E-4	9.94E-4	3.55E-4	3.55E-4	3.55E-4
XXII	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.92E-2	2.93E-2	2.93E-2	2.70E-2	2.71E-2	2.71E-2	.00E+0	.00E+0	.00E+0
DOE	1.25E+0	1.25E+0	1.25E+0	1.24E+0	1.24E+0	1.24E+0	1.19E+0	1.19E+0	1.19E+0	1.06E+0	1.06E+0	1.06E+0	5.14E-1	5.16E-1	5.16E-1
DOD	6.02E-4	6.02E-4	6.02E-4	6.00E-4	6.00E-4	6.00E-4	5.94E-4	5.94E-4	5.94E-4	5.80E-4	5.80E-4	5.80E-4	1.87E-4	1.87E-4	1.87E-4
NRC	4.04E-2	4.04E-2	4.04E-2	4.02E-2	4.02E-2	4.02E-2	3.97E-2	3.97E-2	3.97E-2	3.55E-2	3.55E-2	3.55E-2	1.55E-2	1.55E-2	1.55E-2
Total	1.29E+0	1.29E+0	1.29E+0	1.28E+0	1.28E+0	1.28E+0	1.23E+0	1.23E+0	1.23E+0	1.09E+0	1.09E+0	1.09E+0	5.29E-1	5.32E-1	5.32E-1

Reasonable Occupancy Scenario - 09-13-94 4:14p
 TABLE K-190. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.97E-1	7.62E-1	7.62E-1	6.69E-1	7.31E-1	7.31E-1	6.46E-1	7.06E-1	7.06E-1	6.13E-1	6.70E-1	6.70E-1	5.88E-1	6.43E-1	6.43E-1	5.60E-1	6.12E-1	6.12E-1
II	4.82E+1	4.50E+2	2.22E+3	4.82E+1	4.50E+2	2.21E+3	4.82E+1	4.50E+2	2.21E+3	4.82E+1	4.49E+2	2.20E+3	4.82E+1	4.49E+2	2.20E+3	4.82E+1	4.49E+2	2.19E+3
III	3.03E-1	3.36E-1	3.36E-1	2.64E-1	2.92E-1	2.92E-1	2.40E-1	2.66E-1	2.66E-1	2.20E-1	2.43E-1	2.43E-1	1.96E-1	2.17E-1	2.17E-1	1.61E-1	1.78E-1	1.78E-1
IV	2.63E-1	1.48E+0	2.86E+0	2.56E-1	1.44E+0	2.79E+0	2.50E-1	1.40E+0	2.72E+0	2.38E-1	1.34E+0	2.59E+0	2.26E-1	1.27E+0	2.46E+0	2.07E-1	1.16E+0	2.26E+0
V	1.93E+1	2.10E+1	2.10E+1	1.91E+1	2.07E+1	2.07E+1	1.88E+1	2.05E+1	2.05E+1	1.85E+1	2.01E+1	2.01E+1	1.82E+1	1.98E+1	1.98E+1	1.77E+1	1.92E+1	1.92E+1
VI	1.17E+1	7.88E+1	5.55E+2	1.17E+1	7.88E+1	5.55E+2	1.17E+1	7.87E+1	5.55E+2	1.16E+1	7.86E+1	5.54E+2	1.16E+1	7.85E+1	5.53E+2	1.15E+1	7.83E+1	5.52E+2
VII	1.31E+0	9.01E+0	5.95E+1	8.58E-1	5.96E+0	3.93E+1	6.00E-1	4.20E+0	2.78E+1	3.61E-1	2.56E+0	1.70E+1	2.04E-1	1.45E+0	9.60E+0	3.38E-2	2.33E-1	1.54E+0
IX	1.12E-2	9.73E-2	6.06E-1	5.34E-3	4.65E-2	2.90E-1	3.16E-3	2.75E-2	1.71E-1	1.12E-3	9.71E-3	6.05E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.02E+0	3.13E+0	3.46E+0	1.01E+0	3.00E+0	3.31E+0	1.01E+0	2.88E+0	3.17E+0	1.00E+0	2.66E+0	2.92E+0	9.99E-1	2.51E+0	2.74E+0	9.92E-1	2.36E+0	2.57E+0
XII	2.63E-2	8.14E-2	8.38E-2	2.63E-2	8.12E-2	8.36E-2	2.62E-2	8.11E-2	8.34E-2	2.61E-2	8.08E-2	8.31E-2	2.61E-2	8.06E-2	8.29E-2	2.60E-2	8.04E-2	8.27E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	2.18E-3	2.30E-3	2.30E-3	2.18E-3	2.30E-3	2.30E-3	2.17E-3	2.30E-3	2.30E-3	2.17E-3	2.29E-3	2.29E-3	2.16E-3	2.29E-3	2.29E-3	2.16E-3	2.28E-3	2.28E-3
XVIB	2.16E-3	2.28E-3	2.28E-3	2.15E-3	2.28E-3	2.28E-3	2.15E-3	2.27E-3	2.27E-3	2.15E-3	2.27E-3	2.27E-3	2.14E-3	2.26E-3	2.26E-3	2.13E-3	2.26E-3	2.26E-3
XVIC	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.21E-3	2.21E-3	2.10E-3	2.21E-3	2.21E-3	2.10E-3	2.21E-3	2.20E-3	2.09E-3	2.20E-3	2.20E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.64E-2	2.93E-2	2.93E-2	2.63E-2	2.91E-2	2.91E-2
XVIIIB	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.87E-2	2.87E-2	2.60E-2	2.87E-2	2.87E-2	2.60E-2	2.87E-2	2.87E-2	2.59E-2	2.86E-2	2.86E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.51E-2	2.73E-2	2.73E-2
XXA	1.67E-3	1.30E-2	1.02E-1	5.62E-4	4.38E-3	3.45E-2	5.24E-4	4.08E-3	3.21E-2	4.72E-4	3.68E-3	2.90E-2	4.37E-4	3.40E-3	2.68E-2	3.97E-4	3.10E-3	2.44E-2
XXB	1.59E-3	9.25E-3	4.12E-2	5.35E-4	3.11E-3	1.39E-2	4.99E-4	2.90E-3	1.29E-2	4.50E-4	2.61E-3	1.17E-2	4.16E-4	2.42E-3	1.08E-2	3.78E-4	2.20E-3	9.82E-3
XXC	1.44E-3	5.20E-3	1.17E-1	4.84E-4	1.75E-3	3.95E-2	4.51E-4	1.63E-3	3.68E-2	4.07E-4	1.47E-3	3.32E-2	3.76E-4	1.36E-3	3.07E-2	3.42E-4	1.24E-3	2.79E-2
XXIA	7.46E-2	7.79E-1	7.34E+0	7.44E-2	7.77E-1	7.31E+0	7.42E-2	7.74E-1	7.29E+0	7.37E-2	7.70E-1	7.25E+0	7.33E-2	7.65E-1	7.21E+0	7.26E-2	7.58E-1	7.14E+0
XXIB	7.40E-2	7.66E-1	6.64E+0	7.38E-2	7.64E-1	6.62E+0	7.36E-2	7.62E-1	6.60E+0	7.32E-2	7.57E-1	6.56E+0	7.27E-2	7.53E-1	6.52E+0	7.21E-2	7.46E-1	6.46E+0
XXIC	7.29E-2	7.39E-1	5.37E+0	7.27E-2	7.37E-1	5.36E+0	7.25E-2	7.34E-1	5.34E+0	7.20E-2	7.30E-1	5.31E+0	7.16E-2	7.26E-1	5.28E+0	7.10E-2	7.19E-1	5.23E+0
XXII	3.11E+0	3.09E+1	6.80E+1	3.10E+0	3.08E+1	6.77E+1	3.08E+0	3.06E+1	6.74E+1	3.06E+0	3.04E+1	6.69E+1	3.03E+0	3.02E+1	6.65E+1	2.97E+0	2.96E+1	6.52E+1
DOE	3.59E+2	2.49E+3	1.54E+4	3.57E+2	2.48E+3	1.53E+4	3.56E+2	2.48E+3	1.53E+4	3.55E+2	2.47E+3	1.53E+4	3.53E+2	2.47E+3	1.53E+4	3.50E+2	2.45E+3	1.52E+4
DOD	2.63E-2	8.14E-2	8.38E-2	2.63E-2	8.12E-2	8.36E-2	2.62E-2	8.11E-2	8.34E-2	2.61E-2	8.08E-2	8.31E-2	2.61E-2	8.06E-2	8.29E-2	2.60E-2	8.04E-2	8.27E-2
NRC	3.55E+0	1.90E+1	1.45E+2	3.53E+0	1.88E+1	1.44E+2	3.52E+0	1.88E+1	1.44E+2	3.51E+0	1.87E+1	1.43E+2	3.50E+0	1.86E+1	1.42E+2	3.48E+0	1.84E+1	1.40E+2
Total	3.62E+2	2.51E+3	1.55E+4	3.61E+2	2.50E+3	1.55E+4	3.60E+2	2.50E+3	1.55E+4	3.58E+2	2.49E+3	1.54E+4	3.57E+2	2.48E+3	1.54E+4	3.54E+2	2.47E+3	1.53E+4

Reasonable Occupancy Scenario - 09-13-94 4:14p
 TABLE K-191. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.46E-1	8.15E-1	8.15E-1	7.22E-1	7.89E-1	7.89E-1	6.38E-1	6.97E-1	6.97E-1	4.28E-1	4.68E-1	4.68E-1	1.09E-1	1.19E-1	1.19E-1
II	4.82E+1	4.51E+2	2.22E+3	4.82E+1	4.50E+2	2.22E+3	4.82E+1	4.50E+2	2.21E+3	4.80E+1	4.46E+2	2.17E+3	3.28E+1	3.13E+2	1.54E+3
III	3.25E-1	3.60E-1	3.60E-1	3.22E-1	3.56E-1	3.56E-1	2.37E-1	2.62E-1	2.62E-1	3.79E-2	4.19E-2	4.19E-2	.00E+0	.00E+0	.00E+0
IV	2.78E-1	1.56E+0	3.02E+0	2.71E-1	1.52E+0	2.94E+0	2.46E-1	1.38E+0	2.68E+0	4.41E-2	2.48E-1	4.80E-1	.00E+0	.00E+0	.00E+0
V	1.95E+1	2.13E+1	2.13E+1	1.94E+1	2.12E+1	2.12E+1	1.88E+1	2.04E+1	2.04E+1	1.45E+1	1.58E+1	1.58E+1	4.08E+0	4.44E+0	4.44E+0
VI	1.17E+1	7.88E+1	5.55E+2	1.17E+1	7.88E+1	5.55E+2	1.17E+1	7.87E+1	5.55E+2	1.10E+1	7.60E+1	5.37E+2	7.71E+0	5.73E+1	4.10E+2
VII	1.95E+0	1.38E+1	9.16E+1	1.64E+0	1.13E+1	7.49E+1	5.14E-1	3.62E+0	2.39E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	3.88E-2	3.37E-1	2.10E+0	2.02E-2	1.76E-1	1.09E+0	2.10E-3	1.82E-2	1.14E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.21E+0	3.55E+0	1.01E+0	2.93E+0	3.23E+0	9.61E-1	1.98E+0	2.14E+0	7.71E-1	1.09E+0	1.14E+0
XII	2.64E-2	8.15E-2	8.39E-2	2.64E-2	8.15E-2	8.38E-2	2.61E-2	8.07E-2	8.31E-2	2.55E-2	7.89E-2	8.11E-2	8.22E-3	2.54E-2	2.61E-2
XIIIA	1.58E-4	9.23E-4	2.17E-3	6.04E-5	3.54E-4	8.30E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.42E-4	6.01E-4	9.07E-4	5.42E-5	2.30E-4	3.48E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.16E-4	3.25E-4	5.87E-3	4.43E-5	1.24E-4	2.25E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIIA	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.30E-3	2.30E-3	2.17E-3	2.30E-3	2.30E-3	2.10E-3	2.23E-3	2.23E-3	1.18E-3	1.26E-3	1.26E-3
XVIB	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.15E-3	2.27E-3	2.27E-3	2.08E-3	2.20E-3	2.20E-3	1.17E-3	1.24E-3	1.24E-3
XVIC	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.21E-3	2.21E-3	2.04E-3	2.14E-3	2.14E-3	1.14E-3	1.21E-3	1.21E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.54E-2	2.81E-2	2.81E-2	1.74E-2	1.93E-2	1.93E-2
XVIIIB	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.87E-2	2.87E-2	2.50E-2	2.75E-2	2.75E-2	1.71E-2	1.89E-2	1.89E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.42E-2	2.64E-2	2.64E-2	1.66E-2	1.81E-2	1.81E-2
XXA	9.63E-3	7.50E-2	5.90E-1	4.19E-3	3.26E-2	2.56E-1	4.79E-4	3.73E-3	2.94E-2	1.81E-4	1.41E-3	1.11E-2	.00E+0	.00E+0	.00E+0
XXB	9.16E-3	5.33E-2	2.37E-1	3.98E-3	2.32E-2	1.03E-1	4.56E-4	2.65E-3	1.18E-2	1.72E-4	1.00E-3	4.47E-3	.00E+0	.00E+0	.00E+0
XXC	8.29E-3	3.00E-2	6.75E-1	3.60E-3	1.30E-2	2.94E-1	4.12E-4	1.49E-3	3.36E-2	1.56E-4	5.63E-4	1.27E-2	.00E+0	.00E+0	.00E+0
XXIA	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.41E-2	7.73E-1	7.28E+0	6.37E-2	6.65E-1	6.26E+0	2.28E-2	2.38E-1	2.24E+0
XXIB	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.35E-2	7.61E-1	6.59E+0	6.32E-2	6.54E-1	5.67E+0	2.26E-2	2.34E-1	2.03E+0
XXIC	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.24E-2	7.33E-1	5.34E+0	6.22E-2	6.31E-1	4.59E+0	2.22E-2	2.25E-1	1.64E+0
XXII	3.13E+0	3.11E+1	6.84E+1	3.13E+0	3.10E+1	6.83E+1	3.07E+0	3.06E+1	6.73E+1	2.81E+0	2.81E+1	6.18E+1	.00E+0	.00E+0	.00E+0
DOE	3.61E+2	2.50E+3	1.54E+4	3.60E+2	2.49E+3	1.54E+4	3.56E+2	2.48E+3	1.53E+4	3.34E+2	2.38E+3	1.48E+4	2.13E+2	1.62E+3	1.09E+4
DOD	2.75E-2	8.68E-2	1.09E-1	2.68E-2	8.35E-2	9.35E-2	2.61E-2	8.07E-2	8.31E-2	2.55E-2	7.89E-2	8.11E-2	8.22E-3	2.54E-2	2.61E-2
NRC	3.66E+0	1.96E+1	1.51E+2	3.58E+0	1.92E+1	1.47E+2	3.52E+0	1.87E+1	1.43E+2	3.21E+0	1.63E+1	1.23E+2	1.71E+0	6.44E+0	4.46E+1
Total	3.64E+2	2.52E+3	1.56E+4	3.64E+2	2.51E+3	1.55E+4	3.59E+2	2.50E+3	1.55E+4	3.37E+2	2.40E+3	1.49E+4	2.14E+2	1.63E+3	1.09E+4

Reasonable Occupancy Scenario - 09-13-94 4:14p
 TABLE K-192. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.38E-1	6.97E-1	6.97E-1	5.90E-1	6.45E-1	6.45E-1	5.58E-1	6.10E-1	6.10E-1	5.14E-1	5.62E-1	5.62E-1	4.86E-1	5.31E-1	5.31E-1	4.28E-1	4.68E-1	4.68E-1
II	4.82E+1	4.50E+2	2.21E+3	4.82E+1	4.49E+2	2.20E+3	4.82E+1	4.49E+2	2.19E+3	4.81E+1	4.48E+2	2.19E+3	4.81E+1	4.48E+2	2.18E+3	4.80E+1	4.46E+2	2.17E+3
III	2.37E-1	2.62E-1	2.62E-1	1.98E-1	2.20E-1	2.20E-1	1.58E-1	1.75E-1	1.75E-1	9.31E-2	1.03E-1	1.03E-1	5.38E-2	5.96E-2	5.96E-2	3.79E-2	4.19E-2	4.19E-2
IV	2.46E-1	1.38E+0	2.68E+0	2.24E-1	1.26E+0	2.43E+0	2.01E-1	1.13E+0	2.19E+0	1.56E-1	8.78E-1	1.70E+0	1.11E-1	6.26E-1	1.21E+0	4.41E-2	2.48E-1	4.80E-1
V	1.88E+1	2.04E+1	2.04E+1	1.82E+1	1.98E+1	1.98E+1	1.76E+1	1.92E+1	1.92E+1	1.64E+1	1.79E+1	1.79E+1	1.53E+1	1.66E+1	1.66E+1	1.45E+1	1.58E+1	1.58E+1
VI	1.17E+1	7.87E+1	5.55E+2	1.16E+1	7.85E+1	5.53E+2	1.15E+1	7.82E+1	5.52E+2	1.14E+1	7.77E+1	5.48E+2	1.12E+1	7.70E+1	5.44E+2	1.10E+1	7.60E+1	5.37E+2
VII	5.14E-1	3.62E+0	2.39E+1	1.81E-1	1.28E+0	8.52E+0	1.81E-2	1.22E-1	8.06E-1	1.86E-3	1.09E-2	7.00E-2	5.47E-4	3.05E-3	1.94E-2	.00E+0	.00E+0	.00E+0
IX	2.10E-3	1.82E-2	1.14E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.01E+0	2.93E+0	3.23E+0	1.00E+0	2.64E+0	2.90E+0	9.96E-1	2.46E+0	2.69E+0	9.85E-1	2.25E+0	2.45E+0	9.74E-1	2.12E+0	2.30E+0	9.61E-1	1.98E+0	2.14E+0
XII	2.61E-2	8.07E-2	8.31E-2	2.60E-2	8.04E-2	8.27E-2	2.59E-2	8.02E-2	8.25E-2	2.58E-2	7.98E-2	8.21E-2	2.57E-2	7.94E-2	8.17E-2	2.55E-2	7.89E-2	8.11E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	2.17E-3	2.30E-3	2.30E-3	2.16E-3	2.29E-3	2.29E-3	2.16E-3	2.28E-3	2.28E-3	2.15E-3	2.27E-3	2.27E-3	2.13E-3	2.26E-3	2.26E-3	2.10E-3	2.23E-3	2.23E-3
XVIB	2.15E-3	2.27E-3	2.27E-3	2.14E-3	2.26E-3	2.26E-3	2.14E-3	2.26E-3	2.26E-3	2.13E-3	2.25E-3	2.25E-3	2.11E-3	2.23E-3	2.23E-3	2.08E-3	2.20E-3	2.20E-3
XVIC	2.11E-3	2.21E-3	2.21E-3	2.10E-3	2.20E-3	2.20E-3	2.09E-3	2.20E-3	2.20E-3	2.08E-3	2.19E-3	2.19E-3	2.07E-3	2.17E-3	2.17E-3	2.04E-3	2.14E-3	2.14E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.64E-2	2.92E-2	2.92E-2	2.63E-2	2.91E-2	2.91E-2	2.60E-2	2.88E-2	2.88E-2	2.58E-2	2.85E-2	2.85E-2	2.54E-2	2.81E-2	2.81E-2
XVIIIB	2.61E-2	2.87E-2	2.87E-2	2.60E-2	2.87E-2	2.87E-2	2.59E-2	2.85E-2	2.85E-2	2.56E-2	2.83E-2	2.83E-2	2.54E-2	2.80E-2	2.80E-2	2.50E-2	2.75E-2	2.75E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.74E-2	2.74E-2	2.50E-2	2.73E-2	2.73E-2	2.48E-2	2.70E-2	2.70E-2	2.45E-2	2.68E-2	2.68E-2	2.42E-2	2.64E-2	2.64E-2
XXA	4.79E-4	3.73E-3	2.94E-2	4.04E-4	3.15E-3	2.48E-2	3.58E-4	2.79E-3	2.20E-2	2.99E-4	2.33E-3	1.84E-2	2.52E-4	1.97E-3	1.55E-2	1.81E-4	1.41E-3	1.11E-2
XXB	4.56E-4	2.65E-3	1.18E-2	3.85E-4	2.24E-3	9.99E-3	3.40E-4	1.98E-3	8.84E-3	2.85E-4	1.66E-3	7.41E-3	2.40E-4	1.40E-3	6.24E-3	1.72E-4	1.00E-3	4.47E-3
XXC	4.12E-4	1.49E-3	3.36E-2	3.48E-4	1.26E-3	2.84E-2	3.08E-4	1.11E-3	2.51E-2	2.58E-4	9.32E-4	2.10E-2	2.17E-4	7.85E-4	1.77E-2	1.56E-4	5.63E-4	1.27E-2
XXIA	7.41E-2	7.73E-1	7.28E+0	7.33E-2	7.65E-1	7.21E+0	7.25E-2	7.58E-1	7.13E+0	7.08E-2	7.39E-1	6.96E+0	6.77E-2	7.07E-1	6.65E+0	6.37E-2	6.65E-1	6.26E+0
XXIB	7.35E-2	7.61E-1	6.59E+0	7.28E-2	7.53E-1	6.52E+0	7.20E-2	7.45E-1	6.46E+0	7.02E-2	7.27E-1	6.30E+0	6.72E-2	6.95E-1	6.02E+0	6.32E-2	6.54E-1	5.67E+0
XXIC	7.24E-2	7.33E-1	5.34E+0	7.16E-2	7.26E-1	5.28E+0	7.09E-2	7.18E-1	5.23E+0	6.92E-2	7.01E-1	5.10E+0	6.61E-2	6.70E-1	4.88E+0	6.22E-2	6.31E-1	4.59E+0
XXII	3.07E+0	3.06E+1	6.73E+1	3.03E+0	3.03E+1	6.66E+1	2.96E+0	2.96E+1	6.51E+1	2.88E+0	2.88E+1	6.33E+1	2.85E+0	2.85E+1	6.27E+1	2.81E+0	2.81E+1	6.18E+1
DOE	3.56E+2	2.48E+3	1.53E+4	3.53E+2	2.47E+3	1.53E+4	3.50E+2	2.45E+3	1.52E+4	3.45E+2	2.43E+3	1.51E+4	3.40E+2	2.41E+3	1.50E+4	3.34E+2	2.38E+3	1.48E+4
DOD	2.61E-2	8.07E-2	8.31E-2	2.60E-2	8.04E-2	8.27E-2	2.59E-2	8.02E-2	8.25E-2	2.58E-2	7.98E-2	8.21E-2	2.57E-2	7.94E-2	8.17E-2	2.55E-2	7.89E-2	8.11E-2
NRC	3.52E+0	1.87E+1	1.43E+2	3.50E+0	1.86E+1	1.42E+2	3.47E+0	1.84E+1	1.40E+2	3.42E+0	1.80E+1	1.37E+2	3.33E+0	1.72E+1	1.31E+2	3.21E+0	1.63E+1	1.23E+2
Total	3.59E+2	2.50E+3	1.55E+4	3.57E+2	2.48E+3	1.54E+4	3.54E+2	2.47E+3	1.53E+4	3.48E+2	2.45E+3	1.52E+4	3.43E+2	2.43E+3	1.51E+4	3.37E+2	2.40E+3	1.49E+4

TABLE K-193. ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	3.72E+1	3.72E+1	3.72E+1	3.66E+1	3.66E+1	3.66E+1	3.46E+1	3.46E+1	3.46E+1	2.78E+1	2.78E+1	2.78E+1	1.24E+1	1.24E+1	1.24E+1
II	Ra-226	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.66E+2	1.66E+2	1.66E+2
	Th-230	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.68E+2	1.69E+2	1.69E+2	1.57E+2
	Ra-228	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.50E+0	8.51E+0	8.51E+0	8.04E+0
	Th-232	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.04E+0	3.05E+0	3.05E+0	2.86E+0
	U-234	2.26E+2	2.26E+2	2.26E+2	2.25E+2	2.25E+2	2.25E+2	2.23E+2	2.24E+2	2.24E+2	2.24E+2	2.17E+2	2.17E+2	2.17E+2	1.98E+2	2.00E+2
	U-235	3.68E+0	3.68E+0	3.68E+0	3.63E+0	3.63E+0	3.63E+0	3.62E+0	3.62E+0	3.62E+0	3.62E+0	3.59E+0	3.60E+0	3.60E+0	3.42E+0	3.45E+0
	U-238	9.96E+1	9.96E+1	9.96E+1	9.87E+1	9.87E+1	9.87E+1	9.83E+1	9.84E+1	9.84E+1	9.84E+1	9.79E+1	9.79E+1	9.79E+1	9.46E+1	9.52E+1
III	Cs-137	1.54E+1	1.54E+1	1.54E+1	1.53E+1	1.53E+1	1.53E+1	1.43E+1	1.43E+1	1.43E+1	7.59E+0	7.59E+0	7.59E+0	.00E+0	.00E+0	.00E+0
IV	U-234	3.50E+1	3.50E+1	3.50E+1	3.46E+1	3.46E+1	3.46E+1	3.30E+1	3.30E+1	3.30E+1	2.60E+1	2.60E+1	2.60E+1	.00E+0	.00E+0	.00E+0
	U-235	1.65E+0	1.65E+0	1.65E+0	1.63E+0	1.63E+0	1.63E+0	1.55E+0	1.55E+0	1.55E+0	1.22E+0	1.22E+0	1.22E+0	.00E+0	.00E+0	.00E+0
	U-238	3.50E+1	3.50E+1	3.50E+1	3.46E+1	3.46E+1	3.46E+1	3.30E+1	3.30E+1	3.30E+1	2.60E+1	2.60E+1	2.60E+1	.00E+0	.00E+0	.00E+0
V	Cs-137	9.72E+2	9.72E+2	9.72E+2	9.71E+2	9.71E+2	9.71E+2	9.60E+2	9.60E+2	9.60E+2	8.79E+2	8.79E+2	8.79E+2	5.76E+2	5.76E+2	5.76E+2
VI	Cs-137	4.87E+1	4.87E+1	4.87E+1	4.87E+1	4.87E+1	4.87E+1	4.83E+1	4.83E+1	4.83E+1	4.58E+1	4.58E+1	4.58E+1	3.26E+1	3.26E+1	3.26E+1
	U-234	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.81E+2	6.81E+2	6.81E+2	6.35E+2	6.35E+2	6.35E+2
	U-235	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.20E+1	3.20E+1	3.20E+1	2.98E+1	2.98E+1	2.98E+1
	U-238	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.81E+2	6.81E+2	6.81E+2	6.35E+2	6.35E+2	6.35E+2
VII	Pu-239	3.03E+3	3.03E+3	3.03E+3	2.46E+3	2.46E+3	2.46E+3	1.78E+3	1.78E+3	1.78E+3	4.61E+1	4.61E+1	4.61E+1	.00E+0	.00E+0	.00E+0
	Am-241	5.08E+2	5.08E+2	5.08E+2	4.12E+2	4.12E+2	4.12E+2	2.97E+2	2.97E+2	2.97E+2	7.68E+0	7.68E+0	7.68E+0	.00E+0	.00E+0	.00E+0
	Cs-137	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.15E+1	3.15E+1	3.15E+1	8.29E-1	8.29E-1	8.29E-1	.00E+0	.00E+0	.00E+0
IX	Pu-239	1.21E+1	1.21E+1	1.21E+1	8.83E+0	8.83E+0	8.83E+0	3.03E+0	3.03E+0	3.03E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	Am-241	2.02E+0	2.02E+0	2.02E+0	1.47E+0	1.47E+0	1.47E+0	5.05E-1	5.05E-1	5.05E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	Tc-99	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.12E+2	2.13E+2	2.13E+2	2.07E+2	2.09E+2	2.09E+2	1.82E+2	1.84E+2	1.84E+2
	U-238	7.57E+0	7.57E+0	7.57E+0	7.53E+0	7.57E+0	7.57E+0	6.59E+0	7.31E+0	7.31E+0	4.25E+0	4.70E+0	4.70E+0	1.83E+0	1.93E+0	1.93E+0
	U-234	7.57E+0	7.57E+0	7.57E+0	7.53E+0	7.57E+0	7.57E+0	6.59E+0	7.31E+0	7.31E+0	4.25E+0	4.70E+0	4.70E+0	1.83E+0	1.93E+0	1.93E+0
XII	Pu-239	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.58E+1	3.58E+1	3.58E+1	3.54E+1	3.54E+1	3.54E+1	3.34E+1	3.34E+1	3.34E+1
	Am-241	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.97E+0	5.97E+0	5.97E+0	5.90E+0	5.90E+0	5.90E+0	5.57E+0	5.57E+0	5.57E+0
XIIIA	U-238	2.96E-2	2.96E-2	2.96E-2	2.12E-2	2.12E-2	2.12E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	4.79E-4	4.79E-4	4.79E-4	3.44E-4	3.44E-4	3.44E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	2.77E-3	2.77E-3	2.77E-3	1.99E-3	1.99E-3	1.99E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	U-238	2.96E-2	2.96E-2	2.96E-2	2.12E-2	2.12E-2	2.12E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	4.79E-4	4.79E-4	4.79E-4	3.44E-4	3.44E-4	3.44E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	2.77E-3	2.77E-3	2.77E-3	1.99E-3	1.99E-3	1.99E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0

09-13-94 4:11p
ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	2.96E-2	2.96E-2	2.96E-2	2.12E-2	2.12E-2	2.12E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	4.79E-4	4.79E-4	4.79E-4	3.44E-4	3.44E-4	3.44E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	2.77E-3	2.77E-3	2.77E-3	1.99E-3	1.99E-3	1.99E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.09E-2	6.09E-2	6.09E-2	5.99E-2	5.99E-2	5.99E-2	4.84E-2	4.84E-2	4.84E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.83E-2	4.83E-2	4.83E-2	4.62E-2	4.62E-2	4.62E-2
XVIB	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.09E-2	6.09E-2	6.09E-2	5.99E-2	5.99E-2	5.99E-2	4.84E-2	4.84E-2	4.84E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.83E-2	4.83E-2	4.83E-2	4.62E-2	4.62E-2	4.62E-2
XVIC	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.09E-2	6.09E-2	6.09E-2	5.99E-2	5.99E-2	5.99E-2	4.84E-2	4.84E-2	4.84E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.83E-2	4.83E-2	4.83E-2	4.62E-2	4.62E-2	4.62E-2
XVIII A	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.78E-1	2.78E-1	2.78E-1	2.43E-1	2.43E-1	2.43E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.78E-1	2.78E-1	2.78E-1	2.43E-1	2.43E-1	2.43E-1
XVIII B	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.78E-1	2.78E-1	2.78E-1	2.43E-1	2.43E-1	2.43E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.78E-1	2.78E-1	2.78E-1	2.43E-1	2.43E-1	2.43E-1
XVIII C	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.78E-1	2.78E-1	2.78E-1	2.43E-1	2.43E-1	2.43E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.78E-1	2.78E-1	2.78E-1	2.43E-1	2.43E-1	2.43E-1
XXA	U-234	4.14E+0	4.14E+0	4.14E+0	2.61E+0	2.61E+0	2.61E+0	5.45E-1	5.45E-1	5.45E-1	1.30E-1	1.30E-1	1.30E-1	.00E+0	.00E+0	.00E+0
	U-235	1.39E-1	1.39E-1	1.39E-1	8.75E-2	8.75E-2	8.75E-2	1.80E-2	1.80E-2	1.80E-2	4.05E-3	4.05E-3	4.05E-3	.00E+0	.00E+0	.00E+0
	U-238	7.09E-1	7.09E-1	7.09E-1	4.47E-1	4.47E-1	4.47E-1	9.34E-2	9.34E-2	9.34E-2	2.22E-2	2.22E-2	2.22E-2	.00E+0	.00E+0	.00E+0
XXB	U-234	4.14E+0	4.14E+0	4.14E+0	2.61E+0	2.61E+0	2.61E+0	5.45E-1	5.45E-1	5.45E-1	1.30E-1	1.30E-1	1.30E-1	.00E+0	.00E+0	.00E+0
	U-235	1.39E-1	1.39E-1	1.39E-1	8.75E-2	8.75E-2	8.75E-2	1.80E-2	1.80E-2	1.80E-2	4.05E-3	4.05E-3	4.05E-3	.00E+0	.00E+0	.00E+0
	U-238	7.09E-1	7.09E-1	7.09E-1	4.47E-1	4.47E-1	4.47E-1	9.34E-2	9.34E-2	9.34E-2	2.22E-2	2.22E-2	2.22E-2	.00E+0	.00E+0	.00E+0
XXC	U-234	4.14E+0	4.14E+0	4.14E+0	2.61E+0	2.61E+0	2.61E+0	5.45E-1	5.45E-1	5.45E-1	1.30E-1	1.30E-1	1.30E-1	.00E+0	.00E+0	.00E+0
	U-235	1.39E-1	1.39E-1	1.39E-1	8.75E-2	8.75E-2	8.75E-2	1.80E-2	1.80E-2	1.80E-2	4.05E-3	4.05E-3	4.05E-3	.00E+0	.00E+0	.00E+0
	U-238	7.09E-1	7.09E-1	7.09E-1	4.47E-1	4.47E-1	4.47E-1	9.34E-2	9.34E-2	9.34E-2	2.22E-2	2.22E-2	2.22E-2	.00E+0	.00E+0	.00E+0
XXIA	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	9.85E-1	9.85E-1	9.85E-1	6.69E-1	6.69E-1	6.69E-1
XXIB	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	9.85E-1	9.85E-1	9.85E-1	6.69E-1	6.69E-1	6.69E-1
XXIC	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	9.85E-1	9.85E-1	9.85E-1	6.69E-1	6.69E-1	6.69E-1

09-13-94 4:11p
 ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XXII	Ra-226	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.73E+0	3.74E+0	3.74E+0	3.56E+0	3.58E+0	3.58E+0	1.15E+0	1.80E+0	1.80E+0
	Th-232	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.26E+1	2.26E+1	2.26E+1	2.16E+1	2.17E+1	2.17E+1	6.78E+0	1.01E+1	1.01E+1
	U-234	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.01E+1	2.02E+1	2.02E+1	1.92E+1	1.93E+1	1.93E+1	5.92E+0	9.01E+0	9.01E+0
	U-235	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.47E-1	9.47E-1	9.47E-1	9.04E-1	9.08E-1	9.08E-1	2.78E-1	4.23E-1	4.23E-1
	U-238	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.01E+1	2.02E+1	2.02E+1	1.92E+1	1.93E+1	1.93E+1	5.92E+0	9.01E+0	9.01E+0

TABLE K-194. ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
		1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	3.46E+1	3.46E+1	3.46E+1	3.32E+1	3.32E+1	3.32E+1	3.20E+1	3.20E+1	3.20E+1	3.04E+1	3.04E+1	3.04E+1	2.92E+1	2.92E+1	2.92E+1	2.78E+1	2.78E+1	2.78E+1
II	Ra-226	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2
	Th-230	1.71E+2	1.71E+2	1.71E+2	1.70E+2	1.71E+2	1.71E+2	1.69E+2	1.70E+2	1.70E+2	1.69E+2	1.69E+2	1.69E+2	1.69E+2	1.69E+2	1.69E+2	1.68E+2	1.69E+2	1.69E+2
	Ra-228	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.52E+0	8.53E+0	8.53E+0	8.52E+0	8.52E+0	8.52E+0	8.51E+0	8.52E+0	8.52E+0	8.50E+0	8.51E+0	8.51E+0
	Th-232	3.06E+0	3.06E+0	3.06E+0	3.05E+0	3.06E+0	3.06E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.04E+0	3.05E+0	3.05E+0
	U-234	2.23E+2	2.24E+2	2.24E+2	2.20E+2	2.23E+2	2.23E+2	2.18E+2	2.21E+2	2.21E+2	2.18E+2	2.18E+2	2.18E+2	2.17E+2	2.18E+2	2.18E+2	2.17E+2	2.17E+2	2.17E+2
	U-235	3.62E+0	3.62E+0	3.62E+0	3.62E+0	3.62E+0	3.62E+0	3.61E+0	3.61E+0	3.61E+0	3.61E+0	3.61E+0	3.61E+0	3.60E+0	3.60E+0	3.60E+0	3.59E+0	3.60E+0	3.60E+0
	U-238	9.83E+1	9.84E+1	9.84E+1	9.81E+1	9.83E+1	9.83E+1	9.80E+1	9.82E+1	9.82E+1	9.80E+1	9.80E+1	9.80E+1	9.79E+1	9.80E+1	9.80E+1	9.79E+1	9.79E+1	9.79E+1
	III	Cs-137	1.43E+1	1.43E+1	1.43E+1	1.25E+1	1.25E+1	1.25E+1	1.14E+1	1.14E+1	1.14E+1	1.04E+1	1.04E+1	1.04E+1	9.27E+0	9.27E+0	9.27E+0	7.59E+0	7.59E+0
IV	U-234	3.30E+1	3.30E+1	3.30E+1	3.22E+1	3.22E+1	3.22E+1	3.14E+1	3.14E+1	3.14E+1	2.99E+1	2.99E+1	2.99E+1	2.83E+1	2.83E+1	2.83E+1	2.60E+1	2.60E+1	2.60E+1
	U-235	1.55E+0	1.55E+0	1.55E+0	1.51E+0	1.51E+0	1.51E+0	1.48E+0	1.48E+0	1.48E+0	1.40E+0	1.40E+0	1.40E+0	1.33E+0	1.33E+0	1.33E+0	1.22E+0	1.22E+0	1.22E+0
	U-238	3.30E+1	3.30E+1	3.30E+1	3.22E+1	3.22E+1	3.22E+1	3.14E+1	3.14E+1	3.14E+1	2.99E+1	2.99E+1	2.99E+1	2.83E+1	2.83E+1	2.83E+1	2.60E+1	2.60E+1	2.60E+1
V	Cs-137	9.60E+2	9.60E+2	9.60E+2	9.48E+2	9.48E+2	9.48E+2	9.38E+2	9.38E+2	9.38E+2	9.21E+2	9.21E+2	9.21E+2	9.04E+2	9.04E+2	9.04E+2	8.79E+2	8.79E+2	8.79E+2
VI	Cs-137	4.83E+1	4.83E+1	4.83E+1	4.79E+1	4.79E+1	4.79E+1	4.75E+1	4.75E+1	4.75E+1	4.70E+1	4.70E+1	4.70E+1	4.65E+1	4.65E+1	4.65E+1	4.58E+1	4.58E+1	4.58E+1
	U-234	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.83E+2	6.83E+2	6.83E+2	6.82E+2	6.82E+2	6.82E+2	6.81E+2	6.81E+2	6.81E+2
	U-235	3.22E+1	3.22E+1	3.22E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.20E+1	3.20E+1	3.20E+1
	U-238	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.83E+2	6.83E+2	6.83E+2	6.82E+2	6.82E+2	6.82E+2	6.81E+2	6.81E+2	6.81E+2
VII	Pu-239	1.78E+3	1.78E+3	1.78E+3	1.18E+3	1.18E+3	1.18E+3	8.33E+2	8.33E+2	8.33E+2	5.10E+2	5.10E+2	5.10E+2	2.88E+2	2.88E+2	2.88E+2	4.61E+1	4.61E+1	4.61E+1
	Am-241	2.97E+2	2.97E+2	2.97E+2	1.97E+2	1.97E+2	1.97E+2	1.39E+2	1.39E+2	1.39E+2	8.51E+1	8.51E+1	8.51E+1	4.80E+1	4.80E+1	4.80E+1	7.68E+0	7.68E+0	7.68E+0
	Cs-137	3.15E+1	3.15E+1	3.15E+1	1.99E+1	1.99E+1	1.99E+1	1.32E+1	1.32E+1	1.32E+1	7.23E+0	7.23E+0	7.23E+0	4.06E+0	4.06E+0	4.06E+0	8.29E-1	8.29E-1	8.29E-1
IX	Pu-239	3.03E+0	3.03E+0	3.03E+0	1.45E+0	1.45E+0	1.45E+0	8.56E-1	8.56E-1	8.56E-1	3.02E-1	3.02E-1	3.02E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	Am-241	5.05E-1	5.05E-1	5.05E-1	2.41E-1	2.41E-1	2.41E-1	1.43E-1	1.43E-1	1.43E-1	5.04E-2	5.04E-2	5.04E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	Tc-99	2.12E+2	2.13E+2	2.13E+2	2.11E+2	2.13E+2	2.13E+2	2.11E+2	2.12E+2	2.12E+2	2.09E+2	2.11E+2	2.11E+2	2.09E+2	2.10E+2	2.10E+2	2.07E+2	2.09E+2	2.09E+2
	U-238	6.59E+0	7.31E+0	7.31E+0	5.88E+0	6.86E+0	6.86E+0	5.45E+0	6.44E+0	6.44E+0	4.92E+0	5.70E+0	5.70E+0	4.59E+0	5.20E+0	5.20E+0	4.25E+0	4.70E+0	4.70E+0
	U-234	6.59E+0	7.31E+0	7.31E+0	5.88E+0	6.86E+0	6.86E+0	5.45E+0	6.44E+0	6.44E+0	4.92E+0	5.70E+0	5.70E+0	4.59E+0	5.20E+0	5.20E+0	4.25E+0	4.70E+0	4.70E+0
XII	Pu-239	3.58E+1	3.58E+1	3.58E+1	3.57E+1	3.57E+1	3.57E+1	3.57E+1	3.57E+1	3.57E+1	3.56E+1	3.56E+1	3.56E+1	3.55E+1	3.55E+1	3.55E+1	3.54E+1	3.54E+1	3.54E+1
	Am-241	5.97E+0	5.97E+0	5.97E+0	5.96E+0	5.96E+0	5.96E+0	5.95E+0	5.95E+0	5.95E+0	5.93E+0	5.93E+0	5.93E+0	5.91E+0	5.91E+0	5.91E+0	5.90E+0	5.90E+0	5.90E+0
XIIIA	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0

09-13-94 4:11p
ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
		1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIIC	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	Co-60	6.09E-2	6.09E-2	6.09E-2	6.09E-2	6.09E-2	6.09E-2	6.07E-2	6.07E-2	6.07E-2	6.04E-2	6.04E-2	6.04E-2	6.02E-2	6.02E-2	6.02E-2	5.99E-2	5.99E-2	5.99E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.84E-2	4.84E-2	4.84E-2	4.84E-2	4.84E-2	4.84E-2	4.83E-2	4.83E-2	4.83E-2
XVIB	Co-60	6.09E-2	6.09E-2	6.09E-2	6.09E-2	6.09E-2	6.09E-2	6.07E-2	6.07E-2	6.07E-2	6.04E-2	6.04E-2	6.04E-2	6.02E-2	6.02E-2	6.02E-2	5.99E-2	5.99E-2	5.99E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.84E-2	4.84E-2	4.84E-2	4.84E-2	4.84E-2	4.84E-2	4.83E-2	4.83E-2	4.83E-2
XVIC	Co-60	6.09E-2	6.09E-2	6.09E-2	6.09E-2	6.09E-2	6.09E-2	6.07E-2	6.07E-2	6.07E-2	6.04E-2	6.04E-2	6.04E-2	6.02E-2	6.02E-2	6.02E-2	5.99E-2	5.99E-2	5.99E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.84E-2	4.84E-2	4.84E-2	4.84E-2	4.84E-2	4.84E-2	4.83E-2	4.83E-2	4.83E-2
XVIIIA	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1
XVIIIB	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1
XVIIIC	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1
XXA	U-234	5.45E-1	5.45E-1	5.45E-1	1.83E-1	1.83E-1	1.83E-1	1.71E-1	1.71E-1	1.71E-1	1.54E-1	1.54E-1	1.54E-1	1.43E-1	1.43E-1	1.43E-1	1.30E-1	1.30E-1	1.30E-1
	U-235	1.80E-2	1.80E-2	1.80E-2	5.86E-3	5.86E-3	5.86E-3	5.43E-3	5.43E-3	5.43E-3	4.87E-3	4.87E-3	4.87E-3	4.48E-3	4.48E-3	4.48E-3	4.05E-3	4.05E-3	4.05E-3
	U-238	9.34E-2	9.34E-2	9.34E-2	3.14E-2	3.14E-2	3.14E-2	2.93E-2	2.93E-2	2.93E-2	2.64E-2	2.64E-2	2.64E-2	2.44E-2	2.44E-2	2.44E-2	2.22E-2	2.22E-2	2.22E-2
XXB	U-234	5.45E-1	5.45E-1	5.45E-1	1.83E-1	1.83E-1	1.83E-1	1.71E-1	1.71E-1	1.71E-1	1.54E-1	1.54E-1	1.54E-1	1.43E-1	1.43E-1	1.43E-1	1.30E-1	1.30E-1	1.30E-1
	U-235	1.80E-2	1.80E-2	1.80E-2	5.86E-3	5.86E-3	5.86E-3	5.43E-3	5.43E-3	5.43E-3	4.87E-3	4.87E-3	4.87E-3	4.48E-3	4.48E-3	4.48E-3	4.05E-3	4.05E-3	4.05E-3
	U-238	9.34E-2	9.34E-2	9.34E-2	3.14E-2	3.14E-2	3.14E-2	2.93E-2	2.93E-2	2.93E-2	2.64E-2	2.64E-2	2.64E-2	2.44E-2	2.44E-2	2.44E-2	2.22E-2	2.22E-2	2.22E-2
XXC	U-234	5.45E-1	5.45E-1	5.45E-1	1.83E-1	1.83E-1	1.83E-1	1.71E-1	1.71E-1	1.71E-1	1.54E-1	1.54E-1	1.54E-1	1.43E-1	1.43E-1	1.43E-1	1.30E-1	1.30E-1	1.30E-1
	U-235	1.80E-2	1.80E-2	1.80E-2	5.86E-3	5.86E-3	5.86E-3	5.43E-3	5.43E-3	5.43E-3	4.87E-3	4.87E-3	4.87E-3	4.48E-3	4.48E-3	4.48E-3	4.05E-3	4.05E-3	4.05E-3
	U-238	9.34E-2	9.34E-2	9.34E-2	3.14E-2	3.14E-2	3.14E-2	2.93E-2	2.93E-2	2.93E-2	2.64E-2	2.64E-2	2.64E-2	2.44E-2	2.44E-2	2.44E-2	2.22E-2	2.22E-2	2.22E-2
XXIA	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.00E+0	1.00E+0	1.00E+0	9.94E-1	9.94E-1	9.94E-1	9.85E-1	9.85E-1	9.85E-1
XXIB	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.00E+0	1.00E+0	1.00E+0	9.94E-1	9.94E-1	9.94E-1	9.85E-1	9.85E-1	9.85E-1
XXIC	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.00E+0	1.00E+0	1.00E+0	9.94E-1	9.94E-1	9.94E-1	9.85E-1	9.85E-1	9.85E-1

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 ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
		1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XXII	Ra-226	3.73E+0	3.74E+0	3.74E+0	3.71E+0	3.72E+0	3.72E+0	3.68E+0	3.70E+0	3.70E+0	3.66E+0	3.66E+0	3.66E+0	3.63E+0	3.65E+0	3.65E+0	3.56E+0	3.58E+0	3.58E+0
	Th-232	2.26E+1	2.26E+1	2.26E+1	2.25E+1	2.25E+1	2.25E+1	2.24E+1	2.24E+1	2.24E+1	2.22E+1	2.23E+1	2.23E+1	2.20E+1	2.22E+1	2.22E+1	2.16E+1	2.17E+1	2.17E+1
	U-234	2.01E+1	2.02E+1	2.02E+1	2.00E+1	2.01E+1	2.01E+1	1.98E+1	1.99E+1	1.99E+1	1.97E+1	1.97E+1	1.97E+1	1.95E+1	1.96E+1	1.96E+1	1.92E+1	1.93E+1	1.93E+1
	U-235	9.47E-1	9.47E-1	9.47E-1	9.42E-1	9.44E-1	9.44E-1	9.32E-1	9.37E-1	9.37E-1	9.25E-1	9.27E-1	9.27E-1	9.19E-1	9.23E-1	9.23E-1	9.04E-1	9.08E-1	9.08E-1
	U-238	2.01E+1	2.02E+1	2.02E+1	2.00E+1	2.01E+1	2.01E+1	1.98E+1	1.99E+1	1.99E+1	1.97E+1	1.97E+1	1.97E+1	1.95E+1	1.96E+1	1.96E+1	1.92E+1	1.93E+1	1.93E+1

TABLE K-195. ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	3.70E+1	3.70E+1	3.70E+1	3.58E+1	3.58E+1	3.58E+1	3.16E+1	3.16E+1	3.16E+1	2.12E+1	2.12E+1	2.12E+1	5.41E+0	5.41E+0	5.41E+0
II	Ra-226	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.71E+2	1.71E+2	1.71E+2	1.17E+2	1.19E+2	1.19E+2
	Th-230	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.69E+2	1.70E+2	1.70E+2	1.65E+2	1.66E+2	1.66E+2	1.05E+2	1.19E+2	1.19E+2
	Ra-228	8.54E+0	8.54E+0	8.54E+0	8.53E+0	8.53E+0	8.53E+0	8.52E+0	8.53E+0	8.53E+0	8.41E+0	8.44E+0	8.44E+0	5.00E+0	5.92E+0	5.92E+0
	Th-232	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.05E+0	3.05E+0	3.05E+0	2.99E+0	3.01E+0	3.01E+0	1.92E+0	2.27E+0	2.27E+0
	U-234	2.25E+2	2.25E+2	2.25E+2	2.24E+2	2.25E+2	2.25E+2	2.18E+2	2.20E+2	2.20E+2	2.13E+2	2.13E+2	2.13E+2	1.26E+2	1.28E+2	1.28E+2
	U-235	3.65E+0	3.65E+0	3.65E+0	3.63E+0	3.63E+0	3.63E+0	3.61E+0	3.61E+0	3.61E+0	3.55E+0	3.56E+0	3.56E+0	3.00E+0	3.05E+0	3.05E+0
	U-238	9.91E+1	9.91E+1	9.91E+1	9.84E+1	9.85E+1	9.85E+1	9.80E+1	9.81E+1	9.81E+1	9.72E+1	9.75E+1	9.75E+1	8.47E+1	8.56E+1	8.56E+1
III	Cs-137	1.54E+1	1.54E+1	1.54E+1	1.52E+1	1.52E+1	1.52E+1	1.12E+1	1.12E+1	1.12E+1	1.79E+0	1.79E+0	1.79E+0	.00E+0	.00E+0	.00E+0
IV	U-234	3.49E+1	3.49E+1	3.49E+1	3.40E+1	3.40E+1	3.40E+1	3.09E+1	3.09E+1	3.09E+1	5.54E+0	5.54E+0	5.54E+0	.00E+0	.00E+0	.00E+0
	U-235	1.64E+0	1.64E+0	1.64E+0	1.60E+0	1.60E+0	1.60E+0	1.45E+0	1.45E+0	1.45E+0	2.61E-1	2.61E-1	2.61E-1	.00E+0	.00E+0	.00E+0
	U-238	3.49E+1	3.49E+1	3.49E+1	3.40E+1	3.40E+1	3.40E+1	3.09E+1	3.09E+1	3.09E+1	5.54E+0	5.54E+0	5.54E+0	.00E+0	.00E+0	.00E+0
V	Cs-137	9.72E+2	9.72E+2	9.72E+2	9.68E+2	9.68E+2	9.68E+2	9.35E+2	9.35E+2	9.35E+2	7.22E+2	7.22E+2	7.22E+2	2.03E+2	2.03E+2	2.03E+2
VI	Cs-137	4.87E+1	4.87E+1	4.87E+1	4.86E+1	4.86E+1	4.86E+1	4.74E+1	4.74E+1	4.74E+1	4.05E+1	4.05E+1	4.05E+1	1.72E+1	1.72E+1	1.72E+1
	U-234	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.83E+2	6.83E+2	6.83E+2	6.63E+2	6.63E+2	6.63E+2	5.07E+2	5.07E+2	5.07E+2
	U-235	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.21E+1	3.21E+1	3.21E+1	3.11E+1	3.11E+1	3.11E+1	2.38E+1	2.38E+1	2.38E+1
	U-238	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.83E+2	6.83E+2	6.83E+2	6.63E+2	6.63E+2	6.63E+2	5.07E+2	5.07E+2	5.07E+2
VII	Pu-239	2.75E+3	2.75E+3	2.75E+3	2.25E+3	2.25E+3	2.25E+3	7.18E+2	7.18E+2	7.18E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	Am-241	4.60E+2	4.60E+2	4.60E+2	3.75E+2	3.75E+2	3.75E+2	1.20E+2	1.20E+2	1.20E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	Cs-137	3.91E+1	3.91E+1	3.91E+1	3.81E+1	3.81E+1	3.81E+1	1.09E+1	1.09E+1	1.09E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	Pu-239	1.05E+1	1.05E+1	1.05E+1	5.47E+0	5.47E+0	5.47E+0	5.67E-1	5.67E-1	5.67E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	Am-241	1.75E+0	1.75E+0	1.75E+0	9.12E-1	9.12E-1	9.12E-1	9.46E-2	9.46E-2	9.46E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	Tc-99	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.11E+2	2.12E+2	2.12E+2	2.01E+2	2.03E+2	2.03E+2	1.62E+2	1.63E+2	1.63E+2
	U-238	7.57E+0	7.57E+0	7.57E+0	7.25E+0	7.56E+0	7.56E+0	5.55E+0	6.61E+0	6.61E+0	3.26E+0	3.50E+0	3.50E+0	1.04E+0	1.08E+0	1.08E+0
	U-234	7.57E+0	7.57E+0	7.57E+0	7.25E+0	7.56E+0	7.56E+0	5.55E+0	6.61E+0	6.61E+0	3.26E+0	3.50E+0	3.50E+0	1.04E+0	1.08E+0	1.08E+0
XII	Pu-239	3.59E+1	3.59E+1	3.59E+1	3.58E+1	3.58E+1	3.58E+1	3.55E+1	3.55E+1	3.55E+1	3.47E+1	3.47E+1	3.47E+1	1.12E+1	1.12E+1	1.12E+1
	Am-241	5.98E+0	5.98E+0	5.98E+0	5.97E+0	5.97E+0	5.97E+0	5.92E+0	5.92E+0	5.92E+0	5.78E+0	5.78E+0	5.78E+0	1.86E+0	1.86E+0	1.86E+0
XIIIA	U-238	2.68E-2	2.68E-2	2.68E-2	1.03E-2	1.03E-2	1.03E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	4.35E-4	4.35E-4	4.35E-4	1.67E-4	1.67E-4	1.67E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	2.51E-3	2.51E-3	2.51E-3	9.62E-4	9.62E-4	9.62E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	U-238	2.68E-2	2.68E-2	2.68E-2	1.03E-2	1.03E-2	1.03E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	4.35E-4	4.35E-4	4.35E-4	1.67E-4	1.67E-4	1.67E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	2.51E-3	2.51E-3	2.51E-3	9.62E-4	9.62E-4	9.62E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0

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ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	2.68E-2	2.68E-2	2.68E-2	1.03E-2	1.03E-2	1.03E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	4.35E-4	4.35E-4	4.35E-4	1.67E-4	1.67E-4	1.67E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	2.51E-3	2.51E-3	2.51E-3	9.62E-4	9.62E-4	9.62E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.07E-2	6.07E-2	6.07E-2	5.74E-2	5.74E-2	5.74E-2	2.87E-2	2.87E-2	2.87E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.79E-2	4.79E-2	4.79E-2	2.93E-2	2.93E-2	2.93E-2
XVIB	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.07E-2	6.07E-2	6.07E-2	5.74E-2	5.74E-2	5.74E-2	2.87E-2	2.87E-2	2.87E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.79E-2	4.79E-2	4.79E-2	2.93E-2	2.93E-2	2.93E-2
XVIC	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.07E-2	6.07E-2	6.07E-2	5.74E-2	5.74E-2	5.74E-2	2.87E-2	2.87E-2	2.87E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.79E-2	4.79E-2	4.79E-2	2.93E-2	2.93E-2	2.93E-2
XVIII A	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.68E-1	2.68E-1	2.68E-1	1.84E-1	1.84E-1	1.84E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.68E-1	2.68E-1	2.68E-1	1.84E-1	1.84E-1	1.84E-1
XVIII B	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.68E-1	2.68E-1	2.68E-1	1.84E-1	1.84E-1	1.84E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.68E-1	2.68E-1	2.68E-1	1.84E-1	1.84E-1	1.84E-1
XVIII C	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.68E-1	2.68E-1	2.68E-1	1.84E-1	1.84E-1	1.84E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.68E-1	2.68E-1	2.68E-1	1.84E-1	1.84E-1	1.84E-1
XXA	U-234	3.13E+0	3.13E+0	3.13E+0	1.36E+0	1.36E+0	1.36E+0	1.56E-1	1.56E-1	1.56E-1	5.91E-2	5.91E-2	5.91E-2	.00E+0	.00E+0	.00E+0
	U-235	1.05E-1	1.05E-1	1.05E-1	4.56E-2	4.56E-2	4.56E-2	4.94E-3	4.94E-3	4.94E-3	1.75E-3	1.75E-3	1.75E-3	.00E+0	.00E+0	.00E+0
	U-238	5.37E-1	5.37E-1	5.37E-1	2.34E-1	2.34E-1	2.34E-1	2.68E-2	2.68E-2	2.68E-2	1.01E-2	1.01E-2	1.01E-2	.00E+0	.00E+0	.00E+0
XXB	U-234	3.13E+0	3.13E+0	3.13E+0	1.36E+0	1.36E+0	1.36E+0	1.56E-1	1.56E-1	1.56E-1	5.91E-2	5.91E-2	5.91E-2	.00E+0	.00E+0	.00E+0
	U-235	1.05E-1	1.05E-1	1.05E-1	4.56E-2	4.56E-2	4.56E-2	4.94E-3	4.94E-3	4.94E-3	1.75E-3	1.75E-3	1.75E-3	.00E+0	.00E+0	.00E+0
	U-238	5.37E-1	5.37E-1	5.37E-1	2.34E-1	2.34E-1	2.34E-1	2.68E-2	2.68E-2	2.68E-2	1.01E-2	1.01E-2	1.01E-2	.00E+0	.00E+0	.00E+0
XXC	U-234	3.13E+0	3.13E+0	3.13E+0	1.36E+0	1.36E+0	1.36E+0	1.56E-1	1.56E-1	1.56E-1	5.91E-2	5.91E-2	5.91E-2	.00E+0	.00E+0	.00E+0
	U-235	1.05E-1	1.05E-1	1.05E-1	4.56E-2	4.56E-2	4.56E-2	4.94E-3	4.94E-3	4.94E-3	1.75E-3	1.75E-3	1.75E-3	.00E+0	.00E+0	.00E+0
	U-238	5.37E-1	5.37E-1	5.37E-1	2.34E-1	2.34E-1	2.34E-1	2.68E-2	2.68E-2	2.68E-2	1.01E-2	1.01E-2	1.01E-2	.00E+0	.00E+0	.00E+0
XXIA	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.00E+0	1.00E+0	1.00E+0	8.64E-1	8.64E-1	8.64E-1	3.09E-1	3.09E-1	3.09E-1
XXIB	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.00E+0	1.00E+0	1.00E+0	8.64E-1	8.64E-1	8.64E-1	3.09E-1	3.09E-1	3.09E-1
XXIC	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.00E+0	1.00E+0	1.00E+0	8.64E-1	8.64E-1	8.64E-1	3.09E-1	3.09E-1	3.09E-1

09-13-94 4:11p
 ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XXII	Ra-226	3.76E+0	3.76E+0	3.76E+0	3.75E+0	3.75E+0	3.75E+0	3.67E+0	3.69E+0	3.69E+0	3.35E+0	3.37E+0	3.37E+0	.00E+0	.00E+0	.00E+0
	Th-232	2.28E+1	2.28E+1	2.28E+1	2.27E+1	2.27E+1	2.27E+1	2.23E+1	2.24E+1	2.24E+1	2.04E+1	2.06E+1	2.06E+1	.00E+0	.00E+0	.00E+0
	U-234	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	1.98E+1	1.99E+1	1.99E+1	1.84E+1	1.85E+1	1.85E+1	.00E+0	.00E+0	.00E+0
	U-235	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.29E-1	9.35E-1	9.35E-1	8.63E-1	8.67E-1	8.67E-1	.00E+0	.00E+0	.00E+0
	U-238	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	1.98E+1	1.99E+1	1.99E+1	1.84E+1	1.85E+1	1.85E+1	.00E+0	.00E+0	.00E+0

TABLE K-196. ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
		1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	3.16E+1	3.16E+1	3.16E+1	2.93E+1	2.93E+1	2.93E+1	2.77E+1	2.77E+1	2.77E+1	2.55E+1	2.55E+1	2.55E+1	2.41E+1	2.41E+1	2.41E+1	2.12E+1	2.12E+1	2.12E+1
II	Ra-226	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2
	Th-230	1.69E+2	1.70E+2	1.70E+2	1.69E+2	1.69E+2	1.69E+2	1.68E+2	1.69E+2	1.69E+2	1.67E+2	1.68E+2	1.68E+2	1.66E+2	1.67E+2	1.67E+2	1.65E+2	1.66E+2	1.66E+2
	Ra-228	8.52E+0	8.53E+0	8.53E+0	8.51E+0	8.52E+0	8.52E+0	8.50E+0	8.51E+0	8.51E+0	8.48E+0	8.50E+0	8.50E+0	8.45E+0	8.48E+0	8.48E+0	8.41E+0	8.44E+0	8.44E+0
	Th-232	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.04E+0	3.05E+0	3.05E+0	3.03E+0	3.04E+0	3.04E+0	3.01E+0	3.03E+0	3.03E+0	2.99E+0	3.01E+0	3.01E+0
	U-234	2.18E+2	2.20E+2	2.20E+2	2.17E+2	2.18E+2	2.18E+2	2.17E+2	2.17E+2	2.17E+2	2.16E+2	2.16E+2	2.16E+2	2.15E+2	2.15E+2	2.15E+2	2.13E+2	2.13E+2	2.13E+2
	U-235	3.61E+0	3.61E+0	3.61E+0	3.60E+0	3.61E+0	3.61E+0	3.59E+0	3.60E+0	3.60E+0	3.58E+0	3.59E+0	3.59E+0	3.57E+0	3.58E+0	3.58E+0	3.55E+0	3.56E+0	3.56E+0
	U-238	9.80E+1	9.81E+1	9.81E+1	9.79E+1	9.80E+1	9.80E+1	9.79E+1	9.79E+1	9.79E+1	9.77E+1	9.78E+1	9.78E+1	9.76E+1	9.77E+1	9.77E+1	9.72E+1	9.75E+1	9.75E+1
III	Cs-137	1.12E+1	1.12E+1	1.12E+1	9.38E+0	9.38E+0	9.38E+0	7.47E+0	7.47E+0	7.47E+0	4.40E+0	4.40E+0	4.40E+0	2.54E+0	2.54E+0	2.54E+0	1.79E+0	1.79E+0	1.79E+0
IV	U-234	3.09E+1	3.09E+1	3.09E+1	2.81E+1	2.81E+1	2.81E+1	2.53E+1	2.53E+1	2.53E+1	1.96E+1	1.96E+1	1.96E+1	1.40E+1	1.40E+1	1.40E+1	5.54E+0	5.54E+0	5.54E+0
	U-235	1.45E+0	1.45E+0	1.45E+0	1.32E+0	1.32E+0	1.32E+0	1.19E+0	1.19E+0	1.19E+0	9.23E-1	9.23E-1	9.23E-1	6.58E-1	6.58E-1	6.58E-1	2.61E-1	2.61E-1	2.61E-1
	U-238	3.09E+1	3.09E+1	3.09E+1	2.81E+1	2.81E+1	2.81E+1	2.53E+1	2.53E+1	2.53E+1	1.96E+1	1.96E+1	1.96E+1	1.40E+1	1.40E+1	1.40E+1	5.54E+0	5.54E+0	5.54E+0
V	Cs-137	9.35E+2	9.35E+2	9.35E+2	9.06E+2	9.06E+2	9.06E+2	8.77E+2	8.77E+2	8.77E+2	8.19E+2	8.19E+2	8.19E+2	7.61E+2	7.61E+2	7.61E+2	7.22E+2	7.22E+2	7.22E+2
VI	Cs-137	4.74E+1	4.74E+1	4.74E+1	4.65E+1	4.65E+1	4.65E+1	4.57E+1	4.57E+1	4.57E+1	4.41E+1	4.41E+1	4.41E+1	4.26E+1	4.26E+1	4.26E+1	4.05E+1	4.05E+1	4.05E+1
	U-234	6.83E+2	6.83E+2	6.83E+2	6.82E+2	6.82E+2	6.82E+2	6.80E+2	6.80E+2	6.80E+2	6.76E+2	6.76E+2	6.76E+2	6.71E+2	6.71E+2	6.71E+2	6.63E+2	6.63E+2	6.63E+2
	U-235	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.20E+1	3.20E+1	3.20E+1	3.18E+1	3.18E+1	3.18E+1	3.15E+1	3.15E+1	3.15E+1	3.11E+1	3.11E+1	3.11E+1
	U-238	6.83E+2	6.83E+2	6.83E+2	6.82E+2	6.82E+2	6.82E+2	6.80E+2	6.80E+2	6.80E+2	6.76E+2	6.76E+2	6.76E+2	6.71E+2	6.71E+2	6.71E+2	6.63E+2	6.63E+2	6.63E+2
VII	Pu-239	7.18E+2	7.18E+2	7.18E+2	2.56E+2	2.56E+2	2.56E+2	2.41E+1	2.41E+1	2.41E+1	2.09E+0	2.09E+0	2.09E+0	5.77E-1	5.77E-1	5.77E-1	.00E+0	.00E+0	.00E+0
	Am-241	1.20E+2	1.20E+2	1.20E+2	4.26E+1	4.26E+1	4.26E+1	4.02E+0	4.02E+0	4.02E+0	3.48E-1	3.48E-1	3.48E-1	9.61E-2	9.61E-2	9.61E-2	.00E+0	.00E+0	.00E+0
	Cs-137	1.09E+1	1.09E+1	1.09E+1	3.63E+0	3.63E+0	3.63E+0	4.89E-1	4.89E-1	4.89E-1	8.57E-2	8.57E-2	8.57E-2	2.85E-2	2.85E-2	2.85E-2	.00E+0	.00E+0	.00E+0
IX	Pu-239	5.67E-1	5.67E-1	5.67E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	Am-241	9.46E-2	9.46E-2	9.46E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	Tc-99	2.11E+2	2.12E+2	2.12E+2	2.09E+2	2.11E+2	2.11E+2	2.08E+2	2.10E+2	2.10E+2	2.06E+2	2.08E+2	2.08E+2	2.04E+2	2.06E+2	2.06E+2	2.01E+2	2.03E+2	2.03E+2
	U-238	5.55E+0	6.61E+0	6.61E+0	4.84E+0	5.64E+0	5.64E+0	4.45E+0	5.03E+0	5.03E+0	3.96E+0	4.35E+0	4.35E+0	3.61E+0	3.94E+0	3.94E+0	3.26E+0	3.50E+0	3.50E+0
	U-234	5.55E+0	6.61E+0	6.61E+0	4.84E+0	5.64E+0	5.64E+0	4.45E+0	5.03E+0	5.03E+0	3.96E+0	4.35E+0	4.35E+0	3.61E+0	3.94E+0	3.94E+0	3.26E+0	3.50E+0	3.50E+0
XII	Pu-239	3.55E+1	3.55E+1	3.55E+1	3.54E+1	3.54E+1	3.54E+1	3.53E+1	3.53E+1	3.53E+1	3.51E+1	3.51E+1	3.51E+1	3.49E+1	3.49E+1	3.49E+1	3.47E+1	3.47E+1	3.47E+1
	Am-241	5.92E+0	5.92E+0	5.92E+0	5.89E+0	5.89E+0	5.89E+0	5.88E+0	5.88E+0	5.88E+0	5.85E+0	5.85E+0	5.85E+0	5.82E+0	5.82E+0	5.82E+0	5.78E+0	5.78E+0	5.78E+0
XIIIA	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0

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 ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
		1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	Co-60	6.07E-2	6.07E-2	6.07E-2	6.02E-2	6.02E-2	6.02E-2	6.00E-2	6.00E-2	6.00E-2	5.95E-2	5.95E-2	5.95E-2	5.89E-2	5.89E-2	5.89E-2	5.74E-2	5.74E-2	5.74E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.84E-2	4.84E-2	4.84E-2	4.83E-2	4.83E-2	4.83E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.79E-2	4.79E-2	4.79E-2
XVIB	Co-60	6.07E-2	6.07E-2	6.07E-2	6.02E-2	6.02E-2	6.02E-2	6.00E-2	6.00E-2	6.00E-2	5.95E-2	5.95E-2	5.95E-2	5.89E-2	5.89E-2	5.89E-2	5.74E-2	5.74E-2	5.74E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.84E-2	4.84E-2	4.84E-2	4.83E-2	4.83E-2	4.83E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.79E-2	4.79E-2	4.79E-2
XVIC	Co-60	6.07E-2	6.07E-2	6.07E-2	6.02E-2	6.02E-2	6.02E-2	6.00E-2	6.00E-2	6.00E-2	5.95E-2	5.95E-2	5.95E-2	5.89E-2	5.89E-2	5.89E-2	5.74E-2	5.74E-2	5.74E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.84E-2	4.84E-2	4.84E-2	4.83E-2	4.83E-2	4.83E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.79E-2	4.79E-2	4.79E-2
XVIIIA	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.75E-1	2.75E-1	2.75E-1	2.72E-1	2.72E-1	2.72E-1	2.68E-1	2.68E-1	2.68E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.75E-1	2.75E-1	2.75E-1	2.72E-1	2.72E-1	2.72E-1	2.68E-1	2.68E-1	2.68E-1
XVIIIB	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.75E-1	2.75E-1	2.75E-1	2.72E-1	2.72E-1	2.72E-1	2.68E-1	2.68E-1	2.68E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.75E-1	2.75E-1	2.75E-1	2.72E-1	2.72E-1	2.72E-1	2.68E-1	2.68E-1	2.68E-1
XVIIIC	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.75E-1	2.75E-1	2.75E-1	2.72E-1	2.72E-1	2.72E-1	2.68E-1	2.68E-1	2.68E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.75E-1	2.75E-1	2.75E-1	2.72E-1	2.72E-1	2.72E-1	2.68E-1	2.68E-1	2.68E-1
XXA	U-234	1.56E-1	1.56E-1	1.56E-1	1.32E-1	1.32E-1	1.32E-1	1.17E-1	1.17E-1	1.17E-1	9.78E-2	9.78E-2	9.78E-2	8.25E-2	8.25E-2	8.25E-2	5.91E-2	5.91E-2	5.91E-2
	U-235	4.94E-3	4.94E-3	4.94E-3	4.12E-3	4.12E-3	4.12E-3	3.61E-3	3.61E-3	3.61E-3	2.98E-3	2.98E-3	2.98E-3	2.48E-3	2.48E-3	2.48E-3	1.75E-3	1.75E-3	1.75E-3
	U-238	2.68E-2	2.68E-2	2.68E-2	2.26E-2	2.26E-2	2.26E-2	2.00E-2	2.00E-2	2.00E-2	1.68E-2	1.68E-2	1.68E-2	1.41E-2	1.41E-2	1.41E-2	1.01E-2	1.01E-2	1.01E-2
XXB	U-234	1.56E-1	1.56E-1	1.56E-1	1.32E-1	1.32E-1	1.32E-1	1.17E-1	1.17E-1	1.17E-1	9.78E-2	9.78E-2	9.78E-2	8.25E-2	8.25E-2	8.25E-2	5.91E-2	5.91E-2	5.91E-2
	U-235	4.94E-3	4.94E-3	4.94E-3	4.12E-3	4.12E-3	4.12E-3	3.61E-3	3.61E-3	3.61E-3	2.98E-3	2.98E-3	2.98E-3	2.48E-3	2.48E-3	2.48E-3	1.75E-3	1.75E-3	1.75E-3
	U-238	2.68E-2	2.68E-2	2.68E-2	2.26E-2	2.26E-2	2.26E-2	2.00E-2	2.00E-2	2.00E-2	1.68E-2	1.68E-2	1.68E-2	1.41E-2	1.41E-2	1.41E-2	1.01E-2	1.01E-2	1.01E-2
XXC	U-234	1.56E-1	1.56E-1	1.56E-1	1.32E-1	1.32E-1	1.32E-1	1.17E-1	1.17E-1	1.17E-1	9.78E-2	9.78E-2	9.78E-2	8.25E-2	8.25E-2	8.25E-2	5.91E-2	5.91E-2	5.91E-2
	U-235	4.94E-3	4.94E-3	4.94E-3	4.12E-3	4.12E-3	4.12E-3	3.61E-3	3.61E-3	3.61E-3	2.98E-3	2.98E-3	2.98E-3	2.48E-3	2.48E-3	2.48E-3	1.75E-3	1.75E-3	1.75E-3
	U-238	2.68E-2	2.68E-2	2.68E-2	2.26E-2	2.26E-2	2.26E-2	2.00E-2	2.00E-2	2.00E-2	1.68E-2	1.68E-2	1.68E-2	1.41E-2	1.41E-2	1.41E-2	1.01E-2	1.01E-2	1.01E-2
XXIA	Th-232	1.00E+0	1.00E+0	1.00E+0	9.94E-1	9.94E-1	9.94E-1	9.84E-1	9.84E-1	9.84E-1	9.60E-1	9.60E-1	9.60E-1	9.18E-1	9.18E-1	9.18E-1	8.64E-1	8.64E-1	8.64E-1
XXIB	Th-232	1.00E+0	1.00E+0	1.00E+0	9.94E-1	9.94E-1	9.94E-1	9.84E-1	9.84E-1	9.84E-1	9.60E-1	9.60E-1	9.60E-1	9.18E-1	9.18E-1	9.18E-1	8.64E-1	8.64E-1	8.64E-1
XXIC	Th-232	1.00E+0	1.00E+0	1.00E+0	9.94E-1	9.94E-1	9.94E-1	9.84E-1	9.84E-1	9.84E-1	9.60E-1	9.60E-1	9.60E-1	9.18E-1	9.18E-1	9.18E-1	8.64E-1	8.64E-1	8.64E-1

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 ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
		1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XXII	Ra-226	3.67E+0	3.69E+0	3.69E+0	3.63E+0	3.65E+0	3.65E+0	3.54E+0	3.58E+0	3.58E+0	3.43E+0	3.45E+0	3.45E+0	3.40E+0	3.41E+0	3.41E+0	3.35E+0	3.37E+0	3.37E+0
	Th-232	2.23E+1	2.24E+1	2.24E+1	2.21E+1	2.22E+1	2.22E+1	2.15E+1	2.17E+1	2.17E+1	2.10E+1	2.11E+1	2.11E+1	2.08E+1	2.09E+1	2.09E+1	2.04E+1	2.06E+1	2.06E+1
	U-234	1.98E+1	1.99E+1	1.99E+1	1.95E+1	1.96E+1	1.96E+1	1.92E+1	1.93E+1	1.93E+1	1.88E+1	1.88E+1	1.88E+1	1.86E+1	1.87E+1	1.87E+1	1.84E+1	1.85E+1	1.85E+1
	U-235	9.29E-1	9.35E-1	9.35E-1	9.19E-1	9.23E-1	9.23E-1	9.02E-1	9.07E-1	9.07E-1	8.82E-1	8.86E-1	8.86E-1	8.74E-1	8.78E-1	8.78E-1	8.63E-1	8.67E-1	8.67E-1
	U-238	1.98E+1	1.99E+1	1.99E+1	1.95E+1	1.96E+1	1.96E+1	1.92E+1	1.93E+1	1.93E+1	1.88E+1	1.88E+1	1.88E+1	1.86E+1	1.87E+1	1.87E+1	1.84E+1	1.85E+1	1.85E+1

TABLE K-197. MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)															
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2			
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	
I	Cs-137	3.76E-2	3.76E-2	3.76E-2	3.76E-1	3.76E-1	3.76E-1	3.76E+0	3.76E+0	3.76E+0	3.76E+1	3.76E+1	3.76E+1	3.76E+2	3.76E+2	3.76E+2	
II-1	Ra-226	4.76E-3	4.56E-3	4.56E-3	3.67E-2	3.57E-2	3.57E-2	9.19E-2	9.09E-2	9.09E-2	4.18E+0	3.22E+0	3.22E+0	4.71E+1	4.38E+1	4.38E+1	
	Th-230	3.66E-3	3.50E-3	3.50E-3	2.82E-2	2.74E-2	2.74E-2	8.64E+0	3.55E+0	3.55E+0	1.77E+1	1.66E+1	1.66E+1	6.10E+1	5.75E+1	5.75E+1	
	Ra-228	.00E+0	.00E+0	.00E+0	4.14E-3	3.92E-3	3.92E-3	1.48E-2	1.47E-2	1.47E-2	1.51E-2	1.50E-2	1.50E-2	1.63E-2	1.62E-2	1.62E-2	
	Th-232	.00E+0	.00E+0	.00E+0	2.21E-3	2.02E-3	2.02E-3	1.16E-2	1.15E-2	1.15E-2	1.18E-2	1.18E-2	1.18E-2	1.18E-2	1.29E-2	1.29E-2	1.29E-2
	U-234	4.32E-3	4.14E-3	4.14E-3	3.06E-2	2.99E-2	2.99E-2	6.67E-2	6.61E-2	6.61E-2	6.76E-2	6.74E-2	6.74E-2	7.18E-2	7.15E-2	7.15E-2	
	U-235	.00E+0	.00E+0	.00E+0	2.19E-4	1.64E-4	1.64E-4	2.88E-3	2.84E-3	2.84E-3	2.95E-3	2.94E-3	2.94E-3	3.26E-3	3.24E-3	3.24E-3	
	U-238	4.70E-3	4.50E-3	4.50E-3	3.33E-2	3.25E-2	3.25E-2	7.26E-2	7.20E-2	7.20E-2	9.00E-2	8.57E-2	8.57E-2	3.39E-1	3.19E-1	3.19E-1	
	II-2	Ra-226	2.15E-4	1.64E-4	1.64E-4	4.07E-3	3.96E-3	3.96E-3	1.16E-2	1.15E-2	1.15E-2	1.24E-2	1.21E-2	1.21E-2	1.79E-2	1.57E-2	1.57E-2
Th-230	6.90E-3	6.58E-3	6.58E-3	3.15E-2	3.08E-2	3.08E-2	6.58E+0	2.74E+0	2.74E+0	6.46E+1	4.09E+1	4.09E+1	3.83E+2	2.80E+2	2.80E+2		
Ra-228	2.73E-3	2.52E-3	2.52E-3	1.89E-2	1.85E-2	1.85E-2	5.05E-2	5.03E-2	5.03E-2	2.45E+0	6.83E-1	6.83E-1	2.60E+1	1.74E+1	1.74E+1		
Th-232	.00E+0	.00E+0	.00E+0	8.39E-3	7.98E-3	7.98E-3	3.68E-2	3.66E-2	3.66E-2	3.98E-2	3.86E-2	3.86E-2	8.48E+0	4.52E+0	4.52E+0		
U-234	1.98E-2	1.89E-2	1.89E-2	1.79E-1	1.42E-1	1.42E-1	3.87E+0	3.83E+0	3.83E+0	4.43E+0	4.19E+0	4.19E+0	9.49E+0	7.07E+0	7.07E+0		
U-235	.00E+0	.00E+0	.00E+0	1.73E-3	1.48E-3	1.48E-3	2.62E-1	2.60E-1	2.60E-1	2.96E-1	2.81E-1	2.81E-1	5.98E-1	4.58E-1	4.58E-1		
U-238	2.28E-2	2.18E-2	2.18E-2	4.49E-1	4.05E-1	4.05E-1	4.87E+0	4.82E+0	4.82E+0	5.54E+0	5.26E+0	5.26E+0	1.17E+1	8.75E+0	8.75E+0		
II-3	Ra-226	.00E+0	.00E+0	.00E+0	8.79E-4	8.35E-4	8.35E-4	1.10E-1	7.23E-2	7.23E-2	4.34E-1	4.11E-1	4.11E-1	9.30E-1	9.09E-1	9.09E-1	
	Th-230	3.12E-3	3.05E-3	3.05E-3	1.96E-2	1.92E-2	1.92E-2	2.31E+0	1.81E+0	1.81E+0	1.09E+1	1.01E+1	1.01E+1	6.33E+1	5.92E+1	5.92E+1	
	Ra-228	2.65E-3	2.59E-3	2.59E-3	1.67E-2	1.63E-2	1.63E-2	4.68E-2	4.61E-2	4.61E-2	5.09E-2	5.07E-2	5.07E-2	5.27E+0	4.69E+0	4.69E+0	
	Th-232	1.29E-4	7.19E-5	7.19E-5	1.36E-2	1.32E-2	1.32E-2	4.24E-2	4.18E-2	4.18E-2	1.14E-1	4.61E-2	4.61E-2	8.35E+0	7.68E+0	7.68E+0	
	U-234	5.44E-3	5.32E-3	5.32E-3	3.43E-2	3.36E-2	3.36E-2	4.85E+0	3.75E+0	3.75E+0	3.30E+1	2.97E+1	2.97E+1	2.79E+2	2.60E+2	2.60E+2	
	U-235	2.09E-5	1.16E-5	1.16E-5	2.19E-3	2.13E-3	2.13E-3	1.90E+0	1.60E+0	1.60E+0	8.49E+0	7.68E+0	7.68E+0	5.11E+1	4.69E+1	4.69E+1	
	U-238	5.44E-3	5.31E-3	5.31E-3	3.42E-2	3.35E-2	3.35E-2	4.41E+0	3.38E+0	3.38E+0	3.11E+1	2.78E+1	2.78E+1	2.71E+2	2.52E+2	2.52E+2	
	II-4	Ra-226	1.00E-3	9.49E-4	9.49E-4	5.78E-3	5.77E-3	5.77E-3	7.12E-3	6.33E-3	6.33E-3	2.15E-1	1.51E-2	1.51E-2	2.43E+0	2.19E+0	2.19E+0
Th-230	8.46E-3	7.99E-3	7.99E-3	1.29E-1	5.38E-2	5.38E-2	1.00E+1	4.37E+0	4.37E+0	4.60E+1	3.42E+1	3.42E+1	1.36E+2	1.30E+2	1.30E+2		
Ra-228	1.04E-3	9.19E-4	9.19E-4	1.13E-2	1.13E-2	1.13E-2	3.92E-2	1.25E-2	1.25E-2	7.85E-1	4.51E-1	4.51E-1	5.61E+0	5.13E+0	5.13E+0		
Th-232	1.18E-3	1.05E-3	1.05E-3	1.28E-2	1.28E-2	1.28E-2	1.61E-2	1.42E-2	1.42E-2	9.54E-1	4.65E-1	4.65E-1	1.06E+1	9.45E+0	9.45E+0		
U-234	1.24E-2	1.17E-2	1.17E-2	5.86E-2	5.85E-2	5.85E-2	6.12E-1	2.30E-1	2.30E-1	1.02E+1	4.32E+0	4.32E+0	1.34E+3	1.02E+3	1.02E+3		
U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	6.89E-4	2.82E-4	2.82E-4	5.86E-2	2.43E-3	2.43E-3	4.07E+1	2.78E+1	2.78E+1		
U-238	8.00E-3	7.58E-3	7.58E-3	3.79E-2	3.79E-2	3.79E-2	4.44E-2	4.07E-2	4.07E-2	1.64E+0	6.83E-2	6.83E-2	9.99E+2	6.55E+2	6.55E+2		
II-5	Ra-226	.00E+0	.00E+0	.00E+0	1.91E-2	1.88E-2	1.88E-2	3.46E-1	3.44E-1	3.44E-1	4.56E+0	4.56E+0	4.56E+0	3.67E+1	3.67E+1	3.67E+1	
	Th-230	.00E+0	.00E+0	.00E+0	9.58E-3	9.44E-3	9.44E-3	2.57E-2	2.57E-2	2.57E-2	2.92E-2	2.92E-2	2.92E-2	5.40E-2	5.39E-2	5.39E-2	
	Ra-228	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	1.56E-2	1.56E-2	1.56E-2	1.98E-2	1.98E-2	1.98E-2	3.06E+0	3.06E+0	3.06E+0	
	Th-232	3.01E-3	3.01E-3	3.01E-3	1.49E-2	1.48E-2	1.48E-2	3.09E-2	3.09E-2	3.09E-2	8.16E-2	8.15E-2	8.15E-2	4.81E+0	4.81E+0	4.81E+0	
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	
	U-235	.00E+0	.00E+0	.00E+0	2.36E-4	2.24E-4	2.24E-4	1.58E-3	1.58E-3	1.58E-3	1.88E-3	1.88E-3	1.88E-3	3.95E-3	3.95E-3	3.95E-3	
	U-238	.00E+0	.00E+0	.00E+0	1.42E-2	1.40E-2	1.40E-2	3.81E-2	3.81E-2	3.81E-2	4.33E-2	4.33E-2	4.33E-2	8.01E-2	8.01E-2	8.01E-2	

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 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
II-6	Ra-226	.00E+0	.00E+0	.00E+0	2.19E-2	2.09E-2	2.09E-2	7.60E-2	7.06E-2	7.06E-2	3.59E+0	2.55E+0	2.55E+0	4.64E+1	4.46E+1	4.46E+1
	Th-230	1.16E-2	1.08E-2	1.08E-2	3.18E-2	3.11E-2	3.11E-2	6.29E+0	3.04E+0	3.04E+0	1.82E+1	1.78E+1	1.78E+1	3.20E+1	3.13E+1	3.13E+1
	Ra-228	.00E+0	.00E+0	.00E+0	6.70E-3	6.32E-3	6.32E-3	2.68E-2	2.48E-2	2.48E-2	3.34E-1	3.11E-1	3.11E-1	1.32E+0	1.27E+0	1.27E+0
	Th-232	8.10E-4	6.09E-4	6.09E-4	6.14E-3	5.96E-3	5.96E-3	1.56E-2	1.47E-2	1.47E-2	1.92E-2	1.90E-2	1.90E-2	1.71E-1	1.62E-1	1.62E-1
	U-234	1.44E-2	1.35E-2	1.35E-2	3.87E-2	3.79E-2	3.79E-2	2.44E+1	1.57E+1	1.57E+1	4.95E+1	4.87E+1	4.87E+1	8.67E+1	8.46E+1	8.46E+1
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-238	2.24E-2	2.10E-2	2.10E-2	5.45E-2	5.35E-2	5.35E-2	1.58E+0	1.35E+0	1.35E+0	2.58E+0	2.55E+0	2.55E+0	4.66E+0	4.52E+0	4.52E+0
II-7	U-234	8.51E-1	8.51E-1	8.51E-1	8.50E+0	8.50E+0	8.50E+0	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1
	U-235	4.00E-2	4.00E-2	4.00E-2	3.99E+1	3.99E+1	3.99E+1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1
	U-238	8.51E-1	8.51E-1	8.51E-1	8.50E+0	8.50E+0	8.50E+0	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1
III	Cs-137	3.76E-2	3.76E-2	3.76E-2	3.76E-1	3.76E-1	3.76E-1	3.76E+0	3.76E+0	3.76E+0	3.76E+1	3.76E+1	3.76E+1	3.00E+2	3.00E+2	3.00E+2
IV	U-234	5.02E-1	5.02E-1	5.02E-1	5.02E+0	5.02E+0	5.02E+0	5.02E+1	5.02E+1	5.02E+1	5.02E+2	5.02E+2	5.02E+2	2.20E+3	2.20E+3	2.20E+3
	U-235	2.36E-2	2.36E-2	2.36E-2	2.36E+1	2.36E+1	2.36E+1	2.36E+0	2.36E+0	2.36E+0	2.36E+1	2.36E+1	2.36E+1	1.03E+2	1.03E+2	1.03E+2
	U-238	5.02E-1	5.02E-1	5.02E-1	5.02E+0	5.02E+0	5.02E+0	5.02E+1	5.02E+1	5.02E+1	5.02E+2	5.02E+2	5.02E+2	2.20E+3	2.20E+3	2.20E+3
V	Cs-137	3.76E-2	3.76E-2	3.76E-2	3.76E-1	3.76E-1	3.76E-1	3.76E+0	3.76E+0	3.76E+0	3.76E+1	3.76E+1	3.76E+1	3.76E+2	3.76E+2	3.76E+2
VI	Cs-137	3.76E-2	3.76E-2	3.76E-2	3.75E-1	3.75E-1	3.75E-1	3.72E+0	3.72E+0	3.72E+0	3.42E+1	3.42E+1	3.42E+1	3.29E+2	3.29E+2	3.29E+2
	U-234	1.75E-5	1.75E-5	1.75E-5	4.09E-3	4.09E-3	4.09E-3	9.37E-1	9.37E-1	9.37E-1	7.72E+1	7.72E+1	7.72E+1	1.05E+3	1.05E+3	1.05E+3
	U-235	8.23E-7	8.23E-7	8.23E-7	1.92E-4	1.92E-4	1.92E-4	4.41E-2	4.41E-2	4.41E-2	3.63E+0	3.63E+0	3.63E+0	4.95E+1	4.95E+1	4.95E+1
	U-238	1.75E-5	1.75E-5	1.75E-5	4.09E-3	4.09E-3	4.09E-3	9.37E-1	9.37E-1	9.37E-1	7.72E+1	7.72E+1	7.72E+1	1.05E+3	1.05E+3	1.05E+3
VII	Pu-239	4.10E+0	4.10E+0	4.10E+0	4.09E+1	4.09E+1	4.09E+1	1.29E+2	1.29E+2	1.29E+2	1.44E+3	1.44E+3	1.44E+3	1.50E+3	1.50E+3	1.50E+3
	Am-241	6.85E-1	6.85E-1	6.85E-1	6.85E+0	6.85E+0	6.85E+0	2.16E+1	2.16E+1	2.16E+1	2.39E+2	2.39E+2	2.39E+2	2.50E+2	2.50E+2	2.50E+2
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	2.26E+0	2.26E+0	2.26E+0	2.15E+1	2.15E+1	2.15E+1	8.00E+1	8.00E+1	8.00E+1
IX	Pu-239	4.89E+0	4.89E+0	4.89E+0	4.89E+1	4.89E+1	4.89E+1	4.89E+2	4.89E+2	4.89E+2	2.98E+3	2.98E+3	2.98E+3	2.98E+3	2.98E+3	2.98E+3
	Am-241	8.16E-1	8.16E-1	8.16E-1	8.16E+0	8.16E+0	8.16E+0	8.16E+1	8.16E+1	8.16E+1	4.97E+2	4.97E+2	4.97E+2	4.97E+2	4.97E+2	4.97E+2
X	Tc-99	3.97E-2	3.97E-2	3.97E-2	3.34E-1	1.04E-1	1.04E-1	3.63E+0	8.01E-1	8.01E-1	3.88E+1	2.40E+1	2.40E+1	3.95E+2	3.56E+2	3.56E+2
	U-238	.00E+0	.00E+0	.00E+0	6.23E-1	1.46E-1	1.46E-1	3.44E+0	1.58E+0	1.58E+0	8.97E+0	7.84E+0	7.84E+0	2.10E+1	2.02E+1	2.02E+1
	U-234	.00E+0	.00E+0	.00E+0	6.23E-1	1.46E-1	1.46E-1	3.44E+0	1.58E+0	1.58E+0	8.97E+0	7.84E+0	7.84E+0	2.10E+1	2.02E+1	2.02E+1
XII	Pu-239	1.26E+0	1.26E+0	1.26E+0	1.26E+1	1.26E+1	1.26E+1	1.26E+2	1.26E+2	1.26E+2	1.26E+3	1.26E+3	1.26E+3	1.26E+4	1.26E+4	1.26E+4
	Am-241	2.10E-1	2.10E-1	2.10E-1	2.10E+0	2.10E+0	2.10E+0	2.10E+1	2.10E+1	2.10E+1	2.10E+2	2.10E+2	2.10E+2	2.10E+3	2.10E+3	2.10E+3
XIIIA	U-238	7.80E-1	7.80E-1	7.80E-1	7.79E+0	7.79E+0	7.79E+0	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	1.25E-2	1.25E-2	1.25E-2	1.27E-1	1.27E-1	1.27E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	7.32E-2	7.32E-2	7.32E-2	7.30E-1	7.30E-1	7.30E-1	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0
XIIIB	U-238	7.80E-1	7.80E-1	7.80E-1	7.79E+0	7.79E+0	7.79E+0	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	1.25E-2	1.25E-2	1.25E-2	1.27E-1	1.27E-1	1.27E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	7.32E-2	7.32E-2	7.32E-2	7.30E-1	7.30E-1	7.30E-1	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0

09-13-94 4:11p
 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	7.80E-1	7.80E-1	7.80E-1	7.79E+0	7.79E+0	7.79E+0	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	1.25E-2	1.25E-2	1.25E-2	1.27E-1	1.27E-1	1.27E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	7.32E-2	7.32E-2	7.32E-2	7.30E-1	7.30E-1	7.30E-1	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0
XVIA	Co-60	4.93E-3	4.93E-3	4.93E-3	4.93E-2	4.93E-2	4.93E-2	4.93E-1	4.93E-1	4.93E-1	4.70E+0	4.70E+0	4.70E+0	4.57E+1	4.57E+1	4.57E+1
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	9.38E-1	9.38E-1	9.38E-1	1.51E+1	1.51E+1	1.51E+1
XVIB	Co-60	4.93E-3	4.93E-3	4.93E-3	4.93E-2	4.93E-2	4.93E-2	4.93E-1	4.93E-1	4.93E-1	4.70E+0	4.70E+0	4.70E+0	4.57E+1	4.57E+1	4.57E+1
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	9.38E-1	9.38E-1	9.38E-1	1.51E+1	1.51E+1	1.51E+1
XVIC	Co-60	4.93E-3	4.93E-3	4.93E-3	4.93E-2	4.93E-2	4.93E-2	4.93E-1	4.93E-1	4.93E-1	4.70E+0	4.70E+0	4.70E+0	4.57E+1	4.57E+1	4.57E+1
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	9.38E-1	9.38E-1	9.38E-1	1.51E+1	1.51E+1	1.51E+1
XVIII A	Cs-137	1.93E-2	1.93E-2	1.93E-2	1.93E-1	1.93E-1	1.93E-1	1.93E+0	1.93E+0	1.93E+0	1.93E+1	1.93E+1	1.93E+1	1.93E+2	1.93E+2	1.93E+2
	Sr-90	1.93E-2	1.93E-2	1.93E-2	1.93E-1	1.93E-1	1.93E-1	1.93E+0	1.93E+0	1.93E+0	1.93E+1	1.93E+1	1.93E+1	1.93E+2	1.93E+2	1.93E+2
XVIII B	Cs-137	1.93E-2	1.93E-2	1.93E-2	1.93E-1	1.93E-1	1.93E-1	1.93E+0	1.93E+0	1.93E+0	1.93E+1	1.93E+1	1.93E+1	1.93E+2	1.93E+2	1.93E+2
	Sr-90	1.93E-2	1.93E-2	1.93E-2	1.93E-1	1.93E-1	1.93E-1	1.93E+0	1.93E+0	1.93E+0	1.93E+1	1.93E+1	1.93E+1	1.93E+2	1.93E+2	1.93E+2
XVIII C	Cs-137	1.93E-2	1.93E-2	1.93E-2	1.93E-1	1.93E-1	1.93E-1	1.93E+0	1.93E+0	1.93E+0	1.93E+1	1.93E+1	1.93E+1	1.93E+2	1.93E+2	1.93E+2
	Sr-90	1.93E-2	1.93E-2	1.93E-2	1.93E-1	1.93E-1	1.93E-1	1.93E+0	1.93E+0	1.93E+0	1.93E+1	1.93E+1	1.93E+1	1.93E+2	1.93E+2	1.93E+2
XXA	U-234	8.68E-1	8.68E-1	8.68E-1	8.68E+0	8.68E+0	8.68E+0	8.68E+1	8.68E+1	8.68E+1	8.68E+2	8.68E+2	8.68E+2	7.47E+3	7.47E+3	7.47E+3
	U-235	2.92E-2	2.92E-2	2.92E-2	2.92E-1	2.92E-1	2.92E-1	2.92E+0	2.92E+0	2.92E+0	2.92E+1	2.92E+1	2.92E+1	2.15E+2	2.15E+2	2.15E+2
	U-238	1.49E-1	1.49E-1	1.49E-1	1.49E+0	1.49E+0	1.49E+0	1.49E+1	1.49E+1	1.49E+1	1.49E+2	1.49E+2	1.49E+2	1.28E+3	1.28E+3	1.28E+3
XXB	U-234	8.68E-1	8.68E-1	8.68E-1	8.68E+0	8.68E+0	8.68E+0	8.68E+1	8.68E+1	8.68E+1	8.68E+2	8.68E+2	8.68E+2	7.47E+3	7.47E+3	7.47E+3
	U-235	2.92E-2	2.92E-2	2.92E-2	2.92E-1	2.92E-1	2.92E-1	2.92E+0	2.92E+0	2.92E+0	2.92E+1	2.92E+1	2.92E+1	2.15E+2	2.15E+2	2.15E+2
	U-238	1.49E-1	1.49E-1	1.49E-1	1.49E+0	1.49E+0	1.49E+0	1.49E+1	1.49E+1	1.49E+1	1.49E+2	1.49E+2	1.49E+2	1.28E+3	1.28E+3	1.28E+3
XXC	U-234	8.68E-1	8.68E-1	8.68E-1	8.68E+0	8.68E+0	8.68E+0	8.68E+1	8.68E+1	8.68E+1	8.68E+2	8.68E+2	8.68E+2	7.47E+3	7.47E+3	7.47E+3
	U-235	2.92E-2	2.92E-2	2.92E-2	2.92E-1	2.92E-1	2.92E-1	2.92E+0	2.92E+0	2.92E+0	2.92E+1	2.92E+1	2.92E+1	2.15E+2	2.15E+2	2.15E+2
	U-238	1.49E-1	1.49E-1	1.49E-1	1.49E+0	1.49E+0	1.49E+0	1.49E+1	1.49E+1	1.49E+1	1.49E+2	1.49E+2	1.49E+2	1.28E+3	1.28E+3	1.28E+3
XXIA	Th-232	3.67E-3	3.67E-3	3.67E-3	3.67E-2	3.67E-2	3.67E-2	3.67E-1	3.67E-1	3.67E-1	3.67E+0	3.67E+0	3.67E+0	3.67E+1	3.67E+1	3.67E+1
XXIB	Th-232	3.67E-3	3.67E-3	3.67E-3	3.67E-2	3.67E-2	3.67E-2	3.67E-1	3.67E-1	3.67E-1	3.67E+0	3.67E+0	3.67E+0	3.67E+1	3.67E+1	3.67E+1
XXIC	Th-232	3.67E-3	3.67E-3	3.67E-3	3.67E-2	3.67E-2	3.67E-2	3.67E-1	3.67E-1	3.67E-1	3.67E+0	3.67E+0	3.67E+0	3.67E+1	3.67E+1	3.67E+1
XXII	Ra-226	6.41E-4	6.40E-4	6.40E-4	6.36E-3	6.36E-3	6.36E-3	6.23E-2	5.93E-2	5.93E-2	5.68E-1	4.80E-1	4.80E-1	6.20E+0	5.17E+0	5.17E+0
	Th-232	3.15E-3	3.15E-3	3.15E-3	3.15E-2	3.15E-2	3.15E-2	3.11E-1	2.96E-1	2.96E-1	3.12E+0	2.86E+0	2.86E+0	3.04E+1	2.68E+1	2.68E+1
	U-234	9.08E-8	9.07E-8	9.07E-8	1.05E-4	1.05E-4	1.05E-4	1.17E-1	1.00E-1	1.00E-1	1.93E+0	1.82E+0	1.82E+0	2.52E+1	2.52E+1	2.52E+1
	U-235	4.27E-9	4.26E-9	4.26E-9	4.94E-6	4.94E-6	4.94E-6	5.48E-3	4.72E-3	4.72E-3	9.05E-2	8.57E-2	8.57E-2	1.35E+0	1.19E+0	1.19E+0
	U-238	9.08E-8	9.07E-8	9.07E-8	1.05E-4	1.05E-4	1.05E-4	1.17E-1	1.00E-1	1.00E-1	1.93E+0	1.82E+0	1.82E+0	2.86E+1	2.52E+1	2.52E+1

TABLE K-198. MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
		1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	3.76E+0	3.76E+0	3.76E+0	7.53E+0	7.53E+0	7.53E+0	1.13E+1	1.13E+1	1.13E+1	1.88E+1	1.88E+1	1.88E+1	2.63E+1	2.63E+1	2.63E+1	3.76E+1	3.76E+1	3.76E+1
II-1	Ra-226	9.19E-2	9.09E-2	9.09E-2	3.52E-1	9.18E-2	9.18E-2	8.31E-1	9.27E-2	9.27E-2	1.78E+0	9.27E-1	9.27E-1	2.75E+0	1.83E+0	1.83E+0	4.18E+0	3.22E+0	3.22E+0
	Th-230	8.64E+0	3.55E+0	3.55E+0	1.43E+1	8.39E+0	8.39E+0	1.47E+1	1.32E+1	1.32E+1	1.56E+1	1.48E+1	1.48E+1	1.64E+1	1.57E+1	1.57E+1	1.77E+1	1.66E+1	1.66E+1
	Ra-228	1.48E-2	1.47E-2	1.47E-2	1.50E-2	1.48E-2	1.48E-2	1.50E-2	1.50E-2	1.50E-2	1.50E-2	1.50E-2	1.50E-2	1.50E-2	1.50E-2	1.50E-2	1.51E-2	1.50E-2	1.50E-2
	Th-232	1.16E-2	1.15E-2	1.15E-2	1.18E-2	1.16E-2	1.16E-2	1.18E-2	1.17E-2	1.17E-2	1.18E-2	1.18E-2	1.18E-2	1.18E-2	1.18E-2	1.18E-2	1.18E-2	1.18E-2	1.18E-2
	U-234	6.67E-2	6.61E-2	6.61E-2	6.72E-2	6.67E-2	6.67E-2	6.73E-2	6.71E-2	6.71E-2	6.74E-2	6.73E-2	6.73E-2	6.74E-2	6.74E-2	6.74E-2	6.76E-2	6.74E-2	6.74E-2
	U-235	2.88E-3	2.84E-3	2.84E-3	2.92E-3	2.88E-3	2.88E-3	2.93E-3	2.92E-3	2.92E-3	2.93E-3	2.93E-3	2.93E-3	2.94E-3	2.93E-3	2.93E-3	2.95E-3	2.94E-3	2.94E-3
	U-238	7.26E-2	7.20E-2	7.20E-2	7.72E-2	7.25E-2	7.25E-2	7.87E-2	7.37E-2	7.37E-2	8.21E-2	7.90E-2	7.90E-2	8.48E-2	8.22E-2	8.22E-2	9.00E-2	8.57E-2	8.57E-2
II-2	Ra-226	1.16E-2	1.15E-2	1.15E-2	1.18E-2	1.16E-2	1.16E-2	1.19E-2	1.17E-2	1.17E-2	1.21E-2	1.18E-2	1.18E-2	1.22E-2	1.19E-2	1.19E-2	1.24E-2	1.21E-2	1.21E-2
	Th-230	6.58E+0	2.74E+0	2.74E+0	1.82E+1	7.53E+0	7.53E+0	2.97E+1	1.23E+1	1.23E+1	4.08E+1	2.20E+1	2.20E+1	5.03E+1	3.09E+1	3.09E+1	6.46E+1	4.09E+1	4.09E+1
	Ra-228	5.05E-2	5.03E-2	5.03E-2	5.12E-2	5.06E-2	5.06E-2	5.19E-2	5.09E-2	5.09E-2	6.77E-1	5.14E-2	5.14E-2	1.39E+0	1.34E-1	1.34E-1	2.45E+0	6.83E-1	6.83E-1
	Th-232	3.68E-2	3.66E-2	3.66E-2	3.74E-2	3.68E-2	3.68E-2	3.80E-2	3.71E-2	3.71E-2	3.85E-2	3.76E-2	3.76E-2	3.90E-2	3.80E-2	3.80E-2	3.98E-2	3.86E-2	3.86E-2
	U-234	3.87E+0	3.83E+0	3.83E+0	3.98E+0	3.88E+0	3.88E+0	4.08E+0	3.92E+0	3.92E+0	4.19E+0	4.01E+0	4.01E+0	4.28E+0	4.09E+0	4.09E+0	4.43E+0	4.19E+0	4.19E+0
	U-235	2.62E-1	2.60E-1	2.60E-1	2.65E-1	2.63E-1	2.63E-1	2.75E-1	2.65E-1	2.65E-1	2.81E-1	2.71E-1	2.71E-1	2.87E-1	2.76E-1	2.76E-1	2.96E-1	2.81E-1	2.81E-1
	U-238	4.87E+0	4.82E+0	4.82E+0	5.00E+0	4.88E+0	4.88E+0	5.14E+0	4.94E+0	4.94E+0	5.26E+0	5.05E+0	5.05E+0	5.36E+0	5.15E+0	5.15E+0	5.54E+0	5.26E+0	5.26E+0
II-3	Ra-226	1.10E-1	7.23E-2	7.23E-2	1.75E-1	1.53E-1	1.53E-1	2.25E-1	2.02E-1	2.02E-1	3.04E-1	2.79E-1	2.79E-1	3.66E-1	3.39E-1	3.39E-1	4.34E-1	4.11E-1	4.11E-1
	Th-230	2.31E+0	1.81E+0	1.81E+0	3.38E+0	2.98E+0	2.98E+0	4.47E+0	3.93E+0	3.93E+0	6.55E+0	5.83E+0	5.83E+0	8.49E+0	7.61E+0	7.61E+0	1.09E+1	1.01E+1	1.01E+1
	Ra-228	4.68E-2	4.61E-2	4.61E-2	4.78E-2	4.75E-2	4.75E-2	4.85E-2	4.82E-2	4.82E-2	4.95E-2	4.92E-2	4.92E-2	5.02E-2	4.99E-2	4.99E-2	5.09E-2	5.07E-2	5.07E-2
	Th-232	4.24E-2	4.18E-2	4.18E-2	4.34E-2	4.31E-2	4.31E-2	4.41E-2	4.38E-2	4.38E-2	4.50E-2	4.48E-2	4.48E-2	4.57E-2	4.54E-2	4.54E-2	4.61E-2	4.61E-2	4.61E-2
	U-234	4.85E+0	3.75E+0	3.75E+0	7.34E+0	6.39E+0	6.39E+0	1.00E+1	8.63E+0	8.63E+0	1.67E+1	1.43E+1	1.43E+1	2.36E+1	2.04E+1	2.04E+1	3.30E+1	2.97E+1	2.97E+1
	U-235	1.90E+0	1.60E+0	1.60E+0	2.51E+0	2.30E+0	2.30E+0	3.05E+0	2.79E+0	2.79E+0	4.44E+0	3.84E+0	3.84E+0	6.17E+0	5.37E+0	5.37E+0	8.49E+0	7.68E+0	7.68E+0
	U-238	4.41E+0	3.38E+0	3.38E+0	6.72E+0	5.85E+0	5.85E+0	9.07E+0	7.90E+0	7.90E+0	1.53E+1	1.30E+1	1.30E+1	2.19E+1	1.88E+1	1.88E+1	3.11E+1	2.78E+1	2.78E+1
II-4	Ra-226	7.12E-3	6.33E-3	6.33E-3	8.18E-3	6.99E-3	6.99E-3	9.00E-3	7.62E-3	7.62E-3	1.06E-2	8.70E-3	8.70E-3	7.08E-2	9.74E-3	9.74E-3	2.15E-1	1.51E-2	1.51E-2
	Th-230	1.00E+1	4.37E+0	4.37E+0	1.64E+1	9.08E+0	9.08E+0	2.11E+1	1.32E+1	1.32E+1	3.04E+1	1.94E+1	1.94E+1	3.81E+1	2.54E+1	2.54E+1	4.60E+1	3.42E+1	3.42E+1
	Ra-228	3.92E-2	1.25E-2	1.25E-2	1.45E-1	2.58E-2	2.58E-2	2.25E-1	9.04E-2	9.04E-2	3.85E-1	1.96E-1	1.96E-1	5.43E-1	2.99E-1	2.99E-1	7.85E-1	4.51E-1	4.51E-1
	Th-232	1.61E-2	1.42E-2	1.42E-2	6.04E-2	1.58E-2	1.58E-2	1.64E-1	1.73E-2	1.73E-2	3.76E-1	1.26E-1	1.26E-1	5.91E-1	2.60E-1	2.60E-1	9.54E-1	4.65E-1	4.65E-1
	U-234	6.12E-1	2.30E-1	2.30E-1	1.29E+0	5.33E-1	5.33E-1	1.92E+0	9.22E-1	9.22E-1	3.51E+0	1.68E+0	1.68E+0	5.62E+0	2.58E+0	2.58E+0	1.02E+1	4.32E+0	4.32E+0
	U-235	6.89E-4	2.82E-4	2.82E-4	1.19E-3	6.23E-4	6.23E-4	1.55E-3	9.35E-4	9.35E-4	2.19E-3	1.43E-3	1.43E-3	2.73E-3	1.86E-3	1.86E-3	5.86E-3	2.43E-3	2.43E-3
	U-238	4.44E-2	4.07E-2	4.07E-2	4.89E-2	4.38E-2	4.38E-2	5.22E-2	4.66E-2	4.66E-2	5.80E-2	5.11E-2	5.11E-2	3.85E-1	5.50E-2	5.50E-2	1.64E+0	6.83E-2	6.83E-2
II-5	Ra-226	3.46E-1	3.44E-1	3.44E-1	8.23E-1	8.22E-1	8.22E-1	1.30E+0	1.30E+0	1.30E+0	2.25E+0	2.25E+0	2.25E+0	3.21E+0	3.20E+0	3.20E+0	4.56E+0	4.56E+0	4.56E+0
	Th-230	2.57E-2	2.57E-2	2.57E-2	2.61E-2	2.61E-2	2.61E-2	2.65E-2	2.65E-2	2.65E-2	2.72E-2	2.72E-2	2.72E-2	2.80E-2	2.80E-2	2.80E-2	2.92E-2	2.92E-2	2.92E-2
	Ra-228	1.56E-2	1.56E-2	1.56E-2	1.60E-2	1.60E-2	1.60E-2	1.65E-2	1.65E-2	1.65E-2	1.74E-2	1.74E-2	1.74E-2	1.83E-2	1.83E-2	1.83E-2	1.98E-2	1.98E-2	1.98E-2
	Th-232	3.09E-2	3.09E-2	3.09E-2	3.12E-2	3.12E-2	3.12E-2	3.16E-2	3.16E-2	3.16E-2	3.24E-2	3.24E-2	3.24E-2	3.31E-2	3.31E-2	3.31E-2	8.16E-2	8.15E-2	8.15E-2
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	1.58E-3	1.58E-3	1.58E-3	1.62E-3	1.62E-3	1.62E-3	1.65E-3	1.65E-3	1.65E-3	1.71E-3	1.71E-3	1.71E-3	1.78E-3	1.78E-3	1.78E-3	1.88E-3	1.88E-3	1.88E-3
	U-238	3.81E-2	3.81E-2	3.81E-2	3.87E-2	3.87E-2	3.87E-2	3.93E-2	3.93E-2	3.93E-2	4.04E-2	4.04E-2	4.04E-2	4.15E-2	4.15E-2	4.15E-2	4.33E-2	4.33E-2	4.33E-2

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 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	2.76E+0	2.76E+0	2.76E+0	2.76E+1	2.76E+1	2.76E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	4.44E-2	4.44E-2	4.44E-2	4.46E-1	4.46E-1	4.46E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	2.58E-1	2.58E-1	2.58E-1	2.58E+0	2.58E+0	2.58E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0
XVIA	Co-60	1.59E-2	1.59E-2	1.59E-2	1.59E-1	1.59E-1	1.59E-1	1.52E+0	1.52E+0	1.52E+0	1.53E+1	1.53E+1	1.53E+1	1.29E+2	1.29E+2	1.29E+2
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	3.05E-1	3.05E-1	3.05E-1	2.71E+0	2.71E+0	2.71E+0	1.35E+2	1.35E+2	1.35E+2
XVIB	Co-60	1.59E-2	1.59E-2	1.59E-2	1.59E-1	1.59E-1	1.59E-1	1.52E+0	1.52E+0	1.52E+0	1.53E+1	1.53E+1	1.53E+1	1.29E+2	1.29E+2	1.29E+2
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	3.05E-1	3.05E-1	3.05E-1	2.71E+0	2.71E+0	2.71E+0	1.35E+2	1.35E+2	1.35E+2
XVIC	Co-60	1.59E-2	1.59E-2	1.59E-2	1.59E-1	1.59E-1	1.59E-1	1.52E+0	1.52E+0	1.52E+0	1.53E+1	1.53E+1	1.53E+1	1.29E+2	1.29E+2	1.29E+2
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	3.05E-1	3.05E-1	3.05E-1	2.71E+0	2.71E+0	2.71E+0	1.35E+2	1.35E+2	1.35E+2
XVIII A	Cs-137	6.94E-2	6.94E-2	6.94E-2	6.94E-1	6.94E-1	6.94E-1	6.94E+0	6.94E+0	6.94E+0	6.94E+1	6.94E+1	6.94E+1	6.94E+2	6.94E+2	6.94E+2
	Sr-90	6.94E-2	6.94E-2	6.94E-2	6.94E-1	6.94E-1	6.94E-1	6.94E+0	6.94E+0	6.94E+0	6.94E+1	6.94E+1	6.94E+1	6.94E+2	6.94E+2	6.94E+2
XVIII B	Cs-137	6.94E-2	6.94E-2	6.94E-2	6.94E-1	6.94E-1	6.94E-1	6.94E+0	6.94E+0	6.94E+0	6.94E+1	6.94E+1	6.94E+1	6.94E+2	6.94E+2	6.94E+2
	Sr-90	6.94E-2	6.94E-2	6.94E-2	6.94E-1	6.94E-1	6.94E-1	6.94E+0	6.94E+0	6.94E+0	6.94E+1	6.94E+1	6.94E+1	6.94E+2	6.94E+2	6.94E+2
XVIII C	Cs-137	6.94E-2	6.94E-2	6.94E-2	6.94E-1	6.94E-1	6.94E-1	6.94E+0	6.94E+0	6.94E+0	6.94E+1	6.94E+1	6.94E+1	6.94E+2	6.94E+2	6.94E+2
	Sr-90	6.94E-2	6.94E-2	6.94E-2	6.94E-1	6.94E-1	6.94E-1	6.94E+0	6.94E+0	6.94E+0	6.94E+1	6.94E+1	6.94E+1	6.94E+2	6.94E+2	6.94E+2
XXA	U-234	4.08E+0	4.08E+0	4.08E+0	4.08E+1	4.08E+1	4.08E+1	4.08E+2	4.08E+2	4.08E+2	4.20E+3	4.20E+3	4.20E+3	7.47E+3	7.47E+3	7.47E+3
	U-235	1.37E-1	1.37E-1	1.37E-1	1.37E+0	1.37E+0	1.37E+0	1.37E+1	1.37E+1	1.37E+1	1.28E+2	1.28E+2	1.28E+2	2.15E+2	2.15E+2	2.15E+2
	U-238	7.00E-1	7.00E-1	7.00E-1	7.00E+0	7.00E+0	7.00E+0	6.99E+1	6.99E+1	6.99E+1	7.19E+2	7.19E+2	7.19E+2	1.28E+3	1.28E+3	1.28E+3
XXB	U-234	4.08E+0	4.08E+0	4.08E+0	4.08E+1	4.08E+1	4.08E+1	4.08E+2	4.08E+2	4.08E+2	4.20E+3	4.20E+3	4.20E+3	7.47E+3	7.47E+3	7.47E+3
	U-235	1.37E-1	1.37E-1	1.37E-1	1.37E+0	1.37E+0	1.37E+0	1.37E+1	1.37E+1	1.37E+1	1.28E+2	1.28E+2	1.28E+2	2.15E+2	2.15E+2	2.15E+2
	U-238	7.00E-1	7.00E-1	7.00E-1	7.00E+0	7.00E+0	7.00E+0	6.99E+1	6.99E+1	6.99E+1	7.19E+2	7.19E+2	7.19E+2	1.28E+3	1.28E+3	1.28E+3
XXC	U-234	4.08E+0	4.08E+0	4.08E+0	4.08E+1	4.08E+1	4.08E+1	4.08E+2	4.08E+2	4.08E+2	4.20E+3	4.20E+3	4.20E+3	7.47E+3	7.47E+3	7.47E+3
	U-235	1.37E-1	1.37E-1	1.37E-1	1.37E+0	1.37E+0	1.37E+0	1.37E+1	1.37E+1	1.37E+1	1.28E+2	1.28E+2	1.28E+2	2.15E+2	2.15E+2	2.15E+2
	U-238	7.00E-1	7.00E-1	7.00E-1	7.00E+0	7.00E+0	7.00E+0	6.99E+1	6.99E+1	6.99E+1	7.19E+2	7.19E+2	7.19E+2	1.28E+3	1.28E+3	1.28E+3
XXIA	Th-232	1.27E-2	1.27E-2	1.27E-2	1.27E-1	1.27E-1	1.27E-1	1.27E+0	1.27E+0	1.27E+0	1.27E+1	1.27E+1	1.27E+1	1.27E+2	1.27E+2	1.27E+2
XXIB	Th-232	1.27E-2	1.27E-2	1.27E-2	1.27E-1	1.27E-1	1.27E-1	1.27E+0	1.27E+0	1.27E+0	1.27E+1	1.27E+1	1.27E+1	1.27E+2	1.27E+2	1.27E+2
XXIC	Th-232	1.27E-2	1.27E-2	1.27E-2	1.27E-1	1.27E-1	1.27E-1	1.27E+0	1.27E+0	1.27E+0	1.27E+1	1.27E+1	1.27E+1	1.27E+2	1.27E+2	1.27E+2
XXII	Ra-226	2.25E-3	2.25E-3	2.25E-3	2.23E-2	2.21E-2	2.21E-2	2.03E-1	1.62E-1	1.62E-1	1.28E+0	1.23E+0	1.23E+0	8.00E+0	8.00E+0	8.00E+0
	Th-232	1.11E-2	1.11E-2	1.11E-2	1.11E-1	1.10E-1	1.10E-1	1.05E+0	8.12E-1	8.12E-1	1.14E+1	9.87E+0	9.87E+0	6.40E+1	6.40E+1	6.40E+1
	U-234	4.31E-6	4.31E-6	4.31E-6	4.94E-3	4.82E-3	4.82E-3	1.30E+0	1.15E+0	1.15E+0	7.15E+0	6.55E+0	6.55E+0	6.40E+1	6.40E+1	6.40E+1
	U-235	2.02E-7	2.02E-7	2.02E-7	2.32E-4	2.27E-4	2.27E-4	6.09E-2	5.40E-2	5.40E-2	3.36E-1	3.08E-1	3.08E-1	3.01E+0	3.01E+0	3.01E+0
	U-238	4.31E-6	4.31E-6	4.31E-6	4.94E-3	4.82E-3	4.82E-3	1.30E+0	1.15E+0	1.15E+0	7.15E+0	6.55E+0	6.55E+0	6.40E+1	6.40E+1	6.40E+1

TABLE K-24. POTENTIAL CANCERS AMONG WORKERS--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.64E-3	7.64E-3	7.64E-3	7.06E-3	7.06E-3	7.06E-3	6.68E-3	6.68E-3	6.68E-3	6.15E-3	6.15E-3	6.15E-3	5.82E-3	5.82E-3	5.82E-3	5.13E-3	5.13E-3	5.13E-3
II	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1
III	2.70E-3	2.70E-3	2.70E-3	2.26E-3	2.26E-3	2.26E-3	1.80E-3	1.80E-3	1.80E-3	1.06E-3	1.06E-3	1.06E-3	6.14E-4	6.14E-4	6.14E-4	4.32E-4	4.32E-4	4.32E-4
IV	6.46E-4	6.46E-4	6.46E-4	5.87E-4	5.87E-4	5.87E-4	5.29E-4	5.29E-4	5.29E-4	4.11E-4	4.11E-4	4.11E-4	2.93E-4	2.93E-4	2.93E-4	1.16E-4	1.16E-4	1.16E-4
V	2.26E-1	2.26E-1	2.26E-1	2.19E-1	2.19E-1	2.19E-1	2.12E-1	2.12E-1	2.12E-1	1.98E-1	1.98E-1	1.98E-1	1.84E-1	1.84E-1	1.84E-1	1.74E-1	1.74E-1	1.74E-1
VI	2.57E-2	2.57E-2	2.57E-2	2.55E-2	2.55E-2	2.55E-2	2.53E-2	2.53E-2	2.53E-2	2.48E-2	2.48E-2	2.48E-2	2.43E-2	2.43E-2	2.43E-2	2.36E-2	2.36E-2	2.36E-2
VII	1.46E-2	1.46E-2	1.46E-2	5.15E-3	5.15E-3	5.15E-3	5.21E-4	5.21E-4	5.21E-4	5.56E-5	5.56E-5	5.56E-5	1.65E-5	1.65E-5	1.65E-5	.00E+0	.00E+0	.00E+0
IX	9.48E-6	9.48E-6	9.48E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.07E-4	1.27E-4	1.27E-4	9.30E-5	1.08E-4	1.08E-4	8.55E-5	9.67E-5	9.67E-5	7.63E-5	8.36E-5	8.36E-5	6.95E-5	7.58E-5	7.58E-5	6.27E-5	6.74E-5	6.74E-5
XII	5.94E-4	5.94E-4	5.94E-4	5.91E-4	5.91E-4	5.91E-4	5.89E-4	5.89E-4	5.89E-4	5.86E-4	5.86E-4	5.86E-4	5.84E-4	5.84E-4	5.84E-4	5.80E-4	5.80E-4	5.80E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	8.02E-5	8.02E-5	8.02E-5	7.96E-5	7.96E-5	7.96E-5	7.93E-5	7.93E-5	7.93E-5	7.88E-5	7.88E-5	7.88E-5	7.80E-5	7.80E-5	7.80E-5	7.64E-5	7.64E-5	7.64E-5
XVIB	8.02E-5	8.02E-5	8.02E-5	7.96E-5	7.96E-5	7.96E-5	7.93E-5	7.93E-5	7.93E-5	7.88E-5	7.88E-5	7.88E-5	7.80E-5	7.80E-5	7.80E-5	7.64E-5	7.64E-5	7.64E-5
XVIC	8.02E-5	8.02E-5	8.02E-5	7.96E-5	7.96E-5	7.96E-5	7.93E-5	7.93E-5	7.93E-5	7.88E-5	7.88E-5	7.88E-5	7.80E-5	7.80E-5	7.80E-5	7.64E-5	7.64E-5	7.64E-5
XVIIIA	6.75E-5	6.75E-5	6.75E-5	6.74E-5	6.74E-5	6.74E-5	6.70E-5	6.70E-5	6.70E-5	6.64E-5	6.64E-5	6.64E-5	6.57E-5	6.57E-5	6.57E-5	6.47E-5	6.47E-5	6.47E-5
XVIIIB	6.75E-5	6.75E-5	6.75E-5	6.74E-5	6.74E-5	6.74E-5	6.70E-5	6.70E-5	6.70E-5	6.64E-5	6.64E-5	6.64E-5	6.57E-5	6.57E-5	6.57E-5	6.47E-5	6.47E-5	6.47E-5
XVIIIC	6.75E-5	6.75E-5	6.75E-5	6.74E-5	6.74E-5	6.74E-5	6.70E-5	6.70E-5	6.70E-5	6.64E-5	6.64E-5	6.64E-5	6.57E-5	6.57E-5	6.57E-5	6.47E-5	6.47E-5	6.47E-5
XXA	1.57E-6	1.76E-6	1.76E-6	1.33E-6	1.53E-6	1.53E-6	1.17E-6	1.38E-6	1.38E-6	9.82E-7	1.19E-6	1.19E-6	8.26E-7	1.06E-6	1.06E-6	5.92E-7	9.27E-7	9.27E-7
XXB	1.57E-6	1.70E-6	1.70E-6	1.33E-6	1.46E-6	1.46E-6	1.17E-6	1.32E-6	1.32E-6	9.82E-7	1.12E-6	1.12E-6	8.26E-7	9.98E-7	9.98E-7	5.92E-7	8.41E-7	8.41E-7
XXC	1.57E-6	1.57E-6	1.57E-6	1.33E-6	1.33E-6	1.33E-6	1.17E-6	1.17E-6	1.17E-6	9.82E-7	9.82E-7	9.82E-7	8.26E-7	8.26E-7	8.26E-7	5.92E-7	5.92E-7	5.92E-7
XXIA	1.16E-3	1.16E-3	1.16E-3	1.14E-3	1.14E-3	1.14E-3	1.13E-3	1.13E-3	1.13E-3	1.11E-3	1.11E-3	1.11E-3	1.06E-3	1.06E-3	1.06E-3	9.94E-4	9.94E-4	9.94E-4
XXIB	1.16E-3	1.16E-3	1.16E-3	1.14E-3	1.14E-3	1.14E-3	1.13E-3	1.13E-3	1.13E-3	1.11E-3	1.11E-3	1.11E-3	1.06E-3	1.06E-3	1.06E-3	9.94E-4	9.94E-4	9.94E-4
XXIC	1.16E-3	1.16E-3	1.16E-3	1.14E-3	1.14E-3	1.14E-3	1.13E-3	1.13E-3	1.13E-3	1.11E-3	1.11E-3	1.11E-3	1.06E-3	1.06E-3	1.06E-3	9.94E-4	9.94E-4	9.94E-4
XXII	2.92E-2	2.93E-2	2.93E-2	2.89E-2	2.90E-2	2.90E-2	2.86E-2	2.87E-2	2.87E-2	2.79E-2	2.80E-2	2.80E-2	2.73E-2	2.75E-2	2.75E-2	2.70E-2	2.71E-2	2.71E-2
DOE	1.19E+0	1.19E+0	1.19E+0	1.17E+0	1.17E+0	1.17E+0	1.15E+0	1.15E+0	1.15E+0	1.11E+0	1.12E+0	1.12E+0	1.08E+0	1.09E+0	1.09E+0	1.06E+0	1.06E+0	1.06E+0
DOD	5.94E-4	5.94E-4	5.94E-4	5.91E-4	5.91E-4	5.91E-4	5.89E-4	5.89E-4	5.89E-4	5.86E-4	5.86E-4	5.86E-4	5.84E-4	5.84E-4	5.84E-4	5.80E-4	5.80E-4	5.80E-4
NRC	3.97E-2	3.97E-2	3.97E-2	3.94E-2	3.94E-2	3.94E-2	3.91E-2	3.91E-2	3.91E-2	3.83E-2	3.84E-2	3.84E-2	3.72E-2	3.72E-2	3.72E-2	3.55E-2	3.55E-2	3.55E-2
Total	1.23E+0	1.23E+0	1.23E+0	1.21E+0	1.21E+0	1.21E+0	1.19E+0	1.19E+0	1.19E+0	1.15E+0	1.15E+0	1.15E+0	1.12E+0	1.12E+0	1.12E+0	1.09E+0	1.09E+0	1.09E+0

TABLE K-25. POTENTIAL CANCER DEATHS OF WORKERS--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.92E-3	5.92E-3	5.92E-3	5.81E-3	5.81E-3	5.81E-3	5.49E-3	5.49E-3	5.49E-3	4.41E-3	4.41E-3	4.41E-3	1.97E-3	1.97E-3	1.97E-3
II	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.01E-1	1.01E-1	1.01E-1
III	2.44E-3	2.44E-3	2.44E-3	2.44E-3	2.44E-3	2.44E-3	2.27E-3	2.27E-3	2.27E-3	1.21E-3	1.21E-3	1.21E-3	.00E+0	.00E+0	.00E+0
IV	6.15E-4	6.15E-4	6.15E-4	6.07E-4	6.07E-4	6.07E-4	5.79E-4	5.79E-4	5.79E-4	4.57E-4	4.57E-4	4.57E-4	.00E+0	.00E+0	.00E+0
V	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.53E-1	1.53E-1	1.53E-1	1.40E-1	1.40E-1	1.40E-1	9.16E-2	9.16E-2	9.16E-2
VI	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.92E-2	1.92E-2	1.92E-2	1.63E-2	1.63E-2	1.63E-2
VII	5.17E-2	5.17E-2	5.17E-2	4.32E-2	4.32E-2	4.32E-2	3.18E-2	3.18E-2	3.18E-2	8.23E-4	8.23E-4	8.23E-4	.00E+0	.00E+0	.00E+0
IX	1.82E-4	1.82E-4	1.82E-4	1.32E-4	1.32E-4	1.32E-4	4.54E-5	4.54E-5	4.54E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.24E-4	1.24E-4	1.24E-4	1.23E-4	1.24E-4	1.24E-4	1.08E-4	1.20E-4	1.20E-4	6.96E-5	7.70E-5	7.70E-5	3.01E-5	3.17E-5	3.17E-5
XII	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.31E-4	5.31E-4	5.31E-4	5.01E-4	5.01E-4	5.01E-4
XIIIA	3.22E-7	3.22E-7	3.22E-7	2.31E-7	2.31E-7	2.31E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.22E-7	3.22E-7	3.22E-7	2.31E-7	2.31E-7	2.31E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	3.22E-7	3.22E-7	3.22E-7	2.31E-7	2.31E-7	2.31E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.23E-5	5.23E-5	5.23E-5	4.34E-5	4.34E-5	4.34E-5
XVIB	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.23E-5	5.23E-5	5.23E-5	4.34E-5	4.34E-5	4.34E-5
XVIC	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.23E-5	5.23E-5	5.23E-5	4.34E-5	4.34E-5	4.34E-5
XVIIIA	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.42E-5	4.42E-5	4.42E-5	3.86E-5	3.86E-5	3.86E-5
XVIIIB	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.42E-5	4.42E-5	4.42E-5	3.86E-5	3.86E-5	3.86E-5
XVIIIC	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.42E-5	4.42E-5	4.42E-5	3.86E-5	3.86E-5	3.86E-5
XXA	3.73E-5	3.75E-5	3.75E-5	2.35E-5	2.60E-5	2.60E-5	4.90E-6	8.43E-6	8.43E-6	1.16E-6	1.29E-6	1.29E-6	.00E+0	2.47E-7	2.47E-7
XXB	3.73E-5	3.73E-5	3.73E-5	2.35E-5	2.35E-5	2.35E-5	4.90E-6	4.90E-6	4.90E-6	1.16E-6	1.16E-6	1.16E-6	.00E+0	.00E+0	.00E+0
XXC	3.73E-5	3.73E-5	3.73E-5	2.35E-5	2.35E-5	2.35E-5	4.90E-6	4.90E-6	4.90E-6	1.16E-6	1.16E-6	1.16E-6	.00E+0	.00E+0	.00E+0
XXIA	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.83E-4	7.83E-4	7.83E-4	7.62E-4	7.62E-4	7.62E-4	5.18E-4	5.18E-4	5.18E-4
XXIB	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.83E-4	7.83E-4	7.83E-4	7.62E-4	7.62E-4	7.62E-4	5.18E-4	5.18E-4	5.18E-4
XXIC	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.83E-4	7.83E-4	7.83E-4	7.62E-4	7.62E-4	7.62E-4	5.18E-4	5.18E-4	5.18E-4
XXII	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.98E-2	1.98E-2	1.98E-2	1.93E-2	1.93E-2	1.93E-2	1.33E-2	1.42E-2	1.42E-2
DOE	9.04E-1	9.04E-1	9.04E-1	8.94E-1	8.94E-1	8.94E-1	8.79E-1	8.79E-1	8.79E-1	8.18E-1	8.18E-1	8.18E-1	6.56E-1	6.63E-1	6.63E-1
DOD	5.41E-4	5.41E-4	5.41E-4	5.40E-4	5.40E-4	5.40E-4	5.38E-4	5.38E-4	5.38E-4	5.31E-4	5.31E-4	5.31E-4	5.01E-4	5.01E-4	5.01E-4
NRC	2.72E-2	2.72E-2	2.72E-2	2.70E-2	2.70E-2	2.70E-2	2.67E-2	2.67E-2	2.67E-2	2.61E-2	2.61E-2	2.61E-2	1.92E-2	1.93E-2	1.93E-2
Total	9.31E-1	9.31E-1	9.31E-1	9.22E-1	9.22E-1	9.22E-1	9.06E-1	9.06E-1	9.06E-1	8.44E-1	8.45E-1	8.45E-1	6.76E-1	6.82E-1	6.82E-1

TABLE K-26. POTENTIAL CANCER DEATHS OF WORKERS--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.49E-3	5.49E-3	5.49E-3	5.27E-3	5.27E-3	5.27E-3	5.09E-3	5.09E-3	5.09E-3	4.83E-3	4.83E-3	4.83E-3	4.63E-3	4.63E-3	4.63E-3	4.41E-3	4.41E-3	4.41E-3
II	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1
III	2.27E-3	2.27E-3	2.27E-3	1.98E-3	1.98E-3	1.98E-3	1.80E-3	1.80E-3	1.80E-3	1.65E-3	1.65E-3	1.65E-3	1.47E-3	1.47E-3	1.47E-3	1.21E-3	1.21E-3	1.21E-3
IV	5.79E-4	5.79E-4	5.79E-4	5.65E-4	5.65E-4	5.65E-4	5.51E-4	5.51E-4	5.51E-4	5.24E-4	5.24E-4	5.24E-4	4.97E-4	4.97E-4	4.97E-4	4.57E-4	4.57E-4	4.57E-4
V	1.53E-1	1.53E-1	1.53E-1	1.51E-1	1.51E-1	1.51E-1	1.49E-1	1.49E-1	1.49E-1	1.46E-1	1.46E-1	1.46E-1	1.44E-1	1.44E-1	1.44E-1	1.40E-1	1.40E-1	1.40E-1
VI	1.97E-2	1.97E-2	1.97E-2	1.96E-2	1.96E-2	1.96E-2	1.95E-2	1.95E-2	1.95E-2	1.94E-2	1.94E-2	1.94E-2	1.93E-2	1.93E-2	1.93E-2	1.92E-2	1.92E-2	1.92E-2
VII	3.18E-2	3.18E-2	3.18E-2	2.09E-2	2.09E-2	2.09E-2	1.46E-2	1.46E-2	1.46E-2	8.80E-3	8.80E-3	8.80E-3	4.97E-3	4.97E-3	4.97E-3	8.23E-4	8.23E-4	8.23E-4
IX	4.54E-5	4.54E-5	4.54E-5	2.17E-5	2.17E-5	2.17E-5	1.28E-5	1.28E-5	1.28E-5	4.53E-6	4.53E-6	4.53E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.08E-4	1.20E-4	1.20E-4	9.62E-5	1.12E-4	1.12E-4	8.92E-5	1.05E-4	1.05E-4	8.05E-5	9.34E-5	9.34E-5	7.51E-5	8.51E-5	8.51E-5	6.96E-5	7.70E-5	7.70E-5
XII	5.38E-4	5.38E-4	5.38E-4	5.36E-4	5.36E-4	5.36E-4	5.35E-4	5.35E-4	5.35E-4	5.33E-4	5.33E-4	5.33E-4	5.32E-4	5.32E-4	5.32E-4	5.31E-4	5.31E-4	5.31E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.29E-5	5.29E-5	5.29E-5	5.26E-5	5.26E-5	5.26E-5	5.24E-5	5.24E-5	5.24E-5	5.23E-5	5.23E-5	5.23E-5
XVIB	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.29E-5	5.29E-5	5.29E-5	5.26E-5	5.26E-5	5.26E-5	5.24E-5	5.24E-5	5.24E-5	5.23E-5	5.23E-5	5.23E-5
XVIC	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.29E-5	5.29E-5	5.29E-5	5.26E-5	5.26E-5	5.26E-5	5.24E-5	5.24E-5	5.24E-5	5.23E-5	5.23E-5	5.23E-5
XVIIIA	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.42E-5	4.42E-5	4.42E-5
XVIIIB	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.42E-5	4.42E-5	4.42E-5
XVIIIC	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.42E-5	4.42E-5	4.42E-5
XXA	4.90E-6	8.43E-6	8.43E-6	1.64E-6	2.56E-6	2.56E-6	1.53E-6	1.64E-6	1.64E-6	1.38E-6	1.50E-6	1.50E-6	1.28E-6	1.40E-6	1.40E-6	1.16E-6	1.29E-6	1.29E-6
XXB	4.90E-6	4.90E-6	4.90E-6	1.64E-6	1.64E-6	1.64E-6	1.53E-6	1.53E-6	1.53E-6	1.38E-6	1.38E-6	1.38E-6	1.28E-6	1.28E-6	1.28E-6	1.16E-6	1.16E-6	1.16E-6
XXC	4.90E-6	4.90E-6	4.90E-6	1.64E-6	1.64E-6	1.64E-6	1.53E-6	1.53E-6	1.53E-6	1.38E-6	1.38E-6	1.38E-6	1.28E-6	1.28E-6	1.28E-6	1.16E-6	1.16E-6	1.16E-6
XXIA	7.83E-4	7.83E-4	7.83E-4	7.81E-4	7.81E-4	7.81E-4	7.79E-4	7.79E-4	7.79E-4	7.74E-4	7.74E-4	7.74E-4	7.69E-4	7.69E-4	7.69E-4	7.62E-4	7.62E-4	7.62E-4
XXIB	7.83E-4	7.83E-4	7.83E-4	7.81E-4	7.81E-4	7.81E-4	7.79E-4	7.79E-4	7.79E-4	7.74E-4	7.74E-4	7.74E-4	7.69E-4	7.69E-4	7.69E-4	7.62E-4	7.62E-4	7.62E-4
XXIC	7.83E-4	7.83E-4	7.83E-4	7.81E-4	7.81E-4	7.81E-4	7.79E-4	7.79E-4	7.79E-4	7.74E-4	7.74E-4	7.74E-4	7.69E-4	7.69E-4	7.69E-4	7.62E-4	7.62E-4	7.62E-4
XXII	1.98E-2	1.98E-2	1.98E-2	1.98E-2	1.98E-2	1.98E-2	1.97E-2	1.97E-2	1.97E-2	1.95E-2	1.96E-2	1.96E-2	1.94E-2	1.95E-2	1.95E-2	1.93E-2	1.93E-2	1.93E-2
DOE	8.79E-1	8.79E-1	8.79E-1	8.63E-1	8.64E-1	8.64E-1	8.53E-1	8.53E-1	8.53E-1	8.41E-1	8.41E-1	8.41E-1	8.31E-1	8.31E-1	8.31E-1	8.18E-1	8.18E-1	8.18E-1
DOD	5.38E-4	5.38E-4	5.38E-4	5.36E-4	5.36E-4	5.36E-4	5.35E-4	5.35E-4	5.35E-4	5.33E-4	5.33E-4	5.33E-4	5.32E-4	5.32E-4	5.32E-4	5.31E-4	5.31E-4	5.31E-4
NRC	2.67E-2	2.67E-2	2.67E-2	2.66E-2	2.66E-2	2.66E-2	2.66E-2	2.66E-2	2.66E-2	2.64E-2	2.64E-2	2.64E-2	2.63E-2	2.63E-2	2.63E-2	2.61E-2	2.61E-2	2.61E-2
Total	9.06E-1	9.06E-1	9.06E-1	8.91E-1	8.91E-1	8.91E-1	8.80E-1	8.80E-1	8.80E-1	8.68E-1	8.68E-1	8.68E-1	8.58E-1	8.58E-1	8.58E-1	8.44E-1	8.45E-1	8.45E-1

TABLE K-27. POTENTIAL CANCER DEATHS OF WORKERS--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.88E-3	5.88E-3	5.88E-3	5.69E-3	5.69E-3	5.69E-3	5.03E-3	5.03E-3	5.03E-3	3.37E-3	3.37E-3	3.37E-3	8.59E-4	8.59E-4	8.59E-4
II	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	8.54E-2	8.69E-2	8.69E-2
III	2.44E-3	2.44E-3	2.44E-3	2.42E-3	2.42E-3	2.42E-3	1.78E-3	1.78E-3	1.78E-3	2.84E-4	2.84E-4	2.84E-4	.00E+0	.00E+0	.00E+0
IV	6.12E-4	6.12E-4	6.12E-4	5.96E-4	5.96E-4	5.96E-4	5.42E-4	5.42E-4	5.42E-4	9.72E-5	9.72E-5	9.72E-5	.00E+0	.00E+0	.00E+0
V	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.48E-1	1.48E-1	1.48E-1	1.15E-1	1.15E-1	1.15E-1	3.23E-2	3.23E-2	3.23E-2
VI	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.95E-2	1.95E-2	1.95E-2	1.80E-2	1.80E-2	1.80E-2	1.16E-2	1.16E-2	1.16E-2
VII	4.75E-2	4.75E-2	4.75E-2	3.98E-2	3.98E-2	3.98E-2	1.25E-2	1.25E-2	1.25E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	1.57E-4	1.57E-4	1.57E-4	8.21E-5	8.21E-5	8.21E-5	8.51E-6	8.51E-6	8.51E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.24E-4	1.24E-4	1.24E-4	1.19E-4	1.24E-4	1.24E-4	9.08E-5	1.08E-4	1.08E-4	5.34E-5	5.74E-5	5.74E-5	1.72E-5	1.79E-5	1.79E-5
XII	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.33E-4	5.33E-4	5.33E-4	5.21E-4	5.21E-4	5.21E-4	1.68E-4	1.68E-4	1.68E-4
XIIIA	2.92E-7	2.92E-7	2.92E-7	1.12E-7	1.12E-7	1.12E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.92E-7	2.92E-7	2.92E-7	1.12E-7	1.12E-7	1.12E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.92E-7	2.92E-7	2.92E-7	1.12E-7	1.12E-7	1.12E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.28E-5	5.28E-5	5.28E-5	5.03E-5	5.03E-5	5.03E-5	2.60E-5	2.60E-5	2.60E-5
XVIB	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.28E-5	5.28E-5	5.28E-5	5.03E-5	5.03E-5	5.03E-5	2.60E-5	2.60E-5	2.60E-5
XVIC	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.28E-5	5.28E-5	5.28E-5	5.03E-5	5.03E-5	5.03E-5	2.60E-5	2.60E-5	2.60E-5
XVIIIA	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5	4.26E-5	4.26E-5	4.26E-5	2.92E-5	2.92E-5	2.92E-5
XVIIIB	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5	4.26E-5	4.26E-5	4.26E-5	2.92E-5	2.92E-5	2.92E-5
XVIIIC	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5	4.26E-5	4.26E-5	4.26E-5	2.92E-5	2.92E-5	2.92E-5
XXA	2.82E-5	3.16E-5	3.16E-5	1.23E-5	1.69E-5	1.69E-5	1.40E-6	1.56E-6	1.56E-6	5.26E-7	8.25E-7	8.25E-7	.00E+0	.00E+0	.00E+0
XXB	2.82E-5	3.05E-5	3.05E-5	1.23E-5	1.54E-5	1.54E-5	1.40E-6	1.51E-6	1.51E-6	5.26E-7	7.48E-7	7.48E-7	.00E+0	.00E+0	.00E+0
XXC	2.82E-5	2.82E-5	2.82E-5	1.23E-5	1.23E-5	1.23E-5	1.40E-6	1.40E-6	1.40E-6	5.26E-7	5.26E-7	5.26E-7	.00E+0	.00E+0	.00E+0
XXIA	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.77E-4	7.77E-4	7.77E-4	6.68E-4	6.68E-4	6.68E-4	2.39E-4	2.39E-4	2.39E-4
XXIB	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.77E-4	7.77E-4	7.77E-4	6.68E-4	6.68E-4	6.68E-4	2.39E-4	2.39E-4	2.39E-4
XXIC	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.77E-4	7.77E-4	7.77E-4	6.68E-4	6.68E-4	6.68E-4	2.39E-4	2.39E-4	2.39E-4
XXII	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.97E-2	1.97E-2	1.97E-2	1.82E-2	1.82E-2	1.82E-2	.00E+0	.00E+0	.00E+0
DOE	8.99E-1	8.99E-1	8.99E-1	8.90E-1	8.90E-1	8.90E-1	8.49E-1	8.50E-1	8.50E-1	7.56E-1	7.56E-1	7.56E-1	3.82E-1	3.84E-1	3.84E-1
DOD	5.41E-4	5.41E-4	5.41E-4	5.39E-4	5.39E-4	5.39E-4	5.33E-4	5.33E-4	5.33E-4	5.21E-4	5.21E-4	5.21E-4	1.68E-4	1.68E-4	1.68E-4
NRC	2.71E-2	2.71E-2	2.71E-2	2.68E-2	2.69E-2	2.69E-2	2.65E-2	2.65E-2	2.65E-2	2.37E-2	2.37E-2	2.37E-2	1.03E-2	1.03E-2	1.03E-2
Total	9.27E-1	9.27E-1	9.27E-1	9.17E-1	9.17E-1	9.17E-1	8.77E-1	8.77E-1	8.77E-1	7.80E-1	7.80E-1	7.80E-1	3.93E-1	3.94E-1	3.94E-1

TABLE K-28. POTENTIAL CANCER DEATHS OF WORKERS--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.03E-3	5.03E-3	5.03E-3	4.65E-3	4.65E-3	4.65E-3	4.39E-3	4.39E-3	4.39E-3	4.05E-3	4.05E-3	4.05E-3	3.83E-3	3.83E-3	3.83E-3	3.37E-3	3.37E-3	3.37E-3
II	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1
III	1.78E-3	1.78E-3	1.78E-3	1.49E-3	1.49E-3	1.49E-3	1.19E-3	1.19E-3	1.19E-3	6.99E-4	6.99E-4	6.99E-4	4.04E-4	4.04E-4	4.04E-4	2.84E-4	2.84E-4	2.84E-4
IV	5.42E-4	5.42E-4	5.42E-4	4.93E-4	4.93E-4	4.93E-4	4.43E-4	4.43E-4	4.43E-4	3.44E-4	3.44E-4	3.44E-4	2.46E-4	2.46E-4	2.46E-4	9.72E-5	9.72E-5	9.72E-5
V	1.48E-1	1.48E-1	1.48E-1	1.44E-1	1.44E-1	1.44E-1	1.39E-1	1.39E-1	1.39E-1	1.30E-1	1.30E-1	1.30E-1	1.21E-1	1.21E-1	1.21E-1	1.15E-1	1.15E-1	1.15E-1
VI	1.95E-2	1.95E-2	1.95E-2	1.94E-2	1.94E-2	1.94E-2	1.92E-2	1.92E-2	1.92E-2	1.89E-2	1.89E-2	1.89E-2	1.85E-2	1.85E-2	1.85E-2	1.80E-2	1.80E-2	1.80E-2
VII	1.25E-2	1.25E-2	1.25E-2	4.41E-3	4.41E-3	4.41E-3	4.40E-4	4.40E-4	4.40E-4	4.49E-5	4.49E-5	4.49E-5	1.32E-5	1.32E-5	1.32E-5	.00E+0	.00E+0	.00E+0
IX	8.51E-6	8.51E-6	8.51E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.08E-5	1.08E-4	1.08E-4	7.92E-5	9.23E-5	9.23E-5	7.28E-5	8.24E-5	8.24E-5	6.49E-5	7.12E-5	7.12E-5	5.92E-5	6.46E-5	6.46E-5	5.34E-5	5.74E-5	5.74E-5
XII	5.33E-4	5.33E-4	5.33E-4	5.30E-4	5.30E-4	5.30E-4	5.29E-4	5.29E-4	5.29E-4	5.27E-4	5.27E-4	5.27E-4	5.24E-4	5.24E-4	5.24E-4	5.21E-4	5.21E-4	5.21E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.28E-5	5.28E-5	5.28E-5	5.25E-5	5.25E-5	5.25E-5	5.23E-5	5.23E-5	5.23E-5	5.19E-5	5.19E-5	5.19E-5	5.14E-5	5.14E-5	5.14E-5	5.03E-5	5.03E-5	5.03E-5
XVIB	5.28E-5	5.28E-5	5.28E-5	5.25E-5	5.25E-5	5.25E-5	5.23E-5	5.23E-5	5.23E-5	5.19E-5	5.19E-5	5.19E-5	5.14E-5	5.14E-5	5.14E-5	5.03E-5	5.03E-5	5.03E-5
XVIC	5.28E-5	5.28E-5	5.28E-5	5.25E-5	5.25E-5	5.25E-5	5.23E-5	5.23E-5	5.23E-5	5.19E-5	5.19E-5	5.19E-5	5.14E-5	5.14E-5	5.14E-5	5.03E-5	5.03E-5	5.03E-5
XVIIIA	4.44E-5	4.44E-5	4.44E-5	4.43E-5	4.43E-5	4.43E-5	4.41E-5	4.41E-5	4.41E-5	4.37E-5	4.37E-5	4.37E-5	4.32E-5	4.32E-5	4.32E-5	4.26E-5	4.26E-5	4.26E-5
XVIIIB	4.44E-5	4.44E-5	4.44E-5	4.43E-5	4.43E-5	4.43E-5	4.41E-5	4.41E-5	4.41E-5	4.37E-5	4.37E-5	4.37E-5	4.32E-5	4.32E-5	4.32E-5	4.26E-5	4.26E-5	4.26E-5
XVIIIC	4.44E-5	4.44E-5	4.44E-5	4.43E-5	4.43E-5	4.43E-5	4.41E-5	4.41E-5	4.41E-5	4.37E-5	4.37E-5	4.37E-5	4.32E-5	4.32E-5	4.32E-5	4.26E-5	4.26E-5	4.26E-5
XXA	1.40E-6	1.56E-6	1.56E-6	1.18E-6	1.36E-6	1.36E-6	1.04E-6	1.23E-6	1.23E-6	8.73E-7	1.06E-6	1.06E-6	7.35E-7	9.42E-7	9.42E-7	5.26E-7	8.25E-7	8.25E-7
XXB	1.40E-6	1.51E-6	1.51E-6	1.18E-6	1.30E-6	1.30E-6	1.04E-6	1.17E-6	1.17E-6	8.73E-7	9.97E-7	9.97E-7	7.35E-7	8.87E-7	8.87E-7	5.26E-7	7.48E-7	7.48E-7
XXC	1.40E-6	1.40E-6	1.40E-6	1.18E-6	1.18E-6	1.18E-6	1.04E-6	1.04E-6	1.04E-6	8.73E-7	8.73E-7	8.73E-7	7.35E-7	7.35E-7	7.35E-7	5.26E-7	5.26E-7	5.26E-7
XXIA	7.77E-4	7.77E-4	7.77E-4	7.69E-4	7.69E-4	7.69E-4	7.61E-4	7.61E-4	7.61E-4	7.43E-4	7.43E-4	7.43E-4	7.10E-4	7.10E-4	7.10E-4	6.68E-4	6.68E-4	6.68E-4
XXIB	7.77E-4	7.77E-4	7.77E-4	7.69E-4	7.69E-4	7.69E-4	7.61E-4	7.61E-4	7.61E-4	7.43E-4	7.43E-4	7.43E-4	7.10E-4	7.10E-4	7.10E-4	6.68E-4	6.68E-4	6.68E-4
XXIC	7.77E-4	7.77E-4	7.77E-4	7.69E-4	7.69E-4	7.69E-4	7.61E-4	7.61E-4	7.61E-4	7.43E-4	7.43E-4	7.43E-4	7.10E-4	7.10E-4	7.10E-4	6.68E-4	6.68E-4	6.68E-4
XXII	1.97E-2	1.97E-2	1.97E-2	1.95E-2	1.95E-2	1.95E-2	1.92E-2	1.93E-2	1.93E-2	1.88E-2	1.88E-2	1.88E-2	1.84E-2	1.85E-2	1.85E-2	1.82E-2	1.82E-2	1.82E-2
DOE	8.49E-1	8.50E-1	8.50E-1	8.31E-1	8.31E-1	8.31E-1	8.17E-1	8.17E-1	8.17E-1	7.95E-1	7.96E-1	7.96E-1	7.75E-1	7.76E-1	7.76E-1	7.56E-1	7.56E-1	7.56E-1
DOD	5.33E-4	5.33E-4	5.33E-4	5.30E-4	5.30E-4	5.30E-4	5.29E-4	5.29E-4	5.29E-4	5.27E-4	5.27E-4	5.27E-4	5.24E-4	5.24E-4	5.24E-4	5.21E-4	5.21E-4	5.21E-4
NRC	2.65E-2	2.65E-2	2.65E-2	2.63E-2	2.63E-2	2.63E-2	2.61E-2	2.61E-2	2.61E-2	2.56E-2	2.56E-2	2.56E-2	2.48E-2	2.48E-2	2.48E-2	2.37E-2	2.37E-2	2.37E-2
Total	8.77E-1	8.77E-1	8.77E-1	8.58E-1	8.58E-1	8.58E-1	8.43E-1	8.44E-1	8.44E-1	8.21E-1	8.22E-1	8.22E-1	8.01E-1	8.01E-1	8.01E-1	7.80E-1	7.80E-1	7.80E-1

TABLE K-29. DOSE TO MAXIMALLY EXPOSED INDIVIDUAL (mrem/yr)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.62E-2	4.62E-2	4.62E-2	4.62E-1	4.62E-1	4.62E-1	4.63E+0	4.63E+0	4.63E+0	4.63E+1	4.63E+1	4.63E+1	4.62E+2	4.62E+2	4.62E+2
II-1	8.26E-2	8.19E-2	8.19E-2	7.91E-1	7.87E-1	7.87E-1	8.22E+0	7.38E+0	7.38E+0	8.30E+1	7.82E+1	7.82E+1	8.26E+2	8.13E+2	8.13E+2
II-2	5.57E-2	5.59E-2	5.59E-2	5.71E-1	5.71E-1	5.71E-1	7.51E+0	6.79E+0	6.79E+0	7.53E+1	7.12E+1	7.12E+1	6.63E+2	6.50E+2	6.50E+2
II-3	5.06E-2	5.10E-2	5.10E-2	5.20E-1	5.22E-1	5.22E-1	7.33E+0	6.89E+0	6.89E+0	6.12E+1	6.15E+1	6.15E+1	5.58E+2	5.62E+2	5.62E+2
II-4	6.41E-2	6.43E-2	6.43E-2	5.86E-1	5.87E-1	5.87E-1	8.32E+0	7.14E+0	7.14E+0	7.07E+1	6.80E+1	6.80E+1	6.79E+2	6.62E+2	6.62E+2
II-5	5.12E-2	5.12E-2	5.12E-2	6.60E-1	6.59E-1	6.59E-1	7.27E+0	7.26E+0	7.26E+0	8.07E+1	8.07E+1	8.07E+1	7.83E+2	7.83E+2	7.83E+2
II-6	5.53E-2	5.65E-2	5.65E-2	6.84E-1	6.80E-1	6.80E-1	8.67E+0	7.76E+0	7.76E+0	8.21E+1	7.69E+1	7.69E+1	8.21E+2	8.13E+2	8.13E+2
II-7	7.46E-2	7.46E-2	7.46E-2	7.46E-1	7.46E-1	7.46E-1	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0
III	4.62E-2	4.62E-2	4.62E-2	4.62E-1	4.62E-1	4.62E-1	4.63E+0	4.63E+0	4.63E+0	4.63E+1	4.63E+1	4.63E+1	3.69E+2	3.69E+2	3.69E+2
IV	8.12E-2	8.12E-2	8.12E-2	8.11E-1	8.11E-1	8.11E-1	8.12E+0	8.12E+0	8.12E+0	8.12E+1	8.12E+1	8.12E+1	3.55E+2	3.55E+2	3.55E+2
V	4.62E-2	4.62E-2	4.62E-2	4.62E-1	4.62E-1	4.62E-1	4.62E+0	4.62E+0	4.62E+0	4.62E+1	4.62E+1	4.62E+1	4.62E+2	4.62E+2	4.62E+2
VI	4.62E-2	4.62E-2	4.62E-2	4.62E-1	4.62E-1	4.62E-1	4.65E+0	4.65E+0	4.65E+0	4.88E+1	4.88E+1	4.88E+1	4.97E+2	4.97E+2	4.97E+2
VII	5.48E-1	5.48E-1	5.48E-1	5.48E+0	5.48E+0	5.48E+0	2.04E+1	2.04E+1	2.04E+1	2.22E+2	2.22E+2	2.22E+2	3.13E+2	3.13E+2	3.13E+2
IX	5.44E-1	5.44E-1	5.44E-1	5.44E+0	5.44E+0	5.44E+0	5.44E+1	5.44E+1	5.44E+1	3.32E+2	3.32E+2	3.32E+2	3.32E+2	3.32E+2	3.32E+2
X	1.49E-2	1.49E-2	1.49E-2	2.58E-1	7.22E-1	7.22E-1	2.09E+0	7.69E+0	7.69E+0	1.65E+1	4.57E+1	4.57E+1	1.53E+2	2.28E+2	2.28E+2
XII	5.61E-1	5.61E-1	5.61E-1	5.61E+0	5.61E+0	5.61E+0	5.61E+1	5.61E+1	5.61E+1	5.61E+2	5.61E+2	5.61E+2	5.61E+3	5.61E+3	5.61E+3
XIIIA	6.49E-2	6.49E-2	6.49E-2	6.49E-1	6.49E-1	6.49E-1	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0
XIIIB	6.49E-2	6.49E-2	6.49E-2	6.49E-1	6.49E-1	6.49E-1	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0
XIIIC	6.49E-2	6.49E-2	6.49E-2	6.49E-1	6.49E-1	6.49E-1	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0
XVIA	4.59E-2	4.59E-2	4.59E-2	4.59E-1	4.59E-1	4.59E-1	4.59E+0	4.59E+0	4.59E+0	4.59E+1	4.59E+1	4.59E+1	4.59E+2	4.59E+2	4.59E+2
XVIB	4.59E-2	4.59E-2	4.59E-2	4.59E-1	4.59E-1	4.59E-1	4.59E+0	4.59E+0	4.59E+0	4.59E+1	4.59E+1	4.59E+1	4.59E+2	4.59E+2	4.59E+2
XVIC	4.59E-2	4.59E-2	4.59E-2	4.59E-1	4.59E-1	4.59E-1	4.59E+0	4.59E+0	4.59E+0	4.59E+1	4.59E+1	4.59E+1	4.59E+2	4.59E+2	4.59E+2
XVIIIA	4.78E-2	4.78E-2	4.78E-2	4.78E-1	4.78E-1	4.78E-1	4.78E+0	4.78E+0	4.78E+0	4.78E+1	4.78E+1	4.78E+1	4.78E+2	4.78E+2	4.78E+2
XVIIIB	4.78E-2	4.78E-2	4.78E-2	4.78E-1	4.78E-1	4.78E-1	4.78E+0	4.78E+0	4.78E+0	4.78E+1	4.78E+1	4.78E+1	4.78E+2	4.78E+2	4.78E+2
XVIIIC	4.78E-2	4.78E-2	4.78E-2	4.78E-1	4.78E-1	4.78E-1	4.78E+0	4.78E+0	4.78E+0	4.78E+1	4.78E+1	4.78E+1	4.78E+2	4.78E+2	4.78E+2
XXA	1.09E-1	1.62E-1	1.62E-1	1.09E+0	1.14E+0	1.14E+0	1.09E+1	1.14E+1	1.14E+1	1.09E+2	1.14E+2	1.14E+2	9.22E+2	1.14E+3	1.14E+3
XXB	1.09E-1	1.09E-1	1.09E-1	1.09E+0	1.09E+0	1.09E+0	1.09E+1	1.09E+1	1.09E+1	1.09E+2	1.09E+2	1.09E+2	9.22E+2	9.22E+2	9.22E+2
XXC	1.09E-1	1.09E-1	1.09E-1	1.09E+0	1.09E+0	1.09E+0	1.09E+1	1.09E+1	1.09E+1	1.09E+2	1.09E+2	1.09E+2	9.22E+2	9.22E+2	9.22E+2
XXIA	5.04E-2	5.04E-2	5.04E-2	5.04E-1	5.04E-1	5.04E-1	5.04E+0	5.04E+0	5.04E+0	5.04E+1	5.04E+1	5.04E+1	5.04E+2	5.04E+2	5.04E+2
XXIB	5.04E-2	5.04E-2	5.04E-2	5.04E-1	5.04E-1	5.04E-1	5.04E+0	5.04E+0	5.04E+0	5.04E+1	5.04E+1	5.04E+1	5.04E+2	5.04E+2	5.04E+2
XXIC	5.04E-2	5.04E-2	5.04E-2	5.04E-1	5.04E-1	5.04E-1	5.04E+0	5.04E+0	5.04E+0	5.04E+1	5.04E+1	5.04E+1	5.04E+2	5.04E+2	5.04E+2
XXII	8.39E-2	8.39E-2	8.39E-2	8.23E-1	8.23E-1	8.23E-1	8.22E+0	8.24E+0	8.24E+0	7.64E+1	7.69E+1	7.69E+1	7.87E+2	7.84E+2	7.84E+2

TABLE K-30. DOSE TO MAXIMALLY EXPOSED INDIVIDUAL (mrem/yr)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.63E+0	4.63E+0	4.63E+0	9.26E+0	9.26E+0	9.26E+0	1.39E+1	1.39E+1	1.39E+1	2.31E+1	2.31E+1	2.31E+1	3.24E+1	3.24E+1	3.24E+1	4.63E+1	4.63E+1	4.63E+1
II-1	8.22E+0	7.38E+0	7.38E+0	1.69E+1	1.47E+1	1.47E+1	2.52E+1	2.20E+1	2.20E+1	4.17E+1	3.74E+1	3.74E+1	5.82E+1	5.38E+1	5.38E+1	8.30E+1	7.82E+1	7.82E+1
II-2	7.51E+0	6.79E+0	6.79E+0	1.61E+1	1.41E+1	1.41E+1	2.47E+1	2.13E+1	2.13E+1	4.06E+1	3.59E+1	3.59E+1	5.48E+1	5.05E+1	5.05E+1	7.53E+1	7.12E+1	7.12E+1
II-3	7.33E+0	6.89E+0	6.89E+0	1.38E+1	1.37E+1	1.37E+1	1.98E+1	1.98E+1	1.98E+1	3.18E+1	3.19E+1	3.19E+1	4.37E+1	4.38E+1	4.38E+1	6.12E+1	6.15E+1	6.15E+1
II-4	8.32E+0	7.14E+0	7.14E+0	1.63E+1	1.44E+1	1.44E+1	2.32E+1	2.16E+1	2.16E+1	3.69E+1	3.51E+1	3.51E+1	5.06E+1	4.83E+1	4.83E+1	7.07E+1	6.80E+1	6.80E+1
II-5	7.27E+0	7.26E+0	7.26E+0	1.54E+1	1.54E+1	1.54E+1	2.36E+1	2.36E+1	2.36E+1	3.99E+1	3.98E+1	3.98E+1	5.62E+1	5.62E+1	5.62E+1	8.07E+1	8.07E+1	8.07E+1
II-6	8.67E+0	7.76E+0	7.76E+0	1.73E+1	1.54E+1	1.54E+1	2.51E+1	2.29E+1	2.29E+1	4.10E+1	3.72E+1	3.72E+1	5.75E+1	5.24E+1	5.24E+1	8.21E+1	7.69E+1	7.69E+1
II-7	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0
III	4.63E+0	4.63E+0	4.63E+0	9.25E+0	9.25E+0	9.25E+0	1.39E+1	1.39E+1	1.39E+1	2.31E+1	2.31E+1	2.31E+1	3.24E+1	3.24E+1	3.24E+1	4.63E+1	4.63E+1	4.63E+1
IV	8.12E+0	8.12E+0	8.12E+0	1.62E+1	1.62E+1	1.62E+1	2.43E+1	2.43E+1	2.43E+1	4.06E+1	4.06E+1	4.06E+1	5.68E+1	5.68E+1	5.68E+1	8.12E+1	8.12E+1	8.12E+1
V	4.62E+0	4.62E+0	4.62E+0	9.25E+0	9.25E+0	9.25E+0	1.39E+1	1.39E+1	1.39E+1	2.31E+1	2.31E+1	2.31E+1	3.24E+1	3.24E+1	3.24E+1	4.62E+1	4.62E+1	4.62E+1
VI	4.65E+0	4.65E+0	4.65E+0	9.40E+0	9.40E+0	9.40E+0	1.43E+1	1.43E+1	1.43E+1	2.40E+1	2.40E+1	2.40E+1	3.39E+1	3.39E+1	3.39E+1	4.88E+1	4.88E+1	4.88E+1
VII	2.04E+1	2.04E+1	2.04E+1	3.84E+1	3.84E+1	3.84E+1	5.78E+1	5.78E+1	5.78E+1	1.07E+2	1.07E+2	1.07E+2	1.67E+2	1.67E+2	1.67E+2	2.22E+2	2.22E+2	2.22E+2
IX	5.44E+1	5.44E+1	5.44E+1	1.09E+2	1.09E+2	1.09E+2	1.63E+2	1.63E+2	1.63E+2	2.72E+2	2.72E+2	2.72E+2	3.32E+2	3.32E+2	3.32E+2	3.32E+2	3.32E+2	3.32E+2
X	2.09E+0	7.69E+0	7.69E+0	3.87E+0	1.39E+1	1.39E+1	5.54E+0	1.94E+1	1.94E+1	8.73E+0	2.91E+1	2.91E+1	1.19E+1	3.66E+1	3.66E+1	1.65E+1	4.57E+1	4.57E+1
XII	5.61E+1	5.61E+1	5.61E+1	1.12E+2	1.12E+2	1.12E+2	1.68E+2	1.68E+2	1.68E+2	2.81E+2	2.81E+2	2.81E+2	3.93E+2	3.93E+2	3.93E+2	5.61E+2	5.61E+2	5.61E+2
XIIIA	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0
XIIIB	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0
XIIIC	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0
XVIA	4.59E+0	4.59E+0	4.59E+0	9.19E+0	9.19E+0	9.19E+0	1.38E+1	1.38E+1	1.38E+1	2.30E+1	2.30E+1	2.30E+1	3.21E+1	3.21E+1	3.21E+1	4.59E+1	4.59E+1	4.59E+1
XVIB	4.59E+0	4.59E+0	4.59E+0	9.19E+0	9.19E+0	9.19E+0	1.38E+1	1.38E+1	1.38E+1	2.30E+1	2.30E+1	2.30E+1	3.21E+1	3.21E+1	3.21E+1	4.59E+1	4.59E+1	4.59E+1
XVIC	4.59E+0	4.59E+0	4.59E+0	9.19E+0	9.19E+0	9.19E+0	1.38E+1	1.38E+1	1.38E+1	2.30E+1	2.30E+1	2.30E+1	3.21E+1	3.21E+1	3.21E+1	4.59E+1	4.59E+1	4.59E+1
XVIIIA	4.78E+0	4.78E+0	4.78E+0	9.56E+0	9.56E+0	9.56E+0	1.43E+1	1.43E+1	1.43E+1	2.39E+1	2.39E+1	2.39E+1	3.34E+1	3.34E+1	3.34E+1	4.78E+1	4.78E+1	4.78E+1
XVIIIB	4.78E+0	4.78E+0	4.78E+0	9.56E+0	9.56E+0	9.56E+0	1.43E+1	1.43E+1	1.43E+1	2.39E+1	2.39E+1	2.39E+1	3.34E+1	3.34E+1	3.34E+1	4.78E+1	4.78E+1	4.78E+1
XVIIIC	4.78E+0	4.78E+0	4.78E+0	9.56E+0	9.56E+0	9.56E+0	1.43E+1	1.43E+1	1.43E+1	2.39E+1	2.39E+1	2.39E+1	3.34E+1	3.34E+1	3.34E+1	4.78E+1	4.78E+1	4.78E+1
XXA	1.09E+1	1.14E+1	1.14E+1	2.19E+1	2.28E+1	2.28E+1	3.28E+1	3.42E+1	3.42E+1	5.47E+1	5.70E+1	5.70E+1	7.66E+1	7.98E+1	7.98E+1	1.09E+2	1.14E+2	1.14E+2
XXB	1.09E+1	1.09E+1	1.09E+1	2.19E+1	2.19E+1	2.19E+1	3.28E+1	3.28E+1	3.28E+1	5.47E+1	5.47E+1	5.47E+1	7.66E+1	7.66E+1	7.66E+1	1.09E+2	1.09E+2	1.09E+2
XXC	1.09E+1	1.09E+1	1.09E+1	2.19E+1	2.19E+1	2.19E+1	3.28E+1	3.28E+1	3.28E+1	5.47E+1	5.47E+1	5.47E+1	7.66E+1	7.66E+1	7.66E+1	1.09E+2	1.09E+2	1.09E+2
XXIA	5.04E+0	5.04E+0	5.04E+0	1.01E+1	1.01E+1	1.01E+1	1.51E+1	1.51E+1	1.51E+1	2.52E+1	2.52E+1	2.52E+1	3.53E+1	3.53E+1	3.53E+1	5.04E+1	5.04E+1	5.04E+1
XXIB	5.04E+0	5.04E+0	5.04E+0	1.01E+1	1.01E+1	1.01E+1	1.51E+1	1.51E+1	1.51E+1	2.52E+1	2.52E+1	2.52E+1	3.53E+1	3.53E+1	3.53E+1	5.04E+1	5.04E+1	5.04E+1
XXIC	5.04E+0	5.04E+0	5.04E+0	1.01E+1	1.01E+1	1.01E+1	1.51E+1	1.51E+1	1.51E+1	2.52E+1	2.52E+1	2.52E+1	3.53E+1	3.53E+1	3.53E+1	5.04E+1	5.04E+1	5.04E+1
XXII	8.22E+0	8.24E+0	8.24E+0	1.65E+1	1.66E+1	1.66E+1	2.47E+1	2.50E+1	2.50E+1	4.12E+1	4.18E+1	4.18E+1	5.44E+1	5.64E+1	5.64E+1	7.64E+1	7.69E+1	7.69E+1

TABLE K-31. DOSE TO MAXIMALLY EXPOSED INDIVIDUAL (mrem/yr)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.65E-2	5.65E-2	5.65E-2	5.65E-1	5.65E-1	5.65E-1	5.66E+0	5.66E+0	5.66E+0	5.65E+1	5.65E+1	5.65E+1	5.65E+2	5.65E+2	5.65E+2
II-1	9.55E-2	9.46E-2	9.46E-2	8.71E-1	8.66E-1	8.66E-1	9.75E+0	8.44E+0	8.44E+0	9.57E+1	9.31E+1	9.31E+1	9.55E+2	9.43E+2	9.43E+2
II-2	6.62E-2	6.63E-2	6.63E-2	7.19E-1	7.17E-1	7.17E-1	9.69E+0	8.23E+0	8.23E+0	8.08E+1	7.75E+1	7.75E+1	7.51E+2	7.27E+2	7.27E+2
II-3	5.94E-2	5.97E-2	5.97E-2	6.64E-1	6.56E-1	6.56E-1	7.62E+0	7.58E+0	7.58E+0	6.71E+1	6.74E+1	6.74E+1	6.40E+2	6.43E+2	6.43E+2
II-4	6.92E-2	6.93E-2	6.93E-2	9.07E-1	7.87E-1	7.87E-1	8.92E+0	8.28E+0	8.28E+0	7.75E+1	7.56E+1	7.56E+1	8.87E+2	8.37E+2	8.37E+2
II-5	6.81E-2	6.80E-2	6.80E-2	7.77E-1	7.79E-1	7.79E-1	9.11E+0	9.10E+0	9.10E+0	9.25E+1	9.25E+1	9.25E+1	8.14E+2	8.13E+2	8.13E+2
II-6	7.21E-2	7.08E-2	7.08E-2	8.19E-1	8.09E-1	8.09E-1	9.51E+0	8.70E+0	8.70E+0	9.49E+1	9.27E+1	9.27E+1	9.47E+2	9.42E+2	9.42E+2
II-7	8.78E-2	8.78E-2	8.78E-2	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1
III	5.66E-2	5.66E-2	5.66E-2	5.65E-1	5.65E-1	5.65E-1	5.65E+0	5.65E+0	5.65E+0	5.65E+1	5.65E+1	5.65E+1	1.32E+2	1.32E+2	1.32E+2
IV	9.59E-2	9.59E-2	9.59E-2	9.60E-1	9.60E-1	9.60E-1	9.60E+0	9.60E+0	9.60E+0	9.60E+1	9.60E+1	9.60E+1	1.15E+2	1.15E+2	1.15E+2
V	5.65E-2	5.65E-2	5.65E-2	5.65E-1	5.65E-1	5.65E-1	5.65E+0	5.65E+0	5.65E+0	5.65E+1	5.65E+1	5.65E+1	5.65E+2	5.65E+2	5.65E+2
VI	5.65E-2	5.65E-2	5.65E-2	5.66E-1	5.66E-1	5.66E-1	5.81E+0	5.81E+0	5.81E+0	6.13E+1	6.13E+1	6.13E+1	6.92E+2	6.92E+2	6.92E+2
VII	6.48E-1	6.48E-1	6.48E-1	2.96E+0	2.96E+0	2.96E+0	2.11E+1	2.11E+1	2.11E+1	9.87E+1	9.87E+1	9.87E+1	9.87E+1	9.87E+1	9.87E+1
IX	6.46E-1	6.46E-1	6.46E-1	6.46E+0	6.46E+0	6.46E+0	6.46E+1	6.46E+1	6.46E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1
X	2.40E-2	4.62E-2	4.62E-2	2.66E-1	9.23E-1	9.23E-1	2.08E+0	7.97E+0	7.97E+0	1.86E+1	3.89E+1	3.89E+1	1.81E+2	2.35E+2	2.35E+2
XII	6.67E-1	6.67E-1	6.67E-1	6.67E+0	6.67E+0	6.67E+0	6.67E+1	6.67E+1	6.67E+1	6.67E+2	6.67E+2	6.67E+2	6.67E+3	6.67E+3	6.67E+3
XIIIA	7.67E-2	7.67E-2	7.67E-2	7.67E-1	7.67E-1	7.67E-1	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0
XIIIB	7.67E-2	7.67E-2	7.67E-2	7.67E-1	7.67E-1	7.67E-1	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0
XIIIC	7.67E-2	7.67E-2	7.67E-2	7.67E-1	7.67E-1	7.67E-1	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0
XVIA	5.52E-2	5.52E-2	5.52E-2	5.52E-1	5.52E-1	5.52E-1	5.52E+0	5.52E+0	5.52E+0	5.52E+1	5.52E+1	5.52E+1	5.54E+2	5.54E+2	5.54E+2
XVIB	5.52E-2	5.52E-2	5.52E-2	5.52E-1	5.52E-1	5.52E-1	5.52E+0	5.52E+0	5.52E+0	5.52E+1	5.52E+1	5.52E+1	5.54E+2	5.54E+2	5.54E+2
XVIC	5.52E-2	5.52E-2	5.52E-2	5.52E-1	5.52E-1	5.52E-1	5.52E+0	5.52E+0	5.52E+0	5.52E+1	5.52E+1	5.52E+1	5.54E+2	5.54E+2	5.54E+2
XVIIIA	5.63E-2	5.63E-2	5.63E-2	5.63E-1	5.63E-1	5.63E-1	5.63E+0	5.63E+0	5.63E+0	5.63E+1	5.63E+1	5.63E+1	5.63E+2	5.63E+2	5.63E+2
XVIIIB	5.63E-2	5.63E-2	5.63E-2	5.63E-1	5.63E-1	5.63E-1	5.63E+0	5.63E+0	5.63E+0	5.63E+1	5.63E+1	5.63E+1	5.63E+2	5.63E+2	5.63E+2
XVIIIC	5.63E-2	5.63E-2	5.63E-2	5.63E-1	5.63E-1	5.63E-1	5.63E+0	5.63E+0	5.63E+0	5.63E+1	5.63E+1	5.63E+1	5.63E+2	5.63E+2	5.63E+2
XXA	1.32E-1	1.35E-1	1.35E-1	1.32E+0	1.35E+0	1.35E+0	1.32E+1	1.35E+1	1.35E+1	1.34E+2	1.35E+2	1.35E+2	2.35E+2	4.24E+2	4.24E+2
XXB	1.32E-1	1.37E-1	1.37E-1	1.32E+0	1.37E+0	1.37E+0	1.32E+1	1.37E+1	1.37E+1	1.34E+2	1.37E+2	1.37E+2	2.35E+2	3.59E+2	3.59E+2
XXC	1.32E-1	1.32E-1	1.32E-1	1.32E+0	1.32E+0	1.32E+0	1.32E+1	1.32E+1	1.32E+1	1.34E+2	1.34E+2	1.34E+2	2.35E+2	2.35E+2	2.35E+2
XXIA	5.61E-2	5.61E-2	5.61E-2	5.61E-1	5.61E-1	5.61E-1	5.61E+0	5.61E+0	5.61E+0	5.61E+1	5.61E+1	5.61E+1	5.61E+2	5.61E+2	5.61E+2
XXIB	5.61E-2	5.61E-2	5.61E-2	5.61E-1	5.61E-1	5.61E-1	5.61E+0	5.61E+0	5.61E+0	5.61E+1	5.61E+1	5.61E+1	5.61E+2	5.61E+2	5.61E+2
XXIC	5.61E-2	5.61E-2	5.61E-2	5.61E-1	5.61E-1	5.61E-1	5.61E+0	5.61E+0	5.61E+0	5.61E+1	5.61E+1	5.61E+1	5.61E+2	5.61E+2	5.61E+2
XXII	9.67E-2	9.67E-2	9.67E-2	9.65E-1	9.66E-1	9.66E-1	9.69E+0	9.88E+0	9.88E+0	9.09E+1	9.49E+1	9.49E+1	7.06E+2	8.42E+2	8.42E+2

TABLE K-32. DOSE TO MAXIMALLY EXPOSED INDIVIDUAL (mrem/yr)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.66E+0	5.66E+0	5.66E+0	1.13E+1	1.13E+1	1.13E+1	1.70E+1	1.70E+1	1.70E+1	2.83E+1	2.83E+1	2.83E+1	3.96E+1	3.96E+1	3.96E+1	5.65E+1	5.65E+1	5.65E+1
II-1	9.75E+0	8.44E+0	8.44E+0	1.93E+1	1.77E+1	1.77E+1	2.88E+1	2.71E+1	2.71E+1	4.79E+1	4.60E+1	4.60E+1	6.70E+1	6.48E+1	6.48E+1	9.57E+1	9.31E+1	9.31E+1
II-2	9.69E+0	8.23E+0	8.23E+0	1.83E+1	1.66E+1	1.66E+1	2.62E+1	2.46E+1	2.46E+1	4.20E+1	3.98E+1	3.98E+1	5.78E+1	5.49E+1	5.49E+1	8.08E+1	7.75E+1	7.75E+1
II-3	7.62E+0	7.58E+0	7.58E+0	1.46E+1	1.46E+1	1.46E+1	2.15E+1	2.15E+1	2.15E+1	3.46E+1	3.48E+1	3.48E+1	4.77E+1	4.80E+1	4.80E+1	6.71E+1	6.74E+1	6.74E+1
II-4	8.92E+0	8.28E+0	8.28E+0	1.69E+1	1.59E+1	1.59E+1	2.46E+1	2.35E+1	2.35E+1	3.98E+1	3.85E+1	3.85E+1	5.49E+1	5.34E+1	5.34E+1	7.75E+1	7.56E+1	7.56E+1
II-5	9.11E+0	9.10E+0	9.10E+0	1.85E+1	1.85E+1	1.85E+1	2.79E+1	2.79E+1	2.79E+1	4.66E+1	4.66E+1	4.66E+1	6.51E+1	6.51E+1	6.51E+1	9.25E+1	9.25E+1	9.25E+1
II-6	9.51E+0	8.70E+0	8.70E+0	1.90E+1	1.72E+1	1.72E+1	2.85E+1	2.66E+1	2.66E+1	4.74E+1	4.55E+1	4.55E+1	6.64E+1	6.43E+1	6.43E+1	9.49E+1	9.27E+1	9.27E+1
II-7	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1
III	5.65E+0	5.65E+0	5.65E+0	1.13E+1	1.13E+1	1.13E+1	1.70E+1	1.70E+1	1.70E+1	2.83E+1	2.83E+1	2.83E+1	3.96E+1	3.96E+1	3.96E+1	5.65E+1	5.65E+1	5.65E+1
IV	9.60E+0	9.60E+0	9.60E+0	1.92E+1	1.92E+1	1.92E+1	2.88E+1	2.88E+1	2.88E+1	4.80E+1	4.80E+1	4.80E+1	6.72E+1	6.72E+1	6.72E+1	9.60E+1	9.60E+1	9.60E+1
V	5.65E+0	5.65E+0	5.65E+0	1.13E+1	1.13E+1	1.13E+1	1.70E+1	1.70E+1	1.70E+1	2.83E+1	2.83E+1	2.83E+1	3.96E+1	3.96E+1	3.96E+1	5.65E+1	5.65E+1	5.65E+1
VI	5.81E+0	5.81E+0	5.81E+0	1.18E+1	1.18E+1	1.18E+1	1.78E+1	1.78E+1	1.78E+1	3.00E+1	3.00E+1	3.00E+1	4.25E+1	4.25E+1	4.25E+1	6.13E+1	6.13E+1	6.13E+1
VII	2.11E+1	2.11E+1	2.11E+1	5.20E+1	5.20E+1	5.20E+1	6.92E+1	6.92E+1	6.92E+1	8.16E+1	8.16E+1	8.16E+1	9.30E+1	9.30E+1	9.30E+1	9.87E+1	9.87E+1	9.87E+1
IX	6.46E+1	6.46E+1	6.46E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1
X	2.08E+0	7.97E+0	7.97E+0	3.96E+0	1.39E+1	1.39E+1	5.80E+0	1.83E+1	1.83E+1	9.45E+0	2.49E+1	2.49E+1	1.31E+1	3.06E+1	3.06E+1	1.86E+1	3.89E+1	3.89E+1
XII	6.67E+1	6.67E+1	6.67E+1	1.33E+2	1.33E+2	1.33E+2	2.00E+2	2.00E+2	2.00E+2	3.34E+2	3.34E+2	3.34E+2	4.67E+2	4.67E+2	4.67E+2	6.67E+2	6.67E+2	6.67E+2
XIIIA	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0
XIIIB	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0
XIIIC	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0
XVIA	5.52E+0	5.52E+0	5.52E+0	1.10E+1	1.10E+1	1.10E+1	1.66E+1	1.66E+1	1.66E+1	2.76E+1	2.76E+1	2.76E+1	3.86E+1	3.86E+1	3.86E+1	5.52E+1	5.52E+1	5.52E+1
XVIB	5.52E+0	5.52E+0	5.52E+0	1.10E+1	1.10E+1	1.10E+1	1.66E+1	1.66E+1	1.66E+1	2.76E+1	2.76E+1	2.76E+1	3.86E+1	3.86E+1	3.86E+1	5.52E+1	5.52E+1	5.52E+1
XVIC	5.52E+0	5.52E+0	5.52E+0	1.10E+1	1.10E+1	1.10E+1	1.66E+1	1.66E+1	1.66E+1	2.76E+1	2.76E+1	2.76E+1	3.86E+1	3.86E+1	3.86E+1	5.52E+1	5.52E+1	5.52E+1
XVIIIA	5.63E+0	5.63E+0	5.63E+0	1.13E+1	1.13E+1	1.13E+1	1.69E+1	1.69E+1	1.69E+1	2.82E+1	2.82E+1	2.82E+1	3.94E+1	3.94E+1	3.94E+1	5.63E+1	5.63E+1	5.63E+1
XVIIIB	5.63E+0	5.63E+0	5.63E+0	1.13E+1	1.13E+1	1.13E+1	1.69E+1	1.69E+1	1.69E+1	2.82E+1	2.82E+1	2.82E+1	3.94E+1	3.94E+1	3.94E+1	5.63E+1	5.63E+1	5.63E+1
XVIIIC	5.63E+0	5.63E+0	5.63E+0	1.13E+1	1.13E+1	1.13E+1	1.69E+1	1.69E+1	1.69E+1	2.82E+1	2.82E+1	2.82E+1	3.94E+1	3.94E+1	3.94E+1	5.63E+1	5.63E+1	5.63E+1
XXA	1.32E+1	1.35E+1	1.35E+1	2.64E+1	2.69E+1	2.69E+1	3.96E+1	4.04E+1	4.04E+1	6.62E+1	6.73E+1	6.73E+1	9.31E+1	9.43E+1	9.43E+1	1.34E+2	1.35E+2	1.35E+2
XXB	1.32E+1	1.37E+1	1.37E+1	2.64E+1	2.73E+1	2.73E+1	3.96E+1	4.10E+1	4.10E+1	6.62E+1	6.83E+1	6.83E+1	9.31E+1	9.57E+1	9.57E+1	1.34E+2	1.37E+2	1.37E+2
XXC	1.32E+1	1.32E+1	1.32E+1	2.64E+1	2.64E+1	2.64E+1	3.96E+1	3.96E+1	3.96E+1	6.62E+1	6.62E+1	6.62E+1	9.31E+1	9.31E+1	9.31E+1	1.34E+2	1.34E+2	1.34E+2
XXIA	5.61E+0	5.61E+0	5.61E+0	1.12E+1	1.12E+1	1.12E+1	1.68E+1	1.68E+1	1.68E+1	2.80E+1	2.80E+1	2.80E+1	3.93E+1	3.93E+1	3.93E+1	5.61E+1	5.61E+1	5.61E+1
XXIB	5.61E+0	5.61E+0	5.61E+0	1.12E+1	1.12E+1	1.12E+1	1.68E+1	1.68E+1	1.68E+1	2.80E+1	2.80E+1	2.80E+1	3.93E+1	3.93E+1	3.93E+1	5.61E+1	5.61E+1	5.61E+1
XXIC	5.61E+0	5.61E+0	5.61E+0	1.12E+1	1.12E+1	1.12E+1	1.68E+1	1.68E+1	1.68E+1	2.80E+1	2.80E+1	2.80E+1	3.93E+1	3.93E+1	3.93E+1	5.61E+1	5.61E+1	5.61E+1
XXII	9.69E+0	9.88E+0	9.88E+0	1.83E+1	1.92E+1	1.92E+1	2.68E+1	2.71E+1	2.71E+1	4.81E+1	4.81E+1	4.81E+1	6.92E+1	7.05E+1	7.05E+1	9.09E+1	9.49E+1	9.49E+1

Low Population Density without Agriculture - 09-13-94 4:09p
 TABLE K-33. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.16E+2	2.35E+2	2.35E+2	2.12E+2	2.30E+2	2.30E+2	2.01E+2	2.18E+2	2.18E+2	1.61E+2	1.75E+2	1.75E+2	7.21E+1	7.83E+1	7.83E+1
II	5.03E+3	4.89E+4	3.96E+5	5.02E+3	4.89E+4	3.96E+5	5.02E+3	4.89E+4	3.96E+5	5.02E+3	4.88E+4	3.91E+5	4.95E+3	4.79E+4	3.78E+5
III	9.48E+1	1.05E+2	1.05E+2	9.47E+1	1.05E+2	1.05E+2	8.83E+1	9.78E+1	9.78E+1	4.68E+1	5.18E+1	5.18E+1	.00E+0	.00E+0	.00E+0
IV	2.82E+1	7.34E+1	8.21E+2	2.79E+1	7.25E+1	8.11E+2	2.66E+1	6.92E+1	7.74E+2	2.09E+1	5.45E+1	6.10E+2	.00E+0	.00E+0	.00E+0
V	5.61E+3	6.08E+3	6.08E+3	5.60E+3	6.08E+3	6.08E+3	5.54E+3	6.01E+3	6.01E+3	5.07E+3	5.50E+3	5.50E+3	3.33E+3	3.61E+3	3.61E+3
VI	1.52E+3	9.32E+3	5.70E+4	1.52E+3	9.32E+3	5.70E+4	1.52E+3	9.31E+3	5.70E+4	1.50E+3	9.25E+3	5.67E+4	1.34E+3	8.56E+3	5.28E+4
VII	8.24E+3	7.40E+4	6.01E+5	6.74E+3	6.01E+4	4.88E+5	4.89E+3	4.36E+4	3.54E+5	1.26E+2	1.12E+3	9.13E+3	.00E+0	.00E+0	.00E+0
IX	3.79E+1	3.41E+2	2.17E+3	2.76E+1	2.48E+2	1.58E+3	9.46E+0	8.50E+1	5.42E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.39E+3	1.86E+4	2.12E+4	1.39E+3	1.86E+4	2.12E+4	1.38E+3	1.80E+4	2.05E+4	1.35E+3	1.20E+4	1.36E+4	1.19E+3	5.57E+3	6.24E+3
XII	5.11E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.03E+0	1.54E+1	1.58E+1	4.75E+0	1.45E+1	1.49E+1
XIIIA	2.13E-2	6.96E-2	1.86E-1	1.53E-2	4.99E-2	1.33E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.71E-2	3.08E-2	1.06E-1	1.23E-2	2.21E-2	7.64E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.13E-2	1.36E-2	4.15E+1	8.10E-3	9.78E-3	2.98E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E-1	3.84E-1	3.84E-1	3.65E-1	3.84E-1	3.84E-1	3.65E-1	3.84E-1	3.84E-1	3.61E-1	3.80E-1	3.80E-1	3.18E-1	3.36E-1	3.36E-1
XVIB	3.61E-1	3.79E-1	3.79E-1	3.61E-1	3.79E-1	3.79E-1	3.61E-1	3.78E-1	3.78E-1	3.57E-1	3.75E-1	3.75E-1	3.14E-1	3.31E-1	3.31E-1
XVIC	3.52E-1	3.67E-1	3.67E-1	3.52E-1	3.67E-1	3.67E-1	3.52E-1	3.67E-1	3.67E-1	3.48E-1	3.64E-1	3.64E-1	3.06E-1	3.21E-1	3.21E-1
XVIIIA	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.02E+0	1.13E+0	1.13E+0	8.93E-1	9.88E-1	9.88E-1
XVIIIB	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.00E+0	1.11E+0	1.11E+0	8.78E-1	9.70E-1	9.70E-1
XVIIIC	9.79E-1	1.07E+0	1.07E+0	9.79E-1	1.07E+0	1.07E+0	9.79E-1	1.07E+0	1.07E+0	9.72E-1	1.06E+0	1.06E+0	8.50E-1	9.27E-1	9.27E-1
XXA	3.03E-1	1.51E+0	1.63E+2	1.91E-1	1.05E+0	1.13E+2	3.98E-2	3.39E-1	3.66E+1	9.37E-3	5.18E-2	5.62E+0	.00E+0	9.93E-3	1.09E+0
XXB	2.44E-1	8.87E-1	1.12E+2	1.54E-1	5.59E-1	7.04E+1	3.21E-2	1.17E-1	1.47E+1	7.56E-3	2.76E-2	3.50E+0	.00E+0	.00E+0	.00E+0
XXC	1.61E-1	5.85E-1	7.07E+3	1.02E-1	3.69E-1	4.46E+3	2.12E-2	7.69E-2	9.31E+2	4.99E-3	1.83E-2	2.21E+2	.00E+0	.00E+0	.00E+0
XXIA	2.89E+0	3.00E+1	2.84E+2	2.89E+0	3.00E+1	2.84E+2	2.89E+0	3.00E+1	2.84E+2	2.81E+0	2.92E+1	2.77E+2	1.91E+0	1.99E+1	1.88E+2
XXIB	2.87E+0	2.97E+1	2.57E+2	2.87E+0	2.97E+1	2.57E+2	2.87E+0	2.96E+1	2.57E+2	2.79E+0	2.89E+1	2.50E+2	1.90E+0	1.96E+1	1.70E+2
XXIC	2.83E+0	2.86E+1	2.07E+2	2.83E+0	2.86E+1	2.07E+2	2.83E+0	2.85E+1	2.07E+2	2.76E+0	2.78E+1	2.02E+2	1.87E+0	1.89E+1	1.37E+2
XXII	1.55E+2	5.19E+4	7.92E+4	1.55E+2	5.19E+4	7.92E+4	1.54E+2	5.19E+4	7.91E+4	1.50E+2	5.04E+4	7.69E+4	1.07E+2	3.78E+4	5.85E+4
DOE	5.64E+4	7.20E+5	2.87E+6	5.49E+4	7.06E+5	2.76E+6	5.29E+4	6.88E+5	2.62E+6	4.70E+4	6.27E+5	2.24E+6	4.07E+4	5.13E+5	1.99E+6
DOD	5.25E+0	1.59E+1	1.34E+2	5.20E+0	1.58E+1	1.01E+2	5.10E+0	1.56E+1	1.60E+1	5.03E+0	1.54E+1	1.58E+1	4.75E+0	1.45E+1	1.49E+1
NRC	1.75E+2	7.78E+2	3.99E+4	1.73E+2	7.73E+2	2.73E+4	1.72E+2	7.66E+2	1.02E+4	1.69E+2	7.46E+2	6.53E+3	1.36E+2	5.30E+2	3.74E+3
Total	5.66E+4	7.21E+5	2.91E+6	5.51E+4	7.07E+5	2.78E+6	5.31E+4	6.89E+5	2.63E+6	4.72E+4	6.28E+5	2.24E+6	4.09E+4	5.13E+5	1.99E+6

Low Population Density without Agriculture - 09-13-94 4:09p
 TABLE K-34. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.01E+2	2.18E+2	2.18E+2	1.92E+2	2.09E+2	2.09E+2	1.86E+2	2.02E+2	2.02E+2	1.76E+2	1.91E+2	1.91E+2	1.69E+2	1.84E+2	1.84E+2	1.61E+2	1.75E+2	1.75E+2
II	5.02E+3	4.89E+4	3.95E+5	5.02E+3	4.89E+4	3.95E+5	5.02E+3	4.89E+4	3.94E+5	5.02E+3	4.88E+4	3.93E+5	5.02E+3	4.88E+4	3.92E+5	5.02E+3	4.88E+4	3.91E+5
III	8.83E+1	9.78E+1	9.78E+1	7.70E+1	8.53E+1	8.53E+1	7.01E+1	7.76E+1	7.76E+1	6.41E+1	7.10E+1	7.10E+1	5.72E+1	6.34E+1	6.34E+1	4.68E+1	5.18E+1	5.18E+1
IV	2.66E+1	6.92E+1	7.74E+2	2.59E+1	6.75E+1	7.54E+2	2.53E+1	6.58E+1	7.36E+2	2.40E+1	6.26E+1	7.00E+2	2.28E+1	5.94E+1	6.64E+2	2.09E+1	5.45E+1	6.10E+2
V	5.54E+3	6.01E+3	6.01E+3	5.47E+3	5.94E+3	5.94E+3	5.41E+3	5.87E+3	5.87E+3	5.31E+3	5.77E+3	5.77E+3	5.22E+3	5.66E+3	5.66E+3	5.07E+3	5.50E+3	5.50E+3
VI	1.52E+3	9.31E+3	5.70E+4	1.52E+3	9.31E+3	5.70E+4	1.52E+3	9.30E+3	5.69E+4	1.51E+3	9.29E+3	5.69E+4	1.51E+3	9.27E+3	5.68E+4	1.50E+3	9.25E+3	5.67E+4
VII	4.89E+3	4.36E+4	3.54E+5	3.23E+3	2.88E+4	2.34E+5	2.28E+3	2.03E+4	1.65E+5	1.39E+3	1.24E+4	1.01E+5	7.84E+2	7.03E+3	5.71E+4	1.26E+2	1.12E+3	9.13E+3
IX	9.46E+0	8.50E+1	5.42E+2	4.52E+0	4.06E+1	2.59E+2	2.68E+0	2.40E+1	1.53E+2	9.44E-1	8.49E+0	5.41E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.38E+3	1.80E+4	2.05E+4	1.38E+3	1.69E+4	1.93E+4	1.37E+3	1.60E+4	1.82E+4	1.36E+3	1.43E+4	1.63E+4	1.36E+3	1.32E+4	1.50E+4	1.35E+3	1.20E+4	1.36E+4
XII	5.10E+0	1.56E+1	1.60E+1	5.08E+0	1.55E+1	1.59E+1	5.08E+0	1.55E+1	1.59E+1	5.06E+0	1.55E+1	1.59E+1	5.04E+0	1.54E+1	1.58E+1	5.03E+0	1.54E+1	1.58E+1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E-1	3.84E-1	3.84E-1	3.64E-1	3.83E-1	3.83E-1	3.64E-1	3.83E-1	3.83E-1	3.63E-1	3.82E-1	3.82E-1	3.62E-1	3.81E-1	3.81E-1	3.61E-1	3.80E-1	3.80E-1
XVIB	3.61E-1	3.78E-1	3.78E-1	3.60E-1	3.78E-1	3.78E-1	3.60E-1	3.78E-1	3.78E-1	3.59E-1	3.77E-1	3.77E-1	3.58E-1	3.76E-1	3.76E-1	3.57E-1	3.75E-1	3.75E-1
XVIC	3.52E-1	3.67E-1	3.67E-1	3.52E-1	3.67E-1	3.67E-1	3.51E-1	3.67E-1	3.67E-1	3.50E-1	3.65E-1	3.65E-1	3.49E-1	3.64E-1	3.64E-1	3.48E-1	3.64E-1	3.64E-1
XVIIIA	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.13E+0	1.13E+0	1.02E+0	1.13E+0	1.13E+0
XVIIIB	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.11E+0	1.11E+0	1.01E+0	1.11E+0	1.11E+0	1.00E+0	1.11E+0	1.11E+0
XVIIIC	9.79E-1	1.07E+0	1.07E+0	9.79E-1	1.07E+0	1.07E+0	9.78E-1	1.07E+0	1.07E+0	9.77E-1	1.07E+0	1.07E+0	9.76E-1	1.06E+0	1.06E+0	9.72E-1	1.06E+0	1.06E+0
XXA	3.98E-2	3.39E-1	3.66E+1	1.33E-2	1.03E-1	1.11E+1	1.24E-2	6.61E-2	7.16E+0	1.12E-2	6.03E-2	6.53E+0	1.03E-2	5.63E-2	6.10E+0	9.37E-3	5.18E-2	5.62E+0
XXB	3.21E-2	1.17E-1	1.47E+1	1.07E-2	3.91E-2	4.95E+0	9.99E-3	3.64E-2	4.61E+0	9.00E-3	3.29E-2	4.16E+0	8.31E-3	3.04E-2	3.85E+0	7.56E-3	2.76E-2	3.50E+0
XXC	2.12E-2	7.69E-2	9.31E+2	7.09E-3	2.58E-2	3.13E+2	6.60E-3	2.41E-2	2.92E+2	5.95E-3	2.17E-2	2.63E+2	5.49E-3	2.01E-2	2.43E+2	4.99E-3	1.83E-2	2.21E+2
XXIA	2.89E+0	3.00E+1	2.84E+2	2.88E+0	2.99E+1	2.83E+2	2.87E+0	2.98E+1	2.83E+2	2.86E+0	2.97E+1	2.81E+2	2.84E+0	2.95E+1	2.79E+2	2.81E+0	2.92E+1	2.77E+2
XXIB	2.87E+0	2.96E+1	2.57E+2	2.86E+0	2.96E+1	2.56E+2	2.85E+0	2.95E+1	2.55E+2	2.84E+0	2.93E+1	2.54E+2	2.82E+0	2.91E+1	2.52E+2	2.79E+0	2.89E+1	2.50E+2
XXIC	2.83E+0	2.85E+1	2.07E+2	2.82E+0	2.85E+1	2.07E+2	2.82E+0	2.84E+1	2.06E+2	2.80E+0	2.82E+1	2.05E+2	2.78E+0	2.80E+1	2.04E+2	2.76E+0	2.78E+1	2.02E+2
XXII	1.54E+2	5.19E+4	7.91E+4	1.54E+2	5.18E+4	7.89E+4	1.53E+2	5.17E+4	7.87E+4	1.52E+2	5.11E+4	7.79E+4	1.51E+2	5.08E+4	7.74E+4	1.50E+2	5.04E+4	7.69E+4
DOE	5.29E+4	6.88E+5	2.62E+6	5.11E+4	6.72E+5	2.49E+6	5.00E+4	6.61E+5	2.42E+6	4.88E+4	6.47E+5	2.35E+6	4.80E+4	6.37E+5	2.29E+6	4.70E+4	6.27E+5	2.24E+6
DOD	5.10E+0	1.56E+1	1.60E+1	5.08E+0	1.55E+1	1.59E+1	5.08E+0	1.55E+1	1.59E+1	5.06E+0	1.55E+1	1.59E+1	5.04E+0	1.54E+1	1.58E+1	5.03E+0	1.54E+1	1.58E+1
NRC	1.72E+2	7.66E+2	1.02E+4	1.71E+2	7.63E+2	7.13E+3	1.71E+2	7.60E+2	6.99E+3	1.70E+2	7.55E+2	6.82E+3	1.70E+2	7.52E+2	6.69E+3	1.69E+2	7.46E+2	6.53E+3
Total	5.31E+4	6.89E+5	2.63E+6	5.13E+4	6.72E+5	2.50E+6	5.02E+4	6.62E+5	2.43E+6	4.90E+4	6.48E+5	2.35E+6	4.82E+4	6.38E+5	2.30E+6	4.72E+4	6.28E+5	2.24E+6

Low Population Density without Agriculture - 09-13-94 4:09p
 TABLE K-35. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.15E+2	2.33E+2	2.33E+2	2.08E+2	2.25E+2	2.25E+2	1.84E+2	1.99E+2	1.99E+2	1.23E+2	1.34E+2	1.34E+2	3.14E+1	3.41E+1	3.41E+1
II	5.02E+3	4.89E+4	3.96E+5	5.02E+3	4.89E+4	3.96E+5	5.02E+3	4.88E+4	3.94E+5	5.01E+3	4.86E+4	3.87E+5	4.25E+3	4.12E+4	3.19E+5
III	9.48E+1	1.05E+2	1.05E+2	9.38E+1	1.04E+2	1.04E+2	6.90E+1	7.64E+1	7.64E+1	1.10E+1	1.22E+1	1.22E+1	.00E+0	.00E+0	.00E+0
IV	2.81E+1	7.31E+1	8.17E+2	2.73E+1	7.12E+1	7.97E+2	2.49E+1	6.48E+1	7.24E+2	4.46E+0	1.16E+1	1.30E+2	.00E+0	.00E+0	.00E+0
V	5.61E+3	6.08E+3	6.08E+3	5.58E+3	6.06E+3	6.06E+3	5.39E+3	5.85E+3	5.85E+3	4.17E+3	4.52E+3	4.52E+3	1.17E+3	1.27E+3	1.27E+3
VI	1.52E+3	9.32E+3	5.70E+4	1.52E+3	9.32E+3	5.70E+4	1.51E+3	9.30E+3	5.69E+4	1.44E+3	8.98E+3	5.51E+4	1.01E+3	6.78E+3	4.21E+4
VII	7.49E+3	6.71E+4	5.45E+5	6.15E+3	5.48E+4	4.45E+5	1.96E+3	1.75E+4	1.42E+5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	3.28E+1	2.95E+2	1.88E+3	1.71E+1	1.54E+2	9.79E+2	1.77E+0	1.59E+1	1.02E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.39E+3	1.86E+4	2.12E+4	1.39E+3	1.85E+4	2.11E+4	1.37E+3	1.64E+4	1.87E+4	1.31E+3	9.26E+3	1.05E+4	1.05E+3	3.52E+3	3.89E+3
XII	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.05E+0	1.54E+1	1.58E+1	4.94E+0	1.51E+1	1.55E+1	1.59E+0	4.86E+0	4.99E+0
XIIIA	1.93E-2	6.31E-2	1.69E-1	7.40E-3	2.42E-2	6.45E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.56E-2	2.79E-2	9.66E-2	5.96E-3	1.07E-2	3.70E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.03E-2	1.24E-2	3.76E+1	3.93E-3	4.74E-3	1.44E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E-1	3.84E-1	3.84E-1	3.65E-1	3.84E-1	3.84E-1	3.64E-1	3.83E-1	3.83E-1	3.52E-1	3.70E-1	3.70E-1	1.95E-1	2.07E-1	2.07E-1
XVIB	3.61E-1	3.79E-1	3.79E-1	3.61E-1	3.79E-1	3.79E-1	3.60E-1	3.78E-1	3.78E-1	3.48E-1	3.65E-1	3.65E-1	1.93E-1	2.04E-1	2.04E-1
XVIC	3.52E-1	3.67E-1	3.67E-1	3.52E-1	3.67E-1	3.67E-1	3.51E-1	3.66E-1	3.66E-1	3.39E-1	3.54E-1	3.54E-1	1.88E-1	1.97E-1	1.97E-1
XVIIIA	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	9.85E-1	1.09E+0	1.09E+0	6.76E-1	7.48E-1	7.48E-1
XVIIIB	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	9.68E-1	1.07E+0	1.07E+0	6.64E-1	7.34E-1	7.34E-1
XVIIIC	9.79E-1	1.07E+0	1.07E+0	9.79E-1	1.07E+0	1.07E+0	9.78E-1	1.07E+0	1.07E+0	9.37E-1	1.02E+0	1.02E+0	6.43E-1	7.01E-1	7.01E-1
XXA	2.29E-1	1.27E+0	1.37E+2	9.97E-2	6.80E-1	7.33E+1	1.13E-2	6.28E-2	6.81E+0	4.23E-3	3.31E-2	3.61E+0	.00E+0	.00E+0	.00E+0
XXB	1.85E-1	7.26E-1	9.14E+1	8.04E-2	3.66E-1	4.61E+1	9.12E-3	3.59E-2	4.55E+0	3.41E-3	1.78E-2	2.27E+0	.00E+0	.00E+0	.00E+0
XXC	1.22E-1	4.43E-1	5.36E+3	5.31E-2	1.93E-1	2.33E+3	6.03E-3	2.20E-2	2.67E+2	2.26E-3	8.29E-3	1.01E+2	.00E+0	.00E+0	.00E+0
XXIA	2.89E+0	3.00E+1	2.84E+2	2.89E+0	3.00E+1	2.84E+2	2.87E+0	2.98E+1	2.82E+2	2.47E+0	2.56E+1	2.43E+2	8.81E-1	9.16E+0	8.67E+1
XXIB	2.87E+0	2.97E+1	2.57E+2	2.87E+0	2.97E+1	2.57E+2	2.85E+0	2.94E+1	2.55E+2	2.45E+0	2.53E+1	2.19E+2	8.76E-1	9.04E+0	7.83E+1
XXIC	2.83E+0	2.86E+1	2.07E+2	2.83E+0	2.86E+1	2.07E+2	2.81E+0	2.83E+1	2.06E+2	2.42E+0	2.44E+1	1.77E+2	8.64E-1	8.71E+0	6.32E+1
XXII	1.55E+2	5.19E+4	7.92E+4	1.55E+2	5.19E+4	7.92E+4	1.53E+2	5.16E+4	7.86E+4	1.41E+2	4.81E+4	7.29E+4	.00E+0	.00E+0	.00E+0
DOE	5.57E+4	7.13E+5	2.81E+6	5.43E+4	7.00E+5	2.71E+6	4.96E+4	6.58E+5	2.40E+6	4.43E+4	5.99E+5	2.16E+6	2.96E+4	2.00E+5	1.28E+6
DOD	5.23E+0	1.59E+1	1.23E+2	5.15E+0	1.57E+1	5.71E+1	5.05E+0	1.54E+1	1.58E+1	4.94E+0	1.51E+1	1.55E+1	1.59E+0	4.86E+0	4.99E+0
NRC	1.74E+2	7.76E+2	3.17E+4	1.72E+2	7.70E+2	1.70E+4	1.71E+2	7.59E+2	6.86E+3	1.58E+2	6.65E+2	5.29E+3	8.49E+1	2.68E+2	1.74E+3
Total	5.59E+4	7.14E+5	2.84E+6	5.45E+4	7.01E+5	2.73E+6	4.98E+4	6.59E+5	2.40E+6	4.45E+4	6.00E+5	2.16E+6	2.97E+4	2.00E+5	1.28E+6

Low Population Density without Agriculture - 09-13-94 4:09p
 TABLE K-36. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.84E+2	1.99E+2	1.99E+2	1.70E+2	1.84E+2	1.84E+2	1.60E+2	1.74E+2	1.74E+2	1.48E+2	1.60E+2	1.60E+2	1.40E+2	1.52E+2	1.52E+2	1.23E+2	1.34E+2	1.34E+2
II	5.02E+3	4.88E+4	3.94E+5	5.02E+3	4.88E+4	3.92E+5	5.02E+3	4.88E+4	3.91E+5	5.02E+3	4.87E+4	3.90E+5	5.01E+3	4.87E+4	3.89E+5	5.01E+3	4.86E+4	3.87E+5
III	6.90E+1	7.64E+1	7.64E+1	5.79E+1	6.41E+1	6.41E+1	4.61E+1	5.10E+1	5.10E+1	2.71E+1	3.01E+1	3.01E+1	1.57E+1	1.74E+1	1.74E+1	1.10E+1	1.22E+1	1.22E+1
IV	2.49E+1	6.48E+1	7.24E+2	2.26E+1	5.89E+1	6.58E+2	2.03E+1	5.30E+1	5.92E+2	1.58E+1	4.12E+1	4.60E+2	1.13E+1	2.93E+1	3.28E+2	4.46E+0	1.16E+1	1.30E+2
V	5.39E+3	5.85E+3	5.85E+3	5.23E+3	5.67E+3	5.67E+3	5.06E+3	5.49E+3	5.49E+3	4.72E+3	5.13E+3	5.13E+3	4.39E+3	4.76E+3	4.76E+3	4.17E+3	4.52E+3	4.52E+3
VI	1.51E+3	9.30E+3	5.69E+4	1.51E+3	9.27E+3	5.68E+4	1.50E+3	9.25E+3	5.67E+4	1.48E+3	9.18E+3	5.63E+4	1.46E+3	9.10E+3	5.59E+4	1.44E+3	8.98E+3	5.51E+4
VII	1.96E+3	1.75E+4	1.42E+5	6.96E+2	6.23E+3	5.06E+4	6.66E+1	5.90E+2	4.78E+3	6.01E+0	5.13E+1	4.14E+2	1.69E+0	1.42E+1	1.14E+2	.00E+0	.00E+0	.00E+0
IX	1.77E+0	1.59E+1	1.02E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.37E+3	1.64E+4	1.87E+4	1.36E+3	1.42E+4	1.61E+4	1.35E+3	1.28E+4	1.45E+4	1.34E+3	1.12E+4	1.27E+4	1.33E+3	1.03E+4	1.16E+4	1.31E+3	9.26E+3	1.05E+4
XII	5.05E+0	1.54E+1	1.58E+1	5.03E+0	1.54E+1	1.58E+1	5.02E+0	1.53E+1	1.57E+1	4.99E+0	1.52E+1	1.57E+1	4.97E+0	1.52E+1	1.56E+1	4.94E+0	1.51E+1	1.55E+1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.64E-1	3.83E-1	3.83E-1	3.62E-1	3.81E-1	3.81E-1	3.61E-1	3.80E-1	3.80E-1	3.59E-1	3.78E-1	3.78E-1	3.57E-1	3.76E-1	3.76E-1	3.52E-1	3.70E-1	3.70E-1
XVIB	3.60E-1	3.78E-1	3.78E-1	3.58E-1	3.76E-1	3.76E-1	3.57E-1	3.75E-1	3.75E-1	3.55E-1	3.73E-1	3.73E-1	3.53E-1	3.71E-1	3.71E-1	3.48E-1	3.65E-1	3.65E-1
XVIC	3.51E-1	3.66E-1	3.66E-1	3.49E-1	3.65E-1	3.65E-1	3.48E-1	3.64E-1	3.64E-1	3.47E-1	3.62E-1	3.62E-1	3.44E-1	3.60E-1	3.60E-1	3.39E-1	3.54E-1	3.54E-1
XVIIIA	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.13E+0	1.13E+0	1.02E+0	1.13E+0	1.13E+0	1.01E+0	1.12E+0	1.12E+0	1.00E+0	1.11E+0	1.11E+0	9.85E-1	1.09E+0	1.09E+0
XVIIIB	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.11E+0	1.11E+0	1.00E+0	1.11E+0	1.11E+0	9.93E-1	1.10E+0	1.10E+0	9.83E-1	1.09E+0	1.09E+0	9.68E-1	1.07E+0	1.07E+0
XVIIIC	9.78E-1	1.07E+0	1.07E+0	9.76E-1	1.06E+0	1.06E+0	9.71E-1	1.06E+0	1.06E+0	9.62E-1	1.05E+0	1.05E+0	9.52E-1	1.04E+0	1.04E+0	9.37E-1	1.02E+0	1.02E+0
XXA	1.13E-2	6.28E-2	6.81E+0	9.53E-3	5.46E-2	5.92E+0	8.43E-3	4.95E-2	5.37E+0	7.04E-3	4.26E-2	4.63E+0	5.92E-3	3.79E-2	4.12E+0	4.23E-3	3.31E-2	3.61E+0
XXB	9.12E-3	3.59E-2	4.55E+0	7.69E-3	3.10E-2	3.92E+0	6.80E-3	2.79E-2	3.53E+0	5.68E-3	2.37E-2	3.01E+0	4.77E-3	2.11E-2	2.68E+0	3.41E-3	1.78E-2	2.27E+0
XXC	6.03E-3	2.20E-2	2.67E+2	5.08E-3	1.86E-2	2.25E+2	4.49E-3	1.64E-2	1.99E+2	3.75E-3	1.37E-2	1.67E+2	3.15E-3	1.16E-2	1.41E+2	2.26E-3	8.29E-3	1.01E+2
XXIA	2.87E+0	2.98E+1	2.82E+2	2.84E+0	2.95E+1	2.79E+2	2.81E+0	2.92E+1	2.76E+2	2.74E+0	2.85E+1	2.70E+2	2.62E+0	2.72E+1	2.58E+2	2.47E+0	2.56E+1	2.43E+2
XXIB	2.85E+0	2.94E+1	2.55E+2	2.82E+0	2.91E+1	2.52E+2	2.79E+0	2.88E+1	2.50E+2	2.72E+0	2.81E+1	2.44E+2	2.60E+0	2.69E+1	2.33E+2	2.45E+0	2.53E+1	2.19E+2
XXIC	2.81E+0	2.83E+1	2.06E+2	2.78E+0	2.81E+1	2.04E+2	2.75E+0	2.78E+1	2.02E+2	2.69E+0	2.71E+1	1.97E+2	2.57E+0	2.59E+1	1.88E+2	2.42E+0	2.44E+1	1.77E+2
XXII	1.53E+2	5.16E+4	7.86E+4	1.51E+2	5.08E+4	7.74E+4	1.49E+2	5.04E+4	7.69E+4	1.46E+2	4.95E+4	7.53E+4	1.43E+2	4.87E+4	7.40E+4	1.41E+2	4.81E+4	7.29E+4
DOE	4.96E+4	6.58E+5	2.40E+6	4.79E+4	6.38E+5	2.29E+6	4.69E+4	6.27E+5	2.23E+6	4.61E+4	6.16E+5	2.21E+6	4.52E+4	6.08E+5	2.19E+6	4.43E+4	5.99E+5	2.16E+6
DOD	5.05E+0	1.54E+1	1.58E+1	5.03E+0	1.54E+1	1.58E+1	5.02E+0	1.53E+1	1.57E+1	4.99E+0	1.52E+1	1.57E+1	4.97E+0	1.52E+1	1.56E+1	4.94E+0	1.51E+1	1.55E+1
NRC	1.71E+2	7.59E+2	6.86E+3	1.70E+2	7.52E+2	6.61E+3	1.69E+2	7.45E+2	6.42E+3	1.66E+2	7.29E+2	6.13E+3	1.63E+2	7.01E+2	5.78E+3	1.58E+2	6.65E+2	5.29E+3
Total	4.98E+4	6.59E+5	2.40E+6	4.81E+4	6.39E+5	2.30E+6	4.71E+4	6.28E+5	2.24E+6	4.62E+4	6.17E+5	2.21E+6	4.54E+4	6.08E+5	2.19E+6	4.45E+4	6.00E+5	2.16E+6

Low Population Density without Agriculture - 09-13-94 4:09p
 TABLE K-37. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.48E-2	9.22E-2	9.22E-2	8.33E-2	9.06E-2	9.06E-2	7.87E-2	8.56E-2	8.56E-2	6.32E-2	6.87E-2	6.87E-2	2.83E-2	3.08E-2	3.08E-2
II	1.72E+0	1.68E+1	1.31E+2	1.72E+0	1.68E+1	1.31E+2	1.72E+0	1.68E+1	1.31E+2	1.72E+0	1.67E+1	1.29E+2	1.70E+0	1.64E+1	1.25E+2
III	3.71E-2	4.11E-2	4.11E-2	3.70E-2	4.11E-2	4.11E-2	3.45E-2	3.83E-2	3.83E-2	1.83E-2	2.03E-2	2.03E-2	.00E+0	.00E+0	.00E+0
IV	6.06E-3	1.61E-2	2.48E-1	5.99E-3	1.59E-2	2.45E-1	5.71E-3	1.52E-2	2.34E-1	4.50E-3	1.20E-2	1.84E-1	.00E+0	.00E+0	.00E+0
V	2.20E+0	2.39E+0	2.39E+0	2.20E+0	2.38E+0	2.38E+0	2.18E+0	2.36E+0	2.36E+0	1.99E+0	2.16E+0	2.16E+0	1.31E+0	1.41E+0	1.41E+0
VI	3.50E-1	1.87E+0	1.65E+1	3.50E-1	1.87E+0	1.65E+1	3.49E-1	1.86E+0	1.65E+1	3.42E-1	1.85E+0	1.64E+1	2.94E-1	1.70E+0	1.52E+1
VII	5.51E-1	4.25E+0	3.30E+1	4.64E-1	3.47E+0	2.68E+1	3.43E-1	2.52E+0	1.94E+1	8.90E-3	6.51E-2	5.02E-1	.00E+0	.00E+0	.00E+0
IX	2.18E-3	1.92E-2	1.19E-1	1.59E-3	1.39E-2	8.65E-2	5.44E-4	4.78E-3	2.97E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.49E+0	5.05E+0	5.59E+0	1.49E+0	5.04E+0	5.59E+0	1.49E+0	4.92E+0	5.45E+0	1.45E+0	3.67E+0	4.01E+0	1.28E+0	2.19E+0	2.33E+0
XII	2.97E-4	9.20E-4	9.46E-4	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.18E-4	9.44E-4	2.92E-4	9.07E-4	9.32E-4	2.76E-4	8.56E-4	8.80E-4
XIIIA	5.18E-6	1.70E-5	5.36E-5	3.71E-6	1.22E-5	3.84E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	4.17E-6	7.50E-6	3.12E-5	2.99E-6	5.38E-6	2.23E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.75E-6	3.33E-6	9.94E-3	1.97E-6	2.39E-6	7.13E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-4	1.53E-4	1.53E-4	1.46E-4	1.53E-4	1.53E-4	1.46E-4	1.53E-4	1.44E-4	1.52E-4	1.52E-4	1.52E-4	1.27E-4	1.34E-4	1.34E-4
XVIB	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.51E-4	1.51E-4	1.42E-4	1.49E-4	1.49E-4	1.25E-4	1.32E-4	1.32E-4
XVIC	1.40E-4	1.47E-4	1.47E-4	1.40E-4	1.47E-4	1.47E-4	1.40E-4	1.46E-4	1.46E-4	1.39E-4	1.45E-4	1.45E-4	1.22E-4	1.28E-4	1.28E-4
XVIIIA	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.00E-4	4.42E-4	4.42E-4	3.50E-4	3.87E-4	3.87E-4
XVIIIB	3.96E-4	4.38E-4	4.38E-4	3.96E-4	4.38E-4	4.38E-4	3.96E-4	4.38E-4	4.38E-4	3.93E-4	4.35E-4	4.35E-4	3.44E-4	3.81E-4	3.81E-4
XVIIIC	3.82E-4	4.17E-4	4.17E-4	3.82E-4	4.17E-4	4.17E-4	3.82E-4	4.17E-4	4.17E-4	3.79E-4	4.14E-4	4.14E-4	3.31E-4	3.62E-4	3.62E-4
XXA	5.30E-5	3.42E-4	5.07E-2	3.34E-5	2.37E-4	3.52E-2	6.95E-6	7.67E-5	1.14E-2	1.63E-6	1.17E-5	1.75E-3	.00E+0	2.24E-6	3.39E-4
XXB	4.28E-5	2.19E-4	3.46E-2	2.70E-5	1.38E-4	2.18E-2	5.61E-6	2.88E-5	4.56E-3	1.31E-6	6.83E-6	1.09E-3	.00E+0	.00E+0	.00E+0
XXC	2.83E-5	1.56E-4	1.27E+0	1.79E-5	9.85E-5	8.03E-1	3.71E-6	2.05E-5	1.68E-1	8.70E-7	4.88E-6	3.98E-2	.00E+0	.00E+0	.00E+0
XXIA	1.13E-3	1.18E-2	1.11E-1	1.13E-3	1.18E-2	1.11E-1	1.13E-3	1.18E-2	1.11E-1	1.10E-3	1.15E-2	1.08E-1	7.46E-4	7.78E-3	7.34E-2
XXIB	1.12E-3	1.16E-2	1.00E-1	1.12E-3	1.16E-2	1.00E-1	1.12E-3	1.16E-2	1.00E-1	1.09E-3	1.13E-2	9.77E-2	7.40E-4	7.66E-3	6.64E-2
XXIC	1.10E-3	1.12E-2	8.13E-2	1.10E-3	1.12E-2	8.13E-2	1.10E-3	1.12E-2	8.13E-2	1.07E-3	1.09E-2	7.91E-2	7.29E-4	7.38E-3	5.38E-2
XXII	5.51E-2	1.10E+1	1.59E+1	5.51E-2	1.10E+1	1.59E+1	5.48E-2	1.09E+1	1.59E+1	5.32E-2	1.06E+1	1.54E+1	3.79E-2	7.98E+0	1.17E+1
DOE	1.46E+1	1.47E+2	6.56E+2	1.45E+1	1.46E+2	6.50E+2	1.43E+1	1.45E+2	6.42E+2	1.35E+1	1.38E+2	6.15E+2	1.14E+1	1.14E+2	5.56E+2
DOD	3.31E-4	9.99E-4	2.93E-2	3.21E-4	9.75E-4	2.13E-2	2.96E-4	9.18E-4	9.44E-4	2.92E-4	9.07E-4	9.32E-4	2.76E-4	8.56E-4	8.80E-4
NRC	6.79E-2	3.03E-1	8.53E+0	6.76E-2	3.02E-1	6.20E+0	6.73E-2	3.00E-1	3.05E+0	6.63E-2	2.92E-1	2.33E+0	5.34E-2	2.08E-1	1.46E+0
Total	1.46E+1	1.47E+2	6.65E+2	1.45E+1	1.47E+2	6.56E+2	1.44E+1	1.45E+2	6.45E+2	1.36E+1	1.39E+2	6.17E+2	1.14E+1	1.14E+2	5.57E+2

Low Population Density without Agriculture - 09-13-94 4:09p
 TABLE K-38. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.87E-2	8.56E-2	8.56E-2	7.55E-2	8.21E-2	8.21E-2	7.29E-2	7.93E-2	7.93E-2	6.92E-2	7.52E-2	7.52E-2	6.64E-2	7.22E-2	7.22E-2	6.32E-2	6.87E-2	6.87E-2
II	1.72E+0	1.68E+1	1.31E+2	1.72E+0	1.68E+1	1.31E+2	1.72E+0	1.67E+1	1.30E+2	1.72E+0	1.67E+1	1.30E+2	1.72E+0	1.67E+1	1.29E+2	1.72E+0	1.67E+1	1.29E+2
III	3.45E-2	3.83E-2	3.83E-2	3.01E-2	3.34E-2	3.34E-2	2.74E-2	3.04E-2	3.04E-2	2.51E-2	2.78E-2	2.78E-2	2.24E-2	2.48E-2	2.48E-2	1.83E-2	2.03E-2	2.03E-2
IV	5.71E-3	1.52E-2	2.34E-1	5.57E-3	1.48E-2	2.28E-1	5.43E-3	1.45E-2	2.22E-1	5.17E-3	1.38E-2	2.12E-1	4.90E-3	1.31E-2	2.01E-1	4.50E-3	1.20E-2	1.84E-1
V	2.18E+0	2.36E+0	2.36E+0	2.15E+0	2.33E+0	2.33E+0	2.13E+0	2.30E+0	2.30E+0	2.09E+0	2.26E+0	2.26E+0	2.05E+0	2.22E+0	2.22E+0	1.99E+0	2.16E+0	2.16E+0
VI	3.49E-1	1.86E+0	1.65E+1	3.48E-1	1.86E+0	1.65E+1	3.47E-1	1.86E+0	1.64E+1	3.45E-1	1.86E+0	1.64E+1	3.44E-1	1.85E+0	1.64E+1	3.42E-1	1.85E+0	1.64E+1
VII	3.43E-1	2.52E+0	1.94E+1	2.25E-1	1.66E+0	1.29E+1	1.57E-1	1.17E+0	9.07E+0	9.41E-2	7.16E-1	5.55E+0	5.31E-2	4.04E-1	3.14E+0	8.90E-3	6.51E-2	5.02E-1
IX	5.44E-4	4.78E-3	2.97E-2	2.60E-4	2.29E-3	1.42E-2	1.54E-4	1.35E-3	8.39E-3	5.43E-5	4.77E-4	2.96E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.49E+0	4.92E+0	5.45E+0	1.48E+0	4.71E+0	5.20E+0	1.48E+0	4.51E+0	4.97E+0	1.47E+0	4.16E+0	4.57E+0	1.46E+0	3.91E+0	4.29E+0	1.45E+0	3.67E+0	4.01E+0
XII	2.96E-4	9.18E-4	9.44E-4	2.95E-4	9.16E-4	9.42E-4	2.95E-4	9.14E-4	9.40E-4	2.94E-4	9.11E-4	9.37E-4	2.93E-4	9.09E-4	9.35E-4	2.92E-4	9.07E-4	9.32E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-4	1.53E-4	1.53E-4	1.46E-4	1.53E-4	1.53E-4	1.45E-4	1.53E-4	1.53E-4	1.45E-4	1.52E-4	1.52E-4	1.45E-4	1.52E-4	1.52E-4	1.44E-4	1.52E-4	1.52E-4
XVIB	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.50E-4	1.50E-4	1.43E-4	1.50E-4	1.50E-4	1.43E-4	1.50E-4	1.50E-4	1.42E-4	1.49E-4	1.49E-4
XVIC	1.40E-4	1.46E-4	1.46E-4	1.40E-4	1.46E-4	1.46E-4	1.40E-4	1.46E-4	1.46E-4	1.40E-4	1.46E-4	1.46E-4	1.39E-4	1.45E-4	1.45E-4	1.39E-4	1.45E-4	1.45E-4
XVIIIA	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.02E-4	4.44E-4	4.44E-4	4.02E-4	4.44E-4	4.44E-4	4.00E-4	4.42E-4	4.42E-4
XVIIIB	3.96E-4	4.38E-4	4.38E-4	3.96E-4	4.38E-4	4.38E-4	3.95E-4	4.38E-4	4.38E-4	3.95E-4	4.37E-4	4.37E-4	3.95E-4	4.37E-4	4.37E-4	3.93E-4	4.35E-4	4.35E-4
XVIIIC	3.82E-4	4.17E-4	4.17E-4	3.82E-4	4.17E-4	4.17E-4	3.81E-4	4.17E-4	4.17E-4	3.81E-4	4.16E-4	4.16E-4	3.81E-4	4.16E-4	4.16E-4	3.79E-4	4.14E-4	4.14E-4
XXA	6.95E-6	7.67E-5	1.14E-2	2.32E-6	2.33E-5	3.47E-3	2.16E-6	1.49E-5	2.23E-3	1.94E-6	1.36E-5	2.04E-3	1.79E-6	1.27E-5	1.90E-3	1.63E-6	1.17E-5	1.75E-3
XXB	5.61E-6	2.88E-5	4.56E-3	1.87E-6	9.68E-6	1.54E-3	1.74E-6	9.02E-6	1.43E-3	1.57E-6	8.13E-6	1.29E-3	1.45E-6	7.51E-6	1.19E-3	1.31E-6	6.83E-6	1.09E-3
XXC	3.71E-6	2.05E-5	1.68E-1	1.24E-6	6.91E-6	5.64E-2	1.15E-6	6.43E-6	5.25E-2	1.04E-6	5.80E-6	4.74E-2	9.58E-7	5.36E-6	4.38E-2	8.70E-7	4.88E-6	3.98E-2
XXIA	1.13E-3	1.18E-2	1.11E-1	1.12E-3	1.17E-2	1.11E-1	1.12E-3	1.17E-2	1.10E-1	1.11E-3	1.16E-2	1.10E-1	1.11E-3	1.16E-2	1.09E-1	1.10E-3	1.15E-2	1.08E-1
XXIB	1.12E-3	1.16E-2	1.00E-1	1.12E-3	1.16E-2	1.00E-1	1.11E-3	1.15E-2	9.97E-2	1.11E-3	1.14E-2	9.91E-2	1.10E-3	1.14E-2	9.85E-2	1.09E-3	1.13E-2	9.77E-2
XXIC	1.10E-3	1.12E-2	8.13E-2	1.10E-3	1.11E-2	8.10E-2	1.10E-3	1.11E-2	8.08E-2	1.09E-3	1.10E-2	8.03E-2	1.08E-3	1.10E-2	7.98E-2	1.07E-3	1.09E-2	7.91E-2
XXII	5.48E-2	1.09E+1	1.59E+1	5.46E-2	1.09E+1	1.59E+1	5.44E-2	1.09E+1	1.58E+1	5.39E-2	1.08E+1	1.57E+1	5.37E-2	1.07E+1	1.55E+1	5.32E-2	1.06E+1	1.54E+1
DOE	1.43E+1	1.45E+2	6.42E+2	1.41E+1	1.44E+2	6.35E+2	1.40E+1	1.43E+2	6.30E+2	1.38E+1	1.41E+2	6.24E+2	1.37E+1	1.40E+2	6.19E+2	1.35E+1	1.38E+2	6.15E+2
DOD	2.96E-4	9.18E-4	9.44E-4	2.95E-4	9.16E-4	9.42E-4	2.95E-4	9.14E-4	9.40E-4	2.94E-4	9.11E-4	9.37E-4	2.93E-4	9.09E-4	9.35E-4	2.92E-4	9.07E-4	9.32E-4
NRC	6.73E-2	3.00E-1	3.05E+0	6.72E-2	2.99E-1	2.47E+0	6.71E-2	2.98E-1	2.44E+0	6.68E-2	2.96E-1	2.40E+0	6.66E-2	2.95E-1	2.37E+0	6.63E-2	2.92E-1	2.33E+0
Total	1.44E+1	1.45E+2	6.45E+2	1.42E+1	1.44E+2	6.37E+2	1.41E+1	1.43E+2	6.32E+2	1.39E+1	1.41E+2	6.26E+2	1.38E+1	1.40E+2	6.22E+2	1.36E+1	1.39E+2	6.17E+2

Low Population Density without Agriculture - 09-13-94 4:09p
 TABLE K-39. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.42E-2	9.15E-2	9.15E-2	8.15E-2	8.86E-2	8.86E-2	7.20E-2	7.83E-2	7.83E-2	4.83E-2	5.26E-2	5.26E-2	1.23E-2	1.34E-2	1.34E-2
II	1.72E+0	1.68E+1	1.31E+2	1.72E+0	1.68E+1	1.31E+2	1.72E+0	1.67E+1	1.30E+2	1.72E+0	1.67E+1	1.28E+2	1.46E+0	1.41E+1	1.06E+2
III	3.71E-2	4.11E-2	4.11E-2	3.67E-2	4.07E-2	4.07E-2	2.70E-2	2.99E-2	2.99E-2	4.32E-3	4.79E-3	4.79E-3	.00E+0	.00E+0	.00E+0
IV	6.03E-3	1.61E-2	2.47E-1	5.88E-3	1.57E-2	2.41E-1	5.35E-3	1.42E-2	2.19E-1	9.58E-4	2.55E-3	3.92E-2	.00E+0	.00E+0	.00E+0
V	2.20E+0	2.39E+0	2.39E+0	2.19E+0	2.38E+0	2.38E+0	2.12E+0	2.29E+0	2.29E+0	1.64E+0	1.77E+0	1.77E+0	4.60E-1	4.99E-1	4.99E-1
VI	3.50E-1	1.87E+0	1.65E+1	3.50E-1	1.87E+0	1.65E+1	3.46E-1	1.86E+0	1.64E+1	3.23E-1	1.79E+0	1.59E+1	2.14E-1	1.33E+0	1.22E+1
VII	5.08E-1	3.86E+0	2.99E+1	4.29E-1	3.17E+0	2.45E+1	1.34E-1	1.01E+0	7.82E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	1.89E-3	1.66E-2	1.03E-1	9.83E-4	8.64E-3	5.36E-2	1.02E-4	8.96E-4	5.56E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.49E+0	5.05E+0	5.59E+0	1.49E+0	5.04E+0	5.58E+0	1.48E+0	4.59E+0	5.07E+0	1.41E+0	3.06E+0	3.32E+0	1.14E+0	1.65E+0	1.73E+0
XII	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.19E-4	9.45E-4	2.94E-4	9.10E-4	9.36E-4	2.87E-4	8.89E-4	9.15E-4	9.23E-5	2.86E-4	2.95E-4
XIIIA	4.70E-6	1.54E-5	4.86E-5	1.80E-6	5.92E-6	1.86E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.79E-6	6.80E-6	2.83E-5	1.45E-6	2.60E-6	1.08E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.50E-6	3.02E-6	9.02E-6	9.56E-7	1.16E-6	3.45E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-4	1.53E-4	1.53E-4	1.46E-4	1.53E-4	1.53E-4	1.45E-4	1.53E-4	1.53E-4	1.40E-4	1.48E-4	1.48E-4	7.79E-5	8.24E-5	8.24E-5
XVIB	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.51E-4	1.51E-4	1.43E-4	1.50E-4	1.50E-4	1.39E-4	1.45E-4	1.45E-4	7.68E-5	8.10E-5	8.10E-5
XVIC	1.40E-4	1.47E-4	1.47E-4	1.40E-4	1.47E-4	1.47E-4	1.40E-4	1.46E-4	1.46E-4	1.35E-4	1.41E-4	1.41E-4	7.49E-5	7.86E-5	7.86E-5
XVIIIA	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.02E-4	4.45E-4	4.45E-4	3.86E-4	4.26E-4	4.26E-4	2.65E-4	2.93E-4	2.93E-4
XVIIIB	3.96E-4	4.38E-4	4.38E-4	3.96E-4	4.38E-4	4.38E-4	3.95E-4	4.38E-4	4.38E-4	3.79E-4	4.20E-4	4.20E-4	2.60E-4	2.88E-4	2.88E-4
XVIIIC	3.82E-4	4.17E-4	4.17E-4	3.82E-4	4.17E-4	4.17E-4	3.81E-4	4.17E-4	4.17E-4	3.65E-4	3.99E-4	3.99E-4	2.51E-4	2.74E-4	2.74E-4
XXA	4.01E-5	2.87E-4	4.27E-2	1.74E-5	1.54E-4	2.28E-2	1.97E-6	1.42E-5	2.12E-3	7.32E-7	7.47E-6	1.13E-3	.00E+0	.00E+0	.00E+0
XXB	3.24E-5	1.80E-4	2.84E-2	1.41E-5	9.06E-5	1.43E-2	1.59E-6	8.89E-6	1.41E-3	5.91E-7	4.41E-6	7.03E-4	.00E+0	.00E+0	.00E+0
XXC	2.15E-5	1.18E-4	9.65E-1	9.32E-6	5.15E-5	4.20E-1	1.05E-6	5.88E-6	4.80E-2	3.91E-7	2.22E-6	1.81E-2	.00E+0	.00E+0	.00E+0
XXIA	1.13E-3	1.18E-2	1.11E-1	1.13E-3	1.18E-2	1.11E-1	1.12E-3	1.17E-2	1.10E-1	9.63E-4	1.00E-2	9.47E-2	3.44E-4	3.59E-3	3.38E-2
XXIB	1.12E-3	1.16E-2	1.00E-1	1.12E-3	1.16E-2	1.00E-1	1.11E-3	1.15E-2	9.96E-2	9.55E-4	9.89E-3	8.56E-2	3.41E-4	3.53E-3	3.06E-2
XXIC	1.10E-3	1.12E-2	8.13E-2	1.10E-3	1.12E-2	8.13E-2	1.09E-3	1.11E-2	8.07E-2	9.40E-4	9.53E-3	6.94E-2	3.36E-4	3.40E-3	2.48E-2
XXII	5.51E-2	1.10E+1	1.59E+1	5.50E-2	1.10E+1	1.59E+1	5.43E-2	1.09E+1	1.58E+1	5.01E-2	1.01E+1	1.47E+1	.00E+0	.00E+0	.00E+0
DOE	1.45E+1	1.47E+2	6.53E+2	1.44E+1	1.46E+2	6.48E+2	1.39E+1	1.43E+2	6.28E+2	1.26E+1	1.32E+2	5.96E+2	8.03E+0	4.67E+1	3.84E+2
DOD	3.27E-4	9.91E-4	2.67E-2	3.08E-4	9.46E-4	1.08E-2	2.94E-4	9.10E-4	9.36E-4	2.87E-4	8.89E-4	9.15E-4	9.23E-5	2.86E-4	2.95E-4
NRC	6.77E-2	3.02E-1	7.03E+0	6.75E-2	3.01E-1	4.32E+0	6.70E-2	2.97E-1	2.42E+0	6.20E-2	2.60E-1	1.97E+0	3.33E-2	1.05E-1	6.82E-1
Total	1.46E+1	1.47E+2	6.60E+2	1.45E+1	1.46E+2	6.52E+2	1.40E+1	1.43E+2	6.31E+2	1.27E+1	1.33E+2	5.98E+2	8.06E+0	4.68E+1	3.85E+2

Low Population Density without Agriculture - 09-13-94 4:09p
 TABLE K-40. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.20E-2	7.83E-2	7.83E-2	6.66E-2	7.24E-2	7.24E-2	6.30E-2	6.85E-2	6.85E-2	5.80E-2	6.31E-2	6.31E-2	5.48E-2	5.96E-2	5.96E-2	4.83E-2	5.26E-2	5.26E-2
II	1.72E+0	1.67E+1	1.30E+2	1.72E+0	1.67E+1	1.29E+2	1.72E+0	1.67E+1	1.29E+2	1.72E+0	1.67E+1	1.29E+2	1.72E+0	1.67E+1	1.29E+2	1.72E+0	1.67E+1	1.28E+2
III	2.70E-2	2.99E-2	2.99E-2	2.26E-2	2.51E-2	2.51E-2	1.80E-2	2.00E-2	2.00E-2	1.06E-2	1.18E-2	1.18E-2	6.14E-3	6.80E-3	6.80E-3	4.32E-3	4.79E-3	4.79E-3
IV	5.35E-3	1.42E-2	2.19E-1	4.86E-3	1.29E-2	1.99E-1	4.37E-3	1.16E-2	1.79E-1	3.40E-3	9.05E-3	1.39E-1	2.42E-3	6.45E-3	9.91E-2	9.58E-4	2.55E-3	3.92E-2
V	2.12E+0	2.29E+0	2.29E+0	2.05E+0	2.22E+0	2.22E+0	1.99E+0	2.15E+0	2.15E+0	1.85E+0	2.01E+0	2.01E+0	1.72E+0	1.87E+0	1.87E+0	1.64E+0	1.77E+0	1.77E+0
VI	3.46E-1	1.86E+0	1.64E+1	3.44E-1	1.86E+0	1.64E+1	3.41E-1	1.85E+0	1.64E+1	3.36E-1	1.83E+0	1.63E+1	3.31E-1	1.82E+0	1.61E+1	3.23E-1	1.79E+0	1.59E+1
VII	1.34E-1	1.01E+0	7.82E+0	4.72E-2	3.59E-1	2.78E+0	4.79E-3	3.43E-2	2.63E-1	5.15E-4	3.07E-3	2.29E-2	1.54E-4	8.62E-4	6.33E-3	.00E+0	.00E+0	.00E+0
IX	1.02E-4	8.96E-4	5.56E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.48E+0	4.59E+0	5.07E+0	1.47E+0	4.12E+0	4.53E+0	1.46E+0	3.83E+0	4.19E+0	1.44E+0	3.50E+0	3.81E+0	1.43E+0	3.29E+0	3.57E+0	1.41E+0	3.06E+0	3.32E+0
XII	2.94E-4	9.10E-4	9.36E-4	2.92E-4	9.06E-4	9.32E-4	2.91E-4	9.04E-4	9.30E-4	2.90E-4	8.99E-4	9.25E-4	2.89E-4	8.95E-4	9.21E-4	2.87E-4	8.89E-4	9.15E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.45E-4	1.53E-4	1.53E-4	1.45E-4	1.52E-4	1.52E-4	1.44E-4	1.52E-4	1.52E-4	1.43E-4	1.51E-4	1.51E-4	1.43E-4	1.50E-4	1.50E-4	1.40E-4	1.48E-4	1.48E-4
XVIB	1.43E-4	1.50E-4	1.50E-4	1.43E-4	1.50E-4	1.50E-4	1.42E-4	1.49E-4	1.49E-4	1.42E-4	1.49E-4	1.49E-4	1.41E-4	1.48E-4	1.48E-4	1.39E-4	1.45E-4	1.45E-4
XVIC	1.40E-4	1.46E-4	1.46E-4	1.39E-4	1.45E-4	1.45E-4	1.39E-4	1.45E-4	1.45E-4	1.38E-4	1.44E-4	1.44E-4	1.37E-4	1.43E-4	1.43E-4	1.35E-4	1.41E-4	1.41E-4
XVIIIA	4.02E-4	4.45E-4	4.45E-4	4.02E-4	4.44E-4	4.44E-4	4.00E-4	4.42E-4	4.42E-4	3.96E-4	4.37E-4	4.37E-4	3.92E-4	4.33E-4	4.33E-4	3.86E-4	4.26E-4	4.26E-4
XVIIIB	3.95E-4	4.38E-4	4.38E-4	3.95E-4	4.37E-4	4.37E-4	3.93E-4	4.35E-4	4.35E-4	3.89E-4	4.30E-4	4.30E-4	3.85E-4	4.26E-4	4.26E-4	3.79E-4	4.20E-4	4.20E-4
XVIIIC	3.81E-4	4.17E-4	4.17E-4	3.81E-4	4.16E-4	4.16E-4	3.79E-4	4.14E-4	4.14E-4	3.75E-4	4.10E-4	4.10E-4	3.71E-4	4.05E-4	4.05E-4	3.65E-4	3.99E-4	3.99E-4
XXA	1.97E-6	1.42E-5	2.12E-3	1.66E-6	1.23E-5	1.85E-3	1.46E-6	1.12E-5	1.67E-3	1.22E-6	9.61E-6	1.44E-3	1.02E-6	8.54E-6	1.28E-3	7.32E-7	7.47E-6	1.13E-3
XXB	1.59E-6	8.89E-6	1.41E-3	1.34E-6	7.66E-6	1.22E-3	1.18E-6	6.89E-6	1.10E-3	9.85E-7	5.87E-6	9.35E-4	8.27E-7	5.23E-6	8.33E-4	5.91E-7	4.41E-6	7.03E-4
XXC	1.05E-6	5.88E-6	4.80E-2	8.86E-7	4.96E-6	4.05E-2	7.82E-7	4.39E-6	3.59E-2	6.52E-7	3.67E-6	3.00E-2	5.48E-7	3.09E-6	2.53E-2	3.91E-7	2.22E-6	1.81E-2
XXIA	1.12E-3	1.17E-2	1.10E-1	1.11E-3	1.16E-2	1.09E-1	1.10E-3	1.14E-2	1.08E-1	1.07E-3	1.12E-2	1.05E-1	1.02E-3	1.07E-2	1.01E-1	9.63E-4	1.00E-2	9.47E-2
XXIB	1.11E-3	1.15E-2	9.96E-2	1.10E-3	1.14E-2	9.86E-2	1.09E-3	1.13E-2	9.75E-2	1.06E-3	1.10E-2	9.52E-2	1.01E-3	1.05E-2	9.10E-2	9.55E-4	9.89E-3	8.56E-2
XXIC	1.09E-3	1.11E-2	8.07E-2	1.08E-3	1.10E-2	7.98E-2	1.07E-3	1.09E-2	7.90E-2	1.04E-3	1.06E-2	7.71E-2	9.99E-4	1.01E-2	7.37E-2	9.40E-4	9.53E-3	6.94E-2
XXII	5.43E-2	1.09E+1	1.58E+1	5.37E-2	1.07E+1	1.56E+1	5.32E-2	1.06E+1	1.54E+1	5.18E-2	1.04E+1	1.51E+1	5.07E-2	1.03E+1	1.49E+1	5.01E-2	1.01E+1	1.47E+1
DOE	1.39E+1	1.43E+2	6.28E+2	1.37E+1	1.40E+2	6.20E+2	1.35E+1	1.39E+2	6.15E+2	1.32E+1	1.36E+2	6.09E+2	1.29E+1	1.34E+2	6.03E+2	1.26E+1	1.32E+2	5.96E+2
DOD	2.94E-4	9.10E-4	9.36E-4	2.92E-4	9.06E-4	9.32E-4	2.91E-4	9.04E-4	9.30E-4	2.90E-4	8.99E-4	9.25E-4	2.89E-4	8.95E-4	9.21E-4	2.87E-4	8.89E-4	9.15E-4
NRC	6.70E-2	2.97E-1	2.42E+0	6.66E-2	2.95E-1	2.36E+0	6.62E-2	2.92E-1	2.31E+0	6.53E-2	2.86E-1	2.23E+0	6.39E-2	2.75E-1	2.12E+0	6.20E-2	2.60E-1	1.97E+0
Total	1.40E+1	1.43E+2	6.31E+2	1.38E+1	1.40E+2	6.22E+2	1.36E+1	1.39E+2	6.17E+2	1.33E+1	1.37E+2	6.11E+2	1.30E+1	1.35E+2	6.05E+2	1.27E+1	1.33E+2	5.98E+2

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 TABLE K-41. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.58E-2	6.07E-2	6.07E-2	5.48E-2	5.96E-2	5.96E-2	5.18E-2	5.64E-2	5.64E-2	4.16E-2	4.52E-2	4.52E-2	1.86E-2	2.03E-2	2.03E-2
II	1.42E+0	1.39E+1	1.14E+2	1.42E+0	1.39E+1	1.14E+2	1.42E+0	1.39E+1	1.14E+2	1.42E+0	1.39E+1	1.13E+2	1.40E+0	1.36E+1	1.09E+2
III	2.45E-2	2.70E-2	2.70E-2	2.44E-2	2.70E-2	2.70E-2	2.28E-2	2.52E-2	2.52E-2	1.21E-2	1.33E-2	1.33E-2	.00E+0	.00E+0	.00E+0
IV	4.49E-3	1.21E-2	2.32E-1	4.43E-3	1.20E-2	2.30E-1	4.23E-3	1.15E-2	2.19E-1	3.33E-3	9.02E-3	1.73E-1	.00E+0	.00E+0	.00E+0
V	1.44E+0	1.57E+0	1.57E+0	1.44E+0	1.57E+0	1.57E+0	1.43E+0	1.55E+0	1.55E+0	1.30E+0	1.42E+0	1.42E+0	8.55E-1	9.33E-1	9.33E-1
VI	2.55E-1	1.41E+0	1.42E+1	2.55E-1	1.41E+0	1.42E+1	2.55E-1	1.41E+0	1.42E+1	2.50E-1	1.40E+0	1.41E+1	2.17E-1	1.29E+0	1.31E+1
VII	4.72E-1	3.80E+0	2.99E+1	3.94E-1	3.10E+0	2.43E+1	2.90E-1	2.25E+0	1.76E+1	7.52E-3	5.81E-2	4.54E-1	.00E+0	.00E+0	.00E+0
IX	1.95E-3	1.72E-2	1.08E-1	1.42E-3	1.25E-2	7.84E-2	4.86E-4	4.30E-3	2.69E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.79E-1	3.16E+0	3.50E+0	9.79E-1	3.16E+0	3.50E+0	9.76E-1	3.08E+0	3.41E+0	9.53E-1	2.31E+0	2.52E+0	8.38E-1	1.40E+0	1.49E+0
XII	2.64E-4	8.16E-4	8.39E-4	2.64E-4	8.15E-4	8.38E-4	2.63E-4	8.14E-4	8.38E-4	2.60E-4	8.04E-4	8.27E-4	2.46E-4	7.59E-4	7.81E-4
XIIIA	3.74E-6	1.23E-5	4.59E-5	2.68E-6	8.79E-6	3.29E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.01E-6	5.43E-6	2.77E-5	2.16E-6	3.89E-6	1.99E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.99E-6	2.42E-6	6.07E-3	1.42E-6	1.74E-6	4.35E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.57E-5	1.01E-4	1.01E-4	9.57E-5	1.01E-4	1.01E-4	9.56E-5	1.01E-4	1.01E-4	9.46E-5	9.95E-5	9.95E-5	8.32E-5	8.79E-5	8.79E-5
XVIB	9.47E-5	9.93E-5	9.93E-5	9.47E-5	9.93E-5	9.93E-5	9.47E-5	9.93E-5	9.93E-5	9.37E-5	9.83E-5	9.83E-5	8.24E-5	8.68E-5	8.68E-5
XVIC	9.23E-5	9.63E-5	9.63E-5	9.23E-5	9.63E-5	9.63E-5	9.22E-5	9.63E-5	9.63E-5	9.13E-5	9.53E-5	9.53E-5	8.02E-5	8.40E-5	8.40E-5
XVIIIA	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.63E-4	2.91E-4	2.91E-4	2.30E-4	2.55E-4	2.55E-4
XVIIIB	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.88E-4	2.88E-4	2.59E-4	2.86E-4	2.86E-4	2.27E-4	2.50E-4	2.50E-4
XVIIIC	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.51E-4	2.73E-4	2.73E-4	2.19E-4	2.39E-4	2.39E-4
XXA	4.13E-5	2.85E-4	4.78E-2	2.60E-5	1.98E-4	3.31E-2	5.42E-6	6.40E-5	1.07E-2	1.27E-6	9.78E-6	1.65E-3	.00E+0	1.88E-6	3.19E-4
XXB	3.33E-5	1.91E-4	3.29E-2	2.10E-5	1.21E-4	2.07E-2	4.37E-6	2.51E-5	4.33E-3	1.03E-6	5.96E-6	1.03E-3	.00E+0	.00E+0	.00E+0
XXC	2.20E-5	1.41E-4	7.98E-1	1.39E-5	8.91E-5	5.03E-1	2.89E-6	1.86E-5	1.05E-1	6.79E-7	4.42E-6	2.50E-2	.00E+0	.00E+0	.00E+0
XXIA	7.47E-4	7.80E-3	7.34E-2	7.47E-4	7.80E-3	7.34E-2	7.46E-4	7.79E-3	7.34E-2	7.26E-4	7.58E-3	7.14E-2	4.94E-4	5.15E-3	4.85E-2
XXIB	7.41E-4	7.67E-3	6.64E-2	7.41E-4	7.67E-3	6.64E-2	7.40E-4	7.66E-3	6.64E-2	7.21E-4	7.46E-3	6.46E-2	4.90E-4	5.07E-3	4.39E-2
XXIC	7.30E-4	7.39E-3	5.38E-2	7.30E-4	7.39E-3	5.38E-2	7.29E-4	7.39E-3	5.37E-2	7.10E-4	7.19E-3	5.23E-2	4.82E-4	4.89E-3	3.56E-2
XXII	4.25E-2	6.77E+0	1.04E+1	4.25E-2	6.77E+0	1.04E+1	4.23E-2	6.77E+0	1.04E+1	4.11E-2	6.58E+0	1.01E+1	2.95E-2	4.93E+0	7.68E+0
DOE	1.06E+1	1.02E+2	5.43E+2	1.05E+1	1.01E+2	5.37E+2	1.04E+1	1.00E+2	5.30E+2	9.79E+0	9.52E+1	5.07E+2	8.32E+0	7.94E+1	4.62E+2
DOD	2.89E-4	8.73E-4	1.82E-2	2.81E-4	8.56E-4	1.33E-2	2.63E-4	8.14E-4	8.38E-4	2.60E-4	8.04E-4	8.27E-4	2.46E-4	7.59E-4	7.81E-4
NRC	4.48E-2	2.01E-1	5.55E+0	4.47E-2	2.00E-1	4.05E+0	4.44E-2	1.98E-1	2.01E+0	4.37E-2	1.93E-1	1.54E+0	3.52E-2	1.37E-1	9.66E-1
Total	1.06E+1	1.02E+2	5.48E+2	1.06E+1	1.01E+2	5.41E+2	1.04E+1	1.00E+2	5.32E+2	9.83E+0	9.54E+1	5.08E+2	8.36E+0	7.96E+1	4.63E+2

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 TABLE K-42. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.18E-2	5.64E-2	5.64E-2	4.97E-2	5.40E-2	5.40E-2	4.79E-2	5.22E-2	5.22E-2	4.55E-2	4.95E-2	4.95E-2	4.37E-2	4.75E-2	4.75E-2	4.16E-2	4.52E-2	4.52E-2
II	1.42E+0	1.39E+1	1.14E+2	1.42E+0	1.39E+1	1.14E+2	1.42E+0	1.39E+1	1.14E+2	1.42E+0	1.39E+1	1.13E+2	1.42E+0	1.39E+1	1.13E+2	1.42E+0	1.39E+1	1.13E+2
III	2.28E-2	2.52E-2	2.52E-2	1.99E-2	2.19E-2	2.19E-2	1.81E-2	2.00E-2	2.00E-2	1.65E-2	1.83E-2	1.83E-2	1.48E-2	1.63E-2	1.63E-2	1.21E-2	1.33E-2	1.33E-2
IV	4.23E-3	1.15E-2	2.19E-1	4.12E-3	1.12E-2	2.13E-1	4.02E-3	1.09E-2	2.08E-1	3.83E-3	1.04E-2	1.98E-1	3.63E-3	9.83E-3	1.88E-1	3.33E-3	9.02E-3	1.73E-1
V	1.43E+0	1.55E+0	1.55E+0	1.41E+0	1.53E+0	1.53E+0	1.39E+0	1.52E+0	1.52E+0	1.37E+0	1.49E+0	1.49E+0	1.34E+0	1.46E+0	1.46E+0	1.30E+0	1.42E+0	1.42E+0
VI	2.55E-1	1.41E+0	1.42E+1	2.54E-1	1.41E+0	1.42E+1	2.53E-1	1.41E+0	1.41E+1	2.52E-1	1.41E+0	1.41E+1	2.51E-1	1.41E+0	1.41E+1	2.50E-1	1.40E+0	1.41E+1
VII	2.90E-1	2.25E+0	1.76E+1	1.91E-1	1.49E+0	1.16E+1	1.33E-1	1.05E+0	8.21E+0	8.03E-2	6.40E-1	5.02E+0	4.53E-2	3.62E-1	2.84E+0	7.52E-3	5.81E-2	4.54E-1
IX	4.86E-4	4.30E-3	2.69E-2	2.33E-4	2.06E-3	1.29E-2	1.38E-4	1.22E-3	4.86E-5	4.29E-4	2.68E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.76E-1	3.08E+0	3.41E+0	9.72E-1	2.95E+0	3.26E+0	9.69E-1	2.83E+0	3.12E+0	9.63E-1	2.61E+0	2.87E+0	9.59E-1	2.46E+0	2.70E+0	9.53E-1	2.31E+0	2.52E+0
XII	2.63E-4	8.14E-4	8.38E-4	2.63E-4	8.12E-4	8.36E-4	2.62E-4	8.11E-4	8.34E-4	2.61E-4	8.08E-4	8.31E-4	2.61E-4	8.06E-4	8.29E-4	2.60E-4	8.04E-4	8.27E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.56E-5	1.01E-4	1.01E-4	9.56E-5	1.00E-4	1.00E-4	9.54E-5	1.00E-4	1.00E-4	9.51E-5	1.00E-4	1.00E-4	9.49E-5	9.97E-5	9.97E-5	9.46E-5	9.95E-5	9.95E-5
XVIB	9.47E-5	9.93E-5	9.93E-5	9.46E-5	9.92E-5	9.92E-5	9.45E-5	9.91E-5	9.91E-5	9.42E-5	9.88E-5	9.88E-5	9.39E-5	9.85E-5	9.85E-5	9.37E-5	9.83E-5	9.83E-5
XVIC	9.22E-5	9.63E-5	9.63E-5	9.22E-5	9.62E-5	9.62E-5	9.20E-5	9.61E-5	9.61E-5	9.17E-5	9.58E-5	9.58E-5	9.15E-5	9.55E-5	9.55E-5	9.13E-5	9.53E-5	9.53E-5
XVIIIA	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.64E-4	2.93E-4	2.93E-4	2.63E-4	2.91E-4	2.91E-4
XVIIIB	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.87E-4	2.87E-4	2.60E-4	2.87E-4	2.87E-4	2.60E-4	2.87E-4	2.87E-4	2.59E-4	2.86E-4	2.86E-4
XVIIIC	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.51E-4	2.73E-4	2.73E-4
XXA	5.42E-6	6.40E-5	1.07E-2	1.81E-6	1.94E-5	3.27E-3	1.68E-6	1.25E-5	2.10E-3	1.52E-6	1.14E-5	1.92E-3	1.40E-6	1.06E-5	1.79E-3	1.27E-6	9.78E-6	1.65E-3
XXB	4.37E-6	2.51E-5	4.33E-3	1.46E-6	8.45E-6	1.46E-3	1.36E-6	7.87E-6	1.36E-3	1.22E-6	7.09E-6	1.23E-3	1.13E-6	6.56E-6	1.13E-3	1.03E-6	5.96E-6	1.03E-3
XXC	2.89E-6	1.86E-5	1.05E-1	9.65E-7	6.25E-6	3.53E-2	8.98E-7	5.83E-6	3.29E-2	8.09E-7	5.25E-6	2.97E-2	7.47E-7	4.86E-6	2.74E-2	6.79E-7	4.42E-6	2.50E-2
XXIA	7.46E-4	7.79E-3	7.34E-2	7.44E-4	7.77E-3	7.31E-2	7.42E-4	7.74E-3	7.29E-2	7.37E-4	7.70E-3	7.25E-2	7.33E-4	7.65E-3	7.21E-2	7.26E-4	7.58E-3	7.14E-2
XXIB	7.40E-4	7.66E-3	6.64E-2	7.38E-4	7.64E-3	6.62E-2	7.36E-4	7.62E-3	6.60E-2	7.32E-4	7.57E-3	6.56E-2	7.27E-4	7.53E-3	6.52E-2	7.21E-4	7.46E-3	6.46E-2
XXIC	7.29E-4	7.39E-3	5.37E-2	7.27E-4	7.37E-3	5.36E-2	7.25E-4	7.34E-3	5.34E-2	7.20E-4	7.30E-3	5.31E-2	7.16E-4	7.26E-3	5.28E-2	7.10E-4	7.19E-3	5.23E-2
XXII	4.23E-2	6.77E+0	1.04E+1	4.21E-2	6.76E+0	1.04E+1	4.20E-2	6.74E+0	1.03E+1	4.16E-2	6.67E+0	1.02E+1	4.14E-2	6.62E+0	1.02E+1	4.11E-2	6.58E+0	1.01E+1
DOE	1.04E+1	1.00E+2	5.30E+2	1.02E+1	9.90E+1	5.24E+2	1.01E+1	9.82E+1	5.19E+2	1.00E+1	9.70E+1	5.14E+2	9.91E+0	9.61E+1	5.11E+2	9.79E+0	9.52E+1	5.07E+2
DOD	2.63E-4	8.14E-4	8.38E-4	2.63E-4	8.12E-4	8.36E-4	2.62E-4	8.11E-4	8.34E-4	2.61E-4	8.08E-4	8.31E-4	2.61E-4	8.06E-4	8.29E-4	2.60E-4	8.04E-4	8.27E-4
NRC	4.44E-2	1.98E-1	2.01E+0	4.43E-2	1.97E-1	1.63E+0	4.42E-2	1.97E-1	1.61E+0	4.41E-2	1.96E-1	1.59E+0	4.39E-2	1.95E-1	1.57E+0	4.37E-2	1.93E-1	1.54E+0
Total	1.04E+1	1.00E+2	5.32E+2	1.03E+1	9.92E+1	5.25E+2	1.02E+1	9.84E+1	5.21E+2	1.00E+1	9.72E+1	5.16E+2	9.96E+0	9.63E+1	5.12E+2	9.83E+0	9.54E+1	5.08E+2

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 TABLE K-43. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.54E-2	6.03E-2	6.03E-2	5.36E-2	5.83E-2	5.83E-2	4.74E-2	5.16E-2	5.16E-2	3.18E-2	3.46E-2	3.46E-2	8.10E-3	8.82E-3	8.82E-3
II	1.42E+0	1.39E+1	1.14E+2	1.42E+0	1.39E+1	1.14E+2	1.42E+0	1.39E+1	1.13E+2	1.42E+0	1.38E+1	1.11E+2	1.20E+0	1.17E+1	9.19E+1
III	2.45E-2	2.70E-2	2.70E-2	2.42E-2	2.67E-2	2.67E-2	1.78E-2	1.96E-2	1.96E-2	2.85E-3	3.14E-3	3.14E-3	.00E+0	.00E+0	.00E+0
IV	4.46E-3	1.21E-2	2.31E-1	4.35E-3	1.18E-2	2.25E-1	3.96E-3	1.07E-2	2.05E-1	7.10E-4	1.92E-3	3.67E-2	.00E+0	.00E+0	.00E+0
V	1.44E+0	1.57E+0	1.57E+0	1.44E+0	1.57E+0	1.57E+0	1.39E+0	1.51E+0	1.51E+0	1.07E+0	1.17E+0	1.17E+0	3.01E-1	3.29E-1	3.29E-1
VI	2.55E-1	1.41E+0	1.42E+1	2.55E-1	1.41E+0	1.42E+1	2.53E-1	1.41E+0	1.41E+1	2.36E-1	1.36E+0	1.37E+1	1.59E-1	1.01E+0	1.05E+1
VII	4.33E-1	3.45E+0	2.71E+1	3.63E-1	2.83E+0	2.21E+1	1.14E-1	9.03E-1	7.07E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	1.69E-3	1.49E-2	9.32E-2	8.79E-4	7.77E-3	4.86E-2	9.12E-5	8.06E-4	5.04E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.79E-1	3.16E+0	3.50E+0	9.78E-1	3.15E+0	3.49E+0	9.69E-1	2.88E+0	3.17E+0	9.25E-1	1.94E+0	2.10E+0	7.44E-1	1.06E+0	1.11E+0
XII	2.64E-4	8.15E-4	8.39E-4	2.64E-4	8.15E-4	8.38E-4	2.61E-4	8.07E-4	8.31E-4	2.55E-4	7.89E-4	8.11E-4	8.22E-5	2.54E-4	2.61E-4
XIIIA	3.39E-6	1.11E-5	4.16E-5	1.30E-6	4.26E-6	1.59E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.73E-6	4.93E-6	2.51E-5	1.05E-6	1.89E-6	9.62E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.80E-6	2.20E-6	5.51E-3	6.90E-7	8.42E-7	2.11E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.57E-5	1.01E-4	1.01E-4	9.56E-5	1.01E-4	1.01E-4	9.54E-5	1.00E-4	1.00E-4	9.22E-5	9.70E-5	9.70E-5	5.11E-5	5.41E-5	5.41E-5
XVIB	9.47E-5	9.93E-5	9.93E-5	9.47E-5	9.93E-5	9.93E-5	9.45E-5	9.91E-5	9.91E-5	9.13E-5	9.58E-5	9.58E-5	5.06E-5	5.34E-5	5.34E-5
XVIC	9.23E-5	9.63E-5	9.63E-5	9.22E-5	9.63E-5	9.63E-5	9.20E-5	9.60E-5	9.60E-5	8.89E-5	9.29E-5	9.29E-5	4.92E-5	5.16E-5	5.16E-5
XVIIIA	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.54E-4	2.81E-4	2.81E-4	1.74E-4	1.93E-4	1.93E-4
XVIIIB	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.87E-4	2.87E-4	2.50E-4	2.75E-4	2.75E-4	1.71E-4	1.89E-4	1.89E-4
XVIIIC	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.42E-4	2.64E-4	2.64E-4	1.66E-4	1.81E-4	1.81E-4
XXA	3.13E-5	2.40E-4	4.02E-2	1.36E-5	1.28E-4	2.15E-2	1.54E-6	1.19E-5	2.00E-3	5.73E-7	6.26E-6	1.06E-3	.00E+0	.00E+0	.00E+0
XXB	2.52E-5	1.57E-4	2.69E-2	1.10E-5	7.90E-5	1.36E-2	1.24E-6	7.76E-6	1.34E-3	4.62E-7	3.85E-6	6.67E-4	.00E+0	.00E+0	.00E+0
XXC	1.67E-5	1.07E-4	6.04E-1	7.25E-6	4.66E-5	2.63E-1	8.20E-7	5.32E-6	3.01E-2	3.06E-7	2.01E-6	1.14E-2	.00E+0	.00E+0	.00E+0
XXIA	7.47E-4	7.80E-3	7.34E-2	7.47E-4	7.80E-3	7.34E-2	7.41E-4	7.73E-3	7.28E-2	6.37E-4	6.65E-3	6.26E-2	2.28E-4	2.38E-3	2.24E-2
XXIB	7.41E-4	7.67E-3	6.64E-2	7.41E-4	7.67E-3	6.64E-2	7.35E-4	7.61E-3	6.59E-2	6.32E-4	6.54E-3	5.67E-2	2.26E-4	2.34E-3	2.03E-2
XXIC	7.30E-4	7.39E-3	5.38E-2	7.30E-4	7.39E-3	5.38E-2	7.24E-4	7.33E-3	5.34E-2	6.22E-4	6.31E-3	4.59E-2	2.22E-4	2.25E-3	1.64E-2
XXII	4.25E-2	6.77E+0	1.04E+1	4.24E-2	6.77E+0	1.04E+1	4.19E-2	6.74E+0	1.03E+1	3.86E-2	6.27E+0	9.58E+0	.00E+0	.00E+0	.00E+0
DOE	1.05E+1	1.01E+2	5.40E+2	1.05E+1	1.01E+2	5.35E+2	1.01E+1	9.80E+1	5.18E+2	9.18E+0	9.13E+1	4.92E+2	5.94E+0	3.63E+1	3.31E+2
DOD	2.86E-4	8.67E-4	1.66E-2	2.72E-4	8.35E-4	6.89E-3	2.61E-4	8.07E-4	8.31E-4	2.55E-4	7.89E-4	8.11E-4	8.22E-5	2.54E-4	2.61E-4
NRC	4.47E-2	2.00E-1	4.58E+0	4.45E-2	1.99E-1	2.84E+0	4.42E-2	1.97E-1	1.59E+0	4.09E-2	1.72E-1	1.30E+0	2.20E-2	6.95E-2	4.51E-1
Total	1.06E+1	1.02E+2	5.45E+2	1.05E+1	1.01E+2	5.38E+2	1.01E+1	9.82E+1	5.20E+2	9.22E+0	9.14E+1	4.94E+2	5.97E+0	3.63E+1	3.31E+2

Low Population Density without Agriculture - 09-13-94 4:09p
 TABLE K-44. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.74E-2	5.16E-2	5.16E-2	4.38E-2	4.77E-2	4.77E-2	4.14E-2	4.51E-2	4.51E-2	3.81E-2	4.15E-2	4.15E-2	3.61E-2	3.93E-2	3.93E-2	3.18E-2	3.46E-2	3.46E-2
II	1.42E+0	1.39E+1	1.13E+2	1.42E+0	1.39E+1	1.13E+2	1.42E+0	1.39E+1	1.13E+2	1.42E+0	1.39E+1	1.12E+2	1.42E+0	1.38E+1	1.12E+2	1.42E+0	1.38E+1	1.11E+2
III	1.78E-2	1.96E-2	1.96E-2	1.49E-2	1.65E-2	1.65E-2	1.19E-2	1.31E-2	1.31E-2	7.01E-3	7.74E-3	7.74E-3	4.05E-3	4.47E-3	4.47E-3	2.85E-3	3.14E-3	3.14E-3
IV	3.96E-3	1.07E-2	2.05E-1	3.60E-3	9.74E-3	1.86E-1	3.24E-3	8.76E-3	1.68E-1	2.51E-3	6.81E-3	1.30E-1	1.79E-3	4.85E-3	9.28E-2	7.10E-4	1.92E-3	3.67E-2
V	1.39E+0	1.51E+0	1.51E+0	1.34E+0	1.47E+0	1.47E+0	1.30E+0	1.42E+0	1.42E+0	1.22E+0	1.32E+0	1.32E+0	1.13E+0	1.23E+0	1.23E+0	1.07E+0	1.17E+0	1.17E+0
VI	2.53E-1	1.41E+0	1.41E+1	2.51E-1	1.41E+0	1.41E+1	2.49E-1	1.40E+0	1.41E+1	2.46E-1	1.39E+0	1.40E+1	2.42E-1	1.38E+0	1.39E+1	2.36E-1	1.36E+0	1.37E+1
VII	1.14E-1	9.03E-1	7.07E+0	4.02E-2	3.21E-1	2.52E+0	4.02E-3	3.05E-2	2.38E-1	4.14E-4	2.71E-3	2.06E-2	1.22E-4	7.58E-4	5.71E-3	.00E+0	.00E+0	.00E+0
IX	9.12E-5	8.06E-4	5.04E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.69E-1	2.88E+0	3.17E+0	9.62E-1	2.59E+0	2.85E+0	9.56E-1	2.41E+0	2.64E+0	9.46E-1	2.21E+0	2.40E+0	9.37E-1	2.08E+0	2.26E+0	9.25E-1	1.94E+0	2.10E+0
XII	2.61E-4	8.07E-4	8.31E-4	2.60E-4	8.04E-4	8.27E-4	2.59E-4	8.02E-4	8.25E-4	2.58E-4	7.98E-4	8.21E-4	2.57E-4	7.94E-4	8.17E-4	2.55E-4	7.89E-4	8.11E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.54E-5	1.00E-4	1.00E-4	9.49E-5	9.98E-5	9.98E-5	9.46E-5	9.95E-5	9.95E-5	9.42E-5	9.90E-5	9.90E-5	9.36E-5	9.85E-5	9.85E-5	9.22E-5	9.70E-5	9.70E-5
XVIB	9.45E-5	9.91E-5	9.91E-5	9.40E-5	9.86E-5	9.86E-5	9.37E-5	9.83E-5	9.83E-5	9.32E-5	9.78E-5	9.78E-5	9.27E-5	9.72E-5	9.72E-5	9.13E-5	9.58E-5	9.58E-5
XVIC	9.20E-5	9.60E-5	9.60E-5	9.15E-5	9.55E-5	9.55E-5	9.13E-5	9.53E-5	9.53E-5	9.08E-5	9.48E-5	9.48E-5	9.02E-5	9.42E-5	9.42E-5	8.89E-5	9.29E-5	9.29E-5
XVIIIA	2.65E-4	2.93E-4	2.93E-4	2.64E-4	2.92E-4	2.92E-4	2.63E-4	2.91E-4	2.91E-4	2.60E-4	2.88E-4	2.88E-4	2.58E-4	2.85E-4	2.85E-4	2.54E-4	2.81E-4	2.81E-4
XVIIIB	2.61E-4	2.87E-4	2.87E-4	2.60E-4	2.87E-4	2.87E-4	2.59E-4	2.85E-4	2.85E-4	2.56E-4	2.83E-4	2.83E-4	2.54E-4	2.80E-4	2.80E-4	2.50E-4	2.75E-4	2.75E-4
XVIIIC	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.74E-4	2.74E-4	2.50E-4	2.73E-4	2.73E-4	2.48E-4	2.70E-4	2.70E-4	2.45E-4	2.68E-4	2.68E-4	2.42E-4	2.64E-4	2.64E-4
XXA	1.54E-6	1.19E-5	2.00E-3	1.29E-6	1.03E-5	1.74E-3	1.14E-6	9.34E-6	1.58E-3	9.54E-7	8.04E-6	1.36E-3	8.02E-7	7.15E-6	1.21E-3	5.73E-7	6.26E-6	1.06E-3
XXB	1.24E-6	7.76E-6	1.34E-3	1.04E-6	6.69E-6	1.16E-3	9.22E-7	6.02E-6	1.04E-3	7.69E-7	5.13E-6	8.87E-4	6.47E-7	4.56E-6	7.90E-4	4.62E-7	3.85E-6	6.67E-4
XXC	8.20E-7	5.32E-6	3.01E-2	6.91E-7	4.50E-6	2.54E-2	6.10E-7	3.98E-6	2.25E-2	5.09E-7	3.33E-6	1.88E-2	4.28E-7	2.80E-6	1.59E-2	3.06E-7	2.01E-6	1.14E-2
XXIA	7.41E-4	7.73E-3	7.28E-2	7.33E-4	7.65E-3	7.21E-2	7.25E-4	7.58E-3	7.13E-2	7.08E-4	7.39E-3	6.96E-2	6.77E-4	7.07E-3	6.65E-2	6.37E-4	6.65E-3	6.26E-2
XXIB	7.35E-4	7.61E-3	6.59E-2	7.28E-4	7.53E-3	6.52E-2	7.20E-4	7.45E-3	6.46E-2	7.02E-4	7.27E-3	6.30E-2	6.72E-4	6.95E-3	6.02E-2	6.32E-4	6.54E-3	5.67E-2
XXIC	7.24E-4	7.33E-3	5.34E-2	7.16E-4	7.26E-3	5.28E-2	7.09E-4	7.18E-3	5.23E-2	6.92E-4	7.01E-3	5.10E-2	6.61E-4	6.70E-3	4.88E-2	6.22E-4	6.31E-3	4.59E-2
XXII	4.19E-2	6.74E+0	1.03E+1	4.14E-2	6.63E+0	1.02E+1	4.10E-2	6.58E+0	1.01E+1	4.00E-2	6.45E+0	9.88E+0	3.91E-2	6.35E+0	9.71E+0	3.86E-2	6.27E+0	9.58E+0
DOE	1.01E+1	9.80E+1	5.18E+2	9.92E+0	9.62E+1	5.11E+2	9.78E+0	9.52E+1	5.07E+2	9.58E+0	9.37E+1	5.02E+2	9.39E+0	9.25E+1	4.98E+2	9.18E+0	9.13E+1	4.92E+2
DOD	2.61E-4	8.07E-4	8.31E-4	2.60E-4	8.04E-4	8.27E-4	2.59E-4	8.02E-4	8.25E-4	2.58E-4	7.98E-4	8.21E-4	2.57E-4	7.94E-4	8.17E-4	2.55E-4	7.89E-4	8.11E-4
NRC	4.42E-2	1.97E-1	1.59E+0	4.40E-2	1.95E-1	1.56E+0	4.37E-2	1.93E-1	1.53E+0	4.31E-2	1.89E-1	1.47E+0	4.22E-2	1.82E-1	1.40E+0	4.09E-2	1.72E-1	1.30E+0
Total	1.01E+1	9.82E+1	5.20E+2	9.96E+0	9.64E+1	5.12E+2	9.82E+0	9.54E+1	5.08E+2	9.62E+0	9.39E+1	5.04E+2	9.43E+0	9.27E+1	4.99E+2	9.22E+0	9.14E+1	4.94E+2

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 TABLE K-45. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.75E+2	7.43E+2	7.43E+2	6.63E+2	7.30E+2	7.30E+2	6.27E+2	6.90E+2	6.90E+2	5.03E+2	5.54E+2	5.54E+2	2.25E+2	2.48E+2	2.48E+2
II	2.73E+5	6.28E+6	2.32E+7	2.73E+5	6.28E+6	2.32E+7	2.73E+5	6.28E+6	2.32E+7	2.72E+5	6.27E+6	2.29E+7	2.69E+5	6.18E+6	2.22E+7
III	2.85E+2	3.17E+2	3.17E+2	2.85E+2	3.16E+2	3.16E+2	2.65E+2	2.95E+2	2.95E+2	1.41E+2	1.56E+2	1.56E+2	.00E+0	.00E+0	.00E+0
IV	1.52E+3	1.06E+4	2.33E+4	1.50E+3	1.05E+4	2.31E+4	1.43E+3	1.00E+4	2.20E+4	1.13E+3	7.89E+3	1.73E+4	.00E+0	.00E+0	.00E+0
V	1.76E+4	1.93E+4	1.93E+4	1.76E+4	1.93E+4	1.93E+4	1.74E+4	1.91E+4	1.91E+4	1.59E+4	1.75E+4	1.75E+4	1.04E+4	1.14E+4	1.14E+4
VI	3.24E+4	2.99E+5	3.51E+6	3.24E+4	2.99E+5	3.51E+6	3.24E+4	2.99E+5	3.51E+6	3.22E+4	2.98E+5	3.49E+6	2.98E+4	2.77E+5	3.26E+6
VII	3.24E+4	2.58E+5	1.76E+6	2.65E+4	2.10E+5	1.43E+6	1.92E+4	1.52E+5	1.04E+6	4.96E+2	3.92E+3	2.68E+4	.00E+0	.00E+0	.00E+0
IX	1.33E+2	1.07E+3	6.64E+3	9.65E+1	7.79E+2	4.83E+3	3.31E+1	2.67E+2	1.66E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.54E+3	1.88E+4	2.15E+4	1.54E+3	1.88E+4	2.15E+4	1.52E+3	1.82E+4	2.08E+4	1.46E+3	1.22E+4	1.39E+4	1.25E+3	5.66E+3	6.36E+3
XII	2.71E+2	1.69E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.79E+3	2.67E+2	1.66E+3	2.76E+3	2.52E+2	1.57E+3	2.61E+3
XIIIA	7.04E-1	5.37E+0	1.52E+1	5.05E-1	3.85E+0	1.09E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	6.72E-1	3.83E+0	6.43E+0	4.82E-1	2.75E+0	4.61E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	6.12E-1	2.14E+0	4.41E+1	4.38E-1	1.54E+0	3.16E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.87E-1	1.07E+0	1.07E+0	9.87E-1	1.07E+0	1.07E+0	9.87E-1	1.07E+0	1.07E+0	9.81E-1	1.06E+0	1.06E+0	9.08E-1	9.87E-1	9.87E-1
XVIB	9.80E-1	1.06E+0	1.06E+0	9.80E-1	1.06E+0	1.06E+0	9.80E-1	1.06E+0	1.06E+0	9.74E-1	1.06E+0	1.06E+0	9.01E-1	9.81E-1	9.81E-1
XVIC	9.69E-1	1.05E+0	1.05E+0	9.69E-1	1.05E+0	1.05E+0	9.68E-1	1.05E+0	1.05E+0	9.62E-1	1.04E+0	1.04E+0	8.91E-1	9.68E-1	9.68E-1
XVIIIA	7.77E+1	8.35E+1	8.35E+1	7.77E+1	8.35E+1	8.35E+1	7.77E+1	8.35E+1	8.35E+1	7.71E+1	8.29E+1	8.29E+1	6.75E+1	7.25E+1	7.25E+1
XVIIIB	7.06E+1	7.46E+1	7.46E+1	7.06E+1	7.46E+1	7.46E+1	7.06E+1	7.46E+1	7.46E+1	7.01E+1	7.41E+1	7.41E+1	6.13E+1	6.48E+1	6.48E+1
XVIIIC	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.84E+1	6.03E+1	6.03E+1	5.11E+1	5.27E+1	5.27E+1
XXA	1.07E+2	8.65E+2	6.86E+3	6.73E+1	6.00E+2	4.76E+3	1.40E+1	1.95E+2	1.54E+3	3.34E+0	2.99E+1	2.37E+2	.00E+0	5.76E+0	4.58E+1
XXB	1.03E+2	6.18E+2	2.82E+3	6.47E+1	3.89E+2	1.78E+3	1.35E+1	8.13E+1	3.71E+2	3.21E+0	1.93E+1	8.83E+1	.00E+0	.00E+0	.00E+0
XXC	9.42E+1	3.49E+2	8.04E+3	5.94E+1	2.20E+2	5.07E+3	1.24E+1	4.59E+1	1.06E+3	2.95E+0	1.09E+1	2.52E+2	.00E+0	.00E+0	.00E+0
XXIA	1.91E+1	1.92E+2	1.89E+3	1.91E+1	1.92E+2	1.89E+3	1.91E+1	1.92E+2	1.89E+3	1.86E+1	1.87E+2	1.84E+3	1.27E+1	1.27E+2	1.25E+3
XXIB	1.91E+1	1.92E+2	1.84E+3	1.91E+1	1.92E+2	1.84E+3	1.91E+1	1.92E+2	1.83E+3	1.86E+1	1.87E+2	1.79E+3	1.26E+1	1.27E+2	1.21E+3
XXIC	1.90E+1	1.90E+2	1.73E+3	1.90E+1	1.90E+2	1.73E+3	1.90E+1	1.90E+2	1.73E+3	1.85E+1	1.85E+2	1.68E+3	1.26E+1	1.26E+2	1.14E+3
XXII	3.37E+3	8.32E+4	1.37E+5	3.36E+3	8.32E+4	1.37E+5	3.35E+3	8.31E+4	1.36E+5	3.25E+3	8.07E+4	1.33E+5	2.39E+3	6.14E+4	1.01E+5
DOE	1.09E+6	1.40E+7	1.06E+8	1.08E+6	1.39E+7	1.05E+8	1.07E+6	1.38E+7	1.05E+8	1.04E+6	1.36E+7	1.03E+8	9.74E+5	1.29E+7	9.68E+7
DOD	2.76E+2	1.72E+3	2.99E+3	2.74E+2	1.71E+3	2.93E+3	2.70E+2	1.68E+3	2.79E+3	2.67E+2	1.66E+3	2.76E+3	2.52E+2	1.57E+3	2.61E+3
NRC	6.31E+3	1.75E+4	1.27E+5	5.78E+3	1.46E+4	9.89E+4	5.08E+3	1.04E+4	5.86E+4	4.89E+3	9.07E+3	4.63E+4	4.17E+3	6.92E+3	3.08E+4
Total	1.09E+6	1.40E+7	1.06E+8	1.09E+6	1.39E+7	1.05E+8	1.08E+6	1.39E+7	1.05E+8	1.05E+6	1.36E+7	1.03E+8	9.78E+5	1.29E+7	9.69E+7

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 TABLE K-46. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.27E+2	6.90E+2	6.90E+2	6.01E+2	6.61E+2	6.61E+2	5.80E+2	6.39E+2	6.39E+2	5.51E+2	6.06E+2	6.06E+2	5.29E+2	5.82E+2	5.82E+2	5.03E+2	5.54E+2	5.54E+2
II	2.73E+5	6.28E+6	2.32E+7	2.72E+5	6.27E+6	2.32E+7	2.72E+5	6.27E+6	2.31E+7	2.72E+5	6.27E+6	2.30E+7	2.72E+5	6.27E+6	2.30E+7	2.72E+5	6.27E+6	2.29E+7
III	2.65E+2	2.95E+2	2.95E+2	2.31E+2	2.57E+2	2.57E+2	2.11E+2	2.34E+2	2.34E+2	1.93E+2	2.14E+2	2.14E+2	1.72E+2	1.91E+2	1.91E+2	1.41E+2	1.56E+2	1.56E+2
IV	1.43E+3	1.00E+4	2.20E+4	1.39E+3	9.76E+3	2.14E+4	1.36E+3	9.53E+3	2.09E+4	1.29E+3	9.06E+3	1.99E+4	1.23E+3	8.59E+3	1.89E+4	1.13E+3	7.89E+3	1.73E+4
V	1.74E+4	1.91E+4	1.91E+4	1.71E+4	1.88E+4	1.88E+4	1.70E+4	1.86E+4	1.86E+4	1.67E+4	1.83E+4	1.83E+4	1.63E+4	1.80E+4	1.80E+4	1.59E+4	1.75E+4	1.75E+4
VI	3.24E+4	2.99E+5	3.51E+6	3.24E+4	2.99E+5	3.51E+6	3.23E+4	2.99E+5	3.51E+6	3.23E+4	2.99E+5	3.51E+6	3.22E+4	2.98E+5	3.50E+6	3.22E+4	2.98E+5	3.49E+6
VII	1.92E+4	1.52E+5	1.04E+6	1.27E+4	1.00E+5	6.87E+5	8.94E+3	7.09E+4	4.85E+5	5.46E+3	4.34E+4	2.97E+5	3.08E+3	2.45E+4	1.68E+5	4.96E+2	3.92E+3	2.68E+4
IX	3.31E+1	2.67E+2	1.66E+3	1.58E+1	1.28E+2	7.91E+2	9.36E+0	7.56E+1	4.68E+2	3.30E+0	2.67E+1	1.65E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.52E+3	1.82E+4	2.08E+4	1.51E+3	1.72E+4	1.96E+4	1.49E+3	1.62E+4	1.85E+4	1.48E+3	1.45E+4	1.66E+4	1.47E+3	1.33E+4	1.52E+4	1.46E+3	1.22E+4	1.39E+4
XII	2.70E+2	1.68E+3	2.79E+3	2.70E+2	1.68E+3	2.79E+3	2.69E+2	1.68E+3	2.78E+3	2.68E+2	1.67E+3	2.77E+3	2.67E+2	1.66E+3	2.77E+3	2.67E+2	1.66E+3	2.76E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.87E-1	1.07E+0	1.07E+0	9.87E-1	1.07E+0	1.07E+0	9.86E-1	1.07E+0	1.07E+0	9.84E-1	1.07E+0	1.07E+0	9.82E-1	1.07E+0	1.07E+0	9.81E-1	1.06E+0	1.06E+0
XVIB	9.80E-1	1.06E+0	1.06E+0	9.80E-1	1.06E+0	1.06E+0	9.79E-1	1.06E+0	1.06E+0	9.77E-1	1.06E+0	1.06E+0	9.75E-1	1.06E+0	1.06E+0	9.74E-1	1.06E+0	1.06E+0
XVIC	9.68E-1	1.05E+0	1.05E+0	9.68E-1	1.05E+0	1.05E+0	9.67E-1	1.05E+0	1.05E+0	9.66E-1	1.05E+0	1.05E+0	9.64E-1	1.04E+0	1.04E+0	9.62E-1	1.04E+0	1.04E+0
XVIIIA	7.77E+1	8.35E+1	8.35E+1	7.77E+1	8.34E+1	8.34E+1	7.76E+1	8.34E+1	8.34E+1	7.75E+1	8.33E+1	8.33E+1	7.75E+1	8.32E+1	8.32E+1	7.71E+1	8.29E+1	8.29E+1
XVIIIB	7.06E+1	7.46E+1	7.46E+1	7.06E+1	7.46E+1	7.46E+1	7.05E+1	7.45E+1	7.45E+1	7.04E+1	7.45E+1	7.45E+1	7.04E+1	7.44E+1	7.44E+1	7.01E+1	7.41E+1	7.41E+1
XVIIIC	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.87E+1	6.06E+1	6.06E+1	5.87E+1	6.05E+1	6.05E+1	5.84E+1	6.03E+1	6.03E+1
XXA	1.40E+1	1.95E+2	1.54E+3	4.73E+0	5.92E+1	4.70E+2	4.40E+0	3.80E+1	3.02E+2	3.97E+0	3.47E+1	2.76E+2	3.67E+0	3.24E+1	2.57E+2	3.34E+0	2.99E+1	2.37E+2
XXB	1.35E+1	8.13E+1	3.71E+2	4.54E+0	2.73E+1	1.25E+2	4.23E+0	2.55E+1	1.16E+2	3.82E+0	2.30E+1	1.05E+2	3.53E+0	2.12E+1	9.70E+1	3.21E+0	1.93E+1	8.83E+1
XXC	1.24E+1	4.59E+1	1.06E+3	4.17E+0	1.54E+1	3.56E+2	3.89E+0	1.44E+1	3.32E+2	3.51E+0	1.30E+1	2.99E+2	3.24E+0	1.20E+1	2.77E+2	2.95E+0	1.09E+1	2.52E+2
XXIA	1.91E+1	1.92E+2	1.89E+3	1.91E+1	1.91E+2	1.88E+3	1.90E+1	1.91E+2	1.88E+3	1.89E+1	1.90E+2	1.87E+3	1.88E+1	1.89E+2	1.86E+3	1.86E+1	1.87E+2	1.84E+3
XXIB	1.91E+1	1.92E+2	1.83E+3	1.90E+1	1.91E+2	1.83E+3	1.90E+1	1.91E+2	1.82E+3	1.89E+1	1.90E+2	1.81E+3	1.88E+1	1.89E+2	1.80E+3	1.86E+1	1.87E+2	1.79E+3
XXIC	1.90E+1	1.90E+2	1.73E+3	1.90E+1	1.90E+2	1.72E+3	1.89E+1	1.89E+2	1.72E+3	1.88E+1	1.88E+2	1.71E+3	1.87E+1	1.87E+2	1.70E+3	1.85E+1	1.85E+2	1.68E+3
XXII	3.35E+3	8.31E+4	1.36E+5	3.34E+3	8.29E+4	1.36E+5	3.32E+3	8.26E+4	1.36E+5	3.29E+3	8.18E+4	1.34E+5	3.28E+3	8.13E+4	1.34E+5	3.25E+3	8.07E+4	1.33E+5
DOE	1.07E+6	1.38E+7	1.05E+8	1.06E+6	1.38E+7	1.05E+8	1.06E+6	1.37E+7	1.04E+8	1.05E+6	1.37E+7	1.04E+8	1.05E+6	1.37E+7	1.04E+8	1.04E+6	1.36E+7	1.03E+8
DOD	2.70E+2	1.68E+3	2.79E+3	2.70E+2	1.68E+3	2.79E+3	2.69E+2	1.68E+3	2.78E+3	2.68E+2	1.67E+3	2.77E+3	2.67E+2	1.66E+3	2.77E+3	2.67E+2	1.66E+3	2.76E+3
NRC	5.08E+3	1.04E+4	5.86E+4	4.95E+3	9.40E+3	4.90E+4	4.94E+3	9.27E+3	4.80E+4	4.93E+3	9.21E+3	4.74E+4	4.92E+3	9.15E+3	4.69E+4	4.89E+3	9.07E+3	4.63E+4
Total	1.08E+6	1.39E+7	1.05E+8	1.07E+6	1.38E+7	1.05E+8	1.06E+6	1.38E+7	1.04E+8	1.06E+6	1.37E+7	1.04E+8	1.06E+6	1.37E+7	1.04E+8	1.05E+6	1.36E+7	1.03E+8

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 TABLE K-47. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.70E+2	7.38E+2	7.38E+2	6.49E+2	7.14E+2	7.14E+2	5.73E+2	6.31E+2	6.31E+2	3.85E+2	4.24E+2	4.24E+2	9.80E+1	1.08E+2	1.08E+2
II	2.73E+5	6.28E+6	2.32E+7	2.73E+5	6.28E+6	2.32E+7	2.72E+5	6.27E+6	2.31E+7	2.72E+5	6.25E+6	2.27E+7	2.31E+5	5.33E+6	1.87E+7
III	2.85E+2	3.17E+2	3.17E+2	2.82E+2	3.13E+2	3.13E+2	2.07E+2	2.30E+2	2.30E+2	3.32E+1	3.69E+1	3.69E+1	.00E+0	.00E+0	.00E+0
IV	1.51E+3	1.06E+4	2.32E+4	1.47E+3	1.03E+4	2.26E+4	1.34E+3	9.37E+3	2.06E+4	2.40E+2	1.68E+3	3.69E+3	.00E+0	.00E+0	.00E+0
V	1.76E+4	1.93E+4	1.93E+4	1.75E+4	1.92E+4	1.92E+4	1.69E+4	1.86E+4	1.86E+4	1.31E+4	1.43E+4	1.43E+4	3.67E+3	4.03E+3	4.03E+3
VI	3.24E+4	2.99E+5	3.51E+6	3.24E+4	2.99E+5	3.51E+6	3.23E+4	2.99E+5	3.51E+6	3.12E+4	2.90E+5	3.40E+6	2.37E+4	2.21E+5	2.60E+6
VII	2.94E+4	2.34E+5	1.60E+6	2.42E+4	1.91E+5	1.31E+6	7.70E+3	6.11E+4	4.18E+5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	1.15E+2	9.27E+2	5.74E+3	5.98E+1	4.83E+2	2.99E+3	6.20E+0	5.01E+1	3.10E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.54E+3	1.88E+4	2.15E+4	1.53E+3	1.88E+4	2.15E+4	1.50E+3	1.66E+4	1.90E+4	1.40E+3	9.38E+3	1.06E+4	1.11E+3	3.58E+3	3.97E+3
XII	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3	2.68E+2	1.67E+3	2.77E+3	2.62E+2	1.63E+3	2.71E+3	8.43E+1	5.25E+2	8.72E+2
XIIIA	6.39E-1	4.87E+0	1.38E+1	2.45E-1	1.87E+0	5.28E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	6.09E-1	3.48E+0	5.84E+0	2.33E-1	1.33E+0	2.24E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	5.55E-1	1.94E+0	4.00E+1	2.12E-1	7.44E-1	1.53E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.87E-1	1.07E+0	1.07E+0	9.87E-1	1.07E+0	1.07E+0	9.86E-1	1.07E+0	1.07E+0	9.66E-1	1.05E+0	1.05E+0	5.69E-1	6.19E-1	6.19E-1
XVIB	9.80E-1	1.06E+0	1.06E+0	9.80E-1	1.06E+0	1.06E+0	9.79E-1	1.06E+0	1.06E+0	9.58E-1	1.04E+0	1.04E+0	5.64E-1	6.15E-1	6.15E-1
XVIC	9.69E-1	1.05E+0	1.05E+0	9.69E-1	1.05E+0	1.05E+0	9.67E-1	1.05E+0	1.05E+0	9.47E-1	1.03E+0	1.03E+0	5.58E-1	6.07E-1	6.07E-1
XVIIIA	7.77E+1	8.35E+1	8.35E+1	7.77E+1	8.35E+1	8.35E+1	7.76E+1	8.34E+1	8.34E+1	7.44E+1	7.99E+1	7.99E+1	5.10E+1	5.48E+1	5.48E+1
XVIIIB	7.06E+1	7.46E+1	7.46E+1	7.06E+1	7.46E+1	7.46E+1	7.05E+1	7.45E+1	7.45E+1	6.76E+1	7.14E+1	7.14E+1	4.64E+1	4.90E+1	4.90E+1
XVIIIC	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.06E+1	6.06E+1	5.63E+1	5.81E+1	5.81E+1	3.87E+1	3.99E+1	3.99E+1
XXA	8.09E+1	7.28E+2	5.78E+3	3.52E+1	3.90E+2	3.09E+3	4.02E+0	3.62E+1	2.87E+2	1.52E+0	1.92E+1	1.52E+2	.00E+0	.00E+0	.00E+0
XXB	7.77E+1	5.06E+2	2.31E+3	3.38E+1	2.55E+2	1.16E+3	3.87E+0	2.51E+1	1.15E+2	1.46E+0	1.25E+1	5.71E+1	.00E+0	.00E+0	.00E+0
XXC	7.14E+1	2.64E+2	6.09E+3	3.11E+1	1.15E+2	2.65E+3	3.55E+0	1.31E+1	3.03E+2	1.34E+0	4.96E+0	1.15E+2	.00E+0	.00E+0	.00E+0
XXIA	1.91E+1	1.92E+2	1.89E+3	1.91E+1	1.92E+2	1.89E+3	1.90E+1	1.91E+2	1.88E+3	1.63E+1	1.64E+2	1.61E+3	5.83E+0	5.85E+1	5.76E+2
XXIB	1.91E+1	1.92E+2	1.84E+3	1.91E+1	1.92E+2	1.84E+3	1.90E+1	1.91E+2	1.82E+3	1.63E+1	1.64E+2	1.57E+3	5.82E+0	5.85E+1	5.60E+2
XXIC	1.90E+1	1.90E+2	1.73E+3	1.90E+1	1.90E+2	1.73E+3	1.89E+1	1.89E+2	1.72E+3	1.62E+1	1.62E+2	1.48E+3	5.80E+0	5.80E+1	5.28E+2
XXII	3.37E+3	8.32E+4	1.37E+5	3.36E+3	8.32E+4	1.37E+5	3.32E+3	8.25E+4	1.35E+5	3.05E+3	7.66E+4	1.26E+5	.00E+0	.00E+0	.00E+0
DOE	1.08E+6	1.39E+7	1.06E+8	1.08E+6	1.39E+7	1.05E+8	1.06E+6	1.37E+7	1.04E+8	1.02E+6	1.34E+7	1.01E+8	7.72E+5	1.04E+7	7.78E+7
DOD	2.76E+2	1.71E+3	2.97E+3	2.72E+2	1.69E+3	2.86E+3	2.68E+2	1.67E+3	2.77E+3	2.62E+2	1.63E+3	2.71E+3	8.43E+1	5.25E+2	8.72E+2
NRC	5.97E+3	1.59E+4	1.11E+5	5.36E+3	1.25E+4	7.70E+4	4.94E+3	9.25E+3	4.77E+4	4.66E+3	8.29E+3	4.02E+4	3.06E+3	4.38E+3	1.53E+4
Total	1.09E+6	1.39E+7	1.06E+8	1.08E+6	1.39E+7	1.05E+8	1.06E+6	1.37E+7	1.04E+8	1.02E+6	1.34E+7	1.01E+8	7.76E+5	1.04E+7	7.78E+7

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 TABLE K-48. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.73E+2	6.31E+2	6.31E+2	5.30E+2	5.84E+2	5.84E+2	5.01E+2	5.52E+2	5.52E+2	4.62E+2	5.08E+2	5.08E+2	4.37E+2	4.81E+2	4.81E+2	3.85E+2	4.24E+2	4.24E+2
II	2.72E+5	6.27E+6	2.31E+7	2.72E+5	6.27E+6	2.30E+7	2.72E+5	6.27E+6	2.29E+7	2.72E+5	6.26E+6	2.29E+7	2.72E+5	6.26E+6	2.28E+7	2.72E+5	6.25E+6	2.27E+7
III	2.07E+2	2.30E+2	2.30E+2	1.74E+2	1.93E+2	1.93E+2	1.38E+2	1.54E+2	1.54E+2	8.16E+1	9.07E+1	9.07E+1	4.72E+1	5.24E+1	5.24E+1	3.32E+1	3.69E+1	3.69E+1
IV	1.34E+3	9.37E+3	2.06E+4	1.22E+3	8.52E+3	1.87E+4	1.10E+3	7.66E+3	1.68E+4	8.51E+2	5.95E+3	1.31E+4	6.07E+2	4.24E+3	9.32E+3	2.40E+2	1.68E+3	3.69E+3
V	1.69E+4	1.86E+4	1.86E+4	1.64E+4	1.80E+4	1.80E+4	1.59E+4	1.74E+4	1.74E+4	1.48E+4	1.63E+4	1.63E+4	1.38E+4	1.51E+4	1.51E+4	1.31E+4	1.43E+4	1.43E+4
VI	3.23E+4	2.99E+5	3.51E+6	3.23E+4	2.98E+5	3.50E+6	3.22E+4	2.97E+5	3.49E+6	3.19E+4	2.96E+5	3.47E+6	3.17E+4	2.93E+5	3.44E+6	3.12E+4	2.90E+5	3.40E+6
VII	7.70E+3	6.11E+4	4.18E+5	2.73E+3	2.17E+4	1.49E+5	2.61E+2	2.06E+3	1.40E+4	2.34E+1	1.79E+2	1.22E+3	6.54E+0	4.95E+1	3.36E+2	.00E+0	.00E+0	.00E+0
IX	6.20E+0	5.01E+1	3.10E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.50E+3	1.66E+4	1.90E+4	1.48E+3	1.43E+4	1.64E+4	1.46E+3	1.29E+4	1.48E+4	1.44E+3	1.14E+4	1.29E+4	1.42E+3	1.04E+4	1.18E+4	1.40E+3	9.38E+3	1.06E+4
XII	2.68E+2	1.67E+3	2.77E+3	2.67E+2	1.66E+3	2.76E+3	2.66E+2	1.66E+3	2.75E+3	2.65E+2	1.65E+3	2.74E+3	2.63E+2	1.64E+3	2.73E+3	2.62E+2	1.63E+3	2.71E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.86E-1	1.07E+0	1.07E+0	9.83E-1	1.07E+0	1.07E+0	9.81E-1	1.06E+0	1.06E+0	9.78E-1	1.06E+0	1.06E+0	9.74E-1	1.06E+0	1.06E+0	9.66E-1	1.05E+0	1.05E+0
XVIB	9.79E-1	1.06E+0	1.06E+0	9.75E-1	1.06E+0	1.06E+0	9.74E-1	1.06E+0	1.06E+0	9.71E-1	1.05E+0	1.05E+0	9.67E-1	1.05E+0	1.05E+0	9.58E-1	1.04E+0	1.04E+0
XVIC	9.67E-1	1.05E+0	1.05E+0	9.64E-1	1.04E+0	1.04E+0	9.62E-1	1.04E+0	1.04E+0	9.59E-1	1.04E+0	1.04E+0	9.56E-1	1.04E+0	1.04E+0	9.47E-1	1.03E+0	1.03E+0
XVIIIA	7.76E+1	8.34E+1	8.34E+1	7.74E+1	8.32E+1	8.32E+1	7.71E+1	8.28E+1	8.28E+1	7.63E+1	8.20E+1	8.20E+1	7.55E+1	8.12E+1	8.12E+1	7.44E+1	7.99E+1	7.99E+1
XVIIIB	7.05E+1	7.45E+1	7.45E+1	7.04E+1	7.44E+1	7.44E+1	7.00E+1	7.40E+1	7.40E+1	6.93E+1	7.33E+1	7.33E+1	6.86E+1	7.25E+1	7.25E+1	6.76E+1	7.14E+1	7.14E+1
XVIIIC	5.88E+1	6.06E+1	6.06E+1	5.87E+1	6.05E+1	6.05E+1	5.84E+1	6.02E+1	6.02E+1	5.78E+1	5.96E+1	5.96E+1	5.72E+1	5.90E+1	5.90E+1	5.63E+1	5.81E+1	5.81E+1
XXA	4.02E+0	3.62E+1	2.87E+2	3.40E+0	3.14E+1	2.50E+2	3.01E+0	2.85E+1	2.26E+2	2.52E+0	2.46E+1	1.95E+2	2.12E+0	2.19E+1	1.74E+2	1.52E+0	1.92E+1	1.52E+2
XXB	3.87E+0	2.51E+1	1.15E+2	3.27E+0	2.17E+1	9.89E+1	2.89E+0	1.95E+1	8.91E+1	2.42E+0	1.66E+1	7.59E+1	2.04E+0	1.48E+1	6.77E+1	1.46E+0	1.25E+1	5.71E+1
XXC	3.55E+0	1.31E+1	3.03E+2	3.00E+0	1.11E+1	2.56E+2	2.66E+0	9.82E+0	2.27E+2	2.22E+0	8.22E+0	1.90E+2	1.87E+0	6.93E+0	1.60E+2	1.34E+0	4.96E+0	1.15E+2
XXIA	1.90E+1	1.91E+2	1.88E+3	1.88E+1	1.89E+2	1.86E+3	1.86E+1	1.87E+2	1.84E+3	1.81E+1	1.82E+2	1.79E+3	1.74E+1	1.74E+2	1.71E+3	1.63E+1	1.64E+2	1.61E+3
XXIB	1.90E+1	1.91E+2	1.82E+3	1.88E+1	1.89E+2	1.80E+3	1.86E+1	1.87E+2	1.78E+3	1.81E+1	1.82E+2	1.74E+3	1.73E+1	1.74E+2	1.66E+3	1.63E+1	1.64E+2	1.57E+3
XXIC	1.89E+1	1.89E+2	1.72E+3	1.87E+1	1.87E+2	1.70E+3	1.85E+1	1.85E+2	1.68E+3	1.80E+1	1.80E+2	1.64E+3	1.72E+1	1.72E+2	1.57E+3	1.62E+1	1.62E+2	1.48E+3
XXII	3.32E+3	8.25E+4	1.35E+5	3.28E+3	8.13E+4	1.34E+5	3.25E+3	8.07E+4	1.33E+5	3.16E+3	7.90E+4	1.30E+5	3.09E+3	7.76E+4	1.27E+5	3.05E+3	7.66E+4	1.26E+5
DOE	1.06E+6	1.37E+7	1.04E+8	1.05E+6	1.37E+7	1.04E+8	1.04E+6	1.36E+7	1.03E+8	1.04E+6	1.36E+7	1.03E+8	1.03E+6	1.35E+7	1.02E+8	1.02E+6	1.34E+7	1.01E+8
DOD	2.68E+2	1.67E+3	2.77E+3	2.67E+2	1.66E+3	2.76E+3	2.66E+2	1.66E+3	2.75E+3	2.65E+2	1.65E+3	2.74E+3	2.63E+2	1.64E+3	2.73E+3	2.62E+2	1.63E+3	2.71E+3
NRC	4.94E+3	9.25E+3	4.77E+4	4.92E+3	9.15E+3	4.68E+4	4.88E+3	9.05E+3	4.61E+4	4.82E+3	8.87E+3	4.47E+4	4.76E+3	8.62E+3	4.27E+4	4.66E+3	8.29E+3	4.02E+4
Total	1.06E+6	1.37E+7	1.04E+8	1.05E+6	1.37E+7	1.04E+8	1.05E+6	1.36E+7	1.03E+8	1.04E+6	1.36E+7	1.03E+8	1.03E+6	1.35E+7	1.02E+8	1.02E+6	1.34E+7	1.01E+8

Low Population Density With Agriculture - 09-13-94 4:09p
 TABLE K-49. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	3.75E-1	4.14E-1	4.14E-1	3.68E-1	4.06E-1	4.06E-1	3.48E-1	3.84E-1	3.84E-1	2.79E-1	3.08E-1	3.08E-1	1.25E-1	1.38E-1	1.38E-1
II	4.30E+1	4.23E+2	3.63E+3	4.29E+1	4.23E+2	3.63E+3	4.29E+1	4.23E+2	3.63E+3	4.29E+1	4.22E+2	3.59E+3	4.23E+1	4.14E+2	3.47E+3
III	1.58E-1	1.75E-1	1.75E-1	1.58E-1	1.75E-1	1.75E-1	1.47E-1	1.63E-1	1.63E-1	7.79E-2	8.63E-2	8.63E-2	.00E+0	.00E+0	.00E+0
IV	3.15E-1	2.20E+0	4.68E+0	3.12E-1	2.18E+0	4.62E+0	2.97E-1	2.08E+0	4.41E+0	2.34E-1	1.64E+0	3.48E+0	.00E+0	.00E+0	.00E+0
V	9.75E+0	1.07E+1	1.07E+1	9.74E+0	1.07E+1	1.07E+1	9.63E+0	1.06E+1	1.06E+1	8.82E+0	9.71E+0	9.71E+0	5.78E+0	6.37E+0	6.37E+0
VI	7.00E+0	6.21E+1	6.37E+2	7.00E+0	6.21E+1	6.37E+2	7.00E+0	6.21E+1	6.37E+2	6.94E+0	6.18E+1	6.34E+2	6.37E+0	5.75E+1	5.91E+2
VII	2.60E+0	1.81E+1	1.19E+2	2.18E+0	1.48E+1	9.64E+1	1.61E+0	1.07E+1	6.98E+1	4.18E-2	2.77E-1	1.80E+0	.00E+0	.00E+0	.00E+0
IX	9.11E-3	7.30E-2	4.46E-1	6.62E-3	5.31E-2	3.24E-1	2.27E-3	1.82E-2	1.11E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.56E+0	5.13E+0	5.69E+0	1.56E+0	5.13E+0	5.69E+0	1.56E+0	5.00E+0	5.54E+0	1.51E+0	3.74E+0	4.09E+0	1.32E+0	2.25E+0	2.39E+0
XII	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.95E-2	1.22E-1	2.01E-1	1.84E-2	1.15E-1	1.90E-1
XIIIA	1.68E-4	1.29E-3	3.37E-3	1.20E-4	9.22E-4	2.42E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.61E-4	9.16E-4	1.43E-3	1.15E-4	6.57E-4	1.03E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.46E-4	5.13E-4	1.05E-2	1.05E-4	3.67E-4	7.53E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.40E-4	5.89E-4	5.89E-4	5.39E-4	5.89E-4	5.89E-4	5.39E-4	5.89E-4	5.89E-4	5.36E-4	5.85E-4	5.85E-4	5.00E-4	5.46E-4	5.46E-4
XVIB	5.36E-4	5.85E-4	5.85E-4	5.36E-4	5.85E-4	5.85E-4	5.36E-4	5.85E-4	5.85E-4	5.33E-4	5.82E-4	5.82E-4	4.96E-4	5.43E-4	5.43E-4
XVIC	5.32E-4	5.78E-4	5.78E-4	5.32E-4	5.78E-4	5.78E-4	5.32E-4	5.78E-4	5.78E-4	5.29E-4	5.75E-4	5.75E-4	4.93E-4	5.37E-4	5.37E-4
XVIIIA	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.14E-2	3.39E-2	3.39E-2	2.75E-2	2.96E-2	2.96E-2
XVIIIB	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.87E-2	3.04E-2	3.04E-2	2.51E-2	2.66E-2	2.66E-2
XVIIIC	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.40E-2	2.48E-2	2.48E-2	2.10E-2	2.17E-2	2.17E-2
XXA	1.94E-2	1.56E-1	1.13E+0	1.22E-2	1.08E-1	7.83E-1	2.55E-3	3.52E-2	2.54E-1	6.07E-4	5.40E-3	3.90E-2	.00E+0	1.04E-3	7.53E-3
XXB	1.87E-2	1.12E-1	4.72E-1	1.18E-2	7.04E-2	2.97E-1	2.46E-3	1.47E-2	6.21E-2	5.84E-4	3.50E-3	1.48E-2	.00E+0	.00E+0	.00E+0
XXC	1.71E-2	6.31E-2	1.43E+0	1.08E-2	3.98E-2	9.02E-1	2.25E-3	8.30E-3	1.88E-1	5.36E-4	1.97E-3	4.48E-2	.00E+0	.00E+0	.00E+0
XXIA	4.17E-3	4.23E-2	4.13E-1	4.17E-3	4.23E-2	4.13E-1	4.17E-3	4.23E-2	4.13E-1	4.06E-3	4.12E-2	4.02E-1	2.76E-3	2.80E-2	2.73E-1
XXIB	4.15E-3	4.19E-2	3.97E-1	4.15E-3	4.19E-2	3.97E-1	4.15E-3	4.19E-2	3.96E-1	4.04E-3	4.08E-2	3.86E-1	2.74E-3	2.77E-2	2.62E-1
XXIC	4.13E-3	4.14E-2	3.67E-1	4.13E-3	4.14E-2	3.67E-1	4.13E-3	4.14E-2	3.67E-1	4.02E-3	4.03E-2	3.57E-1	2.73E-3	2.74E-2	2.43E-1
XXII	5.75E-1	1.44E+1	2.58E+1	5.75E-1	1.44E+1	2.58E+1	5.73E-1	1.44E+1	2.57E+1	5.56E-1	1.40E+1	2.50E+1	4.06E-1	1.06E+1	1.89E+1
DOE	2.21E+2	1.97E+3	1.84E+4	2.20E+2	1.97E+3	1.84E+4	2.20E+2	1.96E+3	1.84E+4	2.15E+2	1.94E+3	1.82E+4	1.97E+2	1.80E+3	1.70E+4
DOD	2.11E-2	1.31E-1	2.48E-1	2.07E-2	1.29E-1	2.35E-1	1.97E-2	1.23E-1	2.04E-1	1.95E-2	1.22E-1	2.01E-1	1.84E-2	1.15E-1	1.90E-1
NRC	2.20E+0	4.42E+0	2.47E+1	2.10E+0	3.90E+0	1.98E+1	1.97E+0	3.15E+0	1.29E+1	1.93E+0	2.89E+0	1.08E+1	1.67E+0	2.32E+0	7.44E+0
Total	2.23E+2	1.97E+3	1.84E+4	2.23E+2	1.97E+3	1.84E+4	2.22E+2	1.96E+3	1.84E+4	2.17E+2	1.94E+3	1.82E+4	1.99E+2	1.80E+3	1.70E+4

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 TABLE K-50. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	3.48E-1	3.84E-1	3.84E-1	3.33E-1	3.68E-1	3.68E-1	3.22E-1	3.56E-1	3.56E-1	3.06E-1	3.38E-1	3.38E-1	2.93E-1	3.24E-1	3.24E-1	2.79E-1	3.08E-1	3.08E-1
II	4.29E+1	4.23E+2	3.63E+3	4.29E+1	4.23E+2	3.63E+3	4.29E+1	4.22E+2	3.62E+3	4.29E+1	4.22E+2	3.60E+3	4.29E+1	4.22E+2	3.59E+3	4.29E+1	4.22E+2	3.59E+3
III	1.47E-1	1.63E-1	1.63E-1	1.28E-1	1.42E-1	1.42E-1	1.17E-1	1.29E-1	1.29E-1	1.07E-1	1.18E-1	1.18E-1	9.53E-2	1.06E-1	1.06E-1	7.79E-2	8.63E-2	8.63E-2
IV	2.97E-1	2.08E+0	4.41E+0	2.90E-1	2.03E+0	4.30E+0	2.83E-1	1.98E+0	4.20E+0	2.69E-1	1.88E+0	3.99E+0	2.55E-1	1.78E+0	3.79E+0	2.34E-1	1.64E+0	3.48E+0
V	9.63E+0	1.06E+1	1.06E+1	9.51E+0	1.05E+1	1.05E+1	9.41E+0	1.04E+1	1.04E+1	9.24E+0	1.02E+1	1.02E+1	9.07E+0	9.99E+0	9.99E+0	8.82E+0	9.71E+0	9.71E+0
VI	7.00E+0	6.21E+1	6.37E+2	6.99E+0	6.21E+1	6.37E+2	6.99E+0	6.21E+1	6.37E+2	6.97E+0	6.20E+1	6.36E+2	6.96E+0	6.19E+1	6.35E+2	6.94E+0	6.18E+1	6.34E+2
VII	1.61E+0	1.07E+1	6.98E+1	1.06E+0	7.09E+0	4.62E+1	7.38E-1	5.00E+0	3.26E+1	4.43E-1	3.05E+0	1.99E+1	2.50E-1	1.72E+0	1.13E+1	4.18E-2	2.77E-1	1.80E+0
IX	2.27E-3	1.82E-2	1.11E-1	1.09E-3	8.70E-3	5.32E-2	6.42E-4	5.15E-3	3.15E-2	2.27E-4	1.82E-3	1.11E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.56E+0	5.00E+0	5.54E+0	1.55E+0	4.79E+0	5.30E+0	1.54E+0	4.58E+0	5.06E+0	1.53E+0	4.23E+0	4.66E+0	1.52E+0	3.98E+0	4.37E+0	1.51E+0	3.74E+0	4.09E+0
XII	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.03E-1	1.96E-2	1.23E-1	2.03E-1	1.96E-2	1.22E-1	2.02E-1	1.95E-2	1.22E-1	2.02E-1	1.95E-2	1.22E-1	2.01E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.39E-4	5.89E-4	5.89E-4	5.39E-4	5.88E-4	5.88E-4	5.39E-4	5.88E-4	5.88E-4	5.38E-4	5.87E-4	5.87E-4	5.37E-4	5.86E-4	5.86E-4	5.36E-4	5.85E-4	5.85E-4
XVIB	5.36E-4	5.85E-4	5.85E-4	5.36E-4	5.85E-4	5.85E-4	5.35E-4	5.84E-4	5.84E-4	5.34E-4	5.83E-4	5.83E-4	5.33E-4	5.82E-4	5.82E-4	5.33E-4	5.82E-4	5.82E-4
XVIC	5.32E-4	5.78E-4	5.78E-4	5.32E-4	5.78E-4	5.78E-4	5.31E-4	5.78E-4	5.78E-4	5.30E-4	5.76E-4	5.76E-4	5.29E-4	5.75E-4	5.75E-4	5.29E-4	5.75E-4	5.75E-4
XVIIIA	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.40E-2	3.40E-2	3.15E-2	3.40E-2	3.40E-2	3.14E-2	3.39E-2	3.39E-2
XVIIIB	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.05E-2	3.05E-2	2.88E-2	3.05E-2	3.05E-2	2.87E-2	3.04E-2	3.04E-2
XVIIIC	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.41E-2	2.49E-2	2.49E-2	2.41E-2	2.49E-2	2.49E-2	2.40E-2	2.48E-2	2.48E-2
XXA	2.55E-3	3.52E-2	2.54E-1	8.60E-4	1.07E-2	7.73E-2	8.01E-4	6.87E-3	4.97E-2	7.22E-4	6.27E-3	4.53E-2	6.68E-4	5.86E-3	4.23E-2	6.07E-4	5.40E-3	3.90E-2
XXB	2.46E-3	1.47E-2	6.21E-2	8.27E-4	4.95E-3	2.09E-2	7.70E-4	4.61E-3	1.95E-2	6.95E-4	4.16E-3	1.76E-2	6.42E-4	3.84E-3	1.62E-2	5.84E-4	3.50E-3	1.48E-2
XXC	2.25E-3	8.30E-3	1.88E-1	7.59E-4	2.79E-3	6.34E-2	7.07E-4	2.60E-3	5.91E-2	6.37E-4	2.35E-3	5.33E-2	5.89E-4	2.17E-3	4.92E-2	5.36E-4	1.97E-3	4.48E-2
XXIA	4.17E-3	4.23E-2	4.13E-1	4.15E-3	4.22E-2	4.12E-1	4.14E-3	4.20E-2	4.10E-1	4.12E-3	4.18E-2	4.08E-1	4.09E-3	4.15E-2	4.05E-1	4.06E-3	4.12E-2	4.02E-1
XXIB	4.15E-3	4.19E-2	3.96E-1	4.14E-3	4.18E-2	3.95E-1	4.12E-3	4.17E-2	3.94E-1	4.10E-3	4.14E-2	3.92E-1	4.07E-3	4.12E-2	3.89E-1	4.04E-3	4.08E-2	3.86E-1
XXIC	4.13E-3	4.14E-2	3.67E-1	4.12E-3	4.12E-2	3.66E-1	4.10E-3	4.11E-2	3.65E-1	4.08E-3	4.09E-2	3.63E-1	4.06E-3	4.06E-2	3.60E-1	4.02E-3	4.03E-2	3.57E-1
XXII	5.73E-1	1.44E+1	2.57E+1	5.70E-1	1.44E+1	2.57E+1	5.68E-1	1.43E+1	2.56E+1	5.63E-1	1.42E+1	2.54E+1	5.60E-1	1.41E+1	2.52E+1	5.56E-1	1.40E+1	2.50E+1
DOE	2.20E+2	1.96E+3	1.84E+4	2.19E+2	1.96E+3	1.83E+4	2.18E+2	1.95E+3	1.83E+4	2.17E+2	1.95E+3	1.83E+4	2.16E+2	1.94E+3	1.82E+4	2.15E+2	1.94E+3	1.82E+4
DOD	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.03E-1	1.96E-2	1.23E-1	2.03E-1	1.96E-2	1.22E-1	2.02E-1	1.95E-2	1.22E-1	2.02E-1	1.95E-2	1.22E-1	2.01E-1
NRC	1.97E+0	3.15E+0	1.29E+1	1.95E+0	2.96E+0	1.13E+1	1.95E+0	2.94E+0	1.11E+1	1.94E+0	2.92E+0	1.10E+1	1.94E+0	2.91E+0	1.09E+1	1.93E+0	2.89E+0	1.08E+1
Total	2.22E+2	1.96E+3	1.84E+4	2.21E+2	1.96E+3	1.83E+4	2.20E+2	1.96E+3	1.83E+4	2.19E+2	1.95E+3	1.83E+4	2.18E+2	1.95E+3	1.82E+4	2.17E+2	1.94E+3	1.82E+4

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 TABLE K-51. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	3.72E-1	4.11E-1	4.11E-1	3.60E-1	3.98E-1	3.98E-1	3.18E-1	3.51E-1	3.51E-1	2.14E-1	2.36E-1	2.36E-1	5.44E-2	6.01E-2	6.01E-2
II	4.29E+1	4.23E+2	3.63E+3	4.29E+1	4.23E+2	3.63E+3	4.29E+1	4.22E+2	3.62E+3	4.28E+1	4.20E+2	3.55E+3	3.63E+1	3.56E+2	2.93E+3
III	1.58E-1	1.75E-1	1.75E-1	1.56E-1	1.73E-1	1.73E-1	1.15E-1	1.27E-1	1.27E-1	1.84E-2	2.03E-2	2.03E-2	.00E+0	.00E+0	.00E+0
IV	3.14E-1	2.19E+0	4.66E+0	3.06E-1	2.14E+0	4.54E+0	2.78E-1	1.94E+0	4.13E+0	4.99E-2	3.49E-1	7.40E-1	.00E+0	.00E+0	.00E+0
V	9.75E+0	1.07E+1	1.07E+1	9.71E+0	1.07E+1	1.07E+1	9.38E+0	1.03E+1	1.03E+1	7.24E+0	7.98E+0	7.98E+0	2.04E+0	2.24E+0	2.24E+0
VI	7.00E+0	6.21E+1	6.37E+2	7.00E+0	6.21E+1	6.37E+2	6.98E+0	6.20E+1	6.37E+2	6.71E+0	6.01E+1	6.17E+2	5.00E+0	4.58E+1	4.72E+2
VII	2.39E+0	1.64E+1	1.08E+2	2.02E+0	1.35E+1	8.79E+1	6.32E-1	4.30E+0	2.81E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	7.87E-3	6.31E-2	3.86E-1	4.10E-3	3.29E-2	2.01E-1	4.26E-4	3.41E-3	2.08E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.56E+0	5.13E+0	5.69E+0	1.56E+0	5.12E+0	5.68E+0	1.54E+0	4.67E+0	5.16E+0	1.47E+0	3.13E+0	3.39E+0	1.18E+0	1.69E+0	1.78E+0
XII	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.95E-2	1.22E-1	2.02E-1	1.91E-2	1.19E-1	1.98E-1	6.15E-3	3.84E-2	6.36E-2
XIIIA	1.52E-4	1.17E-3	3.06E-3	5.83E-5	4.47E-4	1.17E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.46E-4	8.31E-4	1.30E-3	5.59E-5	3.18E-4	4.98E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.33E-4	4.65E-4	9.53E-3	5.09E-5	1.78E-4	3.65E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.39E-4	5.89E-4	5.89E-4	5.39E-4	5.89E-4	5.89E-4	5.39E-4	5.88E-4	5.88E-4	5.29E-4	5.77E-4	5.77E-4	3.14E-4	3.43E-4	3.43E-4
XVIB	5.36E-4	5.85E-4	5.85E-4	5.36E-4	5.85E-4	5.85E-4	5.35E-4	5.84E-4	5.84E-4	5.25E-4	5.74E-4	5.74E-4	3.12E-4	3.41E-4	3.41E-4
XVIC	5.32E-4	5.78E-4	5.78E-4	5.32E-4	5.78E-4	5.78E-4	5.31E-4	5.77E-4	5.77E-4	5.21E-4	5.67E-4	5.67E-4	3.09E-4	3.37E-4	3.37E-4
XVIIIA	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.03E-2	3.26E-2	3.26E-2	2.08E-2	2.24E-2	2.24E-2
XVIIIB	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.05E-2	3.05E-2	2.77E-2	2.93E-2	2.93E-2	1.90E-2	2.01E-2	2.01E-2
XVIIIC	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.32E-2	2.39E-2	2.39E-2	1.59E-2	1.64E-2	1.64E-2
XXA	1.47E-2	1.32E-1	9.51E-1	6.40E-3	7.05E-2	5.09E-1	7.32E-4	6.54E-3	4.72E-2	2.76E-4	3.46E-3	2.51E-2	.00E+0	.00E+0	.00E+0
XXB	1.42E-2	9.15E-2	3.86E-1	6.15E-3	4.61E-2	1.95E-1	7.04E-4	4.55E-3	1.92E-2	2.66E-4	2.26E-3	9.56E-3	.00E+0	.00E+0	.00E+0
XXC	1.30E-2	4.78E-2	1.08E+0	5.65E-3	2.08E-2	4.72E-1	6.46E-4	2.38E-3	5.40E-2	2.44E-4	8.98E-4	2.04E-2	.00E+0	.00E+0	.00E+0
XXIA	4.17E-3	4.23E-2	4.13E-1	4.17E-3	4.23E-2	4.13E-1	4.14E-3	4.20E-2	4.10E-1	3.56E-3	3.61E-2	3.52E-1	1.27E-3	1.29E-2	1.26E-1
XXIB	4.15E-3	4.19E-2	3.97E-1	4.15E-3	4.19E-2	3.96E-1	4.12E-3	4.16E-2	3.93E-1	3.54E-3	3.58E-2	3.38E-1	1.27E-3	1.28E-2	1.21E-1
XXIC	4.13E-3	4.14E-2	3.67E-1	4.13E-3	4.14E-2	3.67E-1	4.10E-3	4.11E-2	3.64E-1	3.52E-3	3.53E-2	3.13E-1	1.26E-3	1.26E-2	1.12E-1
XXII	5.75E-1	1.44E+1	2.58E+1	5.74E-1	1.44E+1	2.58E+1	5.67E-1	1.43E+1	2.56E+1	5.22E-1	1.33E+1	2.37E+1	.00E+0	.00E+0	.00E+0
DOE	2.21E+2	1.97E+3	1.84E+4	2.20E+2	1.96E+3	1.84E+4	2.18E+2	1.95E+3	1.83E+4	2.08E+2	1.89E+3	1.77E+4	1.53E+2	1.40E+3	1.37E+4
DOD	2.10E-2	1.30E-1	2.43E-1	2.02E-2	1.26E-1	2.19E-1	1.95E-2	1.22E-1	2.02E-1	1.91E-2	1.19E-1	1.98E-1	6.15E-3	3.84E-2	6.36E-2
NRC	2.13E+0	4.14E+0	2.19E+1	2.02E+0	3.52E+0	1.61E+1	1.94E+0	2.93E+0	1.11E+1	1.85E+0	2.69E+0	9.49E+0	1.24E+0	1.56E+0	3.91E+0
Total	2.23E+2	1.97E+3	1.84E+4	2.22E+2	1.97E+3	1.84E+4	2.20E+2	1.95E+3	1.83E+4	2.10E+2	1.89E+3	1.77E+4	1.54E+2	1.40E+3	1.37E+4

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 TABLE K-52. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	3.18E-1	3.51E-1	3.51E-1	2.94E-1	3.25E-1	3.25E-1	2.78E-1	3.07E-1	3.07E-1	2.56E-1	2.83E-1	2.83E-1	2.42E-1	2.68E-1	2.68E-1	2.14E-1	2.36E-1	2.36E-1
II	4.29E+1	4.22E+2	3.62E+3	4.29E+1	4.22E+2	3.59E+3	4.29E+1	4.22E+2	3.59E+3	4.29E+1	4.21E+2	3.58E+3	4.29E+1	4.21E+2	3.57E+3	4.28E+1	4.20E+2	3.55E+3
III	1.15E-1	1.27E-1	1.27E-1	9.63E-2	1.07E-1	1.07E-1	7.67E-2	8.50E-2	8.50E-2	4.52E-2	5.01E-2	5.01E-2	2.61E-2	2.89E-2	2.89E-2	1.84E-2	2.03E-2	2.03E-2
IV	2.78E-1	1.94E+0	4.13E+0	2.53E-1	1.77E+0	3.75E+0	2.28E-1	1.59E+0	3.38E+0	1.77E-1	1.24E+0	2.62E+0	1.26E-1	8.81E-1	1.87E+0	4.99E-2	3.49E-1	7.40E-1
V	9.38E+0	1.03E+1	1.03E+1	9.09E+0	1.00E+1	1.00E+1	8.80E+0	9.69E+0	9.69E+0	8.21E+0	9.05E+0	9.05E+0	7.63E+0	8.41E+0	8.41E+0	7.24E+0	7.98E+0	7.98E+0
VI	6.98E+0	6.20E+1	6.37E+2	6.96E+0	6.19E+1	6.35E+2	6.94E+0	6.18E+1	6.34E+2	6.88E+0	6.13E+1	6.30E+2	6.82E+0	6.09E+1	6.25E+2	6.71E+0	6.01E+1	6.17E+2
VII	6.32E-1	4.30E+0	2.81E+1	2.22E-1	1.53E+0	9.99E+0	2.25E-2	1.46E-1	9.46E-1	2.38E-3	1.31E-2	8.22E-2	7.09E-4	3.68E-3	2.28E-2	.00E+0	.00E+0	.00E+0
IX	4.26E-4	3.41E-3	2.08E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.54E+0	4.67E+0	5.16E+0	1.53E+0	4.20E+0	4.62E+0	1.52E+0	3.90E+0	4.28E+0	1.50E+0	3.56E+0	3.89E+0	1.49E+0	3.36E+0	3.65E+0	1.47E+0	3.13E+0	3.39E+0
XII	1.95E-2	1.22E-1	2.02E-1	1.94E-2	1.21E-1	2.01E-1	1.94E-2	1.21E-1	2.01E-1	1.93E-2	1.21E-1	2.00E-1	1.92E-2	1.20E-1	1.99E-1	1.91E-2	1.19E-1	1.98E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.39E-4	5.88E-4	5.88E-4	5.37E-4	5.86E-4	5.86E-4	5.36E-4	5.85E-4	5.85E-4	5.35E-4	5.84E-4	5.84E-4	5.33E-4	5.82E-4	5.82E-4	5.29E-4	5.77E-4	5.77E-4
XVIB	5.35E-4	5.84E-4	5.84E-4	5.34E-4	5.82E-4	5.82E-4	5.33E-4	5.82E-4	5.82E-4	5.31E-4	5.80E-4	5.80E-4	5.29E-4	5.78E-4	5.78E-4	5.25E-4	5.74E-4	5.74E-4
XVIC	5.31E-4	5.77E-4	5.77E-4	5.30E-4	5.76E-4	5.76E-4	5.29E-4	5.75E-4	5.75E-4	5.27E-4	5.73E-4	5.73E-4	5.25E-4	5.71E-4	5.71E-4	5.21E-4	5.67E-4	5.67E-4
XVIIIA	3.16E-2	3.41E-2	3.41E-2	3.15E-2	3.40E-2	3.40E-2	3.14E-2	3.38E-2	3.38E-2	3.11E-2	3.35E-2	3.35E-2	3.07E-2	3.32E-2	3.32E-2	3.03E-2	3.26E-2	3.26E-2
XVIIIB	2.89E-2	3.05E-2	3.05E-2	2.88E-2	3.05E-2	3.05E-2	2.87E-2	3.03E-2	3.03E-2	2.84E-2	3.00E-2	3.00E-2	2.81E-2	2.97E-2	2.97E-2	2.77E-2	2.93E-2	2.93E-2
XVIIIC	2.42E-2	2.50E-2	2.50E-2	2.41E-2	2.49E-2	2.49E-2	2.40E-2	2.48E-2	2.48E-2	2.38E-2	2.45E-2	2.45E-2	2.35E-2	2.43E-2	2.43E-2	2.32E-2	2.39E-2	2.39E-2
XXA	7.32E-4	6.54E-3	4.72E-2	6.18E-4	5.69E-3	4.11E-2	5.47E-4	5.15E-3	3.72E-2	4.58E-4	4.44E-3	3.21E-2	3.86E-4	3.95E-3	2.86E-2	2.76E-4	3.46E-3	2.51E-2
XXB	7.04E-4	4.55E-3	1.92E-2	5.95E-4	3.92E-3	1.66E-2	5.26E-4	3.53E-3	1.49E-2	4.41E-4	3.01E-3	1.27E-2	3.71E-4	2.68E-3	1.13E-2	2.66E-4	2.26E-3	9.56E-3
XXC	6.46E-4	2.38E-3	5.40E-2	5.45E-4	2.01E-3	4.56E-2	4.83E-4	1.78E-3	4.03E-2	4.04E-4	1.49E-3	3.38E-2	3.40E-4	1.25E-3	2.85E-2	2.44E-4	8.98E-4	2.04E-2
XXIA	4.14E-3	4.20E-2	4.10E-1	4.09E-3	4.15E-2	4.06E-1	4.05E-3	4.11E-2	4.01E-1	3.95E-3	4.01E-2	3.92E-1	3.78E-3	3.84E-2	3.74E-1	3.56E-3	3.61E-2	3.52E-1
XXIB	4.12E-3	4.16E-2	3.93E-1	4.08E-3	4.12E-2	3.89E-1	4.03E-3	4.08E-2	3.85E-1	3.94E-3	3.98E-2	3.76E-1	3.76E-3	3.80E-2	3.59E-1	3.54E-3	3.58E-2	3.38E-1
XXIC	4.10E-3	4.11E-2	3.64E-1	4.06E-3	4.06E-2	3.61E-1	4.01E-3	4.02E-2	3.57E-1	3.92E-3	3.92E-2	3.48E-1	3.74E-3	3.75E-2	3.33E-1	3.52E-3	3.53E-2	3.13E-1
XXII	5.67E-1	1.43E+1	2.56E+1	5.60E-1	1.41E+1	2.52E+1	5.55E-1	1.40E+1	2.50E+1	5.41E-1	1.37E+1	2.45E+1	5.29E-1	1.35E+1	2.40E+1	5.22E-1	1.33E+1	2.37E+1
DOE	2.18E+2	1.95E+3	1.83E+4	2.16E+2	1.94E+3	1.82E+4	2.15E+2	1.94E+3	1.82E+4	2.13E+2	1.92E+3	1.81E+4	2.11E+2	1.91E+3	1.79E+4	2.08E+2	1.89E+3	1.77E+4
DOD	1.95E+2	1.22E+1	2.02E-1	1.94E-2	1.21E-1	2.01E-1	1.94E-2	1.21E-1	2.01E-1	1.93E-2	1.21E-1	2.00E-1	1.92E-2	1.20E-1	1.99E-1	1.91E-2	1.19E-1	1.98E-1
NRC	1.94E+0	2.93E+0	1.11E+1	1.94E+0	2.91E+0	1.09E+1	1.93E+0	2.88E+0	1.08E+1	1.91E+0	2.84E+0	1.05E+1	1.88E+0	2.77E+0	1.00E+1	1.85E+0	2.69E+0	9.49E+0
Total	2.20E+2	1.95E+3	1.83E+4	2.18E+2	1.95E+3	1.82E+4	2.17E+2	1.94E+3	1.82E+4	2.15E+2	1.93E+3	1.81E+4	2.13E+2	1.91E+3	1.79E+4	2.10E+2	1.89E+3	1.77E+4

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 TABLE K-53. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.49E-1	2.76E-1	2.76E-1	2.45E-1	2.71E-1	2.71E-1	2.31E-1	2.56E-1	2.56E-1	1.86E-1	2.05E-1	2.05E-1	8.31E-2	9.20E-2	9.20E-2
II	3.23E+1	3.18E+2	2.75E+3	3.23E+1	3.18E+2	2.75E+3	3.23E+1	3.17E+2	2.74E+3	3.23E+1	3.17E+2	2.71E+3	3.18E+1	3.11E+2	2.62E+3
III	1.05E-1	1.17E-1	1.17E-1	1.05E-1	1.16E-1	1.16E-1	9.77E-2	1.09E-1	1.09E-1	5.18E-2	5.75E-2	5.75E-2	.00E+0	.00E+0	.00E+0
IV	1.94E-1	1.35E+0	3.04E+0	1.92E-1	1.34E+0	3.01E+0	1.83E-1	1.28E+0	2.87E+0	1.44E-1	1.01E+0	2.26E+0	.00E+0	.00E+0	.00E+0
V	6.50E+0	7.16E+0	7.16E+0	6.49E+0	7.15E+0	7.15E+0	6.42E+0	7.07E+0	7.07E+0	5.87E+0	6.47E+0	6.47E+0	3.85E+0	4.24E+0	4.24E+0
VI	4.35E+0	3.84E+1	4.33E+2	4.34E+0	3.84E+1	4.33E+2	4.34E+0	3.84E+1	4.33E+2	4.30E+0	3.82E+1	4.30E+2	3.94E+0	3.55E+1	4.01E+2
VII	2.13E+0	1.52E+1	1.01E+2	1.78E+0	1.24E+1	8.21E+1	1.31E+0	9.01E+0	5.95E+1	3.38E-2	2.33E-1	1.54E+0	.00E+0	.00E+0	.00E+0
IX	7.73E-3	6.21E-2	3.80E-1	5.62E-3	4.51E-2	2.76E-1	1.93E-3	1.55E-2	9.48E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.02E+0	3.21E+0	3.57E+0	1.02E+0	3.21E+0	3.56E+0	1.02E+0	3.13E+0	3.47E+0	9.92E-1	2.36E+0	2.58E+0	8.69E-1	1.43E+0	1.52E+0
XII	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.70E-1	1.63E-2	1.01E-1	1.68E-1	1.53E-2	9.58E-2	1.59E-1
XIIIA	1.03E-4	7.86E-4	2.14E-3	7.41E-5	5.63E-4	1.53E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	9.84E-5	5.61E-4	9.16E-4	7.05E-5	4.02E-4	6.57E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	8.96E-5	3.14E-4	6.41E-3	6.42E-5	2.25E-4	4.60E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4	3.57E-4	3.91E-4	3.91E-4	3.32E-4	3.65E-4	3.65E-4
XVIB	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.56E-4	3.88E-4	3.88E-4	3.32E-4	3.62E-4	3.62E-4
XVIC	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.87E-4	3.87E-4	3.53E-4	3.84E-4	3.84E-4	3.29E-4	3.59E-4	3.59E-4
XVIIIA	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2	2.45E-2	2.64E-2	2.64E-2	2.14E-2	2.31E-2	2.31E-2
XVIIIB	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.24E-2	2.36E-2	2.36E-2	1.95E-2	2.07E-2	2.07E-2
XVIIIC	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.87E-2	1.93E-2	1.93E-2	1.63E-2	1.68E-2	1.68E-2
XXA	1.19E-2	9.68E-2	8.13E-1	7.52E-3	6.72E-2	5.64E-1	1.57E-3	2.18E-2	1.83E-1	3.73E-4	3.34E-3	2.81E-2	.00E+0	6.44E-4	5.43E-3
XXB	1.15E-2	6.91E-2	3.42E-1	7.23E-3	4.36E-2	2.15E-1	1.51E-3	9.09E-3	4.50E-2	3.59E-4	2.16E-3	1.07E-2	.00E+0	.00E+0	.00E+0
XXC	1.05E-2	3.91E-2	9.07E-1	6.63E-3	2.46E-2	5.72E-1	1.38E-3	5.14E-3	1.19E-1	3.29E-4	1.22E-3	2.84E-2	.00E+0	.00E+0	.00E+0
XXIA	2.79E-3	2.83E-2	2.75E-1	2.79E-3	2.83E-2	2.75E-1	2.78E-3	2.82E-2	2.75E-1	2.71E-3	2.75E-2	2.68E-1	1.84E-3	1.87E-2	1.82E-1
XXIB	2.77E-3	2.81E-2	2.64E-1	2.77E-3	2.81E-2	2.64E-1	2.77E-3	2.81E-2	2.64E-1	2.69E-3	2.73E-2	2.57E-1	1.83E-3	1.86E-2	1.75E-1
XXIC	2.75E-3	2.75E-2	2.44E-1	2.75E-3	2.75E-2	2.44E-1	2.75E-3	2.75E-2	2.44E-1	2.67E-3	2.68E-2	2.38E-1	1.82E-3	1.82E-2	1.61E-1
XXII	4.20E-1	9.29E+0	1.74E+1	4.20E-1	9.29E+0	1.74E+1	4.19E-1	9.28E+0	1.73E+1	4.06E-1	9.02E+0	1.69E+1	2.97E-1	6.82E+0	1.28E+1
DOE	1.44E+2	1.28E+3	1.28E+4	1.44E+2	1.28E+3	1.28E+4	1.43E+2	1.27E+3	1.28E+4	1.40E+2	1.26E+3	1.26E+4	1.28E+2	1.17E+3	1.18E+4
DOD	1.73E-2	1.08E-1	1.97E-1	1.71E-2	1.06E-1	1.90E-1	1.65E-2	1.03E-1	1.70E-1	1.63E-2	1.01E-1	1.68E-1	1.53E-2	9.58E-2	1.59E-1
NRC	1.65E+0	3.09E+0	1.69E+1	1.59E+0	2.76E+0	1.36E+1	1.51E+0	2.30E+0	8.88E+0	1.48E+0	2.13E+0	7.41E+0	1.28E+0	1.73E+0	5.14E+0
Total	1.46E+2	1.28E+3	1.28E+4	1.45E+2	1.28E+3	1.28E+4	1.45E+2	1.28E+3	1.28E+4	1.42E+2	1.26E+3	1.26E+4	1.30E+2	1.17E+3	1.18E+4

Low Population Density With Agriculture - 09-13-94 4:09p
 TABLE K-54. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.31E-1	2.56E-1	2.56E-1	2.22E-1	2.46E-1	2.46E-1	2.14E-1	2.37E-1	2.37E-1	2.03E-1	2.25E-1	2.25E-1	1.95E-1	2.16E-1	2.16E-1	1.86E-1	2.05E-1	2.05E-1
II	3.23E+1	3.17E+2	2.74E+3	3.23E+1	3.17E+2	2.74E+3	3.23E+1	3.17E+2	2.74E+3	3.23E+1	3.17E+2	2.72E+3	3.23E+1	3.17E+2	2.72E+3	3.23E+1	3.17E+2	2.71E+3
III	9.77E-2	1.09E-1	1.09E-1	8.52E-2	9.46E-2	9.46E-2	7.75E-2	8.61E-2	8.61E-2	7.09E-2	7.88E-2	7.88E-2	6.33E-2	7.03E-2	7.03E-2	5.18E-2	5.75E-2	5.75E-2
IV	1.83E-1	1.28E+0	2.87E+0	1.78E-1	1.24E+0	2.80E+0	1.74E-1	1.22E+0	2.73E+0	1.65E-1	1.16E+0	2.60E+0	1.57E-1	1.10E+0	2.46E+0	1.44E-1	1.01E+0	2.26E+0
V	6.42E+0	7.07E+0	7.07E+0	6.34E+0	6.99E+0	6.99E+0	6.27E+0	6.91E+0	6.91E+0	6.16E+0	6.78E+0	6.78E+0	6.04E+0	6.66E+0	6.66E+0	5.87E+0	6.47E+0	6.47E+0
VI	4.34E+0	3.84E+1	4.33E+2	4.34E+0	3.84E+1	4.32E+2	4.33E+0	3.84E+1	4.32E+2	4.33E+0	3.83E+1	4.32E+2	4.32E+0	3.83E+1	4.31E+2	4.30E+0	3.82E+1	4.30E+2
VII	1.31E+0	9.01E+0	5.95E+1	8.58E-1	5.96E+0	3.93E+1	6.00E-1	4.20E+0	2.78E+1	3.61E-1	2.56E+0	1.70E+1	2.04E-1	1.45E+0	9.60E+0	3.38E-2	2.33E-1	1.54E+0
IX	1.93E-3	1.55E-2	9.48E-2	9.22E-4	7.40E-3	4.53E-2	5.45E-4	4.38E-3	2.68E-2	1.92E-4	1.55E-3	9.46E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.02E+0	3.13E+0	3.47E+0	1.01E+0	3.00E+0	3.32E+0	1.01E+0	2.88E+0	3.18E+0	1.00E+0	2.66E+0	2.93E+0	9.99E-1	2.51E+0	2.75E+0	9.92E-1	2.36E+0	2.58E+0
XII	1.65E-2	1.03E-1	1.70E-1	1.64E-2	1.03E-1	1.70E-1	1.64E-2	1.02E-1	1.70E-1	1.63E-2	1.02E-1	1.69E-1	1.63E-2	1.02E-1	1.69E-1	1.63E-2	1.01E-1	1.68E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4	3.58E-4	3.93E-4	3.93E-4	3.58E-4	3.92E-4	3.92E-4	3.57E-4	3.92E-4	3.92E-4	3.57E-4	3.91E-4	3.91E-4
XVIB	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.57E-4	3.89E-4	3.89E-4	3.57E-4	3.88E-4	3.88E-4	3.56E-4	3.88E-4	3.88E-4
XVIC	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.86E-4	3.86E-4	3.54E-4	3.86E-4	3.86E-4	3.54E-4	3.86E-4	3.86E-4	3.53E-4	3.85E-4	3.85E-4	3.53E-4	3.84E-4	3.84E-4
XVIIIA	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2	2.46E-2	2.65E-2	2.65E-2	2.46E-2	2.65E-2	2.65E-2	2.45E-2	2.64E-2	2.64E-2
XVIIIB	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.37E-2	2.37E-2	2.24E-2	2.37E-2	2.37E-2	2.24E-2	2.36E-2	2.36E-2
XVIIIC	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.87E-2	1.93E-2	1.93E-2	1.87E-2	1.93E-2	1.93E-2	1.87E-2	1.93E-2	1.93E-2
XXA	1.57E-3	2.18E-2	1.83E-1	5.28E-4	6.62E-3	5.56E-2	4.92E-4	4.25E-3	3.58E-2	4.43E-4	3.88E-3	3.26E-2	4.10E-4	3.63E-3	3.05E-2	3.73E-4	3.34E-3	2.81E-2
XXB	1.51E-3	9.09E-3	4.50E-2	5.08E-4	3.06E-3	1.51E-2	4.73E-4	2.85E-3	1.41E-2	4.27E-4	2.57E-3	1.27E-2	3.95E-4	2.38E-3	1.18E-2	3.59E-4	2.16E-3	1.07E-2
XXC	1.38E-3	5.14E-3	1.19E-1	4.65E-4	1.73E-3	4.02E-2	4.34E-4	1.61E-3	3.74E-2	3.91E-4	1.45E-3	3.37E-2	3.61E-4	1.34E-3	3.12E-2	3.29E-4	1.22E-3	2.84E-2
XXIA	2.78E-3	2.82E-2	2.75E-1	2.78E-3	2.82E-2	2.74E-1	2.77E-3	2.81E-2	2.74E-1	2.75E-3	2.79E-2	2.72E-1	2.74E-3	2.77E-2	2.70E-1	2.71E-3	2.75E-2	2.68E-1
XXIB	2.77E-3	2.81E-2	2.64E-1	2.76E-3	2.80E-2	2.63E-1	2.75E-3	2.79E-2	2.63E-1	2.73E-3	2.77E-2	2.61E-1	2.72E-3	2.76E-2	2.59E-1	2.69E-3	2.73E-2	2.57E-1
XXIC	2.75E-3	2.75E-2	2.44E-1	2.74E-3	2.74E-2	2.43E-1	2.73E-3	2.74E-2	2.43E-1	2.71E-3	2.72E-2	2.41E-1	2.70E-3	2.70E-2	2.40E-1	2.67E-3	2.68E-2	2.38E-1
XXII	4.19E-1	9.28E+0	1.73E+1	4.17E-1	9.26E+0	1.73E+1	4.15E-1	9.23E+0	1.72E+1	4.11E-1	9.14E+0	1.71E+1	4.09E-1	9.08E+0	1.70E+1	4.06E-1	9.02E+0	1.69E+1
DOE	1.43E+2	1.27E+3	1.28E+4	1.42E+2	1.27E+3	1.27E+4	1.42E+2	1.27E+3	1.27E+4	1.41E+2	1.26E+3	1.27E+4	1.41E+2	1.26E+3	1.26E+4	1.40E+2	1.26E+3	1.26E+4
DOD	1.65E-2	1.03E-1	1.70E-1	1.64E-2	1.03E-1	1.70E-1	1.64E-2	1.02E-1	1.70E-1	1.63E-2	1.02E-1	1.69E-1	1.63E-2	1.02E-1	1.69E-1	1.63E-2	1.01E-1	1.68E-1
NRC	1.51E+0	2.30E+0	8.88E+0	1.50E+0	2.18E+0	7.76E+0	1.50E+0	2.16E+0	7.63E+0	1.49E+0	2.16E+0	7.56E+0	1.49E+0	2.15E+0	7.49E+0	1.48E+0	2.13E+0	7.41E+0
Total	1.45E+2	1.28E+3	1.28E+4	1.44E+2	1.27E+3	1.27E+4	1.43E+2	1.27E+3	1.27E+4	1.43E+2	1.27E+3	1.27E+4	1.42E+2	1.26E+3	1.27E+4	1.42E+2	1.26E+3	1.26E+4

Low Population Density With Agriculture - 09-13-94 4:09p
 TABLE K-55. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.47E-1	2.74E-1	2.74E-1	2.39E-1	2.65E-1	2.65E-1	2.11E-1	2.34E-1	2.34E-1	1.42E-1	1.57E-1	1.57E-1	3.62E-2	4.00E-2	4.00E-2
II	3.23E+1	3.18E+2	2.75E+3	3.23E+1	3.18E+2	2.74E+3	3.23E+1	3.17E+2	2.73E+3	3.22E+1	3.15E+2	2.69E+3	2.73E+1	2.68E+2	2.21E+3
III	1.05E-1	1.16E-1	1.16E-1	1.04E-1	1.15E-1	1.15E-1	7.63E-2	8.48E-2	8.48E-2	1.22E-2	1.36E-2	1.36E-2	.00E+0	.00E+0	.00E+0
IV	1.93E-1	1.35E+0	3.03E+0	1.88E-1	1.31E+0	2.95E+0	1.71E-1	1.20E+0	2.69E+0	3.07E-2	2.14E-1	4.82E-1	.00E+0	.00E+0	.00E+0
V	6.49E+0	7.16E+0	7.16E+0	6.47E+0	7.13E+0	7.13E+0	6.25E+0	6.88E+0	6.88E+0	4.83E+0	5.32E+0	5.32E+0	1.36E+0	1.50E+0	1.50E+0
VI	4.35E+0	3.84E+1	4.33E+2	4.34E+0	3.84E+1	4.33E+2	4.33E+0	3.84E+1	4.32E+2	4.16E+0	3.72E+1	4.19E+2	3.09E+0	2.83E+1	3.21E+2
VII	1.95E+0	1.38E+1	9.16E+1	1.64E+0	1.13E+1	7.49E+1	5.14E-1	3.62E+0	2.39E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	6.69E-3	5.37E-2	3.29E-1	3.48E-3	2.80E-2	1.71E-1	3.61E-4	2.90E-3	1.78E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.02E+0	3.21E+0	3.57E+0	1.02E+0	3.21E+0	3.56E+0	1.01E+0	2.93E+0	3.24E+0	9.61E-1	1.98E+0	2.14E+0	7.71E-1	1.09E+0	1.14E+0
XII	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.70E-1	1.63E-2	1.02E-1	1.69E-1	1.59E-2	9.96E-2	1.65E-1	5.14E-3	3.21E-2	5.31E-2
XIIIA	9.38E-5	7.13E-4	1.94E-3	3.59E-5	2.73E-4	7.43E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	8.92E-5	5.09E-4	8.31E-4	3.42E-5	1.95E-4	3.18E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	8.13E-5	2.85E-4	5.82E-3	3.11E-5	1.09E-4	2.23E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4	3.58E-4	3.93E-4	3.93E-4	3.52E-4	3.86E-4	3.86E-4	2.09E-4	2.30E-4	2.30E-4
XVIB	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.51E-4	3.83E-4	3.83E-4	2.09E-4	2.28E-4	2.28E-4
XVIC	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.87E-4	3.87E-4	3.54E-4	3.86E-4	3.86E-4	3.48E-4	3.79E-4	3.79E-4	2.06E-4	2.26E-4	2.26E-4
XVIIIA	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2	2.46E-2	2.66E-2	2.66E-2	2.36E-2	2.55E-2	2.55E-2	1.62E-2	1.75E-2	1.75E-2
XVIIIB	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.16E-2	2.28E-2	2.28E-2	1.48E-2	1.56E-2	1.56E-2
XVIIIC	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.80E-2	1.86E-2	1.86E-2	1.23E-2	1.27E-2	1.27E-2
XXA	9.03E-3	8.15E-2	6.85E-1	3.93E-3	4.36E-2	3.66E-1	4.49E-4	4.05E-3	3.40E-2	1.70E-4	2.14E-3	1.80E-2	.00E+0	.00E+0	.00E+0
XXB	8.69E-3	5.66E-2	2.80E-1	3.78E-3	2.85E-2	1.41E-1	4.32E-4	2.81E-3	1.39E-2	1.63E-4	1.40E-3	6.93E-3	.00E+0	.00E+0	.00E+0
XXC	7.96E-3	2.96E-2	6.87E-1	3.46E-3	1.29E-2	2.99E-1	3.96E-4	1.47E-3	3.42E-2	1.50E-4	5.56E-4	1.29E-2	.00E+0	.00E+0	.00E+0
XXIA	2.79E-3	2.83E-2	2.75E-1	2.79E-3	2.83E-2	2.75E-1	2.76E-3	2.80E-2	2.73E-1	2.38E-3	2.41E-2	2.35E-1	8.49E-4	8.62E-3	8.39E-2
XXIB	2.77E-3	2.81E-2	2.64E-1	2.77E-3	2.81E-2	2.64E-1	2.75E-3	2.79E-2	2.62E-1	2.36E-3	2.40E-2	2.25E-1	8.44E-4	8.56E-3	8.06E-2
XXIC	2.75E-3	2.75E-2	2.44E-1	2.75E-3	2.75E-2	2.44E-1	2.73E-3	2.73E-2	2.42E-1	2.34E-3	2.35E-2	2.08E-1	8.38E-4	8.39E-3	7.44E-2
XXII	4.20E-1	9.29E+0	1.74E+1	4.20E-1	9.29E+0	1.74E+1	4.14E-1	9.22E+0	1.72E+1	3.81E-1	8.57E+0	1.59E+1	.00E+0	.00E+0	.00E+0
DOE	1.44E+2	1.28E+3	1.28E+4	1.44E+2	1.28E+3	1.28E+4	1.42E+2	1.27E+3	1.27E+4	1.35E+2	1.23E+3	1.23E+4	9.97E+1	9.13E+2	9.49E+3
DOD	1.72E-2	1.07E-1	1.95E-1	1.68E-2	1.04E-1	1.80E-1	1.63E-2	1.02E-1	1.69E-1	1.59E-2	9.96E-2	1.65E-1	5.14E-3	3.21E-2	5.31E-2
NRC	1.61E+0	2.91E+0	1.50E+1	1.54E+0	2.53E+0	1.10E+1	1.49E+0	2.16E+0	7.60E+0	1.42E+0	1.99E+0	6.53E+0	9.54E-1	1.18E+0	2.74E+0
Total	1.46E+2	1.28E+3	1.28E+4	1.45E+2	1.28E+3	1.28E+4	1.43E+2	1.27E+3	1.27E+4	1.37E+2	1.23E+3	1.23E+4	1.01E+2	9.15E+2	9.50E+3

Low Population Density With Agriculture - 09-13-94 4:09p
 TABLE K-56. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.11E-1	2.34E-1	2.34E-1	1.96E-1	2.17E-1	2.17E-1	1.85E-1	2.05E-1	2.05E-1	1.70E-1	1.89E-1	1.89E-1	1.61E-1	1.78E-1	1.78E-1	1.42E-1	1.57E-1	1.57E-1
II	3.23E+1	3.17E+2	2.73E+3	3.23E+1	3.17E+2	2.72E+3	3.23E+1	3.17E+2	2.71E+3	3.22E+1	3.16E+2	2.71E+3	3.22E+1	3.16E+2	2.70E+3	3.22E+1	3.15E+2	2.69E+3
III	7.63E-2	8.48E-2	8.48E-2	6.40E-2	7.11E-2	7.11E-2	5.10E-2	5.66E-2	5.66E-2	3.00E-2	3.34E-2	3.34E-2	1.74E-2	1.93E-2	1.93E-2	1.22E-2	1.36E-2	1.36E-2
IV	1.71E-1	1.20E+0	2.69E+0	1.55E-1	1.09E+0	2.44E+0	1.40E-1	9.77E-1	2.20E+0	1.09E-1	7.59E-1	1.71E+0	7.74E-2	5.41E-1	1.22E+0	3.07E-2	2.14E-1	4.82E-1
V	6.25E+0	6.88E+0	6.88E+0	6.05E+0	6.67E+0	6.67E+0	5.86E+0	6.46E+0	6.46E+0	5.47E+0	6.03E+0	6.03E+0	5.09E+0	5.60E+0	5.60E+0	4.83E+0	5.32E+0	5.32E+0
VI	4.33E+0	3.84E+1	4.32E+2	4.32E+0	3.83E+1	4.31E+2	4.30E+0	3.82E+1	4.30E+2	4.27E+0	3.79E+1	4.28E+2	4.23E+0	3.76E+1	4.24E+2	4.16E+0	3.72E+1	4.19E+2
VII	5.14E-1	3.62E+0	2.39E+1	1.81E-1	1.28E+0	8.52E+0	1.81E-2	1.22E-1	8.06E-1	1.86E-3	1.09E-2	7.00E-2	5.47E-4	3.05E-3	1.94E-2	.00E+0	.00E+0	.00E+0
IX	3.61E-4	2.90E-3	1.78E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.01E+0	2.93E+0	3.24E+0	1.00E+0	2.64E+0	2.90E+0	9.96E-1	2.46E+0	2.69E+0	9.85E-1	2.25E+0	2.45E+0	9.74E-1	2.12E+0	2.31E+0	9.61E-1	1.98E+0	2.14E+0
XII	1.63E-2	1.02E-1	1.69E-1	1.62E-2	1.01E-1	1.68E-1	1.62E-2	1.01E-1	1.68E-1	1.61E-2	1.01E-1	1.67E-1	1.61E-2	1.00E-1	1.66E-1	1.59E-2	9.96E-2	1.65E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.58E-4	3.93E-4	3.93E-4	3.57E-4	3.92E-4	3.92E-4	3.57E-4	3.91E-4	3.91E-4	3.56E-4	3.90E-4	3.90E-4	3.54E-4	3.89E-4	3.89E-4	3.52E-4	3.86E-4	3.86E-4
XVIB	3.58E-4	3.90E-4	3.90E-4	3.57E-4	3.89E-4	3.89E-4	3.56E-4	3.88E-4	3.88E-4	3.55E-4	3.87E-4	3.87E-4	3.54E-4	3.86E-4	3.86E-4	3.51E-4	3.83E-4	3.83E-4
XVIC	3.54E-4	3.86E-4	3.86E-4	3.53E-4	3.85E-4	3.85E-4	3.53E-4	3.84E-4	3.84E-4	3.52E-4	3.83E-4	3.83E-4	3.51E-4	3.82E-4	3.82E-4	3.48E-4	3.79E-4	3.79E-4
XVIIIA	2.46E-2	2.66E-2	2.66E-2	2.46E-2	2.65E-2	2.65E-2	2.45E-2	2.64E-2	2.64E-2	2.42E-2	2.61E-2	2.61E-2	2.40E-2	2.59E-2	2.59E-2	2.36E-2	2.55E-2	2.55E-2
XVIIIB	2.25E-2	2.38E-2	2.38E-2	2.24E-2	2.37E-2	2.37E-2	2.23E-2	2.36E-2	2.36E-2	2.21E-2	2.34E-2	2.34E-2	2.19E-2	2.31E-2	2.31E-2	2.16E-2	2.28E-2	2.28E-2
XVIIIC	1.88E-2	1.94E-2	1.94E-2	1.87E-2	1.93E-2	1.93E-2	1.86E-2	1.92E-2	1.92E-2	1.84E-2	1.90E-2	1.90E-2	1.83E-2	1.88E-2	1.88E-2	1.80E-2	1.86E-2	1.86E-2
XXA	4.49E-4	4.05E-3	3.40E-2	3.80E-4	3.52E-3	2.96E-2	3.36E-4	3.19E-3	2.68E-2	2.81E-4	2.75E-3	2.31E-2	2.37E-4	2.45E-3	2.06E-2	1.70E-4	2.14E-3	1.80E-2
XXB	4.32E-4	2.81E-3	1.39E-2	3.65E-4	2.42E-3	1.20E-2	3.23E-4	2.18E-3	1.08E-2	2.71E-4	1.86E-3	9.21E-3	2.28E-4	1.66E-3	8.21E-3	1.63E-4	1.40E-3	6.93E-3
XXC	3.96E-4	1.47E-3	3.42E-2	3.35E-4	1.24E-3	2.89E-2	2.96E-4	1.10E-3	2.56E-2	2.48E-4	9.21E-4	2.14E-2	2.09E-4	7.76E-4	1.80E-2	1.50E-4	5.56E-4	1.29E-2
XXIA	2.76E-3	2.80E-2	2.73E-1	2.74E-3	2.78E-2	2.70E-1	2.71E-3	2.75E-2	2.68E-1	2.64E-3	2.68E-2	2.61E-1	2.53E-3	2.56E-2	2.50E-1	2.38E-3	2.41E-2	2.35E-1
XXIB	2.75E-3	2.79E-2	2.62E-1	2.72E-3	2.76E-2	2.60E-1	2.69E-3	2.73E-2	2.57E-1	2.62E-3	2.66E-2	2.51E-1	2.51E-3	2.55E-2	2.40E-1	2.36E-3	2.40E-2	2.25E-1
XXIC	2.73E-3	2.73E-2	2.42E-1	2.70E-3	2.70E-2	2.40E-1	2.67E-3	2.68E-2	2.37E-1	2.61E-3	2.61E-2	2.31E-1	2.49E-3	2.50E-2	2.21E-1	2.34E-3	2.35E-2	2.08E-1
XXII	4.14E-1	9.22E+0	1.72E+1	4.09E-1	9.09E+0	1.70E+1	4.06E-1	9.02E+0	1.69E+1	3.95E-1	8.83E+0	1.65E+1	3.87E-1	8.68E+0	1.62E+1	3.81E-1	8.57E+0	1.59E+1
DOE	1.42E+2	1.27E+3	1.27E+4	1.41E+2	1.26E+3	1.26E+4	1.40E+2	1.26E+3	1.26E+4	1.39E+2	1.25E+3	1.25E+4	1.37E+2	1.24E+3	1.25E+4	1.35E+2	1.23E+3	1.23E+4
DOD	1.63E-2	1.02E-1	1.69E-1	1.62E-2	1.01E-1	1.68E-1	1.62E-2	1.01E-1	1.68E-1	1.61E-2	1.01E-1	1.67E-1	1.61E-2	1.00E-1	1.66E-1	1.59E-2	9.96E-2	1.65E-1
NRC	1.49E+0	2.16E+0	7.60E+0	1.49E+0	2.15E+0	7.48E+0	1.48E+0	2.13E+0	7.38E+0	1.47E+0	2.10E+0	7.19E+0	1.45E+0	2.05E+0	6.90E+0	1.42E+0	1.99E+0	6.53E+0
Total	1.43E+2	1.27E+3	1.27E+4	1.42E+2	1.26E+3	1.27E+4	1.42E+2	1.26E+3	1.26E+4	1.40E+2	1.25E+3	1.25E+4	1.39E+2	1.24E+3	1.25E+4	1.37E+2	1.23E+3	1.23E+4

Medium Population Density With Agriculture - 09-13-94 4:04p
 TABLE K-57. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.63E+3	2.86E+3	2.86E+3	2.59E+3	2.81E+3	2.81E+3	2.45E+3	2.66E+3	2.66E+3	1.96E+3	2.13E+3	2.13E+3	8.79E+2	9.54E+2	9.54E+2
II	3.18E+5	6.74E+6	2.67E+7	3.18E+5	6.74E+6	2.67E+7	3.18E+5	6.74E+6	2.67E+7	3.17E+5	6.73E+6	2.64E+7	3.13E+5	6.63E+6	2.55E+7
III	1.13E+3	1.26E+3	1.26E+3	1.13E+3	1.26E+3	1.26E+3	1.06E+3	1.17E+3	1.17E+3	5.60E+2	6.23E+2	6.23E+2	.00E+0	.00E+0	.00E+0
IV	1.77E+3	1.13E+4	3.07E+4	1.75E+3	1.12E+4	3.04E+4	1.67E+3	1.07E+4	2.90E+4	1.32E+3	8.41E+3	2.28E+4	.00E+0	.00E+0	.00E+0
V	6.81E+4	7.41E+4	7.41E+4	6.80E+4	7.40E+4	7.40E+4	6.73E+4	7.32E+4	7.32E+4	6.16E+4	6.70E+4	6.70E+4	4.04E+4	4.39E+4	4.39E+4
VI	4.61E+4	3.84E+5	4.02E+6	4.61E+4	3.84E+5	4.02E+6	4.61E+4	3.84E+5	4.02E+6	4.57E+4	3.82E+5	4.00E+6	4.18E+4	3.56E+5	3.73E+6
VII	1.07E+5	9.24E+5	7.18E+6	8.71E+4	7.51E+5	5.83E+6	6.32E+4	5.44E+5	4.22E+6	1.63E+3	1.40E+4	1.09E+5	.00E+0	.00E+0	.00E+0
IX	4.74E+2	4.14E+3	2.62E+4	3.45E+2	3.01E+3	1.90E+4	1.18E+2	1.03E+3	6.53E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.54E+3	1.88E+4	2.19E+4	1.54E+3	1.88E+4	2.19E+4	1.52E+3	1.82E+4	2.11E+4	1.46E+3	1.22E+4	1.41E+4	1.25E+3	5.66E+3	6.44E+3
XII	3.16E+2	1.83E+3	2.95E+3	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.12E+2	1.80E+3	2.90E+3	2.94E+2	1.70E+3	2.74E+3
XIIIA	8.94E-1	6.00E+0	1.68E+1	6.41E-1	4.30E+0	1.21E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	8.23E-1	4.11E+0	7.39E+0	5.90E-1	2.94E+0	5.29E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	7.12E-1	2.27E+0	4.46E+1	5.11E-1	1.63E+0	3.20E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	4.27E+0	4.53E+0	4.53E+0	4.27E+0	4.53E+0	4.53E+0	4.27E+0	4.52E+0	4.52E+0	4.23E+0	4.48E+0	4.48E+0	3.77E+0	4.01E+0	4.01E+0
XVIB	4.23E+0	4.47E+0	4.47E+0	4.23E+0	4.47E+0	4.47E+0	4.22E+0	4.47E+0	4.47E+0	4.19E+0	4.43E+0	4.43E+0	3.73E+0	3.96E+0	3.96E+0
XVIC	4.14E+0	4.36E+0	4.36E+0	4.14E+0	4.36E+0	4.36E+0	4.13E+0	4.35E+0	4.35E+0	4.10E+0	4.31E+0	4.31E+0	3.65E+0	3.86E+0	3.86E+0
XVIIIA	8.69E+1	9.37E+1	9.37E+1	8.69E+1	9.37E+1	9.37E+1	8.69E+1	9.37E+1	9.37E+1	8.63E+1	9.31E+1	9.31E+1	7.55E+1	8.14E+1	8.14E+1
XVIIIB	7.97E+1	8.47E+1	8.47E+1	7.97E+1	8.47E+1	8.47E+1	7.97E+1	8.46E+1	8.46E+1	7.91E+1	8.41E+1	8.41E+1	6.92E+1	7.35E+1	7.35E+1
XVIIIC	6.77E+1	7.03E+1	7.03E+1	6.77E+1	7.03E+1	7.03E+1	6.77E+1	7.03E+1	7.03E+1	6.72E+1	6.98E+1	6.98E+1	5.88E+1	6.11E+1	6.11E+1
XXA	1.10E+2	8.79E+2	8.33E+3	6.91E+1	6.09E+2	5.77E+3	1.44E+1	1.98E+2	1.87E+3	3.43E+0	3.03E+1	2.88E+2	.00E+0	5.85E+0	5.56E+1
XXB	1.05E+2	6.27E+2	3.82E+3	6.61E+1	3.95E+2	2.41E+3	1.38E+1	8.25E+1	5.03E+2	3.28E+0	1.96E+1	1.20E+2	.00E+0	.00E+0	.00E+0
XXC	9.56E+1	3.55E+2	8.58E+3	6.03E+1	2.24E+2	5.41E+3	1.26E+1	4.67E+1	1.13E+3	2.99E+0	1.11E+1	2.69E+2	.00E+0	.00E+0	.00E+0
XXIA	4.53E+1	4.65E+2	4.44E+3	4.53E+1	4.65E+2	4.44E+3	4.53E+1	4.64E+2	4.44E+3	4.41E+1	4.52E+2	4.32E+3	2.99E+1	3.07E+2	2.94E+3
XXIB	4.49E+1	4.59E+2	4.15E+3	4.49E+1	4.59E+2	4.15E+3	4.49E+1	4.59E+2	4.14E+3	4.37E+1	4.47E+2	4.04E+3	2.97E+1	3.04E+2	2.74E+3
XXIC	4.46E+1	4.46E+2	3.60E+3	4.46E+1	4.46E+2	3.60E+3	4.45E+1	4.46E+2	3.60E+3	4.33E+1	4.34E+2	3.50E+3	2.95E+1	2.95E+2	2.38E+3
XXII	4.77E+3	9.42E+4	1.64E+5	4.77E+3	9.42E+4	1.64E+5	4.75E+3	9.40E+4	1.64E+5	4.61E+3	9.14E+4	1.59E+5	3.36E+3	6.95E+4	1.21E+5
DOE	1.58E+6	1.72E+7	1.27E+8	1.56E+6	1.70E+7	1.25E+8	1.53E+6	1.68E+7	1.24E+8	1.45E+6	1.61E+7	1.19E+8	1.33E+6	1.52E+7	1.11E+8
DOD	3.23E+2	1.86E+3	3.14E+3	3.21E+2	1.85E+3	3.08E+3	3.16E+2	1.82E+3	2.94E+3	3.12E+2	1.80E+3	2.90E+3	2.94E+2	1.70E+3	2.74E+3
NRC	7.88E+3	2.45E+4	1.92E+5	7.35E+3	2.16E+4	1.59E+5	6.62E+3	1.73E+4	1.11E+5	6.41E+3	1.58E+4	9.58E+4	5.39E+3	1.17E+4	6.44E+4
Total	1.59E+6	1.72E+7	1.27E+8	1.57E+6	1.70E+7	1.25E+8	1.54E+6	1.68E+7	1.24E+8	1.46E+6	1.62E+7	1.19E+8	1.33E+6	1.52E+7	1.11E+8

Medium Population Density With Agriculture - 09-13-94 4:04p
 TABLE K-58. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.45E+3	2.66E+3	2.66E+3	2.35E+3	2.55E+3	2.55E+3	2.26E+3	2.46E+3	2.46E+3	2.15E+3	2.33E+3	2.33E+3	2.06E+3	2.24E+3	2.24E+3	1.96E+3	2.13E+3	2.13E+3
II	3.18E+5	6.74E+6	2.67E+7	3.18E+5	6.74E+6	2.67E+7	3.18E+5	6.74E+6	2.67E+7	3.17E+5	6.73E+6	2.65E+7	3.17E+5	6.73E+6	2.65E+7	3.17E+5	6.73E+6	2.64E+7
III	1.06E+3	1.17E+3	1.17E+3	9.20E+2	1.02E+3	1.02E+3	8.38E+2	9.32E+2	9.32E+2	7.66E+2	8.52E+2	8.52E+2	6.84E+2	7.61E+2	7.61E+2	5.60E+2	6.23E+2	6.23E+2
IV	1.67E+3	1.07E+4	2.90E+4	1.63E+3	1.04E+4	2.82E+4	1.59E+3	1.01E+4	2.76E+4	1.51E+3	9.65E+3	2.62E+4	1.43E+3	9.15E+3	2.49E+4	1.32E+3	8.41E+3	2.28E+4
V	6.73E+4	7.32E+4	7.32E+4	6.65E+4	7.23E+4	7.23E+4	6.57E+4	7.15E+4	7.15E+4	6.46E+4	7.02E+4	7.02E+4	6.34E+4	6.89E+4	6.89E+4	6.16E+4	6.70E+4	6.70E+4
VI	4.61E+4	3.84E+5	4.02E+6	4.60E+4	3.84E+5	4.02E+6	4.60E+4	3.84E+5	4.02E+6	4.59E+4	3.84E+5	4.02E+6	4.58E+4	3.83E+5	4.01E+6	4.57E+4	3.82E+5	4.00E+6
VII	6.32E+4	5.44E+5	4.22E+6	4.18E+4	3.60E+5	2.79E+6	2.94E+4	2.54E+5	1.97E+6	1.80E+4	1.55E+5	1.21E+6	1.01E+4	8.78E+4	6.82E+5	1.63E+3	1.40E+4	1.09E+5
IX	1.18E+2	1.03E+3	6.53E+3	5.65E+1	4.93E+2	3.12E+3	3.34E+1	2.92E+2	1.85E+3	1.18E+1	1.03E+2	6.51E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.52E+3	1.82E+4	2.11E+4	1.51E+3	1.72E+4	1.99E+4	1.50E+3	1.62E+4	1.88E+4	1.48E+3	1.45E+4	1.68E+4	1.47E+3	1.33E+4	1.54E+4	1.46E+3	1.22E+4	1.41E+4
XII	3.16E+2	1.82E+3	2.94E+3	3.15E+2	1.82E+3	2.93E+3	3.15E+2	1.81E+3	2.93E+3	3.14E+2	1.81E+3	2.92E+3	3.13E+2	1.80E+3	2.91E+3	3.12E+2	1.80E+3	2.90E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	4.27E+0	4.52E+0	4.52E+0	4.27E+0	4.52E+0	4.52E+0	4.26E+0	4.52E+0	4.52E+0	4.25E+0	4.50E+0	4.50E+0	4.24E+0	4.49E+0	4.49E+0	4.23E+0	4.48E+0	4.48E+0
XVIB	4.22E+0	4.47E+0	4.47E+0	4.22E+0	4.47E+0	4.47E+0	4.22E+0	4.46E+0	4.46E+0	4.21E+0	4.45E+0	4.45E+0	4.19E+0	4.44E+0	4.44E+0	4.19E+0	4.43E+0	4.43E+0
XVIC	4.13E+0	4.35E+0	4.35E+0	4.13E+0	4.35E+0	4.35E+0	4.13E+0	4.35E+0	4.35E+0	4.12E+0	4.33E+0	4.33E+0	4.11E+0	4.32E+0	4.32E+0	4.10E+0	4.31E+0	4.31E+0
XVIIIA	8.69E+1	9.37E+1	9.37E+1	8.69E+1	9.37E+1	9.37E+1	8.68E+1	9.36E+1	9.36E+1	8.67E+1	9.36E+1	9.36E+1	8.67E+1	9.35E+1	9.35E+1	8.63E+1	9.31E+1	9.31E+1
XVIIIB	7.97E+1	8.46E+1	8.46E+1	7.97E+1	8.46E+1	8.46E+1	7.96E+1	8.46E+1	8.46E+1	7.95E+1	8.45E+1	8.45E+1	7.95E+1	8.44E+1	8.44E+1	7.91E+1	8.41E+1	8.41E+1
XVIIIC	6.77E+1	7.03E+1	7.03E+1	6.77E+1	7.03E+1	7.03E+1	6.76E+1	7.03E+1	7.03E+1	6.76E+1	7.02E+1	7.02E+1	6.75E+1	7.01E+1	7.01E+1	6.72E+1	6.98E+1	6.98E+1
XXA	1.44E+1	1.98E+2	1.87E+3	4.85E+0	6.01E+1	5.70E+2	4.52E+0	3.86E+1	3.66E+2	4.08E+0	3.52E+1	3.34E+2	3.77E+0	3.29E+1	3.12E+2	3.43E+0	3.03E+1	2.88E+2
XXB	1.38E+1	8.25E+1	5.03E+2	4.64E+0	2.78E+1	1.70E+2	4.32E+0	2.59E+1	1.58E+2	3.90E+0	2.33E+1	1.42E+2	3.60E+0	2.16E+1	1.32E+2	3.28E+0	1.96E+1	1.20E+2
XXC	1.26E+1	4.67E+1	1.13E+3	4.23E+0	1.57E+1	3.80E+2	3.94E+0	1.46E+1	3.54E+2	3.55E+0	1.32E+1	3.19E+2	3.29E+0	1.22E+1	2.95E+2	2.99E+0	1.11E+1	2.69E+2
XXIA	4.53E+1	4.64E+2	4.44E+3	4.51E+1	4.63E+2	4.43E+3	4.50E+1	4.62E+2	4.41E+3	4.47E+1	4.59E+2	4.39E+3	4.45E+1	4.56E+2	4.36E+3	4.41E+1	4.52E+2	4.32E+3
XXIB	4.49E+1	4.59E+2	4.14E+3	4.48E+1	4.58E+2	4.13E+3	4.46E+1	4.56E+2	4.12E+3	4.44E+1	4.54E+2	4.10E+3	4.41E+1	4.51E+2	4.07E+3	4.37E+1	4.47E+2	4.04E+3
XXIC	4.45E+1	4.46E+2	3.60E+3	4.44E+1	4.45E+2	3.58E+3	4.43E+1	4.44E+2	3.57E+3	4.40E+1	4.41E+2	3.55E+3	4.37E+1	4.38E+2	3.53E+3	4.33E+1	4.34E+2	3.50E+3
XXII	4.75E+3	9.40E+4	1.64E+5	4.73E+3	9.38E+4	1.63E+5	4.71E+3	9.35E+4	1.63E+5	4.67E+3	9.26E+4	1.62E+5	4.65E+3	9.20E+4	1.61E+5	4.61E+3	9.14E+4	1.59E+5
DOE	1.53E+6	1.68E+7	1.24E+8	1.51E+6	1.66E+7	1.22E+8	1.50E+6	1.65E+7	1.21E+8	1.48E+6	1.63E+7	1.20E+8	1.47E+6	1.62E+7	1.19E+8	1.45E+6	1.61E+7	1.19E+8
DOD	3.16E+2	1.82E+3	2.94E+3	3.15E+2	1.82E+3	2.93E+3	3.15E+2	1.81E+3	2.93E+3	3.14E+2	1.81E+3	2.92E+3	3.13E+2	1.80E+3	2.91E+3	3.12E+2	1.80E+3	2.90E+3
NRC	6.62E+3	1.73E+4	1.11E+5	6.49E+3	1.63E+4	1.00E+5	6.48E+3	1.61E+4	9.87E+3	6.46E+3	1.60E+4	9.77E+3	6.45E+3	1.59E+4	9.69E+3	6.41E+3	1.58E+4	9.58E+3
Total	1.54E+6	1.68E+7	1.24E+8	1.52E+6	1.66E+7	1.22E+8	1.50E+6	1.65E+7	1.21E+8	1.49E+6	1.64E+7	1.20E+8	1.48E+6	1.63E+7	1.19E+8	1.46E+6	1.62E+7	1.19E+8

Medium Population Density With Agriculture - 09-13-94 4:04p
 TABLE K-59. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.62E+3	2.84E+3	2.84E+3	2.53E+3	2.75E+3	2.75E+3	2.24E+3	2.43E+3	2.43E+3	1.50E+3	1.63E+3	1.63E+3	3.83E+2	4.15E+2	4.15E+2
II	3.18E+5	6.74E+6	2.67E+7	3.18E+5	6.74E+6	2.67E+7	3.18E+5	6.74E+6	2.66E+7	3.17E+5	6.71E+6	2.62E+7	2.69E+5	5.72E+6	2.16E+7
III	1.13E+3	1.26E+3	1.26E+3	1.12E+3	1.25E+3	1.25E+3	8.24E+2	9.17E+2	9.17E+2	1.32E+2	1.47E+2	1.47E+2	.00E+0	.00E+0	.00E+0
IV	1.76E+3	1.13E+4	3.06E+4	1.72E+3	1.10E+4	2.98E+4	1.56E+3	9.99E+3	2.71E+4	2.81E+2	1.79E+3	4.86E+3	.00E+0	.00E+0	.00E+0
V	6.81E+4	7.41E+4	7.41E+4	6.78E+4	7.38E+4	7.38E+4	6.55E+4	7.12E+4	7.12E+4	5.06E+4	5.50E+4	5.50E+4	1.42E+4	1.55E+4	1.55E+4
VI	4.61E+4	3.84E+5	4.02E+6	4.61E+4	3.84E+5	4.02E+6	4.60E+4	3.84E+5	4.02E+6	4.42E+4	3.72E+5	3.90E+6	3.28E+4	2.83E+5	2.98E+6
VII	9.68E+4	8.38E+5	6.51E+6	7.95E+4	6.85E+5	5.32E+6	2.53E+4	2.19E+5	1.70E+6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	4.10E+2	3.58E+3	2.26E+4	2.14E+2	1.87E+3	1.18E+4	2.22E+1	1.94E+2	1.22E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.54E+3	1.88E+4	2.19E+4	1.53E+3	1.88E+4	2.18E+4	1.50E+3	1.66E+4	1.93E+4	1.40E+3	9.38E+3	1.08E+4	1.11E+3	3.58E+3	4.02E+3
XII	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.13E+2	1.81E+3	2.92E+3	3.06E+2	1.77E+3	2.85E+3	9.86E+1	5.69E+2	9.18E+2
XIIIA	8.11E-1	5.45E+0	1.53E+1	3.11E-1	2.09E+0	5.85E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	7.47E-1	3.72E+0	6.70E+0	2.86E-1	1.43E+0	2.57E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	6.46E-1	2.06E+0	4.05E+1	2.47E-1	7.88E-1	1.55E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	4.27E+0	4.53E+0	4.53E+0	4.27E+0	4.53E+0	4.53E+0	4.26E+0	4.52E+0	4.52E+0	4.13E+0	4.38E+0	4.38E+0	2.33E+0	2.48E+0	2.48E+0
XVIB	4.23E+0	4.47E+0	4.47E+0	4.23E+0	4.47E+0	4.47E+0	4.22E+0	4.46E+0	4.46E+0	4.09E+0	4.33E+0	4.33E+0	2.30E+0	2.45E+0	2.45E+0
XVIC	4.14E+0	4.36E+0	4.36E+0	4.14E+0	4.36E+0	4.36E+0	4.13E+0	4.35E+0	4.35E+0	4.00E+0	4.22E+0	4.22E+0	2.25E+0	2.38E+0	2.38E+0
XVIIIA	8.69E+1	9.37E+1	9.37E+1	8.69E+1	9.37E+1	9.37E+1	8.68E+1	9.36E+1	9.36E+1	8.32E+1	8.97E+1	8.97E+1	5.71E+1	6.16E+1	6.16E+1
XVIIIB	7.97E+1	8.47E+1	8.47E+1	7.97E+1	8.46E+1	8.46E+1	7.96E+1	8.45E+1	8.45E+1	7.63E+1	8.10E+1	8.10E+1	5.24E+1	5.56E+1	5.56E+1
XVIIIC	6.77E+1	7.03E+1	7.03E+1	6.77E+1	7.03E+1	7.03E+1	6.76E+1	7.02E+1	7.02E+1	6.48E+1	6.73E+1	6.73E+1	4.45E+1	4.62E+1	4.62E+1
XXA	8.30E+1	7.40E+2	7.01E+3	3.61E+1	3.96E+2	3.75E+3	4.13E+0	3.67E+1	3.48E+2	1.56E+0	1.95E+1	1.85E+2	.00E+0	.00E+0	.00E+0
XXB	7.94E+1	5.13E+2	3.13E+3	3.45E+1	2.59E+2	1.58E+3	3.95E+0	2.55E+1	1.56E+2	1.49E+0	1.27E+1	7.75E+1	.00E+0	.00E+0	.00E+0
XXC	7.24E+1	2.69E+2	6.50E+3	3.15E+1	1.17E+2	2.83E+3	3.60E+0	1.34E+1	3.24E+2	1.36E+0	5.06E+0	1.22E+2	.00E+0	.00E+0	.00E+0
XXIA	4.53E+1	4.65E+2	4.44E+3	4.53E+1	4.65E+2	4.44E+3	4.49E+1	4.61E+2	4.41E+3	3.86E+1	3.96E+2	3.79E+3	1.38E+1	1.42E+2	1.35E+3
XXIB	4.49E+1	4.59E+2	4.15E+3	4.49E+1	4.59E+2	4.15E+3	4.46E+1	4.56E+2	4.12E+3	3.83E+1	3.92E+2	3.54E+3	1.37E+1	1.40E+2	1.26E+3
XXIC	4.46E+1	4.46E+2	3.60E+3	4.46E+1	4.46E+2	3.60E+3	4.42E+1	4.43E+2	3.57E+3	3.80E+1	3.81E+2	3.07E+3	1.36E+1	1.36E+2	1.10E+3
XXII	4.77E+3	9.42E+4	1.64E+5	4.77E+3	9.41E+4	1.64E+5	4.70E+3	9.34E+4	1.63E+5	4.33E+3	8.66E+4	1.51E+5	.00E+0	.00E+0	.00E+0
DOE	1.57E+6	1.71E+7	1.26E+8	1.55E+6	1.69E+7	1.25E+8	1.49E+6	1.64E+7	1.21E+8	1.40E+6	1.58E+7	1.16E+8	1.03E+6	1.22E+7	8.92E+7
DOD	3.22E+2	1.86E+3	3.12E+3	3.19E+2	1.84E+3	3.01E+3	3.13E+2	1.81E+3	2.92E+3	3.06E+2	1.77E+3	2.85E+3	9.86E+1	5.69E+2	9.18E+2
NRC	7.53E+3	2.29E+4	1.73E+5	6.91E+3	1.94E+4	1.33E+5	6.47E+3	1.61E+4	9.83E+4	6.08E+3	1.43E+4	8.36E+4	3.82E+3	6.80E+3	3.10E+4
Total	1.58E+6	1.71E+7	1.26E+8	1.56E+6	1.69E+7	1.25E+8	1.50E+6	1.64E+7	1.21E+8	1.41E+6	1.58E+7	1.16E+8	1.03E+6	1.22E+7	8.93E+7

Medium Population Density With Agriculture - 09-13-94 4:04p
 TABLE K-60. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.24E+3	2.43E+3	2.43E+3	2.07E+3	2.25E+3	2.25E+3	1.96E+3	2.12E+3	2.12E+3	1.80E+3	1.96E+3	1.96E+3	1.70E+3	1.85E+3	1.85E+3	1.50E+3	1.63E+3	1.63E+3
II	3.18E+5	6.74E+6	2.66E+7	3.17E+5	6.73E+6	2.65E+7	3.17E+5	6.73E+6	2.64E+7	3.17E+5	6.73E+6	2.64E+7	3.17E+5	6.72E+6	2.63E+7	3.17E+5	6.71E+6	2.62E+7
III	8.24E+2	9.17E+2	9.17E+2	6.92E+2	7.69E+2	7.69E+2	5.51E+2	6.13E+2	6.13E+2	3.25E+2	3.61E+2	3.61E+2	1.88E+2	2.09E+2	2.09E+2	1.32E+2	1.47E+2	1.47E+2
IV	1.56E+3	9.99E+3	2.71E+4	1.42E+3	9.07E+3	2.46E+4	1.28E+3	8.16E+3	2.22E+4	9.94E+2	6.34E+3	1.72E+4	7.09E+2	4.52E+3	1.23E+4	2.81E+2	1.79E+3	4.86E+3
V	6.55E+4	7.12E+4	7.12E+4	6.35E+4	6.90E+4	6.90E+4	6.14E+4	6.68E+4	6.68E+4	5.74E+4	6.24E+4	6.24E+4	5.33E+4	5.80E+4	5.80E+4	5.06E+4	5.50E+4	5.50E+4
VI	4.60E+4	3.84E+5	4.02E+6	4.58E+4	3.83E+5	4.01E+6	4.57E+4	3.82E+5	4.00E+6	4.53E+4	3.80E+5	3.98E+6	4.48E+4	3.77E+5	3.95E+6	4.42E+4	3.72E+5	3.90E+6
VII	2.53E+4	2.19E+5	1.70E+6	8.99E+3	7.79E+4	6.05E+5	8.60E+2	7.37E+3	5.72E+4	7.74E+1	6.40E+2	4.94E+3	2.18E+1	1.77E+2	1.37E+3	.00E+0	.00E+0	.00E+0
IX	2.22E+1	1.94E+2	1.22E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.50E+3	1.66E+4	1.93E+4	1.48E+3	1.43E+4	1.66E+4	1.46E+3	1.29E+4	1.50E+4	1.44E+3	1.14E+4	1.31E+4	1.42E+3	1.04E+4	1.20E+4	1.40E+3	9.38E+3	1.08E+4
XII	3.13E+2	1.81E+3	2.92E+3	3.12E+2	1.80E+3	2.90E+3	3.11E+2	1.79E+3	2.89E+3	3.09E+2	1.79E+3	2.88E+3	3.08E+2	1.78E+3	2.87E+3	3.06E+2	1.77E+3	2.85E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	4.26E+0	4.52E+0	4.52E+0	4.24E+0	4.50E+0	4.50E+0	4.23E+0	4.48E+0	4.48E+0	4.21E+0	4.47E+0	4.47E+0	4.19E+0	4.44E+0	4.44E+0	4.13E+0	4.38E+0	4.38E+0
XVIB	4.22E+0	4.46E+0	4.46E+0	4.20E+0	4.44E+0	4.44E+0	4.19E+0	4.43E+0	4.43E+0	4.17E+0	4.41E+0	4.41E+0	4.14E+0	4.39E+0	4.39E+0	4.09E+0	4.33E+0	4.33E+0
XVIC	4.13E+0	4.35E+0	4.35E+0	4.11E+0	4.33E+0	4.33E+0	4.10E+0	4.32E+0	4.32E+0	4.08E+0	4.30E+0	4.30E+0	4.06E+0	4.27E+0	4.27E+0	4.00E+0	4.22E+0	4.22E+0
XVIIIA	8.68E+1	9.36E+1	9.36E+1	8.66E+1	9.34E+1	9.34E+1	8.62E+1	9.30E+1	9.30E+1	8.54E+1	9.21E+1	9.21E+1	8.45E+1	9.11E+1	9.11E+1	8.32E+1	8.97E+1	8.97E+1
XVIIIB	7.96E+1	8.45E+1	8.45E+1	7.95E+1	8.44E+1	8.44E+1	7.91E+1	8.40E+1	8.40E+1	7.83E+1	8.31E+1	8.31E+1	7.75E+1	8.23E+1	8.23E+1	7.63E+1	8.10E+1	8.10E+1
XVIIIC	6.76E+1	7.02E+1	7.02E+1	6.75E+1	7.01E+1	7.01E+1	6.71E+1	6.98E+1	6.98E+1	6.65E+1	6.91E+1	6.91E+1	6.58E+1	6.84E+1	6.84E+1	6.48E+1	6.73E+1	6.73E+1
XXA	4.13E+0	3.67E+1	3.48E+2	3.49E+0	3.19E+1	3.03E+2	3.09E+0	2.89E+1	2.75E+2	2.58E+0	2.50E+1	2.37E+2	2.18E+0	2.22E+1	2.11E+2	1.56E+0	1.95E+1	1.85E+2
XXB	3.95E+0	2.55E+1	1.56E+2	3.34E+0	2.20E+1	1.34E+2	2.95E+0	1.98E+1	1.21E+2	2.47E+0	1.69E+1	1.03E+2	2.08E+0	1.50E+1	9.18E+1	1.49E+0	1.27E+1	7.75E+1
XXC	3.60E+0	1.34E+1	3.24E+2	3.04E+0	1.13E+1	2.73E+2	2.69E+0	1.00E+1	2.42E+2	2.25E+0	8.38E+0	2.03E+2	1.90E+0	7.06E+0	1.71E+2	1.36E+0	5.06E+0	1.22E+2
XXIA	4.49E+1	4.61E+2	4.41E+3	4.45E+1	4.56E+2	4.36E+3	4.40E+1	4.52E+2	4.32E+3	4.29E+1	4.41E+2	4.21E+3	4.11E+1	4.21E+2	4.03E+3	3.86E+1	3.96E+2	3.79E+3
XXIB	4.46E+1	4.56E+2	4.12E+3	4.41E+1	4.51E+2	4.07E+3	4.37E+1	4.46E+2	4.03E+3	4.26E+1	4.35E+2	3.93E+3	4.07E+1	4.16E+2	3.76E+3	3.83E+1	3.92E+2	3.54E+3
XXIC	4.42E+1	4.43E+2	3.57E+3	4.37E+1	4.38E+2	3.53E+3	4.33E+1	4.34E+2	3.50E+3	4.22E+1	4.23E+2	3.41E+3	4.04E+1	4.05E+2	3.26E+3	3.80E+1	3.81E+2	3.07E+3
XXII	4.70E+3	9.34E+4	1.63E+5	4.65E+3	9.21E+4	1.61E+5	4.61E+3	9.14E+4	1.59E+5	4.49E+3	8.94E+4	1.56E+5	4.39E+3	8.78E+4	1.53E+5	4.33E+3	8.66E+4	1.51E+5
DOE	1.49E+6	1.64E+7	1.21E+8	1.47E+6	1.62E+7	1.19E+8	1.45E+6	1.61E+7	1.19E+8	1.44E+6	1.60E+7	1.18E+8	1.42E+6	1.60E+7	1.17E+8	1.40E+6	1.58E+7	1.16E+8
DOD	3.13E+2	1.81E+3	2.92E+3	3.12E+2	1.80E+3	2.90E+3	3.11E+2	1.79E+3	2.89E+3	3.09E+2	1.79E+3	2.88E+3	3.08E+2	1.78E+3	2.87E+3	3.06E+2	1.77E+3	2.85E+3
NRC	6.47E+3	1.61E+4	9.83E+4	6.44E+3	1.59E+4	9.68E+4	6.40E+3	1.58E+4	9.55E+4	6.32E+3	1.54E+4	9.29E+4	6.22E+3	1.49E+4	8.89E+4	6.08E+3	1.43E+4	8.36E+4
Total	1.50E+6	1.64E+7	1.21E+8	1.47E+6	1.63E+7	1.19E+8	1.46E+6	1.62E+7	1.19E+8	1.44E+6	1.61E+7	1.18E+8	1.43E+6	1.60E+7	1.17E+8	1.41E+6	1.58E+7	1.16E+8

Medium Population Density With Agriculture - 09-13-94 4:04p
 TABLE K-61. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.14E+0	1.24E+0	1.24E+0	1.12E+0	1.22E+0	1.22E+0	1.06E+0	1.15E+0	1.15E+0	8.48E-1	9.26E-1	9.26E-1	3.80E-1	4.15E-1	4.15E-1
II	5.83E+1	5.73E+2	4.81E+3	5.83E+1	5.73E+2	4.81E+3	5.83E+1	5.73E+2	4.81E+3	5.83E+1	5.71E+2	4.75E+3	5.75E+1	5.61E+2	4.59E+3
III	4.91E-1	5.44E-1	5.44E-1	4.91E-1	5.44E-1	5.44E-1	4.58E-1	5.07E-1	5.07E-1	2.43E-1	2.69E-1	2.69E-1	.00E+0	.00E+0	.00E+0
IV	3.70E-1	2.35E+0	6.91E+0	3.66E-1	2.32E+0	6.82E+0	3.49E-1	2.21E+0	6.51E+0	2.75E-1	1.74E+0	5.13E+0	.00E+0	.00E+0	.00E+0
V	2.95E+1	3.22E+1	3.22E+1	2.95E+1	3.22E+1	3.22E+1	2.91E+1	3.18E+1	3.18E+1	2.67E+1	2.91E+1	2.91E+1	1.75E+1	1.91E+1	1.91E+1
VI	1.01E+1	7.89E+1	7.86E+2	1.01E+1	7.89E+1	7.86E+2	1.01E+1	7.89E+1	7.86E+2	1.00E+1	7.84E+1	7.81E+2	9.01E+0	7.28E+1	7.28E+2
VII	7.55E+0	5.63E+1	4.15E+2	6.36E+0	4.60E+1	3.38E+2	4.70E+0	3.34E+1	2.45E+2	1.22E-1	8.63E-1	6.31E+0	.00E+0	.00E+0	.00E+0
IX	2.88E-2	2.45E-1	1.51E+0	2.09E-2	1.78E-1	1.10E+0	7.18E-3	6.12E-2	3.78E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.56E+0	5.13E+0	5.80E+0	1.56E+0	5.13E+0	5.80E+0	1.56E+0	5.00E+0	5.65E+0	1.51E+0	3.74E+0	4.15E+0	1.32E+0	2.25E+0	2.42E+0
XII	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.21E-2	1.30E-1	2.10E-1	2.09E-2	1.22E-1	1.98E-1
XIIIA	2.15E-4	1.44E-3	3.85E-3	1.54E-4	1.03E-3	2.76E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.99E-4	9.82E-4	1.71E-3	1.42E-4	7.04E-4	1.23E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.71E-4	5.43E-4	1.07E-2	1.23E-4	3.89E-4	7.66E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.85E-3	1.97E-3	1.97E-3	1.85E-3	1.97E-3	1.97E-3	1.85E-3	1.96E-3	1.96E-3	1.83E-3	1.95E-3	1.95E-3	1.64E-3	1.75E-3	1.75E-3
XVIB	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.82E-3	1.93E-3	1.93E-3	1.63E-3	1.73E-3	1.73E-3
XVIC	1.79E-3	1.90E-3	1.90E-3	1.79E-3	1.90E-3	1.90E-3	1.79E-3	1.89E-3	1.89E-3	1.78E-3	1.88E-3	1.88E-3	1.59E-3	1.69E-3	1.69E-3
XVIIIA	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.50E-2	3.78E-2	3.78E-2	3.06E-2	3.31E-2	3.31E-2
XVIIIB	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2	3.23E-2	3.43E-2	3.43E-2	2.82E-2	3.00E-2	3.00E-2
XVIIIC	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2	2.74E-2	2.86E-2	2.86E-2	2.40E-2	2.50E-2	2.50E-2
XXA	1.99E-2	1.59E-1	1.59E+0	1.25E-2	1.11E-1	1.10E+0	2.62E-3	3.58E-2	3.57E-1	6.22E-4	5.50E-3	5.48E-2	.00E+0	1.06E-3	1.06E-2
XXB	1.91E-2	1.14E-1	7.85E-1	1.20E-2	7.17E-2	4.95E-1	2.51E-3	1.50E-2	1.03E-1	5.96E-4	3.56E-3	2.46E-2	.00E+0	.00E+0	.00E+0
XXC	1.74E-2	6.44E-2	1.60E+0	1.09E-2	4.06E-2	1.01E+0	2.29E-3	8.47E-3	2.11E-1	5.43E-4	2.02E-3	5.01E-2	.00E+0	.00E+0	.00E+0
XXIA	1.43E-2	1.48E-1	1.41E+0	1.43E-2	1.48E-1	1.41E+0	1.43E-2	1.48E-1	1.41E+0	1.39E-2	1.44E-1	1.37E+0	9.47E-3	9.80E-2	9.33E-1
XXIB	1.42E-2	1.46E-1	1.30E+0	1.42E-2	1.46E-1	1.30E+0	1.42E-2	1.46E-1	1.30E+0	1.38E-2	1.42E-1	1.26E+0	9.40E-3	9.67E-2	8.59E-1
XXIC	1.41E-2	1.42E-1	1.10E+0	1.41E-2	1.42E-1	1.10E+0	1.40E-2	1.42E-1	1.10E+0	1.37E-2	1.38E-1	1.07E+0	9.29E-3	9.38E-2	7.26E-1
XXII	1.07E+0	1.83E+1	3.55E+1	1.07E+0	1.83E+1	3.55E+1	1.07E+0	1.83E+1	3.54E+1	1.04E+0	1.78E+1	3.45E+1	7.49E-1	1.34E+1	2.60E+1
DOE	3.37E+2	2.59E+3	2.34E+4	3.36E+2	2.58E+3	2.33E+4	3.33E+2	2.56E+3	2.32E+4	3.22E+2	2.51E+3	2.28E+4	2.86E+2	2.33E+3	2.13E+4
DOD	2.41E-2	1.40E-1	2.59E-1	2.36E-2	1.37E-1	2.46E-1	2.24E-2	1.31E-1	2.13E-1	2.21E-2	1.30E-1	2.10E-1	2.09E-2	1.22E-1	1.98E-1
NRC	2.81E+0	7.15E+0	4.88E+1	2.71E+0	6.61E+0	4.25E+1	2.58E+0	5.85E+0	3.34E+1	2.53E+0	5.52E+0	3.01E+1	2.15E+0	4.18E+0	2.06E+1
Total	3.40E+2	2.60E+3	2.34E+4	3.38E+2	2.59E+3	2.33E+4	3.36E+2	2.57E+3	2.32E+4	3.25E+2	2.52E+3	2.28E+4	2.89E+2	2.33E+3	2.13E+4

Medium Population Density With Agriculture - 09-13-94 4:04p
 TABLE K-62. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.06E+0	1.15E+0	1.15E+0	1.01E+0	1.11E+0	1.11E+0	9.78E-1	1.07E+0	1.07E+0	9.29E-1	1.01E+0	1.01E+0	8.91E-1	9.73E-1	9.73E-1	8.48E-1	9.26E-1	9.26E-1
II	5.83E+1	5.73E+2	4.81E+3	5.83E+1	5.73E+2	4.80E+3	5.83E+1	5.73E+2	4.79E+3	5.83E+1	5.72E+2	4.77E+3	5.83E+1	5.71E+2	4.76E+3	5.83E+1	5.71E+2	4.75E+3
III	4.58E-1	5.07E-1	5.07E-1	3.99E-1	4.42E-1	4.42E-1	3.63E-1	4.02E-1	4.02E-1	3.32E-1	3.68E-1	3.68E-1	2.97E-1	3.29E-1	3.29E-1	2.43E-1	2.69E-1	2.69E-1
IV	3.49E-1	2.21E+0	6.51E+0	3.40E-1	2.16E+0	6.35E+0	3.32E-1	2.11E+0	6.19E+0	3.15E-1	2.00E+0	5.89E+0	2.99E-1	1.90E+0	5.59E+0	2.75E-1	1.74E+0	5.13E+0
V	2.91E+1	3.18E+1	3.18E+1	2.88E+1	3.14E+1	3.14E+1	2.85E+1	3.11E+1	3.11E+1	2.80E+1	3.05E+1	3.05E+1	2.74E+1	3.00E+1	3.00E+1	2.67E+1	2.91E+1	2.91E+1
VI	1.01E+1	7.89E+1	7.86E+2	1.01E+1	7.89E+1	7.85E+2	1.01E+1	7.88E+1	7.85E+2	1.01E+1	7.87E+1	7.84E+2	1.00E+1	7.86E+1	7.83E+2	1.00E+1	7.84E+1	7.81E+2
VII	4.70E+0	3.34E+1	2.45E+2	3.08E+0	2.21E+1	1.62E+2	2.15E+0	1.55E+1	1.14E+2	1.29E+0	9.49E+0	6.98E+1	7.27E-1	5.36E+0	3.94E+1	1.22E-1	8.63E-1	6.31E+0
IX	7.18E-3	6.12E-2	3.78E-1	3.43E-3	2.92E-2	1.81E-1	2.03E-3	1.73E-2	1.07E-1	7.16E-4	6.11E-3	3.77E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.56E+0	5.00E+0	5.65E+0	1.55E+0	4.79E+0	5.39E+0	1.54E+0	4.59E+0	5.15E+0	1.53E+0	4.23E+0	4.73E+0	1.52E+0	3.99E+0	4.44E+0	1.51E+0	3.74E+0	4.15E+0
XII	2.24E-2	1.31E-1	2.13E-1	2.23E-2	1.31E-1	2.12E-1	2.23E-2	1.31E-1	2.12E-1	2.22E-2	1.30E-1	2.11E-1	2.21E-2	1.30E-1	2.10E-1	2.21E-2	1.30E-1	2.10E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.85E-3	1.96E-3	1.96E-3	1.85E-3	1.96E-3	1.96E-3	1.85E-3	1.96E-3	1.96E-3	1.84E-3	1.96E-3	1.96E-3	1.84E-3	1.95E-3	1.95E-3	1.83E-3	1.95E-3	1.95E-3
XVIB	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.82E-3	1.93E-3	1.93E-3	1.82E-3	1.93E-3	1.93E-3
XVIC	1.79E-3	1.89E-3	1.89E-3	1.79E-3	1.89E-3	1.89E-3	1.79E-3	1.89E-3	1.89E-3	1.79E-3	1.89E-3	1.89E-3	1.78E-3	1.88E-3	1.88E-3	1.78E-3	1.88E-3	1.88E-3
XVIIIA	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.80E-2	3.80E-2	3.51E-2	3.80E-2	3.80E-2	3.50E-2	3.78E-2	3.78E-2
XVIIIB	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2	3.24E-2	3.45E-2	3.45E-2	3.24E-2	3.44E-2	3.44E-2	3.23E-2	3.43E-2	3.43E-2
XVIIIC	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.87E-2	2.87E-2	2.76E-2	2.87E-2	2.87E-2	2.76E-2	2.87E-2	2.87E-2	2.74E-2	2.86E-2	2.86E-2
XXA	2.62E-3	3.58E-2	3.57E-1	8.80E-4	1.09E-2	1.09E-1	8.20E-4	7.00E-3	6.97E-2	7.39E-4	6.39E-3	6.37E-2	6.84E-4	5.97E-3	5.94E-2	6.22E-4	5.50E-3	5.48E-2
XXB	2.51E-3	1.50E-2	1.03E-1	8.43E-4	5.04E-3	3.48E-2	7.86E-4	4.69E-3	3.24E-2	7.08E-4	4.23E-3	2.92E-2	6.55E-4	3.91E-3	2.70E-2	5.96E-4	3.56E-3	2.46E-2
XXC	2.29E-3	8.47E-3	2.11E-1	7.69E-4	2.85E-3	7.09E-2	7.16E-4	2.66E-3	6.61E-2	6.46E-4	2.40E-3	5.96E-2	5.97E-4	2.21E-3	5.51E-2	5.43E-4	2.02E-3	5.01E-2
XXIA	1.43E-2	1.48E-1	1.41E+0	1.43E-2	1.48E-1	1.41E+0	1.42E-2	1.47E-1	1.40E+0	1.41E-2	1.46E-1	1.39E+0	1.41E-2	1.46E-1	1.39E+0	1.39E-2	1.44E-1	1.37E+0
XXIB	1.42E-2	1.46E-1	1.30E+0	1.42E-2	1.46E-1	1.29E+0	1.41E-2	1.45E-1	1.29E+0	1.40E-2	1.44E-1	1.28E+0	1.40E-2	1.44E-1	1.28E+0	1.38E-2	1.42E-1	1.26E+0
XXIC	1.40E-2	1.42E-1	1.10E+0	1.40E-2	1.41E-1	1.09E+0	1.40E-2	1.41E-1	1.09E+0	1.39E-2	1.40E-1	1.08E+0	1.38E-2	1.39E-1	1.08E+0	1.37E-2	1.38E-1	1.07E+0
XXII	1.07E+0	1.83E+1	3.54E+1	1.06E+0	1.82E+1	3.53E+1	1.06E+0	1.82E+1	3.52E+1	1.05E+0	1.80E+1	3.49E+1	1.04E+0	1.79E+1	3.47E+1	1.04E+0	1.78E+1	3.45E+1
DOE	3.33E+2	2.56E+3	2.32E+4	3.31E+2	2.55E+3	2.31E+4	3.29E+2	2.54E+3	2.30E+4	3.27E+2	2.53E+3	2.29E+4	3.25E+2	2.52E+3	2.29E+4	3.22E+2	2.51E+3	2.28E+4
DOD	2.24E-2	1.31E-1	2.13E-1	2.23E-2	1.31E-1	2.12E-1	2.23E-2	1.31E-1	2.12E-1	2.22E-2	1.30E-1	2.11E-1	2.21E-2	1.30E-1	2.10E-1	2.21E-2	1.30E-1	2.10E-1
NRC	2.58E+0	5.85E+0	3.34E+1	2.55E+0	5.65E+0	3.12E+1	2.55E+0	5.61E+0	3.09E+1	2.54E+0	5.59E+0	3.07E+1	2.54E+0	5.56E+0	3.04E+1	2.53E+0	5.52E+0	3.01E+1
Total	3.36E+2	2.57E+3	2.32E+4	3.33E+2	2.56E+3	2.31E+4	3.31E+2	2.55E+3	2.30E+4	3.29E+2	2.54E+3	2.30E+4	3.27E+2	2.53E+3	2.29E+4	3.25E+2	2.52E+3	2.28E+4

Medium Population Density With Agriculture - 09-13-94 4:04p
 TABLE K-63. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.13E+0	1.23E+0	1.23E+0	1.09E+0	1.19E+0	1.19E+0	9.67E-1	1.06E+0	1.06E+0	6.49E-1	7.09E-1	7.09E-1	1.65E-1	1.81E-1	1.81E-1
II	5.83E+1	5.73E+2	4.81E+3	5.83E+1	5.73E+2	4.81E+3	5.83E+1	5.72E+2	4.79E+3	5.82E+1	5.69E+2	4.71E+3	4.93E+1	4.83E+2	3.88E+3
III	4.91E-1	5.44E-1	5.44E-1	4.86E-1	5.39E-1	5.39E-1	3.58E-1	3.96E-1	3.96E-1	5.72E-2	6.34E-2	6.34E-2	.00E+0	.00E+0	.00E+0
IV	3.68E-1	2.34E+0	6.87E+0	3.59E-1	2.28E+0	6.70E+0	3.26E-1	2.07E+0	6.09E+0	5.85E-2	3.72E-1	1.09E+0	.00E+0	.00E+0	.00E+0
V	2.95E+1	3.22E+1	3.22E+1	2.94E+1	3.21E+1	3.21E+1	2.84E+1	3.10E+1	3.10E+1	2.19E+1	2.39E+1	2.39E+1	6.17E+0	6.73E+0	6.73E+0
VI	1.01E+1	7.89E+1	7.86E+2	1.01E+1	7.89E+1	7.86E+2	1.01E+1	7.88E+1	7.85E+2	9.61E+0	7.62E+1	7.61E+2	6.91E+0	5.78E+1	5.82E+2
VII	6.95E+0	5.12E+1	3.76E+2	5.87E+0	4.20E+1	3.08E+2	1.84E+0	1.34E+1	9.84E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	2.49E-2	2.12E-1	1.31E+0	1.30E-2	1.11E-1	6.82E-1	1.35E-3	1.15E-2	7.08E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.56E+0	5.13E+0	5.80E+0	1.56E+0	5.12E+0	5.79E+0	1.54E+0	4.67E+0	5.25E+0	1.47E+0	3.13E+0	3.43E+0	1.18E+0	1.70E+0	1.79E+0
XII	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.22E-2	1.30E-1	2.11E-1	2.17E-2	1.27E-1	2.06E-1	6.98E-3	4.10E-2	6.63E-2
XIIIA	1.95E-4	1.31E-3	3.49E-3	7.46E-5	5.01E-4	1.34E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.80E-4	8.91E-4	1.55E-3	6.90E-5	3.41E-4	5.95E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.56E-4	4.92E-4	9.69E-3	5.96E-5	1.89E-4	3.71E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.85E-3	1.97E-3	1.97E-3	1.85E-3	1.97E-3	1.97E-3	1.85E-3	1.96E-3	1.96E-3	1.79E-3	1.91E-3	1.91E-3	1.01E-3	1.08E-3	1.08E-3
XVIB	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.78E-3	1.88E-3	1.88E-3	1.01E-3	1.07E-3	1.07E-3
XVIC	1.79E-3	1.90E-3	1.90E-3	1.79E-3	1.89E-3	1.89E-3	1.79E-3	1.89E-3	1.89E-3	1.74E-3	1.84E-3	1.84E-3	9.83E-4	1.04E-3	1.04E-3
XVIIIA	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.37E-2	3.65E-2	3.65E-2	2.31E-2	2.50E-2	2.50E-2
XVIIIB	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2	3.24E-2	3.45E-2	3.45E-2	3.11E-2	3.31E-2	3.31E-2	2.13E-2	2.27E-2	2.27E-2
XVIIIC	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.87E-2	2.87E-2	2.65E-2	2.75E-2	2.75E-2	1.82E-2	1.89E-2	1.89E-2
XXA	1.51E-2	1.34E-1	1.33E+0	6.55E-3	7.18E-2	7.14E-1	7.49E-4	6.66E-3	6.63E-2	2.83E-4	3.53E-3	3.52E-2	.00E+0	.00E+0	.00E+0
XXB	1.44E-2	9.31E-2	6.43E-1	6.28E-3	4.70E-2	3.24E-1	7.18E-4	4.63E-3	3.20E-2	2.71E-4	2.30E-3	1.59E-2	.00E+0	.00E+0	.00E+0
XXC	1.32E-2	4.88E-2	1.21E+0	5.72E-3	2.12E-2	5.28E-1	6.55E-4	2.43E-3	6.04E-2	2.47E-4	9.17E-4	2.28E-2	.00E+0	.00E+0	.00E+0
XXIA	1.43E-2	1.48E-1	1.41E+0	1.43E-2	1.48E-1	1.41E+0	1.42E-2	1.47E-1	1.40E+0	1.22E-2	1.26E-1	1.20E+0	4.36E-3	4.52E-2	4.30E-1
XXIB	1.42E-2	1.46E-1	1.30E+0	1.42E-2	1.46E-1	1.30E+0	1.41E-2	1.45E-1	1.29E+0	1.21E-2	1.25E-1	1.11E+0	4.34E-3	4.46E-2	3.96E-1
XXIC	1.41E-2	1.42E-1	1.10E+0	1.41E-2	1.42E-1	1.10E+0	1.39E-2	1.41E-1	1.09E+0	1.20E-2	1.21E-1	9.36E-1	4.28E-3	4.32E-2	3.35E-1
XXII	1.07E+0	1.83E+1	3.55E+1	1.07E+0	1.83E+1	3.55E+1	1.06E+0	1.82E+1	3.52E+1	9.74E-1	1.69E+1	3.26E+1	.00E+0	.00E+0	.00E+0
DOE	3.36E+2	2.58E+3	2.33E+4	3.35E+2	2.57E+3	2.32E+4	3.28E+2	2.54E+3	2.30E+4	3.07E+2	2.44E+3	2.22E+4	2.14E+2	1.80E+3	1.71E+4
DOD	2.39E-2	1.39E-1	2.55E-1	2.30E-2	1.34E-1	2.29E-1	2.22E-2	1.30E-1	2.11E-1	2.17E-2	1.27E-1	2.06E-1	6.98E-3	4.10E-2	6.63E-2
NRC	2.74E+0	6.86E+0	4.52E+1	2.63E+0	6.22E+0	3.76E+1	2.55E+0	5.61E+0	3.08E+1	2.41E+0	5.03E+0	2.64E+1	1.54E+0	2.51E+0	1.00E+1
Total	3.39E+2	2.59E+3	2.34E+4	3.37E+2	2.58E+3	2.33E+4	3.31E+2	2.55E+3	2.30E+4	3.10E+2	2.45E+3	2.23E+4	2.15E+2	1.81E+3	1.71E+4

Medium Population Density With Agriculture - 09-13-94 4:04p
 TABLE K-64. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	9.67E-1	1.06E+0	1.06E+0	8.94E-1	9.77E-1	9.77E-1	8.45E-1	9.23E-1	9.23E-1	7.78E-1	8.50E-1	8.50E-1	7.36E-1	8.04E-1	8.04E-1	6.49E-1	7.09E-1	7.09E-1
II	5.83E+1	5.72E+2	4.79E+3	5.83E+1	5.71E+2	4.76E+3	5.83E+1	5.71E+2	4.75E+3	5.82E+1	5.71E+2	4.74E+3	5.82E+1	5.70E+2	4.73E+3	5.82E+1	5.69E+2	4.71E+3
III	3.58E-1	3.96E-1	3.96E-1	3.00E-1	3.32E-1	3.32E-1	2.39E-1	2.65E-1	2.65E-1	1.41E-1	1.56E-1	1.56E-1	8.14E-2	9.01E-2	9.01E-2	5.72E-2	6.34E-2	6.34E-2
IV	3.26E-1	2.07E+0	6.09E+0	2.97E-1	1.88E+0	5.54E+0	2.67E-1	1.69E+0	4.98E+0	2.07E-1	1.32E+0	3.87E+0	1.48E-1	9.38E-1	2.76E+0	5.85E-2	3.72E-1	1.09E+0
V	2.84E+1	3.10E+1	3.10E+1	2.75E+1	3.00E+1	3.00E+1	2.66E+1	2.91E+1	2.91E+1	2.49E+1	2.71E+1	2.71E+1	2.31E+1	2.52E+1	2.52E+1	2.19E+1	2.39E+1	2.39E+1
VI	1.01E+1	7.88E+1	7.85E+2	1.00E+1	7.86E+1	7.83E+2	1.00E+1	7.84E+1	7.81E+2	9.89E+0	7.78E+1	7.76E+2	9.78E+0	7.72E+1	7.70E+2	9.61E+0	7.62E+1	7.61E+2
VII	1.84E+0	1.34E+1	9.84E+1	6.46E-1	4.75E+0	3.50E+1	6.55E-2	4.54E-1	3.31E+0	7.01E-3	4.07E-2	2.88E-1	2.09E-3	1.14E-2	7.97E-2	.00E+0	.00E+0	.00E+0
IX	1.35E-3	1.15E-2	7.08E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.54E+0	4.67E+0	5.25E+0	1.53E+0	4.20E+0	4.70E+0	1.52E+0	3.90E+0	4.34E+0	1.50E+0	3.56E+0	3.95E+0	1.49E+0	3.36E+0	3.70E+0	1.47E+0	3.13E+0	3.43E+0
XII	2.22E-2	1.30E-1	2.11E-1	2.21E-2	1.30E-1	2.10E-1	2.20E-2	1.29E-1	2.09E-1	2.19E-2	1.29E-1	2.08E-1	2.18E-2	1.28E-1	2.07E-1	2.17E-2	1.27E-1	2.06E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.85E-3	1.96E-3	1.96E-3	1.84E-3	1.95E-3	1.95E-3	1.83E-3	1.95E-3	1.95E-3	1.82E-3	1.94E-3	1.94E-3	1.81E-3	1.93E-3	1.93E-3	1.79E-3	1.91E-3	1.91E-3
XVIB	1.83E-3	1.94E-3	1.94E-3	1.82E-3	1.93E-3	1.93E-3	1.82E-3	1.93E-3	1.93E-3	1.81E-3	1.92E-3	1.92E-3	1.80E-3	1.91E-3	1.91E-3	1.78E-3	1.88E-3	1.88E-3
XVIC	1.79E-3	1.89E-3	1.89E-3	1.78E-3	1.88E-3	1.88E-3	1.78E-3	1.88E-3	1.88E-3	1.77E-3	1.87E-3	1.87E-3	1.76E-3	1.86E-3	1.86E-3	1.74E-3	1.84E-3	1.84E-3
XVIIIA	3.52E-2	3.81E-2	3.81E-2	3.51E-2	3.80E-2	3.80E-2	3.50E-2	3.78E-2	3.78E-2	3.46E-2	3.74E-2	3.74E-2	3.43E-2	3.70E-2	3.70E-2	3.37E-2	3.65E-2	3.65E-2
XVIIIB	3.24E-2	3.45E-2	3.45E-2	3.24E-2	3.44E-2	3.44E-2	3.22E-2	3.43E-2	3.43E-2	3.19E-2	3.39E-2	3.39E-2	3.16E-2	3.36E-2	3.36E-2	3.11E-2	3.31E-2	3.31E-2
XVIIIC	2.76E-2	2.87E-2	2.87E-2	2.76E-2	2.87E-2	2.87E-2	2.74E-2	2.85E-2	2.85E-2	2.71E-2	2.83E-2	2.83E-2	2.69E-2	2.80E-2	2.80E-2	2.65E-2	2.75E-2	2.75E-2
XXA	7.49E-4	6.66E-3	6.63E-2	6.33E-4	5.79E-3	5.77E-2	5.60E-4	5.25E-3	5.23E-2	4.69E-4	4.53E-3	4.51E-2	3.95E-4	4.03E-3	4.01E-2	2.83E-4	3.53E-3	3.52E-2
XXB	7.18E-4	4.63E-3	3.20E-2	6.06E-4	3.99E-3	2.76E-2	5.37E-4	3.59E-3	2.48E-2	4.49E-4	3.06E-3	2.12E-2	3.78E-4	2.73E-3	1.89E-2	2.71E-4	2.30E-3	1.59E-2
XXC	6.55E-4	2.43E-3	6.04E-2	5.53E-4	2.05E-3	5.10E-2	4.89E-4	1.81E-3	4.52E-2	4.10E-4	1.52E-3	3.78E-2	3.45E-4	1.28E-3	3.18E-2	2.47E-4	9.17E-4	2.28E-2
XXIA	1.42E-2	1.47E-1	1.40E+0	1.41E-2	1.46E-1	1.39E+0	1.39E-2	1.44E-1	1.37E+0	1.36E-2	1.41E-1	1.34E+0	1.30E-2	1.34E-1	1.28E+0	1.22E-2	1.26E-1	1.20E+0
XXIB	1.41E-2	1.45E-1	1.29E+0	1.40E-2	1.44E-1	1.28E+0	1.38E-2	1.42E-1	1.26E+0	1.35E-2	1.39E-1	1.23E+0	1.29E-2	1.33E-1	1.18E+0	1.21E-2	1.25E-1	1.11E+0
XXIC	1.39E-2	1.41E-1	1.09E+0	1.38E-2	1.39E-1	1.08E+0	1.37E-2	1.38E-1	1.07E+0	1.33E-2	1.34E-1	1.04E+0	1.27E-2	1.29E-1	9.95E-1	1.20E-2	1.21E-1	9.36E-1
XXII	1.06E+0	1.82E+1	3.52E+1	1.05E+0	1.79E+1	3.47E+1	1.04E+0	1.78E+1	3.45E+1	1.01E+0	1.74E+1	3.37E+1	9.87E-1	1.71E+1	3.31E+1	9.74E-1	1.69E+1	3.26E+1
DOE	3.28E+2	2.54E+3	2.30E+4	3.25E+2	2.52E+3	2.29E+4	3.22E+2	2.51E+3	2.28E+4	3.17E+2	2.49E+3	2.26E+4	3.13E+2	2.47E+3	2.25E+4	3.07E+2	2.44E+3	2.22E+4
DOD	2.22E+2	1.30E+1	2.11E-1	2.21E-2	1.30E-1	2.10E-1	2.20E-2	1.29E-1	2.09E-1	2.19E-2	1.29E-1	2.08E-1	2.18E-2	1.28E-1	2.07E-1	2.17E-2	1.27E-1	2.06E-1
NRC	2.55E+0	5.61E+0	3.08E+1	2.54E+0	5.56E+0	3.04E+1	2.52E+0	5.51E+0	3.01E+1	2.49E+0	5.41E+0	2.93E+1	2.46E+0	5.25E+0	2.81E+1	2.41E+0	5.03E+0	2.64E+1
Total	3.31E+2	2.55E+3	2.30E+4	3.27E+2	2.53E+3	2.29E+4	3.25E+2	2.52E+3	2.28E+4	3.20E+2	2.50E+3	2.27E+4	3.15E+2	2.48E+3	2.25E+4	3.10E+2	2.45E+3	2.23E+4

Medium Population Density With Agriculture - 09-13-94 4:04p
 TABLE K-65. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.51E-1	8.21E-1	8.21E-1	7.38E-1	8.07E-1	8.07E-1	6.97E-1	7.62E-1	7.62E-1	5.60E-1	6.12E-1	6.12E-1	2.51E-1	2.74E-1	2.74E-1
II	4.51E+1	4.42E+2	3.77E+3	4.51E+1	4.42E+2	3.77E+3	4.50E+1	4.42E+2	3.77E+3	4.50E+1	4.41E+2	3.73E+3	4.44E+1	4.33E+2	3.60E+3
III	3.25E-1	3.60E-1	3.60E-1	3.25E-1	3.60E-1	3.60E-1	3.03E-1	3.36E-1	3.36E-1	1.61E-1	1.78E-1	1.78E-1	.00E+0	.00E+0	.00E+0
IV	2.34E-1	1.46E+0	5.15E+0	2.32E-1	1.45E+0	5.09E+0	2.21E-1	1.38E+0	4.85E+0	1.74E-1	1.09E+0	3.82E+0	.00E+0	.00E+0	.00E+0
V	1.95E+1	2.13E+1	2.13E+1	1.95E+1	2.12E+1	2.12E+1	1.93E+1	2.10E+1	2.10E+1	1.77E+1	1.92E+1	1.92E+1	1.16E+1	1.26E+1	1.26E+1
VI	6.65E+0	5.12E+1	5.60E+2	6.65E+0	5.12E+1	5.60E+2	6.64E+0	5.12E+1	5.60E+2	6.55E+0	5.09E+1	5.57E+2	5.90E+0	4.72E+1	5.19E+2
VII	6.37E+0	4.94E+1	3.71E+2	5.32E+0	4.03E+1	3.01E+2	3.92E+0	2.92E+1	2.18E+2	1.01E-1	7.55E-1	5.63E+0	.00E+0	.00E+0	.00E+0
IX	2.53E-2	2.18E-1	1.35E+0	1.84E-2	1.58E-1	9.82E-1	6.31E-3	5.42E-2	3.37E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.14E+0	3.57E+0	9.92E-1	2.36E+0	2.64E+0	8.69E-1	1.44E+0	1.55E+0
XII	1.89E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.77E-1	1.86E-2	1.09E-1	1.75E-1	1.75E-2	1.02E-1	1.65E-1
XIIIA	1.37E-4	8.96E-4	2.55E-3	9.80E-5	6.42E-4	1.83E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.26E-4	6.10E-4	1.16E-3	9.03E-5	4.37E-4	8.33E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.08E-4	3.36E-4	6.58E-3	7.71E-5	2.41E-4	4.72E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3	1.21E-3	1.29E-3	1.29E-3	1.08E-3	1.16E-3	1.16E-3
XVIB	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.20E-3	1.27E-3	1.27E-3	1.07E-3	1.14E-3	1.14E-3
XVIC	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3	1.18E-3	1.24E-3	1.24E-3	1.05E-3	1.12E-3	1.12E-3
XVIIIA	2.71E-2	2.92E-2	2.92E-2	2.71E-2	2.92E-2	2.92E-2	2.71E-2	2.92E-2	2.92E-2	2.69E-2	2.90E-2	2.90E-2	2.35E-2	2.54E-2	2.54E-2
XVIIIB	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.64E-2	2.64E-2	2.47E-2	2.62E-2	2.62E-2	2.16E-2	2.29E-2	2.29E-2
XVIIIC	2.11E-2	2.19E-2	2.19E-2	2.11E-2	2.19E-2	2.19E-2	2.11E-2	2.19E-2	2.19E-2	2.09E-2	2.17E-2	2.17E-2	1.83E-2	1.90E-2	1.90E-2
XXA	1.23E-2	9.92E-2	1.24E+0	7.76E-3	6.88E-2	8.63E-1	1.62E-3	2.23E-2	2.80E-1	3.85E-4	3.42E-3	4.30E-2	.00E+0	6.60E-4	8.30E-3
XXB	1.18E-2	7.09E-2	6.38E-1	7.42E-3	4.47E-2	4.02E-1	1.55E-3	9.33E-3	8.40E-2	3.68E-4	2.22E-3	2.00E-2	.00E+0	.00E+0	.00E+0
XXC	1.07E-2	4.03E-2	1.07E+0	6.76E-3	2.54E-2	6.74E-1	1.41E-3	5.31E-3	1.41E-1	3.35E-4	1.26E-3	3.35E-2	.00E+0	.00E+0	.00E+0
XXIA	9.50E-3	9.83E-2	9.36E-1	9.50E-3	9.83E-2	9.36E-1	9.49E-3	9.82E-2	9.35E-1	9.24E-3	9.56E-2	9.11E-1	6.28E-3	6.50E-2	6.19E-1
XXIB	9.44E-3	9.70E-2	8.63E-1	9.44E-3	9.70E-2	8.63E-1	9.44E-3	9.69E-2	8.62E-1	9.19E-3	9.44E-2	8.39E-1	6.24E-3	6.41E-2	5.70E-1
XXIC	9.31E-3	9.41E-2	7.29E-1	9.31E-3	9.41E-2	7.29E-1	9.31E-3	9.40E-2	7.28E-1	9.06E-3	9.15E-2	7.09E-1	6.16E-3	6.22E-2	4.82E-1
XXII	8.01E-1	1.23E+1	2.49E+1	8.01E-1	1.23E+1	2.49E+1	7.98E-1	1.23E+1	2.49E+1	7.74E-1	1.19E+1	2.42E+1	5.61E-1	9.04E+0	1.83E+1
DOE	2.30E+2	1.77E+3	1.70E+4	2.29E+2	1.76E+3	1.70E+4	2.27E+2	1.75E+3	1.69E+4	2.19E+2	1.70E+3	1.66E+4	1.95E+2	1.58E+3	1.55E+4
DOD	1.99E-2	1.15E-1	2.07E-1	1.96E-2	1.14E-1	1.99E-1	1.88E-2	1.10E-1	1.77E-1	1.86E-2	1.09E-1	1.75E-1	1.75E-2	1.02E-1	1.65E-1
NRC	2.05E+0	4.89E+0	3.41E+1	1.99E+0	4.56E+0	2.94E+1	1.91E+0	4.08E+0	2.27E+1	1.88E+0	3.87E+0	2.03E+1	1.60E+0	2.96E+0	1.38E+1
Total	2.32E+2	1.77E+3	1.71E+4	2.31E+2	1.76E+3	1.70E+4	2.29E+2	1.75E+3	1.69E+4	2.21E+2	1.71E+3	1.66E+4	1.97E+2	1.59E+3	1.55E+4

Medium Population Density With Agriculture - 09-13-94 4:04p
 TABLE K-66. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.97E-1	7.62E-1	7.62E-1	6.69E-1	7.31E-1	7.31E-1	6.46E-1	7.06E-1	7.06E-1	6.13E-1	6.70E-1	6.70E-1	5.88E-1	6.43E-1	6.43E-1	5.60E-1	6.12E-1	6.12E-1
II	4.50E+1	4.42E+2	3.77E+3	4.50E+1	4.42E+2	3.76E+3	4.50E+1	4.42E+2	3.76E+3	4.50E+1	4.41E+2	3.74E+3	4.50E+1	4.41E+2	3.73E+3	4.50E+1	4.41E+2	3.73E+3
III	3.03E-1	3.36E-1	3.36E-1	2.64E-1	2.92E-1	2.92E-1	2.40E-1	2.66E-1	2.66E-1	2.20E-1	2.43E-1	2.43E-1	1.96E-1	2.17E-1	2.17E-1	1.61E-1	1.78E-1	1.78E-1
IV	2.21E-1	1.38E+0	4.85E+0	2.15E-1	1.35E+0	4.73E+0	2.10E-1	1.31E+0	4.62E+0	2.00E-1	1.25E+0	4.39E+0	1.90E-1	1.18E+0	4.16E+0	1.74E-1	1.09E+0	3.82E+0
V	1.93E+1	2.10E+1	2.10E+1	1.91E+1	2.07E+1	2.07E+1	1.88E+1	2.05E+1	2.05E+1	1.85E+1	2.01E+1	2.01E+1	1.82E+1	1.98E+1	1.98E+1	1.77E+1	1.92E+1	1.92E+1
VI	6.64E+0	5.12E+1	5.60E+2	6.63E+0	5.12E+1	5.59E+2	6.62E+0	5.12E+1	5.59E+2	6.60E+0	5.11E+1	5.58E+2	6.58E+0	5.10E+1	5.58E+2	6.55E+0	5.09E+1	5.57E+2
VII	3.92E+0	2.92E+1	2.18E+2	2.57E+0	1.93E+1	1.44E+2	1.80E+0	1.36E+1	1.02E+2	1.08E+0	8.32E+0	6.23E+1	6.12E-1	4.70E+0	3.52E+1	1.01E-1	7.55E-1	5.63E+0
IX	6.31E-3	5.42E-2	3.37E-1	3.02E-3	2.59E-2	1.61E-1	1.78E-3	1.53E-2	9.53E-2	6.30E-4	5.41E-3	3.36E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.02E+0	3.14E+0	3.57E+0	1.01E+0	3.00E+0	3.41E+0	1.01E+0	2.88E+0	3.26E+0	1.00E+0	2.66E+0	3.00E+0	9.99E-1	2.51E+0	2.82E+0	9.92E-1	2.36E+0	2.64E+0
XII	1.88E-2	1.10E-1	1.77E-1	1.88E-2	1.10E-1	1.77E-1	1.87E-2	1.09E-1	1.77E-1	1.87E-2	1.09E-1	1.76E-1	1.86E-2	1.09E-1	1.76E-1	1.86E-2	1.09E-1	1.75E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.29E-3	1.29E-3	1.29E-3	1.21E-3	1.29E-3	1.29E-3	1.21E-3	1.29E-3
XVIB	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.20E-3	1.28E-3	1.28E-3	1.20E-3	1.27E-3	1.27E-3
XVIC	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3	1.18E-3	1.25E-3	1.25E-3	1.18E-3	1.25E-3	1.25E-3	1.18E-3	1.24E-3	1.24E-3
XVIIIA	2.71E-2	2.92E-2	2.92E-2	2.71E-2	2.92E-2	2.92E-2	2.70E-2	2.92E-2	2.92E-2	2.70E-2	2.92E-2	2.92E-2	2.70E-2	2.91E-2	2.91E-2	2.69E-2	2.90E-2	2.90E-2
XVIIIB	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.63E-2	2.63E-2	2.48E-2	2.63E-2	2.63E-2	2.48E-2	2.63E-2	2.63E-2	2.47E-2	2.62E-2	2.62E-2
XVIIIC	2.11E-2	2.19E-2	2.19E-2	2.11E-2	2.19E-2	2.19E-2	2.10E-2	2.19E-2	2.19E-2	2.10E-2	2.18E-2	2.18E-2	2.10E-2	2.18E-2	2.18E-2	2.09E-2	2.17E-2	2.17E-2
XXA	1.62E-3	2.23E-2	2.80E-1	5.45E-4	6.79E-3	8.51E-2	5.07E-4	4.36E-3	5.47E-2	4.57E-4	3.98E-3	4.99E-2	4.23E-4	3.72E-3	4.66E-2	3.85E-4	3.42E-3	4.30E-2
XXB	1.55E-3	9.33E-3	8.40E-2	5.21E-4	3.14E-3	2.83E-2	4.86E-4	2.93E-3	2.63E-2	4.38E-4	2.64E-3	2.38E-2	4.05E-4	2.44E-3	2.20E-2	3.68E-4	2.22E-3	2.00E-2
XXC	1.41E-3	5.31E-3	1.41E-1	4.75E-4	1.79E-3	4.74E-2	4.42E-4	1.66E-3	4.41E-2	3.99E-4	1.50E-3	3.98E-2	3.69E-4	1.39E-3	3.68E-2	3.35E-4	1.26E-3	3.35E-2
XXIA	9.49E-3	9.82E-2	9.35E-1	9.47E-3	9.79E-2	9.33E-1	9.44E-3	9.77E-2	9.30E-1	9.38E-3	9.71E-2	9.24E-1	9.33E-3	9.65E-2	9.19E-1	9.24E-3	9.56E-2	9.11E-1
XXIB	9.44E-3	9.69E-2	8.62E-1	9.41E-3	9.67E-2	8.60E-1	9.38E-3	9.64E-2	8.57E-1	9.33E-3	9.58E-2	8.52E-1	9.27E-3	9.52E-2	8.47E-1	9.19E-3	9.44E-2	8.39E-1
XXIC	9.31E-3	9.40E-2	7.28E-1	9.28E-3	9.37E-2	7.26E-1	9.25E-3	9.35E-2	7.24E-1	9.20E-3	9.29E-2	7.20E-1	9.14E-3	9.23E-2	7.15E-1	9.06E-3	9.15E-2	7.09E-1
XXII	7.98E-1	1.23E+1	2.49E+1	7.94E-1	1.23E+1	2.48E+1	7.91E-1	1.22E+1	2.47E+1	7.84E-1	1.21E+1	2.45E+1	7.80E-1	1.20E+1	2.43E+1	7.74E-1	1.19E+1	2.42E+1
DOE	2.27E+2	1.75E+3	1.69E+4	2.25E+2	1.73E+3	1.68E+4	2.24E+2	1.73E+3	1.68E+4	2.22E+2	1.72E+3	1.67E+4	2.21E+2	1.71E+3	1.66E+4	2.19E+2	1.70E+3	1.66E+4
DOD	1.88E-2	1.10E-1	1.77E-1	1.88E-2	1.10E-1	1.77E-1	1.87E-2	1.09E-1	1.77E-1	1.87E-2	1.09E-1	1.76E-1	1.86E-2	1.09E-1	1.76E-1	1.86E-2	1.09E-1	1.75E-1
NRC	1.91E+0	4.08E+0	2.27E+1	1.90E+0	3.96E+0	2.10E+1	1.89E+0	3.94E+0	2.08E+1	1.89E+0	3.92E+0	2.06E+1	1.89E+0	3.90E+0	2.05E+1	1.88E+0	3.87E+0	2.03E+1
Total	2.29E+2	1.75E+3	1.69E+4	2.27E+2	1.74E+3	1.68E+4	2.25E+2	1.73E+3	1.68E+4	2.24E+2	1.72E+3	1.67E+4	2.23E+2	1.72E+3	1.66E+4	2.21E+2	1.71E+3	1.66E+4

Medium Population Density With Agriculture - 09-13-94 4:04p
 TABLE K-67. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.46E-1	8.15E-1	8.15E-1	7.22E-1	7.89E-1	7.89E-1	6.38E-1	6.97E-1	6.97E-1	4.28E-1	4.68E-1	4.68E-1	1.09E-1	1.19E-1	1.19E-1
II	4.51E+1	4.42E+2	3.77E+3	4.51E+1	4.42E+2	3.77E+3	4.50E+1	4.42E+2	3.75E+3	4.49E+1	4.39E+2	3.69E+3	3.81E+1	3.73E+2	3.04E+3
III	3.25E-1	3.60E-1	3.60E-1	3.22E-1	3.56E-1	3.56E-1	2.37E-1	2.62E-1	2.62E-1	3.79E-2	4.19E-2	4.19E-2	.00E+0	.00E+0	.00E+0
IV	2.33E-1	1.46E+0	5.12E+0	2.27E-1	1.42E+0	4.99E+0	2.07E-1	1.29E+0	4.54E+0	3.71E-2	2.32E-1	8.14E-1	.00E+0	.00E+0	.00E+0
V	1.95E+1	2.13E+1	2.13E+1	1.94E+1	2.12E+1	2.12E+1	1.88E+1	2.04E+1	2.04E+1	1.45E+1	1.58E+1	1.58E+1	4.08E+0	4.44E+0	4.44E+0
VI	6.65E+0	5.12E+1	5.60E+2	6.64E+0	5.12E+1	5.60E+2	6.61E+0	5.11E+1	5.59E+2	6.29E+0	4.95E+1	5.42E+2	4.53E+0	3.75E+1	4.14E+2
VII	5.85E+0	4.49E+1	3.36E+2	4.90E+0	3.68E+1	2.75E+2	1.54E+0	1.17E+1	8.78E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	2.19E-2	1.88E-1	1.17E+0	1.14E-2	9.80E-2	6.09E-1	1.18E-3	1.02E-2	6.31E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.21E+0	3.66E+0	1.01E+0	2.93E+0	3.33E+0	9.61E-1	1.98E+0	2.19E+0	7.71E-1	1.09E+0	1.16E+0
XII	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1	1.87E-2	1.09E-1	1.76E-1	1.82E-2	1.06E-1	1.72E-1	5.87E-3	3.43E-2	5.54E-2
XIIIA	1.24E-4	8.13E-4	2.32E-3	4.75E-5	3.11E-4	8.87E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.14E-4	5.53E-4	1.05E-3	4.38E-5	2.12E-4	4.04E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	9.75E-5	3.05E-4	5.97E-3	3.74E-5	1.17E-4	2.29E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3	1.18E-3	1.26E-3	1.26E-3	6.70E-4	7.17E-4	7.17E-4
XVIB	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.17E-3	1.25E-3	1.25E-3	6.64E-4	7.08E-4	7.08E-4
XVIC	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3	1.18E-3	1.25E-3	1.25E-3	1.15E-3	1.22E-3	1.22E-3	6.51E-4	6.91E-4	6.91E-4
XVIIIA	2.71E-2	2.92E-2	2.92E-2	2.71E-2	2.92E-2	2.92E-2	2.70E-2	2.92E-2	2.92E-2	2.59E-2	2.80E-2	2.80E-2	1.78E-2	1.92E-2	1.92E-2
XVIIIB	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.63E-2	2.63E-2	2.38E-2	2.52E-2	2.52E-2	1.63E-2	1.73E-2	1.73E-2
XVIIIC	2.11E-2	2.19E-2	2.19E-2	2.11E-2	2.19E-2	2.19E-2	2.10E-2	2.19E-2	2.19E-2	2.02E-2	2.09E-2	2.09E-2	1.38E-2	1.44E-2	1.44E-2
XXA	9.32E-3	8.36E-2	1.05E+0	4.05E-3	4.47E-2	5.60E-1	4.64E-4	4.15E-3	5.20E-2	1.75E-4	2.20E-3	2.76E-2	.00E+0	.00E+0	.00E+0
XXB	8.92E-3	5.81E-2	5.22E-1	3.88E-3	2.93E-2	2.63E-1	4.44E-4	2.88E-3	2.60E-2	1.68E-4	1.43E-3	1.29E-2	.00E+0	.00E+0	.00E+0
XXC	8.12E-3	3.06E-2	8.10E-1	3.53E-3	1.33E-2	3.52E-1	4.04E-4	1.52E-3	4.03E-2	1.53E-4	5.75E-4	1.52E-2	.00E+0	.00E+0	.00E+0
XXIA	9.50E-3	9.83E-2	9.36E-1	9.50E-3	9.83E-2	9.36E-1	9.43E-3	9.75E-2	9.29E-1	8.10E-3	8.39E-2	7.98E-1	2.90E-3	3.00E-2	2.85E-1
XXIB	9.44E-3	9.70E-2	8.63E-1	9.44E-3	9.70E-2	8.63E-1	9.37E-3	9.62E-2	8.56E-1	8.06E-3	8.28E-2	7.36E-1	2.88E-3	2.96E-2	2.63E-1
XXIC	9.31E-3	9.41E-2	7.29E-1	9.31E-3	9.41E-2	7.29E-1	9.24E-3	9.33E-2	7.23E-1	7.94E-3	8.02E-2	6.22E-1	2.84E-3	2.87E-2	2.22E-1
XXII	8.01E-1	1.23E+1	2.49E+1	8.00E-1	1.23E+1	2.49E+1	7.89E-1	1.22E+1	2.47E+1	7.27E-1	1.13E+1	2.29E+1	.00E+0	.00E+0	.00E+0
DOE	2.29E+2	1.76E+3	1.70E+4	2.28E+2	1.75E+3	1.69E+4	2.23E+2	1.72E+3	1.67E+4	2.09E+2	1.66E+3	1.62E+4	1.46E+2	1.23E+3	1.25E+4
DOD	1.98E-2	1.15E-1	2.04E-1	1.92E-2	1.12E-1	1.88E-1	1.87E-2	1.09E-1	1.76E-1	1.82E-2	1.06E-1	1.72E-1	5.87E-3	3.43E-2	5.54E-2
NRC	2.01E+0	4.71E+0	3.14E+1	1.94E+0	4.32E+0	2.58E+1	1.89E+0	3.93E+0	2.07E+1	1.79E+0	3.54E+0	1.78E+1	1.15E+0	1.80E+0	6.81E+0
Total	2.31E+2	1.77E+3	1.70E+4	2.30E+2	1.76E+3	1.70E+4	2.25E+2	1.73E+3	1.68E+4	2.11E+2	1.66E+3	1.62E+4	1.47E+2	1.23E+3	1.25E+4

Medium Population Density With Agriculture - 09-13-94 4:04p
 TABLE K-68. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.38E-1	6.97E-1	6.97E-1	5.90E-1	6.45E-1	6.45E-1	5.58E-1	6.10E-1	6.10E-1	5.14E-1	5.62E-1	5.62E-1	4.86E-1	5.31E-1	5.31E-1	4.28E-1	4.68E-1	4.68E-1
II	4.50E+1	4.42E+2	3.75E+3	4.50E+1	4.41E+2	3.73E+3	4.50E+1	4.41E+2	3.73E+3	4.50E+1	4.41E+2	3.72E+3	4.50E+1	4.40E+2	3.71E+3	4.49E+1	4.39E+2	3.69E+3
III	2.37E-1	2.62E-1	2.62E-1	1.98E-1	2.20E-1	2.20E-1	1.58E-1	1.75E-1	1.75E-1	9.31E-2	1.03E-1	1.03E-1	5.38E-2	5.96E-2	5.96E-2	3.79E-2	4.19E-2	4.19E-2
IV	2.07E-1	1.29E+0	4.54E+0	1.88E-1	1.17E+0	4.13E+0	1.69E-1	1.06E+0	3.71E+0	1.31E-1	8.21E-1	2.89E+0	9.37E-2	5.85E-1	2.06E+0	3.71E-2	2.32E-1	8.14E-1
V	1.88E+1	2.04E+1	2.04E+1	1.82E+1	1.98E+1	1.98E+1	1.76E+1	1.92E+1	1.92E+1	1.64E+1	1.79E+1	1.79E+1	1.53E+1	1.66E+1	1.66E+1	1.45E+1	1.58E+1	1.58E+1
VI	6.61E+0	5.11E+1	5.59E+2	6.58E+0	5.10E+1	5.58E+2	6.55E+0	5.09E+1	5.56E+2	6.48E+0	5.05E+1	5.53E+2	6.41E+0	5.01E+1	5.49E+2	6.29E+0	4.95E+1	5.42E+2
VII	1.54E+0	1.17E+1	8.78E+1	5.43E-1	4.17E+0	3.12E+1	5.43E-2	3.97E-1	2.95E+0	5.59E-3	3.53E-2	2.56E-1	1.64E-3	9.87E-3	7.10E-2	.00E+0	.00E+0	.00E+0
IX	1.18E-3	1.02E-2	6.31E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.01E+0	2.93E+0	3.33E+0	1.00E+0	2.64E+0	2.98E+0	9.96E-1	2.46E+0	2.76E+0	9.85E-1	2.25E+0	2.51E+0	9.74E-1	2.12E+0	2.36E+0	9.61E-1	1.98E+0	2.19E+0
XII	1.87E-2	1.09E-1	1.76E-1	1.86E-2	1.08E-1	1.75E-1	1.85E-2	1.08E-1	1.75E-1	1.84E-2	1.08E-1	1.74E-1	1.84E-2	1.07E-1	1.73E-1	1.82E-2	1.06E-1	1.72E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.22E-3	1.30E-3	1.30E-3	1.21E-3	1.29E-3	1.29E-3	1.21E-3	1.29E-3	1.29E-3	1.20E-3	1.28E-3	1.28E-3	1.20E-3	1.28E-3	1.28E-3	1.18E-3	1.26E-3	1.26E-3
XVIB	1.21E-3	1.28E-3	1.28E-3	1.20E-3	1.28E-3	1.28E-3	1.20E-3	1.27E-3	1.27E-3	1.20E-3	1.27E-3	1.27E-3	1.19E-3	1.26E-3	1.26E-3	1.17E-3	1.25E-3	1.25E-3
XVIC	1.18E-3	1.25E-3	1.25E-3	1.18E-3	1.25E-3	1.25E-3	1.18E-3	1.24E-3	1.24E-3	1.17E-3	1.24E-3	1.24E-3	1.17E-3	1.23E-3	1.23E-3	1.15E-3	1.22E-3	1.22E-3
XVIIIA	2.70E-2	2.92E-2	2.92E-2	2.70E-2	2.91E-2	2.91E-2	2.69E-2	2.90E-2	2.90E-2	2.66E-2	2.87E-2	2.87E-2	2.63E-2	2.84E-2	2.84E-2	2.59E-2	2.80E-2	2.80E-2
XVIIIB	2.48E-2	2.63E-2	2.63E-2	2.48E-2	2.63E-2	2.63E-2	2.46E-2	2.62E-2	2.62E-2	2.44E-2	2.59E-2	2.59E-2	2.42E-2	2.56E-2	2.56E-2	2.38E-2	2.52E-2	2.52E-2
XVIIIC	2.10E-2	2.19E-2	2.19E-2	2.10E-2	2.18E-2	2.18E-2	2.09E-2	2.17E-2	2.17E-2	2.07E-2	2.15E-2	2.15E-2	2.05E-2	2.13E-2	2.13E-2	2.02E-2	2.09E-2	2.09E-2
XXA	4.64E-4	4.15E-3	5.20E-2	3.92E-4	3.61E-3	4.53E-2	3.46E-4	3.27E-3	4.10E-2	2.90E-4	2.82E-3	3.54E-2	2.44E-4	2.51E-3	3.15E-2	1.75E-4	2.20E-3	2.76E-2
XXB	4.44E-4	2.88E-3	2.60E-2	3.75E-4	2.49E-3	2.24E-2	3.32E-4	2.24E-3	2.02E-2	2.78E-4	1.91E-3	1.72E-2	2.34E-4	1.70E-3	1.53E-2	1.68E-4	1.43E-3	1.29E-2
XXC	4.04E-4	1.52E-3	4.03E-2	3.41E-4	1.28E-3	3.41E-2	3.02E-4	1.14E-3	3.01E-2	2.53E-4	9.52E-4	2.52E-2	2.13E-4	8.02E-4	2.13E-2	1.53E-4	5.75E-4	1.52E-2
XXIA	9.43E-3	9.75E-2	9.29E-1	9.33E-3	9.65E-2	9.19E-1	9.23E-3	9.55E-2	9.10E-1	9.01E-3	9.32E-2	8.87E-1	8.61E-3	8.91E-2	8.49E-1	8.10E-3	8.39E-2	7.98E-1
XXIB	9.37E-3	9.62E-2	8.56E-1	9.27E-3	9.53E-2	8.47E-1	9.18E-3	9.43E-2	8.38E-1	8.95E-3	9.20E-2	8.18E-1	8.56E-3	8.79E-2	7.82E-1	8.06E-3	8.28E-2	7.36E-1
XXIC	9.24E-3	9.33E-2	7.23E-1	9.14E-3	9.24E-2	7.16E-1	9.05E-3	9.14E-2	7.08E-1	8.83E-3	8.92E-2	6.91E-1	8.44E-3	8.53E-2	6.61E-1	7.94E-3	8.02E-2	6.22E-1
XXII	7.89E-1	1.22E+1	2.47E+1	7.80E-1	1.20E+1	2.44E+1	7.73E-1	1.19E+1	2.42E+1	7.53E-1	1.17E+1	2.36E+1	7.37E-1	1.15E+1	2.32E+1	7.27E-1	1.13E+1	2.29E+1
DOE	2.23E+2	1.72E+3	1.67E+4	2.21E+2	1.71E+3	1.66E+4	2.19E+2	1.70E+3	1.66E+4	2.16E+2	1.69E+3	1.65E+4	2.13E+2	1.68E+3	1.63E+4	2.09E+2	1.66E+3	1.62E+4
DOD	1.87E-2	1.09E-1	1.76E-1	1.86E-2	1.08E-1	1.75E-1	1.85E-2	1.08E-1	1.75E-1	1.84E-2	1.08E-1	1.74E-1	1.84E-2	1.07E-1	1.73E-1	1.82E-2	1.06E-1	1.72E-1
NRC	1.89E+0	3.93E+0	2.07E+1	1.89E+0	3.90E+0	2.05E+1	1.88E+0	3.87E+0	2.02E+1	1.85E+0	3.69E+0	1.97E+1	1.83E+0	3.69E+0	1.89E+1	1.79E+0	3.54E+0	1.78E+1
Total	2.25E+2	1.73E+3	1.68E+4	2.23E+2	1.72E+3	1.66E+4	2.21E+2	1.71E+3	1.66E+4	2.17E+2	1.69E+3	1.65E+4	2.14E+2	1.68E+3	1.64E+4	2.11E+2	1.66E+3	1.62E+4

Medium Population Density Without Agriculture - 09-13-94 4:08p
 TABLE K-69. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.16E+3	2.35E+3	2.35E+3	2.12E+3	2.30E+3	2.30E+3	2.01E+3	2.18E+3	2.18E+3	1.61E+3	1.75E+3	1.75E+3	7.21E+2	7.83E+2	7.83E+2
II	5.03E+4	4.89E+5	3.96E+6	5.02E+4	4.89E+5	3.96E+6	5.02E+4	4.89E+5	3.95E+6	5.02E+4	4.88E+5	3.91E+6	4.95E+4	4.79E+5	3.78E+6
III	9.48E+2	1.05E+3	1.05E+3	9.47E+2	1.05E+3	1.05E+3	8.83E+2	9.78E+2	9.78E+2	4.68E+2	5.18E+2	5.18E+2	.00E+0	.00E+0	.00E+0
IV	2.82E+2	7.34E+2	8.21E+3	2.79E+2	7.25E+2	8.11E+3	2.66E+2	6.92E+2	7.74E+3	2.09E+2	5.45E+2	6.10E+3	.00E+0	.00E+0	.00E+0
V	5.61E+4	6.08E+4	6.08E+4	5.60E+4	6.08E+4	6.08E+4	5.54E+4	6.01E+4	6.01E+4	5.07E+4	5.50E+4	5.50E+4	3.33E+4	3.61E+4	3.61E+4
VI	1.52E+4	9.32E+4	5.70E+5	1.52E+4	9.32E+4	5.70E+5	1.52E+4	9.31E+4	5.70E+5	1.50E+4	9.25E+4	5.67E+5	1.34E+4	8.56E+4	5.28E+5
VII	8.24E+4	7.40E+5	6.01E+6	6.74E+4	6.01E+5	4.88E+6	4.89E+4	4.36E+5	3.54E+6	1.26E+3	1.12E+4	9.13E+4	.00E+0	.00E+0	.00E+0
IX	3.79E+2	3.41E+3	2.17E+4	2.76E+2	2.48E+3	1.58E+4	9.46E+1	8.50E+2	5.42E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.39E+3	1.86E+4	2.15E+4	1.39E+3	1.86E+4	2.15E+4	1.38E+3	1.80E+4	2.08E+4	1.35E+3	1.20E+4	1.39E+4	1.19E+3	5.58E+3	6.33E+3
XII	5.11E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.03E+1	1.54E+2	1.58E+2	4.75E+1	1.45E+2	1.49E+2
XIIIA	2.13E-1	6.96E-1	1.86E+0	1.53E-1	4.99E-1	1.33E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.71E-1	3.08E-1	1.06E+0	1.23E-1	2.21E-1	7.64E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.13E-1	1.36E-1	4.20E+1	8.10E-2	9.78E-2	3.01E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E+0	3.84E+0	3.84E+0	3.65E+0	3.84E+0	3.84E+0	3.65E+0	3.84E+0	3.84E+0	3.61E+0	3.80E+0	3.80E+0	3.18E+0	3.36E+0	3.36E+0
XVIB	3.61E+0	3.79E+0	3.79E+0	3.61E+0	3.79E+0	3.79E+0	3.61E+0	3.78E+0	3.78E+0	3.57E+0	3.75E+0	3.75E+0	3.14E+0	3.31E+0	3.31E+0
XVIC	3.52E+0	3.67E+0	3.67E+0	3.52E+0	3.67E+0	3.67E+0	3.52E+0	3.67E+0	3.67E+0	3.48E+0	3.64E+0	3.64E+0	3.06E+0	3.21E+0	3.21E+0
XVIIIA	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.02E+1	1.13E+1	1.13E+1	8.93E+0	9.88E+0	9.88E+0
XVIIIB	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	1.00E+1	1.11E+1	1.11E+1	8.78E+0	9.70E+0	9.70E+0
XVIIIC	9.79E+0	1.07E+1	1.07E+1	9.79E+0	1.07E+1	1.07E+1	9.79E+0	1.07E+1	9.79E+0	1.07E+1	1.07E+1	1.06E+1	1.06E+1	8.50E+0	9.27E+0
XXA	3.03E+0	1.51E+1	1.63E+3	1.91E+0	1.05E+1	1.13E+3	3.98E-1	3.39E+0	3.66E+2	9.37E-2	5.18E-1	5.62E+1	.00E+0	9.93E-2	1.09E+1
XXB	2.44E+0	8.87E+0	1.12E+3	1.54E+0	5.59E+0	7.04E+2	3.21E-1	1.17E+0	1.47E+2	7.56E-2	2.76E-1	3.50E+1	.00E+0	.00E+0	.00E+0
XXC	1.61E+0	5.85E+0	7.62E+3	1.02E+0	3.69E+0	4.80E+3	2.12E-1	7.69E-1	1.00E+3	4.99E-2	1.83E-1	2.38E+2	.00E+0	.00E+0	.00E+0
XXIA	2.89E+1	3.00E+2	2.84E+3	2.89E+1	3.00E+2	2.84E+3	2.89E+1	3.00E+2	2.84E+3	2.81E+1	2.92E+2	2.77E+3	1.91E+1	1.99E+2	1.88E+3
XXIB	2.87E+1	2.97E+2	2.57E+3	2.87E+1	2.97E+2	2.57E+3	2.87E+1	2.96E+2	2.57E+3	2.79E+1	2.89E+2	2.50E+3	1.90E+1	1.96E+2	1.70E+3
XXIC	2.83E+1	2.86E+2	2.07E+3	2.83E+1	2.86E+2	2.07E+3	2.83E+1	2.85E+2	2.07E+3	2.76E+1	2.78E+2	2.02E+3	1.87E+1	1.89E+2	1.37E+3
XXII	1.55E+3	6.29E+4	1.07E+5	1.55E+3	6.29E+4	1.07E+5	1.54E+3	6.29E+4	1.06E+5	1.50E+3	6.11E+4	1.03E+5	1.07E+3	4.59E+4	7.86E+4
DOE	5.51E+5	3.87E+6	2.38E+7	5.35E+5	3.73E+6	2.26E+7	5.15E+5	3.56E+6	2.13E+7	4.57E+5	3.09E+6	1.77E+7	3.96E+5	2.78E+6	1.63E+7
DOD	5.25E+1	1.59E+2	2.87E+2	5.20E+1	1.58E+2	2.51E+2	5.10E+1	1.56E+2	1.60E+2	5.03E+1	1.54E+2	1.58E+2	4.75E+1	1.45E+2	1.49E+2
NRC	1.75E+3	7.78E+3	1.04E+5	1.73E+3	7.73E+3	8.70E+4	1.72E+3	7.66E+3	6.31E+4	1.69E+3	7.46E+3	5.61E+4	1.36E+3	5.30E+3	3.74E+4
Total	5.53E+5	3.87E+6	2.39E+7	5.37E+5	3.73E+6	2.27E+7	5.17E+5	3.56E+6	2.13E+7	4.58E+5	3.10E+6	1.77E+7	3.97E+5	2.79E+6	1.64E+7

Medium Population Density Without Agriculture - 09-13-94 4:08p
 TABLE K-70. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.01E+3	2.18E+3	2.18E+3	1.92E+3	2.09E+3	2.09E+3	1.86E+3	2.02E+3	2.02E+3	1.76E+3	1.91E+3	1.91E+3	1.69E+3	1.84E+3	1.84E+3	1.61E+3	1.75E+3	1.75E+3
II	5.02E+4	4.89E+5	3.95E+6	5.02E+4	4.89E+5	3.95E+6	5.02E+4	4.89E+5	3.94E+6	5.02E+4	4.88E+5	3.93E+6	5.02E+4	4.88E+5	3.92E+6	5.02E+4	4.88E+5	3.91E+6
III	8.83E+2	9.78E+2	9.78E+2	7.70E+2	8.53E+2	8.53E+2	7.01E+2	7.76E+2	7.76E+2	6.41E+2	7.10E+2	7.10E+2	5.72E+2	6.34E+2	6.34E+2	4.68E+2	5.18E+2	5.18E+2
IV	2.66E+2	6.92E+2	7.74E+3	2.59E+2	6.75E+2	7.54E+3	2.53E+2	6.58E+2	7.36E+3	2.40E+2	6.26E+2	7.00E+3	2.28E+2	5.94E+2	6.64E+3	2.09E+2	5.45E+2	6.10E+3
V	5.54E+4	6.01E+4	6.01E+4	5.47E+4	5.94E+4	5.94E+4	5.41E+4	5.87E+4	5.87E+4	5.31E+4	5.77E+4	5.77E+4	5.22E+4	5.66E+4	5.66E+4	5.07E+4	5.50E+4	5.50E+4
VI	1.52E+4	9.31E+4	5.70E+5	1.52E+4	9.31E+4	5.70E+5	1.52E+4	9.30E+4	5.69E+5	1.51E+4	9.29E+4	5.69E+5	1.51E+4	9.27E+4	5.68E+5	1.50E+4	9.25E+4	5.67E+5
VII	4.89E+4	4.36E+5	3.54E+6	3.23E+4	2.88E+5	2.34E+6	2.28E+4	2.03E+5	1.65E+6	1.39E+4	1.24E+5	1.01E+6	7.84E+3	7.03E+4	5.71E+5	1.26E+3	1.12E+4	9.13E+4
IX	9.46E+1	8.50E+2	5.42E+3	4.52E+1	4.06E+2	2.59E+3	2.68E+1	2.40E+2	1.53E+3	9.44E+0	8.49E+1	5.41E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.38E+3	1.80E+4	2.08E+4	1.38E+3	1.70E+4	1.96E+4	1.37E+3	1.60E+4	1.85E+4	1.37E+3	1.43E+4	1.65E+4	1.36E+3	1.32E+4	1.52E+4	1.35E+3	1.20E+4	1.39E+4
XII	5.10E+1	1.56E+2	1.60E+2	5.08E+1	1.55E+2	1.59E+2	5.08E+1	1.55E+2	1.59E+2	5.06E+1	1.55E+2	1.59E+2	5.04E+1	1.54E+2	1.58E+2	5.03E+1	1.54E+2	1.58E+2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E+0	3.84E+0	3.84E+0	3.64E+0	3.83E+0	3.83E+0	3.64E+0	3.83E+0	3.83E+0	3.63E+0	3.82E+0	3.82E+0	3.62E+0	3.81E+0	3.81E+0	3.61E+0	3.80E+0	3.80E+0
XVIB	3.61E+0	3.78E+0	3.78E+0	3.60E+0	3.78E+0	3.78E+0	3.60E+0	3.78E+0	3.78E+0	3.59E+0	3.77E+0	3.77E+0	3.58E+0	3.76E+0	3.76E+0	3.57E+0	3.75E+0	3.75E+0
XVIC	3.52E+0	3.67E+0	3.67E+0	3.52E+0	3.67E+0	3.67E+0	3.51E+0	3.67E+0	3.67E+0	3.50E+0	3.65E+0	3.65E+0	3.49E+0	3.64E+0	3.64E+0	3.48E+0	3.64E+0	3.64E+0
XVIIIA	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.13E+1	1.13E+1	1.02E+1	1.13E+1	1.13E+1
XVIIIB	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.11E+1	1.11E+1	1.01E+1	1.11E+1	1.11E+1	1.00E+1	1.11E+1	1.11E+1
XVIIIC	9.79E+0	1.07E+1	1.07E+1	9.79E+0	1.07E+1	1.07E+1	9.78E+0	1.07E+1	1.07E+1	9.77E+0	1.07E+1	1.07E+1	9.76E+0	1.06E+1	1.06E+1	9.72E+0	1.06E+1	1.06E+1
XXA	3.98E-1	3.39E+0	3.66E+2	1.33E-1	1.03E+0	1.11E+2	1.24E-1	6.61E-1	7.16E+1	1.12E-1	6.03E-1	6.53E+1	1.03E-1	5.63E-1	6.10E+1	9.37E-2	5.18E-1	5.62E+1
XXB	3.21E-1	1.17E+0	1.47E+2	1.07E-1	3.91E-1	4.95E+1	9.99E-2	3.64E-1	4.61E+1	9.00E-2	3.29E-1	4.16E+1	8.31E-2	3.04E-1	3.85E+1	7.56E-2	2.76E-1	3.50E+1
XXC	2.12E-1	7.69E-1	1.00E+3	7.09E-2	2.58E-1	3.37E+2	6.60E-2	2.41E-1	3.14E+2	5.95E-2	2.17E-1	2.83E+2	5.49E-2	2.01E-1	2.62E+2	4.99E-2	1.83E-1	2.38E+2
XXIA	2.89E+1	3.00E+2	2.84E+3	2.88E+1	2.99E+2	2.83E+3	2.87E+1	2.98E+2	2.83E+3	2.86E+1	2.97E+2	2.81E+3	2.84E+1	2.95E+2	2.79E+3	2.81E+1	2.92E+2	2.77E+3
XXIB	2.87E+1	2.96E+2	2.57E+3	2.86E+1	2.96E+2	2.56E+3	2.85E+1	2.95E+2	2.55E+3	2.84E+1	2.93E+2	2.54E+3	2.82E+1	2.91E+2	2.52E+3	2.79E+1	2.89E+2	2.50E+3
XXIC	2.83E+1	2.85E+2	2.07E+3	2.82E+1	2.85E+2	2.07E+3	2.82E+1	2.84E+2	2.06E+3	2.80E+1	2.82E+2	2.05E+3	2.78E+1	2.80E+2	2.04E+3	2.76E+1	2.78E+2	2.02E+3
XXII	1.54E+3	6.29E+4	1.06E+5	1.54E+3	6.27E+4	1.06E+5	1.53E+3	6.26E+4	1.06E+5	1.52E+3	6.19E+4	1.05E+5	1.51E+3	6.15E+4	1.04E+5	1.50E+3	6.11E+4	1.03E+5
DOE	5.15E+5	3.56E+6	2.13E+7	4.97E+5	3.40E+6	2.00E+7	4.86E+5	3.31E+6	1.93E+7	4.75E+5	3.22E+6	1.87E+7	4.67E+5	3.16E+6	1.82E+7	4.57E+5	3.09E+6	1.77E+7
DOD	5.10E+1	1.56E+2	1.60E+2	5.08E+1	1.55E+2	1.59E+2	5.08E+1	1.55E+2	1.59E+2	5.06E+1	1.55E+2	1.59E+2	5.04E+1	1.54E+2	1.58E+2	5.03E+1	1.54E+2	1.58E+2
NRC	1.72E+3	7.66E+3	6.31E+4	1.71E+3	7.63E+3	5.82E+4	1.71E+3	7.60E+3	5.77E+4	1.70E+3	7.55E+3	5.72E+4	1.70E+3	7.52E+3	5.68E+4	1.69E+3	7.46E+3	5.61E+4
Total	5.17E+5	3.56E+6	2.13E+7	4.99E+5	3.41E+6	2.01E+7	4.88E+5	3.32E+6	1.94E+7	4.77E+5	3.23E+6	1.87E+7	4.68E+5	3.17E+6	1.82E+7	4.58E+5	3.10E+6	1.77E+7

Medium Population Density Without Agriculture - 09-13-94 4:08p
 TABLE K-71. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.15E+3	2.33E+3	2.33E+3	2.08E+3	2.25E+3	2.25E+3	1.84E+3	1.99E+3	1.99E+3	1.23E+3	1.34E+3	1.34E+3	3.14E+2	3.41E+2	3.41E+2
II	5.02E+4	4.89E+5	3.96E+6	5.02E+4	4.89E+5	3.96E+6	5.02E+4	4.88E+5	3.94E+6	5.01E+4	4.86E+5	3.87E+6	4.25E+4	4.12E+5	3.19E+6
III	9.48E+2	1.05E+3	1.05E+3	9.38E+2	1.04E+3	1.04E+3	6.90E+2	7.64E+2	7.64E+2	1.10E+2	1.22E+2	1.22E+2	.00E+0	.00E+0	.00E+0
IV	2.81E+2	7.31E+2	8.17E+3	2.73E+2	7.12E+2	7.97E+3	2.49E+2	6.48E+2	7.24E+3	4.46E+1	1.16E+2	1.30E+3	.00E+0	.00E+0	.00E+0
V	5.61E+4	6.08E+4	6.08E+4	5.58E+4	6.06E+4	6.06E+4	5.39E+4	5.85E+4	5.85E+4	4.17E+4	4.52E+4	4.52E+4	1.17E+4	1.27E+4	1.27E+4
VI	1.52E+4	9.32E+4	5.70E+5	1.52E+4	9.32E+4	5.70E+5	1.51E+4	9.30E+4	5.69E+5	1.44E+4	8.98E+4	5.51E+5	1.01E+4	6.78E+4	4.21E+5
VII	7.49E+4	6.71E+5	5.45E+6	6.15E+4	5.48E+5	4.45E+6	1.96E+4	1.75E+5	1.42E+6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	3.28E+2	2.95E+3	1.88E+4	1.71E+2	1.54E+3	9.79E+3	1.77E+1	1.59E+2	1.02E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.39E+3	1.86E+4	2.15E+4	1.39E+3	1.86E+4	2.15E+4	1.37E+3	1.64E+4	1.90E+4	1.31E+3	9.27E+3	1.06E+4	1.05E+3	3.52E+3	3.94E+3
XII	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.05E+1	1.54E+2	1.58E+2	4.94E+1	1.51E+2	1.55E+2	1.59E+1	4.86E+1	4.99E+1
XIIIA	1.93E-1	6.31E-1	1.69E+0	7.40E-2	2.42E-1	6.45E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.5E-1	2.79E-1	9.66E-1	5.96E-2	1.07E-1	3.70E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.03E-1	1.24E-1	3.81E+1	3.93E-2	4.74E-2	1.46E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E+0	3.84E+0	3.84E+0	3.65E+0	3.84E+0	3.84E+0	3.64E+0	3.83E+0	3.83E+0	3.52E+0	3.70E+0	3.70E+0	1.95E+0	2.07E+0	2.07E+0
XVIB	3.61E+0	3.79E+0	3.79E+0	3.61E+0	3.79E+0	3.79E+0	3.60E+0	3.78E+0	3.78E+0	3.48E+0	3.65E+0	3.65E+0	1.93E+0	2.04E+0	2.04E+0
XVIC	3.52E+0	3.67E+0	3.67E+0	3.52E+0	3.67E+0	3.67E+0	3.51E+0	3.66E+0	3.66E+0	3.39E+0	3.54E+0	3.54E+0	1.88E+0	1.97E+0	1.97E+0
XVIIIA	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	9.85E+0	1.09E+1	1.09E+1	6.76E+0	7.48E+0	7.48E+0
XVIIIB	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	9.68E+0	1.07E+1	1.07E+1	6.64E+0	7.34E+0	7.34E+0
XVIIIC	9.79E+0	1.07E+1	1.07E+1	9.79E+0	1.07E+1	1.07E+1	9.78E+0	1.07E+1	1.07E+1	9.37E+0	1.02E+1	1.02E+1	6.43E+0	7.01E+0	7.01E+0
XXA	2.29E+0	1.27E+1	1.37E+3	9.97E-1	6.80E+0	7.33E+2	1.13E-1	6.28E-1	6.81E+1	4.23E-2	3.31E-1	3.61E+1	.00E+0	.00E+0	.00E+0
XXB	1.85E+0	7.26E+0	9.14E+2	8.04E-1	3.66E+0	4.61E+2	9.12E-2	3.59E-1	4.55E+1	3.41E-2	1.78E-1	2.27E+1	.00E+0	.00E+0	.00E+0
XXC	1.22E+0	4.43E+0	5.77E+3	5.31E-1	1.93E+0	2.51E+3	6.03E-2	2.20E-1	2.87E+2	2.26E-2	8.29E-2	1.09E+2	.00E+0	.00E+0	.00E+0
XXIA	2.89E+1	3.00E+2	2.84E+3	2.89E+1	3.00E+2	2.84E+3	2.87E+1	2.98E+2	2.82E+3	2.47E+1	2.56E+2	2.43E+3	8.81E+0	9.16E+1	8.67E+2
XXIB	2.87E+1	2.97E+2	2.57E+3	2.87E+1	2.97E+2	2.57E+3	2.85E+1	2.94E+2	2.55E+3	2.45E+1	2.53E+2	2.19E+3	8.76E+0	9.04E+1	7.83E+2
XXIC	2.83E+1	2.86E+2	2.07E+3	2.83E+1	2.86E+2	2.07E+3	2.81E+1	2.83E+2	2.06E+3	2.42E+1	2.44E+2	1.77E+3	8.64E+0	8.71E+1	6.32E+2
XXII	1.55E+3	6.29E+4	1.07E+5	1.55E+3	6.29E+4	1.07E+5	1.53E+3	6.25E+4	1.06E+5	1.41E+3	5.81E+4	9.80E+4	.00E+0	.00E+0	.00E+0
DOE	5.43E+5	3.80E+6	2.32E+7	5.29E+5	3.67E+6	2.22E+7	4.82E+5	3.29E+6	1.91E+7	4.30E+5	2.98E+6	1.71E+7	2.86E+5	1.97E+6	1.28E+7
DOD	5.23E+1	1.59E+2	2.75E+2	5.15E+1	1.57E+2	2.04E+2	5.05E+1	1.54E+2	1.58E+2	4.94E+1	1.51E+2	1.55E+2	1.59E+1	4.86E+1	4.99E+1
NRC	1.74E+3	7.76E+3	9.37E+4	1.72E+3	7.70E+3	7.34E+4	1.71E+3	7.59E+3	5.75E+4	1.58E+3	6.65E+3	4.87E+4	8.49E+2	2.68E+3	1.74E+4
Total	5.45E+5	3.80E+6	2.33E+7	5.31E+5	3.68E+6	2.23E+7	4.84E+5	3.29E+6	1.92E+7	4.32E+5	2.99E+6	1.72E+7	2.87E+5	1.97E+6	1.28E+7

Medium Population Density Without Agriculture - 09-13-94 4:08p
 TABLE K-72. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.84E+3	1.99E+3	1.99E+3	1.70E+3	1.84E+3	1.84E+3	1.60E+3	1.74E+3	1.74E+3	1.48E+3	1.60E+3	1.60E+3	1.40E+3	1.52E+3	1.52E+3	1.23E+3	1.34E+3	1.34E+3
II	5.02E+4	4.88E+5	3.94E+6	5.02E+4	4.88E+5	3.92E+6	5.02E+4	4.88E+5	3.91E+6	5.02E+4	4.87E+5	3.90E+6	5.01E+4	4.87E+5	3.89E+6	5.01E+4	4.86E+5	3.87E+6
III	6.90E+2	7.64E+2	7.64E+2	5.79E+2	6.41E+2	6.41E+2	4.61E+2	5.10E+2	5.10E+2	2.71E+2	3.01E+2	3.01E+2	1.57E+2	1.74E+2	1.74E+2	1.10E+2	1.22E+2	1.22E+2
IV	2.49E+2	6.48E+2	7.24E+3	2.26E+2	5.89E+2	6.58E+3	2.03E+2	5.30E+2	5.92E+3	1.58E+2	4.12E+2	4.60E+3	1.13E+2	2.93E+2	3.28E+3	4.46E+1	1.16E+2	1.30E+3
V	5.39E+4	5.85E+4	5.85E+4	5.23E+4	5.67E+4	5.67E+4	5.06E+4	5.49E+4	5.49E+4	4.72E+4	5.13E+4	5.13E+4	4.39E+4	4.76E+4	4.76E+4	4.17E+4	4.52E+4	4.52E+4
VI	1.51E+4	9.30E+4	5.69E+5	1.51E+4	9.27E+4	5.68E+5	1.50E+4	9.25E+4	5.67E+5	1.48E+4	9.18E+4	5.63E+5	1.46E+4	9.10E+4	5.59E+5	1.44E+4	8.98E+4	5.51E+5
VII	1.96E+4	1.75E+5	1.42E+6	6.96E+3	6.23E+4	5.06E+5	6.66E+2	5.90E+3	4.78E+4	6.01E+1	5.13E+2	4.14E+3	1.69E+1	1.42E+2	1.14E+3	.00E+0	.00E+0	.00E+0
IX	1.77E+1	1.59E+2	1.02E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.37E+3	1.64E+4	1.90E+4	1.36E+3	1.42E+4	1.64E+4	1.36E+3	1.28E+4	1.47E+4	1.34E+3	1.12E+4	1.29E+4	1.33E+3	1.03E+4	1.18E+4	1.31E+3	9.27E+3	1.06E+4
XII	5.05E+1	1.54E+2	1.58E+2	5.03E+1	1.54E+2	1.58E+2	5.02E+1	1.53E+2	1.57E+2	4.99E+1	1.52E+2	1.57E+2	4.97E+1	1.52E+2	1.56E+2	4.94E+1	1.51E+2	1.55E+2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.64E+0	3.83E+0	3.83E+0	3.62E+0	3.81E+0	3.81E+0	3.61E+0	3.80E+0	3.80E+0	3.59E+0	3.78E+0	3.78E+0	3.57E+0	3.76E+0	3.76E+0	3.52E+0	3.70E+0	3.70E+0
XVIB	3.60E+0	3.78E+0	3.78E+0	3.58E+0	3.76E+0	3.76E+0	3.57E+0	3.75E+0	3.75E+0	3.55E+0	3.73E+0	3.73E+0	3.53E+0	3.71E+0	3.71E+0	3.48E+0	3.65E+0	3.65E+0
XVIC	3.51E+0	3.66E+0	3.66E+0	3.49E+0	3.65E+0	3.65E+0	3.48E+0	3.64E+0	3.64E+0	3.47E+0	3.62E+0	3.62E+0	3.44E+0	3.60E+0	3.60E+0	3.39E+0	3.54E+0	3.54E+0
XVIIIA	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.13E+1	1.13E+1	1.02E+1	1.13E+1	1.13E+1	1.01E+1	1.12E+1	1.12E+1	1.00E+1	1.11E+1	1.11E+1	9.85E+0	1.09E+1	1.09E+1
XVIIIB	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.11E+1	1.11E+1	1.00E+1	1.11E+1	1.11E+1	9.93E+0	1.10E+1	1.10E+1	9.83E+0	1.09E+1	1.09E+1	9.68E+0	1.07E+1	1.07E+1
XVIIIC	9.78E+0	1.07E+1	1.07E+1	9.76E+0	1.06E+1	1.06E+1	9.71E+0	1.06E+1	1.06E+1	9.62E+0	1.05E+1	1.05E+1	9.52E+0	1.04E+1	1.04E+1	9.37E+0	1.02E+1	1.02E+1
XXA	1.13E-1	6.28E-1	6.81E-1	9.53E-2	5.46E-1	5.92E-1	8.43E-2	4.95E-1	5.37E-1	7.04E-2	4.26E-1	4.63E-1	5.92E-2	3.79E-1	4.12E-1	4.23E-2	3.31E-1	3.61E-1
XXB	9.12E-2	3.59E-1	4.55E+1	7.69E-2	3.10E-1	3.92E+1	6.80E-2	2.79E-1	3.53E+1	5.68E-2	2.37E-1	3.01E+1	4.77E-2	2.11E-1	2.68E+1	3.41E-2	1.78E-1	2.27E+1
XXC	6.03E-2	2.20E-1	2.87E+2	5.08E-2	1.86E-1	2.43E+2	4.49E-2	1.64E-1	2.15E+2	3.75E-2	1.37E-1	1.80E+2	3.15E-2	1.16E-1	1.51E+2	2.26E-2	8.29E-2	1.09E+2
XXIA	2.87E+1	2.98E+2	2.82E+3	2.84E+1	2.95E+2	2.79E+3	2.81E+1	2.92E+2	2.76E+3	2.74E+1	2.85E+2	2.70E+3	2.62E+1	2.72E+2	2.58E+3	2.47E+1	2.56E+2	2.43E+3
XXIB	2.85E+1	2.94E+2	2.55E+3	2.82E+1	2.91E+2	2.52E+3	2.79E+1	2.88E+2	2.50E+3	2.72E+1	2.81E+2	2.44E+3	2.60E+1	2.69E+2	2.33E+3	2.45E+1	2.53E+2	2.19E+3
XXIC	2.81E+1	2.83E+2	2.06E+3	2.78E+1	2.81E+2	2.04E+3	2.75E+1	2.78E+2	2.02E+3	2.69E+1	2.71E+2	1.97E+3	2.57E+1	2.59E+2	1.88E+3	2.42E+1	2.44E+2	1.77E+3
XXII	1.53E+3	6.25E+4	1.06E+5	1.51E+3	6.16E+4	1.04E+5	1.49E+3	6.11E+4	1.03E+5	1.46E+3	5.99E+4	1.01E+5	1.43E+3	5.89E+4	9.94E+4	1.41E+3	5.81E+4	9.80E+4
DOE	4.82E+5	3.29E+6	1.91E+7	4.66E+5	3.16E+6	1.81E+7	4.56E+5	3.09E+6	1.76E+7	4.47E+5	3.05E+6	1.75E+7	4.39E+5	3.02E+6	1.73E+7	4.30E+5	2.98E+6	1.71E+7
DOD	5.05E+1	1.54E+2	1.58E+2	5.03E+1	1.54E+2	1.58E+2	5.02E+1	1.53E+2	1.57E+2	4.99E+1	1.52E+2	1.57E+2	4.97E+1	1.52E+2	1.56E+2	4.94E+1	1.51E+2	1.55E+2
NRC	1.71E+3	7.59E+3	5.75E+4	1.70E+3	7.52E+3	5.67E+4	1.69E+3	7.45E+3	5.59E+4	1.66E+3	7.29E+3	5.44E+4	1.63E+3	7.01E+3	5.19E+4	1.58E+3	6.65E+3	4.87E+4
Total	4.84E+5	3.29E+6	1.92E+7	4.68E+5	3.16E+6	1.82E+7	4.58E+5	3.09E+6	1.77E+7	4.49E+5	3.06E+6	1.75E+7	4.41E+5	3.03E+6	1.74E+7	4.32E+5	2.99E+6	1.72E+7

Medium Population Density Without Agriculture - 09-13-94 4:08p
 TABLE K-73. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.48E-1	9.22E-1	9.22E-1	8.33E-1	9.06E-1	9.06E-1	7.87E-1	8.56E-1	8.56E-1	6.32E-1	6.87E-1	6.87E-1	2.83E-1	3.08E-1	3.08E-1
II	1.72E+1	1.68E+2	1.31E+3	1.72E+1	1.68E+2	1.31E+3	1.72E+1	1.68E+2	1.31E+3	1.72E+1	1.67E+2	1.29E+3	1.70E+1	1.64E+2	1.25E+3
III	3.71E-1	4.11E-1	4.11E-1	3.70E-1	4.11E-1	4.11E-1	3.45E-1	3.83E-1	3.83E-1	1.83E-1	2.03E-1	2.03E-1	.00E+0	.00E+0	.00E+0
IV	6.06E-2	1.61E-1	2.48E+0	5.99E-2	1.59E-1	2.45E+0	5.71E-2	1.52E-1	2.34E+0	4.50E-2	1.20E-1	1.84E+0	.00E+0	.00E+0	.00E+0
V	2.20E+1	2.39E+1	2.39E+1	2.20E+1	2.38E+1	2.38E+1	2.18E+1	2.36E+1	2.36E+1	1.99E+1	2.16E+1	2.16E+1	1.31E+1	1.41E+1	1.41E+1
VI	3.50E+0	1.87E+1	1.65E+2	3.50E+0	1.87E+1	1.65E+2	3.49E+0	1.86E+1	1.65E+2	3.42E+0	1.85E+1	1.64E+2	2.94E+0	1.70E+1	1.52E+2
VII	5.51E+0	4.25E+1	3.30E+2	4.64E+0	3.47E+1	2.68E+2	3.43E+0	2.52E+1	1.94E+2	8.90E-2	6.51E-1	5.02E+0	.00E+0	.00E+0	.00E+0
IX	2.18E-2	1.92E-1	1.19E+0	1.59E-2	1.39E-1	8.65E-1	5.44E-3	4.78E-2	2.97E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.49E+0	5.05E+0	5.70E+0	1.49E+0	5.04E+0	5.70E+0	1.49E+0	4.92E+0	5.55E+0	1.45E+0	3.67E+0	4.07E+0	1.28E+0	2.19E+0	2.36E+0
XII	2.97E-3	9.20E-3	9.46E-3	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.18E-3	9.44E-3	2.92E-3	9.07E-3	9.32E-3	2.76E-3	8.56E-3	8.80E-3
XIIIA	5.18E-5	1.70E-4	5.36E-4	3.71E-5	1.22E-4	3.84E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	4.17E-5	7.50E-5	3.12E-4	2.99E-5	5.38E-5	2.23E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.75E-5	3.33E-5	1.01E-2	1.97E-5	2.39E-5	7.21E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-3	1.53E-3	1.53E-3	1.46E-3	1.53E-3	1.53E-3	1.46E-3	1.53E-3	1.53E-3	1.44E-3	1.52E-3	1.52E-3	1.27E-3	1.34E-3	1.34E-3
XVIB	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.51E-3	1.51E-3	1.42E-3	1.49E-3	1.49E-3	1.25E-3	1.32E-3	1.32E-3
XVIC	1.40E-3	1.47E-3	1.47E-3	1.40E-3	1.47E-3	1.47E-3	1.40E-3	1.46E-3	1.46E-3	1.39E-3	1.45E-3	1.45E-3	1.22E-3	1.28E-3	1.28E-3
XVIIIA	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.00E-3	4.42E-3	4.42E-3	3.50E-3	3.87E-3	3.87E-3
XVIIIB	3.96E-3	4.38E-3	4.38E-3	3.96E-3	4.38E-3	4.38E-3	3.96E-3	4.38E-3	4.38E-3	3.93E-3	4.35E-3	4.35E-3	3.44E-3	3.81E-3	3.81E-3
XVIIIC	3.82E-3	4.17E-3	4.17E-3	3.82E-3	4.17E-3	4.17E-3	3.82E-3	4.17E-3	4.17E-3	3.79E-3	4.14E-3	4.14E-3	3.31E-3	3.62E-3	3.62E-3
XXA	5.30E-4	3.42E-3	5.07E-1	3.34E-4	2.37E-3	3.52E-1	6.95E-5	7.67E-4	1.14E-1	1.63E-5	1.17E-4	1.75E-2	.00E+0	2.24E-5	3.39E-3
XXB	4.28E-4	2.19E-3	3.46E-1	2.70E-4	1.38E-3	2.18E-1	5.61E-5	2.88E-4	4.56E-2	1.31E-5	6.83E-5	1.09E-2	.00E+0	.00E+0	.00E+0
XXC	2.83E-4	1.56E-3	1.44E+0	1.79E-4	9.85E-4	9.10E-1	3.71E-5	2.05E-4	1.90E-1	8.70E-6	4.88E-5	4.52E-2	.00E+0	.00E+0	.00E+0
XXIA	1.13E-2	1.18E-1	1.11E+0	1.13E-2	1.18E-1	1.11E+0	1.13E-2	1.18E-1	1.11E+0	1.10E-2	1.15E-1	1.08E+0	7.46E-3	7.78E-2	7.34E-1
XXIB	1.12E-2	1.16E-1	1.00E+0	1.12E-2	1.16E-1	1.00E+0	1.12E-2	1.16E-1	1.00E+0	1.09E-2	1.13E-1	9.77E-1	7.40E-3	7.66E-2	6.64E-1
XXIC	1.10E-2	1.12E-1	8.13E-1	1.10E-2	1.12E-1	8.13E-1	1.10E-2	1.12E-1	8.13E-1	1.07E-2	1.09E-1	7.91E-1	7.29E-3	7.38E-2	5.38E-1
XXII	5.51E-1	1.49E+1	2.57E+1	5.51E-1	1.49E+1	2.57E+1	5.48E-1	1.49E+1	2.56E+1	5.32E-1	1.44E+1	2.49E+1	3.79E-1	1.08E+1	1.88E+1
DOE	1.31E+2	7.67E+2	5.59E+3	1.30E+2	7.60E+2	5.52E+3	1.28E+2	7.49E+2	5.45E+3	1.21E+2	7.14E+2	5.21E+3	1.01E+2	6.41E+2	4.86E+3
DOD	3.31E-3	9.99E-3	4.03E-2	3.21E-3	9.75E-3	3.16E-2	2.96E-3	9.18E-3	9.44E-3	2.92E-3	9.07E-3	9.32E-3	2.76E-3	8.56E-3	8.80E-3
NRC	6.79E-1	3.03E+0	3.26E+1	6.76E-1	3.02E+0	2.88E+1	6.73E-1	3.00E+0	2.35E+1	6.63E-1	2.92E+0	2.17E+1	5.34E-1	2.08E+0	1.46E+1
Total	1.32E+2	7.70E+2	5.62E+3	1.31E+2	7.63E+2	5.55E+3	1.29E+2	7.52E+2	5.47E+3	1.22E+2	7.17E+2	5.24E+3	1.02E+2	6.43E+2	4.87E+3

Medium Population Density Without Agriculture - 09-13-94 4:08p
 TABLE K-74. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.87E-1	8.56E-1	8.56E-1	7.55E-1	8.21E-1	8.21E-1	7.29E-1	7.93E-1	7.93E-1	6.92E-1	7.52E-1	7.52E-1	6.64E-1	7.22E-1	7.22E-1	6.32E-1	6.87E-1	6.87E-1
II	1.72E+1	1.68E+2	1.31E+3	1.72E+1	1.68E+2	1.31E+3	1.72E+1	1.67E+2	1.30E+3	1.72E+1	1.67E+2	1.30E+3	1.72E+1	1.67E+2	1.29E+3	1.72E+1	1.67E+2	1.29E+3
III	3.45E-1	3.83E-1	3.83E-1	3.01E-1	3.34E-1	3.34E-1	2.74E-1	3.04E-1	3.04E-1	2.51E-1	2.78E-1	2.78E-1	2.24E-1	2.48E-1	2.48E-1	1.83E-1	2.03E-1	2.03E-1
IV	5.71E-2	1.52E-1	2.34E+0	5.57E-2	1.48E-1	2.28E+0	5.43E-2	1.45E-1	2.22E+0	5.17E-2	1.38E-1	2.12E+0	4.90E-2	1.31E-1	2.01E+0	4.50E-2	1.20E-1	1.84E+0
V	2.18E+1	2.36E+1	2.36E+1	2.15E+1	2.33E+1	2.33E+1	2.13E+1	2.30E+1	2.30E+1	2.09E+1	2.26E+1	2.26E+1	2.05E+1	2.22E+1	2.22E+1	1.99E+1	2.16E+1	2.16E+1
VI	3.49E+0	1.86E+1	1.65E+2	3.48E+0	1.86E+1	1.65E+2	3.47E+0	1.86E+1	1.64E+2	3.45E+0	1.86E+1	1.64E+2	3.44E+0	1.85E+1	1.64E+2	3.42E+0	1.85E+1	1.64E+2
VII	3.43E+0	2.52E+1	1.94E+2	2.25E+0	1.66E+1	1.29E+2	1.57E+0	1.17E+1	9.07E+1	9.41E-1	7.16E+0	5.55E+1	5.31E-1	4.04E+0	3.14E+1	8.90E-2	6.51E-1	5.02E+0
IX	5.44E-3	4.78E-2	2.97E-1	2.60E-3	2.29E-2	1.42E-1	1.54E-3	1.35E-2	8.39E-2	5.43E-4	4.77E-3	2.96E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.49E+0	4.92E+0	5.55E+0	1.48E+0	4.71E+0	5.30E+0	1.48E+0	4.51E+0	5.06E+0	1.47E+0	4.16E+0	4.65E+0	1.46E+0	3.91E+0	4.36E+0	1.45E+0	3.67E+0	4.07E+0
XII	2.96E-3	9.18E-3	9.44E-3	2.95E-3	9.16E-3	9.42E-3	2.95E-3	9.14E-3	9.40E-3	2.94E-3	9.11E-3	9.37E-3	2.93E-3	9.09E-3	9.35E-3	2.92E-3	9.07E-3	9.32E-3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-3	1.53E-3	1.53E-3	1.46E-3	1.53E-3	1.53E-3	1.45E-3	1.53E-3	1.53E-3	1.45E-3	1.52E-3	1.52E-3	1.45E-3	1.52E-3	1.52E-3	1.44E-3	1.52E-3	1.52E-3
XVIB	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.50E-3	1.50E-3	1.43E-3	1.50E-3	1.50E-3	1.43E-3	1.50E-3	1.50E-3	1.42E-3	1.49E-3	1.49E-3
XVIC	1.40E-3	1.46E-3	1.46E-3	1.40E-3	1.46E-3	1.46E-3	1.40E-3	1.46E-3	1.46E-3	1.40E-3	1.46E-3	1.46E-3	1.39E-3	1.45E-3	1.45E-3	1.39E-3	1.45E-3	1.45E-3
XVIIIA	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.02E-3	4.44E-3	4.44E-3	4.02E-3	4.44E-3	4.44E-3	4.00E-3	4.42E-3	4.42E-3
XVIIIB	3.96E-3	4.38E-3	4.38E-3	3.96E-3	4.38E-3	4.38E-3	3.95E-3	4.38E-3	4.38E-3	3.95E-3	4.37E-3	4.37E-3	3.95E-3	4.37E-3	4.37E-3	3.93E-3	4.35E-3	4.35E-3
XVIIIC	3.82E-3	4.17E-3	4.17E-3	3.82E-3	4.17E-3	4.17E-3	3.81E-3	4.17E-3	4.17E-3	3.81E-3	4.16E-3	4.16E-3	3.81E-3	4.16E-3	4.16E-3	3.79E-3	4.14E-3	4.14E-3
XXA	6.95E-5	7.67E-4	1.14E-1	2.32E-5	2.33E-4	3.47E-2	2.16E-5	1.49E-4	2.23E-2	1.94E-5	1.36E-4	2.04E-2	1.79E-5	1.27E-4	1.90E-2	1.63E-5	1.17E-4	1.75E-2
XXB	5.61E-5	2.88E-4	4.56E-2	1.87E-5	9.68E-5	1.54E-2	1.74E-5	9.02E-5	1.43E-2	1.57E-5	8.13E-5	1.29E-2	1.45E-5	7.51E-5	1.19E-2	1.31E-5	6.83E-5	1.09E-2
XXC	3.71E-5	2.05E-4	1.90E-1	1.24E-5	6.91E-5	6.39E-2	1.15E-5	6.43E-5	5.96E-2	1.04E-5	5.80E-5	5.37E-2	9.58E-6	5.36E-5	4.97E-2	8.70E-6	4.88E-5	4.52E-2
XXIA	1.13E-2	1.18E-1	1.11E+0	1.12E-2	1.17E-1	1.11E+0	1.12E-2	1.17E-1	1.10E+0	1.11E-2	1.16E-1	1.10E+0	1.11E-2	1.16E-1	1.09E+0	1.10E-2	1.15E-1	1.08E+0
XXIB	1.12E-2	1.16E-1	1.00E+0	1.12E-2	1.16E-1	1.00E+0	1.11E-2	1.15E-1	9.97E-1	1.11E-2	1.14E-1	9.91E-1	1.10E-2	1.14E-1	9.85E-1	1.09E-2	1.13E-1	9.77E-1
XXIC	1.10E-2	1.12E-1	8.13E-1	1.10E-2	1.11E-1	8.10E-1	1.10E-2	1.11E-1	8.08E-1	1.09E-2	1.10E-1	8.03E-1	1.08E-2	1.10E-1	7.98E-1	1.07E-2	1.09E-1	7.91E-1
XXII	5.48E-1	1.49E+1	2.56E+1	5.46E-1	1.48E+1	2.55E+1	5.44E-1	1.48E+1	2.54E+1	5.39E-1	1.46E+1	2.52E+1	5.37E-1	1.45E+1	2.51E+1	5.32E-1	1.44E+1	2.49E+1
DOE	1.28E+2	7.49E+2	5.45E+3	1.26E+2	7.39E+2	5.38E+3	1.25E+2	7.33E+2	5.33E+3	1.24E+2	7.26E+2	5.29E+3	1.23E+2	7.20E+2	5.25E+3	1.21E+2	7.14E+2	5.21E+3
DOD	2.96E-3	9.18E-3	9.44E-3	2.95E-3	9.16E-3	9.42E-3	2.95E-3	9.14E-3	9.40E-3	2.94E-3	9.11E-3	9.37E-3	2.93E-3	9.09E-3	9.35E-3	2.92E-3	9.07E-3	9.32E-3
NRC	6.73E-1	3.00E+0	2.35E+1	6.72E-1	2.99E+0	2.24E+1	6.71E-1	2.98E+0	2.22E+1	6.68E-1	2.96E+0	2.21E+1	6.66E-1	2.95E+0	2.19E+1	6.63E-1	2.92E+0	2.17E+1
Total	1.29E+2	7.52E+2	5.47E+3	1.27E+2	7.42E+2	5.40E+3	1.26E+2	7.36E+2	5.36E+3	1.24E+2	7.29E+2	5.31E+3	1.23E+2	7.23E+2	5.27E+3	1.22E+2	7.17E+2	5.24E+3

Medium Population Density Without Agriculture - 09-13-94 4:08p
 TABLE K-75. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.42E-1	9.15E-1	9.15E-1	8.15E-1	8.86E-1	8.86E-1	7.20E-1	7.83E-1	7.83E-1	4.83E-1	5.26E-1	5.26E-1	1.23E-1	1.34E-1	1.34E-1
II	1.72E+1	1.68E+2	1.31E+3	1.72E+1	1.68E+2	1.31E+3	1.72E+1	1.67E+2	1.30E+3	1.72E+1	1.67E+2	1.28E+3	1.46E+1	1.41E+2	1.06E+3
III	3.71E-1	4.11E-1	4.11E-1	3.67E-1	4.07E-1	4.07E-1	2.70E-1	2.99E-1	2.99E-1	4.32E-2	4.79E-2	4.79E-2	.00E+0	.00E+0	.00E+0
IV	6.03E-2	1.61E-1	2.47E+0	5.88E-2	1.57E-1	2.41E+0	5.35E-2	1.42E-1	2.19E+0	9.58E-3	2.55E-2	3.92E-1	.00E+0	.00E+0	.00E+0
V	2.20E+1	2.39E+1	2.39E+1	2.19E+1	2.38E+1	2.38E+1	2.12E+1	2.29E+1	2.29E+1	1.64E+1	1.77E+1	1.77E+1	4.60E+0	4.99E+0	4.99E+0
VI	3.50E+0	1.87E+1	1.65E+2	3.50E+0	1.87E+1	1.65E+2	3.46E+0	1.86E+1	1.64E+2	3.23E+0	1.79E+1	1.59E+2	2.14E+0	1.33E+1	1.22E+2
VII	5.08E+0	3.86E+1	2.99E+2	4.29E+0	3.17E+1	2.45E+2	1.34E+0	1.01E+1	7.82E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	1.89E-2	1.66E-1	1.03E+0	9.83E-3	8.64E-2	5.36E-1	1.02E-3	8.96E-3	5.56E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.49E+0	5.05E+0	5.70E+0	1.49E+0	5.04E+0	5.69E+0	1.48E+0	4.59E+0	5.16E+0	1.41E+0	3.06E+0	3.37E+0	1.14E+0	1.65E+0	1.75E+0
XII	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.19E-3	9.45E-3	2.94E-3	9.10E-3	9.36E-3	2.87E-3	8.89E-3	9.15E-3	9.23E-4	2.86E-3	2.95E-3
XIIIA	4.70E-5	1.54E-4	4.86E-4	1.80E-5	5.92E-5	1.86E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.79E-5	6.80E-5	2.83E-4	1.45E-5	2.60E-5	1.08E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.50E-5	3.02E-5	9.12E-3	9.56E-6	1.16E-5	3.49E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-3	1.53E-3	1.53E-3	1.46E-3	1.53E-3	1.53E-3	1.45E-3	1.53E-3	1.53E-3	1.40E-3	1.48E-3	1.48E-3	7.79E-4	8.24E-4	8.24E-4
XVIB	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.51E-3	1.51E-3	1.43E-3	1.50E-3	1.50E-3	1.39E-3	1.45E-3	1.45E-3	7.68E-4	8.10E-4	8.10E-4
XVIC	1.40E-3	1.47E-3	1.47E-3	1.40E-3	1.47E-3	1.47E-3	1.40E-3	1.46E-3	1.46E-3	1.35E-3	1.41E-3	1.41E-3	7.49E-4	7.86E-4	7.86E-4
XVIIIA	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.02E-3	4.45E-3	4.45E-3	3.86E-3	4.26E-3	4.26E-3	2.65E-3	2.93E-3	2.93E-3
XVIIIB	3.96E-3	4.38E-3	4.38E-3	3.96E-3	4.38E-3	4.38E-3	3.95E-3	4.38E-3	4.38E-3	3.79E-3	4.20E-3	4.20E-3	2.60E-3	2.88E-3	2.88E-3
XVIIIC	3.82E-3	4.17E-3	4.17E-3	3.82E-3	4.17E-3	4.17E-3	3.81E-3	4.17E-3	4.17E-3	3.65E-3	3.99E-3	3.99E-3	2.51E-3	2.74E-3	2.74E-3
XXA	4.01E-4	2.87E-3	4.27E-1	1.74E-4	1.54E-3	2.28E-1	1.97E-5	1.42E-4	2.12E-2	7.32E-6	7.47E-5	1.13E-2	.00E+0	.00E+0	.00E+0
XXB	3.24E-4	1.80E-3	2.84E-1	1.41E-4	9.06E-4	1.43E-1	1.59E-5	8.89E-5	1.41E-2	5.91E-6	4.41E-5	7.03E-3	.00E+0	.00E+0	.00E+0
XXC	2.15E-4	1.18E-3	1.09E+0	9.32E-5	5.15E-4	4.76E-1	1.05E-5	5.88E-5	5.44E-2	3.91E-6	2.22E-5	2.06E-2	.00E+0	.00E+0	.00E+0
XXIA	1.13E-2	1.18E-1	1.11E+0	1.13E-2	1.18E-1	1.11E+0	1.12E-2	1.17E-1	1.10E+0	9.63E-3	1.00E-1	9.47E-1	3.44E-3	3.59E-2	3.38E-1
XXIB	1.12E-2	1.16E-1	1.00E+0	1.12E-2	1.16E-1	1.00E+0	1.11E-2	1.15E-1	9.96E-1	9.55E-3	9.89E-2	8.56E-1	3.41E-3	3.53E-2	3.06E-1
XXIC	1.10E-2	1.12E-1	8.13E-1	1.10E-2	1.12E-1	8.13E-1	1.09E-2	1.11E-1	8.07E-1	9.40E-3	9.53E-2	6.94E-1	3.36E-3	3.40E-2	2.48E-1
XXII	5.51E-1	1.49E+1	2.57E+1	5.50E-1	1.49E+1	2.56E+1	5.43E-1	1.48E+1	2.54E+1	5.01E-1	1.37E+1	2.36E+1	.00E+0	.00E+0	.00E+0
DOE	1.30E+2	7.64E+2	5.56E+3	1.29E+2	7.56E+2	5.50E+3	1.25E+2	7.31E+2	5.32E+3	1.12E+2	6.89E+2	5.08E+3	6.90E+1	4.51E+2	3.82E+3
DOD	3.27E-3	9.91E-3	3.75E-2	3.08E-3	9.46E-3	2.02E-2	2.94E-3	9.10E-3	9.36E-3	2.87E-3	8.89E-3	9.15E-3	9.23E-4	2.86E-3	2.95E-3
NRC	6.77E-1	3.02E+0	3.03E+1	6.75E-1	3.01E+0	2.59E+1	6.70E-1	2.97E+0	2.22E+1	6.20E-1	2.60E+0	1.89E+1	3.33E-1	1.05E+0	6.82E+0
Total	1.31E+2	7.67E+2	5.59E+3	1.30E+2	7.59E+2	5.53E+3	1.25E+2	7.34E+2	5.34E+3	1.13E+2	6.92E+2	5.10E+3	6.94E+1	4.52E+2	3.83E+3

Medium Population Density Without Agriculture - 09-13-94 4:08p
 TABLE K-76. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.20E-1	7.83E-1	7.83E-1	6.66E-1	7.24E-1	7.24E-1	6.30E-1	6.85E-1	6.85E-1	5.80E-1	6.31E-1	6.31E-1	5.48E-1	5.96E-1	5.96E-1	4.83E-1	5.26E-1	5.26E-1
II	1.72E+1	1.67E+2	1.30E+3	1.72E+1	1.67E+2	1.29E+3	1.72E+1	1.67E+2	1.29E+3	1.72E+1	1.67E+2	1.29E+3	1.72E+1	1.67E+2	1.29E+3	1.72E+1	1.67E+2	1.28E+3
III	2.70E-1	2.99E-1	2.99E-1	2.26E-1	2.51E-1	2.51E-1	1.80E-1	2.00E-1	2.00E-1	1.06E-1	1.18E-1	1.18E-1	6.14E-2	6.80E-2	6.80E-2	4.32E-2	4.79E-2	4.79E-2
IV	5.35E-2	1.42E-1	2.19E+0	4.86E-2	1.29E-1	1.99E+0	4.37E-2	1.16E-1	1.79E+0	3.40E-2	9.05E-2	1.39E+0	2.42E-2	6.45E-2	9.91E-1	9.58E-3	2.55E-2	3.92E-1
V	2.12E+1	2.29E+1	2.29E+1	2.05E+1	2.22E+1	2.22E+1	1.99E+1	2.15E+1	2.15E+1	1.85E+1	2.01E+1	2.01E+1	1.72E+1	1.87E+1	1.87E+1	1.64E+1	1.77E+1	1.77E+1
VI	3.46E+0	1.86E+1	1.64E+2	3.44E+0	1.86E+1	1.64E+2	3.41E+0	1.85E+1	1.64E+2	3.36E+0	1.83E+1	1.63E+2	3.31E+0	1.82E+1	1.61E+2	3.23E+0	1.79E+1	1.59E+2
VII	1.34E+0	1.01E+1	7.82E+1	4.72E-1	3.59E+0	2.78E+1	4.79E-2	3.43E-1	2.63E+0	5.15E-3	3.07E-2	2.29E-1	1.54E-3	8.62E-3	6.33E-2	.00E+0	.00E+0	.00E+0
IX	1.02E-3	8.96E-3	5.56E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.48E+0	4.59E+0	5.16E+0	1.47E+0	4.12E+0	4.61E+0	1.46E+0	3.83E+0	4.26E+0	1.44E+0	3.50E+0	3.87E+0	1.43E+0	3.29E+0	3.63E+0	1.41E+0	3.06E+0	3.37E+0
XII	2.94E-3	9.10E-3	9.36E-3	2.92E-3	9.06E-3	9.32E-3	2.91E-3	9.04E-3	9.30E-3	2.90E-3	8.99E-3	9.25E-3	2.89E-3	8.95E-3	9.21E-3	2.87E-3	8.89E-3	9.15E-3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.45E-3	1.53E-3	1.53E-3	1.45E-3	1.52E-3	1.52E-3	1.44E-3	1.52E-3	1.52E-3	1.43E-3	1.51E-3	1.51E-3	1.43E-3	1.50E-3	1.50E-3	1.40E-3	1.48E-3	1.48E-3
XVIB	1.43E-3	1.50E-3	1.50E-3	1.43E-3	1.50E-3	1.50E-3	1.42E-3	1.49E-3	1.49E-3	1.42E-3	1.49E-3	1.49E-3	1.41E-3	1.48E-3	1.48E-3	1.39E-3	1.45E-3	1.45E-3
XVIC	1.40E-3	1.46E-3	1.46E-3	1.39E-3	1.45E-3	1.45E-3	1.39E-3	1.45E-3	1.45E-3	1.38E-3	1.44E-3	1.44E-3	1.37E-3	1.43E-3	1.43E-3	1.35E-3	1.41E-3	1.41E-3
XVIIIA	4.02E-3	4.45E-3	4.45E-3	4.02E-3	4.44E-3	4.44E-3	4.00E-3	4.42E-3	4.42E-3	3.96E-3	4.37E-3	4.37E-3	3.92E-3	4.33E-3	4.33E-3	3.86E-3	4.26E-3	4.26E-3
XVIIIB	3.95E-3	4.38E-3	4.38E-3	3.95E-3	4.37E-3	4.37E-3	3.93E-3	4.35E-3	4.35E-3	3.89E-3	4.30E-3	4.30E-3	3.85E-3	4.26E-3	4.26E-3	3.79E-3	4.20E-3	4.20E-3
XVIIIC	3.81E-3	4.17E-3	4.17E-3	3.81E-3	4.16E-3	4.16E-3	3.79E-3	4.14E-3	4.14E-3	3.75E-3	4.10E-3	4.10E-3	3.71E-3	4.05E-3	4.05E-3	3.65E-3	3.99E-3	3.99E-3
XXA	1.97E-5	1.42E-4	2.12E-2	1.66E-5	1.23E-4	1.85E-2	1.46E-5	1.12E-4	1.67E-2	1.22E-5	9.61E-5	1.44E-2	1.02E-5	8.54E-5	1.28E-2	7.32E-6	7.47E-5	1.13E-2
XXB	1.59E-5	8.89E-5	1.41E-2	1.34E-5	7.66E-5	1.22E-2	1.18E-5	6.89E-5	1.10E-2	9.85E-6	5.87E-5	9.35E-3	8.27E-6	5.23E-5	8.33E-3	5.91E-6	4.41E-5	7.03E-3
XXC	1.05E-5	5.88E-5	5.44E-2	8.86E-6	4.96E-5	4.60E-2	7.82E-6	4.39E-5	4.07E-2	6.52E-6	3.67E-5	3.41E-2	5.48E-6	3.09E-5	2.87E-2	3.91E-6	2.22E-5	2.06E-2
XXIA	1.12E-2	1.17E-1	1.10E+0	1.11E-2	1.16E-1	1.09E+0	1.10E-2	1.14E-1	1.08E+0	1.07E-2	1.12E-1	1.05E+0	1.02E-2	1.07E-1	1.01E+0	9.63E-3	1.00E-1	9.47E-1
XXIB	1.11E-2	1.15E-1	9.96E-1	1.10E-2	1.14E-1	9.86E-1	1.09E-2	1.13E-1	9.75E-1	1.06E-2	1.10E-1	9.52E-1	1.01E-2	1.05E-1	9.10E-1	9.55E-3	9.89E-2	8.56E-1
XXIC	1.09E-2	1.11E-1	8.07E-1	1.08E-2	1.10E-1	7.98E-1	1.07E-2	1.09E-1	7.90E-1	1.04E-2	1.06E-1	7.71E-1	9.99E-3	1.01E-1	7.37E-1	9.40E-3	9.53E-2	6.94E-1
XXII	5.43E-1	1.48E+1	2.54E+1	5.37E-1	1.46E+1	2.51E+1	5.32E-1	1.44E+1	2.49E+1	5.18E-1	1.41E+1	2.43E+1	5.07E-1	1.39E+1	2.39E+1	5.01E-1	1.37E+1	2.36E+1
DOE	1.25E+2	7.31E+2	5.32E+3	1.23E+2	7.20E+2	5.25E+3	1.21E+2	7.13E+2	5.21E+3	1.18E+2	7.06E+2	5.17E+3	1.15E+2	6.98E+2	5.14E+3	1.12E+2	6.89E+2	5.08E+3
DOD	2.94E-3	9.10E-3	9.36E-3	2.92E-3	9.06E-3	9.32E-3	2.91E-3	9.04E-3	9.30E-3	2.90E-3	8.99E-3	9.25E-3	2.89E-3	8.95E-3	9.21E-3	2.87E-3	8.89E-3	9.15E-3
NRC	6.70E-1	2.97E+0	2.22E+1	6.66E-1	2.95E+0	2.19E+1	6.62E-1	2.92E+0	2.16E+1	6.53E-1	2.86E+0	2.11E+1	6.39E-1	2.75E+0	2.01E+1	6.20E-1	2.60E+0	1.89E+1
Total	1.25E+2	7.34E+2	5.34E+3	1.23E+2	7.23E+2	5.27E+3	1.21E+2	7.16E+2	5.23E+3	1.19E+2	7.08E+2	5.20E+3	1.16E+2	7.01E+2	5.16E+3	1.13E+2	6.92E+2	5.10E+3

Medium Population Density Without Agriculture - 09-13-94 4:08p
 TABLE K-77. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.58E-1	6.07E-1	6.07E-1	5.48E-1	5.96E-1	5.96E-1	5.18E-1	5.64E-1	5.64E-1	4.16E-1	4.52E-1	4.52E-1	1.86E-1	2.03E-1	2.03E-1
II	1.42E+1	1.39E+2	1.14E+3	1.42E+1	1.39E+2	1.14E+3	1.42E+1	1.39E+2	1.14E+3	1.42E+1	1.39E+2	1.13E+3	1.40E+1	1.36E+2	1.09E+3
III	2.45E-1	2.70E-1	2.70E-1	2.44E-1	2.70E-1	2.70E-1	2.28E-1	2.52E-1	2.52E-1	1.21E-1	1.33E-1	1.33E-1	.00E+0	.00E+0	.00E+0
IV	4.49E-2	1.21E-1	2.32E+0	4.43E-2	1.20E-1	2.30E+0	4.23E-2	1.15E-1	2.19E+0	3.33E-2	9.02E-2	1.73E+0	.00E+0	.00E+0	.00E+0
V	1.44E+1	1.57E+1	1.57E+1	1.44E+1	1.57E+1	1.57E+1	1.43E+1	1.55E+1	1.55E+1	1.30E+1	1.42E+1	1.42E+1	8.55E+0	9.33E+0	9.33E+0
VI	2.55E+0	1.41E+1	1.42E+2	2.55E+0	1.41E+1	1.42E+2	2.55E+0	1.41E+1	1.42E+2	2.50E+0	1.40E+1	1.41E+2	2.17E+0	1.29E+1	1.31E+2
VII	4.72E+0	3.80E+1	2.99E+2	3.94E+0	3.10E+1	2.43E+2	2.90E+0	2.25E+1	1.76E+2	7.52E-2	5.81E-1	4.54E+0	.00E+0	.00E+0	.00E+0
IX	1.95E-2	1.72E-1	1.08E+0	1.42E-2	1.25E-1	7.84E-1	4.86E-3	4.30E-2	2.69E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.79E-1	3.16E+0	3.60E+0	9.79E-1	3.16E+0	3.60E+0	9.76E-1	3.08E+0	3.51E+0	9.53E-1	2.31E+0	2.59E+0	8.38E-1	1.40E+0	1.51E+0
XII	2.64E-3	8.16E-3	8.39E-3	2.64E-3	8.15E-3	8.38E-3	2.63E-3	8.14E-3	8.38E-3	2.60E-3	8.04E-3	8.27E-3	2.46E-3	7.59E-3	7.81E-3
XIIIA	3.74E-5	1.23E-4	4.59E-4	2.68E-5	8.79E-5	3.29E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.01E-5	5.43E-5	2.77E-4	2.16E-5	3.89E-5	1.99E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.99E-5	2.42E-5	6.20E-3	1.42E-5	1.74E-5	4.44E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.57E-4	1.01E-3	1.01E-3	9.57E-4	1.01E-3	1.01E-3	9.56E-4	1.01E-3	1.01E-3	9.46E-4	9.95E-4	9.95E-4	8.32E-4	8.79E-4	8.79E-4
XVIB	9.47E-4	9.93E-4	9.93E-4	9.47E-4	9.93E-4	9.93E-4	9.47E-4	9.93E-4	9.93E-4	9.37E-4	9.83E-4	9.83E-4	8.24E-4	8.68E-4	8.68E-4
XVIC	9.23E-4	9.63E-4	9.63E-4	9.23E-4	9.63E-4	9.63E-4	9.22E-4	9.63E-4	9.63E-4	9.13E-4	9.53E-4	9.53E-4	8.02E-4	8.40E-4	8.40E-4
XVIIIA	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.63E-3	2.91E-3	2.91E-3	2.30E-3	2.55E-3	2.55E-3
XVIIIB	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.88E-3	2.88E-3	2.59E-3	2.86E-3	2.86E-3	2.27E-3	2.50E-3	2.50E-3
XVIIIC	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.51E-3	2.73E-3	2.73E-3	2.19E-3	2.39E-3	2.39E-3
XXA	4.13E-4	2.85E-3	4.78E-1	2.60E-4	1.98E-3	3.31E-1	5.42E-5	6.40E-4	1.07E-1	1.27E-5	9.78E-5	1.65E-2	.00E+0	1.88E-5	3.19E-3
XXB	3.33E-4	1.91E-3	3.29E-1	2.10E-4	1.21E-3	2.07E-1	4.37E-5	2.51E-4	4.33E-2	1.03E-5	5.96E-5	1.03E-2	.00E+0	.00E+0	.00E+0
XXC	2.20E-4	1.41E-3	9.58E-1	1.39E-4	8.91E-4	6.04E-1	2.89E-5	1.86E-4	1.26E-1	6.79E-6	4.42E-5	3.00E-2	.00E+0	.00E+0	.00E+0
XXIA	7.47E-3	7.80E-2	7.34E-1	7.47E-3	7.80E-2	7.34E-1	7.46E-3	7.79E-2	7.34E-1	7.26E-3	7.58E-2	7.14E-1	4.94E-3	5.15E-2	4.85E-1
XXIB	7.41E-3	7.67E-2	6.64E-1	7.41E-3	7.67E-2	6.64E-1	7.40E-3	7.66E-2	6.64E-1	7.21E-3	7.46E-2	6.46E-1	4.90E-3	5.07E-2	4.39E-1
XXIC	7.30E-3	7.39E-2	5.38E-1	7.30E-3	7.39E-2	5.38E-1	7.29E-3	7.39E-2	5.37E-1	7.10E-3	7.19E-2	5.23E-1	4.82E-3	4.89E-2	3.56E-1
XXII	4.25E-1	9.81E+0	1.80E+1	4.25E-1	9.81E+0	1.80E+1	4.23E-1	9.80E+0	1.80E+1	4.11E-1	9.53E+0	1.75E+1	2.95E-1	7.17E+0	1.33E+1
DOE	9.62E+1	5.86E+2	4.80E+3	9.54E+1	5.79E+2	4.74E+3	9.40E+1	5.70E+2	4.68E+3	8.84E+1	5.41E+2	4.47E+3	7.49E+1	4.90E+2	4.17E+3
DOD	2.89E-3	8.73E-3	2.80E-2	2.81E-3	8.56E-3	2.25E-2	2.63E-3	8.14E-3	8.38E-3	2.60E-3	8.04E-3	8.27E-3	2.46E-3	7.59E-3	7.81E-3
NRC	4.48E-1	2.01E+0	2.27E+1	4.47E-1	2.00E+0	1.98E+1	4.44E-1	1.98E+0	1.58E+1	4.37E-1	1.93E+0	1.44E+1	3.52E-1	1.37E+0	9.66E+0
Total	9.66E+1	5.88E+2	4.82E+3	9.58E+1	5.81E+2	4.76E+3	9.44E+1	5.72E+2	4.69E+3	8.89E+1	5.43E+2	4.48E+3	7.53E+1	4.91E+2	4.18E+3

Medium Population Density Without Agriculture - 09-13-94 4:08p
 TABLE K-78. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.18E-1	5.64E-1	5.64E-1	4.97E-1	5.40E-1	5.40E-1	4.79E-1	5.22E-1	5.22E-1	4.55E-1	4.95E-1	4.95E-1	4.37E-1	4.75E-1	4.75E-1	4.16E-1	4.52E-1	4.52E-1
II	1.42E+1	1.39E+2	1.14E+3	1.42E+1	1.39E+2	1.14E+3	1.42E+1	1.39E+2	1.14E+3	1.42E+1	1.39E+2	1.13E+3	1.42E+1	1.39E+2	1.13E+3	1.42E+1	1.39E+2	1.13E+3
III	2.28E-1	2.52E-1	2.52E-1	1.99E-1	2.19E-1	2.19E-1	1.81E-1	2.00E-1	2.00E-1	1.65E-1	1.83E-1	1.83E-1	1.48E-1	1.63E-1	1.63E-1	1.21E-1	1.33E-1	1.33E-1
IV	4.23E-2	1.15E-1	2.19E+0	4.12E-2	1.12E-1	2.13E+0	4.02E-2	1.09E-1	2.08E+0	3.83E-2	1.04E-1	1.98E+0	3.63E-2	9.83E-2	1.88E+0	3.33E-2	9.02E-2	1.73E+0
V	1.43E+1	1.55E+1	1.55E+1	1.41E+1	1.53E+1	1.53E+1	1.39E+1	1.52E+1	1.52E+1	1.37E+1	1.49E+1	1.49E+1	1.34E+1	1.46E+1	1.46E+1	1.30E+1	1.42E+1	1.42E+1
VI	2.55E+0	1.41E+1	1.42E+2	2.54E+0	1.41E+1	1.42E+2	2.53E+0	1.41E+1	1.41E+2	2.52E+0	1.41E+1	1.41E+2	2.51E+0	1.41E+1	1.41E+2	2.50E+0	1.40E+1	1.41E+2
VII	2.90E+0	2.25E+1	1.76E+2	1.91E+0	1.49E+1	1.16E+2	1.33E+0	1.05E+1	8.21E+1	8.03E-1	6.40E+0	5.02E+1	4.53E-1	3.62E+0	2.84E+1	7.52E-2	5.81E-1	4.54E+0
IX	4.86E-3	4.30E-2	2.69E-1	2.33E-3	2.06E-2	1.29E-1	1.38E-3	1.22E-2	7.60E-2	4.86E-4	4.29E-3	2.68E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.76E-1	3.08E+0	3.51E+0	9.72E-1	2.95E+0	3.35E+0	9.69E-1	2.83E+0	3.20E+0	9.63E-1	2.61E+0	2.94E+0	9.59E-1	2.46E+0	2.77E+0	9.53E-1	2.31E+0	2.59E+0
XII	2.63E-3	8.14E-3	8.38E-3	2.63E-3	8.12E-3	8.36E-3	2.62E-3	8.11E-3	8.34E-3	2.61E-3	8.08E-3	8.31E-3	2.61E-3	8.06E-3	8.29E-3	2.60E-3	8.04E-3	8.27E-3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.56E-4	1.01E-3	1.01E-3	9.56E-4	1.00E-3	1.00E-3	9.54E-4	1.00E-3	1.00E-3	9.51E-4	1.00E-3	1.00E-3	9.49E-4	9.97E-4	9.97E-4	9.46E-4	9.95E-4	9.95E-4
XVIB	9.47E-4	9.93E-4	9.93E-4	9.46E-4	9.92E-4	9.92E-4	9.45E-4	9.91E-4	9.91E-4	9.42E-4	9.88E-4	9.88E-4	9.39E-4	9.85E-4	9.85E-4	9.37E-4	9.83E-4	9.83E-4
XVIC	9.22E-4	9.63E-4	9.63E-4	9.22E-4	9.62E-4	9.62E-4	9.20E-4	9.61E-4	9.61E-4	9.17E-4	9.58E-4	9.58E-4	9.15E-4	9.55E-4	9.55E-4	9.13E-4	9.53E-4	9.53E-4
XVIIIA	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.64E-3	2.93E-3	2.93E-3	2.63E-3	2.91E-3	2.91E-3
XVIIIB	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.87E-3	2.87E-3	2.60E-3	2.87E-3	2.87E-3	2.60E-3	2.87E-3	2.87E-3	2.59E-3	2.86E-3	2.86E-3
XVIIIC	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.51E-3	2.73E-3	2.73E-3
XXA	5.42E-5	6.40E-4	1.07E-1	1.81E-5	1.94E-4	3.27E-2	1.68E-5	1.25E-4	2.10E-2	1.52E-5	1.14E-4	1.92E-2	1.40E-5	1.06E-4	1.79E-2	1.27E-5	9.78E-5	1.65E-2
XXB	4.37E-5	2.51E-4	4.33E-2	1.46E-5	8.45E-5	1.46E-2	1.36E-5	7.87E-5	1.36E-2	1.22E-5	7.09E-5	1.23E-2	1.13E-5	6.56E-5	1.13E-2	1.03E-5	5.96E-5	1.03E-2
XXC	2.89E-5	1.86E-4	1.26E-1	9.65E-6	6.25E-5	4.24E-2	8.98E-6	5.83E-5	3.95E-2	8.09E-6	5.25E-5	3.57E-2	7.47E-6	4.86E-5	3.30E-2	6.79E-6	4.42E-5	3.00E-2
XXIA	7.46E-3	7.79E-2	7.34E-1	7.44E-3	7.77E-2	7.31E-1	7.42E-3	7.74E-2	7.29E-1	7.37E-3	7.70E-2	7.25E-1	7.33E-3	7.65E-2	7.21E-1	7.26E-3	7.58E-2	7.14E-1
XXIB	7.40E-3	7.66E-2	6.64E-1	7.38E-3	7.64E-2	6.62E-1	7.36E-3	7.62E-2	6.60E-1	7.32E-3	7.57E-2	6.56E-1	7.27E-3	7.53E-2	6.52E-1	7.21E-3	7.46E-2	6.46E-1
XXIC	7.29E-3	7.39E-2	5.37E-1	7.27E-3	7.37E-2	5.36E-1	7.25E-3	7.34E-2	5.34E-1	7.20E-3	7.30E-2	5.31E-1	7.16E-3	7.26E-2	5.28E-1	7.10E-3	7.19E-2	5.23E-1
XXII	4.23E-1	9.80E+0	1.80E+1	4.21E-1	9.78E+0	1.79E+1	4.20E-1	9.75E+0	1.79E+1	4.16E-1	9.66E+0	1.77E+1	4.14E-1	9.59E+0	1.76E+1	4.11E-1	9.53E+0	1.75E+1
DOE	9.40E+1	5.70E+2	4.68E+3	9.26E+1	5.61E+2	4.61E+3	9.16E+1	5.56E+2	4.57E+3	9.05E+1	5.50E+2	4.53E+3	8.96E+1	5.46E+2	4.50E+3	8.84E+1	5.41E+2	4.47E+3
DOD	2.63E-3	8.14E-3	8.38E-3	2.63E-3	8.12E-3	8.36E-3	2.62E-3	8.11E-3	8.34E-3	2.61E-3	8.08E-3	8.31E-3	2.61E-3	8.06E-3	8.29E-3	2.60E-3	8.04E-3	8.27E-3
NRC	4.44E-1	1.98E+0	1.58E+1	4.43E-1	1.97E+0	1.49E+1	4.42E-1	1.97E+0	1.48E+1	4.41E-1	1.96E+0	1.46E+1	4.39E-1	1.95E+0	1.45E+1	4.37E-1	1.93E+0	1.44E+1
Total	9.44E+1	5.72E+2	4.69E+3	9.30E+1	5.63E+2	4.63E+3	9.21E+1	5.58E+2	4.59E+3	9.10E+1	5.52E+2	4.55E+3	9.01E+1	5.48E+2	4.52E+3	8.89E+1	5.43E+2	4.48E+3

Medium Population Density Without Agriculture - 09-13-94 4:08p
 TABLE K-79. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.54E-1	6.03E-1	6.03E-1	5.36E-1	5.83E-1	5.83E-1	4.74E-1	5.16E-1	5.16E-1	3.18E-1	3.46E-1	3.46E-1	8.10E-2	8.82E-2	8.82E-2
II	1.42E+1	1.39E+2	1.14E+3	1.42E+1	1.39E+2	1.14E+3	1.42E+1	1.39E+2	1.13E+3	1.42E+1	1.38E+2	1.11E+3	1.20E+1	1.17E+2	9.19E+2
III	2.45E-1	2.70E-1	2.70E-1	2.42E-1	2.67E-1	2.67E-1	1.78E-1	1.96E-1	1.96E-1	2.85E-2	3.14E-2	3.14E-2	.00E+0	.00E+0	.00E+0
IV	4.46E-2	1.21E-1	2.31E+0	4.35E-2	1.18E-1	2.25E+0	3.96E-2	1.07E-1	2.05E+0	7.10E-3	1.92E-2	3.67E-1	.00E+0	.00E+0	.00E+0
V	1.44E+1	1.57E+1	1.57E+1	1.44E+1	1.57E+1	1.57E+1	1.39E+1	1.51E+1	1.51E+1	1.07E+1	1.17E+1	1.17E+1	3.01E+0	3.29E+0	3.29E+0
VI	2.55E+0	1.41E+1	1.42E+2	2.55E+0	1.41E+1	1.42E+2	2.53E+0	1.41E+1	1.41E+2	2.36E+0	1.36E+1	1.37E+2	1.59E+0	1.01E+1	1.05E+2
VII	4.33E+0	3.45E+1	2.71E+2	3.63E+0	2.83E+1	2.21E+2	1.14E+0	9.03E+0	7.07E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	1.69E-2	1.49E-1	9.32E-1	8.79E-3	7.77E-2	4.86E-1	9.12E-4	8.06E-3	5.04E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.79E-1	3.16E+0	3.60E+0	9.78E-1	3.16E+0	3.59E+0	9.69E-1	2.88E+0	3.26E+0	9.25E-1	1.94E+0	2.14E+0	7.44E-1	1.06E+0	1.13E+0
XII	2.64E-3	8.15E-3	8.39E-3	2.64E-3	8.15E-3	8.38E-3	2.61E-3	8.07E-3	8.31E-3	2.55E-3	7.89E-3	8.11E-3	8.22E-4	2.54E-3	2.61E-3
XIIIA	3.39E-5	1.11E-4	4.16E-4	1.30E-5	4.26E-5	1.59E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.73E-5	4.93E-5	2.51E-4	1.05E-5	1.89E-5	9.62E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.80E-5	2.20E-5	5.62E-3	6.90E-6	8.42E-6	2.15E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.57E-4	1.01E-3	1.01E-3	9.56E-4	1.01E-3	1.01E-3	9.54E-4	1.00E-3	1.00E-3	9.22E-4	9.70E-4	9.70E-4	5.11E-4	5.41E-4	5.41E-4
XVIB	9.47E-4	9.93E-4	9.93E-4	9.47E-4	9.93E-4	9.93E-4	9.45E-4	9.91E-4	9.91E-4	9.13E-4	9.58E-4	9.58E-4	5.06E-4	5.34E-4	5.34E-4
XVIC	9.23E-4	9.63E-4	9.63E-4	9.22E-4	9.63E-4	9.63E-4	9.20E-4	9.60E-4	9.60E-4	8.89E-4	9.29E-4	9.29E-4	4.92E-4	4.92E-4	5.16E-4
XVIIIA	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.54E-3	2.81E-3	2.81E-3	1.74E-3	1.93E-3	1.93E-3
XVIIIB	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.87E-3	2.87E-3	2.50E-3	2.75E-3	2.75E-3	1.71E-3	1.89E-3	1.89E-3
XVIIIC	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.42E-3	2.64E-3	2.64E-3	1.66E-3	1.81E-3	1.81E-3
XXA	3.13E-4	2.40E-3	4.02E-1	1.36E-4	1.28E-3	2.15E-1	1.54E-5	1.19E-4	2.00E-2	5.73E-6	6.26E-5	1.06E-2	.00E+0	.00E+0	.00E+0
XXB	2.52E-4	1.57E-3	2.69E-1	1.10E-4	7.90E-4	1.36E-1	1.24E-5	7.76E-5	1.34E-2	4.62E-6	3.85E-5	6.67E-3	.00E+0	.00E+0	.00E+0
XXC	1.67E-4	1.07E-3	7.26E-1	7.25E-5	4.66E-4	3.16E-1	8.20E-6	5.32E-5	3.61E-2	3.06E-6	2.01E-5	1.37E-2	.00E+0	.00E+0	.00E+0
XXIA	7.47E-3	7.80E-2	7.34E-1	7.47E-3	7.80E-2	7.34E-1	7.41E-3	7.73E-2	7.28E-1	6.37E-3	6.65E-2	6.26E-1	2.28E-3	2.38E-2	2.24E-1
XXIB	7.41E-3	7.67E-2	6.64E-1	7.41E-3	7.67E-2	6.64E-1	7.35E-3	7.61E-2	6.59E-1	6.32E-3	6.54E-2	5.67E-1	2.26E-3	2.34E-2	2.03E-1
XXIC	7.30E-3	7.39E-2	5.38E-1	7.30E-3	7.39E-2	5.38E-1	7.24E-3	7.33E-2	5.34E-1	6.22E-3	6.31E-2	4.59E-1	2.22E-3	2.25E-2	1.64E-1
XXII	4.25E-1	9.81E+0	1.80E+1	4.24E-1	9.81E+0	1.80E+1	4.19E-1	9.74E+0	1.78E+1	3.86E-1	9.05E+0	1.65E+1	.00E+0	.00E+0	.00E+0
DOE	9.58E+1	5.83E+2	4.77E+3	9.49E+1	5.76E+2	4.72E+3	9.13E+1	5.54E+2	4.56E+3	8.26E+1	5.23E+2	4.35E+3	5.21E+1	3.52E+2	3.30E+3
DOD	2.86E-3	8.67E-3	2.62E-2	2.72E-3	8.35E-3	1.52E-2	2.61E-3	8.07E-3	8.31E-3	2.55E-3	7.89E-3	8.11E-3	8.22E-4	2.54E-3	2.61E-3
NRC	4.47E-1	2.00E+0	2.10E+1	4.45E-1	1.99E+0	1.76E+1	4.42E-1	1.97E+0	1.47E+1	4.09E-1	1.72E+0	1.25E+1	2.20E-1	6.95E-1	4.51E+0
Total	9.62E+1	5.85E+2	4.79E+3	9.54E+1	5.78E+2	4.74E+3	9.17E+1	5.56E+2	4.58E+3	8.30E+1	5.25E+2	4.37E+3	5.23E+1	3.53E+2	3.30E+3

Medium Population Density Without Agriculture - 09-13-94 4:08p
 TABLE K-80. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.74E-1	5.16E-1	5.16E-1	4.38E-1	4.77E-1	4.77E-1	4.14E-1	4.51E-1	4.51E-1	3.81E-1	4.15E-1	4.15E-1	3.61E-1	3.93E-1	3.93E-1	3.18E-1	3.46E-1	3.46E-1
II	1.42E+1	1.39E+2	1.13E+3	1.42E+1	1.39E+2	1.13E+3	1.42E+1	1.39E+2	1.13E+3	1.42E+1	1.39E+2	1.12E+3	1.42E+1	1.38E+2	1.12E+3	1.42E+1	1.38E+2	1.11E+3
III	1.78E-1	1.96E-1	1.96E-1	1.49E-1	1.65E-1	1.65E-1	1.19E-1	1.31E-1	1.31E-1	7.01E-2	7.74E-2	7.74E-2	4.05E-2	4.47E-2	4.47E-2	2.85E-2	3.14E-2	3.14E-2
IV	3.96E-2	1.07E-1	2.05E+0	3.60E-2	9.74E-2	1.86E+0	3.24E-2	8.76E-2	1.68E+0	2.51E-2	6.81E-2	1.30E+0	1.79E-2	4.85E-2	9.28E-1	7.10E-3	1.92E-2	3.67E-1
V	1.39E+1	1.51E+1	1.51E+1	1.34E+1	1.47E+1	1.47E+1	1.30E+1	1.42E+1	1.42E+1	1.22E+1	1.32E+1	1.32E+1	1.13E+1	1.23E+1	1.23E+1	1.07E+1	1.17E+1	1.17E+1
VI	2.53E+0	1.41E+1	1.41E+2	2.51E+0	1.41E+1	1.41E+2	2.49E+0	1.40E+1	1.41E+2	2.46E+0	1.39E+1	1.40E+2	2.42E+0	1.38E+1	1.39E+2	2.36E+0	1.36E+1	1.37E+2
VII	1.14E+0	9.03E+0	7.07E+1	4.02E-1	3.21E+0	2.52E+1	4.02E-2	3.05E-1	2.38E+0	4.14E-3	2.71E-2	2.06E-1	1.22E-3	7.58E-3	5.71E-2	.00E+0	.00E+0	.00E+0
IX	9.12E-4	8.06E-3	5.04E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.69E-1	2.88E+0	3.26E+0	9.62E-1	2.59E+0	2.92E+0	9.57E-1	2.41E+0	2.71E+0	9.46E-1	2.21E+0	2.46E+0	9.37E-1	2.08E+0	2.31E+0	9.25E-1	1.94E+0	2.14E+0
XII	2.61E-3	8.07E-3	8.31E-3	2.60E-3	8.04E-3	8.27E-3	2.59E-3	8.02E-3	8.25E-3	2.58E-3	7.98E-3	8.21E-3	2.57E-3	7.94E-3	8.17E-3	2.55E-3	7.89E-3	8.11E-3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.54E-4	1.00E-3	1.00E-3	9.49E-4	9.98E-4	9.98E-4	9.46E-4	9.95E-4	9.95E-4	9.42E-4	9.90E-4	9.90E-4	9.36E-4	9.85E-4	9.85E-4	9.22E-4	9.70E-4	9.70E-4
XVIB	9.45E-4	9.91E-4	9.91E-4	9.40E-4	9.86E-4	9.86E-4	9.37E-4	9.83E-4	9.83E-4	9.32E-4	9.78E-4	9.78E-4	9.27E-4	9.72E-4	9.72E-4	9.13E-4	9.58E-4	9.58E-4
XVIC	9.20E-4	9.60E-4	9.60E-4	9.15E-4	9.55E-4	9.55E-4	9.13E-4	9.53E-4	9.53E-4	9.08E-4	9.48E-4	9.48E-4	9.02E-4	9.42E-4	9.42E-4	8.89E-4	9.29E-4	9.29E-4
XVIIIA	2.65E-3	2.93E-3	2.93E-3	2.64E-3	2.92E-3	2.92E-3	2.63E-3	2.91E-3	2.91E-3	2.60E-3	2.88E-3	2.88E-3	2.58E-3	2.85E-3	2.85E-3	2.54E-3	2.81E-3	2.81E-3
XVIIIB	2.61E-3	2.87E-3	2.87E-3	2.60E-3	2.87E-3	2.87E-3	2.59E-3	2.85E-3	2.85E-3	2.56E-3	2.83E-3	2.83E-3	2.54E-3	2.80E-3	2.80E-3	2.50E-3	2.75E-3	2.75E-3
XVIIIC	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.74E-3	2.74E-3	2.50E-3	2.73E-3	2.73E-3	2.48E-3	2.70E-3	2.70E-3	2.45E-3	2.68E-3	2.68E-3	2.42E-3	2.64E-3	2.64E-3
XXA	1.54E-5	1.19E-4	2.00E-2	1.29E-5	1.03E-4	1.74E-2	1.14E-5	9.34E-5	1.58E-2	9.54E-6	8.04E-5	1.36E-2	8.02E-6	7.15E-5	1.21E-2	5.73E-6	6.26E-5	1.06E-2
XXB	1.24E-5	7.76E-5	1.34E-2	1.04E-5	6.69E-5	1.16E-2	9.22E-6	6.02E-5	1.04E-2	7.69E-6	5.13E-5	8.87E-3	6.47E-6	4.56E-5	7.90E-3	4.62E-6	3.85E-5	6.67E-3
XXC	8.20E-6	5.32E-5	3.61E-2	6.91E-6	4.50E-5	3.05E-2	6.10E-6	3.98E-5	2.70E-2	5.09E-6	3.33E-5	2.26E-2	4.28E-6	2.80E-5	1.91E-2	3.06E-6	2.01E-5	1.37E-2
XXIA	7.41E-3	7.73E-2	7.28E-1	7.33E-3	7.65E-2	7.21E-1	7.25E-3	7.58E-2	7.13E-1	7.08E-3	7.39E-2	6.96E-1	6.77E-3	7.07E-2	6.65E-1	6.37E-3	6.65E-2	6.26E-1
XXIB	7.35E-3	7.61E-2	6.59E-1	7.28E-3	7.53E-2	6.52E-1	7.20E-3	7.45E-2	6.46E-1	7.02E-3	7.27E-2	6.30E-1	6.72E-3	6.95E-2	6.02E-1	6.32E-3	6.54E-2	5.67E-1
XXIC	7.24E-3	7.33E-2	5.34E-1	7.16E-3	7.26E-2	5.28E-1	7.09E-3	7.18E-2	5.23E-1	6.92E-3	7.01E-2	5.10E-1	6.61E-3	6.70E-2	4.88E-1	6.22E-3	6.31E-2	4.59E-1
XXII	4.19E-1	9.74E+0	1.78E+1	4.14E-1	9.60E+0	1.76E+1	4.10E-1	9.53E+0	1.75E+1	4.00E-1	9.32E+0	1.71E+1	3.91E-1	9.17E+0	1.68E+1	3.86E-1	9.05E+0	1.65E+1
DOE	9.13E+1	5.54E+2	4.56E+3	8.96E+1	5.46E+2	4.50E+3	8.83E+1	5.40E+2	4.46E+3	8.64E+1	5.35E+2	4.43E+3	8.46E+1	5.29E+2	4.40E+3	8.26E+1	5.23E+2	4.35E+3
DOD	2.61E-3	8.07E-3	8.31E-3	2.60E-3	8.04E-3	8.27E-3	2.59E-3	8.02E-3	8.25E-3	2.58E-3	7.98E-3	8.21E-3	2.57E-3	7.94E-3	8.17E-3	2.55E-3	7.89E-3	8.11E-3
NRC	4.42E-1	1.97E+0	1.47E+1	4.40E-1	1.95E+0	1.45E+1	4.37E-1	1.93E+0	1.43E+1	4.31E-1	1.89E+0	1.40E+1	4.22E-1	1.82E+0	1.33E+1	4.09E-1	1.72E+0	1.25E+1
Total	9.17E+1	5.56E+2	4.58E+3	9.01E+1	5.48E+2	4.51E+3	8.88E+1	5.42E+2	4.48E+3	8.69E+1	5.37E+2	4.45E+3	8.50E+1	5.31E+2	4.42E+3	8.30E+1	5.25E+2	4.37E+3

Reasonable Occupancy Scenario - 09-13-94 4:10p
 TABLE K-81. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.63E+3	2.86E+3	2.86E+3	2.59E+3	2.81E+3	2.81E+3	2.45E+3	2.66E+3	2.66E+3	1.96E+3	2.13E+3	2.13E+3	8.79E+2	9.54E+2	9.54E+2
II	5.03E+5	4.89E+6	3.96E+7	5.02E+5	4.89E+6	3.96E+7	5.02E+5	4.89E+6	3.96E+7	5.02E+5	4.88E+6	3.91E+7	4.95E+5	4.79E+6	3.78E+7
III	1.13E+3	1.26E+3	1.26E+3	1.13E+3	1.26E+3	1.26E+3	1.06E+3	1.17E+3	1.17E+3	5.60E+2	6.23E+2	6.23E+2	.00E+0	.00E+0	.00E+0
IV	2.05E+3	1.21E+4	3.89E+4	2.03E+3	1.19E+4	3.85E+4	1.94E+3	1.14E+4	3.67E+4	1.53E+3	8.96E+3	2.89E+4	.00E+0	.00E+0	.00E+0
V	6.81E+4	7.41E+4	7.41E+4	6.80E+4	7.40E+4	7.40E+4	6.73E+4	7.32E+4	7.32E+4	6.16E+4	6.70E+4	6.70E+4	4.04E+4	4.39E+4	4.39E+4
VI	7.65E+4	5.70E+5	5.16E+6	7.65E+4	5.70E+5	5.16E+6	7.64E+4	5.70E+5	5.16E+6	7.56E+4	5.66E+5	5.13E+6	6.85E+4	5.26E+5	4.79E+6
VII	3.24E+4	2.58E+5	1.76E+6	2.65E+4	2.10E+5	1.43E+6	1.92E+4	1.52E+5	1.04E+6	4.96E+2	3.92E+3	2.68E+4	.00E+0	.00E+0	.00E+0
IX	8.54E+2	7.56E+3	4.77E+4	6.21E+2	5.49E+3	3.47E+4	2.13E+2	1.88E+3	1.19E+4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.54E+3	1.88E+4	2.19E+4	1.54E+3	1.88E+4	2.19E+4	1.52E+3	1.82E+4	2.11E+4	1.46E+3	1.22E+4	1.41E+4	1.25E+3	5.66E+3	6.44E+3
XII	5.11E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.03E+2	1.54E+3	1.58E+3	4.75E+2	1.45E+3	1.49E+3
XIIIA	1.11E+0	6.71E+0	1.87E+1	7.92E-1	4.81E+0	1.34E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.00E+0	4.41E+0	8.46E+0	7.17E-1	3.16E+0	6.07E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	8.24E-1	2.40E+0	4.52E+1	5.91E-1	1.72E+0	3.24E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	7.90E+0	8.36E+0	8.36E+0	7.90E+0	8.36E+0	8.36E+0	7.89E+0	8.36E+0	8.36E+0	7.82E+0	8.28E+0	8.28E+0	6.93E+0	7.37E+0	7.37E+0
XVIB	7.84E+0	8.27E+0	8.27E+0	7.84E+0	8.27E+0	8.27E+0	7.84E+0	8.27E+0	8.27E+0	7.76E+0	8.19E+0	8.19E+0	6.87E+0	7.29E+0	7.29E+0
XVIC	7.65E+0	8.03E+0	8.03E+0	7.65E+0	8.03E+0	8.03E+0	7.65E+0	8.02E+0	8.02E+0	7.57E+0	7.95E+0	7.95E+0	6.71E+0	7.06E+0	7.06E+0
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.02E+2	1.13E+2	1.13E+2	8.93E+1	9.88E+1	9.88E+1
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.00E+2	1.11E+2	1.11E+2	8.78E+1	9.70E+1	9.70E+1
XVIIIC	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.72E+1	1.06E+2	1.06E+2	8.50E+1	9.27E+1	9.27E+1
XXA	1.13E+2	8.94E+2	9.97E+3	7.10E+1	6.20E+2	6.91E+3	1.48E+1	2.01E+2	2.24E+3	3.52E+0	3.09E+1	3.44E+2	.00E+0	5.95E+0	6.65E+1
XXB	1.07E+2	6.35E+2	4.95E+3	6.77E+1	4.00E+2	3.12E+3	1.41E+1	8.35E+1	6.51E+2	3.36E+0	1.99E+1	1.55E+2	.00E+0	.00E+0	.00E+0
XXC	9.72E+1	3.60E+2	9.20E+3	6.13E+1	2.27E+2	5.80E+3	1.28E+1	4.73E+1	1.21E+3	3.04E+0	1.13E+1	2.88E+2	.00E+0	.00E+0	.00E+0
XXIA	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.81E+2	2.92E+3	2.77E+4	1.91E+2	1.99E+3	1.88E+4
XXIB	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.96E+3	2.57E+4	2.79E+2	2.89E+3	2.50E+4	1.90E+2	1.96E+3	1.70E+4
XXIC	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.85E+3	2.07E+4	2.76E+2	2.78E+3	2.02E+4	1.87E+2	1.89E+3	1.37E+4
XXII	2.17E+4	2.22E+5	5.05E+5	2.17E+4	2.22E+5	5.05E+5	2.16E+4	2.22E+5	5.04E+5	2.10E+4	2.15E+5	4.90E+5	1.50E+4	1.63E+5	3.70E+5
DOE	2.50E+6	1.97E+7	1.62E+8	2.49E+6	1.97E+7	1.62E+8	2.48E+6	1.96E+7	1.61E+8	2.43E+6	1.93E+7	1.59E+8	2.20E+6	1.79E+7	1.49E+8
DOD	5.19E+2	1.60E+3	1.81E+3	5.16E+2	1.59E+3	1.75E+3	5.10E+2	1.56E+3	1.60E+3	5.03E+2	1.54E+3	1.58E+3	4.75E+2	1.45E+3	1.49E+3
NRC	1.51E+4	8.16E+4	6.70E+5	1.46E+4	7.86E+4	6.31E+5	1.38E+4	7.42E+4	5.76E+5	1.34E+4	7.12E+4	5.46E+5	1.05E+4	4.98E+4	3.70E+5
Total	2.51E+6	1.98E+7	1.63E+8	2.51E+6	1.98E+7	1.62E+8	2.49E+6	1.97E+7	1.62E+8	2.44E+6	1.94E+7	1.60E+8	2.21E+6	1.79E+7	1.49E+8

Reasonable Occupancy Scenario - 09-13-94 4:10p
 TABLE K-82. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.45E+3	2.66E+3	2.66E+3	2.35E+3	2.55E+3	2.55E+3	2.26E+3	2.46E+3	2.46E+3	2.15E+3	2.33E+3	2.33E+3	2.06E+3	2.24E+3	2.24E+3	1.96E+3	2.13E+3	2.13E+3
II	5.02E+5	4.89E+6	3.95E+7	5.02E+5	4.89E+6	3.95E+7	5.02E+5	4.89E+6	3.94E+7	5.02E+5	4.88E+6	3.93E+7	5.02E+5	4.88E+6	3.92E+7	5.02E+5	4.88E+6	3.91E+7
III	1.06E+3	1.17E+3	1.17E+3	9.20E+2	1.02E+3	1.02E+3	8.38E+2	9.32E+2	9.32E+2	7.66E+2	8.52E+2	8.52E+2	6.84E+2	7.61E+2	7.61E+2	5.60E+2	6.23E+2	6.23E+2
IV	1.94E+3	1.14E+4	3.67E+4	1.89E+3	1.11E+4	3.58E+4	1.84E+3	1.08E+4	3.49E+4	1.75E+3	1.03E+4	3.32E+4	1.66E+3	9.75E+3	3.15E+4	1.53E+3	8.96E+3	2.89E+4
V	6.73E+4	7.32E+4	7.32E+4	6.65E+4	7.23E+4	7.23E+4	6.57E+4	7.15E+4	7.15E+4	6.46E+4	7.02E+4	7.02E+4	6.34E+4	6.89E+4	6.89E+4	6.16E+4	6.70E+4	6.70E+4
VI	7.64E+4	5.70E+5	5.16E+6	7.63E+4	5.69E+5	5.12E+6	7.62E+4	5.69E+5	5.16E+6	7.60E+4	5.68E+5	5.15E+6	7.58E+4	5.68E+5	5.15E+6	7.56E+4	5.66E+5	5.13E+6
VII	1.92E+4	1.52E+5	1.04E+6	1.27E+4	1.00E+5	6.87E+5	8.94E+3	7.09E+4	4.85E+5	5.46E+3	4.34E+4	2.97E+5	3.08E+3	2.45E+4	1.68E+5	4.96E+2	3.92E+3	2.68E+4
IX	2.13E+2	1.88E+3	1.19E+4	1.02E+2	9.01E+2	5.69E+3	6.02E+1	5.33E+2	3.36E+3	2.12E+1	1.88E+2	1.19E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.52E+3	1.82E+4	2.11E+4	1.51E+3	1.72E+4	1.99E+4	1.50E+3	1.62E+4	1.88E+4	1.48E+3	1.45E+4	1.68E+4	1.47E+3	1.33E+4	1.54E+4	1.46E+3	1.22E+4	1.41E+4
XII	5.10E+2	1.56E+3	1.60E+3	5.08E+2	1.55E+3	1.59E+3	5.08E+2	1.55E+3	1.59E+3	5.06E+2	1.55E+3	1.59E+3	5.04E+2	1.54E+3	1.58E+3	5.03E+2	1.54E+3	1.58E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	7.89E+0	8.36E+0	8.36E+0	7.89E+0	8.35E+0	8.35E+0	7.88E+0	8.34E+0	8.34E+0	7.86E+0	8.32E+0	8.32E+0	7.84E+0	8.30E+0	8.30E+0	7.82E+0	8.28E+0	8.28E+0
XVIB	7.84E+0	8.27E+0	8.27E+0	7.83E+0	8.27E+0	8.27E+0	7.82E+0	8.26E+0	8.26E+0	7.80E+0	8.23E+0	8.23E+0	7.78E+0	8.21E+0	8.21E+0	7.76E+0	8.19E+0	8.19E+0
XVIC	7.65E+0	8.02E+0	8.02E+0	7.64E+0	8.02E+0	8.02E+0	7.63E+0	8.01E+0	8.01E+0	7.61E+0	7.99E+0	7.99E+0	7.59E+0	7.97E+0	7.97E+0	7.57E+0	7.95E+0	7.95E+0
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.13E+2	1.13E+2	1.02E+2	1.13E+2	1.13E+2
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.11E+2	1.11E+2	1.01E+2	1.11E+2	1.11E+2	1.00E+2	1.11E+2	1.11E+2
XVIIIC	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.78E+1	1.07E+2	1.07E+2	9.77E+1	1.07E+2	1.07E+2	9.76E+1	1.06E+2	1.06E+2	9.72E+1	1.06E+2	1.06E+2
XXA	1.48E+1	2.01E+2	2.24E+3	4.98E+0	6.12E+1	6.82E+2	4.64E+0	3.93E+1	4.38E+2	4.19E+0	3.59E+1	4.00E+2	3.87E+0	3.35E+1	3.74E+2	3.52E+0	3.09E+1	3.44E+2
XXB	1.41E+1	8.35E+1	6.51E+2	4.75E+0	2.81E+1	2.19E+2	4.43E+0	2.62E+1	2.04E+2	3.99E+0	2.36E+1	1.84E+2	3.69E+0	2.18E+1	1.70E+2	3.36E+0	1.99E+1	1.55E+2
XXC	1.28E+1	4.73E+1	1.21E+3	4.30E+0	1.59E+1	4.08E+2	4.01E+0	1.48E+1	3.80E+2	3.61E+0	1.34E+1	3.42E+2	3.34E+0	1.24E+1	3.17E+2	3.04E+0	1.13E+1	2.88E+2
XXIA	2.89E+2	3.00E+3	2.84E+4	2.88E+2	2.99E+3	2.83E+4	2.87E+2	2.98E+3	2.83E+4	2.86E+2	2.97E+3	2.81E+4	2.84E+2	2.95E+3	2.79E+4	2.81E+2	2.92E+3	2.77E+4
XXIB	2.87E+2	2.96E+3	2.57E+4	2.86E+2	2.96E+3	2.56E+4	2.85E+2	2.95E+3	2.55E+4	2.84E+2	2.93E+3	2.54E+4	2.82E+2	2.91E+3	2.52E+4	2.79E+2	2.89E+3	2.50E+4
XXIC	2.83E+2	2.85E+3	2.07E+4	2.82E+2	2.85E+3	2.07E+4	2.82E+2	2.84E+3	2.06E+4	2.80E+2	2.82E+3	2.05E+4	2.78E+2	2.80E+3	2.04E+4	2.76E+2	2.78E+3	2.02E+4
XXII	2.16E+4	2.22E+5	5.04E+5	2.15E+4	2.21E+5	5.02E+5	2.14E+4	2.20E+5	5.00E+5	2.12E+4	2.18E+5	4.96E+5	2.12E+4	2.17E+5	4.93E+5	2.10E+4	2.15E+5	4.90E+5
DOE	2.48E+6	1.96E+7	1.61E+8	2.47E+6	1.95E+7	1.61E+8	2.46E+6	1.95E+7	1.61E+8	2.45E+6	1.94E+7	1.60E+8	2.44E+6	1.94E+7	1.60E+8	2.43E+6	1.93E+7	1.59E+8
DOD	5.10E+2	1.56E+3	1.60E+3	5.08E+2	1.55E+3	1.59E+3	5.08E+2	1.55E+3	1.59E+3	5.06E+2	1.55E+3	1.59E+3	5.04E+2	1.54E+3	1.58E+3	5.03E+2	1.54E+3	1.58E+3
NRC	1.38E+4	7.42E+4	5.76E+5	1.37E+4	7.30E+4	5.61E+5	1.36E+4	7.27E+4	5.58E+5	1.36E+4	7.23E+4	5.55E+5	1.35E+4	7.18E+4	5.51E+5	1.34E+4	7.12E+4	5.46E+5
Total	2.49E+6	1.97E+7	1.62E+8	2.48E+6	1.96E+7	1.61E+8	2.48E+6	1.96E+7	1.61E+8	2.46E+6	1.95E+7	1.61E+8	2.46E+6	1.95E+7	1.60E+8	2.44E+6	1.94E+7	1.60E+8

Reasonable Occupancy Scenario - 09-13-94 4:10p
 TABLE K-83. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.62E+3	2.84E+3	2.84E+3	2.53E+3	2.75E+3	2.75E+3	2.24E+3	2.43E+3	2.43E+3	1.50E+3	1.63E+3	1.63E+3	3.83E+2	4.15E+2	4.15E+2
II	5.02E+5	4.89E+6	3.96E+7	5.02E+5	4.89E+6	3.96E+7	5.02E+5	4.88E+6	3.94E+7	5.01E+5	4.86E+6	3.87E+7	4.25E+5	4.12E+6	3.19E+7
III	1.13E+3	1.26E+3	1.26E+3	1.12E+3	1.25E+3	1.25E+3	8.24E+2	9.17E+2	9.17E+2	1.32E+2	1.47E+2	1.47E+2	.00E+0	.00E+0	.00E+0
IV	2.04E+3	1.20E+4	3.87E+4	1.99E+3	1.17E+4	3.78E+4	1.81E+3	1.06E+4	3.43E+4	3.25E+2	1.91E+3	6.16E+3	.00E+0	.00E+0	.00E+0
V	6.81E+4	7.41E+4	7.41E+4	6.78E+4	7.38E+4	7.38E+4	6.55E+4	7.12E+4	7.12E+4	5.06E+4	5.50E+4	5.50E+4	1.42E+4	1.55E+4	1.55E+4
VI	7.65E+4	5.70E+5	5.16E+6	7.65E+4	5.70E+5	5.16E+6	7.62E+4	5.69E+5	5.16E+6	7.28E+4	5.50E+5	5.00E+6	5.30E+4	4.18E+5	3.82E+6
VII	2.94E+4	2.34E+5	1.60E+6	2.42E+4	1.91E+5	1.31E+6	7.70E+3	6.11E+4	4.18E+5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	7.38E+2	6.53E+3	4.12E+4	3.85E+2	3.40E+3	2.15E+4	3.99E+1	3.53E+2	2.23E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.54E+3	1.88E+4	2.19E+4	1.53E+3	1.88E+4	2.18E+4	1.50E+3	1.66E+4	1.93E+4	1.40E+3	9.38E+3	1.08E+4	1.11E+3	3.58E+3	4.02E+3
XII	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.05E+2	1.54E+3	1.58E+3	4.94E+2	1.51E+3	1.55E+3	1.59E+2	4.86E+2	4.99E+2
XIIIA	1.00E+0	6.08E+0	1.70E+1	3.84E-1	2.33E+0	6.50E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	9.07E-1	4.00E+0	7.67E+0	3.47E-1	1.53E+0	2.94E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	7.48E-1	2.18E+0	4.10E+1	2.86E-1	8.35E-1	1.57E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	7.90E+0	8.36E+0	8.36E+0	7.90E+0	8.36E+0	8.36E+0	7.88E+0	8.34E+0	8.34E+0	7.63E+0	8.08E+0	8.08E+0	4.27E+0	4.55E+0	4.55E+0
XVIB	7.84E+0	8.27E+0	8.27E+0	7.84E+0	8.27E+0	8.27E+0	7.82E+0	8.25E+0	8.25E+0	7.57E+0	8.00E+0	8.00E+0	4.23E+0	4.50E+0	4.50E+0
XVIC	7.65E+0	8.03E+0	8.03E+0	7.65E+0	8.03E+0	8.03E+0	7.63E+0	8.01E+0	8.01E+0	7.39E+0	7.76E+0	7.76E+0	4.13E+0	4.36E+0	4.36E+0
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	9.85E+1	1.09E+2	1.09E+2	6.76E+1	7.48E+1	7.48E+1
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	9.68E+1	1.07E+2	1.07E+2	6.64E+1	7.34E+1	7.34E+1
XVIIIC	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.78E+1	1.07E+2	1.07E+2	9.37E+1	1.02E+2	1.02E+2	6.43E+1	7.01E+1	7.01E+1
XXA	8.53E+1	7.53E+2	8.39E+3	3.71E+1	4.03E+2	4.49E+3	4.24E+0	3.74E+1	4.17E+2	1.60E+0	1.98E+1	2.21E+2	.00E+0	.00E+0	.00E+0
XXB	8.13E+1	5.20E+2	4.05E+3	3.54E+1	2.62E+2	2.04E+3	4.05E+0	2.58E+1	2.01E+2	1.53E+0	1.28E+1	1.00E+2	.00E+0	.00E+0	.00E+0
XXC	7.36E+1	2.72E+2	6.97E+3	3.20E+1	1.18E+2	3.03E+3	3.66E+0	1.36E+1	3.47E+2	1.38E+0	5.12E+0	1.31E+2	.00E+0	.00E+0	.00E+0
XXIA	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.87E+2	2.98E+3	2.82E+4	2.47E+2	2.56E+3	2.43E+4	8.81E+1	9.16E+2	8.67E+3
XXIB	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.85E+2	2.94E+3	2.55E+4	2.45E+2	2.53E+3	2.19E+4	8.76E+1	9.04E+2	7.83E+3
XXIC	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.81E+2	2.83E+3	2.06E+4	2.42E+2	2.44E+3	1.77E+4	8.64E+1	8.71E+2	6.32E+3
XXII	2.17E+4	2.22E+5	5.05E+5	2.17E+4	2.22E+5	5.05E+5	2.14E+4	2.20E+5	5.00E+5	1.97E+4	2.04E+5	4.62E+5	.00E+0	.00E+0	.00E+0
DOE	2.49E+6	1.97E+7	1.62E+8	2.49E+6	1.97E+7	1.62E+8	2.46E+6	1.95E+7	1.60E+8	2.34E+6	1.88E+7	1.55E+8	1.64E+6	1.36E+7	1.19E+8
DOD	5.18E+2	1.59E+3	1.79E+3	5.13E+2	1.57E+3	1.67E+3	5.05E+2	1.54E+3	1.58E+3	4.94E+2	1.51E+3	1.55E+3	1.59E+2	4.86E+2	4.99E+2
NRC	1.47E+4	8.00E+4	6.48E+5	1.41E+4	7.64E+4	6.02E+5	1.36E+4	7.26E+4	5.57E+5	1.24E+4	6.31E+4	4.78E+5	6.61E+3	2.49E+4	1.73E+5
Total	2.51E+6	1.98E+7	1.63E+8	2.50E+6	1.97E+7	1.62E+8	2.47E+6	1.96E+7	1.61E+8	2.36E+6	1.89E+7	1.56E+8	1.65E+6	1.37E+7	1.19E+8

Reasonable Occupancy Scenario - 09-13-94 4:10p
 TABLE K-84. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.24E+3	2.43E+3	2.43E+3	2.07E+3	2.25E+3	2.25E+3	1.96E+3	2.12E+3	2.12E+3	1.80E+3	1.96E+3	1.96E+3	1.70E+3	1.85E+3	1.85E+3	1.50E+3	1.63E+3	1.63E+3
II	5.02E+5	4.88E+6	3.94E+7	5.02E+5	4.88E+6	3.92E+7	5.02E+5	4.88E+6	3.91E+7	5.02E+5	4.87E+6	3.90E+7	5.01E+5	4.87E+6	3.89E+7	5.01E+5	4.86E+6	3.87E+7
III	8.24E+2	9.17E+2	9.17E+2	6.92E+2	7.69E+2	7.69E+2	5.51E+2	6.13E+2	6.13E+2	3.25E+2	3.61E+2	3.61E+2	1.88E+2	2.09E+2	2.09E+2	1.32E+2	1.47E+2	1.47E+2
IV	1.81E+3	1.06E+4	3.43E+4	1.65E+3	9.67E+3	3.12E+4	1.48E+3	8.70E+3	2.81E+4	1.15E+3	6.76E+3	2.18E+4	8.20E+2	4.82E+3	1.56E+4	3.25E+2	1.91E+3	6.16E+3
V	6.55E+4	7.12E+4	7.12E+4	6.35E+4	6.90E+4	6.90E+4	6.14E+4	6.68E+4	6.68E+4	5.74E+4	6.24E+4	6.24E+4	5.33E+4	5.80E+4	5.80E+4	5.06E+4	5.50E+4	5.50E+4
VI	7.62E+4	5.69E+5	5.16E+6	7.59E+4	5.68E+5	5.15E+6	7.55E+4	5.66E+5	5.13E+6	7.48E+4	5.62E+5	5.10E+6	7.40E+4	5.58E+5	5.06E+6	7.28E+4	5.50E+5	5.00E+6
VII	7.70E+3	6.11E+4	4.18E+5	2.73E+3	2.17E+4	1.49E+5	2.61E+2	2.06E+3	1.40E+4	2.34E+1	1.79E+2	1.22E+3	6.54E+0	4.95E+1	3.36E+2	.00E+0	.00E+0	.00E+0
IX	3.99E+1	3.53E+2	2.23E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.50E+3	1.66E+4	1.93E+4	1.48E+3	1.43E+4	1.66E+4	1.46E+3	1.29E+4	1.50E+4	1.44E+3	1.14E+4	1.31E+4	1.42E+3	1.04E+4	1.20E+4	1.40E+3	9.38E+3	1.08E+4
XII	5.05E+2	1.54E+3	1.58E+3	5.03E+2	1.54E+3	1.58E+3	5.02E+2	1.53E+3	1.57E+3	4.99E+2	1.52E+3	1.57E+3	4.97E+2	1.52E+3	1.56E+3	4.94E+2	1.51E+3	1.55E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	7.88E+0	8.34E+0	8.34E+0	7.84E+0	8.30E+0	8.30E+0	7.82E+0	8.28E+0	8.28E+0	7.78E+0	8.24E+0	8.24E+0	7.74E+0	8.20E+0	8.20E+0	7.63E+0	8.08E+0	8.08E+0
XVIB	7.82E+0	8.25E+0	8.25E+0	7.78E+0	8.21E+0	8.21E+0	7.76E+0	8.19E+0	8.19E+0	7.72E+0	8.16E+0	8.16E+0	7.68E+0	8.11E+0	8.11E+0	7.57E+0	8.00E+0	8.00E+0
XVIC	7.63E+0	8.01E+0	8.01E+0	7.59E+0	7.97E+0	7.97E+0	7.58E+0	7.95E+0	7.95E+0	7.54E+0	7.91E+0	7.91E+0	7.49E+0	7.87E+0	7.87E+0	7.39E+0	7.76E+0	7.76E+0
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.13E+2	1.13E+2	1.02E+2	1.13E+2	1.13E+2	1.01E+2	1.12E+2	1.12E+2	1.00E+2	1.11E+2	1.11E+2	9.85E+1	1.09E+2	1.09E+2
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.11E+2	1.11E+2	1.00E+2	1.11E+2	1.11E+2	9.93E+1	1.10E+2	1.10E+2	9.83E+1	1.09E+2	1.09E+2	9.68E+1	1.07E+2	1.07E+2
XVIIIC	9.78E+1	1.07E+2	1.07E+2	9.76E+1	1.06E+2	1.06E+2	9.71E+1	1.06E+2	1.06E+2	9.62E+1	1.05E+2	1.05E+2	9.52E+1	1.04E+2	1.04E+2	9.37E+1	1.02E+2	1.02E+2
XXA	4.24E+0	3.74E+1	4.17E+2	3.58E+0	3.25E+1	3.63E+2	3.17E+0	2.95E+1	3.29E+2	2.65E+0	2.54E+1	2.84E+2	2.24E+0	2.26E+1	2.52E+2	1.60E+0	1.98E+1	2.21E+2
XXB	4.05E+0	2.58E+1	2.01E+2	3.42E+0	2.23E+1	1.74E+2	3.02E+0	2.00E+1	1.56E+2	2.53E+0	1.71E+1	1.33E+2	2.13E+0	1.52E+1	1.19E+2	1.53E+0	1.28E+1	1.00E+2
XXC	3.66E+0	1.36E+1	3.47E+2	3.09E+0	1.14E+1	2.93E+2	2.74E+0	1.01E+1	2.59E+2	2.29E+0	8.48E+0	2.17E+2	1.93E+0	7.15E+0	1.83E+2	1.38E+0	5.12E+0	1.31E+2
XXIA	2.87E+2	2.98E+3	2.82E+4	2.84E+2	2.95E+3	2.79E+4	2.81E+2	2.92E+3	2.76E+4	2.74E+2	2.85E+3	2.70E+4	2.62E+2	2.72E+3	2.58E+4	2.47E+2	2.56E+3	2.43E+4
XXIB	2.85E+2	2.94E+3	2.55E+4	2.82E+2	2.91E+3	2.52E+4	2.79E+2	2.88E+3	2.50E+4	2.72E+2	2.81E+3	2.44E+4	2.60E+2	2.69E+3	2.33E+4	2.45E+2	2.53E+3	2.19E+4
XXIC	2.81E+2	2.83E+3	2.06E+4	2.78E+2	2.81E+3	2.04E+4	2.75E+2	2.78E+3	2.02E+4	2.69E+2	2.71E+3	1.97E+4	2.57E+2	2.59E+3	1.88E+4	2.42E+2	2.44E+3	1.77E+4
XXII	2.14E+4	2.20E+5	5.00E+5	2.12E+4	2.17E+5	4.94E+5	2.10E+4	2.15E+5	4.90E+5	2.04E+4	2.10E+5	4.78E+5	2.00E+4	2.06E+5	4.69E+5	1.97E+4	2.04E+5	4.62E+5
DOE	2.46E+6	1.95E+7	1.60E+8	2.44E+6	1.94E+7	1.60E+8	2.43E+6	1.93E+7	1.59E+8	2.40E+6	1.92E+7	1.58E+8	2.38E+6	1.90E+7	1.57E+8	2.34E+6	1.88E+7	1.55E+8
DOD	5.05E+2	1.54E+3	1.58E+3	5.03E+2	1.54E+3	1.58E+3	5.02E+2	1.53E+3	1.57E+3	4.99E+2	1.52E+3	1.57E+3	4.97E+2	1.52E+3	1.56E+3	4.94E+2	1.51E+3	1.55E+3
NRC	1.36E+4	7.26E+4	5.57E+5	1.35E+4	7.18E+4	5.51E+5	1.34E+4	7.11E+4	5.45E+5	1.32E+4	6.95E+4	5.31E+5	1.29E+4	6.67E+4	5.08E+5	1.24E+4	6.31E+4	4.78E+5
Total	2.47E+6	1.96E+7	1.61E+8	2.46E+6	1.95E+7	1.60E+8	2.44E+6	1.94E+7	1.60E+8	2.42E+6	1.92E+7	1.59E+8	2.39E+6	1.91E+7	1.58E+8	2.36E+6	1.89E+7	1.56E+8

Reasonable Occupancy Scenario - 09-13-94 4:10p
 TABLE K-85. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.14E+0	1.24E+0	1.24E+0	1.12E+0	1.22E+0	1.22E+0	1.06E+0	1.15E+0	1.15E+0	8.48E-1	9.26E-1	9.26E-1	3.80E-1	4.15E-1	4.15E-1
II	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.67E+3	1.29E+4	1.70E+2	1.64E+3	1.25E+4
III	4.91E-1	5.44E-1	5.44E-1	4.91E-1	5.44E-1	5.44E-1	4.58E-1	5.07E-1	5.07E-1	2.43E-1	2.69E-1	2.69E-1	.00E+0	.00E+0	.00E+0
IV	4.31E-1	2.51E+0	9.40E+0	4.26E-1	2.48E+0	9.29E+0	4.06E-1	2.37E+0	8.87E+0	3.20E-1	1.86E+0	6.99E+0	.00E+0	.00E+0	.00E+0
V	2.95E+1	3.22E+1	3.22E+1	2.95E+1	3.22E+1	3.22E+1	2.91E+1	3.18E+1	3.18E+1	2.67E+1	2.91E+1	2.91E+1	1.75E+1	1.91E+1	1.91E+1
VI	1.71E+1	1.16E+2	1.12E+3	1.71E+1	1.16E+2	1.12E+3	1.71E+1	1.16E+2	1.11E+3	1.68E+1	1.15E+2	1.11E+3	1.49E+1	1.07E+2	1.03E+3
VII	2.60E+0	1.81E+1	1.19E+2	2.18E+0	1.48E+1	9.64E+1	1.61E+0	1.07E+1	6.98E+1	4.18E-2	2.77E-1	1.80E+0	.00E+0	.00E+0	.00E+0
IX	5.07E-2	4.37E-1	2.71E+0	3.69E-2	3.18E-1	1.97E+0	1.26E-2	1.09E-1	6.75E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.56E+0	5.13E+0	5.80E+0	1.56E+0	5.13E+0	5.80E+0	1.56E+0	5.00E+0	5.65E+0	1.51E+0	3.74E+0	4.15E+0	1.32E+0	2.25E+0	2.42E+0
XII	2.97E-2	9.20E-2	9.46E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.18E-2	9.44E-2	2.92E-2	9.07E-2	9.32E-2	2.76E-2	8.56E-2	8.80E-2
XIIIA	2.66E-4	1.61E-3	4.39E-3	1.91E-4	1.15E-3	3.14E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.40E-4	1.06E-3	2.03E-3	1.72E-4	7.60E-4	1.45E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.99E-4	5.76E-4	1.08E-2	1.43E-4	4.13E-4	7.75E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.50E-3	3.50E-3	3.27E-3	3.46E-3	3.46E-3	2.90E-3	3.09E-3	3.09E-3
XVIB	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.45E-3	3.45E-3	3.24E-3	3.42E-3	3.42E-3	2.88E-3	3.05E-3	3.05E-3
XVIC	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.17E-3	3.33E-3	3.33E-3	2.81E-3	2.96E-3	2.96E-3
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.00E-2	4.42E-2	4.42E-2	3.50E-2	3.87E-2	3.87E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.93E-2	4.35E-2	4.35E-2	3.44E-2	3.81E-2	3.81E-2
XVIIIC	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.79E-2	4.14E-2	4.14E-2	3.31E-2	3.62E-2	3.62E-2
XXA	2.04E-2	1.63E-1	2.10E+0	1.29E-2	1.13E-1	1.46E+0	2.69E-3	3.66E-2	4.72E-1	6.39E-4	5.62E-3	7.25E-2	.00E+0	1.08E-3	1.40E-2
XXB	1.95E-2	1.16E-1	1.13E+0	1.23E-2	7.30E-2	7.13E-1	2.56E-3	1.52E-2	1.49E-1	6.08E-4	3.62E-3	3.55E-2	.00E+0	.00E+0	.00E+0
XXC	1.77E-2	6.60E-2	1.79E+0	1.11E-2	4.16E-2	1.13E+0	2.33E-3	8.68E-3	2.36E-1	5.53E-4	2.06E-3	5.60E-2	.00E+0	.00E+0	.00E+0
XXIA	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.10E-1	1.15E+0	1.08E+1	7.46E-2	7.78E-1	7.34E+0
XXIB	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.09E-1	1.13E+0	9.77E+0	7.40E-2	7.66E-1	6.64E+0
XXIC	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.07E-1	1.09E+0	7.91E+0	7.29E-2	7.38E-1	5.38E+0
XXII	7.72E+0	7.14E+1	1.66E+2	7.72E+0	7.14E+1	1.66E+2	7.69E+0	7.11E+1	1.66E+2	7.46E+0	6.92E+1	1.61E+2	5.32E+0	5.21E+1	1.21E+2
DOE	6.51E+2	4.87E+3	3.97E+4	6.50E+2	4.86E+3	3.97E+4	6.48E+2	4.86E+3	3.96E+4	6.36E+2	4.80E+3	3.93E+4	5.64E+2	4.45E+3	3.68E+4
DOD	3.16E-2	1.01E-1	1.43E-1	3.11E-2	9.85E-2	1.30E-1	2.96E-2	9.18E-2	9.44E-2	2.92E-2	9.07E-2	9.32E-2	2.76E-2	8.56E-2	8.80E-2
NRC	5.61E+0	3.01E+1	2.41E+2	5.51E+0	2.96E+1	2.33E+2	5.38E+0	2.88E+1	2.22E+2	5.26E+0	2.78E+1	2.13E+2	4.13E+0	1.95E+1	1.45E+2
Total	6.56E+2	4.90E+3	3.99E+4	6.56E+2	4.89E+3	3.99E+4	6.53E+2	4.88E+3	3.99E+4	6.41E+2	4.83E+3	3.95E+4	5.68E+2	4.47E+3	3.69E+4

Reasonable Occupancy Scenario - 09-13-94 4:10p
 TABLE K-86. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.06E+0	1.15E+0	1.15E+0	1.01E+0	1.11E+0	1.11E+0	9.78E-1	1.07E+0	1.07E+0	9.29E-1	1.01E+0	1.01E+0	8.91E-1	9.73E-1	9.73E-1	8.48E-1	9.26E-1	9.26E-1
II	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.67E+3	1.30E+4	1.72E+2	1.67E+3	1.30E+4	1.72E+2	1.67E+3	1.29E+4	1.72E+2	1.67E+3	1.29E+4
III	4.58E-1	5.07E-1	5.07E-1	3.99E-1	4.42E-1	4.42E-1	3.63E-1	4.02E-1	4.02E-1	3.32E-1	3.68E-1	3.68E-1	2.97E-1	3.29E-1	3.29E-1	2.43E-1	2.69E-1	2.69E-1
IV	4.06E-1	2.37E+0	8.87E+0	3.96E-1	2.31E+0	8.64E+0	3.86E-1	2.25E+0	8.43E+0	3.67E-1	2.14E+0	8.02E+0	3.48E-1	2.03E+0	7.61E+0	3.20E-1	1.86E+0	6.99E+0
V	2.91E+1	3.18E+1	3.18E+1	2.88E+1	3.14E+1	3.14E+1	2.85E+1	3.11E+1	3.11E+1	2.80E+1	3.05E+1	3.05E+1	2.74E+1	3.00E+1	3.00E+1	2.67E+1	2.91E+1	2.91E+1
VI	1.71E+1	1.16E+2	1.11E+3	1.71E+1	1.16E+2	1.11E+3	1.70E+1	1.16E+2	1.11E+3	1.70E+1	1.16E+2	1.11E+3	1.69E+1	1.16E+2	1.11E+3	1.68E+1	1.15E+2	1.11E+3
VII	1.61E+0	1.07E+1	6.98E+1	1.06E+0	7.09E+0	4.62E+1	7.38E-1	5.00E+0	3.26E+1	4.43E-1	3.05E+0	1.99E+1	2.50E-1	1.72E+0	1.13E+1	4.18E-2	2.77E-1	1.80E+0
IX	1.26E-2	1.09E-1	6.75E-1	6.04E-3	5.21E-2	3.23E-1	3.58E-3	3.08E-2	1.91E-1	1.26E-3	1.09E-2	6.74E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.56E+0	5.00E+0	5.65E+0	1.55E+0	4.79E+0	5.39E+0	1.54E+0	4.59E+0	5.15E+0	1.53E+0	4.23E+0	4.73E+0	1.52E+0	3.99E+0	4.44E+0	1.51E+0	3.74E+0	4.15E+0
XII	2.96E-2	9.18E-2	9.44E-2	2.95E-2	9.16E-2	9.42E-2	2.95E-2	9.14E-2	9.40E-2	2.94E-2	9.11E-2	9.37E-2	2.93E-2	9.09E-2	9.35E-2	2.92E-2	9.07E-2	9.32E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.49E-3	3.49E-3	3.30E-3	3.49E-3	3.49E-3	3.29E-3	3.48E-3	3.48E-3	3.28E-3	3.47E-3	3.47E-3	3.27E-3	3.46E-3	3.46E-3
XVIB	3.27E-3	3.45E-3	3.45E-3	3.27E-3	3.45E-3	3.45E-3	3.27E-3	3.45E-3	3.45E-3	3.26E-3	3.44E-3	3.44E-3	3.25E-3	3.43E-3	3.43E-3	3.24E-3	3.42E-3	3.42E-3
XVIC	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.19E-3	3.35E-3	3.35E-3	3.18E-3	3.34E-3	3.34E-3	3.17E-3	3.34E-3	3.34E-3	3.17E-3	3.33E-3	3.33E-3
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.02E-2	4.44E-2	4.44E-2	4.02E-2	4.44E-2	4.44E-2	4.00E-2	4.42E-2	4.42E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.95E-2	4.38E-2	4.38E-2	3.95E-2	4.37E-2	4.37E-2	3.95E-2	4.37E-2	4.37E-2	3.93E-2	4.35E-2	4.35E-2
XVIIIC	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.81E-2	4.17E-2	4.17E-2	3.81E-2	4.16E-2	4.16E-2	3.81E-2	4.16E-2	4.16E-2	3.79E-2	4.14E-2	4.14E-2
XXA	2.69E-3	3.66E-2	4.72E-1	9.04E-4	1.11E-2	1.44E-1	8.42E-4	7.15E-3	9.23E-2	7.59E-4	6.53E-3	8.42E-2	7.02E-4	6.09E-3	7.87E-2	6.39E-4	5.62E-3	7.25E-2
XXB	2.56E-3	1.52E-2	1.49E-1	8.61E-4	5.13E-3	5.02E-2	8.02E-4	4.78E-3	4.67E-2	7.23E-4	4.31E-3	4.22E-2	6.69E-4	3.98E-3	3.90E-2	6.08E-4	3.62E-3	3.55E-2
XXC	2.33E-3	8.68E-3	2.36E-1	7.82E-4	2.92E-3	7.93E-2	7.29E-4	2.72E-3	7.39E-2	6.57E-4	2.45E-3	6.66E-2	6.08E-4	2.27E-3	6.16E-2	5.53E-4	2.06E-3	5.60E-2
XXIA	1.13E-1	1.18E+0	1.11E+1	1.12E-1	1.17E+0	1.11E+1	1.12E-1	1.17E+0	1.10E+1	1.11E-1	1.16E+0	1.10E+1	1.11E-1	1.16E+0	1.09E+1	1.10E-1	1.15E+0	1.08E+1
XXIB	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.11E-1	1.15E+0	9.97E+0	1.11E-1	1.14E+0	9.91E+0	1.10E-1	1.14E+0	9.85E+0	1.09E-1	1.13E+0	9.77E+0
XXIC	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.11E+0	8.10E+0	1.10E-1	1.11E+0	8.08E+0	1.09E-1	1.10E+0	8.03E+0	1.08E-1	1.10E+0	7.98E+0	1.07E-1	1.09E+0	7.91E+0
XXII	7.69E+0	7.11E+1	1.66E+2	7.66E+0	7.09E+1	1.65E+2	7.63E+0	7.07E+1	1.65E+2	7.56E+0	7.01E+1	1.63E+2	7.53E+0	6.97E+1	1.62E+2	7.46E+0	6.92E+1	1.61E+2
DOE	6.48E+2	4.86E+3	3.96E+4	6.46E+2	4.85E+3	3.96E+4	6.44E+2	4.84E+3	3.95E+4	6.41E+2	4.83E+3	3.94E+4	6.39E+2	4.82E+3	3.93E+4	6.36E+2	4.80E+3	3.93E+4
DOD	2.96E-2	9.18E-2	9.44E-2	2.95E-2	9.16E-2	9.42E-2	2.95E-2	9.14E-2	9.40E-2	2.94E-2	9.11E-2	9.37E-2	2.93E-2	9.09E-2	9.35E-2	2.92E-2	9.07E-2	9.32E-2
NRC	5.38E+0	2.88E+1	2.22E+2	5.34E+0	2.85E+1	2.18E+2	5.33E+0	2.84E+1	2.17E+2	5.32E+0	2.82E+1	2.16E+2	5.30E+0	2.81E+1	2.15E+2	5.26E+0	2.78E+1	2.13E+2
Total	6.53E+2	4.88E+3	3.99E+4	6.51E+2	4.88E+3	3.98E+4	6.50E+2	4.87E+3	3.98E+4	6.47E+2	4.86E+3	3.96E+4	6.44E+2	4.85E+3	3.96E+4	6.41E+2	4.83E+3	3.95E+4

Reasonable Occupancy Scenario - 09-13-94 4:10p
 TABLE K-87. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.13E+0	1.23E+0	1.23E+0	1.09E+0	1.19E+0	1.19E+0	9.67E-1	1.06E+0	1.06E+0	6.49E-1	7.09E-1	7.09E-1	1.65E-1	1.81E-1	1.81E-1
II	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.67E+3	1.30E+4	1.72E+2	1.67E+3	1.28E+4	1.46E+2	1.41E+3	1.06E+4
III	4.91E-1	5.44E-1	5.44E-1	4.86E-1	5.39E-1	5.39E-1	3.58E-1	3.96E-1	3.96E-1	5.72E-2	6.34E-2	6.34E-2	.00E+0	.00E+0	.00E+0
IV	4.29E-1	2.50E+0	9.36E+0	4.18E-1	2.43E+0	9.12E+0	3.80E-1	2.21E+0	8.30E+0	6.82E-2	3.97E-1	1.49E+0	.00E+0	.00E+0	.00E+0
V	2.95E+1	3.22E+1	3.22E+1	2.94E+1	3.21E+1	3.21E+1	2.84E+1	3.10E+1	3.10E+1	2.19E+1	2.39E+1	2.39E+1	6.17E+0	6.73E+0	6.73E+0
VI	1.71E+1	1.16E+2	1.12E+3	1.71E+1	1.16E+2	1.12E+3	1.70E+1	1.16E+2	1.11E+3	1.61E+1	1.12E+2	1.08E+3	1.12E+1	8.45E+1	8.25E+2
VII	2.39E+0	1.64E+1	1.08E+2	2.02E+0	1.35E+1	8.79E+1	6.32E-1	4.30E+0	2.81E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	4.38E-2	3.78E-1	2.34E+0	2.28E-2	1.97E-1	1.22E+0	2.37E-3	2.04E-2	1.27E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.56E+0	5.13E+0	5.80E+0	1.56E+0	5.12E+0	5.79E+0	1.54E+0	4.67E+0	5.25E+0	1.47E+0	3.13E+0	3.43E+0	1.18E+0	1.70E+0	1.79E+0
XII	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.94E-2	9.10E-2	9.36E-2	2.87E-2	8.89E-2	9.15E-2	9.23E-3	2.86E-2	2.95E-2
XIIIA	2.42E-4	1.46E-3	3.98E-3	9.26E-5	5.59E-4	1.52E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.18E-4	9.62E-4	1.84E-3	8.35E-5	3.68E-4	7.04E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.80E-4	5.23E-4	9.81E-3	6.91E-5	2.00E-4	3.76E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.49E-3	3.49E-3	3.19E-3	3.38E-3	3.38E-3	1.79E-3	1.91E-3	1.91E-3
XVIB	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.45E-3	3.45E-3	3.27E-3	3.45E-3	3.45E-3	3.16E-3	3.34E-3	3.34E-3	1.77E-3	1.88E-3	1.88E-3
XVIC	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.19E-3	3.35E-3	3.35E-3	3.09E-3	3.25E-3	3.25E-3	1.73E-3	1.83E-3	1.83E-3
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.02E-2	4.45E-2	4.45E-2	3.86E-2	4.26E-2	4.26E-2	2.65E-2	2.93E-2	2.93E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.95E-2	4.38E-2	4.38E-2	3.79E-2	4.20E-2	4.20E-2	2.60E-2	2.88E-2	2.88E-2
XVIIIC	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.81E-2	4.17E-2	4.17E-2	3.65E-2	3.99E-2	3.99E-2	2.51E-2	2.74E-2	2.74E-2
XXA	1.55E-2	1.37E-1	1.77E+0	6.73E-3	7.33E-2	9.45E-1	7.70E-4	6.80E-3	8.78E-2	2.90E-4	3.60E-3	4.66E-2	.00E+0	.00E+0	.00E+0
XXB	1.47E-2	9.48E-2	9.26E-1	6.41E-3	4.78E-2	4.67E-1	7.33E-4	4.71E-3	4.61E-2	2.77E-4	2.34E-3	2.30E-2	.00E+0	.00E+0	.00E+0
XXC	1.34E-2	5.00E-2	1.36E+0	5.82E-3	2.17E-2	5.90E-1	6.66E-4	2.49E-3	6.75E-2	2.52E-4	9.40E-4	2.55E-2	.00E+0	.00E+0	.00E+0
XXIA	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.12E-1	1.17E+0	1.10E+1	9.63E-2	1.00E+0	9.47E+0	3.44E-2	3.59E-1	3.38E+0
XXIB	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.11E-1	1.15E+0	9.96E+0	9.55E-2	9.89E-1	8.56E+0	3.41E-2	3.53E-1	3.06E+0
XXIC	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.09E-1	1.11E+0	8.07E+0	9.40E-2	9.53E-1	6.94E+0	3.36E-2	3.40E-1	2.48E+0
XXII	7.72E+0	7.14E+1	1.66E+2	7.71E+0	7.13E+1	1.66E+2	7.61E+0	7.06E+1	1.64E+2	7.02E+0	6.53E+1	1.52E+2	.00E+0	.00E+0	.00E+0
DOE	6.50E+2	4.87E+3	3.97E+4	6.50E+2	4.86E+3	3.97E+4	6.44E+2	4.84E+3	3.95E+4	6.09E+2	4.69E+3	3.84E+4	4.07E+2	3.34E+3	2.93E+4
DOD	3.14E-2	1.00E-1	1.39E-1	3.03E-2	9.51E-2	1.11E-1	2.94E-2	9.10E-2	9.36E-2	2.87E-2	8.89E-2	9.15E-2	9.23E-3	2.86E-2	2.95E-2
NRC	5.55E+0	2.98E+1	2.37E+2	5.43E+0	2.92E+1	2.27E+2	5.33E+0	2.84E+1	2.17E+2	4.87E+0	2.47E+1	1.87E+2	2.60E+0	9.75E+0	6.75E+1
Total	6.56E+2	4.90E+3	3.99E+4	6.55E+2	4.89E+3	3.99E+4	6.49E+2	4.87E+3	3.97E+4	6.14E+2	4.71E+3	3.86E+4	4.10E+2	3.35E+3	2.94E+4

Reasonable Occupancy Scenario - 09-13-94 4:10p
 TABLE K-88. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	9.67E-1	1.06E+0	1.06E+0	8.94E-1	9.77E-1	9.77E-1	8.45E-1	9.23E-1	9.23E-1	7.78E-1	8.50E-1	8.50E-1	7.36E-1	8.04E-1	8.04E-1	6.49E-1	7.09E-1	7.09E-1
II	1.72E+2	1.67E+3	1.30E+4	1.72E+2	1.67E+3	1.29E+4	1.72E+2	1.67E+3	1.29E+4	1.72E+2	1.67E+3	1.29E+4	1.72E+2	1.67E+3	1.29E+4	1.72E+2	1.67E+3	1.28E+4
III	3.58E-1	3.96E-1	3.96E-1	3.00E-1	3.32E-1	3.32E-1	2.39E-1	2.65E-1	2.65E-1	1.41E-1	1.56E-1	1.56E-1	8.14E-2	9.01E-2	9.01E-2	5.72E-2	6.34E-2	6.34E-2
IV	3.80E-1	2.21E+0	8.30E+0	3.45E-1	2.01E+0	7.54E+0	3.11E-1	1.81E+0	6.78E+0	2.41E-1	1.41E+0	5.27E+0	1.72E-1	1.00E+0	3.76E+0	6.82E-2	3.97E-1	1.49E+0
V	2.84E+1	3.10E+1	3.10E+1	2.75E+1	3.00E+1	3.00E+1	2.66E+1	2.91E+1	2.91E+1	2.49E+1	2.71E+1	2.71E+1	2.31E+1	2.52E+1	2.52E+1	2.19E+1	2.39E+1	2.39E+1
VI	1.70E+1	1.16E+2	1.11E+3	1.69E+1	1.16E+2	1.11E+3	1.68E+1	1.15E+2	1.11E+3	1.66E+1	1.15E+2	1.10E+3	1.64E+1	1.14E+2	1.09E+3	1.61E+1	1.12E+2	1.08E+3
VII	6.32E-1	4.30E+0	2.81E+1	2.22E-1	1.53E+0	9.99E+0	2.25E-2	1.46E-1	9.46E-1	2.38E-3	1.31E-2	8.22E-2	7.09E-4	3.68E-3	2.28E-2	.00E+0	.00E+0	.00E+0
IX	2.37E-3	2.04E-2	1.27E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.54E+0	4.67E+0	5.25E+0	1.53E+0	4.20E+0	4.70E+0	1.52E+0	3.90E+0	4.34E+0	1.50E+0	3.56E+0	3.95E+0	1.49E+0	3.36E+0	3.70E+0	1.47E+0	3.13E+0	3.43E+0
XII	2.94E-2	9.10E-2	9.36E-2	2.92E-2	9.06E-2	9.32E-2	2.91E-2	9.04E-2	9.30E-2	2.90E-2	8.99E-2	9.25E-2	2.89E-2	8.95E-2	9.21E-2	2.87E-2	8.89E-2	9.15E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.30E-3	3.49E-3	3.49E-3	3.28E-3	3.47E-3	3.47E-3	3.27E-3	3.46E-3	3.46E-3	3.26E-3	3.45E-3	3.45E-3	3.24E-3	3.43E-3	3.43E-3	3.19E-3	3.38E-3	3.38E-3
XVIB	3.27E-3	3.45E-3	3.45E-3	3.25E-3	3.43E-3	3.43E-3	3.24E-3	3.42E-3	3.42E-3	3.23E-3	3.41E-3	3.41E-3	3.21E-3	3.39E-3	3.39E-3	3.16E-3	3.34E-3	3.34E-3
XVIC	3.19E-3	3.35E-3	3.35E-3	3.18E-3	3.34E-3	3.34E-3	3.17E-3	3.33E-3	3.33E-3	3.15E-3	3.31E-3	3.31E-3	3.13E-3	3.29E-3	3.29E-3	3.09E-3	3.25E-3	3.25E-3
XVIIIA	4.02E-2	4.45E-2	4.45E-2	4.02E-2	4.44E-2	4.44E-2	4.00E-2	4.42E-2	4.42E-2	3.96E-2	4.37E-2	4.37E-2	3.92E-2	4.33E-2	4.33E-2	3.86E-2	4.26E-2	4.26E-2
XVIIIB	3.95E-2	4.38E-2	4.38E-2	3.95E-2	4.37E-2	4.37E-2	3.93E-2	4.35E-2	4.35E-2	3.89E-2	4.30E-2	4.30E-2	3.85E-2	4.26E-2	4.26E-2	3.79E-2	4.20E-2	4.20E-2
XVIIIC	3.81E-2	4.17E-2	4.17E-2	3.81E-2	4.16E-2	4.16E-2	3.79E-2	4.14E-2	4.14E-2	3.75E-2	4.10E-2	4.10E-2	3.71E-2	4.05E-2	4.05E-2	3.65E-2	3.99E-2	3.99E-2
XXA	7.70E-4	6.80E-3	8.78E-2	6.50E-4	5.92E-3	7.64E-2	5.75E-4	5.36E-3	6.92E-2	4.81E-4	4.62E-3	5.97E-2	4.05E-4	4.11E-3	5.31E-2	2.90E-4	3.60E-3	4.66E-2
XXB	7.33E-4	4.71E-3	4.61E-2	6.19E-4	4.06E-3	3.98E-2	5.48E-4	3.65E-3	3.58E-2	4.59E-4	3.12E-3	3.05E-2	3.86E-4	2.77E-3	2.72E-2	2.77E-4	2.34E-3	2.30E-2
XXC	6.66E-4	2.49E-3	6.75E-2	5.62E-4	2.10E-3	5.70E-2	4.98E-4	1.86E-3	5.05E-2	4.17E-4	1.56E-3	4.22E-2	3.51E-4	1.31E-3	3.56E-2	2.52E-4	9.40E-4	2.55E-2
XXIA	1.12E-1	1.17E+0	1.10E+1	1.11E-1	1.16E+0	1.09E+1	1.10E-1	1.14E+0	1.08E+1	1.07E-1	1.12E+0	1.05E+1	1.02E-1	1.07E+0	1.01E+1	9.63E-2	1.00E+0	9.47E+0
XXIB	1.11E-1	1.15E+0	9.96E+0	1.10E-1	1.14E+0	9.86E+0	1.09E-1	1.13E+0	9.75E+0	1.06E-1	1.10E+0	9.52E+0	1.01E-1	1.05E+0	9.10E+0	9.55E-2	9.89E-1	8.56E+0
XXIC	1.09E-1	1.11E+0	8.07E+0	1.08E-1	1.10E+0	7.98E+0	1.07E-1	1.09E+0	7.90E+0	1.04E-1	1.06E+0	7.71E+0	9.99E-2	1.01E+0	7.37E+0	9.40E-2	9.53E-1	6.94E+0
XXII	7.61E+0	7.06E+1	1.64E+2	7.53E+0	6.98E+1	1.63E+2	7.46E+0	6.92E+1	1.61E+2	7.26E+0	6.75E+1	1.57E+2	7.11E+0	6.62E+1	1.54E+2	7.02E+0	6.53E+1	1.52E+2
DOE	6.44E+2	4.84E+3	3.95E+4	6.39E+2	4.82E+3	3.93E+4	6.35E+2	4.80E+3	3.92E+4	6.27E+2	4.77E+3	3.90E+4	6.19E+2	4.73E+3	3.88E+4	6.09E+2	4.69E+3	3.84E+4
DOD	2.94E+2	9.10E+2	9.36E+2	2.92E+2	9.06E+2	9.32E+2	2.91E+2	9.04E+2	9.30E+2	2.90E+2	8.99E+2	9.25E+2	2.89E+2	8.95E+2	9.21E+2	2.87E+2	8.89E+2	9.15E+2
NRC	5.33E+0	2.84E+1	2.17E+2	5.30E+0	2.81E+1	2.15E+2	5.26E+0	2.78E+1	2.12E+2	5.17E+0	2.72E+1	2.07E+2	5.04E+0	2.61E+1	1.98E+2	4.87E+0	2.47E+1	1.87E+2
Total	6.49E+2	4.87E+3	3.97E+4	6.45E+2	4.85E+3	3.96E+4	6.41E+2	4.83E+3	3.95E+4	6.32E+2	4.80E+3	3.92E+4	6.24E+2	4.76E+3	3.90E+4	6.14E+2	4.71E+3	3.86E+4

Reasonable Occupancy Scenario - 09-13-94 4:10p
 TABLE K-89. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.51E-1	8.21E-1	8.21E-1	7.38E-1	8.07E-1	8.07E-1	6.97E-1	7.62E-1	7.62E-1	5.60E-1	6.12E-1	6.12E-1	2.51E-1	2.74E-1	2.74E-1
II	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.13E+4	1.40E+2	1.36E+3	1.09E+4
III	3.25E-1	3.60E-1	3.60E-1	3.25E-1	3.60E-1	3.60E-1	3.03E-1	3.36E-1	3.36E-1	1.61E-1	1.78E-1	1.78E-1	.00E+0	.00E+0	.00E+0
IV	2.79E-1	1.59E+0	7.47E+0	2.76E-1	1.57E+0	7.38E+0	2.63E-1	1.50E+0	7.05E+0	2.07E-1	1.18E+0	5.55E+0	.00E+0	.00E+0	.00E+0
V	1.95E+1	2.13E+1	2.13E+1	1.95E+1	2.12E+1	2.12E+1	1.93E+1	2.10E+1	2.10E+1	1.77E+1	1.92E+1	1.92E+1	1.16E+1	1.26E+1	1.26E+1
VI	1.18E+1	7.96E+1	8.42E+2	1.17E+1	7.96E+1	8.42E+2	1.17E+1	7.95E+1	8.42E+2	1.15E+1	7.90E+1	8.38E+2	1.02E+1	7.31E+1	7.81E+2
VII	2.13E+0	1.52E+1	1.01E+2	1.78E+0	1.24E+1	8.21E+1	1.31E+0	9.01E+0	5.95E+1	3.38E-2	2.33E-1	1.54E+0	.00E+0	.00E+0	.00E+0
IX	4.48E-2	3.90E-1	2.43E+0	3.26E-2	2.84E-1	1.77E+0	1.12E-2	9.73E-2	6.06E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.14E+0	3.57E+0	9.92E-1	2.36E+0	2.64E+0	8.69E-1	1.44E+0	1.55E+0
XII	2.64E-2	8.16E-2	8.39E-2	2.64E-2	8.15E-2	8.38E-2	2.63E-2	8.14E-2	8.38E-2	2.60E-2	8.04E-2	8.27E-2	2.46E-2	7.59E-2	7.81E-2
XIIIA	1.74E-4	1.02E-3	3.01E-3	1.25E-4	7.31E-4	2.16E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.56E-4	6.64E-4	1.44E-3	1.12E-4	4.76E-4	1.03E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.27E-4	3.60E-4	6.71E-3	9.14E-5	2.58E-4	4.81E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.30E-3	2.30E-3	2.16E-3	2.28E-3	2.28E-3	1.91E-3	2.04E-3	2.04E-3
XVIB	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.13E-3	2.26E-3	2.26E-3	1.90E-3	2.01E-3	2.01E-3
XVIC	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.09E-3	2.20E-3	2.20E-3	1.86E-3	1.96E-3	1.96E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.63E-2	2.91E-2	2.91E-2	2.30E-2	2.55E-2	2.55E-2
XVIIIB	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.59E-2	2.86E-2	2.86E-2	2.27E-2	2.50E-2	2.50E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.51E-2	2.73E-2	2.73E-2	2.19E-2	2.39E-2	2.39E-2
XXA	1.27E-2	1.02E-1	1.72E+0	8.01E-3	7.08E-2	1.19E+0	1.67E-3	2.30E-2	3.87E-1	3.97E-4	3.52E-3	5.94E-2	.00E+0	6.79E-4	1.15E-2
XXB	1.21E-2	7.28E-2	9.67E-1	7.62E-3	4.59E-2	6.09E-1	1.59E-3	9.58E-3	1.27E-1	3.78E-4	2.28E-3	3.03E-2	.00E+0	.00E+0	.00E+0
XXC	1.09E-2	4.18E-2	1.25E+0	6.89E-3	2.64E-2	7.87E-1	1.44E-3	5.51E-3	1.64E-1	3.42E-4	1.31E-3	3.91E-2	.00E+0	.00E+0	.00E+0
XXIA	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.46E-2	7.79E-1	7.34E+0	7.26E-2	7.58E-1	7.14E+0	4.94E-2	5.15E-1	4.85E+0
XXIB	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.40E-2	7.66E-1	6.64E+0	7.21E-2	7.46E-1	6.46E+0	4.90E-2	5.07E-1	4.39E+0
XXIC	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.29E-2	7.39E-1	5.37E+0	7.10E-2	7.19E-1	5.23E+0	4.82E-2	4.89E-1	3.56E+0
XXII	5.95E+0	5.36E+1	1.28E+2	5.95E+0	5.36E+1	1.28E+2	5.93E+0	5.34E+1	1.27E+2	5.75E+0	5.19E+1	1.24E+2	4.13E+0	3.93E+1	9.37E+1
DOE	4.74E+2	3.61E+3	3.15E+4	4.74E+2	3.61E+3	3.15E+4	4.72E+2	3.60E+3	3.15E+4	4.64E+2	3.56E+3	3.12E+4	4.14E+2	3.31E+3	2.93E+4
DOD	2.77E-2	8.74E-2	1.16E-1	2.73E-2	8.57E-2	1.06E-1	2.63E-2	8.14E-2	8.38E-2	2.60E-2	8.04E-2	8.27E-2	2.46E-2	7.59E-2	7.81E-2
NRC	3.70E+0	1.99E+1	1.62E+2	3.63E+0	1.95E+1	1.56E+2	3.55E+0	1.90E+1	1.47E+2	3.48E+0	1.84E+1	1.41E+2	2.73E+0	1.29E+1	9.57E+1
Total	4.78E+2	3.63E+3	3.17E+4	4.77E+2	3.63E+3	3.17E+4	4.76E+2	3.62E+3	3.16E+4	4.67E+2	3.58E+3	3.13E+4	4.17E+2	3.32E+3	2.94E+4

Reasonable Occupancy Scenario - 09-13-94 4:10p
 TABLE K-90. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.97E-1	7.62E-1	7.62E-1	6.69E-1	7.31E-1	7.31E-1	6.46E-1	7.06E-1	7.06E-1	6.13E-1	6.70E-1	6.70E-1	5.88E-1	6.43E-1	6.43E-1	5.60E-1	6.12E-1	6.12E-1
II	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.39E+3	1.13E+4
III	3.03E-1	3.36E-1	3.36E-1	2.64E-1	2.92E-1	2.92E-1	2.40E-1	2.66E-1	2.66E-1	2.20E-1	2.43E-1	2.43E-1	1.96E-1	2.17E-1	2.17E-1	1.61E-1	1.78E-1	1.78E-1
IV	2.63E-1	1.50E+0	7.05E+0	2.56E-1	1.46E+0	6.87E+0	2.50E-1	1.42E+0	6.70E+0	2.38E-1	1.35E+0	6.37E+0	2.26E-1	1.28E+0	6.04E+0	2.07E-1	1.18E+0	5.55E+0
V	1.93E+1	2.10E+1	2.10E+1	1.91E+1	2.07E+1	2.07E+1	1.88E+1	2.05E+1	2.05E+1	1.85E+1	2.01E+1	2.01E+1	1.82E+1	1.98E+1	1.98E+1	1.77E+1	1.92E+1	1.92E+1
VI	1.17E+1	7.95E+1	8.42E+2	1.17E+1	7.95E+1	8.42E+2	1.17E+1	7.94E+1	8.42E+2	1.16E+1	7.93E+1	8.41E+2	1.16E+1	7.92E+1	8.40E+2	1.15E+1	7.90E+1	8.38E+2
VII	1.31E+0	9.01E+0	5.95E+1	8.58E-1	5.96E+0	3.93E+1	6.00E-1	4.20E+0	2.78E+1	3.61E-1	2.56E+0	1.70E+1	2.04E-1	1.45E+0	9.60E+0	3.38E-2	2.33E-1	1.54E+0
IX	1.12E-2	9.73E-2	6.06E-1	5.34E-3	4.65E-2	2.90E-1	3.16E-3	2.75E-2	1.71E-1	1.12E-3	9.71E-3	6.05E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.02E+0	3.14E+0	3.57E+0	1.01E+0	3.00E+0	3.41E+0	1.01E+0	2.88E+0	3.26E+0	1.00E+0	2.66E+0	3.00E+0	9.99E-1	2.51E+0	2.82E+0	9.92E-1	2.36E+0	2.64E+0
XII	2.63E-2	8.14E-2	8.38E-2	2.63E-2	8.12E-2	8.36E-2	2.62E-2	8.11E-2	8.34E-2	2.61E-2	8.08E-2	8.31E-2	2.61E-2	8.06E-2	8.29E-2	2.60E-2	8.04E-2	8.27E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	2.18E-3	2.30E-3	2.30E-3	2.18E-3	2.30E-3	2.30E-3	2.17E-3	2.30E-3	2.30E-3	2.17E-3	2.29E-3	2.29E-3	2.16E-3	2.29E-3	2.29E-3	2.16E-3	2.28E-3	2.28E-3
XVIB	2.16E-3	2.28E-3	2.28E-3	2.15E-3	2.28E-3	2.28E-3	2.15E-3	2.27E-3	2.27E-3	2.15E-3	2.27E-3	2.27E-3	2.14E-3	2.26E-3	2.26E-3	2.13E-3	2.26E-3	2.26E-3
XVIC	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.21E-3	2.21E-3	2.10E-3	2.21E-3	2.21E-3	2.10E-3	2.20E-3	2.20E-3	2.09E-3	2.20E-3	2.20E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.64E-2	2.93E-2	2.93E-2	2.63E-2	2.91E-2	2.91E-2
XVIIIB	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.87E-2	2.87E-2	2.60E-2	2.87E-2	2.87E-2	2.60E-2	2.87E-2	2.87E-2	2.59E-2	2.86E-2	2.86E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.51E-2	2.73E-2	2.73E-2
XXA	1.67E-3	2.30E-2	3.87E-1	5.62E-4	6.98E-3	1.18E-1	5.24E-4	4.49E-3	7.56E-2	4.72E-4	4.09E-3	6.90E-2	4.37E-4	3.82E-3	6.45E-2	3.97E-4	3.52E-3	5.94E-2
XXB	1.59E-3	9.58E-3	1.27E-1	5.35E-4	3.22E-3	4.29E-2	4.99E-4	3.00E-3	3.99E-2	4.50E-4	2.71E-3	3.60E-2	4.16E-4	2.50E-3	3.33E-2	3.78E-4	2.28E-3	3.03E-2
XXC	1.44E-3	5.51E-3	1.64E-1	4.84E-4	1.85E-3	5.53E-2	4.51E-4	1.73E-3	5.15E-2	4.07E-4	1.56E-3	4.65E-2	3.76E-4	1.44E-3	4.30E-2	3.42E-4	1.31E-3	3.91E-2
XXIA	7.46E-2	7.79E-1	7.34E+0	7.44E-2	7.77E-1	7.31E+0	7.42E-2	7.74E-1	7.29E+0	7.37E-2	7.70E-1	7.25E+0	7.33E-2	7.65E-1	7.21E+0	7.26E-2	7.58E-1	7.14E+0
XXIB	7.40E-2	7.66E-1	6.64E+0	7.38E-2	7.64E-1	6.62E+0	7.36E-2	7.62E-1	6.60E+0	7.32E-2	7.57E-1	6.56E+0	7.27E-2	7.53E-1	6.52E+0	7.21E-2	7.46E-1	6.46E+0
XXIC	7.29E-2	7.39E-1	5.37E+0	7.27E-2	7.37E-1	5.36E+0	7.25E-2	7.34E-1	5.34E+0	7.20E-2	7.30E-1	5.31E+0	7.16E-2	7.26E-1	5.28E+0	7.10E-2	7.19E-1	5.23E+0
XXII	5.93E+0	5.34E+1	1.27E+2	5.90E+0	5.32E+1	1.27E+2	5.88E+0	5.30E+1	1.26E+2	5.83E+0	5.26E+1	1.25E+2	5.80E+0	5.23E+1	1.25E+2	5.75E+0	5.19E+1	1.24E+2
DOE	4.72E+2	3.60E+3	3.15E+4	4.71E+2	3.59E+3	3.14E+4	4.70E+2	3.59E+3	3.14E+4	4.68E+2	3.58E+3	3.13E+4	4.66E+2	3.57E+3	3.12E+4	4.64E+2	3.56E+3	3.12E+4
DOD	2.63E-2	8.14E-2	8.38E-2	2.63E-2	8.12E-2	8.36E-2	2.62E-2	8.11E-2	8.34E-2	2.61E-2	8.08E-2	8.31E-2	2.61E-2	8.06E-2	8.29E-2	2.60E-2	8.04E-2	8.27E-2
NRC	3.55E+0	1.90E+1	1.47E+2	3.53E+0	1.88E+1	1.45E+2	3.52E+0	1.88E+1	1.44E+2	3.51E+0	1.87E+1	1.43E+2	3.50E+0	1.86E+1	1.42E+2	3.48E+0	1.84E+1	1.41E+2
Total	4.76E+2	3.62E+3	3.16E+4	4.74E+2	3.61E+3	3.16E+4	4.73E+2	3.61E+3	3.15E+4	4.71E+2	3.60E+3	3.14E+4	4.70E+2	3.59E+3	3.14E+4	4.67E+2	3.58E+3	3.13E+4

Reasonable Occupancy Scenario - 09-13-94 4:10p
 TABLE K-91. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.46E-1	8.15E-1	8.15E-1	7.22E-1	7.89E-1	7.89E-1	6.38E-1	6.97E-1	6.97E-1	4.28E-1	4.68E-1	4.68E-1	1.09E-1	1.19E-1	1.19E-1
II	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.38E+3	1.11E+4	1.20E+2	1.17E+3	9.19E+3
III	3.25E-1	3.60E-1	3.60E-1	3.22E-1	3.56E-1	3.56E-1	2.37E-1	2.62E-1	2.62E-1	3.79E-2	4.19E-2	4.19E-2	.00E+0	.00E+0	.00E+0
IV	2.78E-1	1.58E+0	7.44E+0	2.71E-1	1.54E+0	7.25E+0	2.46E-1	1.40E+0	6.59E+0	4.41E-2	2.51E-1	1.18E+0	.00E+0	.00E+0	.00E+0
V	1.95E+1	2.13E+1	2.13E+1	1.94E+1	2.12E+1	2.12E+1	1.88E+1	2.04E+1	2.04E+1	1.45E+1	1.58E+1	1.58E+1	4.08E+0	4.44E+0	4.44E+0
VI	1.17E+1	7.96E+1	8.42E+2	1.17E+1	7.96E+1	8.42E+2	1.17E+1	7.94E+1	8.41E+2	1.10E+1	7.67E+1	8.15E+2	7.71E+0	5.79E+1	6.23E+2
VII	1.95E+0	1.38E+1	9.16E+1	1.64E+0	1.13E+1	7.49E+1	5.14E-1	3.62E+0	2.39E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	3.88E-2	3.37E-1	2.10E+0	2.02E-2	1.76E-1	1.09E+0	2.10E-3	1.82E-2	1.14E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.21E+0	3.66E+0	1.01E+0	2.93E+0	3.33E+0	9.61E-1	1.98E+0	2.19E+0	7.71E-1	1.09E+0	1.16E+0
XII	2.64E-2	8.15E-2	8.39E-2	2.64E-2	8.15E-2	8.38E-2	2.61E-2	8.07E-2	8.31E-2	2.55E-2	7.89E-2	8.11E-2	8.22E-3	2.54E-2	2.61E-2
XIIIA	1.58E-4	9.24E-4	2.73E-3	6.04E-5	3.54E-4	1.05E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.42E-4	6.02E-4	1.30E-3	5.42E-5	2.31E-4	5.00E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.16E-4	3.26E-4	6.08E-3	4.43E-5	1.25E-4	2.33E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.30E-3	2.30E-3	2.17E-3	2.30E-3	2.30E-3	2.10E-3	2.23E-3	2.23E-3	1.18E-3	1.26E-3	1.26E-3
XVIB	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.15E-3	2.27E-3	2.27E-3	2.08E-3	2.20E-3	2.20E-3	1.17E-3	1.24E-3	1.24E-3
XVIC	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.21E-3	2.21E-3	2.04E-3	2.14E-3	2.14E-3	1.14E-3	1.21E-3	1.21E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.54E-2	2.81E-2	2.81E-2	1.74E-2	1.93E-2	1.93E-2
XVIIIB	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.87E-2	2.87E-2	2.50E-2	2.75E-2	2.75E-2	1.71E-2	1.89E-2	1.89E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.42E-2	2.64E-2	2.64E-2	1.66E-2	1.81E-2	1.81E-2
XXA	9.63E-3	8.60E-2	1.45E+0	4.19E-3	4.60E-2	7.74E-1	4.79E-4	4.27E-3	7.19E-2	1.81E-4	2.26E-3	3.82E-2	.00E+0	.00E+0	.00E+0
XXB	9.16E-3	5.96E-2	7.91E-1	3.98E-3	3.01E-2	3.99E-1	4.56E-4	2.96E-3	3.94E-2	1.72E-4	1.47E-3	1.96E-2	.00E+0	.00E+0	.00E+0
XXC	8.29E-3	3.17E-2	9.46E-1	3.60E-3	1.38E-2	4.12E-1	4.12E-4	1.58E-3	4.71E-2	1.56E-4	5.96E-4	1.78E-2	.00E+0	.00E+0	.00E+0
XXIA	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.41E-2	7.73E-1	7.28E+0	6.37E-2	6.65E-1	6.26E+0	2.28E-2	2.38E-1	2.24E+0
XXIB	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.35E-2	7.61E-1	6.59E+0	6.32E-2	6.54E-1	5.67E+0	2.26E-2	2.34E-1	2.03E+0
XXIC	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.24E-2	7.33E-1	5.34E+0	6.22E-2	6.31E-1	4.59E+0	2.22E-2	2.25E-1	1.64E+0
XXII	5.95E+0	5.36E+1	1.28E+2	5.95E+0	5.35E+1	1.28E+2	5.87E+0	5.30E+1	1.26E+2	5.41E+0	4.90E+1	1.17E+2	.00E+0	.00E+0	.00E+0
DOE	4.74E+2	3.61E+3	3.15E+4	4.73E+2	3.60E+3	3.15E+4	4.69E+2	3.59E+3	3.14E+4	4.46E+2	3.48E+3	3.05E+4	3.00E+2	2.49E+3	2.33E+4
DOD	2.75E-2	8.68E-2	1.13E-1	2.68E-2	8.35E-2	9.48E-2	2.61E-2	8.07E-2	8.31E-2	2.55E-2	7.89E-2	8.11E-2	8.22E-3	2.54E-2	2.61E-2
NRC	3.66E+0	1.97E+1	1.59E+2	3.58E+0	1.93E+1	1.51E+2	3.52E+0	1.87E+1	1.44E+2	3.21E+0	1.63E+1	1.23E+2	1.71E+0	6.44E+0	4.46E+1
Total	4.78E+2	3.63E+3	3.17E+4	4.77E+2	3.62E+3	3.16E+4	4.73E+2	3.61E+3	3.15E+4	4.49E+2	3.50E+3	3.06E+4	3.02E+2	2.50E+3	2.34E+4

Reasonable Occupancy Scenario - 09-13-94 4:10p
 TABLE K-92. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.38E-1	6.97E-1	6.97E-1	5.90E-1	6.45E-1	6.45E-1	5.58E-1	6.10E-1	6.10E-1	5.14E-1	5.62E-1	5.62E-1	4.86E-1	5.31E-1	5.31E-1	4.28E-1	4.68E-1	4.68E-1
II	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.39E+3	1.12E+4	1.42E+2	1.38E+3	1.12E+4	1.42E+2	1.38E+3	1.11E+4
III	2.37E-1	2.62E-1	2.62E-1	1.98E-1	2.20E-1	2.20E-1	1.58E-1	1.75E-1	1.75E-1	9.31E-2	1.03E-1	1.03E-1	5.38E-2	5.96E-2	5.96E-2	3.79E-2	4.19E-2	4.19E-2
IV	2.46E-1	1.40E+0	6.59E+0	2.24E-1	1.27E+0	5.99E+0	2.01E-1	1.14E+0	5.39E+0	1.56E-1	8.89E-1	4.19E+0	1.11E-1	6.34E-1	2.99E+0	4.41E-2	2.51E-1	1.18E+0
V	1.88E+1	2.04E+1	2.04E+1	1.82E+1	1.98E+1	1.98E+1	1.76E+1	1.92E+1	1.92E+1	1.64E+1	1.79E+1	1.79E+1	1.53E+1	1.66E+1	1.66E+1	1.45E+1	1.58E+1	1.58E+1
VI	1.17E+1	7.94E+1	8.41E+2	1.16E+1	7.92E+1	8.40E+2	1.15E+1	7.90E+1	8.37E+2	1.14E+1	7.84E+1	8.32E+2	1.12E+1	7.77E+1	8.26E+2	1.10E+1	7.67E+1	8.15E+2
VII	5.14E-1	3.62E+0	2.39E+1	1.81E-1	1.28E+0	8.52E+0	1.81E-2	1.22E-1	8.06E-1	1.86E-3	1.09E-2	7.00E-2	5.47E-4	3.05E-3	1.94E-2	.00E+0	.00E+0	.00E+0
IX	2.10E-3	1.82E-2	1.14E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.01E+0	2.93E+0	3.33E+0	1.00E+0	2.64E+0	2.98E+0	9.96E-1	2.46E+0	2.76E+0	9.85E-1	2.25E+0	2.51E+0	9.74E-1	2.12E+0	2.36E+0	9.61E-1	1.98E+0	2.19E+0
XII	2.61E-2	8.07E-2	8.31E-2	2.60E-2	8.04E-2	8.27E-2	2.59E-2	8.02E-2	8.25E-2	2.58E-2	7.98E-2	8.21E-2	2.57E-2	7.94E-2	8.17E-2	2.55E-2	7.89E-2	8.11E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	2.17E-3	2.30E-3	2.30E-3	2.16E-3	2.29E-3	2.29E-3	2.16E-3	2.28E-3	2.28E-3	2.15E-3	2.27E-3	2.27E-3	2.13E-3	2.26E-3	2.26E-3	2.10E-3	2.23E-3	2.23E-3
XVIB	2.15E-3	2.27E-3	2.27E-3	2.14E-3	2.26E-3	2.26E-3	2.14E-3	2.26E-3	2.26E-3	2.13E-3	2.25E-3	2.25E-3	2.11E-3	2.23E-3	2.23E-3	2.08E-3	2.20E-3	2.20E-3
XVIC	2.11E-3	2.21E-3	2.21E-3	2.10E-3	2.20E-3	2.20E-3	2.09E-3	2.20E-3	2.20E-3	2.08E-3	2.19E-3	2.19E-3	2.07E-3	2.17E-3	2.17E-3	2.04E-3	2.14E-3	2.14E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.64E-2	2.92E-2	2.92E-2	2.63E-2	2.91E-2	2.91E-2	2.60E-2	2.88E-2	2.88E-2	2.58E-2	2.85E-2	2.85E-2	2.54E-2	2.81E-2	2.81E-2
XVIIIB	2.61E-2	2.87E-2	2.87E-2	2.60E-2	2.87E-2	2.87E-2	2.59E-2	2.85E-2	2.85E-2	2.56E-2	2.83E-2	2.83E-2	2.54E-2	2.80E-2	2.80E-2	2.50E-2	2.75E-2	2.75E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.74E-2	2.74E-2	2.50E-2	2.73E-2	2.73E-2	2.48E-2	2.70E-2	2.70E-2	2.45E-2	2.68E-2	2.68E-2	2.42E-2	2.64E-2	2.64E-2
XXA	4.79E-4	4.27E-3	7.19E-2	4.04E-4	3.71E-3	6.26E-2	3.58E-4	3.36E-3	5.67E-2	2.99E-4	2.90E-3	4.89E-2	2.52E-4	2.58E-3	4.35E-2	1.81E-4	2.26E-3	3.82E-2
XXB	4.56E-4	2.96E-3	3.94E-2	3.85E-4	2.55E-3	3.40E-2	3.40E-4	2.30E-3	3.06E-2	2.85E-4	1.96E-3	2.61E-2	2.40E-4	1.74E-3	2.32E-2	1.72E-4	1.47E-3	1.96E-2
XXC	4.12E-4	1.58E-3	4.71E-2	3.48E-4	1.33E-3	3.98E-2	3.08E-4	1.18E-3	3.52E-2	2.58E-4	9.87E-4	2.95E-2	2.17E-4	8.32E-4	2.48E-2	1.56E-4	5.96E-4	1.78E-2
XXIA	7.41E-2	7.73E-1	7.28E+0	7.33E-2	7.65E-1	7.21E+0	7.25E-2	7.58E-1	7.13E+0	7.08E-2	7.39E-1	6.96E+0	6.77E-2	7.07E-1	6.65E+0	6.37E-2	6.65E-1	6.26E+0
XXIB	7.35E-2	7.61E-1	6.59E+0	7.28E-2	7.53E-1	6.52E+0	7.20E-2	7.45E-1	6.46E+0	7.02E-2	7.27E-1	6.30E+0	6.72E-2	6.95E-1	6.02E+0	6.32E-2	6.54E-1	5.67E+0
XXIC	7.24E-2	7.33E-1	5.34E+0	7.16E-2	7.26E-1	5.28E+0	7.09E-2	7.18E-1	5.23E+0	6.92E-2	7.01E-1	5.10E+0	6.61E-2	6.70E-1	4.88E+0	6.22E-2	6.31E-1	4.59E+0
XXII	5.87E+0	5.30E+1	1.26E+2	5.80E+0	5.23E+1	1.25E+2	5.75E+0	5.19E+1	1.24E+2	5.60E+0	5.07E+1	1.21E+2	5.48E+0	4.97E+1	1.18E+2	5.41E+0	4.90E+1	1.17E+2
DOE	4.69E+2	3.59E+3	3.14E+4	4.66E+2	3.57E+3	3.12E+4	4.63E+2	3.56E+3	3.12E+4	4.58E+2	3.54E+3	3.10E+4	4.52E+2	3.51E+3	3.08E+4	4.46E+2	3.48E+3	3.05E+4
DOD	2.61E+2	8.07E+2	8.31E+2	2.60E+2	8.04E+2	8.27E+2	2.59E+2	8.02E+2	8.25E+2	2.58E+2	7.98E+2	8.21E+2	2.57E+2	7.94E+2	8.17E+2	2.55E+2	7.89E+2	8.11E+2
NRC	3.52E+0	1.87E+1	1.44E+2	3.50E+0	1.86E+1	1.42E+2	3.47E+0	1.84E+1	1.41E+2	3.42E+0	1.80E+1	1.37E+2	3.33E+0	1.72E+1	1.31E+2	3.21E+0	1.63E+1	1.23E+2
Total	4.73E+2	3.61E+3	3.15E+4	4.70E+2	3.59E+3	3.14E+4	4.67E+2	3.58E+3	3.13E+4	4.61E+2	3.55E+3	3.11E+4	4.56E+2	3.53E+3	3.09E+4	4.49E+2	3.50E+3	3.06E+4

TABLE K-93. ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2				
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000		
I	Cs-137	3.72E+1	3.72E+1	3.72E+1	3.66E+1	3.66E+1	3.66E+1	3.46E+1	3.46E+1	3.46E+1	2.78E+1	2.78E+1	2.78E+1	1.24E+1	1.24E+1	1.24E+1		
II	Ra-226	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.69E+2	1.70E+2	1.70E+2		
	Th-230	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.69E+2	1.69E+2	1.69E+2	1.60E+2	1.62E+2	1.62E+2
	Ra-228	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.51E+0	8.52E+0	8.52E+0	8.20E+0	8.30E+0	8.30E+0
	Th-232	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.05E+0	3.05E+0	3.05E+0	2.90E+0	2.93E+0	2.93E+0
	U-234	2.26E+2	2.26E+2	2.26E+2	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.24E+2	2.24E+2	2.24E+2	2.24E+2	2.17E+2	2.18E+2	2.18E+2	2.06E+2	2.07E+2	2.07E+2
	U-235	3.68E+0	3.68E+0	3.68E+0	3.63E+0	3.63E+0	3.63E+0	3.62E+0	3.62E+0	3.62E+0	3.62E+0	3.60E+0	3.60E+0	3.60E+0	3.43E+0	3.46E+0	3.46E+0	
	U-238	9.96E+1	9.96E+1	9.96E+1	9.87E+1	9.87E+1	9.87E+1	9.84E+1	9.84E+1	9.84E+1	9.84E+1	9.79E+1	9.79E+1	9.79E+1	9.53E+1	9.58E+1	9.58E+1	
III	Cs-137	1.54E+1	1.54E+1	1.54E+1	1.53E+1	1.53E+1	1.53E+1	1.43E+1	1.43E+1	1.43E+1	7.59E+0	7.59E+0	7.59E+0	.00E+0	.00E+0	.00E+0		
IV	U-234	3.50E+1	3.50E+1	3.50E+1	3.46E+1	3.46E+1	3.46E+1	3.30E+1	3.30E+1	3.30E+1	2.60E+1	2.60E+1	2.60E+1	.00E+0	.00E+0	.00E+0		
	U-235	1.65E+0	1.65E+0	1.65E+0	1.63E+0	1.63E+0	1.63E+0	1.55E+0	1.55E+0	1.55E+0	1.22E+0	1.22E+0	1.22E+0	.00E+0	.00E+0	.00E+0		
	U-238	3.50E+1	3.50E+1	3.50E+1	3.46E+1	3.46E+1	3.46E+1	3.30E+1	3.30E+1	3.30E+1	2.60E+1	2.60E+1	2.60E+1	.00E+0	.00E+0	.00E+0		
V	Cs-137	9.72E+2	9.72E+2	9.72E+2	9.71E+2	9.71E+2	9.71E+2	9.60E+2	9.60E+2	9.60E+2	8.79E+2	8.79E+2	8.79E+2	5.76E+2	5.76E+2	5.76E+2		
VI	Cs-137	4.87E+1	4.87E+1	4.87E+1	4.87E+1	4.87E+1	4.87E+1	4.83E+1	4.83E+1	4.83E+1	4.58E+1	4.58E+1	4.58E+1	3.26E+1	3.26E+1	3.26E+1		
	U-234	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.81E+2	6.81E+2	6.81E+2	6.35E+2	6.35E+2	6.35E+2		
	U-235	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.20E+1	3.20E+1	3.20E+1	2.98E+1	2.98E+1	2.98E+1		
	U-238	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.81E+2	6.81E+2	6.81E+2	6.35E+2	6.35E+2	6.35E+2		
VII	Pu-239	3.03E+3	3.03E+3	3.03E+3	2.46E+3	2.46E+3	2.46E+3	1.78E+3	1.78E+3	1.78E+3	4.61E+1	4.61E+1	4.61E+1	.00E+0	.00E+0	.00E+0		
	Am-241	5.08E+2	5.08E+2	5.08E+2	4.12E+2	4.12E+2	4.12E+2	2.97E+2	2.97E+2	2.97E+2	7.68E+0	7.68E+0	7.68E+0	.00E+0	.00E+0	.00E+0		
	Cs-137	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.15E+1	3.15E+1	3.15E+1	8.29E-1	8.29E-1	8.29E-1	.00E+0	.00E+0	.00E+0		
IX	Pu-239	1.21E+1	1.21E+1	1.21E+1	8.83E+0	8.83E+0	8.83E+0	3.03E+0	3.03E+0	3.03E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0		
	Am-241	2.02E+0	2.02E+0	2.02E+0	1.47E+0	1.47E+0	1.47E+0	5.05E-1	5.05E-1	5.05E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0		
X	Tc-99	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.12E+2	2.13E+2	2.13E+2	2.07E+2	2.09E+2	2.09E+2	1.82E+2	1.84E+2	1.84E+2		
	U-238	7.57E+0	7.57E+0	7.57E+0	7.53E+0	7.57E+0	7.57E+0	6.59E+0	7.31E+0	7.31E+0	4.25E+0	4.70E+0	4.70E+0	1.83E+0	1.93E+0	1.93E+0		
	U-234	7.57E+0	7.57E+0	7.57E+0	7.53E+0	7.57E+0	7.57E+0	6.59E+0	7.31E+0	7.31E+0	4.25E+0	4.70E+0	4.70E+0	1.83E+0	1.93E+0	1.93E+0		
XII	Pu-239	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.58E+1	3.58E+1	3.58E+1	3.54E+1	3.54E+1	3.54E+1	3.34E+1	3.34E+1	3.34E+1		
	Am-241	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.97E+0	5.97E+0	5.97E+0	5.90E+0	5.90E+0	5.90E+0	5.57E+0	5.57E+0	5.57E+0		
XIIIA	U-238	2.96E-2	2.96E-2	2.96E-2	2.12E-2	2.12E-2	2.12E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0		
	U-235	4.79E-4	4.79E-4	4.79E-4	3.44E-4	3.44E-4	3.44E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0		
	U-234	2.77E-3	2.77E-3	2.77E-3	1.99E-3	1.99E-3	1.99E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0		
XIIIB	U-238	2.96E-2	2.96E-2	2.96E-2	2.12E-2	2.12E-2	2.12E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0		
	U-235	4.79E-4	4.79E-4	4.79E-4	3.44E-4	3.44E-4	3.44E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0		
	U-234	2.77E-3	2.77E-3	2.77E-3	1.99E-3	1.99E-3	1.99E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0		

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ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	2.96E-2	2.96E-2	2.96E-2	2.12E-2	2.12E-2	2.12E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	4.79E-4	4.79E-4	4.79E-4	3.44E-4	3.44E-4	3.44E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	2.77E-3	2.77E-3	2.77E-3	1.99E-3	1.99E-3	1.99E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.09E-2	6.09E-2	6.09E-2	5.99E-2	5.99E-2	5.99E-2	4.84E-2	4.84E-2	4.84E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.83E-2	4.83E-2	4.83E-2	4.62E-2	4.62E-2	4.62E-2
XVIB	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.09E-2	6.09E-2	6.09E-2	5.99E-2	5.99E-2	5.99E-2	4.84E-2	4.84E-2	4.84E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.83E-2	4.83E-2	4.83E-2	4.62E-2	4.62E-2	4.62E-2
XVIC	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.09E-2	6.09E-2	6.09E-2	5.99E-2	5.99E-2	5.99E-2	4.84E-2	4.84E-2	4.84E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.83E-2	4.83E-2	4.83E-2	4.62E-2	4.62E-2	4.62E-2
XVIII A	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.78E-1	2.78E-1	2.78E-1	2.43E-1	2.43E-1	2.43E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.78E-1	2.78E-1	2.78E-1	2.43E-1	2.43E-1	2.43E-1
XVIII B	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.78E-1	2.78E-1	2.78E-1	2.43E-1	2.43E-1	2.43E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.78E-1	2.78E-1	2.78E-1	2.43E-1	2.43E-1	2.43E-1
XVIII C	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.78E-1	2.78E-1	2.78E-1	2.43E-1	2.43E-1	2.43E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.78E-1	2.78E-1	2.78E-1	2.43E-1	2.43E-1	2.43E-1
XXA	U-234	4.14E+0	4.16E+0	4.16E+0	2.61E+0	2.89E+0	2.89E+0	5.45E-1	9.36E-1	9.36E-1	1.30E-1	1.44E-1	1.44E-1	.00E+0	2.78E-2	2.78E-2
	U-235	1.39E-1	1.40E-1	1.40E-1	8.75E-2	9.69E-2	9.69E-2	1.80E-2	3.12E-2	3.12E-2	4.05E-3	4.53E-3	4.53E-3	.00E+0	8.11E-4	8.11E-4
	U-238	7.09E-1	7.14E-1	7.14E-1	4.47E-1	4.95E-1	4.95E-1	9.34E-2	1.61E-1	1.61E-1	2.22E-2	2.47E-2	2.47E-2	.00E+0	4.77E-3	4.77E-3
XXB	U-234	4.14E+0	4.14E+0	4.14E+0	2.61E+0	2.61E+0	2.61E+0	5.45E-1	5.45E-1	5.45E-1	1.30E-1	1.30E-1	1.30E-1	.00E+0	.00E+0	.00E+0
	U-235	1.39E-1	1.39E-1	1.39E-1	8.75E-2	8.75E-2	8.75E-2	1.80E-2	1.80E-2	1.80E-2	4.05E-3	4.05E-3	4.05E-3	.00E+0	.00E+0	.00E+0
	U-238	7.09E-1	7.09E-1	7.09E-1	4.47E-1	4.47E-1	4.47E-1	9.34E-2	9.34E-2	9.34E-2	2.22E-2	2.22E-2	2.22E-2	.00E+0	.00E+0	.00E+0
XXC	U-234	4.14E+0	4.14E+0	4.14E+0	2.61E+0	2.61E+0	2.61E+0	5.45E-1	5.45E-1	5.45E-1	1.30E-1	1.30E-1	1.30E-1	.00E+0	.00E+0	.00E+0
	U-235	1.39E-1	1.39E-1	1.39E-1	8.75E-2	8.75E-2	8.75E-2	1.80E-2	1.80E-2	1.80E-2	4.05E-3	4.05E-3	4.05E-3	.00E+0	.00E+0	.00E+0
	U-238	7.09E-1	7.09E-1	7.09E-1	4.47E-1	4.47E-1	4.47E-1	9.34E-2	9.34E-2	9.34E-2	2.22E-2	2.22E-2	2.22E-2	.00E+0	.00E+0	.00E+0
XXIA	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	9.85E-1	9.85E-1	9.85E-1	6.69E-1	6.69E-1	6.69E-1
XXIB	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	9.85E-1	9.85E-1	9.85E-1	6.69E-1	6.69E-1	6.69E-1
XXIC	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	9.85E-1	9.85E-1	9.85E-1	6.69E-1	6.69E-1	6.69E-1

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 ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)															
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2			
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	
XXII	Ra-226	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.74E+0	3.74E+0	3.74E+0	3.63E+0	3.64E+0	3.64E+0	2.72E+0	2.87E+0	2.87E+0
	Th-232	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.27E+1	2.27E+1	2.27E+1	2.20E+1	2.21E+1	2.21E+1	1.51E+1	1.61E+1	1.61E+1
	U-234	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	1.95E+1	1.96E+1	1.96E+1	1.37E+1	1.47E+1	1.47E+1
	U-235	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.18E-1	9.21E-1	9.21E-1	6.45E-1	6.90E-1	6.90E-1
	U-238	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	1.95E+1	1.96E+1	1.96E+1	1.37E+1	1.47E+1	1.47E+1

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TABLE K-94. ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																			
		1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3				
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000		
I	Cs-137	3.46E+1	3.46E+1	3.46E+1	3.32E+1	3.32E+1	3.32E+1	3.20E+1	3.20E+1	3.20E+1	3.04E+1	3.04E+1	3.04E+1	2.92E+1	2.92E+1	2.92E+1	2.78E+1	2.78E+1	2.78E+1		
II	Ra-226	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	
	Th-230	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.70E+2	1.71E+2	1.71E+2	1.71E+2	1.69E+2	1.70E+2	1.70E+2	1.69E+2	1.69E+2	1.69E+2	1.69E+2	1.69E+2	1.69E+2	
	Ra-228	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.52E+0	8.53E+0	8.53E+0	8.52E+0	8.52E+0	8.52E+0	8.51E+0	8.52E+0	8.52E+0	8.51E+0	8.52E+0	8.52E+0	8.52E+0	
	Th-232	3.06E+0	3.06E+0	3.06E+0	3.05E+0	3.06E+0	3.06E+0	3.05E+0	3.06E+0	3.06E+0	3.06E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0
	U-234	2.24E+2	2.24E+2	2.24E+2	2.22E+2	2.23E+2	2.23E+2	2.19E+2	2.22E+2	2.22E+2	2.18E+2	2.19E+2	2.19E+2	2.18E+2	2.18E+2	2.18E+2	2.17E+2	2.18E+2	2.18E+2	2.18E+2	2.18E+2
	U-238	9.84E+1	9.84E+1	9.84E+1	9.82E+1	9.83E+1	9.83E+1	9.81E+1	9.82E+1	9.82E+1	9.80E+1	9.81E+1	9.81E+1	9.80E+1	9.80E+1	9.80E+1	9.79E+1	9.79E+1	9.79E+1	9.79E+1	9.79E+1
III	Cs-137	1.43E+1	1.43E+1	1.43E+1	1.25E+1	1.25E+1	1.25E+1	1.14E+1	1.14E+1	1.14E+1	1.04E+1	1.04E+1	1.04E+1	9.27E+0	9.27E+0	9.27E+0	7.59E+0	7.59E+0	7.59E+0		
IV	U-234	3.30E+1	3.30E+1	3.30E+1	3.22E+1	3.22E+1	3.22E+1	3.14E+1	3.14E+1	3.14E+1	2.99E+1	2.99E+1	2.99E+1	2.83E+1	2.83E+1	2.83E+1	2.60E+1	2.60E+1	2.60E+1		
	U-235	1.55E+0	1.55E+0	1.55E+0	1.51E+0	1.51E+0	1.51E+0	1.48E+0	1.48E+0	1.48E+0	1.40E+0	1.40E+0	1.40E+0	1.33E+0	1.33E+0	1.33E+0	1.22E+0	1.22E+0	1.22E+0		
	U-238	3.30E+1	3.30E+1	3.30E+1	3.22E+1	3.22E+1	3.22E+1	3.14E+1	3.14E+1	3.14E+1	2.99E+1	2.99E+1	2.99E+1	2.83E+1	2.83E+1	2.83E+1	2.60E+1	2.60E+1	2.60E+1		
V	Cs-137	9.60E+2	9.60E+2	9.60E+2	9.48E+2	9.48E+2	9.48E+2	9.38E+2	9.38E+2	9.38E+2	9.21E+2	9.21E+2	9.21E+2	9.04E+2	9.04E+2	9.04E+2	8.79E+2	8.79E+2	8.79E+2		
VI	Cs-137	4.83E+1	4.83E+1	4.83E+1	4.79E+1	4.79E+1	4.79E+1	4.75E+1	4.75E+1	4.75E+1	4.70E+1	4.70E+1	4.70E+1	4.65E+1	4.65E+1	4.65E+1	4.58E+1	4.58E+1	4.58E+1		
	U-234	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.83E+2	6.83E+2	6.83E+2	6.82E+2	6.82E+2	6.82E+2	6.81E+2	6.81E+2	6.81E+2		
	U-235	3.22E+1	3.22E+1	3.22E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.20E+1	3.20E+1	3.20E+1		
	U-238	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.83E+2	6.83E+2	6.83E+2	6.82E+2	6.82E+2	6.82E+2	6.81E+2	6.81E+2	6.81E+2		
VII	Pu-239	1.78E+3	1.78E+3	1.78E+3	1.18E+3	1.18E+3	1.18E+3	8.33E+2	8.33E+2	8.33E+2	5.10E+2	5.10E+2	5.10E+2	2.88E+2	2.88E+2	2.88E+2	4.61E+1	4.61E+1	4.61E+1		
	Am-241	2.97E+2	2.97E+2	2.97E+2	1.97E+2	1.97E+2	1.97E+2	1.39E+2	1.39E+2	1.39E+2	8.51E+1	8.51E+1	8.51E+1	4.80E+1	4.80E+1	4.80E+1	7.68E+0	7.68E+0	7.68E+0		
	Cs-137	3.15E+1	3.15E+1	3.15E+1	1.99E+1	1.99E+1	1.99E+1	1.32E+1	1.32E+1	1.32E+1	7.23E+0	7.23E+0	7.23E+0	4.06E+0	4.06E+0	4.06E+0	8.29E-1	8.29E-1	8.29E-1		
IX	Pu-239	3.03E+0	3.03E+0	3.03E+0	1.45E+0	1.45E+0	1.45E+0	8.56E-1	8.56E-1	8.56E-1	3.02E-1	3.02E-1	3.02E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0		
	Am-241	5.05E-1	5.05E-1	5.05E-1	2.41E-1	2.41E-1	2.41E-1	1.43E-1	1.43E-1	1.43E-1	5.04E-2	5.04E-2	5.04E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0		
X	Tc-99	2.12E+2	2.13E+2	2.13E+2	2.11E+2	2.13E+2	2.13E+2	2.11E+2	2.12E+2	2.12E+2	2.09E+2	2.11E+2	2.11E+2	2.09E+2	2.10E+2	2.10E+2	2.07E+2	2.09E+2	2.09E+2		
	U-238	6.59E+0	7.31E+0	7.31E+0	5.88E+0	6.86E+0	6.86E+0	5.45E+0	6.44E+0	6.44E+0	4.92E+0	5.71E+0	5.71E+0	4.59E+0	5.20E+0	5.20E+0	4.25E+0	4.70E+0	4.70E+0		
	U-234	6.59E+0	7.31E+0	7.31E+0	5.88E+0	6.86E+0	6.86E+0	5.45E+0	6.44E+0	6.44E+0	4.92E+0	5.71E+0	5.71E+0	4.59E+0	5.20E+0	5.20E+0	4.25E+0	4.70E+0	4.70E+0		
XII	Pu-239	3.58E+1	3.58E+1	3.58E+1	3.57E+1	3.57E+1	3.57E+1	3.57E+1	3.57E+1	3.57E+1	3.56E+1	3.56E+1	3.56E+1	3.55E+1	3.55E+1	3.55E+1	3.54E+1	3.54E+1	3.54E+1		
	Am-241	5.97E+0	5.97E+0	5.97E+0	5.96E+0	5.96E+0	5.96E+0	5.95E+0	5.95E+0	5.95E+0	5.93E+0	5.93E+0	5.93E+0	5.91E+0	5.91E+0	5.91E+0	5.90E+0	5.90E+0	5.90E+0		
XIIIA	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0		
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0		
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0		
XIIIB	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0		
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0		
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0		

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ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
		1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	Co-60	6.09E-2	6.09E-2	6.09E-2	6.09E-2	6.09E-2	6.09E-2	6.07E-2	6.07E-2	6.07E-2	6.04E-2	6.04E-2	6.04E-2	6.02E-2	6.02E-2	6.02E-2	5.99E-2	5.99E-2	5.99E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.84E-2	4.84E-2	4.84E-2	4.84E-2	4.84E-2	4.84E-2	4.83E-2	4.83E-2	4.83E-2
XVIB	Co-60	6.09E-2	6.09E-2	6.09E-2	6.09E-2	6.09E-2	6.09E-2	6.07E-2	6.07E-2	6.07E-2	6.04E-2	6.04E-2	6.04E-2	6.02E-2	6.02E-2	6.02E-2	5.99E-2	5.99E-2	5.99E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.84E-2	4.84E-2	4.84E-2	4.84E-2	4.84E-2	4.84E-2	4.83E-2	4.83E-2	4.83E-2
XVIC	Co-60	6.09E-2	6.09E-2	6.09E-2	6.09E-2	6.09E-2	6.09E-2	6.07E-2	6.07E-2	6.07E-2	6.04E-2	6.04E-2	6.04E-2	6.02E-2	6.02E-2	6.02E-2	5.99E-2	5.99E-2	5.99E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.84E-2	4.84E-2	4.84E-2	4.84E-2	4.84E-2	4.84E-2	4.83E-2	4.83E-2	4.83E-2
XVIIIA	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1
XVIIIB	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1
XVIIIC	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1
XXA	U-234	5.45E-1	9.36E-1	9.36E-1	1.83E-1	2.85E-1	2.85E-1	1.71E-1	1.83E-1	1.83E-1	1.54E-1	1.67E-1	1.67E-1	1.43E-1	1.56E-1	1.56E-1	1.30E-1	1.44E-1	1.44E-1
	U-235	1.80E-2	3.12E-2	3.12E-2	5.86E-3	9.28E-3	9.28E-3	5.43E-3	5.85E-3	5.85E-3	4.87E-3	5.31E-3	5.31E-3	4.48E-3	4.94E-3	4.94E-3	4.05E-3	4.53E-3	4.53E-3
	U-238	9.34E-2	1.61E-1	1.61E-1	3.14E-2	4.89E-2	4.89E-2	2.93E-2	3.14E-2	3.14E-2	2.64E-2	2.87E-2	2.87E-2	2.44E-2	2.68E-2	2.68E-2	2.22E-2	2.47E-2	2.47E-2
XXB	U-234	5.45E-1	5.45E-1	5.45E-1	1.83E-1	1.83E-1	1.83E-1	1.71E-1	1.71E-1	1.71E-1	1.54E-1	1.54E-1	1.54E-1	1.43E-1	1.43E-1	1.43E-1	1.30E-1	1.30E-1	1.30E-1
	U-235	1.80E-2	1.80E-2	1.80E-2	5.86E-3	5.86E-3	5.86E-3	5.43E-3	5.43E-3	5.43E-3	4.87E-3	4.87E-3	4.87E-3	4.48E-3	4.48E-3	4.48E-3	4.05E-3	4.05E-3	4.05E-3
	U-238	9.34E-2	9.34E-2	9.34E-2	3.14E-2	3.14E-2	3.14E-2	2.93E-2	2.93E-2	2.93E-2	2.64E-2	2.64E-2	2.64E-2	2.44E-2	2.44E-2	2.44E-2	2.22E-2	2.22E-2	2.22E-2
XXC	U-234	5.45E-1	5.45E-1	5.45E-1	1.83E-1	1.83E-1	1.83E-1	1.71E-1	1.71E-1	1.71E-1	1.54E-1	1.54E-1	1.54E-1	1.43E-1	1.43E-1	1.43E-1	1.30E-1	1.30E-1	1.30E-1
	U-235	1.80E-2	1.80E-2	1.80E-2	5.86E-3	5.86E-3	5.86E-3	5.43E-3	5.43E-3	5.43E-3	4.87E-3	4.87E-3	4.87E-3	4.48E-3	4.48E-3	4.48E-3	4.05E-3	4.05E-3	4.05E-3
	U-238	9.34E-2	9.34E-2	9.34E-2	3.14E-2	3.14E-2	3.14E-2	2.93E-2	2.93E-2	2.93E-2	2.64E-2	2.64E-2	2.64E-2	2.44E-2	2.44E-2	2.44E-2	2.22E-2	2.22E-2	2.22E-2
XXIA	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.00E+0	1.00E+0	1.00E+0	9.94E-1	9.94E-1	9.94E-1	9.85E-1	9.85E-1	9.85E-1
XXIB	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.00E+0	1.00E+0	1.00E+0	9.94E-1	9.94E-1	9.94E-1	9.85E-1	9.85E-1	9.85E-1
XXIC	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.00E+0	1.00E+0	1.00E+0	9.94E-1	9.94E-1	9.94E-1	9.85E-1	9.85E-1	9.85E-1

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ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
		1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XXII	Ra-226	3.74E+0	3.74E+0	3.74E+0	3.73E+0	3.73E+0	3.73E+0	3.71E+0	3.72E+0	3.72E+0	3.68E+0	3.69E+0	3.69E+0	3.66E+0	3.66E+0	3.66E+0	3.63E+0	3.64E+0	3.64E+0
	Th-232	2.27E+1	2.27E+1	2.27E+1	2.26E+1	2.26E+1	2.26E+1	2.25E+1	2.25E+1	2.25E+1	2.23E+1	2.24E+1	2.24E+1	2.22E+1	2.23E+1	2.23E+1	2.20E+1	2.21E+1	2.21E+1
	U-234	2.02E+1	2.02E+1	2.02E+1	2.01E+1	2.01E+1	2.01E+1	2.01E+1	2.01E+1	2.01E+1	1.98E+1	1.99E+1	1.99E+1	1.97E+1	1.97E+1	1.97E+1	1.95E+1	1.96E+1	1.96E+1
	U-235	9.48E-1	9.48E-1	9.48E-1	9.46E-1	9.46E-1	9.46E-1	9.42E-1	9.44E-1	9.44E-1	9.31E-1	9.34E-1	9.34E-1	9.26E-1	9.27E-1	9.27E-1	9.18E-1	9.21E-1	9.21E-1
	U-238	2.02E+1	2.02E+1	2.02E+1	2.01E+1	2.01E+1	2.01E+1	2.01E+1	2.01E+1	2.01E+1	1.98E+1	1.99E+1	1.99E+1	1.97E+1	1.97E+1	1.97E+1	1.95E+1	1.96E+1	1.96E+1

TABLE K-95. ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	3.70E+1	3.70E+1	3.70E+1	3.58E+1	3.58E+1	3.58E+1	3.16E+1	3.16E+1	3.16E+1	2.12E+1	2.12E+1	2.12E+1	5.41E+0	5.41E+0	5.41E+0
II	Ra-226	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.71E+2	1.71E+2	1.71E+2	1.46E+2	1.47E+2	1.47E+2
	Th-230	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.69E+2	1.71E+2	1.71E+2	1.66E+2	1.67E+2	1.67E+2	1.26E+2	1.36E+2	1.36E+2
	Ra-228	8.54E+0	8.54E+0	8.54E+0	8.53E+0	8.53E+0	8.53E+0	8.52E+0	8.53E+0	8.53E+0	8.44E+0	8.47E+0	8.47E+0	6.06E+0	6.82E+0	6.82E+0
	Th-232	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.05E+0	3.05E+0	3.05E+0	3.00E+0	3.02E+0	3.02E+0	2.21E+0	2.50E+0	2.50E+0
	U-234	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.18E+2	2.21E+2	2.21E+2	2.15E+2	2.15E+2	2.15E+2	1.62E+2	1.63E+2	1.63E+2
	U-235	3.65E+0	3.65E+0	3.65E+0	3.63E+0	3.63E+0	3.63E+0	3.61E+0	3.61E+0	3.61E+0	3.55E+0	3.56E+0	3.56E+0	3.16E+0	3.19E+0	3.19E+0
	U-238	9.91E+1	9.91E+1	9.91E+1	9.85E+1	9.85E+1	9.85E+1	9.80E+1	9.82E+1	9.82E+1	9.75E+1	9.76E+1	9.76E+1	8.82E+1	8.88E+1	8.88E+1
III	Cs-137	1.54E+1	1.54E+1	1.54E+1	1.52E+1	1.52E+1	1.52E+1	1.12E+1	1.12E+1	1.12E+1	1.79E+0	1.79E+0	1.79E+0	.00E+0	.00E+0	.00E+0
IV	U-234	3.49E+1	3.49E+1	3.49E+1	3.40E+1	3.40E+1	3.40E+1	3.09E+1	3.09E+1	3.09E+1	5.54E+0	5.54E+0	5.54E+0	.00E+0	.00E+0	.00E+0
	U-235	1.64E+0	1.64E+0	1.64E+0	1.60E+0	1.60E+0	1.60E+0	1.45E+0	1.45E+0	1.45E+0	2.61E-1	2.61E-1	2.61E-1	.00E+0	.00E+0	.00E+0
	U-238	3.49E+1	3.49E+1	3.49E+1	3.40E+1	3.40E+1	3.40E+1	3.09E+1	3.09E+1	3.09E+1	5.54E+0	5.54E+0	5.54E+0	.00E+0	.00E+0	.00E+0
V	Cs-137	9.72E+2	9.72E+2	9.72E+2	9.68E+2	9.68E+2	9.68E+2	9.35E+2	9.35E+2	9.35E+2	7.22E+2	7.22E+2	7.22E+2	2.03E+2	2.03E+2	2.03E+2
VI	Cs-137	4.87E+1	4.87E+1	4.87E+1	4.86E+1	4.86E+1	4.86E+1	4.74E+1	4.74E+1	4.74E+1	4.05E+1	4.05E+1	4.05E+1	1.72E+1	1.72E+1	1.72E+1
	U-234	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.83E+2	6.83E+2	6.83E+2	6.63E+2	6.63E+2	6.63E+2	5.07E+2	5.07E+2	5.07E+2
	U-235	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.21E+1	3.21E+1	3.21E+1	3.11E+1	3.11E+1	3.11E+1	2.38E+1	2.38E+1	2.38E+1
	U-238	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.83E+2	6.83E+2	6.83E+2	6.63E+2	6.63E+2	6.63E+2	5.07E+2	5.07E+2	5.07E+2
VII	Pu-239	2.75E+3	2.75E+3	2.75E+3	2.25E+3	2.25E+3	2.25E+3	7.18E+2	7.18E+2	7.18E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	Am-241	4.60E+2	4.60E+2	4.60E+2	3.75E+2	3.75E+2	3.75E+2	1.20E+2	1.20E+2	1.20E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	Cs-137	3.91E+1	3.91E+1	3.91E+1	3.81E+1	3.81E+1	3.81E+1	1.09E+1	1.09E+1	1.09E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	Pu-239	1.05E+1	1.05E+1	1.05E+1	5.47E+0	5.47E+0	5.47E+0	5.67E-1	5.67E-1	5.67E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	Am-241	1.75E+0	1.75E+0	1.75E+0	9.12E-1	9.12E-1	9.12E-1	9.46E-2	9.46E-2	9.46E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	Tc-99	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.11E+2	2.12E+2	2.12E+2	2.01E+2	2.03E+2	2.03E+2	1.62E+2	1.63E+2	1.63E+2
	U-238	7.57E+0	7.57E+0	7.57E+0	7.25E+0	7.56E+0	7.56E+0	5.55E+0	6.61E+0	6.61E+0	3.26E+0	3.50E+0	3.50E+0	1.04E+0	1.08E+0	1.08E+0
	U-234	7.57E+0	7.57E+0	7.57E+0	7.25E+0	7.56E+0	7.56E+0	5.55E+0	6.61E+0	6.61E+0	3.26E+0	3.50E+0	3.50E+0	1.04E+0	1.08E+0	1.08E+0
XII	Pu-239	3.59E+1	3.59E+1	3.59E+1	3.58E+1	3.58E+1	3.58E+1	3.55E+1	3.55E+1	3.55E+1	3.47E+1	3.47E+1	3.47E+1	1.12E+1	1.12E+1	1.12E+1
	Am-241	5.98E+0	5.98E+0	5.98E+0	5.97E+0	5.97E+0	5.97E+0	5.92E+0	5.92E+0	5.92E+0	5.78E+0	5.78E+0	5.78E+0	1.86E+0	1.86E+0	1.86E+0
XIIIA	U-238	2.68E-2	2.68E-2	2.68E-2	1.03E-2	1.03E-2	1.03E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	4.35E-4	4.35E-4	4.35E-4	1.67E-4	1.67E-4	1.67E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	2.51E-3	2.51E-3	2.51E-3	9.62E-4	9.62E-4	9.62E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	U-238	2.68E-2	2.68E-2	2.68E-2	1.03E-2	1.03E-2	1.03E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	4.35E-4	4.35E-4	4.35E-4	1.67E-4	1.67E-4	1.67E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	2.51E-3	2.51E-3	2.51E-3	9.62E-4	9.62E-4	9.62E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0

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ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	2.68E-2	2.68E-2	2.68E-2	1.03E-2	1.03E-2	1.03E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	4.35E-4	4.35E-4	4.35E-4	1.67E-4	1.67E-4	1.67E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	2.51E-3	2.51E-3	2.51E-3	9.62E-4	9.62E-4	9.62E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.07E-2	6.07E-2	6.07E-2	5.74E-2	5.74E-2	5.74E-2	2.87E-2	2.87E-2	2.87E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.79E-2	4.79E-2	4.79E-2	2.93E-2	2.93E-2	2.93E-2
XVIB	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.07E-2	6.07E-2	6.07E-2	5.74E-2	5.74E-2	5.74E-2	2.87E-2	2.87E-2	2.87E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.79E-2	4.79E-2	4.79E-2	2.93E-2	2.93E-2	2.93E-2
XVIC	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.07E-2	6.07E-2	6.07E-2	5.74E-2	5.74E-2	5.74E-2	2.87E-2	2.87E-2	2.87E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.79E-2	4.79E-2	4.79E-2	2.93E-2	2.93E-2	2.93E-2
XVIIIA	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.68E-1	2.68E-1	2.68E-1	1.84E-1	1.84E-1	1.84E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.68E-1	2.68E-1	2.68E-1	1.84E-1	1.84E-1	1.84E-1
XVIIIB	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.68E-1	2.68E-1	2.68E-1	1.84E-1	1.84E-1	1.84E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.68E-1	2.68E-1	2.68E-1	1.84E-1	1.84E-1	1.84E-1
XVIIIC	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.68E-1	2.68E-1	2.68E-1	1.84E-1	1.84E-1	1.84E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.68E-1	2.68E-1	2.68E-1	1.84E-1	1.84E-1	1.84E-1
XXA	U-234	3.13E+0	3.51E+0	3.51E+0	1.36E+0	1.88E+0	1.88E+0	1.56E-1	1.74E-1	1.74E-1	5.91E-2	9.25E-2	9.25E-2	.00E+0	.00E+0	.00E+0
	U-235	1.05E-1	1.18E-1	1.18E-1	4.56E-2	6.28E-2	6.28E-2	4.94E-3	5.55E-3	5.55E-3	1.75E-3	2.80E-3	2.80E-3	.00E+0	.00E+0	.00E+0
	U-238	5.37E-1	6.01E-1	6.01E-1	2.34E-1	3.22E-1	3.22E-1	2.68E-2	2.99E-2	2.99E-2	1.01E-2	1.58E-2	1.58E-2	.00E+0	.00E+0	.00E+0
XXB	U-234	3.13E+0	3.39E+0	3.39E+0	1.36E+0	1.71E+0	1.71E+0	1.56E-1	1.69E-1	1.69E-1	5.91E-2	8.39E-2	8.39E-2	.00E+0	.00E+0	.00E+0
	U-235	1.05E-1	1.14E-1	1.14E-1	4.56E-2	5.72E-2	5.72E-2	4.94E-3	5.35E-3	5.35E-3	1.75E-3	2.53E-3	2.53E-3	.00E+0	.00E+0	.00E+0
	U-238	5.37E-1	5.81E-1	5.81E-1	2.34E-1	2.93E-1	2.93E-1	2.68E-2	2.89E-2	2.89E-2	1.01E-2	1.44E-2	1.44E-2	.00E+0	.00E+0	.00E+0
XXC	U-234	3.13E+0	3.13E+0	3.13E+0	1.36E+0	1.36E+0	1.36E+0	1.56E-1	1.56E-1	1.56E-1	5.91E-2	5.91E-2	5.91E-2	.00E+0	.00E+0	.00E+0
	U-235	1.05E-1	1.05E-1	1.05E-1	4.56E-2	4.56E-2	4.56E-2	4.94E-3	4.94E-3	4.94E-3	1.75E-3	1.75E-3	1.75E-3	.00E+0	.00E+0	.00E+0
	U-238	5.37E-1	5.37E-1	5.37E-1	2.34E-1	2.34E-1	2.34E-1	2.68E-2	2.68E-2	2.68E-2	1.01E-2	1.01E-2	1.01E-2	.00E+0	.00E+0	.00E+0
XXIA	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.00E+0	1.00E+0	1.00E+0	8.64E-1	8.64E-1	8.64E-1	3.09E-1	3.09E-1	3.09E-1
XXIB	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.00E+0	1.00E+0	1.00E+0	8.64E-1	8.64E-1	8.64E-1	3.09E-1	3.09E-1	3.09E-1
XXIC	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.00E+0	1.00E+0	1.00E+0	8.64E-1	8.64E-1	8.64E-1	3.09E-1	3.09E-1	3.09E-1

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ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XXII	Ra-226	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.70E+0	3.71E+0	3.71E+0	3.40E+0	3.42E+0	3.42E+0	.00E+0	.00E+0	.00E+0
	Th-232	2.28E+1	2.28E+1	2.28E+1	2.27E+1	2.27E+1	2.27E+1	2.25E+1	2.25E+1	2.25E+1	2.08E+1	2.09E+1	2.09E+1	.00E+0	.00E+0	.00E+0
	U-234	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.00E+1	2.01E+1	2.01E+1	1.86E+1	1.87E+1	1.87E+1	.00E+0	.00E+0	.00E+0
	U-235	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.40E-1	9.43E-1	9.43E-1	8.75E-1	8.78E-1	8.78E-1	.00E+0	.00E+0	.00E+0
	U-238	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.00E+1	2.01E+1	2.01E+1	1.86E+1	1.87E+1	1.87E+1	.00E+0	.00E+0	.00E+0

TABLE K-96. ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
		1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	3.16E+1	3.16E+1	3.16E+1	2.93E+1	2.93E+1	2.93E+1	2.77E+1	2.77E+1	2.77E+1	2.55E+1	2.55E+1	2.55E+1	2.41E+1	2.41E+1	2.41E+1	2.12E+1	2.12E+1	2.12E+1
II	Ra-226	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2
	Th-230	1.69E+2	1.71E+2	1.71E+2	1.69E+2	1.69E+2	1.69E+2	1.69E+2	1.69E+2	1.69E+2	1.68E+2	1.68E+2	1.68E+2	1.67E+2	1.68E+2	1.68E+2	1.66E+2	1.67E+2	1.67E+2
	Ra-228	8.52E+0	8.53E+0	8.53E+0	8.51E+0	8.52E+0	8.52E+0	8.51E+0	8.52E+0	8.52E+0	8.49E+0	8.51E+0	8.51E+0	8.47E+0	8.49E+0	8.49E+0	8.44E+0	8.47E+0	8.47E+0
	Th-232	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.03E+0	3.04E+0	3.04E+0	3.02E+0	3.03E+0	3.03E+0	3.00E+0	3.02E+0	3.02E+0
	U-234	2.18E+2	2.21E+2	2.21E+2	2.18E+2	2.18E+2	2.18E+2	2.17E+2	2.18E+2	2.18E+2	2.17E+2	2.17E+2	2.17E+2	2.16E+2	2.16E+2	2.16E+2	2.15E+2	2.15E+2	2.15E+2
	U-235	3.61E+0	3.61E+0	3.61E+0	3.60E+0	3.61E+0	3.61E+0	3.60E+0	3.60E+0	3.60E+0	3.58E+0	3.59E+0	3.59E+0	3.57E+0	3.58E+0	3.58E+0	3.55E+0	3.56E+0	3.56E+0
	U-238	9.80E+1	9.82E+1	9.82E+1	9.80E+1	9.80E+1	9.80E+1	9.79E+1	9.79E+1	9.79E+1	9.78E+1	9.79E+1	9.79E+1	9.77E+1	9.78E+1	9.78E+1	9.75E+1	9.76E+1	9.76E+1
III	Cs-137	1.12E+1	1.12E+1	1.12E+1	9.38E+0	9.38E+0	9.38E+0	7.47E+0	7.47E+0	7.47E+0	4.40E+0	4.40E+0	4.40E+0	2.54E+0	2.54E+0	2.54E+0	1.79E+0	1.79E+0	1.79E+0
IV	U-234	3.09E+1	3.09E+1	3.09E+1	2.81E+1	2.81E+1	2.81E+1	2.53E+1	2.53E+1	2.53E+1	1.96E+1	1.96E+1	1.96E+1	1.40E+1	1.40E+1	1.40E+1	5.54E+0	5.54E+0	5.54E+0
	U-235	1.45E+0	1.45E+0	1.45E+0	1.32E+0	1.32E+0	1.32E+0	1.19E+0	1.19E+0	1.19E+0	9.23E-1	9.23E-1	9.23E-1	6.58E-1	6.58E-1	6.58E-1	2.61E-1	2.61E-1	2.61E-1
	U-238	3.09E+1	3.09E+1	3.09E+1	2.81E+1	2.81E+1	2.81E+1	2.53E+1	2.53E+1	2.53E+1	1.96E+1	1.96E+1	1.96E+1	1.40E+1	1.40E+1	1.40E+1	5.54E+0	5.54E+0	5.54E+0
V	Cs-137	9.35E+2	9.35E+2	9.35E+2	9.06E+2	9.06E+2	9.06E+2	8.77E+2	8.77E+2	8.77E+2	8.19E+2	8.19E+2	8.19E+2	7.61E+2	7.61E+2	7.61E+2	7.22E+2	7.22E+2	7.22E+2
VI	Cs-137	4.74E+1	4.74E+1	4.74E+1	4.65E+1	4.65E+1	4.65E+1	4.57E+1	4.57E+1	4.57E+1	4.41E+1	4.41E+1	4.41E+1	4.26E+1	4.26E+1	4.26E+1	4.05E+1	4.05E+1	4.05E+1
	U-234	6.83E+2	6.83E+2	6.83E+2	6.82E+2	6.82E+2	6.82E+2	6.80E+2	6.80E+2	6.80E+2	6.76E+2	6.76E+2	6.76E+2	6.71E+2	6.71E+2	6.71E+2	6.63E+2	6.63E+2	6.63E+2
	U-235	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.20E+1	3.20E+1	3.20E+1	3.18E+1	3.18E+1	3.18E+1	3.15E+1	3.15E+1	3.15E+1	3.11E+1	3.11E+1	3.11E+1
	U-238	6.83E+2	6.83E+2	6.83E+2	6.82E+2	6.82E+2	6.82E+2	6.80E+2	6.80E+2	6.80E+2	6.76E+2	6.76E+2	6.76E+2	6.71E+2	6.71E+2	6.71E+2	6.63E+2	6.63E+2	6.63E+2
VII	Pu-239	7.18E+2	7.18E+2	7.18E+2	2.56E+2	2.56E+2	2.56E+2	2.41E+1	2.41E+1	2.41E+1	2.09E+0	2.09E+0	2.09E+0	5.77E-1	5.77E-1	5.77E-1	.00E+0	.00E+0	.00E+0
	Am-241	1.20E+2	1.20E+2	1.20E+2	4.26E+1	4.26E+1	4.26E+1	4.02E+0	4.02E+0	4.02E+0	3.48E-1	3.48E-1	3.48E-1	9.61E-2	9.61E-2	9.61E-2	.00E+0	.00E+0	.00E+0
	Cs-137	1.09E+1	1.09E+1	1.09E+1	3.63E+0	3.63E+0	3.63E+0	4.89E-1	4.89E-1	4.89E-1	8.57E-2	8.57E-2	8.57E-2	2.85E-2	2.85E-2	2.85E-2	.00E+0	.00E+0	.00E+0
IX	Pu-239	5.67E-1	5.67E-1	5.67E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	Am-241	9.46E-2	9.46E-2	9.46E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	Tc-99	2.11E+2	2.12E+2	2.12E+2	2.09E+2	2.11E+2	2.11E+2	2.08E+2	2.10E+2	2.10E+2	2.06E+2	2.08E+2	2.08E+2	2.04E+2	2.06E+2	2.06E+2	2.01E+2	2.03E+2	2.03E+2
	U-238	5.55E+0	6.61E+0	6.61E+0	4.84E+0	5.64E+0	5.64E+0	4.45E+0	5.03E+0	5.03E+0	3.96E+0	4.35E+0	4.35E+0	3.61E+0	3.94E+0	3.94E+0	3.26E+0	3.50E+0	3.50E+0
	U-234	5.55E+0	6.61E+0	6.61E+0	4.84E+0	5.64E+0	5.64E+0	4.45E+0	5.03E+0	5.03E+0	3.96E+0	4.35E+0	4.35E+0	3.61E+0	3.94E+0	3.94E+0	3.26E+0	3.50E+0	3.50E+0
XII	Pu-239	3.55E+1	3.55E+1	3.55E+1	3.54E+1	3.54E+1	3.54E+1	3.53E+1	3.53E+1	3.53E+1	3.51E+1	3.51E+1	3.51E+1	3.49E+1	3.49E+1	3.49E+1	3.47E+1	3.47E+1	3.47E+1
	Am-241	5.92E+0	5.92E+0	5.92E+0	5.89E+0	5.89E+0	5.89E+0	5.88E+0	5.88E+0	5.88E+0	5.85E+0	5.85E+0	5.85E+0	5.82E+0	5.82E+0	5.82E+0	5.78E+0	5.78E+0	5.78E+0
XIIIA	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0

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 ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
		1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	Co-60	6.07E-2	6.07E-2	6.07E-2	6.02E-2	6.02E-2	6.02E-2	6.00E-2	6.00E-2	6.00E-2	5.95E-2	5.95E-2	5.95E-2	5.89E-2	5.89E-2	5.89E-2	5.74E-2	5.74E-2	5.74E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.84E-2	4.84E-2	4.84E-2	4.83E-2	4.83E-2	4.83E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.79E-2	4.79E-2	4.79E-2
XVIB	Co-60	6.07E-2	6.07E-2	6.07E-2	6.02E-2	6.02E-2	6.02E-2	6.00E-2	6.00E-2	6.00E-2	5.95E-2	5.95E-2	5.95E-2	5.89E-2	5.89E-2	5.89E-2	5.74E-2	5.74E-2	5.74E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.84E-2	4.84E-2	4.84E-2	4.83E-2	4.83E-2	4.83E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.79E-2	4.79E-2	4.79E-2
XVIC	Co-60	6.07E-2	6.07E-2	6.07E-2	6.02E-2	6.02E-2	6.02E-2	6.00E-2	6.00E-2	6.00E-2	5.95E-2	5.95E-2	5.95E-2	5.89E-2	5.89E-2	5.89E-2	5.74E-2	5.74E-2	5.74E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.84E-2	4.84E-2	4.84E-2	4.83E-2	4.83E-2	4.83E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.79E-2	4.79E-2	4.79E-2
XVIIIA	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.75E-1	2.75E-1	2.75E-1	2.72E-1	2.72E-1	2.72E-1	2.68E-1	2.68E-1	2.68E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.75E-1	2.75E-1	2.75E-1	2.72E-1	2.72E-1	2.72E-1	2.68E-1	2.68E-1	2.68E-1
XVIIIB	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.75E-1	2.75E-1	2.75E-1	2.72E-1	2.72E-1	2.72E-1	2.68E-1	2.68E-1	2.68E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.75E-1	2.75E-1	2.75E-1	2.72E-1	2.72E-1	2.72E-1	2.68E-1	2.68E-1	2.68E-1
XVIIIC	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.75E-1	2.75E-1	2.75E-1	2.72E-1	2.72E-1	2.72E-1	2.68E-1	2.68E-1	2.68E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.75E-1	2.75E-1	2.75E-1	2.72E-1	2.72E-1	2.72E-1	2.68E-1	2.68E-1	2.68E-1
XXA	U-234	1.56E-1	1.74E-1	1.74E-1	1.32E-1	1.52E-1	1.52E-1	1.17E-1	1.37E-1	1.37E-1	9.78E-2	1.19E-1	1.19E-1	8.25E-2	1.05E-1	1.05E-1	5.91E-2	9.25E-2	9.25E-2
	U-235	4.94E-3	5.55E-3	5.55E-3	4.12E-3	4.78E-3	4.78E-3	3.61E-3	4.31E-3	4.31E-3	2.98E-3	3.67E-3	3.67E-3	2.48E-3	3.23E-3	3.23E-3	1.75E-3	2.80E-3	2.80E-3
	U-238	2.68E-2	2.99E-2	2.99E-2	2.26E-2	2.60E-2	2.60E-2	2.00E-2	2.36E-2	2.36E-2	1.68E-2	2.03E-2	2.03E-2	1.41E-2	1.81E-2	1.81E-2	1.01E-2	1.58E-2	1.58E-2
XXB	U-234	1.56E-1	1.69E-1	1.69E-1	1.32E-1	1.45E-1	1.45E-1	1.17E-1	1.31E-1	1.31E-1	9.78E-2	1.12E-1	1.12E-1	8.25E-2	9.94E-2	9.94E-2	5.91E-2	8.39E-2	8.39E-2
	U-235	4.94E-3	5.35E-3	5.35E-3	4.12E-3	4.57E-3	4.57E-3	3.61E-3	4.09E-3	4.09E-3	2.98E-3	3.44E-3	3.44E-3	2.48E-3	3.03E-3	3.03E-3	1.75E-3	2.53E-3	2.53E-3
	U-238	2.68E-2	2.89E-2	2.89E-2	2.26E-2	2.49E-2	2.49E-2	2.00E-2	2.24E-2	2.24E-2	1.68E-2	1.91E-2	1.91E-2	1.41E-2	1.70E-2	1.70E-2	1.01E-2	1.44E-2	1.44E-2
XXC	U-234	1.56E-1	1.56E-1	1.56E-1	1.32E-1	1.32E-1	1.32E-1	1.17E-1	1.17E-1	1.17E-1	9.78E-2	9.78E-2	9.78E-2	8.25E-2	8.25E-2	8.25E-2	5.91E-2	5.91E-2	5.91E-2
	U-235	4.94E-3	4.94E-3	4.94E-3	4.12E-3	4.12E-3	4.12E-3	3.61E-3	3.61E-3	3.61E-3	2.98E-3	2.98E-3	2.98E-3	2.48E-3	2.48E-3	2.48E-3	1.75E-3	1.75E-3	1.75E-3
	U-238	2.68E-2	2.68E-2	2.68E-2	2.26E-2	2.26E-2	2.26E-2	2.00E-2	2.00E-2	2.00E-2	1.68E-2	1.68E-2	1.68E-2	1.41E-2	1.41E-2	1.41E-2	1.01E-2	1.01E-2	1.01E-2
XXIA	Th-232	1.00E+0	1.00E+0	1.00E+0	9.94E-1	9.94E-1	9.94E-1	9.84E-1	9.84E-1	9.84E-1	9.60E-1	9.60E-1	9.60E-1	9.18E-1	9.18E-1	9.18E-1	8.64E-1	8.64E-1	8.64E-1
XXIB	Th-232	1.00E+0	1.00E+0	1.00E+0	9.94E-1	9.94E-1	9.94E-1	9.84E-1	9.84E-1	9.84E-1	9.60E-1	9.60E-1	9.60E-1	9.18E-1	9.18E-1	9.18E-1	8.64E-1	8.64E-1	8.64E-1
XXIC	Th-232	1.00E+0	1.00E+0	1.00E+0	9.94E-1	9.94E-1	9.94E-1	9.84E-1	9.84E-1	9.84E-1	9.60E-1	9.60E-1	9.60E-1	9.18E-1	9.18E-1	9.18E-1	8.64E-1	8.64E-1	8.64E-1

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 ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
		1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XXII	Ra-226	3.70E+0	3.71E+0	3.71E+0	3.66E+0	3.67E+0	3.67E+0	3.63E+0	3.64E+0	3.64E+0	3.53E+0	3.55E+0	3.55E+0	3.45E+0	3.47E+0	3.47E+0	3.40E+0	3.42E+0	3.42E+0
	Th-232	2.25E+1	2.25E+1	2.25E+1	2.23E+1	2.23E+1	2.23E+1	2.20E+1	2.21E+1	2.21E+1	2.14E+1	2.15E+1	2.15E+1	2.11E+1	2.12E+1	2.12E+1	2.08E+1	2.09E+1	2.09E+1
	U-234	2.00E+1	2.01E+1	2.01E+1	1.97E+1	1.97E+1	1.97E+1	1.95E+1	1.96E+1	1.96E+1	1.92E+1	1.92E+1	1.92E+1	1.88E+1	1.89E+1	1.89E+1	1.86E+1	1.87E+1	1.87E+1
	U-235	9.40E-1	9.43E-1	9.43E-1	9.26E-1	9.28E-1	9.28E-1	9.18E-1	9.21E-1	9.21E-1	9.00E-1	9.03E-1	9.03E-1	8.86E-1	8.90E-1	8.90E-1	8.75E-1	8.78E-1	8.78E-1
	U-238	2.00E+1	2.01E+1	2.01E+1	1.97E+1	1.97E+1	1.97E+1	1.95E+1	1.96E+1	1.96E+1	1.92E+1	1.92E+1	1.92E+1	1.88E+1	1.89E+1	1.89E+1	1.86E+1	1.87E+1	1.87E+1

TABLE K-97. MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	3.76E-2	3.76E-2	3.76E-2	3.76E-1	3.76E-1	3.76E-1	3.76E+0	3.76E+0	3.76E+0	3.76E+1	3.76E+1	3.76E+1	3.76E+2	3.76E+2	3.76E+2
II-1	Ra-226	3.00E-3	2.91E-3	2.91E-3	2.70E-2	2.64E-2	2.64E-2	9.12E-2	9.06E-2	9.06E-2	2.45E+0	1.80E+0	1.80E+0	2.94E+1	2.76E+1	2.76E+1
	Th-230	2.31E-3	2.23E-3	2.23E-3	2.07E-2	2.03E-2	2.03E-2	4.92E+0	2.37E+0	2.37E+0	1.62E+1	1.57E+1	1.57E+1	4.36E+1	4.20E+1	4.20E+1
	Ra-228	.00E+0	.00E+0	.00E+0	1.92E-3	1.78E-3	1.78E-3	1.47E-2	1.46E-2	1.46E-2	1.50E-2	1.50E-2	1.50E-2	1.58E-2	1.58E-2	1.58E-2
	Th-232	.00E+0	.00E+0	.00E+0	2.55E-4	1.34E-4	1.34E-4	1.15E-2	1.14E-2	1.14E-2	1.18E-2	1.18E-2	1.18E-2	1.18E-2	1.18E-2	1.18E-2
	U-234	2.74E-3	2.65E-3	2.65E-3	2.31E-2	2.26E-2	2.26E-2	6.63E-2	6.60E-2	6.60E-2	6.74E-2	6.74E-2	6.74E-2	7.01E-2	6.99E-2	6.99E-2
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	2.86E-3	2.83E-3	2.83E-3	2.94E-3	2.93E-3	2.93E-3	3.13E-3	3.12E-3	3.12E-3
	U-238	2.98E-3	2.89E-3	2.89E-3	2.51E-2	2.46E-2	2.46E-2	7.22E-2	7.18E-2	7.18E-2	8.42E-2	8.21E-2	8.21E-2	2.27E-1	2.16E-1	2.16E-1
II-2	Ra-226	1.83E-4	1.33E-4	1.33E-4	3.90E-3	3.78E-3	3.78E-3	1.16E-2	1.15E-2	1.15E-2	1.22E-2	1.20E-2	1.20E-2	1.69E-2	1.51E-2	1.51E-2
	Th-230	6.70E-3	6.38E-3	6.38E-3	3.04E-2	2.97E-2	2.97E-2	4.34E+0	2.10E+0	2.10E+0	5.37E+1	3.42E+1	3.42E+1	3.45E+2	2.43E+2	2.43E+2
	Ra-228	2.60E-3	2.39E-3	2.39E-3	1.82E-2	1.77E-2	1.77E-2	5.04E-2	5.02E-2	5.02E-2	1.66E+0	3.39E-1	3.39E-1	2.22E+1	1.53E+1	1.53E+1
	Th-232	.00E+0	.00E+0	.00E+0	7.74E-3	7.31E-3	7.31E-3	3.65E-2	3.65E-2	3.65E-2	3.92E-2	3.82E-2	3.82E-2	6.74E+0	3.54E+0	3.54E+0
	U-234	1.93E-2	1.84E-2	1.84E-2	1.20E-1	8.76E-2	8.76E-2	3.85E+0	3.82E+0	3.82E+0	4.31E+0	4.12E+0	4.12E+0	8.34E+0	6.57E+0	6.57E+0
	U-235	.00E+0	.00E+0	.00E+0	1.33E-3	1.06E-3	1.06E-3	2.61E-1	2.59E-1	2.59E-1	2.89E-1	2.78E-1	2.78E-1	5.34E-1	4.27E-1	4.27E-1
	U-238	2.22E-2	2.11E-2	2.11E-2	3.81E-1	3.38E-1	3.38E-1	4.84E+0	4.81E+0	4.81E+0	5.40E+0	5.19E+0	5.19E+0	1.03E+1	8.11E+0	8.11E+0
II-3	Ra-226	.00E+0	.00E+0	.00E+0	8.45E-4	7.98E-4	7.98E-4	8.18E-2	4.73E-2	4.73E-2	4.18E-1	3.89E-1	3.89E-1	9.20E-1	8.97E-1	8.97E-1
	Th-230	3.09E-3	3.01E-3	3.01E-3	1.93E-2	1.89E-2	1.89E-2	1.93E+0	1.52E+0	1.52E+0	1.03E+1	9.29E+0	9.29E+0	6.12E+1	5.68E+1	5.68E+1
	Ra-228	2.63E-3	2.56E-3	2.56E-3	1.64E-2	1.60E-2	1.60E-2	4.63E-2	4.56E-2	4.56E-2	5.07E-2	5.04E-2	5.04E-2	4.97E+0	4.38E+0	4.38E+0
	Th-232	1.09E-4	4.61E-5	4.61E-5	1.33E-2	1.29E-2	1.29E-2	4.19E-2	4.13E-2	4.13E-2	4.62E-2	4.59E-2	4.59E-2	8.01E+0	7.30E+0	7.30E+0
	U-234	5.40E-3	5.27E-3	5.27E-3	3.37E-2	3.29E-2	3.29E-2	4.01E+0	3.12E+0	3.12E+0	3.07E+1	2.66E+1	2.66E+1	2.69E+2	2.49E+2	2.49E+2
	U-235	1.77E-5	7.44E-6	7.44E-6	2.15E-3	2.09E-3	2.09E-3	1.67E+0	1.41E+0	1.41E+0	7.91E+0	6.92E+0	6.92E+0	4.89E+1	4.45E+1	4.45E+1
	U-238	5.39E-3	5.26E-3	5.26E-3	3.37E-2	3.29E-2	3.29E-2	3.63E+0	2.78E+0	2.78E+0	2.88E+1	2.48E+1	2.48E+1	2.62E+2	2.42E+2	2.42E+2
II-4	Ra-226	9.23E-4	8.70E-4	8.70E-4	5.66E-3	5.34E-3	5.34E-3	6.70E-3	6.20E-3	6.20E-3	1.27E-1	1.04E-1	1.04E-1	2.30E+0	2.04E+0	2.04E+0
	Th-230	7.77E-3	7.33E-3	7.33E-3	4.77E-2	4.50E-2	4.50E-2	7.03E+0	3.41E+0	3.41E+0	4.11E+1	2.93E+1	2.93E+1	1.33E+2	1.27E+2	1.27E+2
	Ra-228	8.63E-4	7.50E-4	7.50E-4	1.10E-2	1.03E-2	1.03E-2	1.33E-2	1.22E-2	1.22E-2	6.36E-1	3.66E-1	3.66E-1	5.37E+0	4.79E+0	4.79E+0
	Th-232	9.82E-4	8.54E-4	8.54E-4	1.25E-2	1.18E-2	1.18E-2	1.51E-2	1.39E-2	1.39E-2	7.25E-1	3.50E-1	3.50E-1	1.01E+1	8.65E+0	8.65E+0
	U-234	1.14E-2	1.08E-2	1.08E-2	5.77E-2	5.51E-2	5.51E-2	3.93E-1	1.70E-1	1.70E-1	7.16E+0	3.29E+0	3.29E+0	1.16E+3	8.42E+2	8.42E+2
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	4.76E-4	2.09E-4	2.09E-4	1.78E-2	2.12E-3	2.12E-3	3.39E+1	2.08E+1	2.08E+1
	U-238	7.38E-3	6.97E-3	6.97E-3	3.73E-2	3.56E-2	3.56E-2	4.24E+0	4.00E+0	4.00E+0	8.07E-1	5.74E-2	5.74E-2	8.15E+2	4.74E+2	4.74E+2
II-5	Ra-226	.00E+0	.00E+0	.00E+0	1.48E-2	1.46E-2	1.46E-2	2.20E-1	2.19E-1	2.19E-1	2.95E+0	2.95E+0	2.95E+0	2.71E+1	2.71E+1	2.71E+1
	Th-230	.00E+0	.00E+0	.00E+0	7.48E-3	7.39E-3	7.39E-3	2.56E-2	2.56E-2	2.56E-2	2.78E-2	2.78E-2	2.78E-2	4.70E-2	4.70E-2	4.70E-2
	Ra-228	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	1.55E-2	1.55E-2	1.55E-2	1.81E-2	1.81E-2	1.81E-2	1.50E+0	1.50E+0	1.50E+0
	Th-232	3.01E-3	3.01E-3	3.01E-3	1.28E-2	1.27E-2	1.27E-2	3.07E-2	3.07E-2	3.07E-2	3.29E-2	3.29E-2	3.29E-2	2.27E+0	2.27E+0	2.27E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	5.97E-5	5.20E-5	5.20E-5	1.58E-3	1.58E-3	1.58E-3	1.76E-3	1.76E-3	1.76E-3	3.38E-3	3.38E-3	3.38E-3
	U-238	.00E+0	.00E+0	.00E+0	1.11E-2	1.10E-2	1.10E-2	3.79E-2	3.79E-2	3.79E-2	4.12E-2	4.12E-2	4.12E-2	6.98E-2	6.98E-2	6.98E-2

MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
II-6	Ra-226	.00E+0	.00E+0	.00E+0	1.64E-2	1.57E-2	1.57E-2	7.24E-2	6.93E-2	6.93E-2	2.06E+0	1.34E+0	1.34E+0	2.92E+1	2.82E+1	2.82E+1
	Th-230	1.13E-2	1.05E-2	1.05E-2	2.81E-2	2.76E-2	2.76E-2	4.12E+0	2.12E+0	2.12E+0	1.76E+1	1.73E+1	1.73E+1	2.62E+1	2.59E+1	2.59E+1
	Ra-228	.00E+0	.00E+0	.00E+0	4.65E-3	4.36E-3	4.36E-3	2.54E-2	2.43E-2	2.43E-2	3.01E-1	2.83E-1	2.83E-1	9.05E-1	8.83E-1	8.83E-1
	Th-232	7.38E-4	5.24E-4	5.24E-4	5.17E-3	5.03E-3	5.03E-3	1.50E-2	1.45E-2	1.45E-2	1.90E-2	1.89E-2	1.89E-2	9.70E-2	9.31E-2	9.31E-2
	U-234	1.41E-2	1.31E-2	1.31E-2	3.42E-2	3.36E-2	3.36E-2	1.86E+1	1.37E+1	1.37E+1	4.84E+1	4.77E+1	4.77E+1	7.01E+1	6.93E+1	6.93E+1
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-238	2.19E-2	2.05E-2	2.05E-2	4.91E-2	4.84E-2	4.84E-2	1.43E+0	1.29E+0	1.29E+0	2.53E+0	2.50E+0	2.50E+0	3.66E+0	3.62E+0	3.62E+0
II-7	U-234	8.51E-1	8.51E-1	8.51E-1	8.50E+0	8.50E+0	8.50E+0	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1
	U-235	4.00E-2	4.00E-2	4.00E-2	3.99E+1	3.99E+1	3.99E+1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1
	U-238	8.51E-1	8.51E-1	8.51E-1	8.50E+0	8.50E+0	8.50E+0	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1
III	Cs-137	3.76E-2	3.76E-2	3.76E-2	3.76E-1	3.76E-1	3.76E-1	3.76E+0	3.76E+0	3.76E+0	3.76E+1	3.76E+1	3.76E+1	3.00E+2	3.00E+2	3.00E+2
IV	U-234	5.02E-1	5.02E-1	5.02E-1	5.02E+0	5.02E+0	5.02E+0	5.02E+1	5.02E+1	5.02E+1	5.02E+2	5.02E+2	5.02E+2	2.20E+3	2.20E+3	2.20E+3
	U-235	2.36E-2	2.36E-2	2.36E-2	2.36E+1	2.36E+1	2.36E+1	2.36E+0	2.36E+0	2.36E+0	2.36E+1	2.36E+1	2.36E+1	1.03E+2	1.03E+2	1.03E+2
	U-238	5.02E-1	5.02E-1	5.02E-1	5.02E+0	5.02E+0	5.02E+0	5.02E+1	5.02E+1	5.02E+1	5.02E+2	5.02E+2	5.02E+2	2.20E+3	2.20E+3	2.20E+3
V	Cs-137	3.76E-2	3.76E-2	3.76E-2	3.76E-1	3.76E-1	3.76E-1	3.76E+0	3.76E+0	3.76E+0	3.76E+1	3.76E+1	3.76E+1	3.76E+2	3.76E+2	3.76E+2
VI	Cs-137	3.76E-2	3.76E-2	3.76E-2	3.75E-1	3.75E-1	3.75E-1	3.72E+0	3.72E+0	3.72E+0	3.42E+1	3.42E+1	3.42E+1	3.29E+2	3.29E+2	3.29E+2
	U-234	1.75E-5	1.75E-5	1.75E-5	4.09E-3	4.09E-3	4.09E-3	9.37E-1	9.37E-1	9.37E-1	7.72E+1	7.72E+1	7.72E+1	1.05E+3	1.05E+3	1.05E+3
	U-235	8.23E-7	8.23E-7	8.23E-7	1.92E-4	1.92E-4	1.92E-4	4.41E-2	4.41E-2	4.41E-2	3.63E+0	3.63E+0	3.63E+0	4.95E+1	4.95E+1	4.95E+1
	U-238	1.75E-5	1.75E-5	1.75E-5	4.09E-3	4.09E-3	4.09E-3	9.37E-1	9.37E-1	9.37E-1	7.72E+1	7.72E+1	7.72E+1	1.05E+3	1.05E+3	1.05E+3
VII	Pu-239	4.10E+0	4.10E+0	4.10E+0	4.09E+1	4.09E+1	4.09E+1	1.29E+2	1.29E+2	1.29E+2	1.44E+3	1.44E+3	1.44E+3	1.50E+3	1.50E+3	1.50E+3
	Am-241	6.85E-1	6.85E-1	6.85E-1	6.85E+0	6.85E+0	6.85E+0	2.16E+1	2.16E+1	2.16E+1	2.39E+2	2.39E+2	2.39E+2	2.50E+2	2.50E+2	2.50E+2
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	2.26E+0	2.26E+0	2.26E+0	2.15E+1	2.15E+1	2.15E+1	8.00E+1	8.00E+1	8.00E+1
IX	Pu-239	4.89E+0	4.89E+0	4.89E+0	4.89E+1	4.89E+1	4.89E+1	4.89E+2	4.89E+2	4.89E+2	2.98E+3	2.98E+3	2.98E+3	2.98E+3	2.98E+3	2.98E+3
	Am-241	8.16E-1	8.16E-1	8.16E-1	8.16E+0	8.16E+0	8.16E+0	8.16E+1	8.16E+1	8.16E+1	4.97E+2	4.97E+2	4.97E+2	4.97E+2	4.97E+2	4.97E+2
X	Tc-99	3.97E-2	3.97E-2	3.97E-2	3.34E-1	1.04E-1	1.04E-1	3.63E+0	7.99E-1	7.99E-1	3.88E+1	2.39E+1	2.39E+1	3.95E+2	3.56E+2	3.56E+2
	U-238	.00E+0	.00E+0	.00E+0	6.23E-1	1.46E-1	1.46E-1	3.44E+0	1.58E+0	1.58E+0	8.97E+0	7.84E+0	7.84E+0	2.10E+1	2.02E+1	2.02E+1
	U-234	.00E+0	.00E+0	.00E+0	6.23E-1	1.46E-1	1.46E-1	3.44E+0	1.58E+0	1.58E+0	8.97E+0	7.84E+0	7.84E+0	2.10E+1	2.02E+1	2.02E+1
XII	Pu-239	1.26E+0	1.26E+0	1.26E+0	1.26E+1	1.26E+1	1.26E+1	1.26E+2	1.26E+2	1.26E+2	1.26E+3	1.26E+3	1.26E+3	1.26E+4	1.26E+4	1.26E+4
	Am-241	2.10E-1	2.10E-1	2.10E-1	2.10E+0	2.10E+0	2.10E+0	2.10E+1	2.10E+1	2.10E+1	2.10E+2	2.10E+2	2.10E+2	2.10E+3	2.10E+3	2.10E+3
XIIIA	U-238	7.80E-1	7.80E-1	7.80E-1	7.79E+0	7.79E+0	7.79E+0	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	1.25E-2	1.25E-2	1.25E-2	1.27E-1	1.27E-1	1.27E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	7.32E-2	7.32E-2	7.32E-2	7.30E-1	7.30E-1	7.30E-1	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0
XIIIB	U-238	7.80E-1	7.80E-1	7.80E-1	7.79E+0	7.79E+0	7.79E+0	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	1.25E-2	1.25E-2	1.25E-2	1.27E-1	1.27E-1	1.27E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	7.32E-2	7.32E-2	7.32E-2	7.30E-1	7.30E-1	7.30E-1	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0

09-13-94 4:02p
 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	7.80E-1	7.80E-1	7.80E-1	7.79E+0	7.79E+0	7.79E+0	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	1.25E-2	1.25E-2	1.25E-2	1.27E-1	1.27E-1	1.27E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	7.32E-2	7.32E-2	7.32E-2	7.30E-1	7.30E-1	7.30E-1	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0
XVIA	Co-60	4.93E-3	4.93E-3	4.93E-3	4.93E-2	4.93E-2	4.93E-2	4.93E-1	4.93E-1	4.93E-1	4.70E+0	4.70E+0	4.70E+0	4.57E+1	4.57E+1	4.57E+1
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	9.38E-1	9.38E-1	9.38E-1	1.51E+1	1.51E+1	1.51E+1
XVIB	Co-60	4.93E-3	4.93E-3	4.93E-3	4.93E-2	4.93E-2	4.93E-2	4.93E-1	4.93E-1	4.93E-1	4.70E+0	4.70E+0	4.70E+0	4.57E+1	4.57E+1	4.57E+1
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	9.38E-1	9.38E-1	9.38E-1	1.51E+1	1.51E+1	1.51E+1
XVIC	Co-60	4.93E-3	4.93E-3	4.93E-3	4.93E-2	4.93E-2	4.93E-2	4.93E-1	4.93E-1	4.93E-1	4.70E+0	4.70E+0	4.70E+0	4.57E+1	4.57E+1	4.57E+1
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	9.38E-1	9.38E-1	9.38E-1	1.51E+1	1.51E+1	1.51E+1
XVIII A	Cs-137	1.93E-2	1.93E-2	1.93E-2	1.93E-1	1.93E-1	1.93E-1	1.93E+0	1.93E+0	1.93E+0	1.93E+1	1.93E+1	1.93E+1	1.93E+2	1.93E+2	1.93E+2
	Sr-90	1.93E-2	1.93E-2	1.93E-2	1.93E-1	1.93E-1	1.93E-1	1.93E+0	1.93E+0	1.93E+0	1.93E+1	1.93E+1	1.93E+1	1.93E+2	1.93E+2	1.93E+2
XVIII B	Cs-137	1.93E-2	1.93E-2	1.93E-2	1.93E-1	1.93E-1	1.93E-1	1.93E+0	1.93E+0	1.93E+0	1.93E+1	1.93E+1	1.93E+1	1.93E+2	1.93E+2	1.93E+2
	Sr-90	1.93E-2	1.93E-2	1.93E-2	1.93E-1	1.93E-1	1.93E-1	1.93E+0	1.93E+0	1.93E+0	1.93E+1	1.93E+1	1.93E+1	1.93E+2	1.93E+2	1.93E+2
XVIII C	Cs-137	1.93E-2	1.93E-2	1.93E-2	1.93E-1	1.93E-1	1.93E-1	1.93E+0	1.93E+0	1.93E+0	1.93E+1	1.93E+1	1.93E+1	1.93E+2	1.93E+2	1.93E+2
	Sr-90	1.93E-2	1.93E-2	1.93E-2	1.93E-1	1.93E-1	1.93E-1	1.93E+0	1.93E+0	1.93E+0	1.93E+1	1.93E+1	1.93E+1	1.93E+2	1.93E+2	1.93E+2
XXA	U-234	8.68E-1	8.30E-1	8.30E-1	8.68E+0	5.84E+0	5.84E+0	8.68E+1	5.84E+1	5.84E+1	8.68E+2	5.84E+2	5.84E+2	7.47E+3	5.93E+3	5.93E+3
	U-235	2.92E-2	2.79E-2	2.79E-2	2.92E-1	1.97E-1	1.97E-1	2.92E+0	1.96E+0	1.96E+0	2.92E+1	1.96E+1	1.96E+1	2.15E+2	1.75E+2	1.75E+2
	U-238	1.49E-1	1.42E-1	1.42E-1	1.49E+0	1.00E+0	1.00E+0	1.49E+1	1.00E+1	1.00E+1	1.49E+2	1.00E+2	1.00E+2	1.28E+3	1.02E+3	1.02E+3
XXB	U-234	8.68E-1	8.68E-1	8.68E-1	8.68E+0	8.68E+0	8.68E+0	8.68E+1	8.68E+1	8.68E+1	8.68E+2	8.68E+2	8.68E+2	7.47E+3	7.47E+3	7.47E+3
	U-235	2.92E-2	2.92E-2	2.92E-2	2.92E-1	2.92E-1	2.92E-1	2.92E+0	2.92E+0	2.92E+0	2.92E+1	2.92E+1	2.92E+1	2.15E+2	2.15E+2	2.15E+2
	U-238	1.49E-1	1.49E-1	1.49E-1	1.49E+0	1.49E+0	1.49E+0	1.49E+1	1.49E+1	1.49E+1	1.49E+2	1.49E+2	1.49E+2	1.28E+3	1.28E+3	1.28E+3
XXC	U-234	8.68E-1	8.68E-1	8.68E-1	8.68E+0	8.68E+0	8.68E+0	8.68E+1	8.68E+1	8.68E+1	8.68E+2	8.68E+2	8.68E+2	7.47E+3	7.47E+3	7.47E+3
	U-235	2.92E-2	2.92E-2	2.92E-2	2.92E-1	2.92E-1	2.92E-1	2.92E+0	2.92E+0	2.92E+0	2.92E+1	2.92E+1	2.92E+1	2.15E+2	2.15E+2	2.15E+2
	U-238	1.49E-1	1.49E-1	1.49E-1	1.49E+0	1.49E+0	1.49E+0	1.49E+1	1.49E+1	1.49E+1	1.49E+2	1.49E+2	1.49E+2	1.28E+3	1.28E+3	1.28E+3
XXIA	Th-232	3.67E-3	3.67E-3	3.67E-3	3.67E-2	3.67E-2	3.67E-2	3.67E-1	3.67E-1	3.67E-1	3.67E+0	3.67E+0	3.67E+0	3.67E+1	3.67E+1	3.67E+1
XXIB	Th-232	3.67E-3	3.67E-3	3.67E-3	3.67E-2	3.67E-2	3.67E-2	3.67E-1	3.67E-1	3.67E-1	3.67E+0	3.67E+0	3.67E+0	3.67E+1	3.67E+1	3.67E+1
XXIC	Th-232	3.67E-3	3.67E-3	3.67E-3	3.67E-2	3.67E-2	3.67E-2	3.67E-1	3.67E-1	3.67E-1	3.67E+0	3.67E+0	3.67E+0	3.67E+1	3.67E+1	3.67E+1
XXII	Ra-226	4.08E-4	4.08E-4	4.08E-4	3.99E-3	3.99E-3	3.99E-3	3.96E-2	3.90E-2	3.90E-2	3.13E-1	2.81E-1	2.81E-1	3.40E+0	2.87E+0	2.87E+0
	Th-232	2.00E-3	2.00E-3	2.00E-3	1.97E-2	1.97E-2	1.97E-2	1.97E-1	1.95E-1	1.95E-1	2.26E+0	2.13E+0	2.13E+0	2.13E+1	2.02E+1	2.02E+1
	U-234	2.27E-8	2.27E-8	2.27E-8	2.51E-5	2.51E-5	2.51E-5	2.90E-2	2.78E-2	2.78E-2	1.57E+0	1.51E+0	1.51E+0	2.00E+1	1.89E+1	1.89E+1
	U-235	1.06E-9	1.06E-9	1.06E-9	1.18E-6	1.18E-6	1.18E-6	1.36E-3	1.31E-3	1.31E-3	7.38E-2	7.10E-2	7.10E-2	9.39E-1	8.90E-1	8.90E-1
	U-238	2.27E-8	2.27E-8	2.27E-8	2.51E-5	2.51E-5	2.51E-5	2.90E-2	2.78E-2	2.78E-2	1.57E+0	1.51E+0	1.51E+0	2.00E+1	1.89E+1	1.89E+1

TABLE K-98. MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
		1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	3.76E+0	3.76E+0	3.76E+0	7.53E+0	7.53E+0	7.53E+0	1.13E+1	1.13E+1	1.13E+1	1.88E+1	1.88E+1	1.88E+1	2.63E+1	2.63E+1	2.63E+1	3.76E+1	3.76E+1	3.76E+1
II-1	Ra-226	9.12E-2	9.06E-2	9.06E-2	9.26E-2	9.15E-2	9.15E-2	3.47E-1	9.21E-2	9.21E-2	9.48E-1	3.60E-1	3.60E-1	1.55E+0	9.40E-1	9.40E-1	2.45E+0	1.80E+0	1.80E+0
	Th-230	4.92E+0	2.37E+0	2.37E+0	1.28E+1	6.16E+0	6.16E+0	1.43E+1	9.95E+0	9.95E+0	1.48E+1	1.43E+1	1.43E+1	1.54E+1	1.48E+1	1.48E+1	1.62E+1	1.57E+1	1.57E+1
	Ra-228	1.47E-2	1.46E-2	1.46E-2	1.49E-2	1.48E-2	1.48E-2	1.50E-2	1.49E-2	1.49E-2	1.50E-2	1.50E-2	1.50E-2	1.50E-2	1.50E-2	1.50E-2	1.50E-2	1.50E-2	1.50E-2
	Th-232	1.15E-2	1.14E-2	1.14E-2	1.17E-2	1.16E-2	1.16E-2	1.18E-2	1.17E-2	1.17E-2	1.18E-2	1.18E-2	1.18E-2	1.18E-2	1.18E-2	1.18E-2	1.18E-2	1.18E-2	1.18E-2
	U-234	6.63E-2	6.60E-2	6.60E-2	6.71E-2	6.65E-2	6.65E-2	6.72E-2	6.68E-2	6.68E-2	6.73E-2	6.72E-2	6.72E-2	6.73E-2	6.73E-2	6.73E-2	6.74E-2	6.74E-2	6.74E-2
	U-235	2.86E-3	2.83E-3	2.83E-3	2.91E-3	2.87E-3	2.87E-3	2.92E-3	2.89E-3	2.89E-3	2.93E-3	2.92E-3	2.92E-3	2.93E-3	2.93E-3	2.93E-3	2.94E-3	2.93E-3	2.93E-3
	U-238	7.22E-2	7.18E-2	7.18E-2	7.30E-2	7.23E-2	7.23E-2	7.72E-2	7.27E-2	7.27E-2	7.91E-2	7.72E-2	7.72E-2	8.12E-2	7.90E-2	7.90E-2	8.42E-2	8.21E-2	8.21E-2
II-2	Ra-226	1.16E-2	1.15E-2	1.15E-2	1.17E-2	1.16E-2	1.16E-2	1.18E-2	1.16E-2	1.16E-2	1.20E-2	1.17E-2	1.17E-2	1.21E-2	1.19E-2	1.19E-2	1.22E-2	1.20E-2	1.20E-2
	Th-230	4.34E+0	2.10E+0	2.10E+0	1.21E+1	5.87E+0	5.87E+0	2.00E+1	9.62E+0	9.62E+0	3.27E+1	1.72E+1	1.72E+1	4.20E+1	2.47E+1	2.47E+1	5.37E+1	3.42E+1	3.42E+1
	Ra-228	5.04E-2	5.02E-2	5.02E-2	5.09E-2	5.05E-2	5.05E-2	5.13E-2	5.07E-2	5.07E-2	5.12E-2	5.12E-2	5.12E-2	5.12E-2	5.16E-2	5.16E-2	5.16E-2	5.16E-2	5.16E-2
	Th-232	3.66E-2	3.65E-2	3.65E-2	3.71E-2	3.67E-2	3.67E-2	3.75E-2	3.69E-2	3.69E-2	3.81E-2	3.73E-2	3.73E-2	3.86E-2	3.77E-2	3.77E-2	3.92E-2	3.82E-2	3.82E-2
	U-234	3.85E+0	3.82E+0	3.82E+0	3.92E+0	3.86E+0	3.86E+0	3.99E+0	3.90E+0	3.90E+0	4.11E+0	3.97E+0	3.97E+0	4.20E+0	4.04E+0	4.04E+0	4.31E+0	4.12E+0	4.12E+0
	U-235	2.61E-1	2.59E-1	2.59E-1	2.65E-1	2.62E-1	2.62E-1	2.70E-1	2.64E-1	2.64E-1	2.77E-1	2.68E-1	2.68E-1	2.82E-1	2.72E-1	2.72E-1	2.89E-1	2.78E-1	2.78E-1
	U-238	4.84E+0	4.81E+0	4.81E+0	4.93E+0	4.86E+0	4.86E+0	5.02E+0	4.91E+0	4.91E+0	5.17E+0	4.99E+0	4.99E+0	5.27E+0	5.08E+0	5.08E+0	5.40E+0	5.19E+0	5.19E+0
II-3	Ra-226	8.18E-2	4.73E-2	4.73E-2	1.56E-1	1.34E-1	1.34E-1	2.05E-1	1.83E-1	1.83E-1	2.83E-1	2.58E-1	2.58E-1	3.44E-1	3.17E-1	3.17E-1	4.18E-1	3.89E-1	3.89E-1
	Th-230	1.93E+0	1.52E+0	1.52E+0	3.03E+0	2.67E+0	2.67E+0	4.01E+0	3.53E+0	3.53E+0	5.95E+0	5.27E+0	5.27E+0	7.79E+0	6.93E+0	6.93E+0	1.03E+1	9.29E+0	9.29E+0
	Ra-228	4.63E-2	4.56E-2	4.56E-2	4.75E-2	4.72E-2	4.72E-2	4.82E-2	4.79E-2	4.79E-2	4.93E-2	4.90E-2	4.90E-2	5.00E-2	4.97E-2	4.97E-2	5.07E-2	5.04E-2	5.04E-2
	Th-232	4.19E-2	4.13E-2	4.13E-2	4.31E-2	4.28E-2	4.28E-2	4.38E-2	4.35E-2	4.35E-2	4.48E-2	4.45E-2	4.45E-2	4.55E-2	4.52E-2	4.52E-2	4.62E-2	4.59E-2	4.59E-2
	U-234	4.01E+0	3.12E+0	3.12E+0	6.53E+0	5.67E+0	5.67E+0	8.79E+0	7.69E+0	7.69E+0	1.47E+1	1.25E+1	1.25E+1	2.10E+1	1.80E+1	1.80E+1	3.07E+1	2.66E+1	2.66E+1
	U-235	1.67E+0	1.41E+0	1.41E+0	2.33E+0	2.12E+0	2.12E+0	2.83E+0	2.59E+0	2.59E+0	3.94E+0	3.43E+0	3.43E+0	5.54E+0	4.77E+0	4.77E+0	7.91E+0	6.92E+0	6.92E+0
	U-238	3.63E+0	2.78E+0	2.78E+0	5.97E+0	5.18E+0	5.18E+0	8.06E+0	7.04E+0	7.04E+0	1.34E+1	1.13E+1	1.13E+1	1.94E+1	1.65E+1	1.65E+1	2.88E+1	2.48E+1	2.48E+1
II-4	Ra-226	6.70E-3	6.20E-3	6.20E-3	7.66E-3	6.72E-3	6.72E-3	8.39E-3	7.22E-3	7.22E-3	9.75E-3	8.21E-3	8.21E-3	1.11E-2	9.09E-3	9.09E-3	1.27E-1	1.04E-2	1.04E-2
	Th-230	7.03E+0	3.41E+0	3.41E+0	1.34E+1	7.17E+0	7.17E+0	1.76E+1	1.07E+1	1.07E+1	2.54E+1	1.65E+1	1.65E+1	3.32E+1	2.17E+1	2.17E+1	4.11E+1	2.93E+1	2.93E+1
	Ra-228	1.33E-2	1.22E-2	1.22E-2	9.43E-2	1.33E-2	1.33E-2	1.66E-1	4.93E-2	4.93E-2	3.00E-1	1.48E-1	1.48E-1	4.34E-1	2.35E-1	2.35E-1	6.36E-1	3.66E-1	3.66E-1
	Th-232	1.51E-2	1.39E-2	1.39E-2	1.74E-2	1.51E-2	1.51E-2	8.64E-2	1.63E-2	1.63E-2	2.62E-1	6.40E-2	6.40E-2	4.41E-1	1.76E-1	1.76E-1	7.25E-1	3.50E-1	3.50E-1
	U-234	3.93E-1	1.70E-1	1.70E-1	9.44E-1	4.02E-1	4.02E-1	1.45E+0	6.77E-1	6.77E-1	2.59E+0	1.32E+0	1.32E+0	4.09E+0	2.01E+0	2.01E+0	7.16E+0	3.29E+0	3.29E+0
	U-235	4.76E-4	2.09E-4	2.09E-4	9.53E-4	4.86E-4	4.86E-4	1.29E-3	7.37E-4	7.37E-4	1.86E-3	1.21E-3	1.21E-3	2.37E-3	1.59E-3	1.59E-3	1.78E-2	2.12E-3	2.12E-3
	U-238	4.24E-2	4.00E-2	4.00E-2	4.68E-2	4.25E-2	4.25E-2	4.98E-2	4.48E-2	4.48E-2	5.50E-2	4.91E-2	4.91E-2	5.96E-2	5.26E-2	5.26E-2	8.07E-1	5.74E-2	5.74E-2
II-5	Ra-226	2.20E-1	2.19E-1	2.19E-1	5.23E-1	5.22E-1	5.22E-1	8.27E-1	8.25E-1	8.25E-1	1.43E+0	1.43E+0	1.43E+0	2.04E+0	2.04E+0	2.04E+0	2.95E+0	2.95E+0	2.95E+0
	Th-230	2.56E-2	2.56E-2	2.56E-2	2.58E-2	2.58E-2	2.58E-2	2.61E-2	2.61E-2	2.61E-2	2.66E-2	2.66E-2	2.66E-2	2.70E-2	2.70E-2	2.70E-2	2.78E-2	2.78E-2	2.78E-2
	Ra-228	1.55E-2	1.55E-2	1.55E-2	1.57E-2	1.57E-2	1.57E-2	1.60E-2	1.60E-2	1.60E-2	1.66E-2	1.66E-2	1.66E-2	1.72E-2	1.72E-2	1.72E-2	1.81E-2	1.81E-2	1.81E-2
	Th-232	3.07E-2	3.07E-2	3.07E-2	3.10E-2	3.10E-2	3.10E-2	3.12E-2	3.12E-2	3.12E-2	3.17E-2	3.17E-2	3.17E-2	3.22E-2	3.22E-2	3.22E-2	3.29E-2	3.29E-2	3.29E-2
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	1.58E-3	1.58E-3	1.58E-3	1.60E-3	1.60E-3	1.60E-3	1.62E-3	1.62E-3	1.62E-3	1.66E-3	1.66E-3	1.66E-3	1.70E-3	1.70E-3	1.70E-3	1.76E-3	1.76E-3	1.76E-3
	U-238	3.79E-2	3.79E-2	3.79E-2	3.83E-2	3.83E-2	3.83E-2	3.87E-2	3.87E-2	3.87E-2	3.94E-2	3.94E-2	3.94E-2	4.01E-2	4.01E-2	4.01E-2	4.12E-2	4.12E-2	4.12E-2

MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
		1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
II-6	Ra-226	7.24E-2	6.93E-2	6.93E-2	8.24E-2	7.49E-2	7.49E-2	9.05E-2	8.03E-2	8.03E-2	5.43E-1	9.03E-2	9.03E-2	1.16E+0	4.38E-1	4.38E-1	2.06E+0	1.34E+0	1.34E+0
	Th-230	4.12E+0	2.12E+0	2.12E+0	1.01E+1	5.59E+0	5.59E+0	1.49E+1	8.86E+0	8.86E+0	1.71E+1	1.48E+1	1.48E+1	1.72E+1	1.71E+1	1.71E+1	1.76E+1	1.73E+1	1.73E+1
	Ra-228	2.54E-2	2.43E-2	2.43E-2	2.92E-2	2.64E-2	2.64E-2	1.50E-1	2.84E-2	2.84E-2	2.71E-1	1.43E-1	1.43E-1	2.78E-1	2.70E-1	2.70E-1	3.01E-1	2.83E-1	2.83E-1
	Th-232	1.50E-2	1.45E-2	1.45E-2	1.68E-2	1.54E-2	1.54E-2	1.82E-2	1.64E-2	1.64E-2	1.88E-2	1.82E-2	1.82E-2	1.89E-2	1.88E-2	1.88E-2	1.90E-2	1.89E-2	1.89E-2
	U-234	1.86E+1	1.37E+1	1.37E+1	3.37E+1	2.25E+1	2.25E+1	4.31E+1	3.12E+1	3.12E+1	4.73E+1	4.29E+1	4.29E+1	4.76E+1	4.73E+1	4.73E+1	4.84E+1	4.77E+1	4.77E+1
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-238	1.43E+0	1.29E+0	1.29E+0	1.87E+0	1.53E+0	1.53E+0	2.29E+0	1.77E+0	1.77E+0	2.48E+0	2.28E+0	2.28E+0	2.49E+0	2.48E+0	2.48E+0	2.53E+0	2.50E+0	2.50E+0
II-7	U-234	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1
	U-235	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1
	U-238	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1
III	Cs-137	3.76E+0	3.76E+0	3.76E+0	7.52E+0	7.52E+0	7.52E+0	1.13E+1	1.13E+1	1.13E+1	1.88E+1	1.88E+1	1.88E+1	2.63E+1	2.63E+1	2.63E+1	3.76E+1	3.76E+1	3.76E+1
IV	U-234	5.02E+1	5.02E+1	5.02E+1	1.00E+2	1.00E+2	1.00E+2	1.51E+2	1.51E+2	1.51E+2	2.51E+2	2.51E+2	2.51E+2	3.52E+2	3.52E+2	3.52E+2	5.02E+2	5.02E+2	5.02E+2
	U-235	2.36E+0	2.36E+0	2.36E+0	4.72E+0	4.72E+0	4.72E+0	7.08E+0	7.08E+0	7.08E+0	1.18E+1	1.18E+1	1.18E+1	1.65E+1	1.65E+1	1.65E+1	2.36E+1	2.36E+1	2.36E+1
	U-238	5.02E+1	5.02E+1	5.02E+1	1.00E+2	1.00E+2	1.00E+2	1.51E+2	1.51E+2	1.51E+2	2.51E+2	2.51E+2	2.51E+2	3.52E+2	3.52E+2	3.52E+2	5.02E+2	5.02E+2	5.02E+2
V	Cs-137	3.76E+0	3.76E+0	3.76E+0	7.52E+0	7.52E+0	7.52E+0	1.13E+1	1.13E+1	1.13E+1	1.88E+1	1.88E+1	1.88E+1	2.63E+1	2.63E+1	2.63E+1	3.76E+1	3.76E+1	3.76E+1
VI	Cs-137	3.72E+0	3.72E+0	3.72E+0	7.31E+0	7.31E+0	7.31E+0	1.08E+1	1.08E+1	1.08E+1	1.76E+1	1.76E+1	1.76E+1	2.43E+1	2.43E+1	2.43E+1	3.42E+1	3.42E+1	3.42E+1
	U-234	9.37E-1	9.37E-1	9.37E-1	4.66E+0	4.66E+0	4.66E+0	1.17E+1	1.17E+1	1.17E+1	2.73E+1	2.73E+1	2.73E+1	4.53E+1	4.53E+1	4.53E+1	7.72E+1	7.72E+1	7.72E+1
	U-235	4.41E-2	4.41E-2	4.41E-2	2.19E-1	2.19E-1	2.19E-1	5.48E-1	5.48E-1	5.48E-1	1.28E+0	1.28E+0	1.28E+0	2.13E+0	2.13E+0	2.13E+0	3.63E+0	3.63E+0	3.63E+0
	U-238	9.37E-1	9.37E-1	9.37E-1	4.66E+0	4.66E+0	4.66E+0	1.17E+1	1.17E+1	1.17E+1	2.73E+1	2.73E+1	2.73E+1	4.53E+1	4.53E+1	4.53E+1	7.72E+1	7.72E+1	7.72E+1
VII	Pu-239	1.29E+2	1.29E+2	1.29E+2	2.38E+2	2.38E+2	2.38E+2	3.59E+2	3.59E+2	3.59E+2	6.81E+2	6.81E+2	6.81E+2	1.09E+3	1.09E+3	1.09E+3	1.44E+3	1.44E+3	1.44E+3
	Am-241	2.16E+1	2.16E+1	2.16E+1	3.94E+1	3.94E+1	3.94E+1	5.99E+1	5.99E+1	5.99E+1	1.14E+2	1.14E+2	1.14E+2	1.83E+2	1.83E+2	1.83E+2	2.39E+2	2.39E+2	2.39E+2
	Cs-137	2.26E+0	2.26E+0	2.26E+0	4.69E+0	4.69E+0	4.69E+0	7.01E+0	7.01E+0	7.01E+0	1.10E+1	1.10E+1	1.10E+1	1.43E+1	1.43E+1	1.43E+1	2.15E+1	2.15E+1	2.15E+1
IX	Pu-239	4.89E+2	4.89E+2	4.89E+2	9.79E+2	9.79E+2	9.79E+2	1.47E+3	1.47E+3	1.47E+3	2.45E+3	2.45E+3	2.45E+3	2.98E+3	2.98E+3	2.98E+3	2.98E+3	2.98E+3	2.98E+3
	Am-241	8.16E+1	8.16E+1	8.16E+1	1.63E+2	1.63E+2	1.63E+2	2.45E+2	2.45E+2	2.45E+2	4.08E+2	4.08E+2	4.08E+2	4.97E+2	4.97E+2	4.97E+2	4.97E+2	4.97E+2	4.97E+2
X	Tc-99	3.63E+0	7.99E-1	7.99E-1	7.43E+0	2.37E+0	2.37E+0	1.13E+1	4.26E+0	4.26E+0	1.91E+1	8.79E+0	8.79E+0	2.70E+1	1.44E+1	1.44E+1	3.88E+1	2.39E+1	2.39E+1
	U-238	3.44E+0	1.58E+0	1.58E+0	5.11E+0	2.77E+0	2.77E+0	6.09E+0	3.81E+0	3.81E+0	7.31E+0	5.50E+0	5.50E+0	8.12E+0	6.66E+0	6.66E+0	8.97E+0	7.84E+0	7.84E+0
	U-234	3.44E+0	1.58E+0	1.58E+0	5.11E+0	2.77E+0	2.77E+0	6.09E+0	3.81E+0	3.81E+0	7.31E+0	5.50E+0	5.50E+0	8.12E+0	6.66E+0	6.66E+0	8.97E+0	7.84E+0	7.84E+0
XII	Pu-239	1.26E+2	1.26E+2	1.26E+2	2.52E+2	2.52E+2	2.52E+2	3.79E+2	3.79E+2	3.79E+2	6.31E+2	6.31E+2	6.31E+2	8.84E+2	8.84E+2	8.84E+2	1.26E+3	1.26E+3	1.26E+3
	Am-241	2.10E+1	2.10E+1	2.10E+1	4.21E+1	4.21E+1	4.21E+1	6.31E+1	6.31E+1	6.31E+1	1.05E+2	1.05E+2	1.05E+2	1.47E+2	1.47E+2	1.47E+2	2.10E+2	2.10E+2	2.10E+2
XIIIA	U-238	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0
XIIIB	U-238	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0

MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
		1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIIC	U-238	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0
XVIA	Co-60	4.93E-1	4.93E-1	4.93E-1	9.72E-1	9.72E-1	9.72E-1	1.42E+0	1.42E+0	1.42E+0	2.33E+0	2.33E+0	2.33E+0	3.27E+0	3.27E+0	3.27E+0	4.70E+0	4.70E+0	4.70E+0
	Cs-137	.00E+0	.00E+0	.00E+0	5.62E-2	5.62E-2	5.62E-2	2.62E-1	2.62E-1	2.62E-1	5.47E-1	5.47E-1	5.47E-1	7.59E-1	7.59E-1	7.59E-1	9.38E-1	9.38E-1	9.38E-1
XVIB	Co-60	4.93E-1	4.93E-1	4.93E-1	9.72E-1	9.72E-1	9.72E-1	1.42E+0	1.42E+0	1.42E+0	2.33E+0	2.33E+0	2.33E+0	3.27E+0	3.27E+0	3.27E+0	4.70E+0	4.70E+0	4.70E+0
	Cs-137	.00E+0	.00E+0	.00E+0	5.62E-2	5.62E-2	5.62E-2	2.62E-1	2.62E-1	2.62E-1	5.47E-1	5.47E-1	5.47E-1	7.59E-1	7.59E-1	7.59E-1	9.38E-1	9.38E-1	9.38E-1
XVIC	Co-60	4.93E-1	4.93E-1	4.93E-1	9.72E-1	9.72E-1	9.72E-1	1.42E+0	1.42E+0	1.42E+0	2.33E+0	2.33E+0	2.33E+0	3.27E+0	3.27E+0	3.27E+0	4.70E+0	4.70E+0	4.70E+0
	Cs-137	.00E+0	.00E+0	.00E+0	5.62E-2	5.62E-2	5.62E-2	2.62E-1	2.62E-1	2.62E-1	5.47E-1	5.47E-1	5.47E-1	7.59E-1	7.59E-1	7.59E-1	9.38E-1	9.38E-1	9.38E-1
XVIIIA	Cs-137	1.93E+0	1.93E+0	1.93E+0	3.87E+0	3.87E+0	3.87E+0	5.80E+0	5.80E+0	5.80E+0	9.67E+0	9.67E+0	9.67E+0	1.35E+1	1.35E+1	1.35E+1	1.93E+1	1.93E+1	1.93E+1
	Sr-90	1.93E+0	1.93E+0	1.93E+0	3.87E+0	3.87E+0	3.87E+0	5.80E+0	5.80E+0	5.80E+0	9.67E+0	9.67E+0	9.67E+0	1.35E+1	1.35E+1	1.35E+1	1.93E+1	1.93E+1	1.93E+1
XVIIIB	Cs-137	1.93E+0	1.93E+0	1.93E+0	3.87E+0	3.87E+0	3.87E+0	5.80E+0	5.80E+0	5.80E+0	9.67E+0	9.67E+0	9.67E+0	1.35E+1	1.35E+1	1.35E+1	1.93E+1	1.93E+1	1.93E+1
	Sr-90	1.93E+0	1.93E+0	1.93E+0	3.87E+0	3.87E+0	3.87E+0	5.80E+0	5.80E+0	5.80E+0	9.67E+0	9.67E+0	9.67E+0	1.35E+1	1.35E+1	1.35E+1	1.93E+1	1.93E+1	1.93E+1
XVIIIC	Cs-137	1.93E+0	1.93E+0	1.93E+0	3.87E+0	3.87E+0	3.87E+0	5.80E+0	5.80E+0	5.80E+0	9.67E+0	9.67E+0	9.67E+0	1.35E+1	1.35E+1	1.35E+1	1.93E+1	1.93E+1	1.93E+1
	Sr-90	1.93E+0	1.93E+0	1.93E+0	3.87E+0	3.87E+0	3.87E+0	5.80E+0	5.80E+0	5.80E+0	9.67E+0	9.67E+0	9.67E+0	1.35E+1	1.35E+1	1.35E+1	1.93E+1	1.93E+1	1.93E+1
XXA	U-234	8.68E+1	5.84E+1	5.84E+1	1.74E+2	1.17E+2	1.17E+2	2.60E+2	1.75E+2	1.75E+2	4.34E+2	2.92E+2	2.92E+2	6.08E+2	4.09E+2	4.09E+2	8.68E+2	5.84E+2	5.84E+2
	U-235	2.92E+0	1.96E+0	1.96E+0	5.85E+0	3.93E+0	3.93E+0	8.76E+0	5.90E+0	5.90E+0	1.46E+1	9.82E+0	9.82E+0	2.05E+1	1.38E+1	1.38E+1	2.92E+1	1.96E+1	1.96E+1
	U-238	1.49E+1	1.00E+1	1.00E+1	2.98E+1	2.00E+1	2.00E+1	4.46E+1	3.00E+1	3.00E+1	7.44E+1	5.00E+1	5.00E+1	1.04E+2	7.00E+1	7.00E+1	1.49E+2	1.00E+2	1.00E+2
XXB	U-234	8.68E+1	8.68E+1	8.68E+1	1.74E+2	1.74E+2	1.74E+2	2.60E+2	2.60E+2	2.60E+2	4.34E+2	4.34E+2	4.34E+2	6.08E+2	6.08E+2	6.08E+2	8.68E+2	8.68E+2	8.68E+2
	U-235	2.92E+0	2.92E+0	2.92E+0	5.85E+0	5.85E+0	5.85E+0	8.76E+0	8.76E+0	8.76E+0	1.46E+1	1.46E+1	1.46E+1	2.05E+1	2.05E+1	2.05E+1	2.92E+1	2.92E+1	2.92E+1
	U-238	1.49E+1	1.49E+1	1.49E+1	2.98E+1	2.98E+1	2.98E+1	4.46E+1	4.46E+1	4.46E+1	7.44E+1	7.44E+1	7.44E+1	1.04E+2	1.04E+2	1.04E+2	1.49E+2	1.49E+2	1.49E+2
XXC	U-234	8.68E+1	8.68E+1	8.68E+1	1.74E+2	1.74E+2	1.74E+2	2.60E+2	2.60E+2	2.60E+2	4.34E+2	4.34E+2	4.34E+2	6.08E+2	6.08E+2	6.08E+2	8.68E+2	8.68E+2	8.68E+2
	U-235	2.92E+0	2.92E+0	2.92E+0	5.85E+0	5.85E+0	5.85E+0	8.76E+0	8.76E+0	8.76E+0	1.46E+1	1.46E+1	1.46E+1	2.05E+1	2.05E+1	2.05E+1	2.92E+1	2.92E+1	2.92E+1
	U-238	1.49E+1	1.49E+1	1.49E+1	2.98E+1	2.98E+1	2.98E+1	4.46E+1	4.46E+1	4.46E+1	7.44E+1	7.44E+1	7.44E+1	1.04E+2	1.04E+2	1.04E+2	1.49E+2	1.49E+2	1.49E+2
XXIA	Th-232	3.67E-1	3.67E-1	3.67E-1	7.34E-1	7.34E-1	7.34E-1	1.10E+0	1.10E+0	1.10E+0	1.84E+0	1.84E+0	1.84E+0	2.57E+0	2.57E+0	2.57E+0	3.67E+0	3.67E+0	3.67E+0
XXIB	Th-232	3.67E-1	3.67E-1	3.67E-1	7.34E-1	7.34E-1	7.34E-1	1.10E+0	1.10E+0	1.10E+0	1.84E+0	1.84E+0	1.84E+0	2.57E+0	2.57E+0	2.57E+0	3.67E+0	3.67E+0	3.67E+0
XXIC	Th-232	3.67E-1	3.67E-1	3.67E-1	7.34E-1	7.34E-1	7.34E-1	1.10E+0	1.10E+0	1.10E+0	1.84E+0	1.84E+0	1.84E+0	2.57E+0	2.57E+0	2.57E+0	3.67E+0	3.67E+0	3.67E+0
XXII	Ra-226	3.96E-2	3.90E-2	3.90E-2	7.82E-2	7.44E-2	7.44E-2	1.15E-1	1.05E-1	1.05E-1	1.92E-1	1.69E-1	1.69E-1	2.29E-1	2.19E-1	2.19E-1	3.13E-1	2.81E-1	2.81E-1
	Th-232	1.97E-1	1.95E-1	1.95E-1	3.91E-1	3.72E-1	3.72E-1	5.76E-1	5.24E-1	5.24E-1	9.62E-1	8.48E-1	8.48E-1	1.53E+0	1.33E+0	1.33E+0	2.26E+0	2.13E+0	2.13E+0
	U-234	2.90E-2	2.78E-2	2.78E-2	2.35E-1	2.02E-1	2.02E-1	7.70E-1	5.78E-1	5.78E-1	1.26E+0	1.18E+0	1.18E+0	1.38E+0	1.35E+0	1.35E+0	1.57E+0	1.51E+0	1.51E+0
	U-235	1.36E-3	1.31E-3	1.31E-3	1.10E-2	9.48E-3	9.48E-3	3.62E-2	2.72E-2	2.72E-2	5.91E-2	5.52E-2	5.52E-2	6.50E-2	6.34E-2	6.34E-2	7.38E-2	7.10E-2	7.10E-2
	U-238	2.90E-2	2.78E-2	2.78E-2	2.35E-1	2.02E-1	2.02E-1	7.70E-1	5.78E-1	5.78E-1	1.26E+0	1.18E+0	1.18E+0	1.38E+0	1.35E+0	1.35E+0	1.57E+0	1.51E+0	1.51E+0

TABLE K-99. MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	1.28E-1	1.28E-1	1.28E-1	1.28E+0	1.28E+0	1.28E+0	1.28E+1	1.28E+1	1.28E+1	1.28E+2	1.28E+2	1.28E+2	1.28E+3	1.28E+3	1.28E+3
II-1	Ra-226	1.04E-2	1.01E-2	1.01E-2	8.09E-2	7.90E-2	7.90E-2	4.80E-1	9.23E-2	9.23E-2	9.79E+0	8.78E+0	8.78E+0	1.03E+2	9.83E+1	9.83E+1
	Th-230	8.01E-3	7.75E-3	7.75E-3	6.22E-2	6.07E-2	6.07E-2	1.44E+1	1.14E+1	1.14E+1	2.48E+1	2.37E+1	2.37E+1	1.20E+2	1.15E+2	1.15E+2
	Ra-228	.00E+0	.00E+0	.00E+0	1.29E-2	1.26E-2	1.26E-2	1.50E-2	1.49E-2	1.49E-2	1.53E-2	1.52E-2	1.52E-2	1.80E-2	1.79E-2	1.79E-2
	Th-232	.00E+0	.00E+0	.00E+0	9.97E-3	9.66E-3	9.66E-3	1.18E-2	1.17E-2	1.17E-2	1.20E-2	1.20E-2	1.20E-2	1.45E-2	1.43E-2	1.43E-2
	U-234	9.32E-3	9.03E-3	9.03E-3	6.03E-2	5.92E-2	5.92E-2	6.72E-2	6.70E-2	6.70E-2	6.82E-2	6.81E-2	6.81E-2	3.56E-1	3.26E-1	3.26E-1
	U-235	.00E+0	.00E+0	.00E+0	2.42E-3	2.33E-3	2.33E-3	2.92E-3	2.90E-3	2.90E-3	3.00E-3	2.99E-3	2.99E-3	1.30E-2	1.15E-2	1.15E-2
	U-238	1.01E-2	9.83E-3	9.83E-3	6.57E-2	6.44E-2	6.44E-2	7.76E-2	7.29E-2	7.29E-2	1.23E-1	1.18E-1	1.18E-1	7.06E-1	6.67E-1	6.67E-1
II-2	Ra-226	1.56E-3	1.44E-3	1.44E-3	9.97E-3	9.74E-3	9.74E-3	1.18E-2	1.17E-2	1.17E-2	1.36E-2	1.29E-2	1.29E-2	6.25E-1	2.38E-1	2.38E-1
	Th-230	1.55E-2	1.47E-2	1.47E-2	6.92E-2	6.78E-2	6.78E-2	2.33E+1	1.11E+1	1.11E+1	1.43E+2	9.58E+1	9.58E+1	1.04E+3	7.12E+2	7.12E+2
	Ra-228	8.38E-3	7.88E-3	7.88E-3	4.37E-2	4.27E-2	4.27E-2	5.15E-2	5.08E-2	5.08E-2	8.28E+0	4.88E+0	4.88E+0	7.34E+1	5.62E+1	5.62E+1
	Th-232	.00E+0	.00E+0	.00E+0	3.06E-2	2.98E-2	2.98E-2	3.76E-2	3.70E-2	3.70E-2	6.46E-1	4.16E-1	4.16E-1	2.90E+1	1.97E+1	1.97E+1
	U-234	4.32E-2	4.12E-2	4.12E-2	2.84E+0	2.70E+0	2.70E+0	4.02E+0	3.91E+0	3.91E+0	5.33E+0	4.78E+0	4.78E+0	4.24E+1	2.33E+1	2.33E+1
	U-235	.00E+0	.00E+0	.00E+0	1.97E-1	1.88E-1	1.88E-1	2.71E+1	2.65E+1	2.65E+1	3.49E+1	3.16E+1	3.16E+1	4.28E+0	1.37E+0	1.37E+0
	U-238	4.97E-2	4.74E-2	4.74E-2	3.65E+0	3.51E+0	3.51E+0	5.06E+0	4.92E+0	4.92E+0	6.57E+0	5.94E+0	5.94E+0	4.85E+1	2.74E+1	2.74E+1
II-3	Ra-226	.00E+0	.00E+0	.00E+0	5.92E-3	5.85E-3	5.85E-3	2.22E-1	1.98E-1	1.98E-1	6.57E-1	6.33E-1	6.33E-1	1.27E+0	1.25E+0	1.25E+0
	Th-230	7.42E-3	7.23E-3	7.23E-3	1.31E-1	8.24E-2	8.24E-2	4.39E+0	3.85E+0	3.85E+0	2.60E+1	2.41E+1	2.41E+1	1.62E+2	1.52E+2	1.52E+2
	Ra-228	6.29E-3	6.14E-3	6.14E-3	4.20E-2	4.18E-2	4.18E-2	4.85E-2	4.81E-2	4.81E-2	8.35E-1	6.56E-1	6.56E-1	2.35E+1	2.15E+1	2.15E+1
	Th-232	3.63E-3	3.48E-3	3.48E-3	3.78E-2	3.76E-2	3.76E-2	4.40E-2	4.37E-2	4.37E-2	2.02E+0	1.72E+0	1.72E+0	3.10E+1	2.92E+1	2.92E+1
	U-234	1.30E-2	1.26E-2	1.26E-2	4.93E-1	4.10E-1	4.10E-1	9.80E+0	8.42E+0	8.42E+0	8.48E+1	7.38E+1	7.38E+1	9.88E+2	9.09E+2	9.09E+2
	U-235	5.85E-4	5.61E-4	5.61E-4	5.30E-1	4.99E-1	4.99E-1	3.01E+0	2.75E+0	2.75E+0	1.86E+1	1.74E+1	1.74E+1	1.37E+2	1.32E+2	1.32E+2
	U-238	1.29E-2	1.26E-2	1.26E-2	3.52E-1	2.74E-1	2.74E-1	8.89E+0	7.72E+0	7.72E+0	7.83E+1	6.83E+1	6.83E+1	9.46E+2	8.67E+2	8.67E+2
II-4	Ra-226	2.17E-3	2.04E-3	2.04E-3	6.01E-3	5.88E-3	5.88E-3	8.66E-3	7.43E-3	7.43E-3	9.61E-1	6.50E-1	6.50E-1	3.25E+0	3.25E+0	3.25E+0
	Th-230	1.83E-2	1.72E-2	1.72E-2	1.91E+0	9.11E-1	9.11E-1	1.92E+1	1.20E+1	1.20E+1	8.90E+1	7.09E+1	7.09E+1	1.04E+3	5.17E+2	5.17E+2
	Ra-228	3.54E-3	3.27E-3	3.27E-3	1.18E-2	1.15E-2	1.15E-2	1.92E-1	1.70E-2	1.70E-2	2.23E+0	1.59E+0	1.59E+0	6.99E+0	6.99E+0	6.99E+0
	Th-232	4.02E-3	3.72E-3	3.72E-3	1.34E-2	1.31E-2	1.31E-2	1.21E-1	1.69E-2	1.69E-2	3.35E+0	2.24E+0	2.24E+0	1.42E+1	1.42E+1	1.42E+1
	U-234	2.54E-2	2.41E-2	2.41E-2	8.29E-2	5.94E-2	5.94E-2	1.65E+0	8.14E-1	8.14E-1	8.93E+1	4.29E+1	4.29E+1	4.97E+3	4.97E+3	4.97E+3
	U-235	.00E+0	.00E+0	.00E+0	1.07E-4	3.81E-5	3.81E-5	1.41E-3	8.40E-4	8.40E-4	1.72E+0	5.93E-1	5.93E-1	1.98E+2	1.98E+2	1.98E+2
	U-238	1.65E-2	1.56E-2	1.56E-2	3.91E-2	3.85E-2	3.85E-2	5.09E-2	4.57E-2	4.57E-2	3.56E+1	1.27E+1	1.27E+1	5.07E+3	5.07E+3	5.07E+3
II-5	Ra-226	2.63E-3	2.59E-3	2.59E-3	5.55E-2	5.54E-2	5.54E-2	9.61E-1	9.60E-1	9.60E-1	1.00E+1	1.00E+1	1.00E+1	6.61E+1	6.58E+1	6.58E+1
	Th-230	1.24E-3	1.23E-3	1.23E-3	2.42E-2	2.42E-2	2.42E-2	2.62E-2	2.62E-2	2.62E-2	3.36E-2	3.36E-2	3.36E-2	1.94E+1	1.85E+1	1.85E+1
	Ra-228	.00E+0	.00E+0	.00E+0	1.39E-2	1.39E-2	1.39E-2	1.62E-2	1.62E-2	1.62E-2	1.33E-1	1.32E-1	1.32E-1	1.30E+1	1.28E+1	1.28E+1
	Th-232	6.62E-3	6.60E-3	6.60E-3	2.94E-2	2.94E-2	2.94E-2	3.14E-2	3.14E-2	3.14E-2	3.93E-1	3.93E-1	3.93E-1	2.68E+1	2.65E+1	2.65E+1
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	1.46E-3	1.46E-3	1.46E-3	1.63E-3	1.63E-3	1.63E-3	2.25E-3	2.25E-3	2.25E-3	1.14E+0	1.09E+0	1.09E+0
	U-238	1.85E-3	1.82E-3	1.82E-3	3.60E-2	3.59E-2	3.59E-2	3.89E-2	3.89E-2	3.89E-2	4.99E-2	4.99E-2	4.99E-2	9.57E+0	9.07E+0	9.07E+0

MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
II-6	Ra-226	3.02E-3	2.42E-3	2.42E-3	6.12E-2	6.01E-2	6.01E-2	9.37E-2	8.28E-2	8.28E-2	9.51E+0	8.65E+0	8.65E+0	1.03E+2	1.01E+2	1.01E+2
	Th-230	1.92E-2	1.88E-2	1.88E-2	5.81E-2	5.73E-2	5.73E-2	1.68E+1	1.03E+1	1.03E+1	2.06E+1	2.02E+1	2.02E+1	5.47E+1	5.38E+1	5.38E+1
	Ra-228	.00E+0	.00E+0	.00E+0	2.13E-2	2.09E-2	2.09E-2	2.57E-1	2.93E-2	2.93E-2	4.67E-1	4.47E-1	4.47E-1	2.53E+0	2.48E+0	2.48E+0
	Th-232	2.81E-3	2.71E-3	2.71E-3	1.30E-2	1.28E-2	1.28E-2	1.87E-2	1.68E-2	1.68E-2	2.51E-2	2.20E-2	2.20E-2	4.59E-1	4.48E-1	4.48E-1
	U-234	2.35E-2	2.30E-2	2.30E-2	6.06E-1	6.92E-2	6.92E-2	4.68E+1	3.41E+1	3.41E+1	5.41E+1	5.34E+1	5.34E+1	1.51E+2	1.49E+2	1.49E+2
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	3.60E-2	2.80E-3	2.80E-3
	U-238	3.52E-2	3.46E-2	3.46E-2	9.48E-1	9.07E-1	9.07E-1	2.46E+0	1.89E+0	1.89E+0	2.81E+0	2.77E+0	2.77E+0	1.07E+1	1.04E+1	1.04E+1
II-7	U-234	3.02E+0	3.02E+0	3.02E+0	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1
	U-235	1.42E-1	1.42E-1	1.42E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1
	U-238	3.02E+0	3.02E+0	3.02E+0	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1
III	Cs-137	1.28E-1	1.28E-1	1.28E-1	1.28E+0	1.28E+0	1.28E+0	1.28E+1	1.28E+1	1.28E+1	1.28E+2	1.28E+2	1.28E+2	3.00E+2	3.00E+2	3.00E+2
IV	U-234	1.84E+0	1.84E+0	1.84E+0	1.84E+1	1.84E+1	1.84E+1	1.84E+2	1.84E+2	1.84E+2	1.84E+3	1.84E+3	1.84E+3	2.20E+3	2.20E+3	2.20E+3
	U-235	8.64E-2	8.64E-2	8.64E-2	8.64E-1	8.64E-1	8.64E-1	8.63E+0	8.63E+0	8.63E+0	8.64E+1	8.64E+1	8.64E+1	1.03E+2	1.03E+2	1.03E+2
	U-238	1.84E+0	1.84E+0	1.84E+0	1.84E+1	1.84E+1	1.84E+1	1.84E+2	1.84E+2	1.84E+2	1.84E+3	1.84E+3	1.84E+3	2.20E+3	2.20E+3	2.20E+3
V	Cs-137	1.28E-1	1.28E-1	1.28E-1	1.28E+0	1.28E+0	1.28E+0	1.28E+1	1.28E+1	1.28E+1	1.28E+2	1.28E+2	1.28E+2	1.28E+3	1.28E+3	1.28E+3
VI	Cs-137	1.28E-1	1.28E-1	1.28E-1	1.28E+0	1.28E+0	1.28E+0	1.22E+1	1.22E+1	1.22E+1	1.09E+2	1.09E+2	1.09E+2	7.66E+2	7.66E+2	7.66E+2
	U-234	3.20E-4	3.20E-4	3.20E-4	7.47E-2	7.47E-2	7.47E-2	1.53E+1	1.53E+1	1.53E+1	4.57E+2	4.57E+2	4.57E+2	1.22E+4	1.22E+4	1.22E+4
	U-235	1.50E-5	1.50E-5	1.50E-5	3.51E-3	3.51E-3	3.51E-3	7.20E-1	7.20E-1	7.20E-1	2.15E+1	2.15E+1	2.15E+1	5.74E+2	5.74E+2	5.74E+2
	U-238	3.20E-4	3.20E-4	3.20E-4	7.47E-2	7.47E-2	7.47E-2	1.53E+1	1.53E+1	1.53E+1	4.57E+2	4.57E+2	4.57E+2	1.22E+4	1.22E+4	1.22E+4
VII	Pu-239	1.66E+1	1.66E+1	1.66E+1	6.71E+1	6.71E+1	6.71E+1	4.32E+2	4.32E+2	4.32E+2	1.50E+3	1.50E+3	1.50E+3	1.50E+3	1.50E+3	1.50E+3
	Am-241	2.80E+0	2.80E+0	2.80E+0	1.13E+1	1.13E+1	1.13E+1	7.24E+1	7.24E+1	7.24E+1	2.50E+2	2.50E+2	2.50E+2	2.50E+2	2.50E+2	2.50E+2
	Cs-137	.00E+0	.00E+0	.00E+0	6.71E-1	6.71E-1	6.71E-1	8.33E+0	8.33E+0	8.33E+0	8.00E+1	8.00E+1	8.00E+1	8.00E+1	8.00E+1	8.00E+1
IX	Pu-239	1.98E+1	1.98E+1	1.98E+1	1.98E+2	1.98E+2	1.98E+2	1.98E+3	1.98E+3	1.98E+3	2.98E+3	2.98E+3	2.98E+3	2.98E+3	2.98E+3	2.98E+3
	Am-241	3.30E+0	3.30E+0	3.30E+0	3.30E+1	3.30E+1	3.30E+1	3.30E+2	3.30E+2	3.30E+2	4.97E+2	4.97E+2	4.97E+2	4.97E+2	4.97E+2	4.97E+2
X	Tc-99	9.82E-2	7.39E-2	7.39E-2	9.47E-1	2.08E-1	2.08E-1	1.02E+1	3.54E+0	3.54E+0	1.05E+2	8.22E+1	8.22E+1	1.06E+3	9.98E+2	9.98E+2
	U-238	1.23E-1	1.55E-2	1.55E-2	1.76E+0	4.07E-1	4.07E-1	5.86E+0	3.38E+0	3.38E+0	1.24E+1	1.15E+1	1.15E+1	3.15E+1	3.06E+1	3.06E+1
	U-234	1.23E-1	1.55E-2	1.55E-2	1.76E+0	4.07E-1	4.07E-1	5.86E+0	3.38E+0	3.38E+0	1.24E+1	1.15E+1	1.15E+1	3.15E+1	3.06E+1	3.06E+1
XII	Pu-239	7.08E+0	7.08E+0	7.08E+0	7.07E+1	7.07E+1	7.07E+1	7.08E+2	7.08E+2	7.08E+2	7.07E+3	7.07E+3	7.07E+3	7.08E+4	7.08E+4	7.08E+4
	Am-241	1.18E+0	1.18E+0	1.18E+0	1.18E+1	1.18E+1	1.18E+1	1.18E+2	1.18E+2	1.18E+2	1.18E+3	1.18E+3	1.18E+3	1.18E+4	1.18E+4	1.18E+4
XIIIA	U-238	2.76E+0	2.76E+0	2.76E+0	2.76E+1	2.76E+1	2.76E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	4.44E-2	4.44E-2	4.44E-2	4.46E-1	4.46E-1	4.46E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	2.58E-1	2.58E-1	2.58E-1	2.58E+0	2.58E+0	2.58E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0
XIIIB	U-238	2.76E+0	2.76E+0	2.76E+0	2.76E+1	2.76E+1	2.76E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	4.44E-2	4.44E-2	4.44E-2	4.46E-1	4.46E-1	4.46E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	2.58E-1	2.58E-1	2.58E-1	2.58E+0	2.58E+0	2.58E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0

MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	2.76E+0	2.76E+0	2.76E+0	2.76E+1	2.76E+1	2.76E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	4.44E-2	4.44E-2	4.44E-2	4.46E-1	4.46E-1	4.46E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	2.58E-1	2.58E-1	2.58E-1	2.58E+0	2.58E+0	2.58E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0
XVIA	Co-60	1.59E-2	1.59E-2	1.59E-2	1.59E-1	1.59E-1	1.59E-1	1.52E+0	1.52E+0	1.52E+0	1.53E+1	1.53E+1	1.53E+1	1.29E+2	1.29E+2	1.29E+2
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	3.05E-1	3.05E-1	3.05E-1	2.71E+0	2.71E+0	2.71E+0	1.35E+2	1.35E+2	1.35E+2
XVIB	Co-60	1.59E-2	1.59E-2	1.59E-2	1.59E-1	1.59E-1	1.59E-1	1.52E+0	1.52E+0	1.52E+0	1.53E+1	1.53E+1	1.53E+1	1.29E+2	1.29E+2	1.29E+2
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	3.05E-1	3.05E-1	3.05E-1	2.71E+0	2.71E+0	2.71E+0	1.35E+2	1.35E+2	1.35E+2
XVIC	Co-60	1.59E-2	1.59E-2	1.59E-2	1.59E-1	1.59E-1	1.59E-1	1.52E+0	1.52E+0	1.52E+0	1.53E+1	1.53E+1	1.53E+1	1.29E+2	1.29E+2	1.29E+2
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	3.05E-1	3.05E-1	3.05E-1	2.71E+0	2.71E+0	2.71E+0	1.35E+2	1.35E+2	1.35E+2
XVIII A	Cs-137	6.94E-2	6.94E-2	6.94E-2	6.94E-1	6.94E-1	6.94E-1	6.94E+0	6.94E+0	6.94E+0	6.94E+1	6.94E+1	6.94E+1	6.94E+2	6.94E+2	6.94E+2
	Sr-90	6.94E-2	6.94E-2	6.94E-2	6.94E-1	6.94E-1	6.94E-1	6.94E+0	6.94E+0	6.94E+0	6.94E+1	6.94E+1	6.94E+1	6.94E+2	6.94E+2	6.94E+2
XVIII B	Cs-137	6.94E-2	6.94E-2	6.94E-2	6.94E-1	6.94E-1	6.94E-1	6.94E+0	6.94E+0	6.94E+0	6.94E+1	6.94E+1	6.94E+1	6.94E+2	6.94E+2	6.94E+2
	Sr-90	6.94E-2	6.94E-2	6.94E-2	6.94E-1	6.94E-1	6.94E-1	6.94E+0	6.94E+0	6.94E+0	6.94E+1	6.94E+1	6.94E+1	6.94E+2	6.94E+2	6.94E+2
XVIII C	Cs-137	6.94E-2	6.94E-2	6.94E-2	6.94E-1	6.94E-1	6.94E-1	6.94E+0	6.94E+0	6.94E+0	6.94E+1	6.94E+1	6.94E+1	6.94E+2	6.94E+2	6.94E+2
	Sr-90	6.94E-2	6.94E-2	6.94E-2	6.94E-1	6.94E-1	6.94E-1	6.94E+0	6.94E+0	6.94E+0	6.94E+1	6.94E+1	6.94E+1	6.94E+2	6.94E+2	6.94E+2
XXA	U-234	4.08E+0	2.34E+0	2.34E+0	4.08E+1	2.34E+1	2.34E+1	4.08E+2	2.34E+2	2.34E+2	4.20E+3	2.35E+3	2.35E+3	7.47E+3	7.47E+3	7.47E+3
	U-235	1.37E-1	7.88E-2	7.88E-2	1.37E+0	7.87E-1	7.87E-1	1.37E+1	7.87E+0	7.87E+0	1.28E+2	7.64E+1	7.64E+1	2.15E+2	2.15E+2	2.15E+2
	U-238	7.00E-1	4.01E-1	4.01E-1	7.00E+0	4.01E+0	4.01E+0	6.99E+1	4.01E+1	4.01E+1	7.19E+2	4.03E+2	4.03E+2	1.28E+3	1.28E+3	1.28E+3
XXB	U-234	4.08E+0	2.80E+0	2.80E+0	4.08E+1	2.80E+1	2.80E+1	4.08E+2	2.80E+2	2.80E+2	4.20E+3	2.82E+3	2.82E+3	7.47E+3	7.47E+3	7.47E+3
	U-235	1.37E-1	9.44E-2	9.44E-2	1.37E+0	9.44E-1	9.44E-1	1.37E+1	9.44E+0	9.44E+0	1.28E+2	9.00E+1	9.00E+1	2.15E+2	2.15E+2	2.15E+2
	U-238	7.00E-1	4.81E-1	4.81E-1	7.00E+0	4.81E+0	4.81E+0	6.99E+1	4.80E+1	4.80E+1	7.19E+2	4.84E+2	4.84E+2	1.28E+3	1.28E+3	1.28E+3
XXC	U-234	4.08E+0	4.08E+0	4.08E+0	4.08E+1	4.08E+1	4.08E+1	4.08E+2	4.08E+2	4.08E+2	4.20E+3	4.20E+3	4.20E+3	7.47E+3	7.47E+3	7.47E+3
	U-235	1.37E-1	1.37E-1	1.37E-1	1.37E+0	1.37E+0	1.37E+0	1.37E+1	1.37E+1	1.37E+1	1.28E+2	1.28E+2	1.28E+2	2.15E+2	2.15E+2	2.15E+2
	U-238	7.00E-1	7.00E-1	7.00E-1	7.00E+0	7.00E+0	7.00E+0	6.99E+1	6.99E+1	6.99E+1	7.19E+2	7.19E+2	7.19E+2	1.28E+3	1.28E+3	1.28E+3
XXIA	Th-232	1.27E-2	1.27E-2	1.27E-2	1.27E-1	1.27E-1	1.27E-1	1.27E+0	1.27E+0	1.27E+0	1.27E+1	1.27E+1	1.27E+1	1.27E+2	1.27E+2	1.27E+2
XXIB	Th-232	1.27E-2	1.27E-2	1.27E-2	1.27E-1	1.27E-1	1.27E-1	1.27E+0	1.27E+0	1.27E+0	1.27E+1	1.27E+1	1.27E+1	1.27E+2	1.27E+2	1.27E+2
XXIC	Th-232	1.27E-2	1.27E-2	1.27E-2	1.27E-1	1.27E-1	1.27E-1	1.27E+0	1.27E+0	1.27E+0	1.27E+1	1.27E+1	1.27E+1	1.27E+2	1.27E+2	1.27E+2
XXII	Ra-226	1.37E-3	1.37E-3	1.37E-3	1.36E-2	1.36E-2	1.36E-2	1.29E-1	1.13E-1	1.13E-1	1.13E+0	1.08E+0	1.08E+0	8.00E+0	8.00E+0	8.00E+0
	Th-232	6.73E-3	6.73E-3	6.73E-3	6.75E-2	6.74E-2	6.74E-2	6.47E-1	5.63E-1	5.63E-1	7.46E+0	6.42E+0	6.42E+0	6.40E+1	6.40E+1	6.40E+1
	U-234	9.30E-7	9.30E-7	9.30E-7	1.08E-3	1.08E-3	1.08E-3	1.02E+0	7.18E-1	7.18E-1	5.56E+0	5.14E+0	5.14E+0	6.40E+1	6.40E+1	6.40E+1
	U-235	4.37E-8	4.37E-8	4.37E-8	5.10E-5	5.07E-5	5.07E-5	4.78E-2	3.38E-2	3.38E-2	2.61E-1	2.42E-1	2.42E-1	3.01E+0	3.01E+0	3.01E+0
	U-238	9.30E-7	9.30E-7	9.30E-7	1.08E-3	1.08E-3	1.08E-3	1.02E+0	7.18E-1	7.18E-1	5.56E+0	5.14E+0	5.14E+0	6.40E+1	6.40E+1	6.40E+1

TABLE K-100. MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
		1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	1.28E+1	1.28E+1	1.28E+1	2.57E+1	2.57E+1	2.57E+1	3.85E+1	3.85E+1	3.85E+1	6.41E+1	6.41E+1	6.41E+1	8.97E+1	8.97E+1	8.97E+1	1.28E+2	1.28E+2	1.28E+2
II-1	Ra-226	4.80E-1	9.23E-2	9.23E-2	1.52E+0	8.93E-1	8.93E-1	2.57E+0	1.89E+0	1.89E+0	4.64E+0	3.92E+0	3.92E+0	6.68E+0	5.85E+0	5.85E+0	9.79E+0	8.78E+0	8.78E+0
	Th-230	1.44E+1	1.14E+1	1.14E+1	1.54E+1	1.48E+1	1.48E+1	1.63E+1	1.58E+1	1.58E+1	1.83E+1	1.73E+1	1.73E+1	2.12E+1	2.00E+1	2.00E+1	2.48E+1	2.37E+1	2.37E+1
	Ra-228	1.50E-2	1.49E-2	1.49E-2	1.50E-2	1.50E-2	1.50E-2	1.50E-2	1.50E-2	1.50E-2	1.51E-2	1.51E-2	1.51E-2	1.52E-2	1.51E-2	1.51E-2	1.53E-2	1.52E-2	1.52E-2
	Th-232	1.18E-2	1.17E-2	1.17E-2	1.18E-2	1.18E-2	1.18E-2	1.18E-2	1.18E-2	1.18E-2	1.19E-2	1.18E-2	1.18E-2	1.19E-2	1.19E-2	1.19E-2	1.20E-2	1.20E-2	1.20E-2
	U-234	6.72E-2	6.70E-2	6.70E-2	6.73E-2	6.73E-2	6.73E-2	6.74E-2	6.74E-2	6.74E-2	6.76E-2	6.75E-2	6.75E-2	6.79E-2	6.78E-2	6.78E-2	6.82E-2	6.81E-2	6.81E-2
	U-235	2.92E-3	2.90E-3	2.90E-3	2.93E-3	2.93E-3	2.93E-3	2.94E-3	2.93E-3	2.93E-3	2.95E-3	2.95E-3	2.95E-3	2.97E-3	2.96E-3	2.96E-3	3.00E-3	2.99E-3	2.99E-3
	U-238	7.76E-2	7.29E-2	7.29E-2	8.11E-2	7.89E-2	7.89E-2	8.44E-2	8.25E-2	8.25E-2	9.25E-2	8.86E-2	8.86E-2	1.05E-1	9.98E-2	9.98E-2	1.23E-1	1.18E-1	1.18E-1
II-2	Ra-226	1.18E-2	1.17E-2	1.17E-2	1.21E-2	1.18E-2	1.18E-2	1.23E-2	1.20E-2	1.20E-2	1.27E-2	1.22E-2	1.22E-2	1.31E-2	1.25E-2	1.25E-2	1.36E-2	1.29E-2	1.29E-2
	Th-230	2.33E+1	1.11E+1	1.11E+1	4.13E+1	2.39E+1	2.39E+1	5.47E+1	3.47E+1	3.47E+1	8.09E+1	5.27E+1	5.27E+1	1.08E+2	6.98E+1	6.98E+1	1.43E+2	9.58E+1	9.58E+1
	Ra-228	5.15E-2	5.08E-2	5.08E-2	7.12E-1	5.15E-2	5.15E-2	1.73E+0	3.61E-1	3.61E-1	3.80E+0	1.57E+0	1.57E+0	5.78E+0	2.91E+0	2.91E+0	8.28E+0	4.88E+0	4.88E+0
	Th-232	3.76E-2	3.70E-2	3.70E-2	3.86E-2	3.77E-2	3.77E-2	3.93E-2	3.82E-2	3.82E-2	4.08E-2	3.92E-2	3.92E-2	4.23E-2	4.01E-2	4.01E-2	4.46E-2	4.16E-2	4.16E-2
	U-234	4.02E+0	3.91E+0	3.91E+0	4.19E+0	4.03E+0	4.03E+0	4.32E+0	4.13E+0	4.13E+0	4.61E+0	4.30E+0	4.30E+0	4.92E+0	4.49E+0	4.49E+0	5.33E+0	4.78E+0	4.78E+0
	U-235	2.71E-1	2.65E-1	2.65E-1	2.82E-1	2.72E-1	2.72E-1	2.89E-1	2.78E-1	2.78E-1	3.06E-1	2.88E-1	2.88E-1	3.25E-1	2.99E-1	2.99E-1	3.49E-1	3.16E-1	3.16E-1
	U-238	5.06E+0	4.92E+0	4.92E+0	5.26E+0	5.07E+0	5.07E+0	5.41E+0	5.19E+0	5.19E+0	5.74E+0	5.39E+0	5.39E+0	6.10E+0	5.60E+0	5.60E+0	6.57E+0	5.94E+0	5.94E+0
II-3	Ra-226	2.22E-1	1.98E-1	1.98E-1	3.36E-1	3.09E-1	3.09E-1	4.19E-1	3.90E-1	3.90E-1	5.10E-1	4.87E-1	4.87E-1	5.77E-1	5.54E-1	5.54E-1	6.57E-1	6.33E-1	6.33E-1
	Th-230	4.39E+0	3.85E+0	3.85E+0	7.53E+0	6.69E+0	6.69E+0	1.04E+1	9.33E+0	9.33E+0	1.51E+1	1.37E+1	1.37E+1	1.98E+1	1.81E+1	1.81E+1	2.60E+1	2.41E+1	2.41E+1
	Ra-228	4.85E-2	4.81E-2	4.81E-2	4.99E-2	4.96E-2	4.96E-2	5.07E-2	5.04E-2	5.04E-2	5.15E-2	5.13E-2	5.13E-2	2.72E-1	1.38E-1	1.38E-1	8.35E-1	6.56E-1	6.56E-1
	Th-232	4.40E-2	4.37E-2	4.37E-2	4.54E-2	4.51E-2	4.51E-2	4.62E-2	4.59E-2	4.59E-2	5.77E-1	4.14E-1	4.14E-1	1.13E+0	9.35E-1	9.35E-1	2.02E+0	1.72E+0	1.72E+0
	U-234	9.80E+0	8.42E+0	8.42E+0	2.01E+1	1.72E+1	1.72E+1	3.08E+1	2.68E+1	2.68E+1	4.56E+1	4.17E+1	4.17E+1	5.86E+1	5.40E+1	5.40E+1	8.48E+1	7.38E+1	7.38E+1
	U-235	3.01E+0	2.75E+0	2.75E+0	5.30E+0	4.57E+0	4.57E+0	7.94E+0	6.96E+0	6.96E+0	1.15E+1	1.06E+1	1.06E+1	1.46E+1	1.35E+1	1.35E+1	1.86E+1	1.74E+1	1.74E+1
	U-238	8.89E+0	7.72E+0	7.72E+0	1.85E+1	1.58E+1	1.58E+1	2.89E+1	2.50E+1	2.50E+1	4.36E+1	3.97E+1	3.97E+1	5.65E+1	5.19E+1	5.19E+1	7.83E+1	6.83E+1	6.83E+1
II-4	Ra-226	8.66E-3	7.43E-3	7.43E-3	1.09E-2	8.99E-3	8.99E-3	1.33E-1	1.05E-2	1.05E-2	4.01E-1	1.65E-1	1.65E-1	6.38E-1	3.70E-1	3.70E-1	9.61E-1	6.50E-1	6.50E-1
	Th-230	1.92E+1	1.20E+1	1.20E+1	3.23E+1	2.10E+1	2.10E+1	4.15E+1	2.96E+1	2.96E+1	5.66E+1	4.32E+1	4.32E+1	7.02E+1	5.48E+1	5.48E+1	8.90E+1	7.09E+1	7.09E+1
	Ra-228	1.92E-1	7.06E-2	7.06E-2	4.19E-1	2.24E-1	2.24E-1	6.47E-1	3.71E-1	3.71E-1	1.11E+0	7.01E-1	7.01E-1	1.57E+0	1.05E+0	1.05E+0	2.23E+0	1.59E+0	1.59E+0
	Th-232	1.21E-1	1.69E-2	1.69E-2	4.21E-1	1.62E-1	1.62E-1	7.42E-1	3.57E-1	3.57E-1	1.45E+0	8.24E-1	8.24E-1	2.20E+0	1.37E+0	1.37E+0	3.35E+0	2.24E+0	2.24E+0
	U-234	1.65E+0	8.14E-1	8.14E-1	3.90E+0	1.91E+0	1.91E+0	7.36E+0	3.35E+0	3.35E+0	1.91E+1	8.38E+0	8.38E+0	4.16E+1	1.74E+1	1.74E+1	8.93E+1	4.29E+1	4.29E+1
	U-235	1.41E-3	8.40E-4	8.40E-4	2.31E-3	1.55E-3	1.55E-3	2.01E-2	2.14E-3	2.14E-3	2.02E-1	3.44E-2	3.44E-2	5.68E-1	1.71E-1	1.71E-1	1.72E+0	5.93E-1	5.93E-1
	U-238	5.09E-2	4.57E-2	4.57E-2	5.91E-2	5.22E-2	5.22E-2	8.55E-1	5.75E-2	5.75E-2	4.54E+0	1.13E+0	1.13E+0	1.22E+1	3.91E+0	3.91E+0	3.56E+1	1.27E+1	1.27E+1
II-5	Ra-226	9.61E-1	9.60E-1	9.60E-1	2.01E+0	2.01E+0	2.01E+0	3.06E+0	3.06E+0	3.06E+0	5.10E+0	5.09E+0	5.09E+0	7.10E+0	7.10E+0	7.10E+0	1.00E+1	1.00E+1	1.00E+1
	Th-230	2.62E-2	2.62E-2	2.62E-2	2.70E-2	2.70E-2	2.70E-2	2.79E-2	2.79E-2	2.79E-2	2.96E-2	2.96E-2	2.96E-2	3.13E-2	3.13E-2	3.13E-2	3.36E-2	3.36E-2	3.36E-2
	Ra-228	1.62E-2	1.62E-2	1.62E-2	1.72E-2	1.72E-2	1.72E-2	1.82E-2	1.82E-2	1.82E-2	2.04E-2	2.04E-2	2.04E-2	2.27E-2	2.27E-2	2.27E-2	2.33E-1	1.32E-1	1.32E-1
	Th-232	3.14E-2	3.14E-2	3.14E-2	3.22E-2	3.22E-2	3.22E-2	3.30E-2	3.30E-2	3.30E-2	1.09E-1	1.09E-1	1.09E-1	2.13E-1	2.12E-1	2.12E-1	3.93E-1	3.93E-1	3.93E-1
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	1.63E-3	1.63E-3	1.63E-3	1.70E-3	1.70E-3	1.70E-3	1.77E-3	1.77E-3	1.77E-3	1.92E-3	1.92E-3	1.92E-3	2.06E-3	2.06E-3	2.06E-3	2.25E-3	2.25E-3	2.25E-3
	U-238	3.89E-2	3.89E-2	3.89E-2	4.01E-2	4.01E-2	4.01E-2	4.13E-2	4.13E-2	4.13E-2	4.40E-2	4.40E-2	4.40E-2	4.65E-2	4.65E-2	4.65E-2	4.99E-2	4.99E-2	4.99E-2

09-13-94 4:02p
 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
		1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
II-6	Ra-226	9.37E-2	8.28E-2	8.28E-2	1.14E+0	4.03E-1	4.03E-1	2.19E+0	1.44E+0	1.44E+0	4.28E+0	3.50E+0	3.50E+0	6.37E+0	5.55E+0	5.55E+0	9.51E+0	8.65E+0	8.65E+0
	Th-230	1.68E+1	1.03E+1	1.03E+1	1.72E+1	1.71E+1	1.71E+1	1.77E+1	1.73E+1	1.73E+1	1.85E+1	1.82E+1	1.82E+1	1.93E+1	1.90E+1	1.90E+1	2.06E+1	2.02E+1	2.02E+1
	Ra-228	2.57E-1	2.93E-2	2.93E-2	2.78E-1	2.70E-1	2.70E-1	3.04E-1	2.85E-1	2.85E-1	3.50E-1	3.32E-1	3.32E-1	3.96E-1	3.79E-1	3.79E-1	4.67E-1	4.47E-1	4.47E-1
	Th-232	1.87E-2	1.68E-2	1.68E-2	1.89E-2	1.88E-2	1.88E-2	1.90E-2	1.89E-2	1.89E-2	1.92E-2	1.91E-2	1.91E-2	1.95E-2	1.94E-2	1.94E-2	2.51E-2	2.20E-2	2.20E-2
	U-234	4.68E+1	3.41E+1	3.41E+1	4.76E+1	4.73E+1	4.73E+1	4.85E+1	4.78E+1	4.78E+1	5.01E+1	4.95E+1	4.95E+1	5.17E+1	5.11E+1	5.11E+1	5.41E+1	5.34E+1	5.34E+1
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-238	2.46E+0	1.89E+0	1.89E+0	2.49E+0	2.48E+0	2.48E+0	2.53E+0	2.50E+0	2.50E+0	2.61E+0	2.58E+0	2.58E+0	2.69E+0	2.66E+0	2.66E+0	2.81E+0	2.77E+0	2.77E+0
II-7	U-234	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1
	U-235	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1
	U-238	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1
III	Cs-137	1.28E+1	1.28E+1	1.28E+1	2.56E+1	2.56E+1	2.56E+1	3.85E+1	3.85E+1	3.85E+1	6.41E+1	6.41E+1	6.41E+1	8.97E+1	8.97E+1	8.97E+1	1.28E+2	1.28E+2	1.28E+2
IV	U-234	1.84E+2	1.84E+2	1.84E+2	3.68E+2	3.68E+2	3.68E+2	5.52E+2	5.52E+2	5.52E+2	9.19E+2	9.19E+2	9.19E+2	1.29E+3	1.29E+3	1.29E+3	1.84E+3	1.84E+3	1.84E+3
	U-235	8.63E+0	8.63E+0	8.63E+0	1.73E+1	1.73E+1	1.73E+1	2.59E+1	2.59E+1	2.59E+1	4.32E+1	4.32E+1	4.32E+1	6.05E+1	6.05E+1	6.05E+1	8.64E+1	8.64E+1	8.64E+1
	U-238	1.84E+2	1.84E+2	1.84E+2	3.68E+2	3.68E+2	3.68E+2	5.52E+2	5.52E+2	5.52E+2	9.19E+2	9.19E+2	9.19E+2	1.29E+3	1.29E+3	1.29E+3	1.84E+3	1.84E+3	1.84E+3
V	Cs-137	1.28E+1	1.28E+1	1.28E+1	2.56E+1	2.56E+1	2.56E+1	3.85E+1	3.85E+1	3.85E+1	6.41E+1	6.41E+1	6.41E+1	8.97E+1	8.97E+1	8.97E+1	1.28E+2	1.28E+2	1.28E+2
VI	Cs-137	1.22E+1	1.22E+1	1.22E+1	2.38E+1	2.38E+1	2.38E+1	3.51E+1	3.51E+1	3.51E+1	5.68E+1	5.68E+1	5.68E+1	7.79E+1	7.79E+1	7.79E+1	1.09E+2	1.09E+2	1.09E+2
	U-234	1.53E+1	1.53E+1	1.53E+1	4.37E+1	4.37E+1	4.37E+1	8.03E+1	8.03E+1	8.03E+1	1.71E+2	1.71E+2	1.71E+2	2.80E+2	2.80E+2	2.80E+2	4.57E+2	4.57E+2	4.57E+2
	U-235	7.20E-1	7.20E-1	7.20E-1	2.06E+0	2.06E+0	2.06E+0	3.77E+0	3.77E+0	3.77E+0	8.04E+0	8.04E+0	8.04E+0	1.32E+1	1.32E+1	1.32E+1	2.15E+1	2.15E+1	2.15E+1
	U-238	1.53E+1	1.53E+1	1.53E+1	4.37E+1	4.37E+1	4.37E+1	8.03E+1	8.03E+1	8.03E+1	1.71E+2	1.71E+2	1.71E+2	2.80E+2	2.80E+2	2.80E+2	4.57E+2	4.57E+2	4.57E+2
VII	Pu-239	4.32E+2	4.32E+2	4.32E+2	1.14E+3	1.14E+3	1.14E+3	1.47E+3	1.47E+3	1.47E+3	1.50E+3	1.50E+3	1.50E+3	1.50E+3	1.50E+3	1.50E+3	1.50E+3	1.50E+3	1.50E+3
	Am-241	7.24E+1	7.24E+1	7.24E+1	1.90E+2	1.90E+2	1.90E+2	2.44E+2	2.44E+2	2.44E+2	2.50E+2	2.50E+2	2.50E+2	2.50E+2	2.50E+2	2.50E+2	2.50E+2	2.50E+2	2.50E+2
	Cs-137	8.33E+0	8.33E+0	8.33E+0	1.48E+1	1.48E+1	1.48E+1	2.38E+1	2.38E+1	2.38E+1	4.62E+1	4.62E+1	4.62E+1	6.87E+1	6.87E+1	6.87E+1	8.00E+1	8.00E+1	8.00E+1
IX	Pu-239	1.98E+3	1.98E+3	1.98E+3	2.98E+3	2.98E+3	2.98E+3	2.98E+3	2.98E+3	2.98E+3	2.98E+3	2.98E+3	2.98E+3	2.98E+3	2.98E+3	2.98E+3	2.98E+3	2.98E+3	2.98E+3
	Am-241	3.30E+2	3.30E+2	3.30E+2	4.97E+2	4.97E+2	4.97E+2	4.97E+2	4.97E+2	4.97E+2	4.97E+2	4.97E+2	4.97E+2	4.97E+2	4.97E+2	4.97E+2	4.97E+2	4.97E+2	4.97E+2
X	Tc-99	1.02E+1	3.54E+0	3.54E+0	2.07E+1	9.38E+0	9.38E+0	3.13E+1	1.71E+1	1.71E+1	5.24E+1	3.48E+1	3.48E+1	7.36E+1	5.36E+1	5.36E+1	1.05E+2	8.22E+1	8.22E+1
	U-238	5.86E+0	3.38E+0	3.38E+0	7.51E+0	5.66E+0	5.66E+0	8.47E+0	7.05E+0	7.05E+0	9.81E+0	8.71E+0	8.71E+0	1.11E+1	9.89E+0	9.89E+0	1.24E+1	1.15E+1	1.15E+1
	U-234	5.86E+0	3.38E+0	3.38E+0	7.51E+0	5.66E+0	5.66E+0	8.47E+0	7.05E+0	7.05E+0	9.81E+0	8.71E+0	8.71E+0	1.11E+1	9.89E+0	9.89E+0	1.24E+1	1.15E+1	1.15E+1
XII	Pu-239	7.08E+2	7.08E+2	7.08E+2	1.42E+3	1.42E+3	1.42E+3	2.12E+3	2.12E+3	2.12E+3	3.54E+3	3.54E+3	3.54E+3	4.95E+3	4.95E+3	4.95E+3	7.07E+3	7.07E+3	7.07E+3
	Am-241	1.18E+2	1.18E+2	1.18E+2	2.36E+2	2.36E+2	2.36E+2	3.54E+2	3.54E+2	3.54E+2	5.90E+2	5.90E+2	5.90E+2	8.25E+2	8.25E+2	8.25E+2	1.18E+3	1.18E+3	1.18E+3
XIIIA	U-238	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0
XIIIB	U-238	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0

MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
		1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIIC	U-238	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0
XVIA	Co-60	1.52E+0	1.52E+0	1.52E+0	3.02E+0	3.02E+0	3.02E+0	4.57E+0	4.57E+0	4.57E+0	7.68E+0	7.68E+0	7.68E+0	1.08E+1	1.08E+1	1.08E+1	1.53E+1	1.53E+1	1.53E+1
	Cs-137	3.05E-1	3.05E-1	3.05E-1	7.27E-1	7.27E-1	7.27E-1	9.22E-1	9.22E-1	9.22E-1	1.27E+0	1.27E+0	1.27E+0	1.68E+0	1.68E+0	1.68E+0	2.71E+0	2.71E+0	2.71E+0
XVIB	Co-60	1.52E+0	1.52E+0	1.52E+0	3.02E+0	3.02E+0	3.02E+0	4.57E+0	4.57E+0	4.57E+0	7.68E+0	7.68E+0	7.68E+0	1.08E+1	1.08E+1	1.08E+1	1.53E+1	1.53E+1	1.53E+1
	Cs-137	3.05E-1	3.05E-1	3.05E-1	7.27E-1	7.27E-1	7.27E-1	9.22E-1	9.22E-1	9.22E-1	1.27E+0	1.27E+0	1.27E+0	1.68E+0	1.68E+0	1.68E+0	2.71E+0	2.71E+0	2.71E+0
XVIC	Co-60	1.52E+0	1.52E+0	1.52E+0	3.02E+0	3.02E+0	3.02E+0	4.57E+0	4.57E+0	4.57E+0	7.68E+0	7.68E+0	7.68E+0	1.08E+1	1.08E+1	1.08E+1	1.53E+1	1.53E+1	1.53E+1
	Cs-137	3.05E-1	3.05E-1	3.05E-1	7.27E-1	7.27E-1	7.27E-1	9.22E-1	9.22E-1	9.22E-1	1.27E+0	1.27E+0	1.27E+0	1.68E+0	1.68E+0	1.68E+0	2.71E+0	2.71E+0	2.71E+0
XVIIIA	Cs-137	6.94E+0	6.94E+0	6.94E+0	1.39E+1	1.39E+1	1.39E+1	2.08E+1	2.08E+1	2.08E+1	3.47E+1	3.47E+1	3.47E+1	4.86E+1	4.86E+1	4.86E+1	6.94E+1	6.94E+1	6.94E+1
	Sr-90	6.94E+0	6.94E+0	6.94E+0	1.39E+1	1.39E+1	1.39E+1	2.08E+1	2.08E+1	2.08E+1	3.47E+1	3.47E+1	3.47E+1	4.86E+1	4.86E+1	4.86E+1	6.94E+1	6.94E+1	6.94E+1
XVIIIB	Cs-137	6.94E+0	6.94E+0	6.94E+0	1.39E+1	1.39E+1	1.39E+1	2.08E+1	2.08E+1	2.08E+1	3.47E+1	3.47E+1	3.47E+1	4.86E+1	4.86E+1	4.86E+1	6.94E+1	6.94E+1	6.94E+1
	Sr-90	6.94E+0	6.94E+0	6.94E+0	1.39E+1	1.39E+1	1.39E+1	2.08E+1	2.08E+1	2.08E+1	3.47E+1	3.47E+1	3.47E+1	4.86E+1	4.86E+1	4.86E+1	6.94E+1	6.94E+1	6.94E+1
XVIIIC	Cs-137	6.94E+0	6.94E+0	6.94E+0	1.39E+1	1.39E+1	1.39E+1	2.08E+1	2.08E+1	2.08E+1	3.47E+1	3.47E+1	3.47E+1	4.86E+1	4.86E+1	4.86E+1	6.94E+1	6.94E+1	6.94E+1
	Sr-90	6.94E+0	6.94E+0	6.94E+0	1.39E+1	1.39E+1	1.39E+1	2.08E+1	2.08E+1	2.08E+1	3.47E+1	3.47E+1	3.47E+1	4.86E+1	4.86E+1	4.86E+1	6.94E+1	6.94E+1	6.94E+1
XXA	U-234	4.08E+2	2.34E+2	2.34E+2	8.16E+2	4.68E+2	4.68E+2	1.22E+3	7.02E+2	7.02E+2	2.05E+3	1.17E+3	1.17E+3	2.91E+3	1.64E+3	1.64E+3	4.20E+3	2.35E+3	2.35E+3
	U-235	1.37E+1	7.87E+0	7.87E+0	2.75E+1	1.58E+1	1.58E+1	4.12E+1	2.36E+1	2.36E+1	6.76E+1	3.94E+1	3.94E+1	9.23E+1	5.51E+1	5.51E+1	1.28E+2	7.64E+1	7.64E+1
	U-238	6.99E+1	4.01E+1	4.01E+1	1.40E+2	8.02E+1	8.02E+1	2.10E+2	1.20E+2	1.20E+2	3.52E+2	2.00E+2	2.00E+2	4.98E+2	2.81E+2	2.81E+2	7.19E+2	4.03E+2	4.03E+2
XXB	U-234	4.08E+2	2.80E+2	2.80E+2	8.16E+2	5.61E+2	5.61E+2	1.22E+3	8.41E+2	8.41E+2	2.05E+3	1.40E+3	1.40E+3	2.91E+3	1.97E+3	1.97E+3	4.20E+3	2.82E+3	2.82E+3
	U-235	1.37E+1	9.44E+0	9.44E+0	2.75E+1	1.89E+1	1.89E+1	4.12E+1	2.83E+1	2.83E+1	6.76E+1	4.72E+1	4.72E+1	9.23E+1	6.51E+1	6.51E+1	1.28E+2	9.00E+1	9.00E+1
	U-238	6.99E+1	4.80E+1	4.80E+1	1.40E+2	9.61E+1	9.61E+1	2.10E+2	1.44E+2	1.44E+2	3.52E+2	2.40E+2	2.40E+2	4.98E+2	3.37E+2	3.37E+2	7.19E+2	4.84E+2	4.84E+2
XXC	U-234	4.08E+2	4.08E+2	4.08E+2	8.16E+2	8.16E+2	8.16E+2	1.22E+3	1.22E+3	1.22E+3	2.05E+3	2.05E+3	2.05E+3	2.91E+3	2.91E+3	2.91E+3	4.20E+3	4.20E+3	4.20E+3
	U-235	1.37E+1	1.37E+1	1.37E+1	2.75E+1	2.75E+1	2.75E+1	4.12E+1	4.12E+1	4.12E+1	6.76E+1	6.76E+1	6.76E+1	9.23E+1	9.23E+1	9.23E+1	1.28E+2	1.28E+2	1.28E+2
	U-238	6.99E+1	6.99E+1	6.99E+1	1.40E+2	1.40E+2	1.40E+2	2.10E+2	2.10E+2	2.10E+2	3.52E+2	3.52E+2	3.52E+2	4.98E+2	4.98E+2	4.98E+2	7.19E+2	7.19E+2	7.19E+2
XXIA	Th-232	1.27E+0	1.27E+0	1.27E+0	2.54E+0	2.54E+0	2.54E+0	3.81E+0	3.81E+0	3.81E+0	6.35E+0	6.35E+0	6.35E+0	8.88E+0	8.88E+0	8.88E+0	1.27E+1	1.27E+1	1.27E+1
XXIB	Th-232	1.27E+0	1.27E+0	1.27E+0	2.54E+0	2.54E+0	2.54E+0	3.81E+0	3.81E+0	3.81E+0	6.35E+0	6.35E+0	6.35E+0	8.88E+0	8.88E+0	8.88E+0	1.27E+1	1.27E+1	1.27E+1
XXIC	Th-232	1.27E+0	1.27E+0	1.27E+0	2.54E+0	2.54E+0	2.54E+0	3.81E+0	3.81E+0	3.81E+0	6.35E+0	6.35E+0	6.35E+0	8.88E+0	8.88E+0	8.88E+0	1.27E+1	1.27E+1	1.27E+1
XXII	Ra-226	1.29E-1	1.13E-1	1.13E-1	2.26E-1	2.12E-1	2.12E-1	3.24E-1	2.81E-1	2.81E-1	6.58E-1	5.91E-1	5.91E-1	9.73E-1	8.93E-1	8.93E-1	1.13E+0	1.08E+0	1.08E+0
	Th-232	6.47E-1	5.63E-1	5.63E-1	1.47E+0	1.21E+0	1.21E+0	2.31E+0	2.13E+0	2.13E+0	3.35E+0	3.18E+0	3.18E+0	4.40E+0	3.90E+0	3.90E+0	7.46E+0	6.42E+0	6.42E+0
	U-234	1.02E+0	7.18E-1	7.18E-1	1.37E+0	1.33E+0	1.33E+0	1.59E+0	1.53E+0	1.53E+0	2.10E+0	1.95E+0	1.95E+0	4.21E+0	3.63E+0	3.63E+0	5.56E+0	5.14E+0	5.14E+0
	U-235	4.78E-2	3.38E-2	3.38E-2	6.46E-2	6.24E-2	6.24E-2	7.46E-2	7.09E-2	7.09E-2	9.86E-2	9.16E-2	9.16E-2	1.98E-1	1.71E-1	1.71E-1	2.61E-1	2.42E-1	2.42E-1
	U-238	1.02E+0	7.18E-1	7.18E-1	1.37E+0	1.33E+0	1.33E+0	1.59E+0	1.51E+0	1.51E+0	2.10E+0	1.95E+0	1.95E+0	4.21E+0	3.63E+0	3.63E+0	5.56E+0	5.14E+0	5.14E+0

TABLE K-101. CLEANUP VOLUMES (m**3)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.00E+6	5.00E+6	5.00E+6	1.53E+6	1.53E+6	1.53E+6	4.66E+5	4.66E+5	4.66E+5	9.30E+4	9.30E+4	9.30E+4	8.82E+3	8.82E+3	8.82E+3
II	1.89E+6	1.90E+6	1.90E+6	1.30E+6	1.31E+6	1.31E+6	8.95E+5	9.28E+5	9.28E+5	7.73E+5	7.84E+5	7.84E+5	6.06E+5	6.17E+5	6.17E+5
III	8.44E+5	8.44E+5	8.44E+5	7.99E+5	7.99E+5	7.99E+5	4.63E+5	4.63E+5	4.63E+5	6.65E+4	6.65E+4	6.65E+4	.00E+0	.00E+0	.00E+0
IV	2.55E+5	2.55E+5	2.55E+5	9.73E+4	9.73E+4	9.73E+4	3.71E+4	3.71E+4	3.71E+4	1.42E+4	1.42E+4	1.42E+4	.00E+0	.00E+0	.00E+0
V	1.51E+7	1.51E+7	1.51E+7	1.05E+7	1.05E+7	1.05E+7	6.02E+6	6.02E+6	6.02E+6	2.26E+6	2.26E+6	2.26E+6	3.93E+5	3.93E+5	3.93E+5
VI	5.56E+5	5.56E+5	5.56E+5	3.96E+5	3.96E+5	3.96E+5	2.36E+5	2.36E+5	2.36E+5	1.06E+5	1.06E+5	1.06E+5	2.96E+4	2.96E+4	2.96E+4
VII	3.80E+7	3.80E+7	3.80E+7	9.26E+6	9.26E+6	9.26E+6	3.67E+6	3.67E+6	3.67E+6	1.96E+4	1.96E+4	1.96E+4	.00E+0	.00E+0	.00E+0
IX	1.65E+5	1.65E+5	1.65E+5	2.96E+4	2.96E+4	2.96E+4	1.98E+3	1.98E+3	1.98E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	8.33E+5	8.33E+5	8.33E+5	7.18E+5	7.82E+5	7.82E+5	4.03E+5	5.88E+5	5.88E+5	1.49E+5	1.82E+5	1.82E+5	3.31E+4	3.62E+4	3.62E+4
XII	6.88E+3	6.88E+3	6.88E+3	1.70E+3	1.70E+3	1.70E+3	1.41E+3	1.41E+3	1.41E+3	7.01E+2	7.01E+2	7.01E+2	4.94E+2	4.94E+2	4.94E+2
XIIIA	2.49E+3	2.49E+3	2.49E+3	6.89E+2	6.89E+2	6.89E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.49E+3	2.49E+3	2.49E+3	6.89E+2	6.89E+2	6.89E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.49E+3	2.49E+3	2.49E+3	6.89E+2	6.89E+2	6.89E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.27E+3	1.27E+3	1.27E+3	1.11E+3	1.11E+3	1.11E+3	9.41E+2	9.41E+2	9.41E+2	6.14E+2	6.14E+2	6.14E+2	2.50E+2	2.50E+2	2.50E+2
XVIB	1.27E+3	1.27E+3	1.27E+3	1.11E+3	1.11E+3	1.11E+3	9.41E+2	9.41E+2	9.41E+2	6.14E+2	6.14E+2	6.14E+2	2.50E+2	2.50E+2	2.50E+2
XVIC	1.27E+3	1.27E+3	1.27E+3	1.11E+3	1.11E+3	1.11E+3	9.41E+2	9.41E+2	9.41E+2	6.14E+2	6.14E+2	6.14E+2	2.50E+2	2.50E+2	2.50E+2
XVIIIA	5.92E+2	5.92E+2	5.92E+2	5.89E+2	5.89E+2	5.89E+2	5.80E+2	5.80E+2	5.80E+2	4.56E+2	4.56E+2	4.56E+2	1.69E+2	1.69E+2	1.69E+2
XVIIIB	5.92E+2	5.92E+2	5.92E+2	5.89E+2	5.89E+2	5.89E+2	5.80E+2	5.80E+2	5.80E+2	4.56E+2	4.56E+2	4.56E+2	1.69E+2	1.69E+2	1.69E+2
XVIIIC	5.92E+2	5.92E+2	5.92E+2	5.89E+2	5.89E+2	5.89E+2	5.80E+2	5.80E+2	5.80E+2	4.56E+2	4.56E+2	4.56E+2	1.69E+2	1.69E+2	1.69E+2
XXA	4.74E+5	4.74E+5	4.74E+5	5.50E+4	5.50E+4	5.50E+4	2.26E+3	2.26E+3	2.26E+3	3.00E+1	3.00E+1	3.00E+1	.00E+0	.00E+0	.00E+0
XXB	4.74E+5	4.74E+5	4.74E+5	5.50E+4	5.50E+4	5.50E+4	2.26E+3	2.26E+3	2.26E+3	3.00E+1	3.00E+1	3.00E+1	.00E+0	.00E+0	.00E+0
XXC	4.74E+5	4.74E+5	4.74E+5	5.50E+4	5.50E+4	5.50E+4	2.26E+3	2.26E+3	2.26E+3	3.00E+1	3.00E+1	3.00E+1	.00E+0	.00E+0	.00E+0
XXIA	3.45E+4	3.45E+4	3.45E+4	3.42E+4	3.42E+4	3.42E+4	3.18E+4	3.18E+4	3.18E+4	2.02E+4	2.02E+4	2.02E+4	4.60E+3	4.60E+3	4.60E+3
XXIB	3.45E+4	3.45E+4	3.45E+4	3.42E+4	3.42E+4	3.42E+4	3.18E+4	3.18E+4	3.18E+4	2.02E+4	2.02E+4	2.02E+4	4.60E+3	4.60E+3	4.60E+3
XXIC	3.45E+4	3.45E+4	3.45E+4	3.42E+4	3.42E+4	3.42E+4	3.18E+4	3.18E+4	3.18E+4	2.02E+4	2.02E+4	2.02E+4	4.60E+3	4.60E+3	4.60E+3
XXII	2.48E+6	2.48E+6	2.48E+6	1.83E+6	1.83E+6	1.83E+6	1.18E+6	1.19E+6	1.19E+6	6.34E+5	6.63E+5	6.63E+5	1.02E+5	1.73E+5	1.73E+5
DOE	9.19E+7	9.19E+7	9.19E+7	4.59E+7	4.60E+7	4.60E+7	2.55E+7	2.58E+7	2.58E+7	1.02E+7	1.04E+7	1.04E+7	2.42E+6	2.93E+6	2.93E+6
DOD	2.81E+4	2.81E+4	2.81E+4	7.55E+3	7.55E+3	7.55E+3	1.41E+3	1.41E+3	1.41E+3	7.01E+2	7.01E+2	7.01E+2	4.94E+2	4.94E+2	4.94E+2
NRC	7.59E+6	7.59E+6	7.59E+6	1.70E+6	1.70E+6	1.70E+6	8.85E+5	8.85E+5	8.85E+5	5.51E+5	5.51E+5	5.51E+5	1.43E+5	1.43E+5	1.43E+5
Total	9.95E+7	9.95E+7	9.95E+7	4.76E+7	4.77E+7	4.77E+7	2.64E+7	2.67E+7	2.67E+7	1.07E+7	1.10E+7	1.10E+7	2.56E+6	3.07E+6	3.07E+6

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 TABLE K-102. CLEANUP VOLUMES (m**3)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.66E+5	4.66E+5	4.66E+5	3.03E+5	3.03E+5	3.03E+5	2.26E+5	2.26E+5	2.26E+5	1.56E+5	1.56E+5	1.56E+5	1.21E+5	1.21E+5	1.21E+5	9.30E+4	9.30E+4	9.30E+4
II	8.95E+5	9.28E+5	9.28E+5	8.27E+5	8.87E+5	8.87E+5	7.99E+5	8.49E+5	8.49E+5	7.91E+5	7.99E+5	7.99E+5	7.83E+5	7.93E+5	7.93E+5	7.73E+5	7.84E+5	7.84E+5
III	4.63E+5	4.63E+5	4.63E+5	2.52E+5	2.52E+5	2.52E+5	1.72E+5	1.72E+5	1.72E+5	1.31E+5	1.31E+5	1.31E+5	9.99E+4	9.99E+4	9.99E+4	6.65E+4	6.65E+4	6.65E+4
IV	3.71E+4	3.71E+4	3.71E+4	2.96E+4	2.96E+4	2.96E+4	2.57E+4	2.57E+4	2.57E+4	2.08E+4	2.08E+4	2.08E+4	1.76E+4	1.76E+4	1.76E+4	1.42E+4	1.42E+4	1.42E+4
V	6.02E+6	6.02E+6	6.02E+6	4.66E+6	4.66E+6	4.66E+6	3.95E+6	3.95E+6	3.95E+6	3.23E+6	3.23E+6	3.23E+6	2.76E+6	2.76E+6	2.76E+6	2.26E+6	2.26E+6	2.26E+6
VI	2.36E+5	2.36E+5	2.36E+5	1.89E+5	1.89E+5	1.89E+5	1.62E+5	1.62E+5	1.62E+5	1.37E+5	1.37E+5	1.37E+5	1.22E+5	1.22E+5	1.22E+5	1.06E+5	1.06E+5	1.06E+5
VII	3.67E+6	3.67E+6	3.67E+6	1.48E+6	1.48E+6	1.48E+6	7.26E+5	7.26E+5	7.26E+5	2.98E+5	2.98E+5	2.98E+5	1.40E+5	1.40E+5	1.40E+5	1.96E+4	1.96E+4	1.96E+4
IX	1.98E+3	1.98E+3	1.98E+3	5.83E+2	5.83E+2	5.83E+2	2.51E+2	2.51E+2	2.51E+2	6.98E+1	6.98E+1	6.98E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	4.03E+5	5.88E+5	5.88E+5	2.98E+5	4.58E+5	4.58E+5	2.50E+5	3.77E+5	3.77E+5	2.00E+5	2.78E+5	2.78E+5	1.73E+5	2.26E+5	2.26E+5	1.49E+5	1.82E+5	1.82E+5
XII	1.41E+3	1.41E+3	1.41E+3	1.13E+3	1.13E+3	1.13E+3	9.87E+2	9.87E+2	9.87E+2	8.36E+2	8.36E+2	8.36E+2	7.49E+2	7.49E+2	7.49E+2	7.01E+2	7.01E+2	7.01E+2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.41E+2	9.41E+2	9.41E+2	8.83E+2	8.83E+2	8.83E+2	8.10E+2	8.10E+2	8.10E+2	7.09E+2	7.09E+2	7.09E+2	6.50E+2	6.50E+2	6.50E+2	6.14E+2	6.14E+2	6.14E+2
XVIB	9.41E+2	9.41E+2	9.41E+2	8.83E+2	8.83E+2	8.83E+2	8.10E+2	8.10E+2	8.10E+2	7.09E+2	7.09E+2	7.09E+2	6.50E+2	6.50E+2	6.50E+2	6.14E+2	6.14E+2	6.14E+2
XVIC	9.41E+2	9.41E+2	9.41E+2	8.83E+2	8.83E+2	8.83E+2	8.10E+2	8.10E+2	8.10E+2	7.09E+2	7.09E+2	7.09E+2	6.50E+2	6.50E+2	6.50E+2	6.14E+2	6.14E+2	6.14E+2
XVIIIA	5.80E+2	5.80E+2	5.80E+2	5.57E+2	5.57E+2	5.57E+2	5.38E+2	5.38E+2	5.38E+2	5.15E+2	5.15E+2	5.15E+2	5.00E+2	5.00E+2	5.00E+2	4.56E+2	4.56E+2	4.56E+2
XVIIIB	5.80E+2	5.80E+2	5.80E+2	5.57E+2	5.57E+2	5.57E+2	5.38E+2	5.38E+2	5.38E+2	5.15E+2	5.15E+2	5.15E+2	5.00E+2	5.00E+2	5.00E+2	4.56E+2	4.56E+2	4.56E+2
XVIIIC	5.80E+2	5.80E+2	5.80E+2	5.57E+2	5.57E+2	5.57E+2	5.38E+2	5.38E+2	5.38E+2	5.15E+2	5.15E+2	5.15E+2	5.00E+2	5.00E+2	5.00E+2	4.56E+2	4.56E+2	4.56E+2
XXA	2.26E+3	2.26E+3	2.26E+3	1.24E+2	1.24E+2	1.24E+2	8.67E+1	8.67E+1	8.67E+1	5.53E+1	5.53E+1	5.53E+1	4.11E+1	4.11E+1	4.11E+1	3.00E+1	3.00E+1	3.00E+1
XXB	2.26E+3	2.26E+3	2.26E+3	1.24E+2	1.24E+2	1.24E+2	8.67E+1	8.67E+1	8.67E+1	5.53E+1	5.53E+1	5.53E+1	4.11E+1	4.11E+1	4.11E+1	3.00E+1	3.00E+1	3.00E+1
XXC	2.26E+3	2.26E+3	2.26E+3	1.24E+2	1.24E+2	1.24E+2	8.67E+1	8.67E+1	8.67E+1	5.53E+1	5.53E+1	5.53E+1	4.11E+1	4.11E+1	4.11E+1	3.00E+1	3.00E+1	3.00E+1
XXIA	3.18E+4	3.18E+4	3.18E+4	2.84E+4	2.84E+4	2.84E+4	2.64E+4	2.64E+4	2.64E+4	2.38E+4	2.38E+4	2.38E+4	2.21E+4	2.21E+4	2.21E+4	2.02E+4	2.02E+4	2.02E+4
XXIB	3.18E+4	3.18E+4	3.18E+4	2.84E+4	2.84E+4	2.84E+4	2.64E+4	2.64E+4	2.64E+4	2.38E+4	2.38E+4	2.38E+4	2.21E+4	2.21E+4	2.21E+4	2.02E+4	2.02E+4	2.02E+4
XXIC	3.18E+4	3.18E+4	3.18E+4	2.84E+4	2.84E+4	2.84E+4	2.64E+4	2.64E+4	2.64E+4	2.38E+4	2.38E+4	2.38E+4	2.21E+4	2.21E+4	2.21E+4	2.02E+4	2.02E+4	2.02E+4
XXII	1.18E+6	1.19E+6	1.19E+6	9.94E+5	1.03E+6	1.03E+6	8.78E+5	9.35E+5	9.35E+5	8.06E+5	8.20E+5	8.20E+5	7.45E+5	7.79E+5	7.79E+5	6.34E+5	6.63E+5	6.63E+5
DOE	2.55E+7	2.58E+7	2.58E+7	1.90E+7	1.95E+7	1.95E+7	1.59E+7	1.65E+7	1.65E+7	1.35E+7	1.37E+7	1.37E+7	1.20E+7	1.23E+7	1.23E+7	1.02E+7	1.04E+7	1.04E+7
DOD	1.41E+3	1.41E+3	1.41E+3	1.13E+3	1.13E+3	1.13E+3	9.87E+2	9.87E+2	9.87E+2	8.36E+2	8.36E+2	8.36E+2	7.49E+2	7.49E+2	7.49E+2	7.01E+2	7.01E+2	7.01E+2
NRC	8.85E+5	8.85E+5	8.85E+5	7.73E+5	7.73E+5	7.73E+5	7.17E+5	7.17E+5	7.17E+5	6.45E+5	6.45E+5	6.45E+5	5.99E+5	5.99E+5	5.99E+5	5.51E+5	5.51E+5	5.51E+5
Total	2.64E+7	2.67E+7	2.67E+7	1.98E+7	2.03E+7	2.03E+7	1.66E+7	1.72E+7	1.72E+7	1.42E+7	1.44E+7	1.44E+7	1.26E+7	1.29E+7	1.29E+7	1.07E+7	1.10E+7	1.10E+7

TABLE K-103. CLEANUP VOLUMES (m**3)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.66E+6	2.66E+6	2.66E+6	8.12E+5	8.12E+5	8.12E+5	2.06E+5	2.06E+5	2.06E+5	3.59E+4	3.59E+4	3.59E+4	1.70E+3	1.70E+3	1.70E+3
II	1.53E+6	1.54E+6	1.54E+6	9.56E+5	9.60E+5	9.60E+5	7.97E+5	8.32E+5	8.32E+5	7.15E+5	7.24E+5	7.24E+5	2.76E+5	2.92E+5	2.92E+5
III	8.32E+5	8.32E+5	8.32E+5	6.91E+5	6.91E+5	6.91E+5	1.62E+5	1.62E+5	1.62E+5	5.53E+3	5.53E+3	5.53E+3	.00E+0	.00E+0	.00E+0
IV	1.48E+5	1.48E+5	1.48E+5	5.65E+4	5.65E+4	5.65E+4	2.38E+4	2.38E+4	2.38E+4	1.72E+3	1.72E+3	1.72E+3	.00E+0	.00E+0	.00E+0
V	1.27E+7	1.27E+7	1.27E+7	8.13E+6	8.13E+6	8.13E+6	3.77E+6	3.77E+6	3.77E+6	7.88E+5	7.88E+5	7.88E+5	2.99E+4	2.99E+4	2.99E+4
VI	4.71E+5	4.71E+5	4.71E+5	3.11E+5	3.11E+5	3.11E+5	1.54E+5	1.54E+5	1.54E+5	5.41E+4	5.41E+4	5.41E+4	1.08E+4	1.08E+4	1.08E+4
VII	1.62E+7	1.62E+7	1.62E+7	6.66E+6	6.66E+6	6.66E+6	5.41E+5	5.41E+5	5.41E+5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	6.21E+4	6.21E+4	6.21E+4	7.06E+3	7.06E+3	7.06E+3	1.45E+2	1.45E+2	1.45E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	7.85E+5	8.00E+5	8.00E+5	5.65E+5	7.47E+5	7.47E+5	2.61E+5	4.07E+5	4.07E+5	8.97E+4	1.02E+5	1.02E+5	1.33E+4	1.41E+4	1.41E+4
XII	2.17E+3	2.17E+3	2.17E+3	1.55E+3	1.55E+3	1.55E+3	8.06E+2	8.06E+2	8.06E+2	5.73E+2	5.73E+2	5.73E+2	8.26E+1	8.26E+1	8.26E+1
XIIIA	1.41E+3	1.41E+3	1.41E+3	1.92E+2	1.92E+2	1.92E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.41E+3	1.41E+3	1.41E+3	1.92E+2	1.92E+2	1.92E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.41E+3	1.41E+3	1.41E+3	1.92E+2	1.92E+2	1.92E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.19E+3	1.19E+3	1.19E+3	1.03E+3	1.03E+3	1.03E+3	7.95E+2	7.95E+2	7.95E+2	4.56E+2	4.56E+2	4.56E+2	8.87E+1	8.87E+1	8.87E+1
XVIB	1.19E+3	1.19E+3	1.19E+3	1.03E+3	1.03E+3	1.03E+3	7.95E+2	7.95E+2	7.95E+2	4.56E+2	4.56E+2	4.56E+2	8.87E+1	8.87E+1	8.87E+1
XVIC	1.19E+3	1.19E+3	1.19E+3	1.03E+3	1.03E+3	1.03E+3	7.95E+2	7.95E+2	7.95E+2	4.56E+2	4.56E+2	4.56E+2	8.87E+1	8.87E+1	8.87E+1
XVIIIA	5.92E+2	5.92E+2	5.92E+2	5.84E+2	5.84E+2	5.84E+2	5.30E+2	5.30E+2	5.30E+2	2.97E+2	2.97E+2	2.97E+2	5.97E+1	5.97E+1	5.97E+1
XVIIIB	5.92E+2	5.92E+2	5.92E+2	5.84E+2	5.84E+2	5.84E+2	5.30E+2	5.30E+2	5.30E+2	2.97E+2	2.97E+2	2.97E+2	5.97E+1	5.97E+1	5.97E+1
XVIIIC	5.92E+2	5.92E+2	5.92E+2	5.84E+2	5.84E+2	5.84E+2	5.30E+2	5.30E+2	5.30E+2	2.97E+2	2.97E+2	2.97E+2	5.97E+1	5.97E+1	5.97E+1
XXA	1.11E+5	1.11E+5	1.11E+5	1.12E+4	1.12E+4	1.12E+4	5.84E+1	5.84E+1	5.84E+1	6.51E+0	6.51E+0	6.51E+0	.00E+0	.00E+0	.00E+0
XXB	1.11E+5	1.11E+5	1.11E+5	1.12E+4	1.12E+4	1.12E+4	5.84E+1	5.84E+1	5.84E+1	6.51E+0	6.51E+0	6.51E+0	.00E+0	.00E+0	.00E+0
XXC	1.11E+5	1.11E+5	1.11E+5	1.12E+4	1.12E+4	1.12E+4	5.84E+1	5.84E+1	5.84E+1	6.51E+0	6.51E+0	6.51E+0	.00E+0	.00E+0	.00E+0
XXIA	3.44E+4	3.44E+4	3.44E+4	3.36E+4	3.36E+4	3.36E+4	2.57E+4	2.57E+4	2.57E+4	1.04E+4	1.04E+4	1.04E+4	1.10E+3	1.10E+3	1.10E+3
XXIB	3.44E+4	3.44E+4	3.44E+4	3.36E+4	3.36E+4	3.36E+4	2.57E+4	2.57E+4	2.57E+4	1.04E+4	1.04E+4	1.04E+4	1.10E+3	1.10E+3	1.10E+3
XXIC	3.44E+4	3.44E+4	3.44E+4	3.36E+4	3.36E+4	3.36E+4	2.57E+4	2.57E+4	2.57E+4	1.04E+4	1.04E+4	1.04E+4	1.10E+3	1.10E+3	1.10E+3
XXII	2.12E+6	2.12E+6	2.12E+6	1.47E+6	1.47E+6	1.47E+6	8.43E+5	9.07E+5	9.07E+5	4.90E+5	4.99E+5	4.99E+5	.00E+0	.00E+0	.00E+0
DOE	6.02E+7	6.02E+7	6.02E+7	3.51E+7	3.53E+7	3.53E+7	1.51E+7	1.57E+7	1.57E+7	6.25E+6	6.34E+6	6.34E+6	5.69E+5	5.86E+5	5.86E+5
DOD	1.41E+4	1.41E+4	1.41E+4	3.18E+3	3.18E+3	3.18E+3	8.06E+2	8.06E+2	8.06E+2	5.73E+2	5.73E+2	5.73E+2	8.26E+1	8.26E+1	8.26E+1
NRC	2.50E+6	2.50E+6	2.50E+6	1.06E+6	1.06E+6	1.06E+6	6.98E+5	6.98E+5	6.98E+5	3.05E+5	3.05E+5	3.05E+5	3.90E+4	3.90E+4	3.90E+4
Total	6.27E+7	6.28E+7	6.28E+7	3.62E+7	3.64E+7	3.64E+7	1.58E+7	1.64E+7	1.64E+7	6.56E+6	6.64E+6	6.64E+6	6.08E+5	6.25E+5	6.25E+5

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 TABLE K-104. CLEANUP VOLUMES (m**3)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.06E+5	2.06E+5	2.06E+5	1.24E+5	1.24E+5	1.24E+5	9.14E+4	9.14E+4	9.14E+4	6.36E+4	6.36E+4	6.36E+4	5.22E+4	5.22E+4	5.22E+4	3.59E+4	3.59E+4	3.59E+4
II	7.97E+5	8.32E+5	8.32E+5	7.83E+5	7.94E+5	7.94E+5	7.72E+5	7.83E+5	7.83E+5	7.52E+5	7.63E+5	7.63E+5	7.36E+5	7.46E+5	7.46E+5	7.15E+5	7.24E+5	7.24E+5
III	1.62E+5	1.62E+5	1.62E+5	1.02E+5	1.02E+5	1.02E+5	6.45E+4	6.45E+4	6.45E+4	2.57E+4	2.57E+4	2.57E+4	1.02E+4	1.02E+4	1.02E+4	5.53E+3	5.53E+3	5.53E+3
IV	2.38E+4	2.38E+4	2.38E+4	1.71E+4	1.71E+4	1.71E+4	1.33E+4	1.33E+4	1.33E+4	8.37E+3	8.37E+3	8.37E+3	5.14E+3	5.14E+3	5.14E+3	1.72E+3	1.72E+3	1.72E+3
V	3.77E+6	3.77E+6	3.77E+6	2.80E+6	2.80E+6	2.80E+6	2.22E+6	2.22E+6	2.22E+6	1.50E+6	1.50E+6	1.50E+6	1.03E+6	1.03E+6	1.03E+6	7.88E+5	7.88E+5	7.88E+5
VI	1.54E+5	1.54E+5	1.54E+5	1.23E+5	1.23E+5	1.23E+5	1.05E+5	1.05E+5	1.05E+5	8.30E+4	8.30E+4	8.30E+4	6.85E+4	6.85E+4	6.85E+4	5.41E+4	5.41E+4	5.41E+4
VII	5.41E+5	5.41E+5	5.41E+5	1.22E+5	1.22E+5	1.22E+5	1.02E+4	1.02E+4	1.02E+4	8.70E+2	8.70E+2	8.70E+2	2.40E+2	2.40E+2	2.40E+2	.00E+0	.00E+0	.00E+0
IX	1.45E+2	1.45E+2	1.45E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	2.61E+5	4.07E+5	4.07E+5	1.94E+5	2.70E+5	2.70E+5	1.63E+5	2.10E+5	2.10E+5	1.30E+5	1.56E+5	1.56E+5	1.08E+5	1.28E+5	1.28E+5	8.97E+4	1.02E+5	1.02E+5
XII	8.06E+2	8.06E+2	8.06E+2	6.91E+2	6.91E+2	6.91E+2	6.59E+2	6.59E+2	6.59E+2	6.21E+2	6.21E+2	6.21E+2	5.97E+2	5.97E+2	5.97E+2	5.73E+2	5.73E+2	5.73E+2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	7.95E+2	7.95E+2	7.95E+2	6.57E+2	6.57E+2	6.57E+2	6.17E+2	6.17E+2	6.17E+2	5.66E+2	5.66E+2	5.66E+2	5.26E+2	5.26E+2	5.26E+2	4.56E+2	4.56E+2	4.56E+2
XVIB	7.95E+2	7.95E+2	7.95E+2	6.57E+2	6.57E+2	6.57E+2	6.17E+2	6.17E+2	6.17E+2	5.66E+2	5.66E+2	5.66E+2	5.26E+2	5.26E+2	5.26E+2	4.56E+2	4.56E+2	4.56E+2
XVIC	7.95E+2	7.95E+2	7.95E+2	6.57E+2	6.57E+2	6.57E+2	6.17E+2	6.17E+2	6.17E+2	5.66E+2	5.66E+2	5.66E+2	5.26E+2	5.26E+2	5.26E+2	4.56E+2	4.56E+2	4.56E+2
XVIIIA	5.30E+2	5.30E+2	5.30E+2	4.98E+2	4.98E+2	4.98E+2	4.47E+2	4.47E+2	4.47E+2	3.84E+2	3.84E+2	3.84E+2	3.42E+2	3.42E+2	3.42E+2	2.97E+2	2.97E+2	2.97E+2
XVIIIB	5.30E+2	5.30E+2	5.30E+2	4.98E+2	4.98E+2	4.98E+2	4.47E+2	4.47E+2	4.47E+2	3.84E+2	3.84E+2	3.84E+2	3.42E+2	3.42E+2	3.42E+2	2.97E+2	2.97E+2	2.97E+2
XVIIIC	5.30E+2	5.30E+2	5.30E+2	4.98E+2	4.98E+2	4.98E+2	4.47E+2	4.47E+2	4.47E+2	3.84E+2	3.84E+2	3.84E+2	3.42E+2	3.42E+2	3.42E+2	2.97E+2	2.97E+2	2.97E+2
XXA	5.84E+1	5.84E+1	5.84E+1	3.17E+1	3.17E+1	3.17E+1	2.22E+1	2.22E+1	2.22E+1	1.46E+1	1.46E+1	1.46E+1	1.07E+1	1.07E+1	1.07E+1	6.51E+0	6.51E+0	6.51E+0
XXB	5.84E+1	5.84E+1	5.84E+1	3.17E+1	3.17E+1	3.17E+1	2.22E+1	2.22E+1	2.22E+1	1.46E+1	1.46E+1	1.46E+1	1.07E+1	1.07E+1	1.07E+1	6.51E+0	6.51E+0	6.51E+0
XXC	5.84E+1	5.84E+1	5.84E+1	3.17E+1	3.17E+1	3.17E+1	2.22E+1	2.22E+1	2.22E+1	1.46E+1	1.46E+1	1.46E+1	1.07E+1	1.07E+1	1.07E+1	6.51E+0	6.51E+0	6.51E+0
XXIA	2.57E+4	2.57E+4	2.57E+4	2.21E+4	2.21E+4	2.21E+4	2.01E+4	2.01E+4	2.01E+4	1.71E+4	1.71E+4	1.71E+4	1.36E+4	1.36E+4	1.36E+4	1.04E+4	1.04E+4	1.04E+4
XXIB	2.57E+4	2.57E+4	2.57E+4	2.21E+4	2.21E+4	2.21E+4	2.01E+4	2.01E+4	2.01E+4	1.71E+4	1.71E+4	1.71E+4	1.36E+4	1.36E+4	1.36E+4	1.04E+4	1.04E+4	1.04E+4
XXIC	2.57E+4	2.57E+4	2.57E+4	2.21E+4	2.21E+4	2.21E+4	2.01E+4	2.01E+4	2.01E+4	1.71E+4	1.71E+4	1.71E+4	1.36E+4	1.36E+4	1.36E+4	1.04E+4	1.04E+4	1.04E+4
XXII	8.43E+5	9.07E+5	9.07E+5	7.47E+5	7.87E+5	7.87E+5	6.19E+5	6.58E+5	6.58E+5	5.34E+5	5.45E+5	5.45E+5	5.14E+5	5.23E+5	5.23E+5	4.90E+5	4.99E+5	4.99E+5
DOE	1.51E+7	1.57E+7	1.57E+7	1.21E+7	1.25E+7	1.25E+7	1.00E+7	1.03E+7	1.03E+7	8.06E+6	8.18E+6	8.18E+6	7.05E+6	7.14E+6	7.14E+6	6.25E+6	6.34E+6	6.34E+6
DOD	8.06E+2	8.06E+2	8.06E+2	6.91E+2	6.91E+2	6.91E+2	6.59E+2	6.59E+2	6.59E+2	6.21E+2	6.21E+2	6.21E+2	5.97E+2	5.97E+2	5.97E+2	5.73E+2	5.73E+2	5.73E+2
NRC	6.98E+5	6.98E+5	6.98E+5	6.01E+5	6.01E+5	6.01E+5	5.47E+5	5.47E+5	5.47E+5	4.72E+5	4.72E+5	4.72E+5	3.88E+5	3.88E+5	3.88E+5	3.05E+5	3.05E+5	3.05E+5
Total	1.58E+7	1.64E+7	1.64E+7	1.27E+7	1.31E+7	1.31E+7	1.06E+7	1.09E+7	1.09E+7	8.54E+6	8.65E+6	8.65E+6	7.44E+6	7.53E+6	7.53E+6	6.56E+6	6.64E+6	6.64E+6

High Population Density Without Agriculture - 09-13-94 4:11p
 TABLE K-105. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.16E+4	2.35E+4	2.35E+4	2.12E+4	2.30E+4	2.30E+4	2.01E+4	2.18E+4	2.18E+4	1.61E+4	1.75E+4	1.75E+4	7.21E+3	7.83E+3	7.83E+3
II	1.84E+5	1.71E+6	8.37E+6	1.84E+5	1.71E+6	8.37E+6	1.84E+5	1.71E+6	8.37E+6	1.83E+5	1.70E+6	8.29E+6	1.77E+5	1.64E+6	7.90E+6
III	9.48E+3	1.05E+4	1.05E+4	9.47E+3	1.05E+4	1.05E+4	8.83E+3	9.78E+3	9.78E+3	4.68E+3	5.18E+3	5.18E+3	.00E+0	.00E+0	.00E+0
IV	2.82E+3	7.01E+3	7.07E+3	2.79E+3	6.92E+3	6.99E+3	2.66E+3	6.61E+3	6.67E+3	2.09E+3	5.20E+3	5.25E+3	.00E+0	.00E+0	.00E+0
V	5.61E+5	6.08E+5	6.08E+5	5.60E+5	6.08E+5	6.08E+5	5.54E+5	6.01E+5	6.01E+5	5.07E+5	5.50E+5	5.50E+5	3.33E+5	3.61E+5	3.61E+5
VI	1.52E+5	9.24E+5	2.46E+6	1.52E+5	9.24E+5	2.46E+6	1.52E+5	9.24E+5	2.46E+6	1.50E+5	9.18E+5	2.45E+6	1.34E+5	8.49E+5	2.27E+6
VII	8.24E+5	7.40E+6	6.01E+7	6.74E+5	6.01E+6	4.88E+7	4.89E+5	4.36E+6	3.54E+7	1.26E+4	1.12E+5	9.13E+5	.00E+0	.00E+0	.00E+0
IX	3.79E+3	3.41E+4	2.17E+5	2.76E+3	2.48E+4	1.58E+5	9.46E+2	8.50E+3	5.42E+4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.39E+3	1.86E+4	2.12E+4	1.39E+3	1.86E+4	2.12E+4	1.39E+3	1.80E+4	2.05E+4	1.35E+3	1.20E+4	1.36E+4	1.19E+3	5.58E+3	6.24E+3
XII	5.11E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.03E+2	1.54E+3	1.58E+3	4.75E+2	1.45E+3	1.49E+3
XIIIA	2.13E+0	6.93E+0	8.00E+0	1.53E+0	4.97E+0	5.74E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.71E+0	3.05E+0	3.25E+0	1.23E+0	2.19E+0	2.33E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.13E+0	1.34E+0	4.28E+1	8.10E-1	9.59E-1	3.07E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E+1	3.84E+1	3.84E+1	3.65E+1	3.84E+1	3.84E+1	3.65E+1	3.84E+1	3.84E+1	3.61E+1	3.80E+1	3.80E+1	3.18E+1	3.36E+1	3.36E+1
XVIB	3.61E+1	3.79E+1	3.79E+1	3.61E+1	3.79E+1	3.79E+1	3.61E+1	3.78E+1	3.78E+1	3.57E+1	3.75E+1	3.75E+1	3.14E+1	3.31E+1	3.31E+1
XVIC	3.52E+1	3.67E+1	3.67E+1	3.52E+1	3.67E+1	3.67E+1	3.52E+1	3.67E+1	3.67E+1	3.48E+1	3.64E+1	3.64E+1	3.06E+1	3.21E+1	3.21E+1
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.02E+2	1.13E+2	1.13E+2	8.93E+1	9.88E+1	9.88E+1
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.00E+2	1.11E+2	1.11E+2	8.78E+1	9.70E+1	9.70E+1
XVIIIC	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.72E+1	1.06E+2	1.06E+2	8.50E+1	9.27E+1	9.27E+1
XXA	3.02E+1	1.07E+2	3.69E+2	1.91E+1	6.72E+1	2.33E+2	3.97E+0	1.40E+1	4.86E+1	9.35E-1	3.30E+0	1.15E+1	.00E+0	.00E+0	.00E+0
XXB	2.44E+1	4.69E+1	1.07E+2	1.54E+1	2.96E+1	6.73E+1	3.20E+0	6.16E+0	1.40E+1	7.54E-1	1.45E+0	3.33E+0	.00E+0	.00E+0	.00E+0
XXC	1.61E+1	2.02E+1	7.04E+3	1.01E+1	1.28E+1	4.44E+3	2.11E+0	2.66E+0	9.27E+2	4.98E-1	6.27E-1	2.20E+2	.00E+0	.00E+0	.00E+0
XXIA	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.81E+2	2.92E+3	2.77E+4	1.91E+2	1.99E+3	1.88E+4
XXIB	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.96E+3	2.57E+4	2.79E+2	2.89E+3	2.50E+4	1.90E+2	1.96E+3	1.70E+4
XXIC	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.85E+3	2.07E+4	2.76E+2	2.78E+3	2.02E+4	1.87E+2	1.89E+3	1.37E+4
XXII	8.67E+3	1.19E+5	2.38E+5	8.66E+3	1.19E+5	2.38E+5	8.61E+3	1.18E+5	2.37E+5	8.21E+3	1.13E+5	2.28E+5	2.59E+3	5.27E+4	1.07E+5
DOE	5.13E+6	3.16E+7	1.27E+8	4.98E+6	3.02E+7	1.16E+8	4.78E+6	2.85E+7	1.02E+8	4.19E+6	2.40E+7	6.69E+7	3.57E+6	2.16E+7	6.06E+7
DOD	5.25E+2	1.59E+3	1.75E+3	5.20E+2	1.58E+3	1.71E+3	5.10E+2	1.56E+3	1.60E+3	5.03E+2	1.54E+3	1.58E+3	4.75E+2	1.45E+3	1.49E+3
NRC	1.75E+4	7.72E+4	5.96E+5	1.73E+4	7.69E+4	5.83E+5	1.72E+4	7.65E+4	5.65E+5	1.69E+4	7.46E+4	5.47E+5	1.36E+4	5.30E+4	3.73E+5
Total	5.15E+6	3.17E+7	1.27E+8	4.99E+6	3.03E+7	1.16E+8	4.79E+6	2.86E+7	1.02E+8	4.21E+6	2.41E+7	6.74E+7	3.58E+6	2.17E+7	6.10E+7

High Population Density Without Agriculture - 09-13-94 4:11p
 TABLE K-106. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.01E+4	2.18E+4	2.18E+4	1.92E+4	2.09E+4	2.09E+4	1.86E+4	2.02E+4	2.02E+4	1.76E+4	1.91E+4	1.91E+4	1.69E+4	1.84E+4	1.84E+4	1.61E+4	1.75E+4	1.75E+4
II	1.84E+5	1.71E+6	8.36E+6	1.84E+5	1.71E+6	8.35E+6	1.83E+5	1.71E+6	8.34E+6	1.83E+5	1.70E+6	8.30E+6	1.83E+5	1.70E+6	8.30E+6	1.83E+5	1.70E+6	8.29E+6
III	8.83E+3	9.78E+3	9.78E+3	7.70E+3	8.53E+3	8.53E+3	7.01E+3	7.76E+3	7.76E+3	6.41E+3	7.10E+3	7.10E+3	5.72E+3	6.34E+3	6.34E+3	4.68E+3	5.18E+3	5.18E+3
IV	2.66E+3	6.61E+3	6.67E+3	2.59E+3	6.44E+3	6.50E+3	2.53E+3	6.28E+3	6.34E+3	2.40E+3	5.97E+3	6.03E+3	2.28E+3	5.67E+3	5.72E+3	2.09E+3	5.20E+3	5.25E+3
V	5.54E+5	6.01E+5	6.01E+5	5.47E+5	5.94E+5	5.94E+5	5.41E+5	5.87E+5	5.87E+5	5.31E+5	5.77E+5	5.77E+5	5.22E+5	5.66E+5	5.66E+5	5.07E+5	5.50E+5	5.50E+5
VI	1.52E+5	9.24E+5	2.46E+6	1.52E+5	9.23E+5	2.46E+6	1.52E+5	9.23E+5	2.46E+6	1.51E+5	9.21E+5	2.46E+6	1.51E+5	9.20E+5	2.45E+6	1.50E+5	9.18E+5	2.45E+6
VII	4.89E+5	4.36E+6	3.54E+7	3.23E+5	2.88E+6	2.34E+7	2.28E+5	2.03E+6	1.65E+7	1.39E+5	1.24E+6	1.01E+7	7.84E+4	7.03E+5	5.71E+6	1.26E+4	1.12E+5	9.13E+5
IX	9.46E+2	8.50E+3	5.42E+4	4.52E+2	4.06E+3	2.59E+4	2.68E+2	2.40E+3	1.53E+4	9.44E+1	8.49E+2	5.41E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.39E+3	1.80E+4	2.05E+4	1.38E+3	1.70E+4	1.93E+4	1.38E+3	1.60E+4	1.82E+4	1.37E+3	1.43E+4	1.63E+4	1.36E+3	1.32E+4	1.50E+4	1.35E+3	1.20E+4	1.36E+4
XII	5.10E+2	1.56E+3	1.60E+3	5.08E+2	1.55E+3	1.59E+3	5.08E+2	1.55E+3	1.59E+3	5.06E+2	1.55E+3	1.59E+3	5.04E+2	1.54E+3	1.58E+3	5.03E+2	1.54E+3	1.58E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E+1	3.84E+1	3.84E+1	3.64E+1	3.83E+1	3.83E+1	3.64E+1	3.83E+1	3.83E+1	3.63E+1	3.82E+1	3.82E+1	3.62E+1	3.81E+1	3.81E+1	3.61E+1	3.80E+1	3.80E+1
XVIB	3.61E+1	3.78E+1	3.78E+1	3.60E+1	3.78E+1	3.78E+1	3.60E+1	3.78E+1	3.78E+1	3.59E+1	3.77E+1	3.77E+1	3.58E+1	3.76E+1	3.76E+1	3.57E+1	3.75E+1	3.75E+1
XVIC	3.52E+1	3.67E+1	3.67E+1	3.52E+1	3.67E+1	3.67E+1	3.51E+1	3.67E+1	3.67E+1	3.50E+1	3.65E+1	3.65E+1	3.49E+1	3.64E+1	3.64E+1	3.48E+1	3.64E+1	3.64E+1
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.13E+2	1.13E+2	1.02E+2	1.13E+2	1.13E+2
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.11E+2	1.11E+2	1.01E+2	1.11E+2	1.11E+2	1.00E+2	1.11E+2	1.11E+2
XVIIIC	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.78E+1	1.07E+2	1.07E+2	9.77E+1	1.07E+2	1.07E+2	9.76E+1	1.06E+2	1.06E+2	9.72E+1	1.06E+2	1.06E+2
XXA	3.97E+0	1.40E+1	4.86E+1	1.33E+0	4.69E+0	1.63E+1	1.24E+0	4.36E+0	1.52E+1	1.11E+0	3.93E+0	1.37E+1	1.03E+0	3.63E+0	1.27E+1	9.35E-1	3.30E+0	1.15E+1
XXB	3.20E+0	6.16E+0	1.40E+1	1.07E+0	2.06E+0	4.72E+0	9.97E-1	1.92E+0	4.40E+0	8.98E-1	1.73E+0	3.96E+0	8.30E-1	1.60E+0	3.66E+0	7.54E-1	1.45E+0	3.33E+0
XXC	2.11E+0	2.66E+0	9.27E+2	7.07E-1	8.90E-1	3.12E+2	6.58E-1	8.28E-1	2.91E+2	5.93E-1	7.46E-1	2.62E+2	5.48E-1	6.90E-1	2.42E+2	4.98E-1	6.27E-1	2.20E+2
XXIA	2.89E+2	3.00E+3	2.84E+4	2.88E+2	2.99E+3	2.83E+4	2.87E+2	2.98E+3	2.83E+4	2.86E+2	2.97E+3	2.81E+4	2.84E+2	2.95E+3	2.79E+4	2.81E+2	2.92E+3	2.77E+4
XXIB	2.87E+2	2.96E+3	2.57E+4	2.86E+2	2.96E+3	2.56E+4	2.85E+2	2.95E+3	2.55E+4	2.84E+2	2.93E+3	2.54E+4	2.82E+2	2.91E+3	2.52E+4	2.79E+2	2.89E+3	2.50E+4
XXIC	2.83E+2	2.85E+3	2.07E+4	2.82E+2	2.85E+3	2.07E+4	2.82E+2	2.84E+3	2.06E+4	2.80E+2	2.82E+3	2.05E+4	2.78E+2	2.80E+3	2.04E+4	2.76E+2	2.78E+3	2.02E+4
XXII	8.61E+3	1.18E+5	2.37E+5	8.56E+3	1.18E+5	2.36E+5	8.51E+3	1.17E+5	2.35E+5	8.46E+3	1.16E+5	2.33E+5	8.39E+3	1.15E+5	2.32E+5	8.21E+3	1.13E+5	2.28E+5
DOE	4.78E+6	2.85E+7	1.02E+8	4.59E+6	2.70E+7	8.99E+7	4.48E+6	2.61E+7	8.29E+7	4.37E+6	2.53E+7	7.64E+7	4.29E+6	2.47E+7	7.19E+7	4.19E+6	2.40E+7	6.69E+7
DOD	5.10E+2	1.56E+3	1.60E+3	5.08E+2	1.55E+3	1.59E+3	5.08E+2	1.55E+3	1.59E+3	5.06E+2	1.55E+3	1.59E+3	5.04E+2	1.54E+3	1.58E+3	5.03E+2	1.54E+3	1.58E+3
NRC	1.72E+4	7.65E+4	5.65E+5	1.71E+4	7.62E+4	5.60E+5	1.71E+4	7.60E+4	5.59E+5	1.70E+4	7.56E+4	5.55E+5	1.70E+4	7.52E+4	5.52E+5	1.69E+4	7.46E+4	5.47E+5
Total	4.79E+6	2.86E+7	1.02E+8	4.61E+6	2.71E+7	9.04E+7	4.50E+6	2.62E+7	8.35E+7	4.39E+6	2.54E+7	7.69E+7	4.31E+6	2.48E+7	7.24E+7	4.21E+6	2.41E+7	6.74E+7

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 TABLE K-107. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.15E+4	2.33E+4	2.33E+4	2.08E+4	2.25E+4	2.25E+4	1.84E+4	1.99E+4	1.99E+4	1.23E+4	1.34E+4	1.34E+4	3.14E+3	3.41E+3	3.41E+3
II	1.84E+5	1.71E+6	8.37E+6	1.84E+5	1.71E+6	8.37E+6	1.83E+5	1.71E+6	8.32E+6	1.82E+5	1.69E+6	8.18E+6	1.24E+5	1.19E+6	5.80E+6
III	9.48E+3	1.05E+4	1.05E+4	9.38E+3	1.04E+4	1.04E+4	6.90E+3	7.64E+3	7.64E+3	1.10E+3	1.22E+3	1.22E+3	.00E+0	.00E+0	.00E+0
IV	2.81E+3	6.97E+3	7.04E+3	2.73E+3	6.80E+3	6.86E+3	2.49E+3	6.18E+3	6.24E+3	4.46E+2	1.11E+3	1.12E+3	.00E+0	.00E+0	.00E+0
V	5.61E+5	6.08E+5	6.08E+5	5.58E+5	6.06E+5	6.06E+5	5.39E+5	5.85E+5	5.85E+5	4.17E+5	4.52E+5	4.52E+5	1.17E+5	1.27E+5	1.27E+5
VI	1.52E+5	9.24E+5	2.46E+6	1.52E+5	9.24E+5	2.46E+6	1.51E+5	9.22E+5	2.46E+6	1.44E+5	8.91E+5	2.38E+6	1.01E+5	6.72E+5	1.81E+6
VII	7.49E+5	6.71E+6	5.45E+7	6.15E+5	5.48E+6	4.45E+7	1.96E+5	1.75E+6	1.42E+7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	3.28E+3	2.95E+4	1.88E+5	1.71E+3	1.54E+4	9.79E+4	1.77E+2	1.59E+3	1.02E+4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.39E+3	1.86E+4	2.12E+4	1.39E+3	1.86E+4	2.11E+4	1.38E+3	1.64E+4	1.87E+4	1.31E+3	9.27E+3	1.05E+4	1.06E+3	3.52E+3	3.89E+3
XII	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.05E+2	1.54E+3	1.58E+3	4.94E+2	1.51E+3	1.55E+3	1.59E+2	4.86E+2	4.99E+2
XIIIA	1.93E+0	6.29E+0	7.26E+0	7.40E-1	2.41E+0	2.78E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.56E+0	2.77E+0	2.95E+0	5.96E-1	1.06E+0	1.13E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.03E+0	1.21E+0	3.88E+1	3.93E-1	4.65E-1	1.49E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E+1	3.84E+1	3.84E+1	3.65E+1	3.84E+1	3.84E+1	3.64E+1	3.83E+1	3.52E+1	3.70E+1	3.70E+1	3.70E+1	1.95E+1	2.07E+1	2.07E+1
XVIB	3.61E+1	3.79E+1	3.79E+1	3.61E+1	3.79E+1	3.79E+1	3.60E+1	3.78E+1	3.48E+1	3.65E+1	3.65E+1	3.65E+1	1.93E+1	2.04E+1	2.04E+1
XVIC	3.52E+1	3.67E+1	3.67E+1	3.52E+1	3.67E+1	3.67E+1	3.51E+1	3.66E+1	3.66E+1	3.39E+1	3.54E+1	3.54E+1	1.88E+1	1.97E+1	1.97E+1
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	9.85E+1	1.09E+2	1.09E+2	6.76E+1	7.48E+1	7.48E+1
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	9.68E+1	1.07E+2	1.07E+2	6.64E+1	7.34E+1	7.34E+1
XVIIIC	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.78E+1	1.07E+2	1.07E+2	9.37E+1	1.02E+2	1.02E+2	6.43E+1	7.01E+1	7.01E+1
XXA	2.29E+1	8.08E+1	2.80E+2	9.95E+0	3.51E+1	1.22E+2	1.13E+0	3.99E+0	1.39E+1	4.22E-1	1.49E+0	5.24E+0	.00E+0	.00E+0	.00E+0
XXB	1.85E+1	3.55E+1	8.09E+1	8.02E+0	1.54E+1	3.52E+1	9.10E-1	1.75E+0	4.02E+0	3.41E-1	6.57E-1	1.51E+0	.00E+0	.00E+0	.00E+0
XXC	1.22E+1	1.53E+1	5.34E+3	5.30E+0	6.67E+0	2.32E+3	6.01E-1	7.57E-1	2.66E+2	2.25E-1	2.83E-1	1.00E+2	.00E+0	.00E+0	.00E+0
XXIA	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.87E+2	2.98E+3	2.82E+4	2.47E+2	2.56E+3	2.43E+4	8.81E+1	9.16E+2	8.67E+3
XXIB	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.85E+2	2.94E+3	2.55E+4	2.45E+2	2.53E+3	2.19E+4	8.76E+1	9.04E+2	7.83E+3
XXIC	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.81E+2	2.83E+3	2.06E+4	2.42E+2	2.44E+3	1.77E+4	8.64E+1	8.71E+2	6.32E+3
XXII	8.66E+3	1.19E+5	2.38E+5	8.65E+3	1.18E+5	2.38E+5	8.49E+3	1.17E+5	2.35E+5	7.76E+3	1.08E+5	2.16E+5	.00E+0	.00E+0	.00E+0
DOE	5.05E+6	3.09E+7	1.21E+8	4.91E+6	2.97E+7	1.11E+8	4.45E+6	2.58E+7	8.06E+7	3.93E+6	2.31E+7	6.42E+7	2.55E+6	1.66E+7	4.70E+7
DOD	5.23E+2	1.59E+3	1.74E+3	5.15E+2	1.57E+3	1.65E+3	5.05E+2	1.54E+3	1.58E+3	4.94E+2	1.51E+3	1.55E+3	1.59E+2	4.86E+2	4.99E+2
NRC	1.74E+4	7.70E+4	5.87E+5	1.72E+4	7.67E+4	5.72E+5	1.71E+4	7.59E+4	5.58E+5	1.58E+4	6.65E+4	4.80E+5	8.49E+3	2.68E+4	1.74E+5
Total	5.07E+6	3.10E+7	1.22E+8	4.93E+6	2.97E+7	1.12E+8	4.46E+6	2.59E+7	8.12E+7	3.94E+6	2.32E+7	6.46E+7	2.55E+6	1.66E+7	4.72E+7

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 TABLE K-108. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.84E+4	1.99E+4	1.99E+4	1.70E+4	1.84E+4	1.84E+4	1.60E+4	1.74E+4	1.74E+4	1.48E+4	1.60E+4	1.60E+4	1.40E+4	1.52E+4	1.52E+4	1.23E+4	1.34E+4	1.34E+4
II	1.83E+5	1.71E+6	8.32E+6	1.83E+5	1.70E+6	8.30E+6	1.83E+5	1.70E+6	8.28E+6	1.83E+5	1.70E+6	8.26E+6	1.83E+5	1.70E+6	8.23E+6	1.82E+5	1.69E+6	8.18E+6
III	6.90E+3	7.64E+3	7.64E+3	5.79E+3	6.41E+3	6.41E+3	4.61E+3	5.10E+3	5.10E+3	2.71E+3	3.01E+3	3.01E+3	1.57E+3	1.74E+3	1.74E+3	1.10E+3	1.22E+3	1.22E+3
IV	2.49E+3	6.18E+3	6.24E+3	2.26E+3	5.62E+3	5.67E+3	2.03E+3	5.05E+3	5.10E+3	1.58E+3	3.93E+3	3.96E+3	1.13E+3	2.80E+3	2.83E+3	4.46E+2	1.11E+3	1.12E+3
V	5.39E+5	5.85E+5	5.85E+5	5.23E+5	5.67E+5	5.67E+5	5.06E+5	5.49E+5	5.49E+5	4.72E+5	5.13E+5	5.13E+5	4.39E+5	4.76E+5	4.76E+5	4.17E+5	4.52E+5	4.52E+5
VI	1.51E+5	9.22E+5	2.46E+6	1.51E+5	9.20E+5	2.45E+6	1.50E+5	9.17E+5	2.45E+6	1.48E+5	9.11E+5	2.43E+6	1.46E+5	9.03E+5	2.41E+6	1.44E+5	8.91E+5	2.38E+6
VII	1.96E+5	1.75E+6	1.42E+7	6.96E+4	6.23E+5	5.06E+6	6.66E+3	5.90E+4	4.78E+5	6.01E+2	5.13E+3	4.14E+4	1.69E+2	1.42E+3	1.14E+4	.00E+0	.00E+0	.00E+0
IX	1.77E+2	1.59E+3	1.02E+4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.38E+3	1.64E+4	1.87E+4	1.37E+3	1.42E+4	1.61E+4	1.36E+3	1.28E+4	1.45E+4	1.34E+3	1.12E+4	1.27E+4	1.33E+3	1.03E+4	1.16E+4	1.31E+3	9.27E+3	1.05E+4
XII	5.05E+2	1.54E+3	1.58E+3	5.03E+2	1.54E+3	1.58E+3	5.02E+2	1.53E+3	1.57E+3	4.99E+2	1.52E+3	1.57E+3	4.97E+2	1.52E+3	1.56E+3	4.94E+2	1.51E+3	1.55E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.64E+1	3.83E+1	3.83E+1	3.62E+1	3.81E+1	3.81E+1	3.61E+1	3.80E+1	3.80E+1	3.59E+1	3.78E+1	3.78E+1	3.57E+1	3.76E+1	3.76E+1	3.52E+1	3.70E+1	3.70E+1
XVIB	3.60E+1	3.78E+1	3.78E+1	3.58E+1	3.76E+1	3.76E+1	3.57E+1	3.75E+1	3.75E+1	3.55E+1	3.73E+1	3.73E+1	3.53E+1	3.71E+1	3.71E+1	3.48E+1	3.65E+1	3.65E+1
XVIC	3.51E+1	3.66E+1	3.66E+1	3.49E+1	3.65E+1	3.65E+1	3.48E+1	3.64E+1	3.64E+1	3.47E+1	3.62E+1	3.62E+1	3.44E+1	3.60E+1	3.60E+1	3.39E+1	3.54E+1	3.54E+1
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.13E+2	1.13E+2	1.02E+2	1.13E+2	1.13E+2	1.01E+2	1.12E+2	1.12E+2	1.00E+2	1.11E+2	1.11E+2	9.85E+1	1.09E+2	1.09E+2
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.11E+2	1.11E+2	1.00E+2	1.11E+2	1.11E+2	9.93E+1	1.10E+2	1.10E+2	9.83E+1	1.09E+2	1.09E+2	9.68E+1	1.07E+2	1.07E+2
XVIIIC	9.78E+1	1.07E+2	1.07E+2	9.76E+1	1.06E+2	1.06E+2	9.71E+1	1.06E+2	1.06E+2	9.62E+1	1.05E+2	1.05E+2	9.52E+1	1.04E+2	1.04E+2	9.37E+1	1.02E+2	1.02E+2
XXA	1.13E+0	3.99E+0	1.39E+1	9.52E-1	3.36E+0	1.17E+1	8.41E-1	2.97E+0	1.04E+1	7.02E-1	2.48E+0	8.69E+0	5.91E-1	2.09E+0	7.32E+0	4.22E-1	1.49E+0	5.24E+0
XXB	9.10E-1	1.75E+0	4.02E+0	7.67E-1	1.48E+0	3.39E+0	6.78E-1	1.31E+0	3.00E+0	5.66E-1	1.09E+0	2.51E+0	4.76E-1	9.18E-1	2.11E+0	3.41E-1	6.57E-1	1.51E+0
XXC	6.01E-1	7.57E-1	2.66E+2	5.07E-1	6.38E-1	2.24E+2	4.48E-1	1.98E+2	3.74E-1	4.71E-1	1.66E+2	3.15E-1	3.96E-1	1.40E+2	2.25E-1	2.83E-1	1.00E+2	1.00E+2
XXIA	2.87E+2	2.98E+3	2.82E+4	2.84E+2	2.95E+3	2.79E+4	2.81E+2	2.92E+3	2.76E+4	2.74E+2	2.85E+3	2.70E+4	2.62E+2	2.72E+3	2.58E+4	2.47E+2	2.56E+3	2.43E+4
XXIB	2.85E+2	2.94E+3	2.55E+4	2.82E+2	2.91E+3	2.52E+4	2.79E+2	2.88E+3	2.50E+4	2.72E+2	2.81E+3	2.44E+4	2.60E+2	2.69E+3	2.33E+4	2.45E+2	2.53E+3	2.19E+4
XXIC	2.81E+2	2.83E+3	2.06E+4	2.78E+2	2.81E+3	2.04E+4	2.75E+2	2.78E+3	2.02E+4	2.69E+2	2.71E+3	1.97E+4	2.57E+2	2.59E+3	1.88E+4	2.42E+2	2.44E+3	1.77E+4
XXII	8.49E+3	1.17E+5	2.35E+5	8.39E+3	1.16E+5	2.32E+5	8.18E+3	1.13E+5	2.27E+5	7.97E+3	1.10E+5	2.21E+5	7.89E+3	1.09E+5	2.19E+5	7.76E+3	1.08E+5	2.16E+5
DOE	4.45E+6	2.58E+7	8.06E+7	4.28E+6	2.46E+7	7.12E+7	4.18E+6	2.40E+7	6.64E+7	4.10E+6	2.37E+7	6.55E+7	4.02E+6	2.35E+7	6.50E+7	3.93E+6	2.31E+7	6.42E+7
DOD	5.05E+2	1.54E+3	1.58E+3	5.03E+2	1.54E+3	1.58E+3	5.02E+2	1.53E+3	1.57E+3	4.99E+2	1.52E+3	1.57E+3	4.97E+2	1.52E+3	1.56E+3	4.94E+2	1.51E+3	1.55E+3
NRC	1.71E+4	7.59E+4	5.58E+5	1.70E+4	7.52E+4	5.52E+5	1.69E+4	7.45E+4	5.46E+5	1.66E+4	7.29E+4	5.33E+5	1.63E+4	7.01E+4	5.10E+5	1.58E+4	6.65E+4	4.80E+5
Total	4.46E+6	2.59E+7	8.12E+7	4.30E+6	2.47E+7	7.18E+7	4.20E+6	2.40E+7	6.70E+7	4.11E+6	2.38E+7	6.60E+7	4.03E+6	2.35E+7	6.55E+7	3.94E+6	2.32E+7	6.46E+7

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 TABLE K-109. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.48E+0	9.22E+0	9.22E+0	8.33E+0	9.06E+0	9.06E+0	7.87E+0	8.56E+0	8.56E+0	6.32E+0	6.87E+0	6.87E+0	2.83E+0	3.08E+0	3.08E+0
II	7.34E+1	6.83E+2	3.37E+3	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.81E+2	3.34E+3	7.08E+1	6.57E+2	3.18E+3
III	3.71E+0	4.11E+0	4.11E+0	3.70E+0	4.11E+0	4.11E+0	3.45E+0	3.83E+0	3.83E+0	1.83E+0	2.03E+0	2.03E+0	.00E+0	.00E+0	.00E+0
IV	6.06E-1	1.51E+0	1.53E+0	5.99E-1	1.49E+0	1.51E+0	5.71E-1	1.42E+0	1.44E+0	4.50E-1	1.12E+0	1.14E+0	.00E+0	.00E+0	.00E+0
V	2.20E+2	2.39E+2	2.39E+2	2.20E+2	2.38E+2	2.38E+2	2.18E+2	2.36E+2	2.36E+2	1.99E+2	2.16E+2	2.16E+2	1.31E+2	1.41E+2	1.41E+2
VI	3.50E+1	1.84E+2	6.43E+2	3.50E+1	1.84E+2	6.43E+2	3.49E+1	1.84E+2	6.43E+2	3.41E+1	1.83E+2	6.39E+2	2.94E+1	1.68E+2	5.93E+2
VII	5.51E+1	4.25E+2	3.30E+3	4.64E+1	3.47E+2	2.68E+3	3.43E+1	2.52E+2	1.94E+3	8.90E-1	6.51E+0	5.02E+1	.00E+0	.00E+0	.00E+0
IX	2.18E-1	1.92E+0	1.19E+1	1.59E-1	1.39E+0	8.65E+0	5.44E-2	4.78E-1	2.97E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.49E+0	5.05E+0	5.58E+0	1.49E+0	5.05E+0	5.58E+0	1.49E+0	4.92E+0	5.44E+0	1.45E+0	3.67E+0	4.00E+0	1.28E+0	2.20E+0	2.33E+0
XII	2.97E-2	9.20E-2	9.46E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.18E-2	9.44E-2	2.92E-2	9.07E-2	9.32E-2	2.76E-2	8.56E-2	8.80E-2
XIIIA	5.18E-4	1.69E-3	2.07E-3	3.71E-4	1.21E-3	1.49E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	4.17E-4	7.41E-4	8.17E-4	2.99E-4	5.31E-4	5.86E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.75E-4	3.26E-4	1.03E-2	1.97E-4	2.33E-4	7.36E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-2	1.53E-2	1.53E-2	1.46E-2	1.53E-2	1.53E-2	1.46E-2	1.53E-2	1.53E-2	1.44E-2	1.52E-2	1.52E-2	1.27E-2	1.34E-2	1.34E-2
XVIB	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.51E-2	1.51E-2	1.42E-2	1.49E-2	1.49E-2	1.25E-2	1.32E-2	1.32E-2
XVIC	1.40E-2	1.47E-2	1.47E-2	1.40E-2	1.47E-2	1.47E-2	1.40E-2	1.46E-2	1.46E-2	1.39E-2	1.45E-2	1.45E-2	1.22E-2	1.28E-2	1.28E-2
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.00E-2	4.42E-2	4.42E-2	3.50E-2	3.87E-2	3.87E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.93E-2	4.35E-2	4.35E-2	3.44E-2	3.81E-2	3.81E-2
XVIIIC	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.79E-2	4.14E-2	4.14E-2	3.31E-2	3.62E-2	3.62E-2
XXA	5.28E-3	2.03E-2	1.24E-1	3.33E-3	1.28E-2	7.79E-2	6.93E-4	2.66E-3	1.63E-2	1.62E-4	6.26E-4	3.86E-3	.00E+0	.00E+0	.00E+0
XXB	4.26E-3	8.97E-3	3.21E-2	2.69E-3	5.66E-3	2.02E-2	5.59E-4	1.18E-3	4.22E-3	1.31E-4	2.77E-4	1.00E-3	.00E+0	.00E+0	.00E+0
XXC	2.82E-3	3.78E-3	1.26E+0	1.78E-3	2.38E-3	7.95E-1	3.69E-4	4.96E-4	1.66E-1	8.65E-5	1.16E-4	3.95E-2	.00E+0	.00E+0	.00E+0
XXIA	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.10E-1	1.15E+0	1.08E+1	7.46E-2	7.78E-1	7.34E+0
XXIB	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.09E-1	1.13E+0	9.77E+0	7.40E-2	7.66E-1	6.64E+0
XXIC	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.07E-1	1.09E+0	7.91E+0	7.29E-2	7.38E-1	5.38E+0
XXII	3.38E+0	3.72E+1	7.84E+1	3.38E+0	3.72E+1	7.83E+1	3.36E+0	3.70E+1	7.80E+1	3.21E+0	3.55E+1	7.48E+1	1.01E+0	1.65E+1	3.49E+1
DOE	1.18E+3	5.81E+3	2.21E+4	1.17E+3	5.73E+3	2.15E+4	1.15E+3	5.63E+3	2.07E+4	1.08E+3	5.31E+3	1.86E+4	8.80E+2	4.72E+3	1.70E+4
DOD	3.31E-2	9.98E-2	1.32E-1	3.21E-2	9.75E-2	1.21E-1	2.96E-2	9.18E-2	9.44E-2	2.92E-2	9.07E-2	9.32E-2	2.76E-2	8.56E-2	8.80E-2
NRC	6.79E+0	3.01E+1	2.26E+2	6.76E+0	3.00E+1	2.23E+2	6.73E+0	2.99E+1	2.20E+2	6.63E+0	2.92E+1	2.14E+2	5.34E+0	2.08E+1	1.46E+2
Total	1.19E+3	5.84E+3	2.23E+4	1.18E+3	5.76E+3	2.17E+4	1.16E+3	5.66E+3	2.09E+4	1.09E+3	5.34E+3	1.89E+4	8.86E+2	4.74E+3	1.72E+4

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 TABLE K-110. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.87E+0	8.56E+0	8.56E+0	7.55E+0	8.21E+0	8.21E+0	7.29E+0	7.93E+0	7.93E+0	6.92E+0	7.52E+0	7.52E+0	6.64E+0	7.22E+0	7.22E+0	6.32E+0	6.87E+0	6.87E+0
II	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.82E+2	3.36E+3	7.33E+1	6.81E+2	3.35E+3	7.33E+1	6.81E+2	3.34E+3	7.33E+1	6.81E+2	3.34E+3
III	3.45E+0	3.83E+0	3.83E+0	3.01E+0	3.34E+0	3.34E+0	2.74E+0	3.04E+0	3.04E+0	2.51E+0	2.78E+0	2.78E+0	2.24E+0	2.48E+0	2.48E+0	1.83E+0	2.03E+0	2.03E+0
IV	5.71E-1	1.42E+0	1.44E+0	5.57E-1	1.39E+0	1.40E+0	5.43E-1	1.35E+0	1.37E+0	5.17E-1	1.29E+0	1.30E+0	4.90E-1	1.22E+0	1.24E+0	4.50E-1	1.12E+0	1.14E+0
V	2.18E+2	2.36E+2	2.36E+2	2.15E+2	2.33E+2	2.33E+2	2.13E+2	2.30E+2	2.30E+2	2.09E+2	2.26E+2	2.26E+2	2.05E+2	2.22E+2	2.22E+2	1.99E+2	2.16E+2	2.16E+2
VI	3.49E+1	1.84E+2	6.43E+2	3.48E+1	1.84E+2	6.43E+2	3.47E+1	1.84E+2	6.43E+2	3.45E+1	1.84E+2	6.42E+2	3.44E+1	1.83E+2	6.41E+2	3.41E+1	1.83E+2	6.39E+2
VII	3.43E+1	2.52E+2	1.94E+3	2.25E+1	1.66E+2	1.29E+3	1.57E+1	1.17E+2	9.07E+2	9.41E+0	7.16E+1	5.55E+2	5.31E+0	4.04E+1	3.14E+2	8.90E-1	6.51E+0	5.02E+1
IX	5.44E-2	4.78E-1	2.97E+0	2.60E-2	2.29E-1	1.42E+0	1.54E-2	1.35E-1	8.39E-1	5.43E-3	4.77E-2	2.96E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.49E+0	4.92E+0	5.44E+0	1.48E+0	4.71E+0	5.19E+0	1.48E+0	4.51E+0	4.96E+0	1.47E+0	4.16E+0	4.56E+0	1.46E+0	3.91E+0	4.28E+0	1.45E+0	3.67E+0	4.00E+0
XII	2.96E-2	9.18E-2	9.44E-2	2.95E-2	9.16E-2	9.42E-2	2.95E-2	9.14E-2	9.40E-2	2.94E-2	9.11E-2	9.37E-2	2.93E-2	9.09E-2	9.35E-2	2.92E-2	9.07E-2	9.32E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-2	1.53E-2	1.53E-2	1.46E-2	1.53E-2	1.53E-2	1.45E-2	1.53E-2	1.53E-2	1.45E-2	1.52E-2	1.52E-2	1.45E-2	1.52E-2	1.52E-2	1.44E-2	1.52E-2	1.52E-2
XVIB	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.50E-2	1.50E-2	1.43E-2	1.50E-2	1.50E-2	1.43E-2	1.50E-2	1.50E-2	1.42E-2	1.49E-2	1.49E-2
XVIC	1.40E-2	1.46E-2	1.46E-2	1.40E-2	1.46E-2	1.46E-2	1.40E-2	1.46E-2	1.46E-2	1.40E-2	1.46E-2	1.46E-2	1.39E-2	1.45E-2	1.45E-2	1.39E-2	1.45E-2	1.45E-2
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.02E-2	4.44E-2	4.44E-2	4.02E-2	4.44E-2	4.44E-2	4.00E-2	4.42E-2	4.42E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.95E-2	4.38E-2	4.38E-2	3.95E-2	4.37E-2	4.37E-2	3.95E-2	4.37E-2	4.37E-2	3.93E-2	4.35E-2	4.35E-2
XVIIIC	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.81E-2	4.17E-2	4.17E-2	3.81E-2	4.16E-2	4.16E-2	3.81E-2	4.16E-2	4.16E-2	3.79E-2	4.14E-2	4.14E-2
XXA	6.93E-4	2.66E-3	1.63E-2	2.31E-4	8.90E-4	5.47E-3	2.15E-4	8.29E-4	5.09E-3	1.94E-4	7.46E-4	4.59E-3	1.79E-4	6.89E-4	4.25E-3	1.62E-4	6.26E-4	3.86E-3
XXB	5.59E-4	1.18E-3	4.22E-3	1.86E-4	3.93E-4	1.42E-3	1.73E-4	3.66E-4	1.32E-3	1.56E-4	3.30E-4	1.19E-3	1.44E-4	3.04E-4	1.10E-3	1.31E-4	2.77E-4	1.00E-3
XXC	3.69E-4	4.96E-4	1.66E-1	1.23E-4	1.66E-4	5.59E-2	1.15E-4	1.54E-4	5.20E-2	1.03E-4	1.39E-4	4.69E-2	9.53E-5	1.28E-4	4.34E-2	8.65E-5	1.16E-4	3.95E-2
XXIA	1.13E-1	1.18E+0	1.11E+1	1.12E-1	1.17E+0	1.11E+1	1.12E-1	1.17E+0	1.10E+1	1.11E-1	1.16E+0	1.10E+1	1.11E-1	1.16E+0	1.09E+1	1.10E-1	1.15E+0	1.08E+1
XXIB	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.11E-1	1.15E+0	9.97E+0	1.11E-1	1.14E+0	9.91E+0	1.10E-1	1.14E+0	9.85E+0	1.09E-1	1.13E+0	9.77E+0
XXIC	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.11E+0	8.10E+0	1.10E-1	1.11E+0	8.08E+0	1.09E-1	1.10E+0	8.03E+0	1.08E-1	1.10E+0	7.98E+0	1.07E-1	1.09E+0	7.91E+0
XXII	3.36E+0	3.70E+1	7.80E+1	3.34E+0	3.68E+1	7.76E+1	3.32E+0	3.67E+1	7.73E+1	3.30E+0	3.63E+1	7.66E+1	3.28E+0	3.62E+1	7.63E+1	3.21E+0	3.55E+1	7.48E+1
DOE	1.15E+3	5.63E+3	2.07E+4	1.14E+3	5.53E+3	2.00E+4	1.12E+3	5.47E+3	1.96E+4	1.11E+3	5.41E+3	1.92E+4	1.10E+3	5.37E+3	1.90E+4	1.08E+3	5.31E+3	1.86E+4
DOD	2.96E+2	9.18E+2	9.44E+2	2.95E+2	9.16E+2	9.42E+2	2.95E+2	9.14E+2	9.40E+2	2.94E+2	9.11E+2	9.37E+2	2.93E+2	9.09E+2	9.35E+2	2.92E+2	9.07E+2	9.32E+2
NRC	6.73E+0	2.99E+1	2.20E+2	6.72E+0	2.99E+1	2.19E+2	6.71E+0	2.98E+1	2.18E+2	6.68E+0	2.96E+1	2.17E+2	6.66E+0	2.95E+1	2.16E+2	6.63E+0	2.92E+1	2.14E+2
Total	1.16E+3	5.66E+3	2.09E+4	1.14E+3	5.56E+3	2.03E+4	1.13E+3	5.50E+3	1.99E+4	1.12E+3	5.44E+3	1.95E+4	1.10E+3	5.40E+3	1.92E+4	1.09E+3	5.34E+3	1.89E+4

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 TABLE K-111. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.42E+0	9.15E+0	9.15E+0	8.15E+0	8.86E+0	8.86E+0	7.20E+0	7.83E+0	7.83E+0	4.83E+0	5.26E+0	5.26E+0	1.23E+0	1.34E+0	1.34E+0
II	7.34E+1	6.83E+2	3.37E+3	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.82E+2	3.36E+3	7.29E+1	6.77E+2	3.30E+3	4.98E+1	4.75E+2	2.34E+3
III	3.71E+0	4.11E+0	4.11E+0	3.67E+0	4.07E+0	4.07E+0	2.70E+0	2.99E+0	2.99E+0	4.32E-1	4.79E-1	4.79E-1	.00E+0	.00E+0	.00E+0
IV	6.03E-1	1.50E+0	1.52E+0	5.88E-1	1.46E+0	1.48E+0	5.35E-1	1.33E+0	1.35E+0	9.58E-2	2.39E-1	2.42E-1	.00E+0	.00E+0	.00E+0
V	2.20E+2	2.39E+2	2.39E+2	2.19E+2	2.38E+2	2.38E+2	2.12E+2	2.29E+2	2.29E+2	1.64E+2	1.77E+2	1.77E+2	4.60E+1	4.99E+1	4.99E+1
VI	3.50E+1	1.84E+2	6.43E+2	3.49E+1	1.84E+2	6.43E+2	3.46E+1	1.84E+2	6.42E+2	3.22E+1	1.77E+2	6.21E+2	2.14E+1	1.32E+2	4.72E+2
VII	5.08E+1	3.86E+2	2.99E+3	4.29E+1	3.17E+2	2.45E+3	1.34E+1	1.01E+2	7.82E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	1.89E-1	1.66E+0	1.03E+1	9.83E-2	8.64E-1	5.36E+0	1.02E-2	8.96E-2	5.56E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.49E+0	5.05E+0	5.58E+0	1.49E+0	5.04E+0	5.57E+0	1.48E+0	4.59E+0	5.06E+0	1.41E+0	3.07E+0	3.31E+0	1.14E+0	1.65E+0	1.73E+0
XII	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.94E-2	9.10E-2	9.36E-2	2.87E-2	8.89E-2	9.15E-2	9.23E-3	2.86E-2	2.95E-2
XIIIA	4.70E-4	1.54E-3	1.88E-3	1.80E-4	5.88E-4	7.21E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.79E-4	6.72E-4	7.41E-4	1.45E-4	2.57E-4	2.84E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.50E-4	2.95E-4	9.31E-3	9.56E-5	1.13E-4	3.57E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-2	1.53E-2	1.53E-2	1.46E-2	1.53E-2	1.53E-2	1.45E-2	1.53E-2	1.53E-2	1.40E-2	1.48E-2	1.48E-2	7.79E-3	8.24E-3	8.24E-3
XVIB	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.51E-2	1.51E-2	1.43E-2	1.50E-2	1.50E-2	1.39E-2	1.45E-2	1.45E-2	7.68E-3	8.10E-3	8.10E-3
XVIC	1.40E-2	1.47E-2	1.47E-2	1.40E-2	1.47E-2	1.47E-2	1.40E-2	1.46E-2	1.46E-2	1.35E-2	1.41E-2	1.41E-2	7.49E-3	7.86E-3	7.86E-3
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.02E-2	4.45E-2	4.45E-2	3.86E-2	4.26E-2	4.26E-2	2.65E-2	2.93E-2	2.93E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.95E-2	4.38E-2	4.38E-2	3.79E-2	4.20E-2	4.20E-2	2.60E-2	2.88E-2	2.88E-2
XVIIIC	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.81E-2	4.17E-2	4.17E-2	3.65E-2	3.99E-2	3.99E-2	2.51E-2	2.74E-2	2.74E-2
XXA	4.00E-3	1.54E-2	9.36E-2	1.74E-3	6.69E-3	4.07E-2	1.96E-4	7.56E-4	4.66E-3	7.30E-5	2.82E-4	1.76E-3	.00E+0	.00E+0	.00E+0
XXB	3.23E-3	6.80E-3	2.43E-2	1.40E-3	2.95E-3	1.06E-2	1.58E-4	3.34E-4	1.21E-3	5.89E-5	1.25E-4	4.54E-4	.00E+0	.00E+0	.00E+0
XXC	2.13E-3	2.86E-3	9.56E-1	9.27E-4	1.24E-3	4.16E-1	1.05E-4	1.41E-4	4.76E-2	3.89E-5	5.24E-5	1.80E-2	.00E+0	.00E+0	.00E+0
XXIA	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.12E-1	1.17E+0	1.10E+1	9.63E-2	1.00E+0	9.47E+0	3.44E-2	3.59E-1	3.38E+0
XXIB	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.11E-1	1.15E+0	9.96E+0	9.55E-2	9.89E-1	8.56E+0	3.41E-2	3.53E-1	3.06E+0
XXIC	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.09E-1	1.11E+0	8.07E+0	9.40E-2	9.53E-1	6.94E+0	3.36E-2	3.40E-1	2.48E+0
XXII	3.38E+0	3.72E+1	7.84E+1	3.38E+0	3.71E+1	7.82E+1	3.31E+0	3.66E+1	7.71E+1	3.03E+0	3.37E+1	7.09E+1	.00E+0	.00E+0	.00E+0
DOE	1.18E+3	5.77E+3	2.18E+4	1.17E+3	5.70E+3	2.12E+4	1.12E+3	5.45E+3	1.95E+4	9.96E+2	5.11E+3	1.81E+4	5.83E+2	3.51E+3	1.31E+4
DOD	3.27E-2	9.90E-2	1.28E-1	3.08E-2	9.46E-2	1.07E-1	2.94E-2	9.10E-2	9.36E-2	2.87E-2	8.89E-2	9.15E-2	9.23E-3	2.86E-2	2.95E-2
NRC	6.77E+0	3.01E+1	2.24E+2	6.75E+0	3.00E+1	2.21E+2	6.70E+0	2.97E+1	2.18E+2	6.20E+0	2.60E+1	1.88E+2	3.33E+0	1.05E+1	6.82E+1
Total	1.18E+3	5.80E+3	2.20E+4	1.17E+3	5.73E+3	2.14E+4	1.13E+3	5.48E+3	1.97E+4	1.00E+3	5.13E+3	1.83E+4	5.86E+2	3.52E+3	1.32E+4

High Population Density Without Agriculture - 09-13-94 4:11p
 TABLE K-112. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.20E+0	7.83E+0	7.83E+0	6.66E+0	7.24E+0	7.24E+0	6.30E+0	6.85E+0	6.85E+0	5.80E+0	6.31E+0	6.31E+0	5.48E+0	5.96E+0	5.96E+0	4.83E+0	5.26E+0	5.26E+0
II	7.33E+1	6.82E+2	3.36E+3	7.33E+1	6.81E+2	3.34E+3	7.32E+1	6.81E+2	3.34E+3	7.32E+1	6.80E+2	3.33E+3	7.31E+1	6.79E+2	3.32E+3	7.29E+1	6.77E+2	3.30E+3
III	2.70E+0	2.99E+0	2.99E+0	2.26E+0	2.51E+0	2.51E+0	1.80E+0	2.00E+0	2.00E+0	1.06E+0	1.18E+0	1.18E+0	6.14E-1	6.80E-1	6.80E-1	4.32E-1	4.79E-1	4.79E-1
IV	5.35E-1	1.33E+0	1.35E+0	4.86E-1	1.21E+0	1.23E+0	4.37E-1	1.09E+0	1.10E+0	3.40E-1	8.46E-1	8.57E-1	2.42E-1	6.03E-1	6.11E-1	9.58E-2	2.39E-1	2.42E-1
V	2.12E+2	2.29E+2	2.29E+2	2.05E+2	2.22E+2	2.22E+2	1.99E+2	2.15E+2	2.15E+2	1.85E+2	2.01E+2	2.01E+2	1.72E+2	1.87E+2	1.87E+2	1.64E+2	1.77E+2	1.77E+2
VI	3.46E+1	1.84E+2	6.42E+2	3.44E+1	1.83E+2	6.41E+2	3.41E+1	1.83E+2	6.39E+2	3.36E+1	1.81E+2	6.35E+2	3.30E+1	1.79E+2	6.30E+2	3.22E+1	1.77E+2	6.21E+2
VII	1.34E+1	1.01E+2	7.82E+2	4.72E+0	3.59E+1	2.78E+2	4.79E-1	3.43E+0	2.63E+1	5.15E-2	3.07E-1	2.29E+0	1.54E-2	8.62E-2	6.33E-1	.00E+0	.00E+0	.00E+0
IX	1.02E-2	8.96E-2	5.56E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.48E+0	4.59E+0	5.06E+0	1.47E+0	4.13E+0	4.52E+0	1.46E+0	3.83E+0	4.19E+0	1.44E+0	3.50E+0	3.80E+0	1.43E+0	3.29E+0	3.57E+0	1.41E+0	3.07E+0	3.31E+0
XII	2.94E-2	9.10E-2	9.36E-2	2.92E-2	9.06E-2	9.32E-2	2.91E-2	9.04E-2	9.30E-2	2.90E-2	8.99E-2	9.25E-2	2.89E-2	8.95E-2	9.21E-2	2.87E-2	8.89E-2	9.15E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.45E-2	1.53E-2	1.53E-2	1.45E-2	1.52E-2	1.52E-2	1.44E-2	1.52E-2	1.52E-2	1.43E-2	1.51E-2	1.51E-2	1.43E-2	1.50E-2	1.50E-2	1.40E-2	1.48E-2	1.48E-2
XVIB	1.43E-2	1.50E-2	1.50E-2	1.43E-2	1.50E-2	1.50E-2	1.42E-2	1.49E-2	1.49E-2	1.42E-2	1.49E-2	1.49E-2	1.41E-2	1.48E-2	1.48E-2	1.39E-2	1.45E-2	1.45E-2
XVIC	1.40E-2	1.46E-2	1.46E-2	1.39E-2	1.45E-2	1.45E-2	1.39E-2	1.45E-2	1.45E-2	1.38E-2	1.44E-2	1.44E-2	1.37E-2	1.43E-2	1.43E-2	1.35E-2	1.41E-2	1.41E-2
XVIIIA	4.02E-2	4.45E-2	4.45E-2	4.02E-2	4.44E-2	4.44E-2	4.00E-2	4.42E-2	4.42E-2	3.96E-2	4.37E-2	4.37E-2	3.92E-2	4.33E-2	4.33E-2	3.86E-2	4.26E-2	4.26E-2
XVIIIB	3.95E-2	4.38E-2	4.38E-2	3.95E-2	4.37E-2	4.37E-2	3.93E-2	4.35E-2	4.35E-2	3.89E-2	4.30E-2	4.30E-2	3.85E-2	4.26E-2	4.26E-2	3.79E-2	4.20E-2	4.20E-2
XVIIIC	3.81E-2	4.17E-2	4.17E-2	3.81E-2	4.16E-2	4.16E-2	3.79E-2	4.14E-2	4.14E-2	3.75E-2	4.10E-2	4.10E-2	3.71E-2	4.05E-2	4.05E-2	3.65E-2	3.99E-2	3.99E-2
XXA	1.96E-4	7.56E-4	4.66E-3	1.65E-4	6.37E-4	3.93E-3	1.46E-4	5.63E-4	3.48E-3	1.22E-4	4.70E-4	2.91E-3	1.02E-4	3.95E-4	2.45E-3	7.30E-5	2.82E-4	1.76E-3
XXB	1.58E-4	3.34E-4	1.21E-3	1.33E-4	2.81E-4	1.02E-3	1.18E-4	2.49E-4	9.00E-4	9.81E-5	2.07E-4	7.53E-4	8.24E-5	1.74E-4	6.34E-4	5.89E-5	1.25E-4	4.54E-4
XXC	1.05E-4	1.41E-4	4.76E-2	8.81E-5	1.18E-4	4.02E-2	7.78E-5	1.05E-4	3.55E-2	6.48E-5	8.73E-5	2.98E-2	5.45E-5	7.34E-5	2.51E-2	3.89E-5	5.24E-5	1.80E-2
XXIA	1.12E-1	1.17E+0	1.10E+1	1.11E-1	1.16E+0	1.09E+1	1.10E-1	1.14E+0	1.08E+1	1.07E-1	1.12E+0	1.05E+1	1.02E-1	1.07E+0	1.01E+1	9.63E-2	1.00E+0	9.47E+0
XXIB	1.11E-1	1.15E+0	9.96E+0	1.10E-1	1.14E+0	9.86E+0	1.09E-1	1.13E+0	9.75E+0	1.06E-1	1.10E+0	9.52E+0	1.01E-1	1.05E+0	9.10E+0	9.55E-2	9.89E-1	8.56E+0
XXIC	1.09E-1	1.11E+0	8.07E+0	1.08E-1	1.10E+0	7.98E+0	1.07E-1	1.09E+0	7.90E+0	1.04E-1	1.06E+0	7.71E+0	9.99E-2	1.01E+0	7.37E+0	9.40E-2	9.53E-1	6.94E+0
XXII	3.31E+0	3.66E+1	7.71E+1	3.28E+0	3.62E+1	7.63E+1	3.19E+0	3.54E+1	7.47E+1	3.11E+0	3.45E+1	7.26E+1	3.08E+0	3.42E+1	7.19E+1	3.03E+0	3.37E+1	7.09E+1
DOE	1.12E+3	5.45E+3	1.95E+4	1.10E+3	5.36E+3	1.89E+4	1.08E+3	5.30E+3	1.86E+4	1.05E+3	5.24E+3	1.85E+4	1.02E+3	5.18E+3	1.83E+4	9.96E+2	5.11E+3	1.81E+4
DOD	2.94E-2	9.10E-2	9.36E-2	2.92E-2	9.06E-2	9.32E-2	2.91E-2	9.04E-2	9.30E-2	2.90E-2	8.99E-2	9.25E-2	2.89E-2	8.95E-2	9.21E-2	2.87E-2	8.89E-2	9.15E-2
NRC	6.70E+0	2.97E+1	2.18E+2	6.66E+0	2.95E+1	2.16E+2	6.62E+0	2.92E+1	2.13E+2	6.53E+0	2.85E+1	2.08E+2	6.39E+0	2.75E+1	1.99E+2	6.20E+0	2.60E+1	1.88E+2
Total	1.13E+3	5.48E+3	1.97E+4	1.10E+3	5.39E+3	1.92E+4	1.09E+3	5.33E+3	1.88E+4	1.06E+3	5.27E+3	1.87E+4	1.03E+3	5.21E+3	1.85E+4	1.00E+3	5.13E+3	1.83E+4

High Population Density Without Agriculture - 09-13-94 4:11p
 TABLE K-113. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.58E+0	6.07E+0	6.07E+0	5.48E+0	5.96E+0	5.96E+0	5.18E+0	5.64E+0	5.64E+0	4.16E+0	4.52E+0	4.52E+0	1.86E+0	2.03E+0	2.03E+0
II	4.83E+1	4.51E+2	2.22E+3	4.82E+1	4.51E+2	2.22E+3	4.82E+1	4.50E+2	2.22E+3	4.82E+1	4.49E+2	2.19E+3	4.65E+1	4.33E+2	2.09E+3
III	2.45E+0	2.70E+0	2.70E+0	2.44E+0	2.70E+0	2.70E+0	2.28E+0	2.52E+0	2.52E+0	1.21E+0	1.33E+0	1.33E+0	.00E+0	.00E+0	.00E+0
IV	4.49E-1	1.12E+0	1.13E+0	4.43E-1	1.10E+0	1.12E+0	4.23E-1	1.05E+0	1.07E+0	3.33E-1	8.29E-1	8.39E-1	.00E+0	.00E+0	.00E+0
V	1.44E+2	1.57E+2	1.57E+2	1.44E+2	1.57E+2	1.57E+2	1.43E+2	1.55E+2	1.55E+2	1.30E+2	1.42E+2	1.42E+2	8.55E+1	9.33E+1	9.33E+1
VI	2.55E+1	1.39E+2	4.56E+2	2.55E+1	1.39E+2	4.56E+2	2.55E+1	1.39E+2	4.56E+2	2.50E+1	1.38E+2	4.53E+2	2.17E+1	1.27E+2	4.21E+2
VII	4.72E+1	3.80E+2	2.99E+3	3.94E+1	3.10E+2	2.43E+3	2.90E+1	2.25E+2	1.76E+3	7.52E-1	5.81E+0	4.54E+1	.00E+0	.00E+0	.00E+0
IX	1.95E-1	1.72E+0	1.08E+1	1.42E-1	1.25E+0	7.84E+0	4.86E-2	4.30E-1	2.69E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.80E-1	3.16E+0	3.49E+0	9.80E-1	3.16E+0	3.49E+0	9.77E-1	3.08E+0	3.40E+0	9.54E-1	2.31E+0	2.52E+0	8.38E-1	1.40E+0	1.49E+0
XII	2.64E-2	8.16E-2	8.39E-2	2.64E-2	8.15E-2	8.38E-2	2.63E-2	8.14E-2	8.38E-2	2.60E-2	8.04E-2	8.27E-2	2.46E-2	7.59E-2	7.81E-2
XIIIA	3.74E-4	1.22E-3	1.48E-3	2.68E-4	8.73E-4	1.06E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.01E-4	5.35E-4	5.85E-4	2.16E-4	3.84E-4	4.19E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.99E-4	2.35E-4	6.30E-3	1.42E-4	1.68E-4	4.52E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.57E-3	1.01E-2	1.01E-2	9.57E-3	1.01E-2	1.01E-2	9.56E-3	1.01E-2	1.01E-2	9.46E-3	9.95E-3	9.95E-3	8.32E-3	8.79E-3	8.79E-3
XVIB	9.47E-3	9.93E-3	9.93E-3	9.47E-3	9.93E-3	9.93E-3	9.47E-3	9.93E-3	9.93E-3	9.37E-3	9.83E-3	9.83E-3	8.24E-3	8.68E-3	8.68E-3
XVIC	9.23E-3	9.63E-3	9.63E-3	9.23E-3	9.63E-3	9.63E-3	9.22E-3	9.63E-3	9.63E-3	9.13E-3	9.53E-3	9.53E-3	8.02E-3	8.40E-3	8.40E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.63E-2	2.91E-2	2.91E-2	2.30E-2	2.55E-2	2.55E-2
XVIIIB	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.59E-2	2.86E-2	2.86E-2	2.27E-2	2.50E-2	2.50E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.51E-2	2.73E-2	2.73E-2	2.19E-2	2.39E-2	2.39E-2
XXA	4.11E-3	1.54E-2	8.34E-2	2.59E-3	9.72E-3	5.26E-2	5.39E-4	2.02E-3	1.10E-2	1.27E-4	4.77E-4	2.61E-3	.00E+0	.00E+0	.00E+0
XXB	3.31E-3	6.81E-3	2.20E-2	2.09E-3	4.29E-3	1.39E-2	4.35E-4	8.93E-4	2.89E-3	1.02E-4	2.10E-4	6.87E-4	.00E+0	.00E+0	.00E+0
XXC	2.19E-3	2.89E-3	7.86E-1	1.38E-3	1.82E-3	4.95E-1	2.87E-4	3.79E-4	1.03E-1	6.75E-5	8.91E-5	2.46E-2	.00E+0	.00E+0	.00E+0
XXIA	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.46E-2	7.79E-1	7.34E+0	7.26E-2	7.58E-1	7.14E+0	4.94E-2	5.15E-1	4.85E+0
XXIB	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.40E-2	7.66E-1	6.64E+0	7.21E-2	7.46E-1	6.46E+0	4.90E-2	5.07E-1	4.39E+0
XXIC	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.29E-2	7.39E-1	5.37E+0	7.10E-2	7.19E-1	5.23E+0	4.82E-2	4.89E-1	3.56E+0
XXII	2.24E+0	2.40E+1	5.17E+1	2.24E+0	2.40E+1	5.16E+1	2.22E+0	2.39E+1	5.14E+1	2.12E+0	2.29E+1	4.93E+1	6.68E-1	1.07E+1	2.30E+1
DOE	8.44E+2	4.33E+3	1.61E+4	8.36E+2	4.26E+3	1.55E+4	8.22E+2	4.17E+3	1.48E+4	7.67E+2	3.90E+3	1.30E+4	6.32E+2	3.49E+3	1.19E+4
DOD	2.89E-2	8.72E-2	1.08E-1	2.81E-2	8.55E-2	1.01E-1	2.63E-2	8.14E-2	8.38E-2	2.60E-2	8.04E-2	8.27E-2	2.46E-2	7.59E-2	7.81E-2
NRC	4.48E+0	1.99E+1	1.49E+2	4.47E+0	1.99E+1	1.48E+2	4.44E+0	1.98E+1	1.45E+2	4.37E+0	1.93E+1	1.41E+2	3.52E+0	1.37E+1	9.65E+1
Total	8.49E+2	4.35E+3	1.62E+4	8.40E+2	4.28E+3	1.57E+4	8.26E+2	4.19E+3	1.50E+4	7.72E+2	3.92E+3	1.32E+4	6.35E+2	3.50E+3	1.20E+4

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 TABLE K-114. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.18E+0	5.64E+0	5.64E+0	4.97E+0	5.40E+0	5.40E+0	4.79E+0	5.22E+0	5.22E+0	4.55E+0	4.95E+0	4.95E+0	4.37E+0	4.75E+0	4.75E+0	4.16E+0	4.52E+0	4.52E+0
II	4.82E+1	4.50E+2	2.22E+3	4.82E+1	4.50E+2	2.21E+3	4.82E+1	4.50E+2	2.21E+3	4.82E+1	4.49E+2	2.20E+3	4.82E+1	4.49E+2	2.20E+3	4.82E+1	4.49E+2	2.19E+3
III	2.28E+0	2.52E+0	2.52E+0	1.99E+0	2.19E+0	2.19E+0	1.81E+0	2.00E+0	2.00E+0	1.65E+0	1.83E+0	1.83E+0	1.48E+0	1.63E+0	1.63E+0	1.21E+0	1.33E+0	1.33E+0
IV	4.23E-1	1.05E+0	1.07E+0	4.12E-1	1.02E+0	1.04E+0	4.02E-1	1.00E+0	1.01E+0	3.83E-1	9.51E-1	9.64E-1	3.63E-1	9.02E-1	9.14E-1	3.33E-1	8.29E-1	8.39E-1
V	1.43E+2	1.55E+2	1.55E+2	1.41E+2	1.53E+2	1.53E+2	1.39E+2	1.52E+2	1.52E+2	1.37E+2	1.49E+2	1.49E+2	1.34E+2	1.46E+2	1.46E+2	1.30E+2	1.42E+2	1.42E+2
VI	2.55E+1	1.39E+2	4.56E+2	2.54E+1	1.39E+2	4.56E+2	2.53E+1	1.39E+2	4.55E+2	2.52E+1	1.39E+2	4.55E+2	2.51E+1	1.39E+2	4.54E+2	2.50E+1	1.38E+2	4.53E+2
VII	2.90E+1	2.25E+2	1.76E+3	1.91E+1	1.49E+2	1.16E+3	1.33E+1	1.05E+2	8.21E+2	8.03E+0	6.40E+1	5.02E+2	4.53E+0	3.62E+1	2.84E+2	7.52E-1	5.81E+0	4.54E+1
IX	4.86E-2	4.30E-1	2.69E+0	2.33E-2	2.06E-1	1.29E+0	1.38E-2	1.22E-1	7.60E-1	4.86E-3	4.29E-2	2.68E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.77E-1	3.08E+0	3.40E+0	9.73E-1	2.95E+0	3.25E+0	9.69E-1	2.83E+0	3.11E+0	9.64E-1	2.61E+0	2.86E+0	9.59E-1	2.46E+0	2.69E+0	9.54E-1	2.31E+0	2.52E+0
XII	2.63E-2	8.14E-2	8.38E-2	2.63E-2	8.12E-2	8.36E-2	2.62E-2	8.11E-2	8.34E-2	2.61E-2	8.08E-2	8.31E-2	2.61E-2	8.06E-2	8.29E-2	2.60E-2	8.04E-2	8.27E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.56E-3	1.01E-2	1.01E-2	9.56E-3	1.00E-2	1.00E-2	9.54E-3	1.00E-2	1.00E-2	9.51E-3	1.00E-2	1.00E-2	9.49E-3	9.97E-3	9.97E-3	9.46E-3	9.95E-3	9.95E-3
XVIB	9.47E-3	9.93E-3	9.93E-3	9.46E-3	9.92E-3	9.92E-3	9.45E-3	9.91E-3	9.91E-3	9.42E-3	9.88E-3	9.88E-3	9.39E-3	9.85E-3	9.85E-3	9.37E-3	9.83E-3	9.83E-3
XVIC	9.22E-3	9.63E-3	9.63E-3	9.22E-3	9.62E-3	9.62E-3	9.20E-3	9.61E-3	9.61E-3	9.17E-3	9.58E-3	9.58E-3	9.15E-3	9.55E-3	9.55E-3	9.13E-3	9.53E-3	9.53E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.64E-2	2.93E-2	2.93E-2	2.63E-2	2.91E-2	2.91E-2
XVIIIB	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.87E-2	2.87E-2	2.60E-2	2.87E-2	2.87E-2	2.60E-2	2.87E-2	2.87E-2	2.59E-2	2.86E-2	2.86E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.51E-2	2.73E-2	2.73E-2
XXA	5.39E-4	2.02E-3	1.10E-2	1.80E-4	6.77E-4	3.69E-3	1.68E-4	6.30E-4	3.44E-3	1.51E-4	5.68E-4	3.10E-3	1.40E-4	5.24E-4	2.87E-3	1.27E-4	4.77E-4	2.61E-3
XXB	4.35E-4	8.93E-4	2.89E-3	1.45E-4	2.99E-4	9.72E-4	1.35E-4	2.78E-4	9.06E-4	1.22E-4	2.50E-4	8.17E-4	1.12E-4	2.31E-4	7.55E-4	1.02E-4	2.10E-4	6.87E-4
XXC	2.87E-4	3.79E-4	1.03E-1	9.59E-5	1.27E-4	3.48E-2	8.93E-5	1.18E-4	3.24E-2	8.04E-5	1.06E-4	2.92E-2	7.43E-5	9.80E-5	2.70E-2	6.75E-5	8.91E-5	2.46E-2
XXIA	7.46E-2	7.79E-1	7.34E+0	7.44E-2	7.77E-1	7.31E+0	7.42E-2	7.74E-1	7.29E+0	7.37E-2	7.70E-1	7.25E+0	7.33E-2	7.65E-1	7.21E+0	7.26E-2	7.58E-1	7.14E+0
XXIB	7.40E-2	7.66E-1	6.64E+0	7.38E-2	7.64E-1	6.62E+0	7.36E-2	7.62E-1	6.60E+0	7.32E-2	7.57E-1	6.56E+0	7.27E-2	7.53E-1	6.52E+0	7.21E-2	7.46E-1	6.46E+0
XXIC	7.29E-2	7.39E-1	5.37E+0	7.27E-2	7.37E-1	5.36E+0	7.25E-2	7.34E-1	5.34E+0	7.20E-2	7.30E-1	5.31E+0	7.16E-2	7.26E-1	5.28E+0	7.10E-2	7.19E-1	5.23E+0
XXII	2.22E+0	2.39E+1	5.14E+1	2.21E+0	2.38E+1	5.12E+1	2.20E+0	2.37E+1	5.09E+1	2.18E+0	2.35E+1	5.05E+1	2.16E+0	2.34E+1	5.02E+1	2.12E+0	2.29E+1	4.93E+1
DOE	8.22E+2	4.17E+3	1.48E+4	8.08E+2	4.09E+3	1.42E+4	7.99E+2	4.04E+3	1.39E+4	7.88E+2	3.98E+3	1.35E+4	7.79E+2	3.95E+3	1.33E+4	7.67E+2	3.90E+3	1.30E+4
DOD	2.63E-2	8.14E-2	8.38E-2	2.63E-2	8.12E-2	8.36E-2	2.62E-2	8.11E-2	8.34E-2	2.61E-2	8.08E-2	8.31E-2	2.61E-2	8.06E-2	8.29E-2	2.60E-2	8.04E-2	8.27E-2
NRC	4.44E+0	1.98E+1	1.45E+2	4.43E+0	1.97E+1	1.45E+2	4.42E+0	1.97E+1	1.44E+2	4.41E+0	1.96E+1	1.43E+2	4.39E+0	1.95E+1	1.43E+2	4.37E+0	1.93E+1	1.41E+2
Total	8.26E+2	4.19E+3	1.50E+4	8.13E+2	4.11E+3	1.44E+4	8.03E+2	4.06E+3	1.40E+4	7.92E+2	4.00E+3	1.37E+4	7.84E+2	3.97E+3	1.34E+4	7.72E+2	3.92E+3	1.32E+4

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 TABLE K-115. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.54E+0	6.03E+0	6.03E+0	5.36E+0	5.83E+0	5.83E+0	4.74E+0	5.16E+0	5.16E+0	3.18E+0	3.46E+0	3.46E+0	8.10E-1	8.82E-1	8.82E-1
II	4.82E+1	4.51E+2	2.22E+3	4.82E+1	4.50E+2	2.22E+3	4.82E+1	4.50E+2	2.21E+3	4.80E+1	4.46E+2	2.17E+3	3.28E+1	3.13E+2	1.54E+3
III	2.45E+0	2.70E+0	2.70E+0	2.42E+0	2.67E+0	2.67E+0	1.78E+0	1.96E+0	1.96E+0	2.85E-1	3.14E-1	3.14E-1	.00E+0	.00E+0	.00E+0
IV	4.46E-1	1.11E+0	1.12E+0	4.35E-1	1.08E+0	1.10E+0	3.96E-1	9.84E-1	9.97E-1	7.10E-2	1.76E-1	1.79E-1	.00E+0	.00E+0	.00E+0
V	1.44E+2	1.57E+2	1.57E+2	1.44E+2	1.57E+2	1.57E+2	1.39E+2	1.51E+2	1.51E+2	1.07E+2	1.17E+2	1.17E+2	3.01E+1	3.29E+1	3.29E+1
VI	2.55E+1	1.39E+2	4.56E+2	2.55E+1	1.39E+2	4.56E+2	2.53E+1	1.39E+2	4.55E+2	2.36E+1	1.34E+2	4.40E+2	1.59E+1	9.99E+1	3.35E+2
VII	4.33E+1	3.45E+2	2.71E+3	3.63E+1	2.83E+2	2.21E+3	1.14E+1	9.03E+1	7.07E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	1.69E-1	1.49E+0	9.32E+0	8.79E-2	7.77E-1	4.86E+0	9.12E-3	8.06E-2	5.04E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.80E-1	3.16E+0	3.49E+0	9.79E-1	3.16E+0	3.48E+0	9.70E-1	2.88E+0	3.17E+0	9.25E-1	1.94E+0	2.09E+0	7.45E-1	1.06E+0	1.11E+0
XII	2.64E-2	8.15E-2	8.39E-2	2.64E-2	8.15E-2	8.38E-2	2.61E-2	8.07E-2	8.31E-2	2.55E-2	7.89E-2	8.11E-2	8.22E-3	2.54E-2	2.61E-2
XIIIA	3.39E-4	1.10E-3	1.34E-3	1.30E-4	4.23E-4	5.13E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.73E-4	4.85E-4	5.31E-4	1.05E-4	1.86E-4	2.03E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.80E-4	2.13E-4	5.71E-3	6.90E-5	8.16E-5	2.19E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.57E-3	1.01E-2	1.01E-2	9.56E-3	1.01E-2	1.01E-2	9.54E-3	1.00E-2	1.00E-2	9.22E-3	9.70E-3	9.70E-3	5.11E-3	5.41E-3	5.41E-3
XVIB	9.47E-3	9.93E-3	9.93E-3	9.47E-3	9.93E-3	9.93E-3	9.45E-3	9.91E-3	9.91E-3	9.13E-3	9.58E-3	9.58E-3	5.06E-3	5.34E-3	5.34E-3
XVIC	9.23E-3	9.63E-3	9.63E-3	9.22E-3	9.63E-3	9.63E-3	9.20E-3	9.60E-3	9.60E-3	8.89E-3	9.29E-3	9.29E-3	4.92E-3	5.16E-3	5.16E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.54E-2	2.81E-2	2.81E-2	1.74E-2	1.93E-2	1.93E-2
XVIIIB	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.87E-2	2.87E-2	2.50E-2	2.75E-2	2.75E-2	1.71E-2	1.89E-2	1.89E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.42E-2	2.64E-2	2.64E-2	1.66E-2	1.81E-2	1.81E-2
XXA	3.12E-3	1.17E-2	6.32E-2	1.35E-3	5.08E-3	2.75E-2	1.53E-4	5.75E-4	3.14E-3	5.71E-5	2.15E-4	1.19E-3	.00E+0	.00E+0	.00E+0
XXB	2.51E-3	5.16E-3	1.67E-2	1.09E-3	2.24E-3	7.25E-3	1.23E-4	2.54E-4	8.28E-4	4.60E-5	9.49E-5	3.12E-4	.00E+0	.00E+0	.00E+0
XXC	1.66E-3	2.19E-3	5.95E-1	7.21E-4	9.50E-4	2.59E-1	8.15E-5	1.08E-4	2.96E-2	3.04E-5	4.02E-5	1.12E-2	.00E+0	.00E+0	.00E+0
XXIA	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.41E-2	7.73E-1	7.28E+0	6.37E-2	6.65E-1	6.26E+0	2.28E-2	2.38E-1	2.24E+0
XXIB	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.35E-2	7.61E-1	6.59E+0	6.32E-2	6.54E-1	5.67E+0	2.26E-2	2.34E-1	2.03E+0
XXIC	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.24E-2	7.33E-1	5.34E+0	6.22E-2	6.31E-1	4.59E+0	2.22E-2	2.25E-1	1.64E+0
XXII	2.24E+0	2.40E+1	5.16E+1	2.23E+0	2.40E+1	5.16E+1	2.19E+0	2.36E+1	5.08E+1	2.00E+0	2.17E+1	4.67E+1	.00E+0	.00E+0	.00E+0
DOE	8.40E+2	4.30E+3	1.58E+4	8.32E+2	4.23E+3	1.53E+4	7.96E+2	4.02E+3	1.38E+4	7.10E+2	3.76E+3	1.26E+4	4.26E+2	2.62E+3	9.17E+3
DOD	2.86E-2	8.66E-2	1.05E-1	2.72E-2	8.34E-2	9.20E-2	2.61E-2	8.07E-2	8.31E-2	2.55E-2	7.89E-2	8.11E-2	8.22E-3	2.54E-2	2.61E-2
NRC	4.47E+0	1.99E+1	1.48E+2	4.45E+0	1.98E+1	1.46E+2	4.42E+0	1.97E+1	1.44E+2	4.09E+0	1.72E+1	1.24E+2	2.20E+0	6.95E+0	4.51E+1
Total	8.45E+2	4.32E+3	1.60E+4	8.36E+2	4.25E+3	1.55E+4	8.00E+2	4.04E+3	1.39E+4	7.14E+2	3.77E+3	1.27E+4	4.28E+2	2.62E+3	9.21E+3

High Population Density Without Agriculture - 09-13-94 4:11p
 TABLE K-116. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.74E+0	5.16E+0	5.16E+0	4.38E+0	4.77E+0	4.77E+0	4.14E+0	4.51E+0	4.51E+0	3.81E+0	4.15E+0	4.15E+0	3.61E+0	3.93E+0	3.93E+0	3.18E+0	3.46E+0	3.46E+0
II	4.82E+1	4.50E+2	2.21E+3	4.82E+1	4.49E+2	2.20E+3	4.82E+1	4.49E+2	2.19E+3	4.81E+1	4.48E+2	2.19E+3	4.81E+1	4.48E+2	2.18E+3	4.80E+1	4.46E+2	2.17E+3
III	1.78E+0	1.96E+0	1.96E+0	1.49E+0	1.65E+0	1.65E+0	1.19E+0	1.31E+0	1.31E+0	7.01E-1	7.74E-1	7.74E-1	4.05E-1	4.47E-1	4.47E-1	2.85E-1	3.14E-1	3.14E-1
IV	3.96E-1	9.84E-1	9.97E-1	3.60E-1	8.94E-1	9.06E-1	3.24E-1	8.05E-1	8.15E-1	2.51E-1	6.25E-1	6.33E-1	1.79E-1	4.46E-1	4.52E-1	7.10E-2	1.76E-1	1.79E-1
V	1.39E+2	1.51E+2	1.51E+2	1.34E+2	1.47E+2	1.47E+2	1.30E+2	1.42E+2	1.42E+2	1.22E+2	1.32E+2	1.32E+2	1.13E+2	1.23E+2	1.23E+2	1.07E+2	1.17E+2	1.17E+2
VI	2.53E+1	1.39E+2	4.55E+2	2.51E+1	1.39E+2	4.54E+2	2.49E+1	1.38E+2	4.53E+2	2.46E+1	1.37E+2	4.50E+2	2.42E+1	1.36E+2	4.46E+2	2.36E+1	1.34E+2	4.40E+2
VII	1.14E+1	9.03E+1	7.07E+2	4.02E+0	3.21E+1	2.52E+2	4.02E-1	3.05E+0	2.38E+1	4.14E-2	2.71E-1	2.06E+0	1.22E-2	7.58E-2	5.71E-1	.00E+0	.00E+0	.00E+0
IX	9.12E-3	8.06E-2	5.04E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.70E-1	2.88E+0	3.17E+0	9.63E-1	2.59E+0	2.84E+0	9.57E-1	2.41E+0	2.63E+0	9.47E-1	2.21E+0	2.40E+0	9.37E-1	2.08E+0	2.25E+0	9.25E-1	1.94E+0	2.09E+0
XII	2.61E-2	8.07E-2	8.31E-2	2.60E-2	8.04E-2	8.27E-2	2.59E-2	8.02E-2	8.25E-2	2.58E-2	7.98E-2	8.21E-2	2.57E-2	7.94E-2	8.17E-2	2.55E-2	7.89E-2	8.11E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.54E-3	1.00E-2	1.00E-2	9.49E-3	9.98E-3	9.98E-3	9.46E-3	9.95E-3	9.95E-3	9.42E-3	9.90E-3	9.90E-3	9.36E-3	9.85E-3	9.85E-3	9.22E-3	9.70E-3	9.70E-3
XVIB	9.45E-3	9.91E-3	9.91E-3	9.40E-3	9.86E-3	9.86E-3	9.37E-3	9.83E-3	9.83E-3	9.32E-3	9.78E-3	9.78E-3	9.27E-3	9.72E-3	9.72E-3	9.13E-3	9.58E-3	9.58E-3
XVIC	9.20E-3	9.60E-3	9.60E-3	9.15E-3	9.55E-3	9.55E-3	9.13E-3	9.53E-3	9.53E-3	9.08E-3	9.48E-3	9.48E-3	9.02E-3	9.42E-3	9.42E-3	8.89E-3	9.29E-3	9.29E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.64E-2	2.92E-2	2.92E-2	2.63E-2	2.91E-2	2.91E-2	2.60E-2	2.88E-2	2.88E-2	2.58E-2	2.85E-2	2.85E-2	2.54E-2	2.81E-2	2.81E-2
XVIIIB	2.61E-2	2.87E-2	2.87E-2	2.60E-2	2.87E-2	2.87E-2	2.59E-2	2.85E-2	2.85E-2	2.56E-2	2.83E-2	2.83E-2	2.54E-2	2.80E-2	2.80E-2	2.50E-2	2.75E-2	2.75E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.74E-2	2.74E-2	2.50E-2	2.73E-2	2.73E-2	2.48E-2	2.70E-2	2.70E-2	2.45E-2	2.68E-2	2.68E-2	2.42E-2	2.64E-2	2.64E-2
XXA	1.53E-4	5.75E-4	3.14E-3	1.29E-4	4.85E-4	2.65E-3	1.14E-4	4.28E-4	2.35E-3	9.51E-5	3.58E-4	1.97E-3	7.99E-5	3.01E-4	1.66E-3	5.71E-5	2.15E-4	1.19E-3
XXB	1.23E-4	2.54E-4	8.28E-4	1.04E-4	2.14E-4	6.99E-4	9.18E-5	1.89E-4	6.18E-4	7.66E-5	1.58E-4	5.17E-4	6.44E-5	1.33E-4	4.36E-4	4.60E-5	9.49E-5	3.12E-4
XXC	8.15E-5	1.08E-4	2.96E-2	6.87E-5	9.07E-5	2.50E-2	6.06E-5	8.01E-5	2.21E-2	5.06E-5	6.69E-5	1.85E-2	4.25E-5	5.62E-5	1.56E-2	3.04E-5	4.02E-5	1.12E-2
XXIA	7.41E-2	7.73E-1	7.28E+0	7.33E-2	7.65E-1	7.21E+0	7.25E-2	7.58E-1	7.13E+0	7.08E-2	7.39E-1	6.96E+0	6.77E-2	7.07E-1	6.65E+0	6.37E-2	6.65E-1	6.26E+0
XXIB	7.35E-2	7.61E-1	6.59E+0	7.28E-2	7.53E-1	6.52E+0	7.20E-2	7.45E-1	6.46E+0	7.02E-2	7.27E-1	6.30E+0	6.72E-2	6.95E-1	6.02E+0	6.32E-2	6.54E-1	5.67E+0
XXIC	7.24E-2	7.33E-1	5.34E+0	7.16E-2	7.26E-1	5.28E+0	7.09E-2	7.18E-1	5.23E+0	6.92E-2	7.01E-1	5.10E+0	6.61E-2	6.70E-1	4.88E+0	6.22E-2	6.31E-1	4.59E+0
XXII	2.19E+0	2.36E+1	5.08E+1	2.16E+0	2.34E+1	5.03E+1	2.11E+0	2.29E+1	4.92E+1	2.06E+0	2.22E+1	4.78E+1	2.04E+0	2.20E+1	4.74E+1	2.00E+0	2.17E+1	4.67E+1
DOE	7.96E+2	4.02E+3	1.38E+4	7.79E+2	3.94E+3	1.33E+4	7.66E+2	3.90E+3	1.30E+4	7.48E+2	3.85E+3	1.29E+4	7.30E+2	3.81E+3	1.28E+4	7.10E+2	3.76E+3	1.26E+4
DOD	2.61E-2	8.07E-2	8.31E-2	2.60E-2	8.04E-2	8.27E-2	2.59E-2	8.02E-2	8.25E-2	2.58E-2	7.98E-2	8.21E-2	2.57E-2	7.94E-2	8.17E-2	2.55E-2	7.89E-2	8.11E-2
NRC	4.42E+0	1.97E+1	1.44E+2	4.40E+0	1.95E+1	1.43E+2	4.37E+0	1.93E+1	1.41E+2	4.31E+0	1.89E+1	1.38E+2	4.22E+0	1.82E+1	1.32E+2	4.09E+0	1.72E+1	1.24E+2
Total	8.00E+2	4.04E+3	1.39E+4	7.84E+2	3.96E+3	1.34E+4	7.71E+2	3.91E+3	1.31E+4	7.52E+2	3.87E+3	1.30E+4	7.34E+2	3.83E+3	1.29E+4	7.14E+2	3.77E+3	1.27E+4

TABLE K-117. DOSE TO WORKERS (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.30E+1	1.30E+1	1.30E+1	1.28E+1	1.28E+1	1.28E+1	1.21E+1	1.21E+1	1.21E+1	9.69E+0	9.69E+0	9.69E+0	4.34E+0	4.34E+0	4.34E+0
II	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.63E+2	2.63E+2	2.63E+2	2.52E+2	2.53E+2	2.53E+2
III	5.36E+0	5.36E+0	5.36E+0	5.36E+0	5.36E+0	5.36E+0	5.00E+0	5.00E+0	5.00E+0	2.65E+0	2.65E+0	2.65E+0	.00E+0	.00E+0	.00E+0
IV	5.00E+0	5.00E+0	5.00E+0	4.94E+0	4.94E+0	4.94E+0	4.72E+0	4.72E+0	4.72E+0	3.72E+0	3.72E+0	3.72E+0	.00E+0	.00E+0	.00E+0
V	3.39E+2	3.39E+2	3.39E+2	3.39E+2	3.39E+2	3.39E+2	3.35E+2	3.35E+2	3.35E+2	3.07E+2	3.07E+2	3.07E+2	2.01E+2	2.01E+2	2.01E+2
VI	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.14E+2	1.14E+2	1.14E+2	1.13E+2	1.13E+2	1.13E+2	1.02E+2	1.02E+2	1.02E+2
VII	7.58E+2	7.58E+2	7.58E+2	6.19E+2	6.19E+2	6.19E+2	4.49E+2	4.49E+2	4.49E+2	1.16E+1	1.16E+1	1.16E+1	.00E+0	.00E+0	.00E+0
IX	2.98E+0	2.98E+0	2.98E+0	2.17E+0	2.17E+0	2.17E+0	7.43E-1	7.43E-1	7.43E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.03E+0	1.03E+0	1.03E+0	1.03E+0	1.03E+0	1.03E+0	8.98E-1	9.95E-1	9.95E-1	5.80E-1	6.41E-1	6.41E-1	2.51E-1	2.65E-1	2.65E-1
XII	8.81E+0	8.81E+0	8.81E+0	8.80E+0	8.80E+0	8.80E+0	8.79E+0	8.79E+0	8.79E+0	8.68E+0	8.68E+0	8.68E+0	8.20E+0	8.20E+0	8.20E+0
XIIIA	2.36E-3	2.36E-3	2.36E-3	1.69E-3	1.69E-3	1.69E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.36E-3	2.36E-3	2.36E-3	1.69E-3	1.69E-3	1.69E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.36E-3	2.36E-3	2.36E-3	1.69E-3	1.69E-3	1.69E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	9.19E-2	9.19E-2	9.19E-2
XVIB	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	9.19E-2	9.19E-2	9.19E-2
XVIC	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	9.19E-2	9.19E-2	9.19E-2
XVIIIA	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.80E-2	9.80E-2	9.80E-2	8.57E-2	8.57E-2	8.57E-2
XVIIIB	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.80E-2	9.80E-2	9.80E-2	8.57E-2	8.57E-2	8.57E-2
XVIIIC	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.80E-2	9.80E-2	9.80E-2	8.57E-2	8.57E-2	8.57E-2
XXA	3.38E-1	3.38E-1	3.38E-1	2.13E-1	2.13E-1	2.13E-1	4.44E-2	4.44E-2	4.44E-2	1.05E-2	1.05E-2	1.05E-2	.00E+0	.00E+0	.00E+0
XXB	3.38E-1	3.38E-1	3.38E-1	2.13E-1	2.13E-1	2.13E-1	4.44E-2	4.44E-2	4.44E-2	1.05E-2	1.05E-2	1.05E-2	.00E+0	.00E+0	.00E+0
XXC	3.38E-1	3.38E-1	3.38E-1	2.13E-1	2.13E-1	2.13E-1	4.44E-2	4.44E-2	4.44E-2	1.05E-2	1.05E-2	1.05E-2	.00E+0	.00E+0	.00E+0
XXIA	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.48E+0	2.48E+0	2.48E+0	1.68E+0	1.68E+0	1.68E+0
XXIB	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.48E+0	2.48E+0	2.48E+0	1.68E+0	1.68E+0	1.68E+0
XXIC	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.48E+0	2.48E+0	2.48E+0	1.68E+0	1.68E+0	1.68E+0
XXII	6.43E+1	6.43E+1	6.43E+1	6.42E+1	6.42E+1	6.42E+1	6.39E+1	6.39E+1	6.39E+1	6.09E+1	6.13E+1	6.13E+1	1.92E+1	2.85E+1	2.85E+1
DOE	4.44E+3	4.44E+3	4.44E+3	4.29E+3	4.29E+3	4.29E+3	4.11E+3	4.11E+3	4.11E+3	3.59E+3	3.59E+3	3.59E+3	2.90E+3	2.97E+3	2.97E+3
DOD	8.83E+0	8.83E+0	8.83E+0	8.81E+0	8.81E+0	8.81E+0	8.79E+0	8.79E+0	8.79E+0	8.68E+0	8.68E+0	8.68E+0	8.20E+0	8.20E+0	8.20E+0
NRC	8.10E+1	8.10E+1	8.10E+1	7.92E+1	7.92E+1	7.92E+1	7.68E+1	7.68E+1	7.68E+1	7.46E+1	7.46E+1	7.46E+1	5.39E+1	5.39E+1	5.39E+1
Total	4.52E+3	4.52E+3	4.52E+3	4.38E+3	4.38E+3	4.38E+3	4.20E+3	4.20E+3	4.20E+3	3.67E+3	3.67E+3	3.67E+3	2.97E+3	3.03E+3	3.03E+3

TABLE K-118. DOSE TO WORKERS (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.21E+1	1.21E+1	1.21E+1	1.16E+1	1.16E+1	1.16E+1	1.12E+1	1.12E+1	1.12E+1	1.06E+1	1.06E+1	1.06E+1	1.02E+1	1.02E+1	1.02E+1	9.69E+0	9.69E+0	9.69E+0
II	2.64E+2	2.64E+2	2.64E+2	2.63E+2	2.64E+2	2.64E+2	2.63E+2	2.64E+2	2.64E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2
III	5.00E+0	5.00E+0	5.00E+0	4.36E+0	4.36E+0	4.36E+0	3.96E+0	3.96E+0	3.96E+0	3.63E+0	3.63E+0	3.63E+0	3.24E+0	3.24E+0	3.24E+0	2.65E+0	2.65E+0	2.65E+0
IV	4.72E+0	4.72E+0	4.72E+0	4.59E+0	4.59E+0	4.59E+0	4.48E+0	4.48E+0	4.48E+0	4.27E+0	4.27E+0	4.27E+0	4.05E+0	4.05E+0	4.05E+0	3.72E+0	3.72E+0	3.72E+0
V	3.35E+2	3.35E+2	3.35E+2	3.31E+2	3.31E+2	3.31E+2	3.28E+2	3.28E+2	3.28E+2	3.22E+2	3.22E+2	3.22E+2	3.16E+2	3.16E+2	3.16E+2	3.07E+2	3.07E+2	3.07E+2
VI	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.13E+2	1.13E+2	1.13E+2
VII	4.49E+2	4.49E+2	4.49E+2	2.97E+2	2.97E+2	2.97E+2	2.09E+2	2.09E+2	2.09E+2	1.28E+2	1.28E+2	1.28E+2	7.21E+1	7.21E+1	7.21E+1	1.16E+1	1.16E+1	1.16E+1
IX	7.43E-1	7.43E-1	7.43E-1	3.55E-1	3.55E-1	3.55E-1	2.10E-1	2.10E-1	2.10E-1	7.42E-2	7.42E-2	7.42E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	8.98E-1	9.95E-1	9.95E-1	8.01E-1	9.35E-1	9.35E-1	7.43E-1	8.77E-1	8.77E-1	6.71E-1	7.78E-1	7.78E-1	6.26E-1	7.09E-1	7.09E-1	5.80E-1	6.41E-1	6.41E-1
XII	8.79E+0	8.79E+0	8.79E+0	8.77E+0	8.77E+0	8.77E+0	8.76E+0	8.76E+0	8.76E+0	8.73E+0	8.73E+0	8.73E+0	8.70E+0	8.70E+0	8.70E+0	8.68E+0	8.68E+0	8.68E+0
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1
XVIB	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1
XVIC	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1
XVIIIA	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2	9.85E-2	9.85E-2	9.85E-2	9.84E-2	9.84E-2	9.84E-2	9.80E-2	9.80E-2	9.80E-2
XVIIIB	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2	9.85E-2	9.85E-2	9.85E-2	9.84E-2	9.84E-2	9.84E-2	9.80E-2	9.80E-2	9.80E-2
XVIIIC	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2	9.85E-2	9.85E-2	9.85E-2	9.84E-2	9.84E-2	9.84E-2	9.80E-2	9.80E-2	9.80E-2
XXA	4.44E-2	4.44E-2	4.44E-2	1.49E-2	1.49E-2	1.49E-2	1.39E-2	1.39E-2	1.39E-2	1.25E-2	1.25E-2	1.25E-2	1.16E-2	1.16E-2	1.16E-2	1.05E-2	1.05E-2	1.05E-2
XXB	4.44E-2	4.44E-2	4.44E-2	1.49E-2	1.49E-2	1.49E-2	1.39E-2	1.39E-2	1.39E-2	1.25E-2	1.25E-2	1.25E-2	1.16E-2	1.16E-2	1.16E-2	1.05E-2	1.05E-2	1.05E-2
XXC	4.44E-2	4.44E-2	4.44E-2	1.49E-2	1.49E-2	1.49E-2	1.39E-2	1.39E-2	1.39E-2	1.25E-2	1.25E-2	1.25E-2	1.16E-2	1.16E-2	1.16E-2	1.05E-2	1.05E-2	1.05E-2
XXIA	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.53E+0	2.53E+0	2.53E+0	2.51E+0	2.51E+0	2.51E+0	2.50E+0	2.50E+0	2.50E+0	2.48E+0	2.48E+0	2.48E+0
XXIB	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.53E+0	2.53E+0	2.53E+0	2.51E+0	2.51E+0	2.51E+0	2.50E+0	2.50E+0	2.50E+0	2.48E+0	2.48E+0	2.48E+0
XXIC	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.53E+0	2.53E+0	2.53E+0	2.51E+0	2.51E+0	2.51E+0	2.50E+0	2.50E+0	2.50E+0	2.48E+0	2.48E+0	2.48E+0
XXII	6.39E+1	6.39E+1	6.39E+1	6.35E+1	6.36E+1	6.36E+1	6.31E+1	6.33E+1	6.33E+1	6.27E+1	6.28E+1	6.28E+1	6.22E+1	6.25E+1	6.25E+1	6.09E+1	6.13E+1	6.13E+1
DOE	4.11E+3	4.11E+3	4.11E+3	3.95E+3	3.95E+3	3.95E+3	3.85E+3	3.85E+3	3.85E+3	3.75E+3	3.75E+3	3.75E+3	3.68E+3	3.68E+3	3.68E+3	3.59E+3	3.59E+3	3.59E+3
DOD	8.79E+0	8.79E+0	8.79E+0	8.77E+0	8.77E+0	8.77E+0	8.76E+0	8.76E+0	8.76E+0	8.73E+0	8.73E+0	8.73E+0	8.70E+0	8.70E+0	8.70E+0	8.68E+0	8.68E+0	8.68E+0
NRC	7.68E+1	7.68E+1	7.68E+1	7.62E+1	7.62E+1	7.62E+1	7.60E+1	7.60E+1	7.60E+1	7.56E+1	7.56E+1	7.56E+1	7.52E+1	7.52E+1	7.52E+1	7.46E+1	7.46E+1	7.46E+1
Total	4.20E+3	4.20E+3	4.20E+3	4.03E+3	4.03E+3	4.03E+3	3.93E+3	3.93E+3	3.93E+3	3.83E+3	3.83E+3	3.83E+3	3.76E+3	3.76E+3	3.76E+3	3.67E+3	3.67E+3	3.67E+3

TABLE K-119. DOSE TO WORKERS (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.29E+1	1.29E+1	1.29E+1	1.25E+1	1.25E+1	1.25E+1	1.10E+1	1.10E+1	1.10E+1	7.42E+0	7.42E+0	7.42E+0	1.89E+0	1.89E+0	1.89E+0
II	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.63E+2	2.63E+2	2.63E+2	2.61E+2	2.61E+2	2.61E+2	1.76E+2	1.83E+2	1.83E+2
III	5.36E+0	5.36E+0	5.36E+0	5.31E+0	5.31E+0	5.31E+0	3.90E+0	3.90E+0	3.90E+0	6.24E-1	6.24E-1	6.24E-1	.00E+0	.00E+0	.00E+0
IV	4.98E+0	4.98E+0	4.98E+0	4.85E+0	4.85E+0	4.85E+0	4.41E+0	4.41E+0	4.41E+0	7.91E-1	7.91E-1	7.91E-1	.00E+0	.00E+0	.00E+0
V	3.39E+2	3.39E+2	3.39E+2	3.38E+2	3.38E+2	3.38E+2	3.26E+2	3.26E+2	3.26E+2	2.52E+2	2.52E+2	2.52E+2	7.09E+1	7.09E+1	7.09E+1
VI	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.14E+2	1.14E+2	1.14E+2	1.09E+2	1.09E+2	1.09E+2	7.83E+1	7.83E+1	7.83E+1
VII	6.89E+2	6.89E+2	6.89E+2	5.65E+2	5.65E+2	5.65E+2	1.80E+2	1.80E+2	1.80E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	2.58E+0	2.58E+0	2.58E+0	1.34E+0	1.34E+0	1.34E+0	1.39E-1	1.39E-1	1.39E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.03E+0	1.03E+0	1.03E+0	9.87E-1	1.03E+0	1.03E+0	7.57E-1	9.01E-1	9.01E-1	4.45E-1	4.78E-1	4.78E-1	1.44E-1	1.49E-1	1.49E-1
XII	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.72E+0	8.72E+0	8.72E+0	8.52E+0	8.52E+0	8.52E+0	2.74E+0	2.74E+0	2.74E+0
XIIIA	2.14E-3	2.14E-3	2.14E-3	8.19E-4	8.19E-4	8.19E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.14E-3	2.14E-3	2.14E-3	8.19E-4	8.19E-4	8.19E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.14E-3	2.14E-3	2.14E-3	8.19E-4	8.19E-4	8.19E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.07E-1	1.07E-1	1.07E-1	5.51E-2	5.51E-2	5.51E-2
XVIB	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.07E-1	1.07E-1	1.07E-1	5.51E-2	5.51E-2	5.51E-2
XVIC	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.07E-1	1.07E-1	1.07E-1	5.51E-2	5.51E-2	5.51E-2
XVIIIA	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2	9.45E-2	9.45E-2	9.45E-2	6.48E-2	6.48E-2	6.48E-2
XVIIIB	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2	9.45E-2	9.45E-2	9.45E-2	6.48E-2	6.48E-2	6.48E-2
XVIIIC	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2	9.45E-2	9.45E-2	9.45E-2	6.48E-2	6.48E-2	6.48E-2
XXA	2.56E-1	2.56E-1	2.56E-1	1.11E-1	1.11E-1	1.11E-1	1.27E-2	1.27E-2	1.27E-2	4.79E-3	4.79E-3	4.79E-3	.00E+0	.00E+0	.00E+0
XXB	2.56E-1	2.56E-1	2.56E-1	1.11E-1	1.11E-1	1.11E-1	1.27E-2	1.27E-2	1.27E-2	4.79E-3	4.79E-3	4.79E-3	.00E+0	.00E+0	.00E+0
XXC	2.56E-1	2.56E-1	2.56E-1	1.11E-1	1.11E-1	1.11E-1	1.27E-2	1.27E-2	1.27E-2	4.79E-3	4.79E-3	4.79E-3	.00E+0	.00E+0	.00E+0
XXIA	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.52E+0	2.52E+0	2.52E+0	2.17E+0	2.17E+0	2.17E+0	7.76E-1	7.76E-1	7.76E-1
XXIB	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.52E+0	2.52E+0	2.52E+0	2.17E+0	2.17E+0	2.17E+0	7.76E-1	7.76E-1	7.76E-1
XXIC	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.52E+0	2.52E+0	2.52E+0	2.17E+0	2.17E+0	2.17E+0	7.76E-1	7.76E-1	7.76E-1
XXII	6.43E+1	6.43E+1	6.43E+1	6.41E+1	6.41E+1	6.41E+1	6.30E+1	6.32E+1	6.32E+1	5.76E+1	5.80E+1	5.80E+1	.00E+0	.00E+0	.00E+0
DOE	4.36E+3	4.36E+3	4.36E+3	4.24E+3	4.24E+3	4.24E+3	3.81E+3	3.82E+3	3.82E+3	3.39E+3	3.39E+3	3.39E+3	2.03E+3	2.03E+3	2.03E+3
DOD	8.82E+0	8.82E+0	8.82E+0	8.81E+0	8.81E+0	8.81E+0	8.72E+0	8.72E+0	8.72E+0	8.52E+0	8.52E+0	8.52E+0	2.74E+0	2.74E+0	2.74E+0
NRC	7.98E+1	7.98E+1	7.98E+1	7.78E+1	7.78E+1	7.78E+1	7.59E+1	7.59E+1	7.59E+1	6.71E+1	6.71E+1	6.71E+1	2.80E+1	2.80E+1	2.80E+1
Total	4.45E+3	4.45E+3	4.45E+3	4.32E+3	4.32E+3	4.32E+3	3.90E+3	3.90E+3	3.90E+3	3.46E+3	3.47E+3	3.47E+3	2.06E+3	2.07E+3	2.07E+3

TABLE K-120. DOSE TO WORKERS (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.10E+1	1.10E+1	1.10E+1	1.02E+1	1.02E+1	1.02E+1	9.66E+0	9.66E+0	9.66E+0	8.90E+0	8.90E+0	8.90E+0	8.41E+0	8.41E+0	8.41E+0	7.42E+0	7.42E+0	7.42E+0
II	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.62E+2	2.63E+2	2.63E+2	2.62E+2	2.62E+2	2.62E+2	2.61E+2	2.61E+2	2.61E+2
III	3.90E+0	3.90E+0	3.90E+0	3.27E+0	3.27E+0	3.27E+0	2.61E+0	2.61E+0	2.61E+0	1.54E+0	1.54E+0	1.54E+0	8.88E-1	8.88E-1	8.88E-1	6.24E-1	6.24E-1	6.24E-1
IV	4.41E+0	4.41E+0	4.41E+0	4.01E+0	4.01E+0	4.01E+0	3.61E+0	3.61E+0	3.61E+0	2.80E+0	2.80E+0	2.80E+0	2.00E+0	2.00E+0	2.00E+0	7.91E-1	7.91E-1	7.91E-1
V	3.26E+2	3.26E+2	3.26E+2	3.16E+2	3.16E+2	3.16E+2	3.06E+2	3.06E+2	3.06E+2	2.86E+2	2.86E+2	2.86E+2	2.66E+2	2.66E+2	2.66E+2	2.52E+2	2.52E+2	2.52E+2
VI	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.13E+2	1.13E+2	1.13E+2	1.12E+2	1.12E+2	1.12E+2	1.11E+2	1.11E+2	1.11E+2	1.09E+2	1.09E+2	1.09E+2
VII	1.80E+2	1.80E+2	1.80E+2	6.40E+1	6.40E+1	6.40E+1	6.10E+0	6.10E+0	6.10E+0	5.42E-1	5.42E-1	5.42E-1	1.51E-1	1.51E-1	1.51E-1	.00E+0	.00E+0	.00E+0
IX	1.39E-1	1.39E-1	1.39E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	7.57E-1	9.01E-1	9.01E-1	6.60E-1	7.69E-1	7.69E-1	6.07E-1	6.86E-1	6.86E-1	5.41E-1	5.93E-1	5.93E-1	4.93E-1	5.38E-1	5.38E-1	4.45E-1	4.78E-1	4.78E-1
XII	8.72E+0	8.72E+0	8.72E+0	8.68E+0	8.68E+0	8.68E+0	8.66E+0	8.66E+0	8.66E+0	8.61E+0	8.61E+0	8.61E+0	8.57E+0	8.57E+0	8.57E+0	8.52E+0	8.52E+0	8.52E+0
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.10E-1	1.10E-1	1.10E-1	1.09E-1	1.09E-1	1.09E-1	1.07E-1	1.07E-1	1.07E-1
XVIB	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.10E-1	1.10E-1	1.10E-1	1.09E-1	1.09E-1	1.09E-1	1.07E-1	1.07E-1	1.07E-1
XVIC	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.10E-1	1.10E-1	1.10E-1	1.09E-1	1.09E-1	1.09E-1	1.07E-1	1.07E-1	1.07E-1
XVIIIA	9.86E-2	9.86E-2	9.86E-2	9.84E-2	9.84E-2	9.84E-2	9.79E-2	9.79E-2	9.79E-2	9.69E-2	9.69E-2	9.69E-2	9.60E-2	9.60E-2	9.60E-2	9.45E-2	9.45E-2	9.45E-2
XVIIIB	9.86E-2	9.86E-2	9.86E-2	9.84E-2	9.84E-2	9.84E-2	9.79E-2	9.79E-2	9.79E-2	9.69E-2	9.69E-2	9.69E-2	9.60E-2	9.60E-2	9.60E-2	9.45E-2	9.45E-2	9.45E-2
XVIIIC	9.86E-2	9.86E-2	9.86E-2	9.84E-2	9.84E-2	9.84E-2	9.79E-2	9.79E-2	9.79E-2	9.69E-2	9.69E-2	9.69E-2	9.60E-2	9.60E-2	9.60E-2	9.45E-2	9.45E-2	9.45E-2
XXA	1.27E-2	1.27E-2	1.27E-2	1.07E-2	1.07E-2	1.07E-2	9.49E-3	9.49E-3	9.49E-3	7.94E-3	7.94E-3	7.94E-3	6.69E-3	6.69E-3	6.69E-3	4.79E-3	4.79E-3	4.79E-3
XXB	1.27E-2	1.27E-2	1.27E-2	1.07E-2	1.07E-2	1.07E-2	9.49E-3	9.49E-3	9.49E-3	7.94E-3	7.94E-3	7.94E-3	6.69E-3	6.69E-3	6.69E-3	4.79E-3	4.79E-3	4.79E-3
XXC	1.27E-2	1.27E-2	1.27E-2	1.07E-2	1.07E-2	1.07E-2	9.49E-3	9.49E-3	9.49E-3	7.94E-3	7.94E-3	7.94E-3	6.69E-3	6.69E-3	6.69E-3	4.79E-3	4.79E-3	4.79E-3
XXIA	2.52E+0	2.52E+0	2.52E+0	2.50E+0	2.50E+0	2.50E+0	2.47E+0	2.47E+0	2.47E+0	2.41E+0	2.41E+0	2.41E+0	2.31E+0	2.31E+0	2.31E+0	2.17E+0	2.17E+0	2.17E+0
XXIB	2.52E+0	2.52E+0	2.52E+0	2.50E+0	2.50E+0	2.50E+0	2.47E+0	2.47E+0	2.47E+0	2.41E+0	2.41E+0	2.41E+0	2.31E+0	2.31E+0	2.31E+0	2.17E+0	2.17E+0	2.17E+0
XXIC	2.52E+0	2.52E+0	2.52E+0	2.50E+0	2.50E+0	2.50E+0	2.47E+0	2.47E+0	2.47E+0	2.41E+0	2.41E+0	2.41E+0	2.31E+0	2.31E+0	2.31E+0	2.17E+0	2.17E+0	2.17E+0
XXII	6.30E+1	6.32E+1	6.32E+1	6.22E+1	6.26E+1	6.26E+1	6.07E+1	6.12E+1	6.12E+1	5.92E+1	5.94E+1	5.94E+1	5.86E+1	5.89E+1	5.89E+1	5.76E+1	5.80E+1	5.80E+1
DOE	3.81E+3	3.82E+3	3.82E+3	3.67E+3	3.67E+3	3.67E+3	3.58E+3	3.58E+3	3.58E+3	3.51E+3	3.51E+3	3.51E+3	3.45E+3	3.46E+3	3.46E+3	3.39E+3	3.39E+3	3.39E+3
DOD	8.72E+0	8.72E+0	8.72E+0	8.68E+0	8.68E+0	8.68E+0	8.66E+0	8.66E+0	8.66E+0	8.61E+0	8.61E+0	8.61E+0	8.57E+0	8.57E+0	8.57E+0	8.52E+0	8.52E+0	8.52E+0
NRC	7.59E+1	7.59E+1	7.59E+1	7.52E+1	7.52E+1	7.52E+1	7.45E+1	7.45E+1	7.45E+1	7.30E+1	7.30E+1	7.30E+1	7.05E+1	7.05E+1	7.05E+1	6.71E+1	6.71E+1	6.71E+1
Total	3.90E+3	3.90E+3	3.90E+3	3.75E+3	3.76E+3	3.76E+3	3.66E+3	3.66E+3	3.66E+3	3.59E+3	3.59E+3	3.59E+3	3.53E+3	3.54E+3	3.54E+3	3.46E+3	3.47E+3	3.47E+3

TABLE K-121. POTENTIAL CANCERS AMONG WORKERS--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.99E-3	8.99E-3	8.99E-3	8.83E-3	8.83E-3	8.83E-3	8.35E-3	8.35E-3	8.35E-3	6.70E-3	6.70E-3	6.70E-3	3.00E-3	3.00E-3	3.00E-3
II	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.49E-1	1.49E-1	1.49E-1
III	3.71E-3	3.71E-3	3.71E-3	3.70E-3	3.70E-3	3.70E-3	3.45E-3	3.45E-3	3.45E-3	1.83E-3	1.83E-3	1.83E-3	.00E+0	.00E+0	.00E+0
IV	7.33E-4	7.33E-4	7.33E-4	7.24E-4	7.24E-4	7.24E-4	6.91E-4	6.91E-4	6.91E-4	5.44E-4	5.44E-4	5.44E-4	.00E+0	.00E+0	.00E+0
V	2.35E-1	2.35E-1	2.35E-1	2.34E-1	2.34E-1	2.34E-1	2.32E-1	2.32E-1	2.32E-1	2.12E-1	2.12E-1	2.12E-1	1.39E-1	1.39E-1	1.39E-1
VI	2.61E-2	2.61E-2	2.61E-2	2.61E-2	2.61E-2	2.61E-2	2.60E-2	2.60E-2	2.60E-2	2.53E-2	2.53E-2	2.53E-2	2.11E-2	2.11E-2	2.11E-2
VII	6.01E-2	6.01E-2	6.01E-2	5.06E-2	5.06E-2	5.06E-2	3.74E-2	3.74E-2	3.74E-2	9.70E-4	9.70E-4	9.70E-4	.00E+0	.00E+0	.00E+0
IX	2.03E-4	2.03E-4	2.03E-4	1.48E-4	1.48E-4	1.48E-4	5.06E-5	5.06E-5	5.06E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.45E-4	1.45E-4	1.45E-4	1.45E-4	1.45E-4	1.45E-4	1.27E-4	1.40E-4	1.40E-4	8.18E-5	9.04E-5	9.04E-5	3.53E-5	3.72E-5	3.72E-5
XII	6.00E-4	6.00E-4	6.00E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.91E-4	5.91E-4	5.91E-4	5.58E-4	5.58E-4	5.58E-4
XIIIA	4.02E-7	4.02E-7	4.02E-7	2.88E-7	2.88E-7	2.88E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	4.02E-7	4.02E-7	4.02E-7	2.88E-7	2.88E-7	2.88E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	4.02E-7	4.02E-7	4.02E-7	2.88E-7	2.88E-7	2.88E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	7.93E-5	7.93E-5	7.93E-5	6.58E-5	6.58E-5	6.58E-5
XVIB	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	7.93E-5	7.93E-5	7.93E-5	6.58E-5	6.58E-5	6.58E-5
XVIC	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	7.93E-5	7.93E-5	7.93E-5	6.58E-5	6.58E-5	6.58E-5
XVIIIA	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.71E-5	6.71E-5	6.71E-5	5.87E-5	5.87E-5	5.87E-5
XVIIIB	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.71E-5	6.71E-5	6.71E-5	5.87E-5	5.87E-5	5.87E-5
XVIIIC	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.71E-5	6.71E-5	6.71E-5	5.87E-5	5.87E-5	5.87E-5
XXA	4.20E-5	4.20E-5	4.20E-5	2.65E-5	2.65E-5	2.65E-5	5.52E-6	5.52E-6	5.52E-6	1.31E-6	1.31E-6	1.31E-6	.00E+0	.00E+0	.00E+0
XXB	4.20E-5	4.20E-5	4.20E-5	2.65E-5	2.65E-5	2.65E-5	5.52E-6	5.52E-6	5.52E-6	1.31E-6	1.31E-6	1.31E-6	.00E+0	.00E+0	.00E+0
XXC	4.20E-5	4.20E-5	4.20E-5	2.65E-5	2.65E-5	2.65E-5	5.52E-6	5.52E-6	5.52E-6	1.31E-6	1.31E-6	1.31E-6	.00E+0	.00E+0	.00E+0
XXIA	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3	1.13E-3	1.13E-3	1.13E-3	7.71E-4	7.71E-4	7.71E-4
XXIB	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3	1.13E-3	1.13E-3	1.13E-3	7.71E-4	7.71E-4	7.71E-4
XXIC	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3	1.13E-3	1.13E-3	1.13E-3	7.71E-4	7.71E-4	7.71E-4
XXII	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.94E-2	2.94E-2	2.94E-2	2.80E-2	2.82E-2	2.82E-2	8.83E-3	1.32E-2	1.32E-2
DOE	1.26E+0	1.26E+0	1.26E+0	1.25E+0	1.25E+0	1.25E+0	1.23E+0	1.23E+0	1.23E+0	1.14E+0	1.14E+0	1.14E+0	8.32E-1	8.62E-1	8.62E-1
DOD	6.03E-4	6.03E-4	6.03E-4	6.02E-4	6.02E-4	6.02E-4	5.99E-4	5.99E-4	5.99E-4	5.91E-4	5.91E-4	5.91E-4	5.58E-4	5.58E-4	5.58E-4
NRC	4.06E-2	4.06E-2	4.06E-2	4.03E-2	4.03E-2	4.03E-2	4.00E-2	4.00E-2	4.00E-2	3.91E-2	3.91E-2	3.91E-2	2.89E-2	2.89E-2	2.89E-2
Total	1.30E+0	1.30E+0	1.30E+0	1.29E+0	1.29E+0	1.29E+0	1.27E+0	1.27E+0	1.27E+0	1.18E+0	1.18E+0	1.18E+0	8.61E-1	8.92E-1	8.92E-1

TABLE K-122. POTENTIAL CANCERS AMONG WORKERS--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.35E-3	8.35E-3	8.35E-3	8.00E-3	8.00E-3	8.00E-3	7.73E-3	7.73E-3	7.73E-3	7.34E-3	7.34E-3	7.34E-3	7.04E-3	7.04E-3	7.04E-3	6.70E-3	6.70E-3	6.70E-3
II	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1
III	3.45E-3	3.45E-3	3.45E-3	3.01E-3	3.01E-3	3.01E-3	2.74E-3	2.74E-3	2.74E-3	2.51E-3	2.51E-3	2.51E-3	2.24E-3	2.24E-3	2.24E-3	1.83E-3	1.83E-3	1.83E-3
IV	6.91E-4	6.91E-4	6.91E-4	6.73E-4	6.73E-4	6.73E-4	6.57E-4	6.57E-4	6.57E-4	6.25E-4	6.25E-4	6.25E-4	5.93E-4	5.93E-4	5.93E-4	5.44E-4	5.44E-4	5.44E-4
V	2.32E-1	2.32E-1	2.32E-1	2.29E-1	2.29E-1	2.29E-1	2.26E-1	2.26E-1	2.26E-1	2.22E-1	2.22E-1	2.22E-1	2.18E-1	2.18E-1	2.18E-1	2.12E-1	2.12E-1	2.12E-1
VI	2.60E-2	2.60E-2	2.60E-2	2.59E-2	2.59E-2	2.59E-2	2.58E-2	2.58E-2	2.58E-2	2.56E-2	2.56E-2	2.56E-2	2.55E-2	2.55E-2	2.55E-2	2.53E-2	2.53E-2	2.53E-2
VII	3.74E-2	3.74E-2	3.74E-2	2.45E-2	2.45E-2	2.45E-2	1.71E-2	1.71E-2	1.71E-2	1.03E-2	1.03E-2	1.03E-2	5.79E-3	5.79E-3	5.79E-3	9.70E-4	9.70E-4	9.70E-4
IX	5.06E-5	5.06E-5	5.06E-5	2.42E-5	2.42E-5	2.42E-5	1.43E-5	1.43E-5	1.43E-5	5.05E-6	5.05E-6	5.05E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.27E-4	1.40E-4	1.40E-4	1.13E-4	1.32E-4	1.32E-4	1.05E-4	1.24E-4	1.24E-4	9.46E-5	1.10E-4	1.10E-4	8.82E-5	1.00E-4	1.00E-4	8.18E-5	9.04E-5	9.04E-5
XII	5.99E-4	5.99E-4	5.99E-4	5.97E-4	5.97E-4	5.97E-4	5.96E-4	5.96E-4	5.96E-4	5.94E-4	5.94E-4	5.94E-4	5.92E-4	5.92E-4	5.92E-4	5.91E-4	5.91E-4	5.91E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	8.05E-5	8.05E-5	8.05E-5	8.04E-5	8.04E-5	8.04E-5	8.02E-5	8.02E-5	8.02E-5	7.99E-5	7.99E-5	7.99E-5	7.96E-5	7.96E-5	7.96E-5	7.93E-5	7.93E-5	7.93E-5
XVIB	8.05E-5	8.05E-5	8.05E-5	8.04E-5	8.04E-5	8.04E-5	8.02E-5	8.02E-5	8.02E-5	7.99E-5	7.99E-5	7.99E-5	7.96E-5	7.96E-5	7.96E-5	7.93E-5	7.93E-5	7.93E-5
XVIC	8.05E-5	8.05E-5	8.05E-5	8.04E-5	8.04E-5	8.04E-5	8.02E-5	8.02E-5	8.02E-5	7.99E-5	7.99E-5	7.99E-5	7.96E-5	7.96E-5	7.96E-5	7.93E-5	7.93E-5	7.93E-5
XVIII	6.76E-5	6.76E-5	6.76E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.74E-5	6.74E-5	6.74E-5	6.74E-5	6.74E-5	6.74E-5	6.71E-5	6.71E-5	6.71E-5
XVIII A	6.76E-5	6.76E-5	6.76E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.74E-5	6.74E-5	6.74E-5	6.74E-5	6.74E-5	6.74E-5	6.71E-5	6.71E-5	6.71E-5
XVIII B	6.76E-5	6.76E-5	6.76E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.74E-5	6.74E-5	6.74E-5	6.74E-5	6.74E-5	6.74E-5	6.71E-5	6.71E-5	6.71E-5
XVIII C	6.76E-5	6.76E-5	6.76E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.74E-5	6.74E-5	6.74E-5	6.74E-5	6.74E-5	6.74E-5	6.71E-5	6.71E-5	6.71E-5
XXA	5.52E-6	5.52E-6	5.52E-6	1.85E-6	1.85E-6	1.85E-6	1.72E-6	1.72E-6	1.72E-6	1.55E-6	1.55E-6	1.55E-6	1.44E-6	1.44E-6	1.44E-6	1.31E-6	1.31E-6	1.31E-6
XXB	5.52E-6	5.52E-6	5.52E-6	1.85E-6	1.85E-6	1.85E-6	1.72E-6	1.72E-6	1.72E-6	1.55E-6	1.55E-6	1.55E-6	1.44E-6	1.44E-6	1.44E-6	1.31E-6	1.31E-6	1.31E-6
XXC	5.52E-6	5.52E-6	5.52E-6	1.85E-6	1.85E-6	1.85E-6	1.72E-6	1.72E-6	1.72E-6	1.55E-6	1.55E-6	1.55E-6	1.44E-6	1.44E-6	1.44E-6	1.31E-6	1.31E-6	1.31E-6
XXIA	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.15E-3	1.15E-3	1.15E-3	1.14E-3	1.14E-3	1.14E-3	1.13E-3	1.13E-3	1.13E-3
XXIB	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.15E-3	1.15E-3	1.15E-3	1.14E-3	1.14E-3	1.14E-3	1.13E-3	1.13E-3	1.13E-3
XXIC	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.15E-3	1.15E-3	1.15E-3	1.14E-3	1.14E-3	1.14E-3	1.13E-3	1.13E-3	1.13E-3
XXII	2.94E-2	2.94E-2	2.94E-2	2.92E-2	2.93E-2	2.93E-2	2.91E-2	2.92E-2	2.92E-2	2.89E-2	2.89E-2	2.89E-2	2.86E-2	2.88E-2	2.88E-2	2.80E-2	2.82E-2	2.82E-2
DOE	1.23E+0	1.23E+0	1.23E+0	1.21E+0	1.21E+0	1.21E+0	1.19E+0	1.20E+0	1.20E+0	1.18E+0	1.18E+0	1.18E+0	1.16E+0	1.17E+0	1.17E+0	1.14E+0	1.14E+0	1.14E+0
DOD	5.99E-4	5.99E-4	5.99E-4	5.97E-4	5.97E-4	5.97E-4	5.96E-4	5.96E-4	5.96E-4	5.94E-4	5.94E-4	5.94E-4	5.92E-4	5.92E-4	5.92E-4	5.91E-4	5.91E-4	5.91E-4
NRC	4.00E-2	4.00E-2	4.00E-2	3.99E-2	3.99E-2	3.99E-2	3.98E-2	3.98E-2	3.98E-2	3.96E-2	3.96E-2	3.96E-2	3.94E-2	3.94E-2	3.94E-2	3.91E-2	3.91E-2	3.91E-2
Total	1.27E+0	1.27E+0	1.27E+0	1.25E+0	1.25E+0	1.25E+0	1.23E+0	1.24E+0	1.24E+0	1.22E+0	1.22E+0	1.22E+0	1.20E+0	1.21E+0	1.21E+0	1.18E+0	1.18E+0	1.18E+0

TABLE K-123. POTENTIAL CANCERS AMONG WORKERS--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.93E-3	8.93E-3	8.93E-3	8.64E-3	8.64E-3	8.64E-3	7.64E-3	7.64E-3	7.64E-3	5.13E-3	5.13E-3	5.13E-3	1.31E-3	1.31E-3	1.31E-3
II	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.53E-1	1.54E-1	1.54E-1	1.04E-1	1.07E-1	1.07E-1
III	3.71E-3	3.71E-3	3.71E-3	3.67E-3	3.67E-3	3.67E-3	2.70E-3	2.70E-3	2.70E-3	4.32E-4	4.32E-4	4.32E-4	.00E+0	.00E+0	.00E+0
IV	7.29E-4	7.29E-4	7.29E-4	7.11E-4	7.11E-4	7.11E-4	6.46E-4	6.46E-4	6.46E-4	1.16E-4	1.16E-4	1.16E-4	.00E+0	.00E+0	.00E+0
V	2.34E-1	2.34E-1	2.34E-1	2.34E-1	2.34E-1	2.34E-1	2.26E-1	2.26E-1	2.26E-1	1.74E-1	1.74E-1	1.74E-1	4.90E-2	4.90E-2	4.90E-2
VI	2.61E-2	2.61E-2	2.61E-2	2.60E-2	2.60E-2	2.60E-2	2.57E-2	2.57E-2	2.57E-2	2.36E-2	2.36E-2	2.36E-2	1.47E-2	1.47E-2	1.47E-2
VII	5.54E-2	5.54E-2	5.54E-2	4.68E-2	4.68E-2	4.68E-2	1.46E-2	1.46E-2	1.46E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	1.75E-4	1.75E-4	1.75E-4	9.14E-5	9.14E-5	9.14E-5	9.48E-6	9.48E-6	9.48E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.45E-4	1.45E-4	1.45E-4	1.39E-4	1.45E-4	1.45E-4	1.07E-4	1.27E-4	1.27E-4	6.27E-5	6.74E-5	6.74E-5	2.02E-5	2.10E-5	2.10E-5
XII	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.94E-4	5.94E-4	5.94E-4	5.80E-4	5.80E-4	5.80E-4	1.87E-4	1.87E-4	1.87E-4
XIIIA	3.65E-7	3.65E-7	3.65E-7	1.40E-7	1.40E-7	1.40E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.65E-7	3.65E-7	3.65E-7	1.40E-7	1.40E-7	1.40E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	3.65E-7	3.65E-7	3.65E-7	1.40E-7	1.40E-7	1.40E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.02E-5	8.02E-5	8.02E-5	7.64E-5	7.64E-5	7.64E-5	3.95E-5	3.95E-5	3.95E-5
XVIB	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.02E-5	8.02E-5	8.02E-5	7.64E-5	7.64E-5	7.64E-5	3.95E-5	3.95E-5	3.95E-5
XVIC	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.02E-5	8.02E-5	8.02E-5	7.64E-5	7.64E-5	7.64E-5	3.95E-5	3.95E-5	3.95E-5
XVIIIA	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.75E-5	6.75E-5	6.75E-5	6.47E-5	6.47E-5	6.47E-5	4.44E-5	4.44E-5	4.44E-5
XVIIIB	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.75E-5	6.75E-5	6.75E-5	6.47E-5	6.47E-5	6.47E-5	4.44E-5	4.44E-5	4.44E-5
XVIIIC	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.75E-5	6.75E-5	6.75E-5	6.47E-5	6.47E-5	6.47E-5	4.44E-5	4.44E-5	4.44E-5
XXA	3.18E-5	3.18E-5	3.18E-5	1.38E-5	1.38E-5	1.38E-5	1.57E-6	1.57E-6	1.57E-6	5.92E-7	5.92E-7	5.92E-7	.00E+0	.00E+0	.00E+0
XXB	3.18E-5	3.18E-5	3.18E-5	1.38E-5	1.38E-5	1.38E-5	1.57E-6	1.57E-6	1.57E-6	5.92E-7	5.92E-7	5.92E-7	.00E+0	.00E+0	.00E+0
XXC	3.18E-5	3.18E-5	3.18E-5	1.38E-5	1.38E-5	1.38E-5	1.57E-6	1.57E-6	1.57E-6	5.92E-7	5.92E-7	5.92E-7	.00E+0	.00E+0	.00E+0
XXIA	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3	9.94E-4	9.94E-4	9.94E-4	3.55E-4	3.55E-4	3.55E-4
XXIB	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3	9.94E-4	9.94E-4	9.94E-4	3.55E-4	3.55E-4	3.55E-4
XXIC	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3	9.94E-4	9.94E-4	9.94E-4	3.55E-4	3.55E-4	3.55E-4
XXII	2.96E-2	2.96E-2	2.96E-2	2.95E-2	2.95E-2	2.95E-2	2.90E-2	2.91E-2	2.91E-2	2.65E-2	2.67E-2	2.67E-2	.00E+0	.00E+0	.00E+0
DOE	1.25E+0	1.25E+0	1.25E+0	1.24E+0	1.24E+0	1.24E+0	1.19E+0	1.19E+0	1.19E+0	1.05E+0	1.05E+0	1.05E+0	4.89E-1	4.92E-1	4.92E-1
DOD	6.02E-4	6.02E-4	6.02E-4	6.00E-4	6.00E-4	6.00E-4	5.94E-4	5.94E-4	5.94E-4	5.80E-4	5.80E-4	5.80E-4	1.87E-4	1.87E-4	1.87E-4
NRC	4.04E-2	4.04E-2	4.04E-2	4.02E-2	4.02E-2	4.02E-2	3.97E-2	3.97E-2	3.97E-2	3.55E-2	3.55E-2	3.55E-2	1.55E-2	1.55E-2	1.55E-2
Total	1.29E+0	1.29E+0	1.29E+0	1.28E+0	1.28E+0	1.28E+0	1.23E+0	1.23E+0	1.23E+0	1.09E+0	1.09E+0	1.09E+0	5.04E-1	5.08E-1	5.08E-1

TABLE K-124. POTENTIAL CANCERS AMONG WORKERS--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.64E-3	7.64E-3	7.64E-3	7.06E-3	7.06E-3	7.06E-3	6.68E-3	6.68E-3	6.68E-3	6.15E-3	6.15E-3	6.15E-3	5.82E-3	5.82E-3	5.82E-3	5.13E-3	5.13E-3	5.13E-3
II	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.53E-1	1.54E-1	1.54E-1
III	2.70E-3	2.70E-3	2.70E-3	2.26E-3	2.26E-3	2.26E-3	1.80E-3	1.80E-3	1.80E-3	1.06E-3	1.06E-3	1.06E-3	6.14E-4	6.14E-4	6.14E-4	4.32E-4	4.32E-4	4.32E-4
IV	6.46E-4	6.46E-4	6.46E-4	5.87E-4	5.87E-4	5.87E-4	5.29E-4	5.29E-4	5.29E-4	4.11E-4	4.11E-4	4.11E-4	2.93E-4	2.93E-4	2.93E-4	1.16E-4	1.16E-4	1.16E-4
V	2.26E-1	2.26E-1	2.26E-1	2.19E-1	2.19E-1	2.19E-1	2.12E-1	2.12E-1	2.12E-1	1.98E-1	1.98E-1	1.98E-1	1.84E-1	1.84E-1	1.84E-1	1.74E-1	1.74E-1	1.74E-1
VI	2.57E-2	2.57E-2	2.57E-2	2.55E-2	2.55E-2	2.55E-2	2.53E-2	2.53E-2	2.53E-2	2.48E-2	2.48E-2	2.48E-2	2.43E-2	2.43E-2	2.43E-2	2.36E-2	2.36E-2	2.36E-2
VII	1.46E-2	1.46E-2	1.46E-2	5.15E-3	5.15E-3	5.15E-3	5.21E-4	5.21E-4	5.21E-4	5.56E-5	5.56E-5	5.56E-5	1.65E-5	1.65E-5	1.65E-5	.00E+0	.00E+0	.00E+0
IX	9.48E-6	9.48E-6	9.48E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.07E-4	1.27E-4	1.27E-4	9.30E-5	1.08E-4	1.08E-4	8.55E-5	9.67E-5	9.67E-5	7.63E-5	8.36E-5	8.36E-5	6.95E-5	7.58E-5	7.58E-5	6.27E-5	6.74E-5	6.74E-5
XII	5.94E-4	5.94E-4	5.94E-4	5.91E-4	5.91E-4	5.91E-4	5.89E-4	5.89E-4	5.89E-4	5.86E-4	5.86E-4	5.86E-4	5.84E-4	5.84E-4	5.84E-4	5.80E-4	5.80E-4	5.80E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	8.02E-5	8.02E-5	8.02E-5	7.96E-5	7.96E-5	7.96E-5	7.93E-5	7.93E-5	7.93E-5	7.88E-5	7.88E-5	7.88E-5	7.80E-5	7.80E-5	7.80E-5	7.64E-5	7.64E-5	7.64E-5
XVIB	8.02E-5	8.02E-5	8.02E-5	7.96E-5	7.96E-5	7.96E-5	7.93E-5	7.93E-5	7.93E-5	7.88E-5	7.88E-5	7.88E-5	7.80E-5	7.80E-5	7.80E-5	7.64E-5	7.64E-5	7.64E-5
XVIC	8.02E-5	8.02E-5	8.02E-5	7.96E-5	7.96E-5	7.96E-5	7.93E-5	7.93E-5	7.93E-5	7.88E-5	7.88E-5	7.88E-5	7.80E-5	7.80E-5	7.80E-5	7.64E-5	7.64E-5	7.64E-5
XVIIIA	6.75E-5	6.75E-5	6.75E-5	6.74E-5	6.74E-5	6.74E-5	6.70E-5	6.70E-5	6.70E-5	6.64E-5	6.64E-5	6.64E-5	6.57E-5	6.57E-5	6.57E-5	6.47E-5	6.47E-5	6.47E-5
XVIIIB	6.75E-5	6.75E-5	6.75E-5	6.74E-5	6.74E-5	6.74E-5	6.70E-5	6.70E-5	6.70E-5	6.64E-5	6.64E-5	6.64E-5	6.57E-5	6.57E-5	6.57E-5	6.47E-5	6.47E-5	6.47E-5
XVIIIC	6.75E-5	6.75E-5	6.75E-5	6.74E-5	6.74E-5	6.74E-5	6.70E-5	6.70E-5	6.70E-5	6.64E-5	6.64E-5	6.64E-5	6.57E-5	6.57E-5	6.57E-5	6.47E-5	6.47E-5	6.47E-5
XXA	1.57E-6	1.57E-6	1.57E-6	1.33E-6	1.33E-6	1.33E-6	1.17E-6	1.17E-6	1.17E-6	9.82E-7	9.82E-7	9.82E-7	8.26E-7	8.26E-7	8.26E-7	5.92E-7	5.92E-7	5.92E-7
XXB	1.57E-6	1.57E-6	1.57E-6	1.33E-6	1.33E-6	1.33E-6	1.17E-6	1.17E-6	1.17E-6	9.82E-7	9.82E-7	9.82E-7	8.26E-7	8.26E-7	8.26E-7	5.92E-7	5.92E-7	5.92E-7
XXC	1.57E-6	1.57E-6	1.57E-6	1.33E-6	1.33E-6	1.33E-6	1.17E-6	1.17E-6	1.17E-6	9.82E-7	9.82E-7	9.82E-7	8.26E-7	8.26E-7	8.26E-7	5.92E-7	5.92E-7	5.92E-7
XXIA	1.16E-3	1.16E-3	1.16E-3	1.14E-3	1.14E-3	1.14E-3	1.13E-3	1.13E-3	1.13E-3	1.11E-3	1.11E-3	1.11E-3	1.06E-3	1.06E-3	1.06E-3	9.94E-4	9.94E-4	9.94E-4
XXIB	1.16E-3	1.16E-3	1.16E-3	1.14E-3	1.14E-3	1.14E-3	1.13E-3	1.13E-3	1.13E-3	1.11E-3	1.11E-3	1.11E-3	1.06E-3	1.06E-3	1.06E-3	9.94E-4	9.94E-4	9.94E-4
XXIC	1.16E-3	1.16E-3	1.16E-3	1.14E-3	1.14E-3	1.14E-3	1.13E-3	1.13E-3	1.13E-3	1.11E-3	1.11E-3	1.11E-3	1.06E-3	1.06E-3	1.06E-3	9.94E-4	9.94E-4	9.94E-4
XXII	2.90E-2	2.91E-2	2.91E-2	2.86E-2	2.88E-2	2.88E-2	2.79E-2	2.82E-2	2.82E-2	2.72E-2	2.73E-2	2.73E-2	2.70E-2	2.71E-2	2.71E-2	2.65E-2	2.67E-2	2.67E-2
DOE	1.19E+0	1.19E+0	1.19E+0	1.16E+0	1.17E+0	1.17E+0	1.14E+0	1.14E+0	1.14E+0	1.11E+0	1.11E+0	1.11E+0	1.08E+0	1.08E+0	1.08E+0	1.05E+0	1.05E+0	1.05E+0
DOD	5.94E-4	5.94E-4	5.94E-4	5.91E-4	5.91E-4	5.91E-4	5.89E-4	5.89E-4	5.89E-4	5.86E-4	5.86E-4	5.86E-4	5.84E-4	5.84E-4	5.84E-4	5.80E-4	5.80E-4	5.80E-4
NRC	3.97E-2	3.97E-2	3.97E-2	3.94E-2	3.94E-2	3.94E-2	3.91E-2	3.91E-2	3.91E-2	3.83E-2	3.83E-2	3.83E-2	3.72E-2	3.72E-2	3.72E-2	3.55E-2	3.55E-2	3.55E-2
Total	1.23E+0	1.23E+0	1.23E+0	1.20E+0	1.21E+0	1.21E+0	1.18E+0	1.18E+0	1.18E+0	1.15E+0	1.15E+0	1.15E+0	1.12E+0	1.12E+0	1.12E+0	1.09E+0	1.09E+0	1.09E+0

TABLE K-125. POTENTIAL CANCER DEATHS OF WORKERS--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.92E-3	5.92E-3	5.92E-3	5.81E-3	5.81E-3	5.81E-3	5.49E-3	5.49E-3	5.49E-3	4.41E-3	4.41E-3	4.41E-3	1.97E-3	1.97E-3	1.97E-3
II	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	9.86E-2	9.91E-2	9.91E-2
III	2.44E-3	2.44E-3	2.44E-3	2.44E-3	2.44E-3	2.44E-3	2.27E-3	2.27E-3	2.27E-3	1.21E-3	1.21E-3	1.21E-3	.00E+0	.00E+0	.00E+0
IV	6.15E-4	6.15E-4	6.15E-4	6.07E-4	6.07E-4	6.07E-4	5.79E-4	5.79E-4	5.79E-4	4.57E-4	4.57E-4	4.57E-4	.00E+0	.00E+0	.00E+0
V	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.53E-1	1.53E-1	1.53E-1	1.40E-1	1.40E-1	1.40E-1	9.16E-2	9.16E-2	9.16E-2
VI	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.92E-2	1.92E-2	1.92E-2	1.63E-2	1.63E-2	1.63E-2
VII	5.17E-2	5.17E-2	5.17E-2	4.32E-2	4.32E-2	4.32E-2	3.18E-2	3.18E-2	3.18E-2	8.23E-4	8.23E-4	8.23E-4	.00E+0	.00E+0	.00E+0
IX	1.82E-4	1.82E-4	1.82E-4	1.32E-4	1.32E-4	1.32E-4	4.54E-5	4.54E-5	4.54E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.24E-4	1.24E-4	1.24E-4	1.23E-4	1.24E-4	1.24E-4	1.08E-4	1.20E-4	1.20E-4	6.96E-5	7.69E-5	7.69E-5	3.01E-5	3.17E-5	3.17E-5
XII	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.31E-4	5.31E-4	5.31E-4	5.01E-4	5.01E-4	5.01E-4
XIIIA	3.22E-7	3.22E-7	3.22E-7	2.31E-7	2.31E-7	2.31E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.22E-7	3.22E-7	3.22E-7	2.31E-7	2.31E-7	2.31E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	3.22E-7	3.22E-7	3.22E-7	2.31E-7	2.31E-7	2.31E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.23E-5	5.23E-5	5.23E-5	4.34E-5	4.34E-5	4.34E-5
XVIB	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.23E-5	5.23E-5	5.23E-5	4.34E-5	4.34E-5	4.34E-5
XVIC	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.23E-5	5.23E-5	5.23E-5	4.34E-5	4.34E-5	4.34E-5
XVIIIA	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.42E-5	4.42E-5	4.42E-5	3.86E-5	3.86E-5	3.86E-5
XVIIIB	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.42E-5	4.42E-5	4.42E-5	3.86E-5	3.86E-5	3.86E-5
XVIIIC	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.42E-5	4.42E-5	4.42E-5	3.86E-5	3.86E-5	3.86E-5
XXA	3.73E-5	3.73E-5	3.73E-5	2.35E-5	2.35E-5	2.35E-5	4.90E-6	4.90E-6	4.90E-6	1.16E-6	1.16E-6	1.16E-6	.00E+0	.00E+0	.00E+0
XXB	3.73E-5	3.73E-5	3.73E-5	2.35E-5	2.35E-5	2.35E-5	4.90E-6	4.90E-6	4.90E-6	1.16E-6	1.16E-6	1.16E-6	.00E+0	.00E+0	.00E+0
XXC	3.73E-5	3.73E-5	3.73E-5	2.35E-5	2.35E-5	2.35E-5	4.90E-6	4.90E-6	4.90E-6	1.16E-6	1.16E-6	1.16E-6	.00E+0	.00E+0	.00E+0
XXIA	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.83E-4	7.83E-4	7.83E-4	7.62E-4	7.62E-4	7.62E-4	5.18E-4	5.18E-4	5.18E-4
XXIB	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.83E-4	7.83E-4	7.83E-4	7.62E-4	7.62E-4	7.62E-4	5.18E-4	5.18E-4	5.18E-4
XXIC	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.83E-4	7.83E-4	7.83E-4	7.62E-4	7.62E-4	7.62E-4	5.18E-4	5.18E-4	5.18E-4
XXII	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.98E-2	1.98E-2	1.98E-2	1.89E-2	1.90E-2	1.90E-2	5.94E-3	8.87E-3	8.87E-3
DOE	9.04E-1	9.04E-1	9.04E-1	8.94E-1	8.94E-1	8.94E-1	8.79E-1	8.79E-1	8.79E-1	8.15E-1	8.16E-1	8.16E-1	6.04E-1	6.24E-1	6.24E-1
DOD	5.41E-4	5.41E-4	5.41E-4	5.40E-4	5.40E-4	5.40E-4	5.38E-4	5.38E-4	5.38E-4	5.31E-4	5.31E-4	5.31E-4	5.01E-4	5.01E-4	5.01E-4
NRC	2.72E-2	2.72E-2	2.72E-2	2.70E-2	2.70E-2	2.70E-2	2.67E-2	2.67E-2	2.67E-2	2.61E-2	2.61E-2	2.61E-2	1.92E-2	1.92E-2	1.92E-2
Total	9.31E-1	9.31E-1	9.31E-1	9.22E-1	9.22E-1	9.22E-1	9.06E-1	9.06E-1	9.06E-1	8.42E-1	8.43E-1	8.43E-1	6.23E-1	6.44E-1	6.44E-1

TABLE K-126. POTENTIAL CANCER DEATHS OF WORKERS--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.49E-3	5.49E-3	5.49E-3	5.27E-3	5.27E-3	5.27E-3	5.09E-3	5.09E-3	5.09E-3	4.83E-3	4.83E-3	4.83E-3	4.63E-3	4.63E-3	4.63E-3	4.41E-3	4.41E-3	4.41E-3
II	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1
III	2.27E-3	2.27E-3	2.27E-3	1.98E-3	1.98E-3	1.98E-3	1.80E-3	1.80E-3	1.80E-3	1.65E-3	1.65E-3	1.65E-3	1.47E-3	1.47E-3	1.47E-3	1.21E-3	1.21E-3	1.21E-3
IV	5.79E-4	5.79E-4	5.79E-4	5.65E-4	5.65E-4	5.65E-4	5.51E-4	5.51E-4	5.51E-4	5.24E-4	5.24E-4	5.24E-4	4.97E-4	4.97E-4	4.97E-4	4.57E-4	4.57E-4	4.57E-4
V	1.53E-1	1.53E-1	1.53E-1	1.51E-1	1.51E-1	1.51E-1	1.49E-1	1.49E-1	1.49E-1	1.46E-1	1.46E-1	1.46E-1	1.44E-1	1.44E-1	1.44E-1	1.40E-1	1.40E-1	1.40E-1
VI	1.97E-2	1.97E-2	1.97E-2	1.96E-2	1.96E-2	1.96E-2	1.95E-2	1.95E-2	1.95E-2	1.94E-2	1.94E-2	1.94E-2	1.93E-2	1.93E-2	1.93E-2	1.92E-2	1.92E-2	1.92E-2
VII	3.18E-2	3.18E-2	3.18E-2	2.09E-2	2.09E-2	2.09E-2	1.46E-2	1.46E-2	1.46E-2	8.80E-3	8.80E-3	8.80E-3	4.97E-3	4.97E-3	4.97E-3	8.23E-4	8.23E-4	8.23E-4
IX	4.54E-5	4.54E-5	4.54E-5	2.17E-5	2.17E-5	2.17E-5	1.28E-5	1.28E-5	1.28E-5	4.53E-6	4.53E-6	4.53E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.08E-4	1.20E-4	1.20E-4	9.62E-5	1.12E-4	1.12E-4	8.92E-5	1.05E-4	1.05E-4	8.05E-5	9.34E-5	9.34E-5	7.51E-5	8.51E-5	8.51E-5	6.96E-5	7.69E-5	7.69E-5
XII	5.38E-4	5.38E-4	5.38E-4	5.36E-4	5.36E-4	5.36E-4	5.35E-4	5.35E-4	5.35E-4	5.33E-4	5.33E-4	5.33E-4	5.32E-4	5.32E-4	5.32E-4	5.31E-4	5.31E-4	5.31E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.29E-5	5.29E-5	5.29E-5	5.26E-5	5.26E-5	5.26E-5	5.24E-5	5.24E-5	5.24E-5	5.23E-5	5.23E-5	5.23E-5
XVIB	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.29E-5	5.29E-5	5.29E-5	5.26E-5	5.26E-5	5.26E-5	5.24E-5	5.24E-5	5.24E-5	5.23E-5	5.23E-5	5.23E-5
XVIC	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.29E-5	5.29E-5	5.29E-5	5.26E-5	5.26E-5	5.26E-5	5.24E-5	5.24E-5	5.24E-5	5.23E-5	5.23E-5	5.23E-5
XVIIIA	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.42E-5	4.42E-5	4.42E-5
XVIIIB	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.42E-5	4.42E-5	4.42E-5
XVIIIC	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.42E-5	4.42E-5	4.42E-5
XXA	4.90E-6	4.90E-6	4.90E-6	1.64E-6	1.64E-6	1.64E-6	1.53E-6	1.53E-6	1.53E-6	1.38E-6	1.38E-6	1.38E-6	1.28E-6	1.28E-6	1.28E-6	1.16E-6	1.16E-6	1.16E-6
XXB	4.90E-6	4.90E-6	4.90E-6	1.64E-6	1.64E-6	1.64E-6	1.53E-6	1.53E-6	1.53E-6	1.38E-6	1.38E-6	1.38E-6	1.28E-6	1.28E-6	1.28E-6	1.16E-6	1.16E-6	1.16E-6
XXC	4.90E-6	4.90E-6	4.90E-6	1.64E-6	1.64E-6	1.64E-6	1.53E-6	1.53E-6	1.53E-6	1.38E-6	1.38E-6	1.38E-6	1.28E-6	1.28E-6	1.28E-6	1.16E-6	1.16E-6	1.16E-6
XXIA	7.83E-4	7.83E-4	7.83E-4	7.81E-4	7.81E-4	7.81E-4	7.79E-4	7.79E-4	7.79E-4	7.74E-4	7.74E-4	7.74E-4	7.69E-4	7.69E-4	7.69E-4	7.62E-4	7.62E-4	7.62E-4
XXIB	7.83E-4	7.83E-4	7.83E-4	7.81E-4	7.81E-4	7.81E-4	7.79E-4	7.79E-4	7.79E-4	7.74E-4	7.74E-4	7.74E-4	7.69E-4	7.69E-4	7.69E-4	7.62E-4	7.62E-4	7.62E-4
XXIC	7.83E-4	7.83E-4	7.83E-4	7.81E-4	7.81E-4	7.81E-4	7.79E-4	7.79E-4	7.79E-4	7.74E-4	7.74E-4	7.74E-4	7.69E-4	7.69E-4	7.69E-4	7.62E-4	7.62E-4	7.62E-4
XXII	1.98E-2	1.98E-2	1.98E-2	1.97E-2	1.97E-2	1.97E-2	1.96E-2	1.96E-2	1.96E-2	1.94E-2	1.95E-2	1.95E-2	1.93E-2	1.94E-2	1.94E-2	1.89E-2	1.90E-2	1.90E-2
DOE	8.79E-1	8.79E-1	8.79E-1	8.63E-1	8.63E-1	8.63E-1	8.52E-1	8.53E-1	8.53E-1	8.40E-1	8.40E-1	8.40E-1	8.30E-1	8.31E-1	8.31E-1	8.15E-1	8.16E-1	8.16E-1
DOD	5.38E-4	5.38E-4	5.38E-4	5.36E-4	5.36E-4	5.36E-4	5.35E-4	5.35E-4	5.35E-4	5.33E-4	5.33E-4	5.33E-4	5.32E-4	5.32E-4	5.32E-4	5.31E-4	5.31E-4	5.31E-4
NRC	2.67E-2	2.67E-2	2.67E-2	2.66E-2	2.66E-2	2.66E-2	2.66E-2	2.66E-2	2.66E-2	2.64E-2	2.64E-2	2.64E-2	2.63E-2	2.63E-2	2.63E-2	2.61E-2	2.61E-2	2.61E-2
Total	9.06E-1	9.06E-1	9.06E-1	8.90E-1	8.90E-1	8.90E-1	8.79E-1	8.80E-1	8.80E-1	8.67E-1	8.67E-1	8.67E-1	8.57E-1	8.57E-1	8.57E-1	8.42E-1	8.43E-1	8.43E-1

TABLE K-127. POTENTIAL CANCER DEATHS OF WORKERS--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.88E-3	5.88E-3	5.88E-3	5.69E-3	5.69E-3	5.69E-3	5.03E-3	5.03E-3	5.03E-3	3.37E-3	3.37E-3	3.37E-3	8.59E-4	8.59E-4	8.59E-4
II	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	6.89E-2	7.13E-2	7.13E-2
III	2.44E-3	2.44E-3	2.44E-3	2.42E-3	2.42E-3	2.42E-3	1.78E-3	1.78E-3	1.78E-3	2.84E-4	2.84E-4	2.84E-4	.00E+0	.00E+0	.00E+0
IV	6.12E-4	6.12E-4	6.12E-4	5.96E-4	5.96E-4	5.96E-4	5.42E-4	5.42E-4	5.42E-4	9.72E-5	9.72E-5	9.72E-5	.00E+0	.00E+0	.00E+0
V	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.48E-1	1.48E-1	1.48E-1	1.15E-1	1.15E-1	1.15E-1	3.23E-2	3.23E-2	3.23E-2
VI	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.95E-2	1.95E-2	1.95E-2	1.80E-2	1.80E-2	1.80E-2	1.16E-2	1.16E-2	1.16E-2
VII	4.75E-2	4.75E-2	4.75E-2	3.98E-2	3.98E-2	3.98E-2	1.25E-2	1.25E-2	1.25E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	1.57E-4	1.57E-4	1.57E-4	8.21E-5	8.21E-5	8.21E-5	8.51E-6	8.51E-6	8.51E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.24E-4	1.24E-4	1.24E-4	1.19E-4	1.24E-4	1.24E-4	9.08E-5	1.08E-4	1.08E-4	5.34E-5	5.74E-5	5.74E-5	1.72E-5	1.79E-5	1.79E-5
XII	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.33E-4	5.33E-4	5.33E-4	5.21E-4	5.21E-4	5.21E-4	1.68E-4	1.68E-4	1.68E-4
XIIIA	2.92E-7	2.92E-7	2.92E-7	1.12E-7	1.12E-7	1.12E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.92E-7	2.92E-7	2.92E-7	1.12E-7	1.12E-7	1.12E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.92E-7	2.92E-7	2.92E-7	1.12E-7	1.12E-7	1.12E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.28E-5	5.28E-5	5.28E-5	5.03E-5	5.03E-5	5.03E-5	2.60E-5	2.60E-5	2.60E-5
XVIB	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.28E-5	5.28E-5	5.28E-5	5.03E-5	5.03E-5	5.03E-5	2.60E-5	2.60E-5	2.60E-5
XVIC	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.28E-5	5.28E-5	5.28E-5	5.03E-5	5.03E-5	5.03E-5	2.60E-5	2.60E-5	2.60E-5
XVIIIA	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5	4.26E-5	4.26E-5	4.26E-5	2.92E-5	2.92E-5	2.92E-5
XVIIIB	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5	4.26E-5	4.26E-5	4.26E-5	2.92E-5	2.92E-5	2.92E-5
XVIIIC	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5	4.26E-5	4.26E-5	4.26E-5	2.92E-5	2.92E-5	2.92E-5
XXA	2.82E-5	2.82E-5	2.82E-5	1.23E-5	1.23E-5	1.23E-5	1.40E-6	1.40E-6	1.40E-6	5.26E-7	5.26E-7	5.26E-7	.00E+0	.00E+0	.00E+0
XXB	2.82E-5	2.82E-5	2.82E-5	1.23E-5	1.23E-5	1.23E-5	1.40E-6	1.40E-6	1.40E-6	5.26E-7	5.26E-7	5.26E-7	.00E+0	.00E+0	.00E+0
XXC	2.82E-5	2.82E-5	2.82E-5	1.23E-5	1.23E-5	1.23E-5	1.40E-6	1.40E-6	1.40E-6	5.26E-7	5.26E-7	5.26E-7	.00E+0	.00E+0	.00E+0
XXIA	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.77E-4	7.77E-4	7.77E-4	6.68E-4	6.68E-4	6.68E-4	2.39E-4	2.39E-4	2.39E-4
XXIB	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.77E-4	7.77E-4	7.77E-4	6.68E-4	6.68E-4	6.68E-4	2.39E-4	2.39E-4	2.39E-4
XXIC	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.77E-4	7.77E-4	7.77E-4	6.68E-4	6.68E-4	6.68E-4	2.39E-4	2.39E-4	2.39E-4
XXII	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.95E-2	1.96E-2	1.96E-2	1.78E-2	1.80E-2	1.80E-2	.00E+0	.00E+0	.00E+0
DOE	8.99E-1	8.99E-1	8.99E-1	8.90E-1	8.90E-1	8.90E-1	8.48E-1	8.49E-1	8.49E-1	7.53E-1	7.54E-1	7.54E-1	3.66E-1	3.68E-1	3.68E-1
DOD	5.41E-4	5.41E-4	5.41E-4	5.39E-4	5.39E-4	5.39E-4	5.33E-4	5.33E-4	5.33E-4	5.21E-4	5.21E-4	5.21E-4	1.68E-4	1.68E-4	1.68E-4
NRC	2.71E-2	2.71E-2	2.71E-2	2.68E-2	2.68E-2	2.68E-2	2.65E-2	2.65E-2	2.65E-2	2.37E-2	2.37E-2	2.37E-2	1.03E-2	1.03E-2	1.03E-2
Total	9.27E-1	9.27E-1	9.27E-1	9.17E-1	9.17E-1	9.17E-1	8.76E-1	8.76E-1	8.76E-1	7.77E-1	7.78E-1	7.78E-1	3.76E-1	3.79E-1	3.79E-1

TABLE K-128. POTENTIAL CANCER DEATHS OF WORKERS--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.03E-3	5.03E-3	5.03E-3	4.65E-3	4.65E-3	4.65E-3	4.39E-3	4.39E-3	4.39E-3	4.05E-3	4.05E-3	4.05E-3	3.83E-3	3.83E-3	3.83E-3	3.37E-3	3.37E-3	3.37E-3
II	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1
III	1.78E-3	1.78E-3	1.78E-3	1.49E-3	1.49E-3	1.49E-3	1.19E-3	1.19E-3	1.19E-3	6.99E-4	6.99E-4	6.99E-4	4.04E-4	4.04E-4	4.04E-4	2.84E-4	2.84E-4	2.84E-4
IV	5.42E-4	5.42E-4	5.42E-4	4.93E-4	4.93E-4	4.93E-4	4.43E-4	4.43E-4	4.43E-4	3.44E-4	3.44E-4	3.44E-4	2.46E-4	2.46E-4	2.46E-4	9.72E-5	9.72E-5	9.72E-5
V	1.48E-1	1.48E-1	1.48E-1	1.44E-1	1.44E-1	1.44E-1	1.39E-1	1.39E-1	1.39E-1	1.30E-1	1.30E-1	1.30E-1	1.21E-1	1.21E-1	1.21E-1	1.15E-1	1.15E-1	1.15E-1
VI	1.95E-2	1.95E-2	1.95E-2	1.94E-2	1.94E-2	1.94E-2	1.92E-2	1.92E-2	1.92E-2	1.89E-2	1.89E-2	1.89E-2	1.85E-2	1.85E-2	1.85E-2	1.80E-2	1.80E-2	1.80E-2
VII	1.25E-2	1.25E-2	1.25E-2	4.41E-3	4.41E-3	4.41E-3	4.40E-4	4.40E-4	4.40E-4	4.49E-5	4.49E-5	4.49E-5	1.32E-5	1.32E-5	1.32E-5	.00E+0	.00E+0	.00E+0
IX	8.51E-6	8.51E-6	8.51E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.08E-5	1.08E-4	1.08E-4	7.92E-5	9.23E-5	9.23E-5	7.28E-5	8.24E-5	8.24E-5	6.49E-5	7.12E-5	7.12E-5	5.92E-5	6.46E-5	6.46E-5	5.34E-5	5.74E-5	5.74E-5
XII	5.33E-4	5.33E-4	5.33E-4	5.30E-4	5.30E-4	5.30E-4	5.29E-4	5.29E-4	5.29E-4	5.27E-4	5.27E-4	5.27E-4	5.24E-4	5.24E-4	5.24E-4	5.21E-4	5.21E-4	5.21E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.28E-5	5.28E-5	5.28E-5	5.25E-5	5.25E-5	5.25E-5	5.23E-5	5.23E-5	5.23E-5	5.19E-5	5.19E-5	5.19E-5	5.14E-5	5.14E-5	5.14E-5	5.03E-5	5.03E-5	5.03E-5
XVIB	5.28E-5	5.28E-5	5.28E-5	5.25E-5	5.25E-5	5.25E-5	5.23E-5	5.23E-5	5.23E-5	5.19E-5	5.19E-5	5.19E-5	5.14E-5	5.14E-5	5.14E-5	5.03E-5	5.03E-5	5.03E-5
XVIC	5.28E-5	5.28E-5	5.28E-5	5.25E-5	5.25E-5	5.25E-5	5.23E-5	5.23E-5	5.23E-5	5.19E-5	5.19E-5	5.19E-5	5.14E-5	5.14E-5	5.14E-5	5.03E-5	5.03E-5	5.03E-5
XVIIIA	4.44E-5	4.44E-5	4.44E-5	4.43E-5	4.43E-5	4.43E-5	4.41E-5	4.41E-5	4.41E-5	4.37E-5	4.37E-5	4.37E-5	4.32E-5	4.32E-5	4.32E-5	4.26E-5	4.26E-5	4.26E-5
XVIIIB	4.44E-5	4.44E-5	4.44E-5	4.43E-5	4.43E-5	4.43E-5	4.41E-5	4.41E-5	4.41E-5	4.37E-5	4.37E-5	4.37E-5	4.32E-5	4.32E-5	4.32E-5	4.26E-5	4.26E-5	4.26E-5
XVIIIC	4.44E-5	4.44E-5	4.44E-5	4.43E-5	4.43E-5	4.43E-5	4.41E-5	4.41E-5	4.41E-5	4.37E-5	4.37E-5	4.37E-5	4.32E-5	4.32E-5	4.32E-5	4.26E-5	4.26E-5	4.26E-5
XXA	1.40E-6	1.40E-6	1.40E-6	1.18E-6	1.18E-6	1.18E-6	1.04E-6	1.04E-6	1.04E-6	8.73E-7	8.73E-7	8.73E-7	7.35E-7	7.35E-7	7.35E-7	5.26E-7	5.26E-7	5.26E-7
XXB	1.40E-6	1.40E-6	1.40E-6	1.18E-6	1.18E-6	1.18E-6	1.04E-6	1.04E-6	1.04E-6	8.73E-7	8.73E-7	8.73E-7	7.35E-7	7.35E-7	7.35E-7	5.26E-7	5.26E-7	5.26E-7
XXC	1.40E-6	1.40E-6	1.40E-6	1.18E-6	1.18E-6	1.18E-6	1.04E-6	1.04E-6	1.04E-6	8.73E-7	8.73E-7	8.73E-7	7.35E-7	7.35E-7	7.35E-7	5.26E-7	5.26E-7	5.26E-7
XXIA	7.77E-4	7.77E-4	7.77E-4	7.69E-4	7.69E-4	7.69E-4	7.61E-4	7.61E-4	7.61E-4	7.43E-4	7.43E-4	7.43E-4	7.10E-4	7.10E-4	7.10E-4	6.68E-4	6.68E-4	6.68E-4
XXIB	7.77E-4	7.77E-4	7.77E-4	7.69E-4	7.69E-4	7.69E-4	7.61E-4	7.61E-4	7.61E-4	7.43E-4	7.43E-4	7.43E-4	7.10E-4	7.10E-4	7.10E-4	6.68E-4	6.68E-4	6.68E-4
XXIC	7.77E-4	7.77E-4	7.77E-4	7.69E-4	7.69E-4	7.69E-4	7.61E-4	7.61E-4	7.61E-4	7.43E-4	7.43E-4	7.43E-4	7.10E-4	7.10E-4	7.10E-4	6.68E-4	6.68E-4	6.68E-4
XXII	1.95E-2	1.96E-2	1.96E-2	1.93E-2	1.94E-2	1.94E-2	1.88E-2	1.90E-2	1.90E-2	1.83E-2	1.84E-2	1.84E-2	1.81E-2	1.82E-2	1.82E-2	1.78E-2	1.80E-2	1.80E-2
DOE	8.48E-1	8.49E-1	8.49E-1	8.30E-1	8.31E-1	8.31E-1	8.14E-1	8.15E-1	8.15E-1	7.92E-1	7.93E-1	7.93E-1	7.73E-1	7.74E-1	7.74E-1	7.53E-1	7.54E-1	7.54E-1
DOD	5.33E-4	5.33E-4	5.33E-4	5.30E-4	5.30E-4	5.30E-4	5.29E-4	5.29E-4	5.29E-4	5.27E-4	5.27E-4	5.27E-4	5.24E-4	5.24E-4	5.24E-4	5.21E-4	5.21E-4	5.21E-4
NRC	2.65E-2	2.65E-2	2.65E-2	2.63E-2	2.63E-2	2.63E-2	2.61E-2	2.61E-2	2.61E-2	2.56E-2	2.56E-2	2.56E-2	2.48E-2	2.48E-2	2.48E-2	2.37E-2	2.37E-2	2.37E-2
Total	8.76E-1	8.76E-1	8.76E-1	8.57E-1	8.57E-1	8.57E-1	8.40E-1	8.41E-1	8.41E-1	8.18E-1	8.19E-1	8.19E-1	7.99E-1	7.99E-1	7.99E-1	7.77E-1	7.78E-1	7.78E-1

TABLE K-129. DOSE TO MAXIMALLY EXPOSED INDIVIDUAL (mrem/yr)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.62E-2	4.62E-2	4.62E-2	4.62E-1	4.62E-1	4.62E-1	4.63E+0	4.63E+0	4.63E+0	4.63E+1	4.63E+1	4.63E+1	4.62E+2	4.62E+2	4.62E+2
II-1	5.32E-2	5.30E-2	5.30E-2	5.23E-1	5.22E-1	5.22E-1	6.08E+0	5.37E+0	5.37E+0	5.42E+1	5.31E+1	5.31E+1	5.31E+2	5.28E+2	5.28E+2
II-2	5.16E-2	5.14E-2	5.14E-2	5.28E-1	5.24E-1	5.24E-1	6.19E+0	5.65E+0	5.65E+0	5.82E+1	5.41E+1	5.41E+1	5.51E+2	5.28E+2	5.28E+2
II-3	4.96E-2	4.94E-2	4.94E-2	5.05E-1	5.04E-1	5.04E-1	6.01E+0	5.76E+0	5.76E+0	5.38E+1	5.32E+1	5.32E+1	5.29E+2	5.25E+2	5.25E+2
II-4	5.25E-2	5.21E-2	5.21E-2	5.24E-1	5.13E-1	5.13E-1	6.24E+0	5.41E+0	5.41E+0	5.62E+1	5.33E+1	5.33E+1	6.29E+2	5.93E+2	5.93E+2
II-5	5.12E-2	5.12E-2	5.12E-2	5.14E-1	5.13E-1	5.13E-1	5.14E+0	5.14E+0	5.14E+0	5.22E+1	5.22E+1	5.22E+1	5.19E+2	5.19E+2	5.19E+2
II-6	5.15E-2	5.11E-2	5.11E-2	5.15E-1	5.14E-1	5.14E-1	7.10E+0	6.17E+0	6.17E+0	5.66E+1	5.54E+1	5.54E+1	5.32E+2	5.30E+2	5.30E+2
II-7	7.46E-2	7.46E-2	7.46E-2	7.46E-1	7.46E-1	7.46E-1	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0
III	4.62E-2	4.62E-2	4.62E-2	4.62E-1	4.62E-1	4.62E-1	4.63E+0	4.63E+0	4.63E+0	4.63E+1	4.63E+1	4.63E+1	3.69E+2	3.69E+2	3.69E+2
IV	8.12E-2	8.12E-2	8.12E-2	8.11E-1	8.11E-1	8.11E-1	8.12E+0	8.12E+0	8.12E+0	8.12E+1	8.12E+1	8.12E+1	3.55E+2	3.55E+2	3.55E+2
V	4.62E-2	4.62E-2	4.62E-2	4.62E-1	4.62E-1	4.62E-1	4.62E+0	4.62E+0	4.62E+0	4.62E+1	4.62E+1	4.62E+1	4.62E+2	4.62E+2	4.62E+2
VI	4.62E-2	4.62E-2	4.62E-2	4.62E-1	4.62E-1	4.62E-1	4.65E+0	4.65E+0	4.65E+0	4.88E+1	4.88E+1	4.88E+1	4.97E+2	4.97E+2	4.97E+2
VII	5.48E-1	5.48E-1	5.48E-1	5.48E+0	5.48E+0	5.48E+0	2.04E+1	2.04E+1	2.04E+1	2.22E+2	2.22E+2	2.22E+2	3.13E+2	3.13E+2	3.13E+2
IX	5.44E-1	5.44E-1	5.44E-1	5.44E+0	5.44E+0	5.44E+0	5.44E+1	5.44E+1	5.44E+1	3.32E+2	3.32E+2	3.32E+2	3.32E+2	3.32E+2	3.32E+2
X	1.49E-2	1.49E-2	1.49E-2	2.58E-1	7.21E-1	7.21E-1	2.09E+0	7.68E+0	7.68E+0	1.65E+1	4.56E+1	4.56E+1	1.53E+2	2.28E+2	2.28E+2
XII	5.61E-1	5.61E-1	5.61E-1	5.61E+0	5.61E+0	5.61E+0	5.61E+1	5.61E+1	5.61E+1	5.61E+2	5.61E+2	5.61E+2	5.61E+3	5.61E+3	5.61E+3
XIIIA	6.49E-2	6.49E-2	6.49E-2	6.49E-1	6.49E-1	6.49E-1	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0
XIIIB	6.49E-2	6.49E-2	6.49E-2	6.49E-1	6.49E-1	6.49E-1	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0
XIIIC	6.49E-2	6.49E-2	6.49E-2	6.49E-1	6.49E-1	6.49E-1	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0
XVIA	4.59E-2	4.59E-2	4.59E-2	4.59E-1	4.59E-1	4.59E-1	4.59E+0	4.59E+0	4.59E+0	4.59E+1	4.59E+1	4.59E+1	4.59E+2	4.59E+2	4.59E+2
XVIB	4.59E-2	4.59E-2	4.59E-2	4.59E-1	4.59E-1	4.59E-1	4.59E+0	4.59E+0	4.59E+0	4.59E+1	4.59E+1	4.59E+1	4.59E+2	4.59E+2	4.59E+2
XVIC	4.59E-2	4.59E-2	4.59E-2	4.59E-1	4.59E-1	4.59E-1	4.59E+0	4.59E+0	4.59E+0	4.59E+1	4.59E+1	4.59E+1	4.59E+2	4.59E+2	4.59E+2
XVIIIA	4.78E-2	4.78E-2	4.78E-2	4.78E-1	4.78E-1	4.78E-1	4.78E+0	4.78E+0	4.78E+0	4.78E+1	4.78E+1	4.78E+1	4.78E+2	4.78E+2	4.78E+2
XVIIIB	4.78E-2	4.78E-2	4.78E-2	4.78E-1	4.78E-1	4.78E-1	4.78E+0	4.78E+0	4.78E+0	4.78E+1	4.78E+1	4.78E+1	4.78E+2	4.78E+2	4.78E+2
XVIIIC	4.78E-2	4.78E-2	4.78E-2	4.78E-1	4.78E-1	4.78E-1	4.78E+0	4.78E+0	4.78E+0	4.78E+1	4.78E+1	4.78E+1	4.78E+2	4.78E+2	4.78E+2
XXA	1.09E-1	1.09E-1	1.09E-1	1.09E+0	1.09E+0	1.09E+0	1.09E+1	1.09E+1	1.09E+1	1.09E+2	1.09E+2	1.09E+2	9.22E+2	9.22E+2	9.22E+2
XXB	1.09E-1	1.09E-1	1.09E-1	1.09E+0	1.09E+0	1.09E+0	1.09E+1	1.09E+1	1.09E+1	1.09E+2	1.09E+2	1.09E+2	9.22E+2	9.22E+2	9.22E+2
XXC	1.09E-1	1.09E-1	1.09E-1	1.09E+0	1.09E+0	1.09E+0	1.09E+1	1.09E+1	1.09E+1	1.09E+2	1.09E+2	1.09E+2	9.22E+2	9.22E+2	9.22E+2
XXIA	5.04E-2	5.04E-2	5.04E-2	5.04E-1	5.04E-1	5.04E-1	5.04E+0	5.04E+0	5.04E+0	5.04E+1	5.04E+1	5.04E+1	5.04E+2	5.04E+2	5.04E+2
XXIB	5.04E-2	5.04E-2	5.04E-2	5.04E-1	5.04E-1	5.04E-1	5.04E+0	5.04E+0	5.04E+0	5.04E+1	5.04E+1	5.04E+1	5.04E+2	5.04E+2	5.04E+2
XXIC	5.04E-2	5.04E-2	5.04E-2	5.04E-1	5.04E-1	5.04E-1	5.04E+0	5.04E+0	5.04E+0	5.04E+1	5.04E+1	5.04E+1	5.04E+2	5.04E+2	5.04E+2
XXII	5.17E-2	5.17E-2	5.17E-2	5.17E-1	5.17E-1	5.17E-1	5.22E+0	5.42E+0	5.42E+0	5.26E+1	5.62E+1	5.62E+1	5.31E+2	5.80E+2	5.80E+2

TABLE K-130. DOSE TO MAXIMALLY EXPOSED INDIVIDUAL (mrem/yr)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.63E+0	4.63E+0	4.63E+0	9.26E+0	9.26E+0	9.26E+0	1.39E+1	1.39E+1	1.39E+1	2.31E+1	2.31E+1	2.31E+1	3.24E+1	3.24E+1	3.24E+1	4.63E+1	4.63E+1	4.63E+1
II-1	6.08E+0	5.37E+0	5.37E+0	1.19E+1	1.08E+1	1.08E+1	1.72E+1	1.62E+1	1.62E+1	2.78E+1	2.68E+1	2.68E+1	3.84E+1	3.73E+1	3.73E+1	5.42E+1	5.31E+1	5.31E+1
II-2	6.19E+0	5.65E+0	5.65E+0	1.26E+1	1.11E+1	1.11E+1	1.90E+1	1.65E+1	1.65E+1	3.03E+1	2.74E+1	2.74E+1	4.14E+1	3.82E+1	3.82E+1	5.82E+1	5.41E+1	5.41E+1
II-3	6.01E+0	5.76E+0	5.76E+0	1.13E+1	1.11E+1	1.11E+1	1.65E+1	1.63E+1	1.63E+1	2.72E+1	2.68E+1	2.68E+1	3.79E+1	3.73E+1	3.73E+1	5.38E+1	5.32E+1	5.32E+1
II-4	6.24E+0	5.41E+0	5.41E+0	1.20E+1	1.09E+1	1.09E+1	1.76E+1	1.62E+1	1.62E+1	2.88E+1	2.68E+1	2.68E+1	3.99E+1	3.74E+1	3.74E+1	5.62E+1	5.33E+1	5.33E+1
II-5	5.14E+0	5.14E+0	5.14E+0	1.04E+1	1.04E+1	1.04E+1	1.56E+1	1.56E+1	1.56E+1	2.61E+1	2.61E+1	2.61E+1	3.65E+1	3.65E+1	3.65E+1	5.22E+1	5.22E+1	5.22E+1
II-6	7.10E+0	6.17E+0	6.17E+0	1.38E+1	1.21E+1	1.21E+1	1.96E+1	1.80E+1	1.80E+1	3.02E+1	2.91E+1	2.91E+1	4.07E+1	3.96E+1	3.96E+1	5.66E+1	5.54E+1	5.54E+1
II-7	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0
III	4.63E+0	4.63E+0	4.63E+0	9.25E+0	9.25E+0	9.25E+0	1.39E+1	1.39E+1	1.39E+1	2.31E+1	2.31E+1	2.31E+1	3.24E+1	3.24E+1	3.24E+1	4.63E+1	4.63E+1	4.63E+1
IV	8.12E+0	8.12E+0	8.12E+0	1.62E+1	1.62E+1	1.62E+1	2.43E+1	2.43E+1	2.43E+1	4.06E+1	4.06E+1	4.06E+1	5.68E+1	5.68E+1	5.68E+1	8.12E+1	8.12E+1	8.12E+1
V	4.62E+0	4.62E+0	4.62E+0	9.25E+0	9.25E+0	9.25E+0	1.39E+1	1.39E+1	1.39E+1	2.31E+1	2.31E+1	2.31E+1	3.24E+1	3.24E+1	3.24E+1	4.62E+1	4.62E+1	4.62E+1
VI	4.65E+0	4.65E+0	4.65E+0	9.40E+0	9.40E+0	9.40E+0	1.43E+1	1.43E+1	1.43E+1	2.40E+1	2.40E+1	2.40E+1	3.39E+1	3.39E+1	3.39E+1	4.88E+1	4.88E+1	4.88E+1
VII	2.04E+1	2.04E+1	2.04E+1	3.84E+1	3.84E+1	3.84E+1	5.78E+1	5.78E+1	5.78E+1	1.07E+2	1.07E+2	1.07E+2	1.67E+2	1.67E+2	1.67E+2	2.22E+2	2.22E+2	2.22E+2
IX	5.44E+1	5.44E+1	5.44E+1	1.09E+2	1.09E+2	1.09E+2	1.63E+2	1.63E+2	1.63E+2	2.72E+2	2.72E+2	2.72E+2	3.32E+2	3.32E+2	3.32E+2	3.32E+2	3.32E+2	3.32E+2
X	2.09E+0	7.68E+0	7.68E+0	3.87E+0	1.39E+1	1.39E+1	5.54E+0	1.94E+1	1.94E+1	8.73E+0	2.90E+1	2.90E+1	1.19E+1	3.65E+1	3.65E+1	1.65E+1	4.56E+1	4.56E+1
XII	5.61E+1	5.61E+1	5.61E+1	1.12E+2	1.12E+2	1.12E+2	1.68E+2	1.68E+2	1.68E+2	2.81E+2	2.81E+2	2.81E+2	3.93E+2	3.93E+2	3.93E+2	5.61E+2	5.61E+2	5.61E+2
XIIIA	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0
XIIIB	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0
XIIIC	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0
XVIA	4.59E+0	4.59E+0	4.59E+0	9.19E+0	9.19E+0	9.19E+0	1.38E+1	1.38E+1	1.38E+1	2.30E+1	2.30E+1	2.30E+1	3.21E+1	3.21E+1	3.21E+1	4.59E+1	4.59E+1	4.59E+1
XVIB	4.59E+0	4.59E+0	4.59E+0	9.19E+0	9.19E+0	9.19E+0	1.38E+1	1.38E+1	1.38E+1	2.30E+1	2.30E+1	2.30E+1	3.21E+1	3.21E+1	3.21E+1	4.59E+1	4.59E+1	4.59E+1
XVIC	4.59E+0	4.59E+0	4.59E+0	9.19E+0	9.19E+0	9.19E+0	1.38E+1	1.38E+1	1.38E+1	2.30E+1	2.30E+1	2.30E+1	3.21E+1	3.21E+1	3.21E+1	4.59E+1	4.59E+1	4.59E+1
XVIIIA	4.78E+0	4.78E+0	4.78E+0	9.56E+0	9.56E+0	9.56E+0	1.43E+1	1.43E+1	1.43E+1	2.39E+1	2.39E+1	2.39E+1	3.34E+1	3.34E+1	3.34E+1	4.78E+1	4.78E+1	4.78E+1
XVIIIB	4.78E+0	4.78E+0	4.78E+0	9.56E+0	9.56E+0	9.56E+0	1.43E+1	1.43E+1	1.43E+1	2.39E+1	2.39E+1	2.39E+1	3.34E+1	3.34E+1	3.34E+1	4.78E+1	4.78E+1	4.78E+1
XVIIIC	4.78E+0	4.78E+0	4.78E+0	9.56E+0	9.56E+0	9.56E+0	1.43E+1	1.43E+1	1.43E+1	2.39E+1	2.39E+1	2.39E+1	3.34E+1	3.34E+1	3.34E+1	4.78E+1	4.78E+1	4.78E+1
XXA	1.09E+1	1.09E+1	1.09E+1	2.19E+1	2.19E+1	2.19E+1	3.28E+1	3.28E+1	3.28E+1	5.47E+1	5.47E+1	5.47E+1	7.66E+1	7.66E+1	7.66E+1	1.09E+2	1.09E+2	1.09E+2
XXB	1.09E+1	1.09E+1	1.09E+1	2.19E+1	2.19E+1	2.19E+1	3.28E+1	3.28E+1	3.28E+1	5.47E+1	5.47E+1	5.47E+1	7.66E+1	7.66E+1	7.66E+1	1.09E+2	1.09E+2	1.09E+2
XXC	1.09E+1	1.09E+1	1.09E+1	2.19E+1	2.19E+1	2.19E+1	3.28E+1	3.28E+1	3.28E+1	5.47E+1	5.47E+1	5.47E+1	7.66E+1	7.66E+1	7.66E+1	1.09E+2	1.09E+2	1.09E+2
XXIA	5.04E+0	5.04E+0	5.04E+0	1.01E+1	1.01E+1	1.01E+1	1.51E+1	1.51E+1	1.51E+1	2.52E+1	2.52E+1	2.52E+1	3.53E+1	3.53E+1	3.53E+1	5.04E+1	5.04E+1	5.04E+1
XXIB	5.04E+0	5.04E+0	5.04E+0	1.01E+1	1.01E+1	1.01E+1	1.51E+1	1.51E+1	1.51E+1	2.52E+1	2.52E+1	2.52E+1	3.53E+1	3.53E+1	3.53E+1	5.04E+1	5.04E+1	5.04E+1
XXIC	5.04E+0	5.04E+0	5.04E+0	1.01E+1	1.01E+1	1.01E+1	1.51E+1	1.51E+1	1.51E+1	2.52E+1	2.52E+1	2.52E+1	3.53E+1	3.53E+1	3.53E+1	5.04E+1	5.04E+1	5.04E+1
XXII	5.22E+0	5.42E+0	5.42E+0	1.07E+1	1.18E+1	1.18E+1	1.61E+1	1.82E+1	1.82E+1	2.64E+1	2.92E+1	2.92E+1	3.68E+1	3.97E+1	3.97E+1	5.26E+1	5.62E+1	5.62E+1

TABLE K-131. DOSE TO MAXIMALLY EXPOSED INDIVIDUAL (mrem/yr)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.65E-2	5.65E-2	5.65E-2	5.65E-1	5.65E-1	5.65E-1	5.66E+0	5.66E+0	5.66E+0	5.65E+1	5.65E+1	5.65E+1	5.65E+2	5.65E+2	5.65E+2
II-1	5.47E-2	5.47E-2	5.47E-2	5.92E-1	5.67E-1	5.67E-1	6.00E+0	5.98E+0	5.98E+0	5.50E+1	5.49E+1	5.49E+1	5.44E+2	5.44E+2	5.44E+2
II-2	5.84E-2	5.82E-2	5.82E-2	6.81E-1	6.76E-1	6.76E-1	6.92E+0	6.15E+0	6.15E+0	6.32E+1	5.97E+1	5.97E+1	6.22E+2	5.95E+2	5.95E+2
II-3	5.85E-2	5.83E-2	5.83E-2	6.33E-1	6.22E-1	6.22E-1	6.28E+0	6.17E+0	6.17E+0	6.16E+1	6.08E+1	6.08E+1	6.16E+2	6.11E+2	6.11E+2
II-4	5.89E-2	5.86E-2	5.86E-2	6.76E-1	6.00E-1	6.00E-1	6.57E+0	6.04E+0	6.04E+0	6.39E+1	6.05E+1	6.05E+1	6.57E+2	7.31E+2	7.31E+2
II-5	5.81E-2	5.81E-2	5.81E-2	5.67E-1	5.66E-1	5.66E-1	5.41E+0	5.41E+0	5.41E+0	5.43E+1	5.43E+1	5.43E+1	5.68E+2	5.67E+2	5.67E+2
II-6	5.82E-2	5.80E-2	5.80E-2	7.31E-1	7.09E-1	7.09E-1	6.91E+0	6.59E+0	6.59E+0	5.56E+1	5.56E+1	5.56E+1	5.44E+2	5.44E+2	5.44E+2
II-7	8.78E-2	8.78E-2	8.78E-2	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1
III	5.66E-2	5.66E-2	5.66E-2	5.65E-1	5.65E-1	5.65E-1	5.65E+0	5.65E+0	5.65E+0	5.65E+1	5.65E+1	5.65E+1	1.32E+2	1.32E+2	1.32E+2
IV	9.59E-2	9.59E-2	9.59E-2	9.60E-1	9.60E-1	9.60E-1	9.60E+0	9.60E+0	9.60E+0	9.60E+1	9.60E+1	9.60E+1	1.15E+2	1.15E+2	1.15E+2
V	5.65E-2	5.65E-2	5.65E-2	5.65E-1	5.65E-1	5.65E-1	5.65E+0	5.65E+0	5.65E+0	5.65E+1	5.65E+1	5.65E+1	5.65E+2	5.65E+2	5.65E+2
VI	5.65E-2	5.65E-2	5.65E-2	5.66E-1	5.66E-1	5.66E-1	5.81E+0	5.81E+0	5.81E+0	6.13E+1	6.13E+1	6.13E+1	6.92E+2	6.92E+2	6.92E+2
VII	6.48E-1	6.48E-1	6.48E-1	2.96E+0	2.96E+0	2.96E+0	2.11E+1	2.11E+1	2.11E+1	9.87E+1	9.87E+1	9.87E+1	9.87E+1	9.87E+1	9.87E+1
IX	6.46E-1	6.46E-1	6.46E-1	6.46E+0	6.46E+0	6.46E+0	6.46E+1	6.46E+1	6.46E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1
X	2.40E-2	4.62E-2	4.62E-2	2.66E-1	9.23E-1	9.23E-1	2.08E+0	7.97E+0	7.97E+0	1.86E+1	3.89E+1	3.89E+1	1.81E+2	2.35E+2	2.35E+2
XII	6.67E-1	6.67E-1	6.67E-1	6.67E+0	6.67E+0	6.67E+0	6.67E+1	6.67E+1	6.67E+1	6.67E+2	6.67E+2	6.67E+2	6.67E+3	6.67E+3	6.67E+3
XIIIA	8.86E-2	8.86E-2	8.86E-2	8.86E-1	8.86E-1	8.86E-1	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0
XIIIB	8.86E-2	8.86E-2	8.86E-2	8.86E-1	8.86E-1	8.86E-1	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0
XIIIC	8.86E-2	8.86E-2	8.86E-2	8.86E-1	8.86E-1	8.86E-1	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0
XVIA	5.52E-2	5.52E-2	5.52E-2	5.52E-1	5.52E-1	5.52E-1	5.52E+0	5.52E+0	5.52E+0	5.52E+1	5.52E+1	5.52E+1	5.54E+2	5.54E+2	5.54E+2
XVIB	5.52E-2	5.52E-2	5.52E-2	5.52E-1	5.52E-1	5.52E-1	5.52E+0	5.52E+0	5.52E+0	5.52E+1	5.52E+1	5.52E+1	5.54E+2	5.54E+2	5.54E+2
XVIC	5.52E-2	5.52E-2	5.52E-2	5.52E-1	5.52E-1	5.52E-1	5.52E+0	5.52E+0	5.52E+0	5.52E+1	5.52E+1	5.52E+1	5.54E+2	5.54E+2	5.54E+2
XVIIIA	5.63E-2	5.63E-2	5.63E-2	5.63E-1	5.63E-1	5.63E-1	5.63E+0	5.63E+0	5.63E+0	5.63E+1	5.63E+1	5.63E+1	5.63E+2	5.63E+2	5.63E+2
XVIIIB	5.63E-2	5.63E-2	5.63E-2	5.63E-1	5.63E-1	5.63E-1	5.63E+0	5.63E+0	5.63E+0	5.63E+1	5.63E+1	5.63E+1	5.63E+2	5.63E+2	5.63E+2
XVIIIC	5.63E-2	5.63E-2	5.63E-2	5.63E-1	5.63E-1	5.63E-1	5.63E+0	5.63E+0	5.63E+0	5.63E+1	5.63E+1	5.63E+1	5.63E+2	5.63E+2	5.63E+2
XXA	1.32E-1	1.32E-1	1.32E-1	1.32E+0	1.32E+0	1.32E+0	1.32E+1	1.32E+1	1.32E+1	1.34E+2	1.34E+2	1.34E+2	2.35E+2	2.35E+2	2.35E+2
XXB	1.32E-1	1.32E-1	1.32E-1	1.32E+0	1.32E+0	1.32E+0	1.32E+1	1.32E+1	1.32E+1	1.34E+2	1.34E+2	1.34E+2	2.35E+2	2.35E+2	2.35E+2
XXC	1.32E-1	1.32E-1	1.32E-1	1.32E+0	1.32E+0	1.32E+0	1.32E+1	1.32E+1	1.32E+1	1.34E+2	1.34E+2	1.34E+2	2.35E+2	2.35E+2	2.35E+2
XXIA	5.61E-2	5.61E-2	5.61E-2	5.61E-1	5.61E-1	5.61E-1	5.61E+0	5.61E+0	5.61E+0	5.61E+1	5.61E+1	5.61E+1	5.61E+2	5.61E+2	5.61E+2
XXIB	5.61E-2	5.61E-2	5.61E-2	5.61E-1	5.61E-1	5.61E-1	5.61E+0	5.61E+0	5.61E+0	5.61E+1	5.61E+1	5.61E+1	5.61E+2	5.61E+2	5.61E+2
XXIC	5.61E-2	5.61E-2	5.61E-2	5.61E-1	5.61E-1	5.61E-1	5.61E+0	5.61E+0	5.61E+0	5.61E+1	5.61E+1	5.61E+1	5.61E+2	5.61E+2	5.61E+2
XXII	5.58E-2	5.58E-2	5.58E-2	5.59E-1	5.65E-1	5.65E-1	5.89E+0	7.07E+0	7.07E+0	5.76E+1	6.44E+1	6.44E+1	3.38E+2	4.74E+2	4.74E+2

TABLE K-132. DOSE TO MAXIMALLY EXPOSED INDIVIDUAL (mrem/yr)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.66E+0	5.66E+0	5.66E+0	1.13E+1	1.13E+1	1.13E+1	1.70E+1	1.70E+1	1.70E+1	2.83E+1	2.83E+1	2.83E+1	3.96E+1	3.96E+1	3.96E+1	5.65E+1	5.65E+1	5.65E+1
II-1	6.00E+0	5.98E+0	5.98E+0	1.14E+1	1.14E+1	1.14E+1	1.69E+1	1.68E+1	1.68E+1	2.78E+1	2.77E+1	2.77E+1	3.87E+1	3.86E+1	3.86E+1	5.50E+1	5.49E+1	5.49E+1
II-2	6.92E+0	6.15E+0	6.15E+0	1.33E+1	1.22E+1	1.22E+1	1.95E+1	1.82E+1	1.82E+1	3.20E+1	3.00E+1	3.00E+1	4.46E+1	4.19E+1	4.19E+1	6.32E+1	5.97E+1	5.97E+1
II-3	6.28E+0	6.17E+0	6.17E+0	1.25E+1	1.23E+1	1.23E+1	1.87E+1	1.84E+1	1.84E+1	3.09E+1	3.05E+1	3.05E+1	4.31E+1	4.27E+1	4.27E+1	6.16E+1	6.08E+1	6.08E+1
II-4	6.57E+0	6.04E+0	6.04E+0	1.29E+1	1.20E+1	1.20E+1	1.90E+1	1.80E+1	1.80E+1	3.15E+1	3.00E+1	3.00E+1	4.42E+1	4.21E+1	4.21E+1	6.39E+1	6.05E+1	6.05E+1
II-5	5.41E+0	5.41E+0	5.41E+0	1.08E+1	1.08E+1	1.08E+1	1.62E+1	1.62E+1	1.62E+1	2.71E+1	2.71E+1	2.71E+1	3.80E+1	3.80E+1	3.80E+1	5.43E+1	5.43E+1	5.43E+1
II-6	6.91E+0	6.59E+0	6.59E+0	1.23E+1	1.23E+1	1.23E+1	1.78E+1	1.77E+1	1.77E+1	2.86E+1	2.85E+1	2.85E+1	3.94E+1	3.94E+1	3.94E+1	5.56E+1	5.56E+1	5.56E+1
II-7	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1
III	5.65E+0	5.65E+0	5.65E+0	1.13E+1	1.13E+1	1.13E+1	1.70E+1	1.70E+1	1.70E+1	2.83E+1	2.83E+1	2.83E+1	3.96E+1	3.96E+1	3.96E+1	5.65E+1	5.65E+1	5.65E+1
IV	9.60E+0	9.60E+0	9.60E+0	1.92E+1	1.92E+1	1.92E+1	2.88E+1	2.88E+1	2.88E+1	4.80E+1	4.80E+1	4.80E+1	6.72E+1	6.72E+1	6.72E+1	9.60E+1	9.60E+1	9.60E+1
V	5.65E+0	5.65E+0	5.65E+0	1.13E+1	1.13E+1	1.13E+1	1.70E+1	1.70E+1	1.70E+1	2.83E+1	2.83E+1	2.83E+1	3.96E+1	3.96E+1	3.96E+1	5.65E+1	5.65E+1	5.65E+1
VI	5.81E+0	5.81E+0	5.81E+0	1.18E+1	1.18E+1	1.18E+1	1.78E+1	1.78E+1	1.78E+1	3.00E+1	3.00E+1	3.00E+1	4.25E+1	4.25E+1	4.25E+1	6.13E+1	6.13E+1	6.13E+1
VII	2.11E+1	2.11E+1	2.11E+1	5.20E+1	5.20E+1	5.20E+1	6.92E+1	6.92E+1	6.92E+1	8.16E+1	8.16E+1	8.16E+1	9.30E+1	9.30E+1	9.30E+1	9.87E+1	9.87E+1	9.87E+1
IX	6.46E+1	6.46E+1	6.46E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1	9.74E+1
X	2.08E+0	7.97E+0	7.97E+0	3.96E+0	1.39E+1	1.39E+1	5.80E+0	1.83E+1	1.83E+1	9.45E+0	2.49E+1	2.49E+1	1.31E+1	3.06E+1	3.06E+1	1.86E+1	3.89E+1	3.89E+1
XII	6.67E+1	6.67E+1	6.67E+1	1.33E+2	1.33E+2	1.33E+2	2.00E+2	2.00E+2	2.00E+2	3.34E+2	3.34E+2	3.34E+2	4.67E+2	4.67E+2	4.67E+2	6.67E+2	6.67E+2	6.67E+2
XIIIA	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0
XIIIB	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0
XIIIC	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0
XVIA	5.52E+0	5.52E+0	5.52E+0	1.10E+1	1.10E+1	1.10E+1	1.66E+1	1.66E+1	1.66E+1	2.76E+1	2.76E+1	2.76E+1	3.86E+1	3.86E+1	3.86E+1	5.52E+1	5.52E+1	5.52E+1
XVIB	5.52E+0	5.52E+0	5.52E+0	1.10E+1	1.10E+1	1.10E+1	1.66E+1	1.66E+1	1.66E+1	2.76E+1	2.76E+1	2.76E+1	3.86E+1	3.86E+1	3.86E+1	5.52E+1	5.52E+1	5.52E+1
XVIC	5.52E+0	5.52E+0	5.52E+0	1.10E+1	1.10E+1	1.10E+1	1.66E+1	1.66E+1	1.66E+1	2.76E+1	2.76E+1	2.76E+1	3.86E+1	3.86E+1	3.86E+1	5.52E+1	5.52E+1	5.52E+1
XVIIIA	5.63E+0	5.63E+0	5.63E+0	1.13E+1	1.13E+1	1.13E+1	1.69E+1	1.69E+1	1.69E+1	2.82E+1	2.82E+1	2.82E+1	3.94E+1	3.94E+1	3.94E+1	5.63E+1	5.63E+1	5.63E+1
XVIIIB	5.63E+0	5.63E+0	5.63E+0	1.13E+1	1.13E+1	1.13E+1	1.69E+1	1.69E+1	1.69E+1	2.82E+1	2.82E+1	2.82E+1	3.94E+1	3.94E+1	3.94E+1	5.63E+1	5.63E+1	5.63E+1
XVIIIC	5.63E+0	5.63E+0	5.63E+0	1.13E+1	1.13E+1	1.13E+1	1.69E+1	1.69E+1	1.69E+1	2.82E+1	2.82E+1	2.82E+1	3.94E+1	3.94E+1	3.94E+1	5.63E+1	5.63E+1	5.63E+1
XXA	1.32E+1	1.32E+1	1.32E+1	2.64E+1	2.64E+1	2.64E+1	3.96E+1	3.96E+1	3.96E+1	6.62E+1	6.62E+1	6.62E+1	9.31E+1	9.31E+1	9.31E+1	1.34E+2	1.34E+2	1.34E+2
XXB	1.32E+1	1.32E+1	1.32E+1	2.64E+1	2.64E+1	2.64E+1	3.96E+1	3.96E+1	3.96E+1	6.62E+1	6.62E+1	6.62E+1	9.31E+1	9.31E+1	9.31E+1	1.34E+2	1.34E+2	1.34E+2
XXC	1.32E+1	1.32E+1	1.32E+1	2.64E+1	2.64E+1	2.64E+1	3.96E+1	3.96E+1	3.96E+1	6.62E+1	6.62E+1	6.62E+1	9.31E+1	9.31E+1	9.31E+1	1.34E+2	1.34E+2	1.34E+2
XXIA	5.61E+0	5.61E+0	5.61E+0	1.12E+1	1.12E+1	1.12E+1	1.68E+1	1.68E+1	1.68E+1	2.80E+1	2.80E+1	2.80E+1	3.93E+1	3.93E+1	3.93E+1	5.61E+1	5.61E+1	5.61E+1
XXIB	5.61E+0	5.61E+0	5.61E+0	1.12E+1	1.12E+1	1.12E+1	1.68E+1	1.68E+1	1.68E+1	2.80E+1	2.80E+1	2.80E+1	3.93E+1	3.93E+1	3.93E+1	5.61E+1	5.61E+1	5.61E+1
XXIC	5.61E+0	5.61E+0	5.61E+0	1.12E+1	1.12E+1	1.12E+1	1.68E+1	1.68E+1	1.68E+1	2.80E+1	2.80E+1	2.80E+1	3.93E+1	3.93E+1	3.93E+1	5.61E+1	5.61E+1	5.61E+1
XXII	5.89E+0	7.07E+0	7.07E+0	1.15E+1	1.30E+1	1.30E+1	1.72E+1	1.91E+1	1.91E+1	2.90E+1	3.33E+1	3.33E+1	4.05E+1	4.58E+1	4.58E+1	5.76E+1	6.44E+1	6.44E+1

Low Population Density Without Agriculture - 09-13-94 4:14p
 TABLE K-133. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.16E+2	2.35E+2	2.35E+2	2.12E+2	2.30E+2	2.30E+2	2.01E+2	2.18E+2	2.18E+2	1.61E+2	1.75E+2	1.75E+2	7.21E+1	7.83E+1	7.83E+1
II	1.84E+3	1.71E+4	8.37E+4	1.84E+3	1.71E+4	8.37E+4	1.84E+3	1.71E+4	8.36E+4	1.83E+3	1.70E+4	8.29E+4	1.77E+3	1.64E+4	7.90E+4
III	9.48E+1	1.05E+2	1.05E+2	9.47E+1	1.05E+2	1.05E+2	8.83E+1	9.78E+1	9.78E+1	4.68E+1	5.18E+1	5.18E+1	.00E+0	.00E+0	.00E+0
IV	2.82E+1	7.01E+1	7.07E+1	2.79E+1	6.92E+1	6.99E+1	2.66E+1	6.61E+1	6.67E+1	2.09E+1	5.20E+1	5.25E+1	.00E+0	.00E+0	.00E+0
V	5.61E+3	6.08E+3	6.08E+3	5.60E+3	6.08E+3	6.08E+3	5.54E+3	6.01E+3	6.01E+3	5.07E+3	5.50E+3	5.50E+3	3.33E+3	3.61E+3	3.61E+3
VI	1.52E+3	9.24E+3	2.46E+4	1.52E+3	9.24E+3	2.46E+4	1.52E+3	9.24E+3	2.46E+4	1.50E+3	9.18E+3	2.45E+4	1.34E+3	8.49E+3	2.27E+4
VII	8.24E+3	7.40E+4	6.01E+5	6.74E+3	6.01E+4	4.88E+5	4.89E+3	4.36E+4	3.54E+5	1.26E+2	1.12E+3	9.13E+3	.00E+0	.00E+0	.00E+0
IX	3.79E+1	3.41E+2	2.17E+3	2.76E+1	2.48E+2	1.58E+3	9.46E+0	8.50E+1	5.42E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.39E+3	1.86E+4	2.12E+4	1.39E+3	1.86E+4	2.11E+4	1.38E+3	1.80E+4	2.05E+4	1.35E+3	1.20E+4	1.36E+4	1.19E+3	5.57E+3	6.23E+3
XII	5.11E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.03E+0	1.54E+1	1.58E+1	4.75E+0	1.45E+1	1.49E+1
XIIIA	2.13E-2	6.93E-2	8.00E-2	1.53E-2	4.97E-2	5.74E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.71E-2	3.05E-2	3.25E-2	1.23E-2	2.19E-2	2.33E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.13E-2	1.34E-2	4.15E-1	8.10E-3	9.59E-3	2.97E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E-1	3.84E-1	3.84E-1	3.65E-1	3.84E-1	3.84E-1	3.65E-1	3.84E-1	3.84E-1	3.61E-1	3.80E-1	3.80E-1	3.18E-1	3.36E-1	3.36E-1
XVIB	3.61E-1	3.79E-1	3.79E-1	3.61E-1	3.79E-1	3.79E-1	3.61E-1	3.78E-1	3.78E-1	3.57E-1	3.75E-1	3.75E-1	3.14E-1	3.31E-1	3.31E-1
XVIC	3.52E-1	3.67E-1	3.67E-1	3.52E-1	3.67E-1	3.67E-1	3.52E-1	3.67E-1	3.67E-1	3.48E-1	3.64E-1	3.64E-1	3.06E-1	3.21E-1	3.21E-1
XVIIIA	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.02E+0	1.13E+0	1.13E+0	8.93E-1	9.88E-1	9.88E-1
XVIIIB	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.00E+0	1.11E+0	1.11E+0	8.78E-1	9.70E-1	9.70E-1
XVIIIC	9.79E-1	1.07E+0	1.07E+0	9.79E-1	1.07E+0	1.07E+0	9.79E-1	1.07E+0	1.07E+0	9.72E-1	1.06E+0	1.06E+0	8.50E-1	9.27E-1	9.27E-1
XXA	3.02E-1	1.07E+0	3.69E+0	1.91E-1	6.72E-1	2.33E+0	3.97E-2	1.40E-1	4.86E-1	9.35E-3	3.30E-2	1.15E-1	.00E+0	.00E+0	.00E+0
XXB	2.44E-1	4.69E-1	1.07E+0	1.54E-1	2.96E-1	6.73E-1	3.20E-2	6.16E-2	1.40E-1	7.54E-3	1.45E-2	3.33E-2	.00E+0	.00E+0	.00E+0
XXC	1.61E-1	2.02E-1	7.02E+3	1.01E-1	1.28E-1	4.42E+3	2.11E-2	2.66E-2	9.23E+2	4.98E-3	6.27E-3	2.20E+2	.00E+0	.00E+0	.00E+0
XXIA	2.89E+0	3.00E+1	2.84E+2	2.89E+0	3.00E+1	2.84E+2	2.89E+0	3.00E+1	2.84E+2	2.81E+0	2.92E+1	2.77E+2	1.91E+0	1.99E+1	1.88E+2
XXIB	2.87E+0	2.97E+1	2.57E+2	2.87E+0	2.97E+1	2.57E+2	2.87E+0	2.96E+1	2.57E+2	2.79E+0	2.89E+1	2.50E+2	1.90E+0	1.96E+1	1.70E+2
XXIC	2.83E+0	2.86E+1	2.07E+2	2.83E+0	2.86E+1	2.07E+2	2.83E+0	2.85E+1	2.07E+2	2.76E+0	2.78E+1	2.02E+2	1.87E+0	1.89E+1	1.37E+2
XXII	8.67E+1	5.14E+4	7.77E+4	8.66E+1	5.14E+4	7.77E+4	8.61E+1	5.13E+4	7.75E+4	8.21E+1	4.92E+4	7.43E+4	2.59E+1	2.30E+4	3.54E+4
DOE	5.28E+4	6.83E+5	1.81E+6	5.13E+4	6.69E+5	1.70E+6	4.93E+4	6.51E+5	1.56E+6	4.34E+4	5.85E+5	1.18E+6	3.70E+4	3.77E+5	8.50E+5
DOD	5.25E+0	1.59E+1	1.34E+2	5.20E+0	1.58E+1	1.00E+2	5.10E+0	1.56E+1	1.60E+1	5.03E+0	1.54E+1	1.58E+1	4.75E+0	1.45E+1	1.49E+1
NRC	1.75E+2	7.72E+2	3.84E+4	1.73E+2	7.69E+2	2.63E+4	1.72E+2	7.65E+2	9.92E+3	1.69E+2	7.46E+2	6.48E+3	1.36E+2	5.30E+2	3.73E+3
Total	5.30E+4	6.83E+5	1.85E+6	5.14E+4	6.69E+5	1.72E+6	4.94E+4	6.52E+5	1.57E+6	4.35E+4	5.86E+5	1.19E+6	3.71E+4	3.78E+5	8.54E+5

Low Population Density Without Agriculture - 09-13-94 4:14p
 TABLE K-134. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.01E+2	2.18E+2	2.18E+2	1.92E+2	2.09E+2	2.09E+2	1.86E+2	2.02E+2	2.02E+2	1.76E+2	1.91E+2	1.91E+2	1.69E+2	1.84E+2	1.84E+2	1.61E+2	1.75E+2	1.75E+2
II	1.84E+3	1.71E+4	8.36E+4	1.84E+3	1.71E+4	8.35E+4	1.83E+3	1.71E+4	8.34E+4	1.83E+3	1.70E+4	8.30E+4	1.83E+3	1.70E+4	8.30E+4	1.83E+3	1.70E+4	8.29E+4
III	8.83E+1	9.78E+1	9.78E+1	7.70E+1	8.53E+1	8.53E+1	7.01E+1	7.76E+1	7.76E+1	6.41E+1	7.10E+1	7.10E+1	5.72E+1	6.34E+1	6.34E+1	4.68E+1	5.18E+1	5.18E+1
IV	2.66E+1	6.61E+1	6.67E+1	2.59E+1	6.44E+1	6.50E+1	2.53E+1	6.28E+1	6.34E+1	2.40E+1	5.97E+1	6.03E+1	2.28E+1	5.67E+1	5.72E+1	2.09E+1	5.20E+1	5.25E+1
V	5.54E+3	6.01E+3	6.01E+3	5.47E+3	5.94E+3	5.94E+3	5.41E+3	5.87E+3	5.87E+3	5.31E+3	5.77E+3	5.77E+3	5.22E+3	5.66E+3	5.66E+3	5.07E+3	5.50E+3	5.50E+3
VI	1.52E+3	9.24E+3	2.46E+4	1.52E+3	9.23E+3	2.46E+4	1.52E+3	9.23E+3	2.46E+4	1.51E+3	9.21E+3	2.46E+4	1.51E+3	9.20E+3	2.45E+4	1.50E+3	9.18E+3	2.45E+4
VII	4.89E+3	4.36E+4	3.54E+5	3.23E+3	2.88E+4	2.34E+5	2.28E+3	2.03E+4	1.65E+5	1.39E+3	1.24E+4	1.01E+5	7.84E+2	7.03E+3	5.71E+4	1.26E+2	1.12E+3	9.13E+3
IX	9.46E+0	8.50E+1	5.42E+2	4.52E+0	4.06E+1	2.59E+2	2.68E+0	2.40E+1	1.53E+2	9.44E-1	8.49E+0	5.41E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.38E+3	1.80E+4	2.05E+4	1.38E+3	1.69E+4	1.93E+4	1.37E+3	1.60E+4	1.82E+4	1.36E+3	1.43E+4	1.63E+4	1.36E+3	1.32E+4	1.49E+4	1.35E+3	1.20E+4	1.36E+4
XII	5.10E+0	1.56E+1	1.60E+1	5.08E+0	1.55E+1	1.59E+1	5.08E+0	1.55E+1	1.59E+1	5.06E+0	1.55E+1	1.59E+1	5.04E+0	1.54E+1	1.58E+1	5.03E+0	1.54E+1	1.58E+1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E-1	3.84E-1	3.84E-1	3.64E-1	3.83E-1	3.83E-1	3.64E-1	3.83E-1	3.83E-1	3.63E-1	3.82E-1	3.82E-1	3.62E-1	3.81E-1	3.81E-1	3.61E-1	3.80E-1	3.80E-1
XVIB	3.61E-1	3.78E-1	3.78E-1	3.60E-1	3.78E-1	3.78E-1	3.60E-1	3.78E-1	3.78E-1	3.59E-1	3.77E-1	3.77E-1	3.58E-1	3.76E-1	3.76E-1	3.57E-1	3.75E-1	3.75E-1
XVIC	3.52E-1	3.67E-1	3.67E-1	3.52E-1	3.67E-1	3.67E-1	3.51E-1	3.67E-1	3.67E-1	3.50E-1	3.65E-1	3.65E-1	3.49E-1	3.64E-1	3.64E-1	3.48E-1	3.64E-1	3.64E-1
XVIIIA	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.13E+0	1.13E+0	1.02E+0	1.13E+0	1.13E+0
XVIIIB	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.11E+0	1.11E+0	1.01E+0	1.11E+0	1.11E+0	1.00E+0	1.11E+0	1.11E+0
XVIIIC	9.79E-1	1.07E+0	1.07E+0	9.79E-1	1.07E+0	1.07E+0	9.78E-1	1.07E+0	1.07E+0	9.77E-1	1.07E+0	1.07E+0	9.76E-1	1.06E+0	1.06E+0	9.72E-1	1.06E+0	1.06E+0
XXA	3.97E-2	1.40E-1	4.86E-1	1.33E-2	4.69E-2	1.63E-1	1.24E-2	4.36E-2	1.52E-1	1.11E-2	3.93E-2	1.37E-1	1.03E-2	3.63E-2	1.27E-1	9.35E-3	3.30E-2	1.15E-1
XXB	3.20E-2	6.16E-2	1.40E-1	1.07E-2	2.06E-2	4.72E-2	9.97E-3	1.92E-2	4.40E-2	8.98E-3	1.73E-2	3.96E-2	8.30E-3	1.60E-2	3.66E-2	7.54E-3	1.45E-2	3.33E-2
XXC	2.11E-2	2.66E-2	9.23E+2	7.07E-3	8.90E-3	3.11E+2	6.58E-3	8.28E-3	2.89E+2	5.93E-3	7.46E-3	2.61E+2	5.48E-3	6.90E-3	2.41E+2	4.98E-3	6.27E-3	2.20E+2
XXIA	2.89E+0	3.00E+1	2.84E+2	2.88E+0	2.99E+1	2.83E+2	2.87E+0	2.98E+1	2.83E+2	2.86E+0	2.97E+1	2.81E+2	2.84E+0	2.95E+1	2.79E+2	2.81E+0	2.92E+1	2.77E+2
XXIB	2.87E+0	2.96E+1	2.57E+2	2.86E+0	2.96E+1	2.56E+2	2.85E+0	2.95E+1	2.55E+2	2.84E+0	2.93E+1	2.54E+2	2.82E+0	2.91E+1	2.52E+2	2.79E+0	2.89E+1	2.50E+2
XXIC	2.83E+0	2.85E+1	2.07E+2	2.82E+0	2.85E+1	2.07E+2	2.82E+0	2.84E+1	2.06E+2	2.80E+0	2.82E+1	2.05E+2	2.78E+0	2.80E+1	2.04E+2	2.76E+0	2.78E+1	2.02E+2
XXII	8.61E+1	5.13E+4	7.75E+4	8.56E+1	5.12E+4	7.72E+4	8.51E+1	5.08E+4	7.67E+4	8.46E+1	5.02E+4	7.59E+4	8.39E+1	5.00E+4	7.56E+4	8.21E+1	4.92E+4	7.43E+4
DOE	4.93E+4	6.51E+5	1.56E+6	4.74E+4	6.33E+5	1.44E+6	4.63E+4	6.21E+5	1.36E+6	4.52E+4	6.07E+5	1.29E+6	4.44E+4	5.98E+5	1.24E+6	4.34E+4	5.85E+5	1.18E+6
DOD	5.10E+0	1.56E+1	1.60E+1	5.08E+0	1.55E+1	1.59E+1	5.08E+0	1.55E+1	1.59E+1	5.06E+0	1.55E+1	1.59E+1	5.04E+0	1.54E+1	1.58E+1	5.03E+0	1.54E+1	1.58E+1
NRC	1.72E+2	7.65E+2	9.92E+3	1.71E+2	7.62E+2	7.04E+3	1.71E+2	7.60E+2	6.92E+3	1.70E+2	7.56E+2	6.76E+3	1.70E+2	7.52E+2	6.63E+3	1.69E+2	7.46E+2	6.48E+3
Total	4.94E+4	6.52E+5	1.57E+6	4.76E+4	6.34E+5	1.44E+6	4.65E+4	6.22E+5	1.37E+6	4.54E+4	6.08E+5	1.30E+6	4.45E+4	5.99E+5	1.25E+6	4.35E+4	5.86E+5	1.19E+6

Low Population Density Without Agriculture - 09-13-94 4:14p
 TABLE K-135. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.15E+2	2.33E+2	2.33E+2	2.08E+2	2.25E+2	2.25E+2	1.84E+2	1.99E+2	1.99E+2	1.23E+2	1.34E+2	1.34E+2	3.14E+1	3.41E+1	3.41E+1
II	1.84E+3	1.71E+4	8.37E+4	1.84E+3	1.71E+4	8.37E+4	1.83E+3	1.71E+4	8.32E+4	1.82E+3	1.69E+4	8.18E+4	1.24E+3	1.19E+4	5.80E+4
III	9.48E+1	1.05E+2	1.05E+2	9.38E+1	1.04E+2	1.04E+2	6.90E+1	7.64E+1	7.64E+1	1.10E+1	1.22E+1	1.22E+1	.00E+0	.00E+0	.00E+0
IV	2.81E+1	6.97E+1	7.04E+1	2.73E+1	6.80E+1	6.86E+1	2.49E+1	6.18E+1	6.24E+1	4.46E+0	1.11E+1	1.12E+1	.00E+0	.00E+0	.00E+0
V	5.61E+3	6.08E+3	6.08E+3	5.58E+3	6.06E+3	6.06E+3	5.39E+3	5.85E+3	5.85E+3	4.17E+3	4.52E+3	4.52E+3	1.17E+3	1.27E+3	1.27E+3
VI	1.52E+3	9.24E+3	2.46E+4	1.52E+3	9.24E+3	2.46E+4	1.51E+3	9.22E+3	2.46E+4	1.44E+3	8.91E+3	2.38E+4	1.01E+3	6.72E+3	1.81E+4
VII	7.49E+3	6.71E+4	5.45E+5	6.15E+3	5.48E+4	4.45E+5	1.96E+3	1.75E+4	1.42E+5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	3.28E+1	2.95E+2	1.88E+3	1.71E+1	1.54E+2	9.79E+2	1.77E+0	1.59E+1	1.02E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.39E+3	1.86E+4	2.12E+4	1.39E+3	1.85E+4	2.11E+4	1.37E+3	1.64E+4	1.86E+4	1.31E+3	9.26E+3	1.05E+4	1.05E+3	3.52E+3	3.89E+3
XII	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.05E+0	1.54E+1	1.58E+1	4.94E+0	1.51E+1	1.55E+1	1.59E+0	4.86E+0	4.99E+0
XIIIA	1.93E-2	6.29E-2	7.26E-2	7.40E-3	2.41E-2	2.78E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.56E-2	2.77E-2	2.95E-2	5.96E-3	1.06E-2	1.13E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.03E-2	1.21E-2	3.76E+1	3.93E-3	4.65E-3	1.44E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E-1	3.84E-1	3.84E-1	3.65E-1	3.84E-1	3.84E-1	3.64E-1	3.83E-1	3.83E-1	3.52E-1	3.70E-1	3.70E-1	1.95E-1	2.07E-1	2.07E-1
XVIB	3.61E-1	3.79E-1	3.79E-1	3.61E-1	3.79E-1	3.79E-1	3.60E-1	3.78E-1	3.78E-1	3.48E-1	3.65E-1	3.65E-1	1.93E-1	2.04E-1	2.04E-1
XVIC	3.52E-1	3.67E-1	3.67E-1	3.52E-1	3.67E-1	3.67E-1	3.51E-1	3.66E-1	3.66E-1	3.39E-1	3.54E-1	3.54E-1	1.88E-1	1.97E-1	1.97E-1
XVIIIA	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	9.85E-1	1.09E+0	1.09E+0	6.76E-1	7.48E-1	7.48E-1
XVIIIB	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	9.68E-1	1.07E+0	1.07E+0	6.64E-1	7.34E-1	7.34E-1
XVIIIC	9.79E-1	1.07E+0	1.07E+0	9.79E-1	1.07E+0	1.07E+0	9.78E-1	1.07E+0	1.07E+0	9.37E-1	1.02E+0	1.02E+0	6.43E-1	7.01E-1	7.01E-1
XXA	2.29E-1	8.08E-1	2.80E+0	9.95E-2	3.51E-1	1.22E+0	1.13E-2	3.99E-2	1.39E-1	4.22E-3	1.49E-2	5.24E-2	.00E+0	.00E+0	.00E+0
XXB	1.85E-1	3.55E-1	8.09E-1	8.02E-2	1.54E-1	3.52E-1	9.10E-3	1.75E-2	4.02E-2	3.41E-3	6.57E-3	1.51E-2	.00E+0	.00E+0	.00E+0
XXC	1.22E-1	1.53E-1	5.32E+3	5.30E-2	6.67E-2	2.31E+3	6.01E-3	7.57E-3	2.65E+2	2.25E-3	2.83E-3	1.00E+2	.00E+0	.00E+0	.00E+0
XXIA	2.89E+0	3.00E+1	2.84E+2	2.89E+0	3.00E+1	2.84E+2	2.87E+0	2.98E+1	2.82E+2	2.47E+0	2.56E+1	2.43E+2	8.81E-1	9.16E+0	8.67E+1
XXIB	2.87E+0	2.97E+1	2.57E+2	2.87E+0	2.97E+1	2.57E+2	2.85E+0	2.94E+1	2.55E+2	2.45E+0	2.53E+1	2.19E+2	8.76E-1	9.04E+0	7.83E+1
XXIC	2.83E+0	2.86E+1	2.07E+2	2.83E+0	2.86E+1	2.07E+2	2.81E+0	2.83E+1	2.06E+2	2.42E+0	2.44E+1	1.77E+2	8.64E-1	8.71E+0	6.32E+1
XXII	8.66E+1	5.14E+4	7.77E+4	8.65E+1	5.14E+4	7.77E+4	8.49E+1	5.07E+4	7.65E+4	7.76E+1	4.70E+4	7.07E+4	.00E+0	.00E+0	.00E+0
DOE	5.20E+4	6.76E+5	1.76E+6	5.06E+4	6.63E+5	1.65E+6	4.60E+4	6.18E+5	1.34E+6	4.07E+4	5.58E+5	1.13E+6	2.66E+4	1.70E+5	4.75E+5
DOD	5.23E+0	1.59E+1	1.23E+2	5.15E+0	1.57E+1	5.69E+1	5.05E+0	1.54E+1	1.58E+1	4.94E+0	1.51E+1	1.55E+1	1.59E+0	4.86E+0	4.99E+0
NRC	1.74E+2	7.70E+2	3.04E+4	1.72E+2	7.67E+2	1.64E+4	1.71E+2	7.59E+2	1.58E+3	1.58E+2	6.65E+2	5.26E+3	8.49E+1	2.68E+2	1.74E+3
Total	5.22E+4	6.76E+5	1.79E+6	5.08E+4	6.64E+5	1.67E+6	4.61E+4	6.19E+5	1.35E+6	4.08E+4	5.59E+5	1.13E+6	2.67E+4	1.70E+5	4.76E+5

Low Population Density Without Agriculture - 09-13-94 4:14p
 TABLE K-136. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.84E+2	1.99E+2	1.99E+2	1.70E+2	1.84E+2	1.84E+2	1.60E+2	1.74E+2	1.74E+2	1.48E+2	1.60E+2	1.60E+2	1.40E+2	1.52E+2	1.52E+2	1.23E+2	1.34E+2	1.34E+2
II	1.83E+3	1.71E+4	8.32E+4	1.83E+3	1.70E+4	8.30E+4	1.83E+3	1.70E+4	8.28E+4	1.83E+3	1.70E+4	8.26E+4	1.83E+3	1.70E+4	8.23E+4	1.82E+3	1.69E+4	8.18E+4
III	6.90E+1	7.64E+1	7.64E+1	5.79E+1	6.41E+1	6.41E+1	4.61E+1	5.10E+1	5.10E+1	2.71E+1	3.01E+1	3.01E+1	1.57E+1	1.74E+1	1.74E+1	1.10E+1	1.22E+1	1.22E+1
IV	2.49E+1	6.18E+1	6.24E+1	2.26E+1	5.62E+1	5.67E+1	2.03E+1	5.05E+1	5.10E+1	1.58E+1	3.93E+1	3.96E+1	1.13E+1	2.80E+1	2.83E+1	4.46E+0	1.11E+1	1.12E+1
V	5.39E+3	5.85E+3	5.85E+3	5.23E+3	5.67E+3	5.67E+3	5.06E+3	5.49E+3	5.49E+3	4.72E+3	5.13E+3	5.13E+3	4.39E+3	4.76E+3	4.76E+3	4.17E+3	4.52E+3	4.52E+3
VI	1.51E+3	9.22E+3	2.46E+4	1.51E+3	9.20E+3	2.45E+4	1.50E+3	9.17E+3	2.45E+4	1.48E+3	9.11E+3	2.43E+4	1.46E+3	9.03E+3	2.41E+4	1.44E+3	8.91E+3	2.38E+4
VII	1.96E+3	1.75E+4	1.42E+5	6.96E+2	6.23E+3	5.06E+4	6.66E+1	5.90E+2	4.78E+3	6.01E+0	5.13E+1	4.14E+2	1.69E+0	1.42E+1	1.14E+2	.00E+0	.00E+0	.00E+0
IX	1.77E+0	1.59E+1	1.02E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.37E+3	1.64E+4	1.86E+4	1.36E+3	1.42E+4	1.61E+4	1.35E+3	1.28E+4	1.45E+4	1.34E+3	1.12E+4	1.27E+4	1.33E+3	1.03E+4	1.16E+4	1.31E+3	9.26E+3	1.05E+4
XII	5.05E+0	1.54E+1	1.58E+1	5.03E+0	1.54E+1	1.58E+1	5.02E+0	1.53E+1	1.57E+1	4.99E+0	1.52E+1	1.57E+1	4.97E+0	1.52E+1	1.56E+1	4.94E+0	1.51E+1	1.55E+1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.64E-1	3.83E-1	3.83E-1	3.62E-1	3.81E-1	3.81E-1	3.61E-1	3.80E-1	3.80E-1	3.59E-1	3.78E-1	3.78E-1	3.57E-1	3.76E-1	3.76E-1	3.52E-1	3.70E-1	3.70E-1
XVIB	3.60E-1	3.78E-1	3.78E-1	3.58E-1	3.76E-1	3.76E-1	3.57E-1	3.75E-1	3.75E-1	3.55E-1	3.73E-1	3.73E-1	3.53E-1	3.71E-1	3.71E-1	3.48E-1	3.65E-1	3.65E-1
XVIC	3.51E-1	3.66E-1	3.66E-1	3.49E-1	3.65E-1	3.65E-1	3.48E-1	3.64E-1	3.64E-1	3.47E-1	3.62E-1	3.62E-1	3.44E-1	3.60E-1	3.60E-1	3.39E-1	3.54E-1	3.54E-1
XVIIIA	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.13E+0	1.13E+0	1.02E+0	1.13E+0	1.13E+0	1.01E+0	1.12E+0	1.12E+0	1.00E+0	1.11E+0	1.11E+0	9.85E-1	1.09E+0	1.09E+0
XVIIIB	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.11E+0	1.11E+0	1.00E+0	1.11E+0	1.11E+0	9.93E-1	1.10E+0	1.10E+0	9.83E-1	1.09E+0	1.09E+0	9.68E-1	1.07E+0	1.07E+0
XVIIIC	9.78E-1	1.07E+0	1.07E+0	9.76E-1	1.06E+0	1.06E+0	9.71E-1	1.06E+0	1.06E+0	9.62E-1	1.05E+0	1.05E+0	9.52E-1	1.04E+0	1.04E+0	9.37E-1	1.02E+0	1.02E+0
XXA	1.13E-2	3.99E-2	1.39E-1	9.52E-3	3.36E-2	1.17E-1	8.41E-3	2.97E-2	1.04E-1	7.02E-3	2.48E-2	8.69E-2	5.91E-3	2.09E-2	7.32E-2	4.22E-3	1.49E-2	5.24E-2
XXB	9.10E-3	1.75E-2	4.02E-2	7.67E-3	1.48E-2	3.39E-2	6.78E-3	1.31E-2	3.00E-2	5.66E-3	1.09E-2	2.51E-2	4.76E-3	9.18E-3	2.11E-2	3.41E-3	6.57E-3	1.51E-2
XXC	6.01E-3	7.57E-3	2.65E+2	5.07E-3	6.38E-3	2.23E+2	4.48E-3	5.64E-3	1.98E+2	3.74E-3	4.71E-3	1.66E+2	3.15E-3	3.96E-3	1.39E+2	2.25E-3	2.83E-3	1.00E+2
XXIA	2.87E+0	2.98E+1	2.82E+2	2.84E+0	2.95E+1	2.79E+2	2.81E+0	2.92E+1	2.76E+2	2.74E+0	2.85E+1	2.70E+2	2.62E+0	2.72E+1	2.58E+2	2.47E+0	2.56E+1	2.43E+2
XXIB	2.85E+0	2.94E+1	2.55E+2	2.82E+0	2.91E+1	2.52E+2	2.79E+0	2.88E+1	2.50E+2	2.72E+0	2.81E+1	2.44E+2	2.60E+0	2.69E+1	2.33E+2	2.45E+0	2.53E+1	2.19E+2
XXIC	2.81E+0	2.83E+1	2.06E+2	2.78E+0	2.81E+1	2.04E+2	2.75E+0	2.78E+1	2.02E+2	2.69E+0	2.71E+1	1.97E+2	2.57E+0	2.59E+1	1.88E+2	2.42E+0	2.44E+1	1.77E+2
XXII	8.49E+1	5.07E+4	7.65E+4	8.39E+1	5.00E+4	7.56E+4	8.18E+1	4.92E+4	7.43E+4	7.97E+1	4.80E+4	7.22E+4	7.89E+1	4.76E+4	7.16E+4	7.76E+1	4.70E+4	7.07E+4
DOE	4.60E+4	6.18E+5	1.34E+6	4.43E+4	5.99E+5	1.24E+6	4.33E+4	5.85E+5	1.18E+6	4.24E+4	5.73E+5	1.15E+6	4.16E+4	5.67E+5	1.14E+6	4.07E+4	5.58E+5	1.13E+6
DOD	5.05E+0	1.54E+1	1.58E+1	5.03E+0	1.54E+1	1.58E+1	5.02E+0	1.53E+1	1.57E+1	4.99E+0	1.52E+1	1.57E+1	4.97E+0	1.52E+1	1.56E+1	4.94E+0	1.51E+1	1.55E+1
NRC	1.71E+2	7.59E+2	6.80E+3	1.70E+2	7.52E+2	6.55E+3	1.69E+2	7.45E+2	6.37E+3	1.66E+2	7.29E+2	6.09E+3	1.63E+2	7.01E+2	5.74E+3	1.58E+2	6.65E+2	5.26E+3
Total	4.61E+4	6.19E+5	1.35E+6	4.45E+4	6.00E+5	1.24E+6	4.34E+4	5.86E+5	1.18E+6	4.26E+4	5.73E+5	1.16E+6	4.18E+4	5.67E+5	1.15E+6	4.08E+4	5.59E+5	1.13E+6

Low Population Density Without Agriculture - 09-13-94 4:14p
 TABLE K-137. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.48E-2	9.22E-2	9.22E-2	8.33E-2	9.06E-2	9.06E-2	7.87E-2	8.56E-2	8.56E-2	6.32E-2	6.87E-2	6.87E-2	2.83E-2	3.08E-2	3.08E-2
II	7.34E-1	6.83E+0	3.37E+1	7.33E-1	6.83E+0	3.37E+1	7.33E-1	6.83E+0	3.37E+1	7.33E-1	6.81E+0	3.34E+1	7.08E-1	6.57E+0	3.18E+1
III	3.71E-2	4.11E-2	4.11E-2	3.70E-2	4.11E-2	4.11E-2	3.45E-2	3.83E-2	3.83E-2	1.83E-2	2.03E-2	2.03E-2	.00E+0	.00E+0	.00E+0
IV	6.06E-3	1.51E-2	1.53E-2	5.99E-3	1.49E-2	1.51E-2	5.71E-3	1.42E-2	1.44E-2	4.50E-3	1.12E-2	1.14E-2	.00E+0	.00E+0	.00E+0
V	2.20E+0	2.39E+0	2.39E+0	2.20E+0	2.38E+0	2.38E+0	2.18E+0	2.36E+0	2.36E+0	1.99E+0	2.16E+0	2.16E+0	1.31E+0	1.41E+0	1.41E+0
VI	3.50E-1	1.84E+0	6.43E+0	3.50E-1	1.84E+0	6.43E+0	3.49E-1	1.84E+0	6.43E+0	3.41E-1	1.83E+0	6.39E+0	2.94E-1	1.68E+0	5.93E+0
VII	5.51E-1	4.25E+0	3.30E+1	4.64E-1	3.47E+0	2.68E+1	3.43E-1	2.52E+0	1.94E+1	8.90E-3	6.51E-2	5.02E-1	.00E+0	.00E+0	.00E+0
IX	2.18E-3	1.92E-2	1.19E-1	1.59E-3	1.39E-2	8.65E-2	5.44E-4	4.78E-3	2.97E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.49E+0	5.05E+0	5.58E+0	1.49E+0	5.04E+0	5.58E+0	1.49E+0	4.92E+0	5.43E+0	1.45E+0	3.67E+0	4.00E+0	1.28E+0	2.19E+0	2.33E+0
XII	2.97E-4	9.20E-4	9.46E-4	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.18E-4	9.44E-4	2.92E-4	9.07E-4	9.32E-4	2.76E-4	8.56E-4	8.80E-4
XIIIA	5.18E-6	1.69E-5	2.07E-5	3.71E-6	1.21E-5	1.49E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	4.17E-6	7.41E-6	8.17E-6	2.99E-6	5.31E-6	5.86E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.75E-6	3.26E-6	9.93E-6	1.97E-6	2.33E-6	7.12E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-4	1.53E-4	1.53E-4	1.46E-4	1.53E-4	1.53E-4	1.46E-4	1.53E-4	1.53E-4	1.44E-4	1.52E-4	1.52E-4	1.27E-4	1.34E-4	1.34E-4
XVIB	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.51E-4	1.51E-4	1.42E-4	1.49E-4	1.49E-4	1.25E-4	1.32E-4	1.32E-4
XVIC	1.40E-4	1.47E-4	1.47E-4	1.40E-4	1.47E-4	1.47E-4	1.40E-4	1.46E-4	1.46E-4	1.39E-4	1.45E-4	1.45E-4	1.22E-4	1.28E-4	1.28E-4
XVIIIA	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.00E-4	4.42E-4	4.42E-4	3.50E-4	3.87E-4	3.87E-4
XVIIIB	3.96E-4	4.38E-4	4.38E-4	3.96E-4	4.38E-4	4.38E-4	3.96E-4	4.38E-4	4.38E-4	3.93E-4	4.35E-4	4.35E-4	3.44E-4	3.81E-4	3.81E-4
XVIIIC	3.82E-4	4.17E-4	4.17E-4	3.82E-4	4.17E-4	4.17E-4	3.82E-4	4.17E-4	4.17E-4	3.79E-4	4.14E-4	4.14E-4	3.31E-4	3.62E-4	3.62E-4
XXA	5.28E-5	2.03E-4	1.24E-3	3.33E-5	1.28E-4	7.79E-4	6.93E-6	2.66E-5	1.63E-4	1.62E-6	6.26E-6	3.86E-5	.00E+0	.00E+0	.00E+0
XXB	4.26E-5	8.97E-5	3.21E-4	2.69E-5	5.66E-5	2.02E-4	5.59E-6	1.18E-5	4.22E-5	1.31E-6	2.77E-6	1.00E-5	.00E+0	.00E+0	.00E+0
XXC	2.82E-5	3.78E-5	1.25E+0	1.78E-5	2.38E-5	7.90E-1	3.69E-6	4.96E-6	1.65E-1	8.65E-7	1.16E-6	3.92E-2	.00E+0	.00E+0	.00E+0
XXIA	1.13E-3	1.18E-2	1.11E-1	1.13E-3	1.18E-2	1.11E-1	1.13E-3	1.18E-2	1.11E-1	1.10E-3	1.15E-2	1.08E-1	7.46E-4	7.78E-3	7.34E-2
XXIB	1.12E-3	1.16E-2	1.00E-1	1.12E-3	1.16E-2	1.00E-1	1.12E-3	1.16E-2	1.00E-1	1.09E-3	1.13E-2	9.77E-2	7.40E-4	7.66E-3	6.64E-2
XXIC	1.10E-3	1.12E-2	8.13E-2	1.10E-3	1.12E-2	8.13E-2	1.10E-3	1.12E-2	8.13E-2	1.07E-3	1.09E-2	7.91E-2	7.29E-4	7.38E-3	5.38E-2
XXII	3.38E-2	1.08E+1	1.55E+1	3.38E-2	1.08E+1	1.55E+1	3.36E-2	1.08E+1	1.55E+1	3.21E-2	1.03E+1	1.48E+1	1.01E-2	4.82E+0	7.04E+0
DOE	1.34E+1	1.35E+2	3.28E+2	1.33E+1	1.35E+2	3.22E+2	1.32E+1	1.33E+2	3.14E+2	1.24E+1	1.26E+2	2.88E+2	1.02E+1	8.17E+1	2.19E+2
DOD	3.31E-4	9.98E-4	2.92E-2	3.21E-4	9.75E-4	2.12E-2	2.96E-4	9.18E-4	9.44E-4	2.92E-4	9.07E-4	9.32E-4	2.76E-4	8.56E-4	8.80E-4
NRC	6.79E-2	3.01E-1	8.05E+0	6.76E-2	3.00E-1	5.89E+0	6.73E-2	2.99E-1	2.96E+0	6.63E-2	2.92E-1	2.32E+0	5.34E-2	2.08E-1	1.46E+0
Total	1.35E+1	1.36E+2	3.37E+2	1.34E+1	1.35E+2	3.28E+2	1.32E+1	1.34E+2	3.17E+2	1.25E+1	1.26E+2	2.90E+2	1.02E+1	8.19E+1	2.21E+2

Low Population Density Without Agriculture - 09-13-94 4:14p
 TABLE K-138. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.87E-2	8.56E-2	8.56E-2	7.55E-2	8.21E-2	8.21E-2	7.29E-2	7.93E-2	7.93E-2	6.92E-2	7.52E-2	7.52E-2	6.64E-2	7.22E-2	7.22E-2	6.32E-2	6.87E-2	6.87E-2
II	7.33E-1	6.83E+0	3.37E+1	7.33E-1	6.83E+0	3.37E+1	7.33E-1	6.82E+0	3.36E+1	7.33E-1	6.81E+0	3.35E+1	7.33E-1	6.81E+0	3.34E+1	7.33E-1	6.81E+0	3.34E+1
III	3.45E-2	3.83E-2	3.83E-2	3.01E-2	3.34E-2	3.34E-2	2.74E-2	3.04E-2	3.04E-2	2.51E-2	2.78E-2	2.78E-2	2.24E-2	2.48E-2	2.48E-2	1.83E-2	2.03E-2	2.03E-2
IV	5.71E-3	1.42E-2	1.44E-2	5.57E-3	1.39E-2	1.40E-2	5.43E-3	1.35E-2	1.37E-2	5.17E-3	1.29E-2	1.30E-2	4.90E-3	1.22E-2	1.24E-2	4.50E-3	1.12E-2	1.14E-2
V	2.18E+0	2.36E+0	2.36E+0	2.15E+0	2.33E+0	2.33E+0	2.13E+0	2.30E+0	2.30E+0	2.09E+0	2.26E+0	2.26E+0	2.05E+0	2.22E+0	2.22E+0	1.99E+0	2.16E+0	2.16E+0
VI	3.49E-1	1.84E+0	6.43E+0	3.48E-1	1.84E+0	6.43E+0	3.47E-1	1.84E+0	6.43E+0	3.45E-1	1.84E+0	6.42E+0	3.44E-1	1.83E+0	6.41E+0	3.41E-1	1.83E+0	6.39E+0
VII	3.43E-1	2.52E+0	1.94E+1	2.25E-1	1.66E+0	1.29E+1	1.57E-1	1.17E+0	9.07E+0	9.41E-2	7.16E-1	5.55E+0	5.31E-2	4.04E-1	3.14E+0	8.90E-3	6.51E-2	5.02E-1
IX	5.44E-4	4.78E-3	2.97E-2	2.60E-4	2.29E-3	1.42E-2	1.54E-4	1.35E-3	8.39E-3	5.43E-5	4.77E-4	2.96E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.49E+0	4.92E+0	5.43E+0	1.48E+0	4.71E+0	5.19E+0	1.48E+0	4.51E+0	4.96E+0	1.47E+0	4.16E+0	4.56E+0	1.46E+0	3.91E+0	4.28E+0	1.45E+0	3.67E+0	4.00E+0
XII	2.96E-4	9.18E-4	9.44E-4	2.95E-4	9.16E-4	9.42E-4	2.95E-4	9.14E-4	9.40E-4	2.94E-4	9.11E-4	9.37E-4	2.93E-4	9.09E-4	9.35E-4	2.92E-4	9.07E-4	9.32E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-4	1.53E-4	1.53E-4	1.46E-4	1.53E-4	1.53E-4	1.45E-4	1.53E-4	1.53E-4	1.45E-4	1.52E-4	1.52E-4	1.45E-4	1.52E-4	1.52E-4	1.44E-4	1.52E-4	1.52E-4
XVIB	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.50E-4	1.50E-4	1.43E-4	1.50E-4	1.50E-4	1.43E-4	1.50E-4	1.50E-4	1.42E-4	1.49E-4	1.49E-4
XVIC	1.40E-4	1.46E-4	1.46E-4	1.40E-4	1.46E-4	1.46E-4	1.40E-4	1.46E-4	1.46E-4	1.40E-4	1.46E-4	1.46E-4	1.39E-4	1.45E-4	1.45E-4	1.39E-4	1.45E-4	1.45E-4
XVIIIA	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.02E-4	4.44E-4	4.44E-4	4.02E-4	4.44E-4	4.44E-4	4.00E-4	4.42E-4	4.42E-4
XVIIIB	3.96E-4	4.38E-4	4.38E-4	3.96E-4	4.38E-4	4.38E-4	3.95E-4	4.38E-4	4.38E-4	3.95E-4	4.37E-4	4.37E-4	3.95E-4	4.37E-4	4.37E-4	3.93E-4	4.35E-4	4.35E-4
XVIIIC	3.82E-4	4.17E-4	4.17E-4	3.82E-4	4.17E-4	4.17E-4	3.81E-4	4.17E-4	4.17E-4	3.81E-4	4.16E-4	4.16E-4	3.81E-4	4.16E-4	4.16E-4	3.79E-4	4.14E-4	4.14E-4
XXA	6.93E-6	2.66E-5	1.63E-4	2.31E-6	8.90E-6	5.47E-5	2.15E-6	8.29E-6	5.09E-5	1.94E-6	7.46E-6	4.59E-5	1.79E-6	6.89E-6	4.25E-5	1.62E-6	6.26E-6	3.86E-5
XXB	5.59E-6	1.18E-5	4.22E-5	1.86E-6	3.93E-6	1.42E-5	1.73E-6	3.66E-6	1.32E-5	1.56E-6	3.30E-6	1.19E-5	1.44E-6	3.04E-6	1.10E-5	1.31E-6	2.77E-6	1.00E-5
XXC	3.69E-6	4.96E-6	1.65E-1	1.23E-6	1.66E-6	5.55E-2	1.15E-6	1.54E-6	5.17E-2	1.03E-6	1.39E-6	4.66E-2	9.53E-7	1.28E-6	4.31E-2	8.65E-7	1.16E-6	3.92E-2
XXIA	1.13E-3	1.18E-2	1.11E-1	1.12E-3	1.17E-2	1.11E-1	1.12E-3	1.17E-2	1.10E-1	1.11E-3	1.16E-2	1.10E-1	1.11E-3	1.16E-2	1.09E-1	1.10E-3	1.15E-2	1.08E-1
XXIB	1.12E-3	1.16E-2	1.00E-1	1.12E-3	1.16E-2	1.00E-1	1.11E-3	1.15E-2	9.97E-2	1.11E-3	1.14E-2	9.91E-2	1.10E-3	1.14E-2	9.85E-2	1.09E-3	1.13E-2	9.77E-2
XXIC	1.10E-3	1.12E-2	8.13E-2	1.10E-3	1.11E-2	8.10E-2	1.10E-3	1.11E-2	8.08E-2	1.09E-3	1.10E-2	8.03E-2	1.08E-3	1.10E-2	7.98E-2	1.07E-3	1.09E-2	7.91E-2
XXII	3.36E-2	1.08E+1	1.55E+1	3.34E-2	1.07E+1	1.54E+1	3.32E-2	1.07E+1	1.53E+1	3.30E-2	1.05E+1	1.51E+1	3.28E-2	1.05E+1	1.51E+1	3.21E-2	1.03E+1	1.48E+1
DOE	1.32E+1	1.33E+2	3.14E+2	1.30E+1	1.32E+2	3.07E+2	1.28E+1	1.31E+2	3.02E+2	1.27E+1	1.29E+2	2.97E+2	1.26E+1	1.28E+2	2.93E+2	1.24E+1	1.26E+2	2.88E+2
DOD	2.96E-4	9.18E-4	9.44E-4	2.95E-4	9.16E-4	9.42E-4	2.95E-4	9.14E-4	9.40E-4	2.94E-4	9.11E-4	9.37E-4	2.93E-4	9.09E-4	9.35E-4	2.92E-4	9.07E-4	9.32E-4
NRC	6.73E-2	2.99E-1	2.96E+0	6.72E-2	2.99E-1	2.44E+0	6.71E-2	2.98E-1	2.42E+0	6.68E-2	2.96E-1	2.38E+0	6.66E-2	2.95E-1	2.35E+0	6.63E-2	2.92E-1	2.32E+0
Total	1.32E+1	1.34E+2	3.17E+2	1.30E+1	1.32E+2	3.09E+2	1.29E+1	1.31E+2	3.04E+2	1.28E+1	1.29E+2	2.99E+2	1.26E+1	1.28E+2	2.95E+2	1.25E+1	1.26E+2	2.90E+2

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 TABLE K-139. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.42E-2	9.15E-2	9.15E-2	8.15E-2	8.86E-2	8.86E-2	7.20E-2	7.83E-2	7.83E-2	4.83E-2	5.26E-2	5.26E-2	1.23E-2	1.34E-2	1.34E-2
II	7.34E-1	6.83E+0	3.37E+1	7.33E-1	6.83E+0	3.37E+1	7.33E-1	6.82E+0	3.36E+1	7.29E-1	6.77E+0	3.30E+1	4.98E-1	4.75E+0	2.34E+1
III	3.71E-2	4.11E-2	4.11E-2	3.67E-2	4.07E-2	4.07E-2	2.70E-2	2.99E-2	2.99E-2	4.32E-3	4.79E-3	4.79E-3	.00E+0	.00E+0	.00E+0
IV	6.03E-3	1.50E-2	1.52E-2	5.88E-3	1.46E-2	1.48E-2	5.35E-3	1.33E-2	1.35E-2	9.58E-4	2.39E-3	2.42E-3	.00E+0	.00E+0	.00E+0
V	2.20E+0	2.39E+0	2.39E+0	2.19E+0	2.38E+0	2.38E+0	2.12E+0	2.29E+0	2.29E+0	1.64E+0	1.77E+0	1.77E+0	4.60E-1	4.99E-1	4.99E-1
VI	3.50E-1	1.84E+0	6.43E+0	3.49E-1	1.84E+0	6.43E+0	3.46E-1	1.84E+0	6.42E+0	3.22E-1	1.77E+0	6.21E+0	2.14E-1	1.32E+0	4.72E+0
VII	5.08E-1	3.86E+0	2.99E+1	4.29E-1	3.17E+0	2.45E+1	1.34E-1	1.01E+0	7.82E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	1.89E-3	1.66E-2	1.03E-1	9.83E-4	8.64E-3	5.36E-2	1.02E-4	8.96E-4	5.56E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.49E+0	5.05E+0	5.58E+0	1.49E+0	5.04E+0	5.57E+0	1.48E+0	4.59E+0	5.06E+0	1.41E+0	3.06E+0	3.31E+0	1.14E+0	1.65E+0	1.73E+0
XII	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.19E-4	9.45E-4	2.94E-4	9.10E-4	9.36E-4	2.87E-4	8.89E-4	9.15E-4	9.23E-5	2.86E-4	2.95E-4
XIIIA	4.70E-6	1.54E-5	1.88E-5	1.80E-6	5.88E-6	7.21E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.79E-6	6.72E-6	7.41E-6	1.45E-6	2.57E-6	2.84E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.50E-6	2.95E-6	9.01E-3	9.56E-7	1.13E-6	3.45E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-4	1.53E-4	1.53E-4	1.46E-4	1.53E-4	1.53E-4	1.45E-4	1.53E-4	1.53E-4	1.40E-4	1.48E-4	1.48E-4	7.79E-5	8.24E-5	8.24E-5
XVIB	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.51E-4	1.51E-4	1.43E-4	1.50E-4	1.50E-4	1.39E-4	1.45E-4	1.45E-4	7.68E-5	8.10E-5	8.10E-5
XVIC	1.40E-4	1.47E-4	1.47E-4	1.40E-4	1.47E-4	1.47E-4	1.40E-4	1.46E-4	1.46E-4	1.35E-4	1.41E-4	1.41E-4	7.49E-5	7.86E-5	7.86E-5
XVIIIA	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.02E-4	4.45E-4	4.45E-4	3.86E-4	4.26E-4	4.26E-4	2.65E-4	2.93E-4	2.93E-4
XVIIIB	3.96E-4	4.38E-4	4.38E-4	3.96E-4	4.38E-4	4.38E-4	3.95E-4	4.38E-4	4.38E-4	3.79E-4	4.20E-4	4.20E-4	2.60E-4	2.88E-4	2.88E-4
XVIIIC	3.82E-4	4.17E-4	4.17E-4	3.82E-4	4.17E-4	4.17E-4	3.81E-4	4.17E-4	4.17E-4	3.65E-4	3.99E-4	3.99E-4	2.51E-4	2.74E-4	2.74E-4
XXA	4.00E-5	1.54E-4	9.36E-4	1.74E-5	6.69E-5	4.07E-4	1.96E-6	7.56E-6	4.66E-5	7.30E-7	2.82E-6	1.76E-5	.00E+0	.00E+0	.00E+0
XXB	3.23E-5	6.80E-5	2.43E-4	1.40E-5	2.95E-5	1.06E-4	1.58E-6	3.34E-6	1.21E-5	5.89E-7	1.25E-6	4.54E-6	.00E+0	.00E+0	.00E+0
XXC	2.13E-5	2.86E-5	9.50E-1	9.27E-6	1.24E-5	4.13E-1	1.05E-6	1.41E-6	4.73E-2	3.89E-7	5.24E-7	1.79E-2	.00E+0	.00E+0	.00E+0
XXIA	1.13E-3	1.18E-2	1.11E-1	1.13E-3	1.18E-2	1.11E-1	1.12E-3	1.17E-2	1.10E-1	9.63E-4	1.00E-2	9.47E-2	3.44E-4	3.59E-3	3.38E-2
XXIB	1.12E-3	1.16E-2	1.00E-1	1.12E-3	1.16E-2	1.00E-1	1.11E-3	1.15E-2	9.96E-2	9.55E-4	9.89E-3	8.56E-2	3.41E-4	3.53E-3	3.06E-2
XXIC	1.10E-3	1.12E-2	8.13E-2	1.10E-3	1.12E-2	8.13E-2	1.09E-3	1.11E-2	8.07E-2	9.40E-4	9.53E-3	6.94E-2	3.36E-4	3.40E-3	2.48E-2
XXII	3.38E-2	1.08E+1	1.55E+1	3.38E-2	1.08E+1	1.55E+1	3.31E-2	1.06E+1	1.53E+1	3.03E-2	9.87E+0	1.41E+1	.00E+0	.00E+0	.00E+0
DOE	1.34E+1	1.35E+2	3.25E+2	1.33E+1	1.34E+2	3.20E+2	1.28E+1	1.30E+2	3.00E+2	1.15E+1	1.20E+2	2.77E+2	7.07E+0	3.69E+1	1.33E+2
DOD	3.27E-4	9.90E-4	2.65E-2	3.08E-4	9.46E-4	1.07E-2	2.94E-4	9.10E-4	9.36E-4	2.87E-4	8.89E-4	9.15E-4	9.23E-5	2.86E-4	2.95E-4
NRC	6.77E-2	3.01E-1	6.63E+0	6.75E-2	3.00E-1	4.12E+0	6.70E-2	2.97E-1	2.40E+0	6.20E-2	2.60E-1	1.96E+0	3.33E-2	1.05E-1	6.82E-1
Total	1.35E+1	1.35E+2	3.32E+2	1.34E+1	1.35E+2	3.24E+2	1.29E+1	1.31E+2	3.03E+2	1.16E+1	1.20E+2	2.79E+2	7.10E+0	3.70E+1	1.34E+2

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 TABLE K-140. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.20E-2	7.83E-2	7.83E-2	6.66E-2	7.24E-2	7.24E-2	6.30E-2	6.85E-2	6.85E-2	5.80E-2	6.31E-2	6.31E-2	5.48E-2	5.96E-2	5.96E-2	4.83E-2	5.26E-2	5.26E-2
II	7.33E-1	6.82E+0	3.36E+1	7.33E-1	6.81E+0	3.34E+1	7.32E-1	6.81E+0	3.34E+1	7.32E-1	6.80E+0	3.33E+1	7.31E-1	6.79E+0	3.32E+1	7.29E-1	6.77E+0	3.30E+1
III	2.70E-2	2.99E-2	2.99E-2	2.26E-2	2.51E-2	2.51E-2	1.80E-2	2.00E-2	2.00E-2	1.06E-2	1.18E-2	1.18E-2	6.14E-3	6.80E-3	6.80E-3	4.32E-3	4.79E-3	4.79E-3
IV	5.35E-3	1.33E-2	1.35E-2	4.86E-3	1.21E-2	1.23E-2	4.37E-3	1.09E-2	1.10E-2	3.40E-3	8.46E-3	8.57E-3	2.42E-3	6.03E-3	6.11E-3	9.58E-4	2.39E-3	2.42E-3
V	2.12E+0	2.29E+0	2.29E+0	2.05E+0	2.22E+0	2.22E+0	1.99E+0	2.15E+0	2.15E+0	1.85E+0	2.01E+0	2.01E+0	1.72E+0	1.87E+0	1.87E+0	1.64E+0	1.77E+0	1.77E+0
VI	3.46E-1	1.84E+0	6.42E+0	3.44E-1	1.83E+0	6.41E+0	3.41E-1	1.83E+0	6.39E+0	3.36E-1	1.81E+0	6.35E+0	3.30E-1	1.79E+0	6.30E+0	3.22E-1	1.77E+0	6.21E+0
VII	1.34E-1	1.01E+0	7.82E+0	4.72E-2	3.59E-1	2.78E+0	4.79E-3	3.43E-2	2.63E-1	5.15E-4	3.07E-3	2.29E-2	1.54E-4	8.62E-4	6.33E-3	.00E+0	.00E+0	.00E+0
IX	1.02E-4	8.96E-4	5.56E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.48E+0	4.59E+0	5.06E+0	1.47E+0	4.12E+0	4.52E+0	1.46E+0	3.83E+0	4.18E+0	1.44E+0	3.50E+0	3.80E+0	1.43E+0	3.29E+0	3.57E+0	1.41E+0	3.06E+0	3.31E+0
XII	2.94E-4	9.10E-4	9.36E-4	2.92E-4	9.06E-4	9.32E-4	2.91E-4	9.04E-4	9.30E-4	2.90E-4	8.99E-4	9.25E-4	2.89E-4	8.95E-4	9.21E-4	2.87E-4	8.89E-4	9.15E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.45E-4	1.53E-4	1.53E-4	1.45E-4	1.52E-4	1.52E-4	1.44E-4	1.52E-4	1.52E-4	1.43E-4	1.51E-4	1.51E-4	1.43E-4	1.50E-4	1.50E-4	1.40E-4	1.48E-4	1.48E-4
XVIB	1.43E-4	1.50E-4	1.50E-4	1.43E-4	1.50E-4	1.50E-4	1.42E-4	1.49E-4	1.49E-4	1.42E-4	1.49E-4	1.49E-4	1.41E-4	1.48E-4	1.48E-4	1.39E-4	1.45E-4	1.45E-4
XVIC	1.40E-4	1.46E-4	1.46E-4	1.39E-4	1.45E-4	1.45E-4	1.39E-4	1.45E-4	1.45E-4	1.38E-4	1.44E-4	1.44E-4	1.37E-4	1.43E-4	1.43E-4	1.35E-4	1.41E-4	1.41E-4
XVIIIA	4.02E-4	4.45E-4	4.45E-4	4.02E-4	4.44E-4	4.44E-4	4.00E-4	4.42E-4	4.42E-4	3.96E-4	4.37E-4	4.37E-4	3.92E-4	4.33E-4	4.33E-4	3.86E-4	4.26E-4	4.26E-4
XVIIIB	3.95E-4	4.38E-4	4.38E-4	3.95E-4	4.37E-4	4.37E-4	3.93E-4	4.35E-4	4.35E-4	3.89E-4	4.30E-4	4.30E-4	3.85E-4	4.26E-4	4.26E-4	3.79E-4	4.20E-4	4.20E-4
XVIIIC	3.81E-4	4.17E-4	4.17E-4	3.81E-4	4.16E-4	4.16E-4	3.79E-4	4.14E-4	4.14E-4	3.75E-4	4.10E-4	4.10E-4	3.71E-4	4.05E-4	4.05E-4	3.65E-4	3.99E-4	3.99E-4
XXA	1.96E-6	7.56E-6	4.66E-5	1.65E-6	6.37E-6	3.93E-5	1.46E-6	5.63E-6	3.48E-5	1.22E-6	4.70E-6	2.91E-5	1.02E-6	3.95E-6	2.45E-5	7.30E-7	2.82E-6	1.76E-5
XXB	1.58E-6	3.34E-6	1.21E-5	1.33E-6	2.81E-6	1.02E-5	1.18E-6	2.49E-6	9.00E-6	9.81E-7	2.07E-6	7.53E-6	8.24E-7	1.74E-6	6.34E-6	5.89E-7	1.25E-6	4.54E-6
XXC	1.05E-6	1.41E-6	4.73E-6	8.81E-7	1.18E-6	3.99E-6	7.78E-7	1.05E-6	3.53E-6	6.48E-7	8.73E-7	2.96E-6	5.45E-7	7.34E-7	2.49E-6	3.89E-7	5.24E-7	1.79E-6
XXIA	1.12E-3	1.17E-2	1.10E-1	1.11E-3	1.16E-2	1.09E-1	1.10E-3	1.14E-2	1.08E-1	1.07E-3	1.12E-2	1.05E-1	1.02E-3	1.07E-2	1.01E-1	9.63E-4	1.00E-2	9.47E-2
XXIB	1.11E-3	1.15E-2	9.96E-2	1.10E-3	1.14E-2	9.86E-2	1.09E-3	1.13E-2	9.75E-2	1.06E-3	1.10E-2	9.52E-2	1.01E-3	1.05E-2	9.10E-2	9.55E-4	9.89E-3	8.56E-2
XXIC	1.09E-3	1.11E-2	8.07E-2	1.08E-3	1.10E-2	7.98E-2	1.07E-3	1.09E-2	7.90E-2	1.04E-3	1.06E-2	7.71E-2	9.99E-4	1.01E-2	7.37E-2	9.40E-4	9.53E-3	6.94E-2
XXII	3.31E-2	1.06E+1	1.53E+1	3.28E-2	1.05E+1	1.51E+1	3.19E-2	1.03E+1	1.48E+1	3.11E-2	1.01E+1	1.44E+1	3.08E-2	9.99E+0	1.43E+1	3.03E-2	9.87E+0	1.41E+1
DOE	1.28E+1	1.30E+2	3.00E+2	1.26E+1	1.28E+2	2.93E+2	1.24E+1	1.26E+2	2.88E+2	1.21E+1	1.23E+2	2.83E+2	1.18E+1	1.22E+2	2.80E+2	1.15E+1	1.20E+2	2.77E+2
DOD	2.94E-4	9.10E-4	9.36E-4	2.92E-4	9.06E-4	9.32E-4	2.91E-4	9.04E-4	9.30E-4	2.90E-4	8.99E-4	9.25E-4	2.89E-4	8.95E-4	9.21E-4	2.87E-4	8.89E-4	9.15E-4
NRC	6.70E-2	2.97E-1	2.40E+0	6.66E-2	2.95E-1	2.34E+0	6.62E-2	2.92E-1	2.30E+0	6.53E-2	2.85E-1	2.22E+0	6.39E-2	2.75E-1	2.11E+0	6.20E-2	2.60E-1	1.96E+0
Total	1.29E+1	1.31E+2	3.03E+2	1.26E+1	1.28E+2	2.95E+2	1.24E+1	1.26E+2	2.90E+2	1.22E+1	1.24E+2	2.85E+2	1.19E+1	1.22E+2	2.83E+2	1.16E+1	1.20E+2	2.79E+2

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 TABLE K-141. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.58E-2	6.07E-2	6.07E-2	5.48E-2	5.96E-2	5.96E-2	5.18E-2	5.64E-2	5.64E-2	4.16E-2	4.52E-2	4.52E-2	1.86E-2	2.03E-2	2.03E-2
II	4.83E-1	4.51E+0	2.22E+1	4.82E-1	4.51E+0	2.22E+1	4.82E-1	4.50E+0	2.22E+1	4.82E-1	4.49E+0	2.19E+1	4.65E-1	4.33E+0	2.09E+1
III	2.45E-2	2.70E-2	2.70E-2	2.44E-2	2.70E-2	2.70E-2	2.28E-2	2.52E-2	2.52E-2	1.21E-2	1.33E-2	1.33E-2	.00E+0	.00E+0	.00E+0
IV	4.49E-3	1.12E-2	1.13E-2	4.43E-3	1.10E-2	1.12E-2	4.23E-3	1.05E-2	1.07E-2	3.33E-3	8.29E-3	8.39E-3	.00E+0	.00E+0	.00E+0
V	1.44E+0	1.57E+0	1.57E+0	1.44E+0	1.57E+0	1.57E+0	1.43E+0	1.55E+0	1.55E+0	1.30E+0	1.42E+0	1.42E+0	8.55E-1	9.33E-1	9.33E-1
VI	2.55E-1	1.39E+0	4.56E+0	2.55E-1	1.39E+0	4.56E+0	2.55E-1	1.39E+0	4.56E+0	2.50E-1	1.38E+0	4.53E+0	2.17E-1	1.27E+0	4.21E+0
VII	4.72E-1	3.80E+0	2.99E+1	3.94E-1	3.10E+0	2.43E+1	2.90E-1	2.25E+0	1.76E+1	7.52E-3	5.81E-2	4.54E-1	.00E+0	.00E+0	.00E+0
IX	1.95E-3	1.72E-2	1.08E-1	1.42E-3	1.25E-2	7.84E-2	4.86E-4	4.30E-3	2.69E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.79E-1	3.16E+0	3.49E+0	9.79E-1	3.16E+0	3.49E+0	9.76E-1	3.08E+0	3.40E+0	9.53E-1	2.31E+0	2.52E+0	8.38E-1	1.40E+0	1.48E+0
XII	2.64E-4	8.16E-4	8.39E-4	2.64E-4	8.15E-4	8.38E-4	2.63E-4	8.14E-4	8.38E-4	2.60E-4	8.04E-4	8.27E-4	2.46E-4	7.59E-4	7.81E-4
XIIIA	3.74E-6	1.22E-5	1.48E-5	2.68E-6	8.73E-6	1.06E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.01E-6	5.35E-6	5.85E-6	2.16E-6	3.84E-6	4.19E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.99E-6	2.35E-6	6.06E-3	1.42E-6	1.68E-6	4.34E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.57E-5	1.01E-4	1.01E-4	9.57E-5	1.01E-4	1.01E-4	9.56E-5	1.01E-4	1.01E-4	9.46E-5	9.95E-5	9.95E-5	8.32E-5	8.79E-5	8.79E-5
XVIB	9.47E-5	9.93E-5	9.93E-5	9.47E-5	9.93E-5	9.93E-5	9.47E-5	9.93E-5	9.93E-5	9.37E-5	9.83E-5	9.83E-5	8.24E-5	8.68E-5	8.68E-5
XVIC	9.23E-5	9.63E-5	9.63E-5	9.23E-5	9.63E-5	9.63E-5	9.22E-5	9.63E-5	9.63E-5	9.13E-5	9.53E-5	9.53E-5	8.02E-5	8.40E-5	8.40E-5
XVIIIA	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.63E-4	2.91E-4	2.91E-4	2.30E-4	2.55E-4	2.55E-4
XVIIIB	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.88E-4	2.88E-4	2.59E-4	2.86E-4	2.86E-4	2.27E-4	2.50E-4	2.50E-4
XVIIIC	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.51E-4	2.73E-4	2.73E-4	2.19E-4	2.39E-4	2.39E-4
XXA	4.11E-5	1.54E-4	8.34E-4	2.59E-5	9.72E-5	5.26E-4	5.39E-6	2.02E-5	1.10E-4	1.27E-6	4.77E-6	2.61E-5	.00E+0	.00E+0	.00E+0
XXB	3.31E-5	6.81E-5	2.20E-4	2.09E-5	4.29E-5	1.39E-4	4.35E-6	8.93E-6	2.89E-5	1.02E-6	2.10E-6	6.87E-6	.00E+0	.00E+0	.00E+0
XXC	2.19E-5	2.89E-5	7.80E-1	1.38E-5	1.82E-5	4.92E-1	2.87E-6	3.79E-6	1.03E-1	6.75E-7	8.91E-7	2.44E-2	.00E+0	.00E+0	.00E+0
XXIA	7.47E-4	7.80E-3	7.34E-2	7.47E-4	7.80E-3	7.34E-2	7.46E-4	7.79E-3	7.34E-2	7.26E-4	7.58E-3	7.14E-2	4.94E-4	5.15E-3	4.85E-2
XXIB	7.41E-4	7.67E-3	6.64E-2	7.41E-4	7.67E-3	6.64E-2	7.40E-4	7.66E-3	6.64E-2	7.21E-4	7.46E-3	6.46E-2	4.90E-4	5.07E-3	4.39E-2
XXIC	7.30E-4	7.39E-3	5.38E-2	7.30E-4	7.39E-3	5.38E-2	7.29E-4	7.39E-3	5.37E-2	7.10E-4	7.19E-3	5.23E-2	4.82E-4	4.89E-3	3.56E-2
XXII	2.24E-2	6.61E+0	9.97E+0	2.24E-2	6.61E+0	9.97E+0	2.22E-2	6.61E+0	9.94E+0	2.12E-2	6.34E+0	9.53E+0	6.68E-3	2.95E+0	4.54E+0
DOE	9.51E+0	9.07E+1	2.30E+2	9.43E+0	9.00E+1	2.24E+2	9.28E+0	8.90E+1	2.17E+2	8.71E+0	8.36E+1	1.95E+2	7.23E+0	5.60E+1	1.50E+2
DOD	2.89E-4	8.72E-4	1.81E-2	2.81E-4	8.55E-4	1.32E-2	2.63E-4	8.14E-4	8.38E-4	2.60E-4	8.04E-4	8.27E-4	2.46E-4	7.59E-4	7.81E-4
NRC	4.48E-2	1.99E-1	5.10E+0	4.47E-2	1.99E-1	3.75E+0	4.44E-2	1.98E-1	1.93E+0	4.37E-2	1.93E-1	1.53E+0	3.52E-2	1.37E-1	9.65E-1
Total	9.55E+0	9.09E+1	2.35E+2	9.47E+0	9.02E+1	2.28E+2	9.33E+0	8.92E+1	2.19E+2	8.75E+0	8.38E+1	1.97E+2	7.26E+0	5.62E+1	1.51E+2

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 TABLE K-142. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.18E-2	5.64E-2	5.64E-2	4.97E-2	5.40E-2	5.40E-2	4.79E-2	5.22E-2	5.22E-2	4.55E-2	4.95E-2	4.95E-2	4.37E-2	4.75E-2	4.75E-2	4.16E-2	4.52E-2	4.52E-2
II	4.82E-1	4.50E+0	2.22E+1	4.82E-1	4.50E+0	2.21E+1	4.82E-1	4.50E+0	2.21E+1	4.82E-1	4.49E+0	2.20E+1	4.82E-1	4.49E+0	2.20E+1	4.82E-1	4.49E+0	2.19E+1
III	2.28E-2	2.52E-2	2.52E-2	1.99E-2	2.19E-2	2.19E-2	1.81E-2	2.00E-2	2.00E-2	1.65E-2	1.83E-2	1.83E-2	1.48E-2	1.63E-2	1.63E-2	1.21E-2	1.33E-2	1.33E-2
IV	4.23E-3	1.05E-2	1.07E-2	4.12E-3	1.02E-2	1.04E-2	4.02E-3	1.00E-2	1.01E-2	3.83E-3	9.51E-3	9.64E-3	3.63E-3	9.02E-3	9.14E-3	3.33E-3	8.29E-3	8.39E-3
V	1.43E+0	1.55E+0	1.55E+0	1.41E+0	1.53E+0	1.53E+0	1.39E+0	1.52E+0	1.52E+0	1.37E+0	1.49E+0	1.49E+0	1.34E+0	1.46E+0	1.46E+0	1.30E+0	1.42E+0	1.42E+0
VI	2.55E-1	1.39E+0	4.56E+0	2.54E-1	1.39E+0	4.56E+0	2.53E-1	1.39E+0	4.55E+0	2.52E-1	1.39E+0	4.55E+0	2.51E-1	1.39E+0	4.54E+0	2.50E-1	1.38E+0	4.53E+0
VII	2.90E-1	2.25E+0	1.76E+1	1.91E-1	1.49E+0	1.16E+1	1.33E-1	1.05E+0	8.21E+0	8.03E-2	6.40E-1	5.02E+0	4.53E-2	3.62E-1	2.84E+0	7.52E-3	5.81E-2	4.54E-1
IX	4.86E-4	4.30E-3	2.69E-2	2.33E-4	2.06E-3	1.29E-2	1.38E-4	1.22E-3	7.60E-3	4.86E-5	4.29E-4	2.68E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.76E-1	3.08E+0	3.40E+0	9.72E-1	2.95E+0	3.25E+0	9.69E-1	2.83E+0	3.11E+0	9.63E-1	2.61E+0	2.86E+0	9.59E-1	2.46E+0	2.69E+0	9.53E-1	2.31E+0	2.52E+0
XII	2.63E-4	8.14E-4	8.38E-4	2.63E-4	8.12E-4	8.36E-4	2.62E-4	8.11E-4	8.34E-4	2.61E-4	8.08E-4	8.31E-4	2.61E-4	8.06E-4	8.29E-4	2.60E-4	8.04E-4	8.27E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.56E-5	1.01E-4	1.01E-4	9.56E-5	1.00E-4	1.00E-4	9.54E-5	1.00E-4	1.00E-4	9.51E-5	1.00E-4	1.00E-4	9.49E-5	9.97E-5	9.97E-5	9.46E-5	9.95E-5	9.95E-5
XVIB	9.47E-5	9.93E-5	9.93E-5	9.46E-5	9.92E-5	9.92E-5	9.45E-5	9.91E-5	9.91E-5	9.42E-5	9.88E-5	9.88E-5	9.39E-5	9.85E-5	9.85E-5	9.37E-5	9.83E-5	9.83E-5
XVIC	9.22E-5	9.63E-5	9.63E-5	9.22E-5	9.62E-5	9.62E-5	9.20E-5	9.61E-5	9.61E-5	9.17E-5	9.58E-5	9.58E-5	9.15E-5	9.55E-5	9.55E-5	9.13E-5	9.53E-5	9.53E-5
XVIIIA	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.64E-4	2.93E-4	2.93E-4	2.63E-4	2.91E-4	2.91E-4
XVIIIB	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.87E-4	2.87E-4	2.60E-4	2.87E-4	2.87E-4	2.60E-4	2.87E-4	2.87E-4	2.59E-4	2.86E-4	2.86E-4
XVIIIC	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.51E-4	2.73E-4	2.73E-4
XXA	5.39E-6	2.02E-5	1.10E-4	1.80E-6	6.77E-6	3.69E-5	1.68E-6	6.30E-6	3.44E-5	1.51E-6	5.68E-6	3.10E-5	1.40E-6	5.24E-6	2.87E-5	1.27E-6	4.77E-6	2.61E-5
XXB	4.35E-6	8.93E-6	2.89E-5	1.45E-6	2.99E-6	9.72E-6	1.35E-6	2.78E-6	9.06E-6	1.22E-6	2.50E-6	8.17E-6	1.12E-6	2.31E-6	7.55E-6	1.02E-6	2.10E-6	6.87E-6
XXC	2.87E-6	3.79E-6	1.03E-1	9.59E-7	1.27E-6	3.46E-2	8.93E-7	1.18E-6	3.22E-2	8.04E-7	1.06E-6	2.90E-2	7.43E-7	9.80E-7	2.68E-2	6.75E-7	8.91E-7	2.44E-2
XXIA	7.46E-4	7.79E-3	7.34E-2	7.44E-4	7.77E-3	7.31E-2	7.42E-4	7.74E-3	7.29E-2	7.37E-4	7.70E-3	7.25E-2	7.33E-4	7.65E-3	7.21E-2	7.26E-4	7.58E-3	7.14E-2
XXIB	7.40E-4	7.66E-3	6.64E-2	7.38E-4	7.64E-3	6.62E-2	7.36E-4	7.62E-3	6.60E-2	7.32E-4	7.57E-3	6.56E-2	7.27E-4	7.53E-3	6.52E-2	7.21E-4	7.46E-3	6.46E-2
XXIC	7.29E-4	7.39E-3	5.37E-2	7.27E-4	7.37E-3	5.36E-2	7.25E-4	7.34E-3	5.34E-2	7.20E-4	7.30E-3	5.31E-2	7.16E-4	7.26E-3	5.28E-2	7.10E-4	7.19E-3	5.23E-2
XXII	2.22E-2	6.61E+0	9.94E+0	2.21E-2	6.58E+0	9.90E+0	2.20E-2	6.54E+0	9.84E+0	2.18E-2	6.47E+0	9.74E+0	2.16E-2	6.44E+0	9.69E+0	2.12E-2	6.34E+0	9.53E+0
DOE	9.28E+0	8.90E+1	2.17E+2	9.14E+0	8.79E+1	2.11E+2	9.04E+0	8.69E+1	2.07E+2	8.93E+0	8.57E+1	2.02E+2	8.84E+0	8.50E+1	1.99E+2	8.71E+0	8.36E+1	1.95E+2
DOD	2.63E-4	8.14E-4	8.38E-4	2.63E-4	8.12E-4	8.36E-4	2.62E-4	8.11E-4	8.34E-4	2.61E-4	8.08E-4	8.31E-4	2.61E-4	8.06E-4	8.29E-4	2.60E-4	8.04E-4	8.27E-4
NRC	4.44E-2	1.98E-1	1.93E+0	4.43E-2	1.97E-1	1.61E+0	4.42E-2	1.97E-1	1.59E+0	4.41E-2	1.96E-1	1.57E+0	4.39E-2	1.95E-1	1.55E+0	4.37E-2	1.93E-1	1.53E+0
Total	9.33E+0	8.92E+1	2.19E+2	9.18E+0	8.81E+1	2.12E+2	9.09E+0	8.71E+1	2.08E+2	8.97E+0	8.59E+1	2.04E+2	8.88E+0	8.51E+1	2.01E+2	8.75E+0	8.38E+1	1.97E+2

Low Population Density Without Agriculture - 09-13-94 4:14p
 TABLE K-143. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.54E-2	6.03E-2	6.03E-2	5.36E-2	5.83E-2	5.83E-2	4.74E-2	5.16E-2	5.16E-2	3.18E-2	3.46E-2	3.46E-2	8.10E-3	8.82E-3	8.82E-3
II	4.82E-1	4.51E+0	2.22E+1	4.82E-1	4.50E+0	2.22E+1	4.82E-1	4.50E+0	2.21E+1	4.80E-1	4.46E+0	2.17E+1	3.28E-1	3.13E+0	1.54E+1
III	2.45E-2	2.70E-2	2.70E-2	2.42E-2	2.67E-2	2.67E-2	1.78E-2	1.96E-2	1.96E-2	2.85E-3	3.14E-3	3.14E-3	.00E+0	.00E+0	.00E+0
IV	4.46E-3	1.11E-2	1.12E-2	4.35E-3	1.08E-2	1.10E-2	3.96E-3	9.84E-3	9.97E-3	7.10E-4	1.76E-3	1.79E-3	.00E+0	.00E+0	.00E+0
V	1.44E+0	1.57E+0	1.57E+0	1.44E+0	1.57E+0	1.57E+0	1.39E+0	1.51E+0	1.51E+0	1.07E+0	1.17E+0	1.17E+0	3.01E-1	3.29E-1	3.29E-1
VI	2.55E-1	1.39E+0	4.56E+0	2.55E-1	1.39E+0	4.56E+0	2.53E-1	1.39E+0	4.55E+0	2.36E-1	1.34E+0	4.40E+0	1.59E-1	9.99E-1	3.35E+0
VII	4.33E-1	3.45E+0	2.71E+1	3.63E-1	2.83E+0	2.21E+1	1.14E-1	9.03E-1	7.07E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	1.69E-3	1.49E-2	9.32E-2	8.79E-4	7.77E-3	4.86E-2	9.12E-5	8.06E-4	5.04E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.79E-1	3.16E+0	3.49E+0	9.78E-1	3.15E+0	3.48E+0	9.69E-1	2.88E+0	3.16E+0	9.25E-1	1.94E+0	2.09E+0	7.44E-1	1.06E+0	1.11E+0
XII	2.64E-4	8.15E-4	8.39E-4	2.64E-4	8.15E-4	8.38E-4	2.61E-4	8.07E-4	8.31E-4	2.55E-4	7.89E-4	8.11E-4	8.22E-5	2.54E-4	2.61E-4
XIIIA	3.39E-6	1.10E-5	1.34E-5	1.30E-6	4.23E-6	5.13E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.73E-6	4.85E-6	5.31E-6	1.05E-6	1.86E-6	2.03E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.80E-6	2.13E-6	5.50E-6	6.90E-7	8.16E-7	2.10E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.57E-5	1.01E-4	1.01E-4	9.56E-5	1.01E-4	1.01E-4	9.54E-5	1.00E-4	1.00E-4	9.22E-5	9.70E-5	9.70E-5	5.11E-5	5.41E-5	5.41E-5
XVIB	9.47E-5	9.93E-5	9.93E-5	9.47E-5	9.93E-5	9.93E-5	9.45E-5	9.91E-5	9.91E-5	9.13E-5	9.58E-5	9.58E-5	5.06E-5	5.34E-5	5.34E-5
XVIC	9.23E-5	9.63E-5	9.63E-5	9.22E-5	9.63E-5	9.63E-5	9.20E-5	9.60E-5	9.60E-5	8.89E-5	9.29E-5	9.29E-5	4.92E-5	5.16E-5	5.16E-5
XVIIIA	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.54E-4	2.81E-4	2.81E-4	1.74E-4	1.93E-4	1.93E-4
XVIIIB	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.87E-4	2.87E-4	2.50E-4	2.75E-4	2.75E-4	1.71E-4	1.89E-4	1.89E-4
XVIIIC	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.42E-4	2.64E-4	2.64E-4	1.66E-4	1.81E-4	1.81E-4
XXA	3.12E-5	1.17E-4	6.32E-4	1.35E-5	5.08E-5	2.75E-4	1.53E-6	5.75E-6	3.14E-5	5.71E-7	2.15E-6	1.19E-5	.00E+0	.00E+0	.00E+0
XXB	2.51E-5	5.16E-5	1.67E-4	1.09E-5	2.24E-5	7.25E-5	1.23E-6	2.54E-6	8.28E-6	4.60E-7	9.49E-7	3.12E-6	.00E+0	.00E+0	.00E+0
XXC	1.66E-5	2.19E-5	5.91E-1	7.21E-6	9.50E-6	2.57E-1	8.15E-7	1.08E-6	2.94E-2	3.04E-7	4.02E-7	1.11E-2	.00E+0	.00E+0	.00E+0
XXIA	7.47E-4	7.80E-3	7.34E-2	7.47E-4	7.80E-3	7.34E-2	7.41E-4	7.73E-3	7.28E-2	6.37E-4	6.65E-3	6.26E-2	2.28E-4	2.38E-3	2.24E-2
XXIB	7.41E-4	7.67E-3	6.64E-2	7.41E-4	7.67E-3	6.64E-2	7.35E-4	7.61E-3	6.59E-2	6.32E-4	6.54E-3	5.67E-2	2.26E-4	2.34E-3	2.03E-2
XXIC	7.30E-4	7.39E-3	5.38E-2	7.30E-4	7.39E-3	5.38E-2	7.24E-4	7.33E-3	5.34E-2	6.22E-4	6.31E-3	4.59E-2	2.22E-4	2.25E-3	1.64E-2
XXII	2.24E-2	6.61E+0	9.97E+0	2.23E-2	6.61E+0	9.96E+0	2.19E-2	6.52E+0	9.82E+0	2.00E-2	6.05E+0	9.06E+0	.00E+0	.00E+0	.00E+0
DOE	9.47E+0	9.04E+1	2.27E+2	9.38E+0	8.97E+1	2.22E+2	9.01E+0	8.67E+1	2.05E+2	8.11E+0	7.99E+1	1.88E+2	5.07E+0	2.73E+1	9.29E+1
DOD	2.86E-4	8.66E-4	1.65E-2	2.72E-4	8.34E-4	6.82E-3	2.61E-4	8.07E-4	8.31E-4	2.55E-4	7.89E-4	8.11E-4	8.22E-5	2.54E-4	2.61E-4
NRC	4.47E-2	1.99E-1	4.21E+0	4.45E-2	1.98E-1	2.65E+0	4.42E-2	1.97E-1	1.58E+0	4.09E-2	1.72E-1	1.29E+0	2.20E-2	6.95E-2	4.51E-1
Total	9.51E+0	9.06E+1	2.31E+2	9.43E+0	8.99E+1	2.25E+2	9.06E+0	8.69E+1	2.07E+2	8.15E+0	8.01E+1	1.89E+2	5.09E+0	2.74E+1	9.33E+1

Low Population Density Without Agriculture - 09-13-94 4:14p
 TABLE K-144. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.74E-2	5.16E-2	5.16E-2	4.38E-2	4.77E-2	4.77E-2	4.14E-2	4.51E-2	4.51E-2	3.81E-2	4.15E-2	4.15E-2	3.61E-2	3.93E-2	3.93E-2	3.18E-2	3.46E-2	3.46E-2
II	4.82E-1	4.50E+0	2.21E+1	4.82E-1	4.49E+0	2.20E+1	4.82E-1	4.49E+0	2.19E+1	4.81E-1	4.48E+0	2.19E+1	4.81E-1	4.48E+0	2.18E+1	4.80E-1	4.46E+0	2.17E+1
III	1.78E-2	1.96E-2	1.96E-2	1.49E-2	1.65E-2	1.65E-2	1.19E-2	1.31E-2	1.31E-2	7.01E-3	7.74E-3	7.74E-3	4.05E-3	4.47E-3	4.47E-3	2.85E-3	3.14E-3	3.14E-3
IV	3.96E-3	9.84E-3	9.97E-3	3.60E-3	8.94E-3	9.06E-3	3.24E-3	8.05E-3	8.15E-3	2.51E-3	6.25E-3	6.33E-3	1.79E-3	4.46E-3	4.52E-3	7.10E-4	1.76E-3	1.79E-3
V	1.39E+0	1.51E+0	1.51E+0	1.34E+0	1.47E+0	1.47E+0	1.30E+0	1.42E+0	1.42E+0	1.22E+0	1.32E+0	1.32E+0	1.13E+0	1.23E+0	1.23E+0	1.07E+0	1.17E+0	1.17E+0
VI	2.53E-1	1.39E+0	4.55E+0	2.51E-1	1.39E+0	4.54E+0	2.49E-1	1.38E+0	4.53E+0	2.46E-1	1.37E+0	4.50E+0	2.42E-1	1.36E+0	4.46E+0	2.36E-1	1.34E+0	4.40E+0
VII	1.14E-1	9.03E-1	7.07E+0	4.02E-2	3.21E-1	2.52E+0	4.02E-3	3.05E-2	2.38E-1	4.14E-4	2.71E-3	2.06E-2	1.22E-4	7.58E-4	5.71E-3	.00E+0	.00E+0	.00E+0
IX	9.12E-5	8.06E-4	5.04E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.69E-1	2.88E+0	3.16E+0	9.62E-1	2.59E+0	2.84E+0	9.56E-1	2.41E+0	2.63E+0	9.46E-1	2.21E+0	2.39E+0	9.37E-1	2.08E+0	2.25E+0	9.25E-1	1.94E+0	2.09E+0
XII	2.61E-4	8.07E-4	8.31E-4	2.60E-4	8.04E-4	8.27E-4	2.59E-4	8.02E-4	8.25E-4	2.58E-4	7.98E-4	8.21E-4	2.57E-4	7.94E-4	8.17E-4	2.55E-4	7.89E-4	8.11E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.54E-5	1.00E-4	1.00E-4	9.49E-5	9.98E-5	9.98E-5	9.46E-5	9.95E-5	9.95E-5	9.42E-5	9.90E-5	9.90E-5	9.36E-5	9.85E-5	9.85E-5	9.22E-5	9.70E-5	9.70E-5
XVIB	9.45E-5	9.91E-5	9.91E-5	9.40E-5	9.86E-5	9.86E-5	9.37E-5	9.83E-5	9.83E-5	9.32E-5	9.78E-5	9.78E-5	9.27E-5	9.72E-5	9.72E-5	9.13E-5	9.58E-5	9.58E-5
XVIC	9.20E-5	9.60E-5	9.60E-5	9.15E-5	9.55E-5	9.55E-5	9.13E-5	9.53E-5	9.53E-5	9.08E-5	9.48E-5	9.48E-5	9.02E-5	9.42E-5	9.42E-5	8.89E-5	9.29E-5	9.29E-5
XVIIIA	2.65E-4	2.93E-4	2.93E-4	2.64E-4	2.92E-4	2.92E-4	2.63E-4	2.91E-4	2.91E-4	2.60E-4	2.88E-4	2.88E-4	2.58E-4	2.85E-4	2.85E-4	2.54E-4	2.81E-4	2.81E-4
XVIIIB	2.61E-4	2.87E-4	2.87E-4	2.60E-4	2.87E-4	2.87E-4	2.59E-4	2.85E-4	2.85E-4	2.56E-4	2.83E-4	2.83E-4	2.54E-4	2.80E-4	2.80E-4	2.50E-4	2.75E-4	2.75E-4
XVIIIC	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.74E-4	2.74E-4	2.50E-4	2.73E-4	2.73E-4	2.48E-4	2.70E-4	2.70E-4	2.45E-4	2.68E-4	2.68E-4	2.42E-4	2.64E-4	2.64E-4
XXA	1.53E-6	5.75E-6	3.14E-5	1.29E-6	4.85E-6	2.65E-5	1.14E-6	4.28E-6	2.35E-5	9.51E-7	3.58E-6	1.97E-5	7.99E-7	3.01E-6	1.66E-5	5.71E-7	2.15E-6	1.19E-5
XXB	1.23E-6	2.54E-6	8.28E-6	1.04E-6	2.14E-6	6.99E-6	9.18E-7	1.89E-6	6.18E-6	7.66E-7	1.58E-6	5.17E-6	6.44E-7	1.33E-6	4.36E-6	4.60E-7	9.49E-7	3.12E-6
XXC	8.15E-7	1.08E-6	2.94E-6	6.87E-7	9.07E-7	2.48E-6	6.06E-7	8.01E-7	2.20E-6	5.06E-7	6.69E-7	1.84E-6	4.25E-7	5.62E-7	1.55E-6	3.04E-7	4.02E-7	1.11E-6
XXIA	7.41E-4	7.73E-3	7.28E-2	7.33E-4	7.65E-3	7.21E-2	7.25E-4	7.58E-3	7.13E-2	7.08E-4	7.39E-3	6.96E-2	6.77E-4	7.07E-3	6.65E-2	6.37E-4	6.65E-3	6.26E-2
XXIB	7.35E-4	7.61E-3	6.59E-2	7.28E-4	7.53E-3	6.52E-2	7.20E-4	7.45E-3	6.46E-2	7.02E-4	7.27E-3	6.30E-2	6.72E-4	6.95E-3	6.02E-2	6.32E-4	6.54E-3	5.67E-2
XXIC	7.24E-4	7.33E-3	5.34E-2	7.16E-4	7.26E-3	5.28E-2	7.09E-4	7.18E-3	5.23E-2	6.92E-4	7.01E-3	5.10E-2	6.61E-4	6.70E-3	4.88E-2	6.22E-4	6.31E-3	4.59E-2
XXII	2.19E-2	6.52E+0	9.82E+0	2.16E-2	6.44E+0	9.70E+0	2.11E-2	6.33E+0	9.53E+0	2.06E-2	6.18E+0	9.26E+0	2.04E-2	6.12E+0	9.18E+0	2.00E-2	6.05E+0	9.06E+0
DOE	9.01E+0	8.67E+1	2.05E+2	8.84E+0	8.51E+1	1.99E+2	8.70E+0	8.37E+1	1.95E+2	8.51E+0	8.20E+1	1.92E+2	8.32E+0	8.11E+1	1.90E+2	8.11E+0	7.99E+1	1.88E+2
DOD	2.61E-4	8.07E-4	8.31E-4	2.60E-4	8.04E-4	8.27E-4	2.59E-4	8.02E-4	8.25E-4	2.58E-4	7.98E-4	8.21E-4	2.57E-4	7.94E-4	8.17E-4	2.55E-4	7.89E-4	8.11E-4
NRC	4.42E-2	1.97E-1	1.58E+0	4.40E-2	1.95E-1	1.54E+0	4.37E-2	1.93E-1	1.53E+0	4.31E-2	1.91E-1	1.46E+0	4.22E-2	1.82E-1	1.39E+0	4.09E-2	1.72E-1	1.29E+0
Total	9.06E+0	8.69E+1	2.07E+2	8.88E+0	8.53E+1	2.01E+2	8.75E+0	8.39E+1	1.97E+2	8.55E+0	8.22E+1	1.93E+2	8.36E+0	8.13E+1	1.92E+2	8.15E+0	8.01E+1	1.89E+2

Low Population Density With Agriculture - 09-13-94 4:13p
 TABLE K-145. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.75E+2	7.43E+2	7.43E+2	6.63E+2	7.30E+2	7.30E+2	6.27E+2	6.90E+2	6.90E+2	5.03E+2	5.54E+2	5.54E+2	2.25E+2	2.48E+2	2.48E+2
II	2.69E+5	6.27E+6	2.29E+7	2.69E+5	6.27E+6	2.29E+7	2.69E+5	6.27E+6	2.29E+7	2.69E+5	6.26E+6	2.26E+7	2.60E+5	6.06E+6	2.15E+7
III	2.85E+2	3.17E+2	3.17E+2	2.85E+2	3.16E+2	3.16E+2	2.65E+2	2.95E+2	2.95E+2	1.41E+2	1.56E+2	1.56E+2	.00E+0	.00E+0	.00E+0
IV	1.52E+3	1.06E+4	2.26E+4	1.50E+3	1.05E+4	2.23E+4	1.43E+3	1.00E+4	2.13E+4	1.13E+3	7.89E+3	1.68E+4	.00E+0	.00E+0	.00E+0
V	1.76E+4	1.93E+4	1.93E+4	1.76E+4	1.93E+4	1.93E+4	1.74E+4	1.91E+4	1.91E+4	1.59E+4	1.75E+4	1.75E+4	1.04E+4	1.14E+4	1.14E+4
VI	3.24E+4	2.99E+5	3.48E+6	3.24E+4	2.99E+5	3.48E+6	3.24E+4	2.99E+5	3.48E+6	3.22E+4	2.98E+5	3.46E+6	2.98E+4	2.77E+5	3.22E+6
VII	3.24E+4	2.58E+5	1.76E+6	2.65E+4	2.10E+5	1.43E+6	1.92E+4	1.52E+5	1.04E+6	4.96E+2	3.92E+3	2.68E+4	.00E+0	.00E+0	.00E+0
IX	1.33E+2	1.07E+3	6.64E+3	9.65E+1	7.79E+2	4.83E+3	3.31E+1	2.67E+2	1.66E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.54E+3	1.88E+4	2.15E+4	1.54E+3	1.88E+4	2.15E+4	1.52E+3	1.82E+4	2.08E+4	1.46E+3	1.22E+4	1.38E+4	1.25E+3	5.66E+3	6.35E+3
XII	2.71E+2	1.69E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.79E+3	2.67E+2	1.66E+3	2.76E+3	2.52E+2	1.57E+3	2.61E+3
XIIIA	7.04E-1	5.37E+0	1.51E+1	5.05E-1	3.85E+0	1.08E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	6.72E-1	3.83E+0	6.36E+0	4.82E-1	2.75E+0	4.56E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	6.12E-1	2.14E+0	4.41E+1	4.38E-1	1.54E+0	3.16E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.87E-1	1.07E+0	1.07E+0	9.87E-1	1.07E+0	1.07E+0	9.87E-1	1.07E+0	1.07E+0	9.81E-1	1.06E+0	1.06E+0	9.08E-1	9.87E-1	9.87E-1
XVIB	9.80E-1	1.06E+0	1.06E+0	9.80E-1	1.06E+0	1.06E+0	9.80E-1	1.06E+0	1.06E+0	9.74E-1	1.06E+0	1.06E+0	9.01E-1	9.81E-1	9.81E-1
XVIC	9.69E-1	1.05E+0	1.05E+0	9.69E-1	1.05E+0	1.05E+0	9.68E-1	1.05E+0	1.05E+0	9.62E-1	1.04E+0	1.04E+0	8.91E-1	9.68E-1	9.68E-1
XVIIIA	7.77E+1	8.35E+1	8.35E+1	7.77E+1	8.35E+1	8.35E+1	7.77E+1	8.35E+1	8.35E+1	7.71E+1	8.29E+1	8.29E+1	6.75E+1	7.25E+1	7.25E+1
XVIIIB	7.06E+1	7.46E+1	7.46E+1	7.06E+1	7.46E+1	7.46E+1	7.06E+1	7.46E+1	7.46E+1	7.01E+1	7.41E+1	7.41E+1	6.13E+1	6.48E+1	6.48E+1
XVIIIC	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.84E+1	6.03E+1	6.03E+1	5.11E+1	5.27E+1	5.27E+1
XXA	1.07E+2	8.59E+2	6.66E+3	6.73E+1	5.42E+2	4.20E+3	1.40E+1	1.13E+2	8.77E+2	3.34E+0	2.69E+1	2.09E+2	.00E+0	.00E+0	.00E+0
XXB	1.03E+2	6.18E+2	2.72E+3	6.47E+1	3.89E+2	1.72E+3	1.35E+1	8.13E+1	3.58E+2	3.21E+0	1.93E+1	8.52E+1	.00E+0	.00E+0	.00E+0
XXC	9.42E+1	3.49E+2	7.98E+3	5.94E+1	2.20E+2	5.03E+3	1.24E+1	4.59E+1	1.05E+3	2.95E+0	1.09E+1	2.50E+2	.00E+0	.00E+0	.00E+0
XXIA	1.91E+1	1.92E+2	1.89E+3	1.91E+1	1.92E+2	1.89E+3	1.91E+1	1.92E+2	1.89E+3	1.86E+1	1.87E+2	1.84E+3	1.27E+1	1.27E+2	1.25E+3
XXIB	1.91E+1	1.92E+2	1.84E+3	1.91E+1	1.92E+2	1.84E+3	1.91E+1	1.92E+2	1.83E+3	1.86E+1	1.87E+2	1.79E+3	1.26E+1	1.27E+2	1.21E+3
XXIC	1.90E+1	1.90E+2	1.73E+3	1.90E+1	1.90E+2	1.73E+3	1.90E+1	1.90E+2	1.73E+3	1.85E+1	1.85E+2	1.68E+3	1.26E+1	1.26E+2	1.14E+3
XXII	3.30E+3	8.27E+4	1.35E+5	3.29E+3	8.26E+4	1.35E+5	3.27E+3	8.24E+4	1.35E+5	3.12E+3	7.90E+4	1.29E+5	9.99E+2	3.77E+4	6.19E+4
DOE	1.08E+6	1.39E+7	1.05E+8	1.08E+6	1.39E+7	1.04E+8	1.07E+6	1.38E+7	1.04E+8	1.04E+6	1.36E+7	1.02E+8	9.55E+5	1.26E+7	9.51E+7
DOD	2.76E+2	1.72E+3	2.99E+3	2.74E+2	1.71E+3	2.93E+3	2.70E+2	1.68E+3	2.79E+3	2.67E+2	1.66E+3	2.76E+3	2.52E+2	1.57E+3	2.61E+3
NRC	6.31E+3	1.75E+4	1.26E+5	5.78E+3	1.43E+4	9.58E+4	5.08E+3	1.01E+4	5.54E+4	4.89E+3	9.06E+3	4.62E+4	4.17E+3	6.90E+3	3.06E+4
Total	1.09E+6	1.40E+7	1.05E+8	1.08E+6	1.39E+7	1.04E+8	1.07E+6	1.38E+7	1.04E+8	1.05E+6	1.36E+7	1.02E+8	9.60E+5	1.26E+7	9.51E+7

Low Population Density With Agriculture - 09-13-94 4:13p
 TABLE K-146. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.27E+2	6.90E+2	6.90E+2	6.01E+2	6.61E+2	6.61E+2	5.80E+2	6.39E+2	6.39E+2	5.51E+2	6.06E+2	6.06E+2	5.29E+2	5.82E+2	5.82E+2	5.03E+2	5.54E+2	5.54E+2
II	2.69E+5	6.27E+6	2.29E+7	2.69E+5	6.27E+6	2.29E+7	2.69E+5	6.27E+6	2.28E+7	2.69E+5	6.26E+6	2.27E+7	2.69E+5	6.26E+6	2.27E+7	2.69E+5	6.26E+6	2.26E+7
III	2.65E+2	2.95E+2	2.95E+2	2.31E+2	2.57E+2	2.57E+2	2.11E+2	2.34E+2	2.34E+2	1.93E+2	2.14E+2	2.14E+2	1.72E+2	1.91E+2	1.91E+2	1.41E+2	1.56E+2	1.56E+2
IV	1.43E+3	1.00E+4	2.13E+4	1.39E+3	9.76E+3	2.07E+4	1.36E+3	9.53E+3	2.02E+4	1.29E+3	9.06E+3	1.93E+4	1.23E+3	8.59E+3	1.83E+4	1.13E+3	7.89E+3	1.68E+4
V	1.74E+4	1.91E+4	1.91E+4	1.71E+4	1.88E+4	1.88E+4	1.70E+4	1.86E+4	1.86E+4	1.67E+4	1.83E+4	1.83E+4	1.63E+4	1.80E+4	1.80E+4	1.59E+4	1.75E+4	1.75E+4
VI	3.24E+4	2.99E+5	3.48E+6	3.24E+4	2.99E+5	3.47E+6	3.23E+4	2.99E+5	3.47E+6	3.23E+4	2.99E+5	3.47E+6	3.22E+4	2.98E+5	3.47E+6	3.22E+4	2.98E+5	3.46E+6
VII	1.92E+4	1.52E+5	1.04E+6	1.27E+4	1.00E+5	6.87E+5	8.94E+3	7.09E+4	4.85E+5	5.46E+3	4.34E+4	2.97E+5	3.08E+3	2.45E+4	1.68E+5	4.96E+2	3.92E+3	2.68E+4
IX	3.31E+1	2.67E+2	1.66E+3	1.58E+1	1.28E+2	7.91E+2	9.36E+0	7.56E+1	4.68E+2	3.30E+0	2.67E+1	1.65E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.52E+3	1.82E+4	2.08E+4	1.51E+3	1.72E+4	1.96E+4	1.49E+3	1.62E+4	1.85E+4	1.48E+3	1.45E+4	1.65E+4	1.47E+3	1.33E+4	1.52E+4	1.46E+3	1.22E+4	1.38E+4
XII	2.70E+2	1.68E+3	2.79E+3	2.70E+2	1.68E+3	2.79E+3	2.69E+2	1.68E+3	2.78E+3	2.68E+2	1.67E+3	2.77E+3	2.67E+2	1.66E+3	2.77E+3	2.67E+2	1.66E+3	2.76E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.87E-1	1.07E+0	1.07E+0	9.87E-1	1.07E+0	1.07E+0	9.86E-1	1.07E+0	1.07E+0	9.84E-1	1.07E+0	1.07E+0	9.82E-1	1.07E+0	1.07E+0	9.81E-1	1.06E+0	1.06E+0
XVIB	9.80E-1	1.06E+0	1.06E+0	9.80E-1	1.06E+0	1.06E+0	9.79E-1	1.06E+0	1.06E+0	9.77E-1	1.06E+0	1.06E+0	9.75E-1	1.06E+0	1.06E+0	9.74E-1	1.06E+0	1.06E+0
XVIC	9.68E-1	1.05E+0	1.05E+0	9.68E-1	1.05E+0	1.05E+0	9.67E-1	1.05E+0	1.05E+0	9.66E-1	1.05E+0	1.05E+0	9.64E-1	1.04E+0	1.04E+0	9.62E-1	1.04E+0	1.04E+0
XVIIIA	7.77E+1	8.35E+1	8.35E+1	7.77E+1	8.34E+1	8.34E+1	7.76E+1	8.34E+1	8.34E+1	7.75E+1	8.33E+1	8.33E+1	7.75E+1	8.32E+1	8.32E+1	7.71E+1	8.29E+1	8.29E+1
XVIIIB	7.06E+1	7.46E+1	7.46E+1	7.06E+1	7.46E+1	7.46E+1	7.05E+1	7.45E+1	7.45E+1	7.04E+1	7.45E+1	7.45E+1	7.04E+1	7.44E+1	7.44E+1	7.01E+1	7.41E+1	7.41E+1
XVIIIC	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.87E+1	6.06E+1	6.06E+1	5.87E+1	6.05E+1	6.05E+1	5.84E+1	6.03E+1	6.03E+1
XXA	1.40E+1	1.13E+2	8.77E+2	4.73E+0	3.81E+1	2.95E+2	4.40E+0	3.55E+1	2.75E+2	3.97E+0	3.20E+1	2.48E+2	3.67E+0	2.96E+1	2.30E+2	3.34E+0	2.69E+1	2.09E+2
XXB	1.35E+1	8.13E+1	3.58E+2	4.54E+0	2.73E+1	1.21E+2	4.23E+0	2.55E+1	1.12E+2	3.82E+0	2.30E+1	1.01E+2	3.53E+0	2.12E+1	9.37E+1	3.21E+0	1.93E+1	8.52E+1
XXC	1.24E+1	4.59E+1	1.05E+3	4.17E+0	1.54E+1	3.53E+2	3.89E+0	1.44E+1	3.29E+2	3.51E+0	1.30E+1	2.97E+2	3.24E+0	1.20E+1	2.75E+2	2.95E+0	1.09E+1	2.50E+2
XXIA	1.91E+1	1.92E+2	1.89E+3	1.91E+1	1.91E+2	1.88E+3	1.90E+1	1.91E+2	1.88E+3	1.89E+1	1.90E+2	1.87E+3	1.88E+1	1.89E+2	1.86E+3	1.86E+1	1.87E+2	1.84E+3
XXIB	1.91E+1	1.92E+2	1.83E+3	1.90E+1	1.91E+2	1.83E+3	1.90E+1	1.91E+2	1.82E+3	1.89E+1	1.90E+2	1.81E+3	1.88E+1	1.89E+2	1.80E+3	1.86E+1	1.87E+2	1.79E+3
XXIC	1.90E+1	1.90E+2	1.73E+3	1.90E+1	1.90E+2	1.72E+3	1.89E+1	1.89E+2	1.72E+3	1.88E+1	1.88E+2	1.71E+3	1.87E+1	1.87E+2	1.70E+3	1.85E+1	1.85E+2	1.68E+3
XXII	3.27E+3	8.24E+4	1.35E+5	3.25E+3	8.21E+4	1.34E+5	3.23E+3	8.16E+4	1.33E+5	3.21E+3	8.07E+4	1.32E+5	3.18E+3	8.04E+4	1.32E+5	3.12E+3	7.90E+4	1.29E+5
DOE	1.07E+6	1.38E+7	1.04E+8	1.06E+6	1.38E+7	1.03E+8	1.06E+6	1.37E+7	1.03E+8	1.05E+6	1.37E+7	1.03E+8	1.05E+6	1.37E+7	1.02E+8	1.04E+6	1.36E+7	1.02E+8
DOD	2.70E+2	1.68E+3	2.79E+3	2.70E+2	1.68E+3	2.79E+3	2.69E+2	1.68E+3	2.78E+3	2.68E+2	1.67E+3	2.77E+3	2.67E+2	1.66E+3	2.77E+3	2.67E+2	1.66E+3	2.76E+3
NRC	5.08E+3	1.01E+4	5.54E+4	4.95E+3	9.30E+3	4.82E+4	4.94E+3	9.26E+3	4.78E+4	4.93E+3	9.20E+3	4.73E+4	4.92E+3	9.14E+3	4.68E+4	4.89E+3	9.06E+3	4.62E+4
Total	1.07E+6	1.38E+7	1.04E+8	1.07E+6	1.38E+7	1.03E+8	1.06E+6	1.37E+7	1.03E+8	1.06E+6	1.37E+7	1.03E+8	1.05E+6	1.37E+7	1.03E+8	1.05E+6	1.36E+7	1.02E+8

Low Population Density With Agriculture - 09-13-94 4:13p
 TABLE K-147. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.70E+2	7.38E+2	7.38E+2	6.49E+2	7.14E+2	7.14E+2	5.73E+2	6.31E+2	6.31E+2	3.85E+2	4.24E+2	4.24E+2	9.80E+1	1.08E+2	1.08E+2
II	2.69E+5	6.27E+6	2.29E+7	2.69E+5	6.27E+6	2.29E+7	2.69E+5	6.26E+6	2.28E+7	2.68E+5	6.23E+6	2.23E+7	1.83E+5	4.35E+6	1.58E+7
III	2.85E+2	3.17E+2	3.17E+2	2.82E+2	3.13E+2	3.13E+2	2.07E+2	2.30E+2	2.30E+2	3.32E+1	3.69E+1	3.69E+1	.00E+0	.00E+0	.00E+0
IV	1.51E+3	1.06E+4	2.25E+4	1.47E+3	1.03E+4	2.19E+4	1.34E+3	9.37E+3	1.99E+4	2.40E+2	1.68E+3	3.57E+3	.00E+0	.00E+0	.00E+0
V	1.76E+4	1.93E+4	1.93E+4	1.75E+4	1.92E+4	1.92E+4	1.69E+4	1.86E+4	1.86E+4	1.31E+4	1.43E+4	1.43E+4	3.67E+3	4.03E+3	4.03E+3
VI	3.24E+4	2.99E+5	3.48E+6	3.24E+4	2.99E+5	3.48E+6	3.23E+4	2.99E+5	3.47E+6	3.12E+4	2.90E+5	3.37E+6	2.37E+4	2.21E+5	2.58E+6
VII	2.94E+4	2.34E+5	1.60E+6	2.42E+4	1.91E+5	1.31E+6	7.70E+3	6.11E+4	4.18E+5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	1.15E+2	9.27E+2	5.74E+3	5.98E+1	4.83E+2	2.99E+3	6.20E+0	5.01E+1	3.10E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.54E+3	1.88E+4	2.15E+4	1.53E+3	1.88E+4	2.14E+4	1.50E+3	1.66E+4	1.89E+4	1.40E+3	9.38E+3	1.06E+4	1.11E+3	3.58E+3	3.97E+3
XII	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3	2.68E+2	1.67E+3	2.77E+3	2.62E+2	1.63E+3	2.71E+3	8.43E+1	5.25E+2	8.72E+2
XIIIA	6.39E-1	4.87E+0	1.37E+1	2.45E-1	1.87E+0	5.25E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	6.09E-1	3.48E+0	5.77E+0	2.33E-1	1.33E+0	2.21E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	5.55E-1	1.94E+0	4.00E+1	2.12E-1	7.44E-1	1.53E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.87E-1	1.07E+0	1.07E+0	9.87E-1	1.07E+0	1.07E+0	9.86E-1	1.07E+0	1.07E+0	9.66E-1	1.05E+0	1.05E+0	5.69E-1	6.19E-1	6.19E-1
XVIB	9.80E-1	1.06E+0	1.06E+0	9.80E-1	1.06E+0	1.06E+0	9.79E-1	1.06E+0	1.06E+0	9.58E-1	1.04E+0	1.04E+0	5.64E-1	6.15E-1	6.15E-1
XVIC	9.69E-1	1.05E+0	1.05E+0	9.69E-1	1.05E+0	1.05E+0	9.67E-1	1.05E+0	1.05E+0	9.47E-1	1.03E+0	1.03E+0	5.58E-1	6.07E-1	6.07E-1
XVIIIA	7.77E+1	8.35E+1	8.35E+1	7.77E+1	8.35E+1	8.35E+1	7.76E+1	8.34E+1	8.34E+1	7.44E+1	7.99E+1	7.99E+1	5.10E+1	5.48E+1	5.48E+1
XVIIIB	7.06E+1	7.46E+1	7.46E+1	7.06E+1	7.46E+1	7.46E+1	7.05E+1	7.45E+1	7.45E+1	6.76E+1	7.14E+1	7.14E+1	4.64E+1	4.90E+1	4.90E+1
XVIIIC	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.06E+1	6.06E+1	5.63E+1	5.81E+1	5.81E+1	3.87E+1	3.99E+1	3.99E+1
XXA	8.09E+1	6.51E+2	5.05E+3	3.52E+1	2.83E+2	2.20E+3	4.02E+0	3.24E+1	2.52E+2	1.52E+0	1.22E+1	9.51E+1	.00E+0	.00E+0	.00E+0
XXB	7.77E+1	4.68E+2	2.06E+3	3.38E+1	2.04E+2	8.97E+2	3.87E+0	2.33E+1	1.03E+2	1.46E+0	8.80E+0	3.88E+1	.00E+0	.00E+0	.00E+0
XXC	7.14E+1	2.64E+2	6.05E+3	3.11E+1	1.15E+2	2.63E+3	3.55E+0	1.31E+1	3.01E+2	1.34E+0	4.96E+0	1.14E+2	.00E+0	.00E+0	.00E+0
XXIA	1.91E+1	1.92E+2	1.89E+3	1.91E+1	1.92E+2	1.89E+3	1.90E+1	1.91E+2	1.88E+3	1.63E+1	1.64E+2	1.61E+3	5.83E+0	5.85E+1	5.76E+2
XXIB	1.91E+1	1.92E+2	1.84E+3	1.91E+1	1.92E+2	1.84E+3	1.90E+1	1.91E+2	1.82E+3	1.63E+1	1.64E+2	1.57E+3	5.82E+0	5.85E+1	5.60E+2
XXIC	1.90E+1	1.90E+2	1.73E+3	1.90E+1	1.90E+2	1.73E+3	1.89E+1	1.89E+2	1.72E+3	1.62E+1	1.62E+2	1.48E+3	5.80E+0	5.80E+1	5.28E+2
XXII	3.30E+3	8.27E+4	1.35E+5	3.29E+3	8.26E+4	1.35E+5	3.22E+3	8.14E+4	1.33E+5	2.94E+3	7.51E+4	1.22E+5	.00E+0	.00E+0	.00E+0
DOE	1.08E+6	1.39E+7	1.04E+8	1.07E+6	1.39E+7	1.04E+8	1.05E+6	1.37E+7	1.03E+8	1.01E+6	1.34E+7	9.96E+7	7.25E+5	9.38E+6	7.43E+7
DOD	2.76E+2	1.71E+3	2.97E+3	2.72E+2	1.69E+3	2.86E+3	2.68E+2	1.67E+3	2.77E+3	2.62E+2	1.63E+3	2.71E+3	8.43E+1	5.25E+2	8.72E+2
NRC	5.97E+3	1.54E+4	1.06E+5	5.36E+3	1.17E+4	7.14E+4	4.94E+3	9.22E+3	4.75E+4	4.66E+3	8.24E+3	3.98E+4	3.06E+3	4.38E+3	1.53E+4
Total	1.08E+6	1.39E+7	1.05E+8	1.08E+6	1.39E+7	1.04E+8	1.06E+6	1.37E+7	1.03E+8	1.02E+6	1.34E+7	9.97E+7	7.28E+5	9.39E+6	7.43E+7

Low Population Density With Agriculture - 09-13-94 4:13p
 TABLE K-148. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.73E+2	6.31E+2	6.31E+2	5.30E+2	5.84E+2	5.84E+2	5.01E+2	5.52E+2	5.52E+2	4.62E+2	5.08E+2	5.08E+2	4.37E+2	4.81E+2	4.81E+2	3.85E+2	4.24E+2	4.24E+2
II	2.69E+5	6.26E+6	2.28E+7	2.69E+5	6.26E+6	2.27E+7	2.69E+5	6.26E+6	2.26E+7	2.69E+5	6.25E+6	2.25E+7	2.68E+5	6.25E+6	2.25E+7	2.68E+5	6.23E+6	2.23E+7
III	2.07E+2	2.30E+2	2.30E+2	1.74E+2	1.93E+2	1.93E+2	1.38E+2	1.54E+2	1.54E+2	8.16E+1	9.07E+1	9.07E+1	4.72E+1	5.24E+1	5.24E+1	3.32E+1	3.69E+1	3.69E+1
IV	1.34E+3	9.37E+3	1.99E+4	1.22E+3	8.52E+3	1.81E+4	1.10E+3	7.66E+3	1.63E+4	8.51E+2	5.95E+3	1.27E+4	6.07E+2	4.24E+3	9.02E+3	2.40E+2	1.68E+3	3.57E+3
V	1.69E+4	1.86E+4	1.86E+4	1.64E+4	1.80E+4	1.80E+4	1.59E+4	1.74E+4	1.74E+4	1.48E+4	1.63E+4	1.63E+4	1.38E+4	1.51E+4	1.51E+4	1.31E+4	1.43E+4	1.43E+4
VI	3.23E+4	2.99E+5	3.47E+6	3.23E+4	2.98E+5	3.47E+6	3.22E+4	2.97E+5	3.46E+6	3.19E+4	2.96E+5	3.44E+6	3.17E+4	2.93E+5	3.41E+6	3.12E+4	2.90E+5	3.37E+6
VII	7.70E+3	6.11E+4	4.18E+5	2.73E+3	2.17E+4	1.49E+5	2.61E+2	2.06E+3	1.40E+4	2.34E+1	1.79E+2	1.22E+3	6.54E+0	4.95E+1	3.36E+2	.00E+0	.00E+0	.00E+0
IX	6.20E+0	5.01E+1	3.10E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.50E+3	1.66E+4	1.89E+4	1.48E+3	1.43E+4	1.64E+4	1.46E+3	1.29E+4	1.47E+4	1.44E+3	1.14E+4	1.29E+4	1.42E+3	1.04E+4	1.18E+4	1.40E+3	9.38E+3	1.06E+4
XII	2.68E+2	1.67E+3	2.77E+3	2.67E+2	1.66E+3	2.76E+3	2.66E+2	1.66E+3	2.75E+3	2.65E+2	1.65E+3	2.74E+3	2.63E+2	1.64E+3	2.73E+3	2.62E+2	1.63E+3	2.71E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.86E-1	1.07E+0	1.07E+0	9.83E-1	1.07E+0	1.07E+0	9.81E-1	1.06E+0	1.06E+0	9.78E-1	1.06E+0	1.06E+0	9.74E-1	1.06E+0	1.06E+0	9.66E-1	1.05E+0	1.05E+0
XVIB	9.79E-1	1.06E+0	1.06E+0	9.75E-1	1.06E+0	1.06E+0	9.74E-1	1.06E+0	1.06E+0	9.71E-1	1.05E+0	1.05E+0	9.67E-1	1.05E+0	1.05E+0	9.58E-1	1.04E+0	1.04E+0
XVIC	9.67E-1	1.05E+0	1.05E+0	9.64E-1	1.04E+0	1.04E+0	9.62E-1	1.04E+0	1.04E+0	9.59E-1	1.04E+0	1.04E+0	9.56E-1	1.04E+0	1.04E+0	9.47E-1	1.03E+0	1.03E+0
XVIIIA	7.76E+1	8.34E+1	8.34E+1	7.74E+1	8.32E+1	8.32E+1	7.71E+1	8.28E+1	8.28E+1	7.63E+1	8.20E+1	8.20E+1	7.55E+1	8.12E+1	8.12E+1	7.44E+1	7.99E+1	7.99E+1
XVIIIB	7.05E+1	7.45E+1	7.45E+1	7.04E+1	7.44E+1	7.44E+1	7.00E+1	7.40E+1	7.40E+1	6.93E+1	7.33E+1	7.33E+1	6.86E+1	7.25E+1	7.25E+1	6.76E+1	7.14E+1	7.14E+1
XVIIIC	5.88E+1	6.06E+1	6.06E+1	5.87E+1	6.05E+1	6.05E+1	5.84E+1	6.02E+1	6.02E+1	5.78E+1	5.96E+1	5.96E+1	5.72E+1	5.90E+1	5.90E+1	5.63E+1	5.81E+1	5.81E+1
XXA	4.02E+0	3.24E+1	2.52E+2	3.40E+0	2.74E+1	2.12E+2	3.01E+0	2.42E+1	1.88E+2	2.52E+0	2.03E+1	1.58E+2	2.12E+0	1.71E+1	1.33E+2	1.52E+0	1.22E+1	9.51E+1
XXB	3.87E+0	2.33E+1	1.03E+2	3.27E+0	1.97E+1	8.67E+1	2.89E+0	1.74E+1	7.68E+1	2.42E+0	1.46E+1	6.43E+1	2.04E+0	1.23E+1	5.42E+1	1.46E+0	8.80E+0	3.88E+1
XXC	3.55E+0	1.31E+1	3.01E+2	3.00E+0	1.11E+1	2.54E+2	2.66E+0	9.82E+0	2.25E+2	2.22E+0	8.22E+0	1.88E+2	1.87E+0	6.93E+0	1.59E+2	1.34E+0	4.96E+0	1.14E+2
XXIA	1.90E+1	1.91E+2	1.88E+3	1.88E+1	1.89E+2	1.86E+3	1.86E+1	1.87E+2	1.84E+3	1.81E+1	1.82E+2	1.79E+3	1.74E+1	1.74E+2	1.71E+3	1.63E+1	1.64E+2	1.61E+3
XXIB	1.90E+1	1.91E+2	1.82E+3	1.88E+1	1.89E+2	1.80E+3	1.86E+1	1.87E+2	1.78E+3	1.81E+1	1.82E+2	1.74E+3	1.73E+1	1.74E+2	1.66E+3	1.63E+1	1.64E+2	1.57E+3
XXIC	1.89E+1	1.89E+2	1.72E+3	1.87E+1	1.87E+2	1.70E+3	1.85E+1	1.85E+2	1.68E+3	1.80E+1	1.80E+2	1.64E+3	1.72E+1	1.72E+2	1.57E+3	1.62E+1	1.62E+2	1.48E+3
XXII	3.22E+3	8.14E+4	1.33E+5	3.18E+3	8.04E+4	1.32E+5	3.11E+3	7.89E+4	1.29E+5	3.02E+3	7.67E+4	1.25E+5	2.99E+3	7.60E+4	1.24E+5	2.94E+3	7.51E+4	1.22E+5
DOE	1.05E+6	1.37E+7	1.03E+8	1.05E+6	1.37E+7	1.02E+8	1.04E+6	1.36E+7	1.02E+8	1.03E+6	1.35E+7	1.01E+8	1.02E+6	1.35E+7	1.01E+8	1.01E+6	1.34E+7	9.96E+7
DOD	2.68E+2	1.67E+3	2.77E+3	2.67E+2	1.66E+3	2.76E+3	2.66E+2	1.66E+3	2.75E+3	2.65E+2	1.65E+3	2.74E+3	2.63E+2	1.64E+3	2.73E+3	2.62E+2	1.63E+3	2.71E+3
NRC	4.94E+3	9.22E+3	4.75E+4	4.92E+3	9.12E+3	4.66E+4	4.88E+3	9.02E+3	4.59E+4	4.82E+3	8.84E+3	4.45E+4	4.76E+3	8.59E+3	4.25E+4	4.66E+3	8.24E+3	3.98E+4
Total	1.06E+6	1.37E+7	1.03E+8	1.05E+6	1.37E+7	1.03E+8	1.04E+6	1.36E+7	1.02E+8	1.04E+6	1.35E+7	1.01E+8	1.03E+6	1.35E+7	1.01E+8	1.02E+6	1.34E+7	9.97E+7

Low Population Density With Agriculture - 09-13-94 4:13p
 TABLE K-149. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	3.75E-1	4.14E-1	4.14E-1	3.68E-1	4.06E-1	4.06E-1	3.48E-1	3.84E-1	3.84E-1	2.79E-1	3.08E-1	3.08E-1	1.25E-1	1.38E-1	1.38E-1
II	4.20E+1	4.13E+2	3.54E+3	4.19E+1	4.13E+2	3.54E+3	4.19E+1	4.12E+2	3.53E+3	4.19E+1	4.11E+2	3.49E+3	4.05E+1	3.97E+2	3.32E+3
III	1.58E-1	1.75E-1	1.75E-1	1.58E-1	1.75E-1	1.75E-1	1.47E-1	1.63E-1	1.63E-1	7.79E-2	8.63E-2	8.63E-2	.00E+0	.00E+0	.00E+0
IV	3.15E-1	2.20E+0	4.45E+0	3.12E-1	2.18E+0	4.39E+0	2.97E-1	2.08E+0	4.19E+0	2.34E-1	1.64E+0	3.30E+0	.00E+0	.00E+0	.00E+0
V	9.75E+0	1.07E+1	1.07E+1	9.74E+0	1.07E+1	1.07E+1	9.63E+0	1.06E+1	1.06E+1	8.82E+0	9.71E+0	9.71E+0	5.78E+0	6.37E+0	6.37E+0
VI	7.00E+0	6.21E+1	6.26E+2	7.00E+0	6.21E+1	6.26E+2	7.00E+0	6.21E+1	6.26E+2	6.94E+0	6.18E+1	6.23E+2	6.37E+0	5.75E+1	5.81E+2
VII	2.60E+0	1.81E+1	1.19E+2	2.18E+0	1.48E+1	9.64E+1	1.61E+0	1.07E+1	6.98E+1	4.18E-2	2.77E-1	1.80E+0	.00E+0	.00E+0	.00E+0
IX	9.11E-3	7.30E-2	4.46E-1	6.62E-3	5.31E-2	3.24E-1	2.27E-3	1.82E-2	1.11E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.56E+0	5.13E+0	5.68E+0	1.56E+0	5.13E+0	5.68E+0	1.56E+0	5.00E+0	5.53E+0	1.51E+0	3.74E+0	4.08E+0	1.32E+0	2.25E+0	2.39E+0
XII	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.95E-2	1.22E-1	2.01E-1	1.84E-2	1.15E-1	1.90E-1
XIIIA	1.68E-4	1.29E-3	3.34E-3	1.20E-4	9.22E-4	2.39E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.61E-4	9.16E-4	1.41E-3	1.15E-4	6.57E-4	1.01E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.46E-4	5.12E-4	1.05E-2	1.05E-4	3.67E-4	7.52E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.40E-4	5.89E-4	5.89E-4	5.39E-4	5.89E-4	5.89E-4	5.39E-4	5.89E-4	5.89E-4	5.36E-4	5.85E-4	5.85E-4	5.00E-4	5.46E-4	5.46E-4
XVIB	5.36E-4	5.85E-4	5.85E-4	5.36E-4	5.85E-4	5.85E-4	5.36E-4	5.85E-4	5.85E-4	5.33E-4	5.82E-4	5.82E-4	4.96E-4	5.43E-4	5.43E-4
XVIC	5.32E-4	5.78E-4	5.78E-4	5.32E-4	5.78E-4	5.78E-4	5.32E-4	5.78E-4	5.78E-4	5.29E-4	5.75E-4	5.75E-4	4.93E-4	5.37E-4	5.37E-4
XVIIIA	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.14E-2	3.39E-2	3.39E-2	2.75E-2	2.96E-2	2.96E-2
XVIIIB	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.87E-2	3.04E-2	3.04E-2	2.51E-2	2.66E-2	2.66E-2
XVIIIC	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.40E-2	2.48E-2	2.48E-2	2.10E-2	2.17E-2	2.17E-2
XXA	1.94E-2	1.55E-1	1.07E+0	1.22E-2	9.79E-2	6.77E-1	2.55E-3	2.04E-2	1.41E-1	6.07E-4	4.86E-3	3.36E-2	.00E+0	.00E+0	.00E+0
XXB	1.87E-2	1.12E-1	4.39E-1	1.18E-2	7.03E-2	2.77E-1	2.46E-3	1.47E-2	5.78E-2	5.84E-4	3.49E-3	1.37E-2	.00E+0	.00E+0	.00E+0
XXC	1.71E-2	6.29E-2	1.41E+0	1.08E-2	3.96E-2	8.90E-1	2.25E-3	8.27E-3	1.86E-1	5.36E-4	1.97E-3	4.42E-2	.00E+0	.00E+0	.00E+0
XXIA	4.17E-3	4.23E-2	4.13E-1	4.17E-3	4.23E-2	4.13E-1	4.17E-3	4.23E-2	4.13E-1	4.06E-3	4.12E-2	4.02E-1	2.76E-3	2.80E-2	2.73E-1
XXIB	4.15E-3	4.19E-2	3.97E-1	4.15E-3	4.19E-2	3.97E-1	4.15E-3	4.19E-2	3.96E-1	4.04E-3	4.08E-2	3.86E-1	2.74E-3	2.77E-2	2.62E-1
XXIC	4.13E-3	4.14E-2	3.67E-1	4.13E-3	4.14E-2	3.67E-1	4.13E-3	4.14E-2	3.67E-1	4.02E-3	4.03E-2	3.57E-1	2.73E-3	2.74E-2	2.43E-1
XXII	5.56E-1	1.42E+1	2.53E+1	5.56E-1	1.42E+1	2.53E+1	5.52E-1	1.42E+1	2.52E+1	5.26E-1	1.36E+1	2.42E+1	1.68E-1	6.43E+0	1.15E+1
DOE	2.20E+2	1.96E+3	1.81E+4	2.19E+2	1.95E+3	1.80E+4	2.18E+2	1.95E+3	1.80E+4	2.14E+2	1.92E+3	1.78E+4	1.94E+2	1.75E+3	1.66E+4
DOD	2.11E-2	1.31E-1	2.47E-1	2.07E-2	1.29E-1	2.35E-1	1.97E-2	1.23E-1	2.04E-1	1.95E-2	1.22E-1	2.01E-1	1.84E-2	1.15E-1	1.90E-1
NRC	2.20E+0	4.42E+0	2.42E+1	2.10E+0	3.85E+0	1.92E+1	1.97E+0	3.08E+0	1.24E+1	1.93E+0	2.89E+0	1.08E+1	1.67E+0	2.31E+0	7.41E+0
Total	2.22E+2	1.96E+3	1.81E+4	2.21E+2	1.96E+3	1.81E+4	2.20E+2	1.95E+3	1.80E+4	2.16E+2	1.93E+3	1.78E+4	1.95E+2	1.76E+3	1.66E+4

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 TABLE K-150. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	3.48E-1	3.84E-1	3.84E-1	3.33E-1	3.68E-1	3.68E-1	3.22E-1	3.56E-1	3.56E-1	3.06E-1	3.38E-1	3.38E-1	2.93E-1	3.24E-1	3.24E-1	2.79E-1	3.08E-1	3.08E-1
II	4.19E+1	4.12E+2	3.53E+3	4.19E+1	4.12E+2	3.53E+3	4.19E+1	4.12E+2	3.52E+3	4.19E+1	4.11E+2	3.50E+3	4.19E+1	4.11E+2	3.50E+3	4.19E+1	4.11E+2	3.49E+3
III	1.47E-1	1.63E-1	1.63E-1	1.28E-1	1.42E-1	1.42E-1	1.17E-1	1.29E-1	1.29E-1	1.07E-1	1.18E-1	1.18E-1	9.53E-2	1.06E-1	1.06E-1	7.79E-2	8.63E-2	8.63E-2
IV	2.97E-1	2.08E+0	4.19E+0	2.90E-1	2.03E+0	4.08E+0	2.83E-1	1.98E+0	3.99E+0	2.69E-1	1.88E+0	3.79E+0	2.55E-1	1.78E+0	3.60E+0	2.34E-1	1.64E+0	3.30E+0
V	9.63E+0	1.06E+1	1.06E+1	9.51E+0	1.05E+1	1.05E+1	9.41E+0	1.04E+1	1.04E+1	9.24E+0	1.02E+1	1.02E+1	9.07E+0	9.99E+0	9.99E+0	8.82E+0	9.71E+0	9.71E+0
VI	7.00E+0	6.21E+1	6.26E+2	6.99E+0	6.21E+1	6.26E+2	6.99E+0	6.21E+1	6.26E+2	6.97E+0	6.20E+1	6.25E+2	6.96E+0	6.19E+1	6.24E+2	6.94E+0	6.18E+1	6.23E+2
VII	1.61E+0	1.07E+1	6.98E+1	1.06E+0	7.09E+0	4.62E+1	7.38E-1	5.00E+0	3.26E+1	4.43E-1	3.05E+0	1.99E+1	2.50E-1	1.72E+0	1.13E+1	4.18E-2	2.77E-1	1.80E+0
IX	2.27E-3	1.82E-2	1.11E-1	1.09E-3	8.70E-3	5.32E-2	6.42E-4	5.15E-3	3.15E-2	2.27E-4	1.82E-3	1.11E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.56E+0	5.00E+0	5.53E+0	1.55E+0	4.79E+0	5.29E+0	1.54E+0	4.58E+0	5.05E+0	1.53E+0	4.23E+0	4.65E+0	1.52E+0	3.98E+0	4.36E+0	1.51E+0	3.74E+0	4.08E+0
XII	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.03E-1	1.96E-2	1.23E-1	2.03E-1	1.96E-2	1.22E-1	2.02E-1	1.95E-2	1.22E-1	2.02E-1	1.95E-2	1.22E-1	2.01E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.39E-4	5.89E-4	5.89E-4	5.39E-4	5.88E-4	5.88E-4	5.39E-4	5.88E-4	5.88E-4	5.38E-4	5.87E-4	5.87E-4	5.37E-4	5.86E-4	5.86E-4	5.86E-4	5.85E-4	5.85E-4
XVIB	5.36E-4	5.85E-4	5.85E-4	5.36E-4	5.85E-4	5.85E-4	5.35E-4	5.84E-4	5.84E-4	5.34E-4	5.83E-4	5.83E-4	5.33E-4	5.82E-4	5.82E-4	5.82E-4	5.82E-4	5.82E-4
XVIC	5.32E-4	5.78E-4	5.78E-4	5.32E-4	5.78E-4	5.78E-4	5.31E-4	5.78E-4	5.78E-4	5.30E-4	5.76E-4	5.76E-4	5.29E-4	5.75E-4	5.75E-4	5.75E-4	5.75E-4	5.75E-4
XVIIIA	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.40E-2	3.40E-2	3.15E-2	3.40E-2	3.40E-2	3.14E-2	3.39E-2	3.39E-2
XVIIIB	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.05E-2	3.05E-2	2.88E-2	3.05E-2	3.05E-2	2.87E-2	3.04E-2	3.04E-2
XVIIIC	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.41E-2	2.49E-2	2.49E-2	2.41E-2	2.49E-2	2.49E-2	2.40E-2	2.48E-2	2.48E-2
XXA	2.55E-3	2.04E-2	1.41E-1	8.60E-4	6.87E-3	4.76E-2	8.01E-4	6.40E-3	4.43E-2	7.22E-4	5.77E-3	4.00E-2	6.68E-4	5.34E-3	3.70E-2	6.07E-4	4.86E-3	3.36E-2
XXB	2.46E-3	1.47E-2	5.78E-2	8.27E-4	4.94E-3	1.94E-2	7.70E-4	4.60E-3	1.81E-2	6.95E-4	4.15E-3	1.63E-2	6.42E-4	3.84E-3	1.51E-2	5.84E-4	3.49E-3	1.37E-2
XXC	2.25E-3	8.27E-3	1.86E-1	7.59E-4	2.78E-3	6.25E-2	7.07E-4	2.59E-3	5.83E-2	6.37E-4	2.34E-3	5.25E-2	5.89E-4	2.16E-3	4.86E-2	5.36E-4	1.97E-3	4.42E-2
XXIA	4.17E-3	4.23E-2	4.13E-1	4.15E-3	4.22E-2	4.12E-1	4.14E-3	4.20E-2	4.10E-1	4.12E-3	4.18E-2	4.08E-1	4.09E-3	4.15E-2	4.05E-1	4.06E-3	4.12E-2	4.02E-1
XXIB	4.15E-3	4.19E-2	3.96E-1	4.14E-3	4.18E-2	3.95E-1	4.12E-3	4.17E-2	3.94E-1	4.10E-3	4.14E-2	3.92E-1	4.07E-3	4.12E-2	3.89E-1	4.04E-3	4.08E-2	3.86E-1
XXIC	4.13E-3	4.14E-2	3.67E-1	4.12E-3	4.12E-2	3.66E-1	4.10E-3	4.11E-2	3.65E-1	4.08E-3	4.09E-2	3.63E-1	4.06E-3	4.06E-2	3.60E-1	4.02E-3	4.03E-2	3.57E-1
XXII	5.52E-1	1.42E+1	2.52E+1	5.49E-1	1.41E+1	2.51E+1	5.45E-1	1.41E+1	2.50E+1	5.41E-1	1.39E+1	2.48E+1	5.37E-1	1.38E+1	2.46E+1	5.26E-1	1.36E+1	2.42E+1
DOE	2.18E+2	1.95E+3	1.80E+4	2.17E+2	1.94E+3	1.80E+4	2.17E+2	1.94E+3	1.79E+4	2.16E+2	1.93E+3	1.79E+4	2.15E+2	1.93E+3	1.79E+4	2.14E+2	1.92E+3	1.78E+4
DOD	1.97E+2	1.23E+1	2.04E-1	1.97E-2	1.23E-1	2.03E-1	1.96E-2	1.23E-1	2.03E-1	1.96E-2	1.22E-1	2.02E-1	1.95E-2	1.22E-1	2.02E-1	1.95E-2	1.22E-1	2.01E-1
NRC	1.97E+0	3.08E+0	1.24E+1	1.95E+0	2.94E+0	1.12E+1	1.95E+0	2.93E+0	1.11E+1	1.94E+0	2.92E+0	1.10E+1	1.94E+0	2.91E+0	1.09E+1	1.93E+0	2.89E+0	1.08E+1
Total	2.20E+2	1.95E+3	1.80E+4	2.19E+2	1.95E+3	1.80E+4	2.19E+2	1.94E+3	1.80E+4	2.18E+2	1.94E+3	1.79E+4	2.17E+2	1.93E+3	1.79E+4	2.16E+2	1.93E+3	1.78E+4

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 TABLE K-151. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	3.72E-1	4.11E-1	4.11E-1	3.60E-1	3.98E-1	3.98E-1	3.18E-1	3.51E-1	3.51E-1	2.14E-1	2.36E-1	2.36E-1	5.44E-2	6.01E-2	6.01E-2
II	4.20E+1	4.13E+2	3.54E+3	4.19E+1	4.13E+2	3.54E+3	4.19E+1	4.12E+2	3.51E+3	4.17E+1	4.09E+2	3.44E+3	2.85E+1	2.86E+2	2.44E+3
III	1.58E-1	1.75E-1	1.75E-1	1.56E-1	1.73E-1	1.73E-1	1.15E-1	1.27E-1	1.27E-1	1.84E-2	2.03E-2	2.03E-2	.00E+0	.00E+0	.00E+0
IV	3.14E-1	2.19E+0	4.42E+0	3.06E-1	2.14E+0	4.31E+0	2.78E-1	1.94E+0	3.92E+0	4.99E-2	3.49E-1	7.03E-1	.00E+0	.00E+0	.00E+0
V	9.75E+0	1.07E+1	1.07E+1	9.71E+0	1.07E+1	1.07E+1	9.38E+0	1.03E+1	1.03E+1	7.24E+0	7.98E+0	7.98E+0	2.04E+0	2.24E+0	2.24E+0
VI	7.00E+0	6.21E+1	6.26E+2	7.00E+0	6.21E+1	6.26E+2	6.98E+0	6.20E+1	6.26E+2	6.71E+0	6.01E+1	6.07E+2	5.00E+0	4.58E+1	4.64E+2
VII	2.39E+0	1.64E+1	1.08E+2	2.02E+0	1.35E+1	8.79E+1	6.32E-1	4.30E+0	2.81E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	7.87E-3	6.31E-2	3.86E-1	4.10E-3	3.29E-2	2.01E-1	4.26E-4	3.41E-3	2.08E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.56E+0	5.13E+0	5.68E+0	1.56E+0	5.12E+0	5.67E+0	1.54E+0	4.67E+0	5.15E+0	1.47E+0	3.13E+0	3.38E+0	1.18E+0	1.69E+0	1.77E+0
XII	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.95E-2	1.22E-1	2.02E-1	1.91E-2	1.19E-1	1.98E-1	6.15E-3	3.84E-2	6.36E-2
XIIIA	1.52E-4	1.17E-3	3.03E-3	5.83E-5	4.47E-4	1.16E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.46E-4	8.31E-4	1.28E-3	5.59E-5	3.18E-4	4.91E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.33E-4	4.65E-4	9.52E-3	5.09E-5	1.78E-4	3.64E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.39E-4	5.89E-4	5.89E-4	5.39E-4	5.89E-4	5.89E-4	5.39E-4	5.88E-4	5.88E-4	5.29E-4	5.77E-4	5.77E-4	3.14E-4	3.43E-4	3.43E-4
XVIB	5.36E-4	5.85E-4	5.85E-4	5.36E-4	5.85E-4	5.85E-4	5.35E-4	5.84E-4	5.84E-4	5.25E-4	5.74E-4	5.74E-4	3.12E-4	3.41E-4	3.41E-4
XVIC	5.32E-4	5.78E-4	5.78E-4	5.32E-4	5.78E-4	5.78E-4	5.31E-4	5.77E-4	5.77E-4	5.21E-4	5.67E-4	5.67E-4	3.09E-4	3.37E-4	3.37E-4
XVIIIA	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.03E-2	3.26E-2	3.26E-2	2.08E-2	2.24E-2	2.24E-2
XVIIIB	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.05E-2	3.05E-2	2.77E-2	2.93E-2	2.93E-2	1.90E-2	2.01E-2	2.01E-2
XVIIIC	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.32E-2	2.39E-2	2.39E-2	1.59E-2	1.64E-2	1.64E-2
XXA	1.47E-2	1.18E-1	8.13E-1	6.40E-3	5.12E-2	3.54E-1	7.32E-4	5.85E-3	4.05E-2	2.76E-4	2.21E-3	1.53E-2	.00E+0	.00E+0	.00E+0
XXB	1.42E-2	8.45E-2	3.32E-1	6.15E-3	3.68E-2	1.45E-1	7.04E-4	4.21E-3	1.66E-2	2.66E-4	1.59E-3	6.26E-3	.00E+0	.00E+0	.00E+0
XXC	1.30E-2	4.76E-2	1.07E+0	5.65E-3	2.07E-2	4.65E-1	6.46E-4	2.37E-3	5.32E-2	2.44E-4	8.95E-4	2.01E-2	.00E+0	.00E+0	.00E+0
XXIA	4.17E-3	4.23E-2	4.13E-1	4.17E-3	4.23E-2	4.13E-1	4.14E-3	4.20E-2	4.10E-1	3.56E-3	3.61E-2	3.52E-1	1.27E-3	1.29E-2	1.26E-1
XXIB	4.15E-3	4.19E-2	3.97E-1	4.15E-3	4.19E-2	3.96E-1	4.12E-3	4.16E-2	3.93E-1	3.54E-3	3.58E-2	3.38E-1	1.27E-3	1.28E-2	1.21E-1
XXIC	4.13E-3	4.14E-2	3.67E-1	4.13E-3	4.14E-2	3.67E-1	4.10E-3	4.11E-2	3.64E-1	3.52E-3	3.53E-2	3.13E-1	1.26E-3	1.26E-2	1.12E-1
XXII	5.56E-1	1.42E+1	2.53E+1	5.55E-1	1.42E+1	2.53E+1	5.43E-1	1.40E+1	2.49E+1	4.97E-1	1.30E+1	2.30E+1	.00E+0	.00E+0	.00E+0
DOE	2.19E+2	1.96E+3	1.81E+4	2.19E+2	1.95E+3	1.80E+4	2.17E+2	1.94E+3	1.79E+4	2.07E+2	1.87E+3	1.74E+4	1.45E+2	1.33E+3	1.30E+4
DOD	2.10E-2	1.30E-1	2.43E-1	2.02E-2	1.26E-1	2.19E-1	1.95E-2	1.22E-1	2.02E-1	1.91E-2	1.19E-1	1.98E-1	6.15E-3	3.84E-2	6.36E-2
NRC	2.13E+0	4.04E+0	2.09E+1	2.02E+0	3.38E+0	1.51E+1	1.94E+0	2.93E+0	1.10E+1	1.85E+0	2.68E+0	9.43E+0	1.24E+0	1.56E+0	3.91E+0
Total	2.22E+2	1.96E+3	1.81E+4	2.21E+2	1.96E+3	1.81E+4	2.19E+2	1.94E+3	1.79E+4	2.09E+2	1.88E+3	1.74E+4	1.47E+2	1.33E+3	1.30E+4

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 TABLE K-152. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	3.18E-1	3.51E-1	3.51E-1	2.94E-1	3.25E-1	3.25E-1	2.78E-1	3.07E-1	3.07E-1	2.56E-1	2.83E-1	2.83E-1	2.42E-1	2.68E-1	2.68E-1	2.14E-1	2.36E-1	2.36E-1
II	4.19E+1	4.12E+2	3.51E+3	4.19E+1	4.11E+2	3.50E+3	4.19E+1	4.11E+2	3.49E+3	4.19E+1	4.10E+2	3.48E+3	4.18E+1	4.10E+2	3.46E+3	4.17E+1	4.09E+2	3.44E+3
III	1.15E-1	1.27E-1	1.27E-1	9.63E-2	1.07E-1	1.07E-1	7.67E-2	8.50E-2	8.50E-2	4.52E-2	5.01E-2	5.01E-2	2.61E-2	2.89E-2	2.89E-2	1.84E-2	2.03E-2	2.03E-2
IV	2.78E-1	1.94E+0	3.92E+0	2.53E-1	1.77E+0	3.56E+0	2.28E-1	1.59E+0	3.21E+0	1.77E-1	1.24E+0	2.49E+0	1.26E-1	8.81E-1	1.78E+0	4.99E-2	3.49E-1	7.03E-1
V	9.38E+0	1.03E+1	1.03E+1	9.09E+0	1.00E+1	1.00E+1	8.80E+0	9.69E+0	9.69E+0	8.21E+0	9.05E+0	9.05E+0	7.63E+0	8.41E+0	8.41E+0	7.24E+0	7.98E+0	7.98E+0
VI	6.98E+0	6.20E+1	6.26E+2	6.96E+0	6.19E+1	6.24E+2	6.94E+0	6.18E+1	6.23E+2	6.88E+0	6.13E+1	6.19E+2	6.82E+0	6.09E+1	6.14E+2	6.71E+0	6.01E+1	6.07E+2
VII	6.32E-1	4.30E+0	2.81E+1	2.22E-1	1.53E+0	9.99E+0	2.25E-2	1.46E-1	9.46E-1	2.38E-3	1.31E-2	8.22E-2	7.09E-4	3.68E-3	2.28E-2	.00E+0	.00E+0	.00E+0
IX	4.26E-4	3.41E-3	2.08E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.54E+0	4.67E+0	5.15E+0	1.53E+0	4.20E+0	4.61E+0	1.52E+0	3.90E+0	4.27E+0	1.50E+0	3.56E+0	3.88E+0	1.49E+0	3.36E+0	3.64E+0	1.47E+0	3.13E+0	3.38E+0
XII	1.95E-2	1.22E-1	2.02E-1	1.94E-2	1.21E-1	2.01E-1	1.94E-2	1.21E-1	2.01E-1	1.93E-2	1.21E-1	2.00E-1	1.92E-2	1.20E-1	1.99E-1	1.91E-2	1.19E-1	1.98E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.39E-4	5.88E-4	5.88E-4	5.37E-4	5.86E-4	5.86E-4	5.36E-4	5.85E-4	5.85E-4	5.35E-4	5.84E-4	5.84E-4	5.33E-4	5.82E-4	5.82E-4	5.29E-4	5.77E-4	5.77E-4
XVIB	5.35E-4	5.84E-4	5.84E-4	5.34E-4	5.82E-4	5.82E-4	5.33E-4	5.82E-4	5.82E-4	5.31E-4	5.80E-4	5.80E-4	5.29E-4	5.78E-4	5.78E-4	5.25E-4	5.74E-4	5.74E-4
XVIC	5.31E-4	5.77E-4	5.77E-4	5.30E-4	5.76E-4	5.76E-4	5.29E-4	5.75E-4	5.75E-4	5.27E-4	5.73E-4	5.73E-4	5.25E-4	5.71E-4	5.71E-4	5.21E-4	5.67E-4	5.67E-4
XVIIIA	3.16E-2	3.41E-2	3.41E-2	3.15E-2	3.40E-2	3.40E-2	3.14E-2	3.38E-2	3.38E-2	3.11E-2	3.35E-2	3.35E-2	3.07E-2	3.32E-2	3.32E-2	3.03E-2	3.26E-2	3.26E-2
XVIIIB	2.89E-2	3.05E-2	3.05E-2	2.88E-2	3.05E-2	3.05E-2	2.87E-2	3.03E-2	3.03E-2	2.84E-2	3.00E-2	3.00E-2	2.81E-2	2.97E-2	2.97E-2	2.77E-2	2.93E-2	2.93E-2
XVIIIC	2.42E-2	2.50E-2	2.50E-2	2.41E-2	2.49E-2	2.49E-2	2.40E-2	2.48E-2	2.48E-2	2.38E-2	2.45E-2	2.45E-2	2.35E-2	2.43E-2	2.43E-2	2.32E-2	2.39E-2	2.39E-2
XXA	7.32E-4	5.85E-3	4.05E-2	6.18E-4	4.94E-3	3.42E-2	5.47E-4	4.37E-3	3.03E-2	4.58E-4	3.66E-3	2.54E-2	3.86E-4	3.08E-3	2.14E-2	2.76E-4	2.21E-3	1.53E-2
XXB	7.04E-4	4.21E-3	1.66E-2	5.95E-4	3.55E-3	1.40E-2	5.26E-4	3.14E-3	1.24E-2	4.41E-4	2.63E-3	1.04E-2	3.71E-4	2.22E-3	8.74E-3	2.66E-4	1.59E-3	6.26E-3
XXC	6.46E-4	2.37E-3	5.32E-2	5.45E-4	2.00E-3	4.50E-2	4.83E-4	1.77E-3	3.98E-2	4.04E-4	1.48E-3	3.33E-2	3.40E-4	1.25E-3	2.81E-2	2.44E-4	8.95E-4	2.01E-2
XXIA	4.14E-3	4.20E-2	4.10E-1	4.09E-3	4.15E-2	4.06E-1	4.05E-3	4.11E-2	4.01E-1	3.95E-3	4.01E-2	3.92E-1	3.78E-3	3.84E-2	3.74E-1	3.56E-3	3.61E-2	3.52E-1
XXIB	4.12E-3	4.16E-2	3.93E-1	4.08E-3	4.12E-2	3.89E-1	4.03E-3	4.08E-2	3.85E-1	3.94E-3	3.98E-2	3.76E-1	3.76E-3	3.80E-2	3.59E-1	3.54E-3	3.58E-2	3.38E-1
XXIC	4.10E-3	4.11E-2	3.64E-1	4.06E-3	4.06E-2	3.61E-1	4.01E-3	4.02E-2	3.57E-1	3.92E-3	3.92E-2	3.48E-1	3.74E-3	3.75E-2	3.33E-1	3.52E-3	3.53E-2	3.13E-1
XXII	5.43E-1	1.40E+1	2.49E+1	5.37E-1	1.39E+1	2.47E+1	5.24E-1	1.36E+1	2.42E+1	5.09E-1	1.32E+1	2.35E+1	5.04E-1	1.31E+1	2.33E+1	4.97E-1	1.30E+1	2.30E+1
DOE	2.17E+2	1.94E+3	1.79E+4	2.15E+2	1.93E+3	1.79E+4	2.14E+2	1.92E+3	1.78E+4	2.12E+2	1.91E+3	1.77E+4	2.10E+2	1.90E+3	1.76E+4	2.07E+2	1.87E+3	1.74E+4
DOD	1.95E+2	1.22E+1	2.02E-1	1.94E-2	1.21E-1	2.01E-1	1.94E-2	1.21E-1	2.01E-1	1.93E-2	1.21E-1	2.00E-1	1.92E-2	1.20E-1	1.99E-1	1.91E-2	1.19E-1	1.98E-1
NRC	1.94E+0	2.93E+0	1.10E+1	1.94E+0	2.90E+0	1.09E+1	1.93E+0	2.88E+0	1.07E+1	1.91E+0	2.83E+0	1.04E+1	1.88E+0	2.77E+0	1.00E+1	1.85E+0	2.68E+0	9.43E+0
Total	2.19E+2	1.94E+3	1.79E+4	2.17E+2	1.93E+3	1.79E+4	2.16E+2	1.93E+3	1.78E+4	2.14E+2	1.91E+3	1.77E+4	2.12E+2	1.90E+3	1.76E+4	2.09E+2	1.88E+3	1.74E+4

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 TABLE K-153. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.49E-1	2.76E-1	2.76E-1	2.45E-1	2.71E-1	2.71E-1	2.31E-1	2.56E-1	2.56E-1	1.86E-1	2.05E-1	2.05E-1	8.31E-2	9.20E-2	9.20E-2
II	3.14E+1	3.08E+2	2.65E+3	3.13E+1	3.08E+2	2.65E+3	3.13E+1	3.08E+2	2.65E+3	3.13E+1	3.07E+2	2.62E+3	3.03E+1	2.96E+2	2.48E+3
III	1.05E-1	1.17E-1	1.17E-1	1.05E-1	1.16E-1	1.16E-1	9.77E-2	1.09E-1	1.09E-1	5.18E-2	5.75E-2	5.75E-2	.00E+0	.00E+0	.00E+0
IV	1.94E-1	1.35E+0	2.82E+0	1.92E-1	1.34E+0	2.79E+0	1.83E-1	1.28E+0	2.66E+0	1.44E-1	1.01E+0	2.10E+0	.00E+0	.00E+0	.00E+0
V	6.50E+0	7.16E+0	7.16E+0	6.49E+0	7.15E+0	7.15E+0	6.42E+0	7.07E+0	7.07E+0	5.87E+0	6.47E+0	6.47E+0	3.85E+0	4.24E+0	4.24E+0
VI	4.35E+0	3.84E+1	4.23E+2	4.34E+0	3.84E+1	4.23E+2	4.34E+0	3.84E+1	4.23E+2	4.30E+0	3.82E+1	4.21E+2	3.94E+0	3.55E+1	3.92E+2
VII	2.13E+0	1.52E+1	1.01E+2	1.78E+0	1.24E+1	8.21E+1	1.31E+0	9.01E+0	5.95E+1	3.38E-2	2.33E-1	1.54E+0	.00E+0	.00E+0	.00E+0
IX	7.73E-3	6.21E-2	3.80E-1	5.62E-3	4.51E-2	2.76E-1	1.93E-3	1.55E-2	9.48E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.13E+0	3.46E+0	9.92E-1	2.36E+0	2.57E+0	8.69E-1	1.43E+0	1.52E+0
XII	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.70E-1	1.63E-2	1.01E-1	1.68E-1	1.53E-2	9.58E-2	1.59E-1
XIIIA	1.03E-4	7.86E-4	2.11E-3	7.41E-5	5.63E-4	1.51E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	9.84E-5	5.61E-4	8.94E-4	7.05E-5	4.02E-4	6.41E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	8.96E-5	3.14E-4	6.40E-3	6.42E-5	2.25E-4	4.59E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4	3.57E-4	3.91E-4	3.91E-4	3.32E-4	3.65E-4	3.65E-4
XVIB	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.56E-4	3.88E-4	3.88E-4	3.32E-4	3.62E-4	3.62E-4
XVIC	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.87E-4	3.87E-4	3.53E-4	3.84E-4	3.84E-4	3.29E-4	3.59E-4	3.59E-4
XVIIIA	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2	2.45E-2	2.64E-2	2.64E-2	2.14E-2	2.31E-2	2.31E-2
XVIIIB	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.24E-2	2.36E-2	2.36E-2	1.95E-2	2.07E-2	2.07E-2
XVIIIC	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.87E-2	1.93E-2	1.93E-2	1.63E-2	1.68E-2	1.68E-2
XXA	1.19E-2	9.60E-2	7.61E-1	7.52E-3	6.05E-2	4.80E-1	1.57E-3	1.26E-2	1.00E-1	3.73E-4	3.00E-3	2.39E-2	.00E+0	.00E+0	.00E+0
XXB	1.15E-2	6.91E-2	3.11E-1	7.23E-3	4.36E-2	1.96E-1	1.51E-3	9.09E-3	4.09E-2	3.59E-4	2.16E-3	9.74E-3	.00E+0	.00E+0	.00E+0
XXC	1.05E-2	3.91E-2	8.89E-1	6.63E-3	2.46E-2	5.61E-1	1.38E-3	5.14E-3	1.17E-1	3.29E-4	1.22E-3	2.78E-2	.00E+0	.00E+0	.00E+0
XXIA	2.79E-3	2.83E-2	2.75E-1	2.79E-3	2.83E-2	2.75E-1	2.78E-3	2.82E-2	2.75E-1	2.71E-3	2.75E-2	2.68E-1	1.84E-3	1.87E-2	1.82E-1
XXIB	2.77E-3	2.81E-2	2.64E-1	2.77E-3	2.81E-2	2.64E-1	2.77E-3	2.81E-2	2.64E-1	2.69E-3	2.73E-2	2.57E-1	1.83E-3	1.86E-2	1.75E-1
XXIC	2.75E-3	2.75E-2	2.44E-1	2.75E-3	2.75E-2	2.44E-1	2.75E-3	2.75E-2	2.44E-1	2.67E-3	2.68E-2	2.38E-1	1.82E-3	1.82E-2	1.61E-1
XXII	4.00E-1	9.13E+0	1.70E+1	4.00E-1	9.13E+0	1.70E+1	3.97E-1	9.11E+0	1.69E+1	3.79E-1	8.74E+0	1.62E+1	1.21E-1	4.14E+0	7.74E+0
DOE	1.43E+2	1.27E+3	1.25E+4	1.43E+2	1.27E+3	1.25E+4	1.42E+2	1.26E+3	1.24E+4	1.39E+2	1.24E+3	1.23E+4	1.26E+2	1.14E+3	1.14E+4
DOD	1.73E-2	1.08E-1	1.97E-1	1.71E-2	1.06E-1	1.90E-1	1.65E-2	1.03E-1	1.70E-1	1.63E-2	1.01E-1	1.68E-1	1.53E-2	9.58E-2	1.59E-1
NRC	1.65E+0	3.08E+0	1.64E+1	1.59E+0	2.73E+0	1.30E+1	1.51E+0	2.25E+0	8.46E+0	1.48E+0	2.13E+0	7.38E+0	1.28E+0	1.72E+0	5.12E+0
Total	1.45E+2	1.27E+3	1.25E+4	1.44E+2	1.27E+3	1.25E+4	1.44E+2	1.27E+3	1.24E+4	1.40E+2	1.25E+3	1.23E+4	1.27E+2	1.14E+3	1.15E+4

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 TABLE K-154. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.31E-1	2.56E-1	2.56E-1	2.22E-1	2.46E-1	2.46E-1	2.14E-1	2.37E-1	2.37E-1	2.03E-1	2.25E-1	2.25E-1	1.95E-1	2.16E-1	2.16E-1	1.86E-1	2.05E-1	2.05E-1
II	3.13E+1	3.08E+2	2.65E+3	3.13E+1	3.08E+2	2.64E+3	3.13E+1	3.08E+2	2.64E+3	3.13E+1	3.07E+2	2.62E+3	3.13E+1	3.07E+2	2.62E+3	3.13E+1	3.07E+2	2.62E+3
III	9.77E-2	1.09E-1	1.09E-1	8.52E-2	9.46E-2	9.46E-2	7.75E-2	8.61E-2	8.61E-2	7.09E-2	7.88E-2	7.88E-2	6.33E-2	7.03E-2	7.03E-2	5.18E-2	5.75E-2	5.75E-2
IV	1.83E-1	1.28E+0	2.66E+0	1.78E-1	1.24E+0	2.59E+0	1.74E-1	1.22E+0	2.53E+0	1.65E-1	1.16E+0	2.41E+0	1.57E-1	1.10E+0	2.28E+0	1.44E-1	1.01E+0	2.10E+0
V	6.42E+0	7.07E+0	7.07E+0	6.34E+0	6.99E+0	6.99E+0	6.27E+0	6.91E+0	6.91E+0	6.16E+0	6.78E+0	6.78E+0	6.04E+0	6.66E+0	6.66E+0	5.87E+0	6.47E+0	6.47E+0
VI	4.34E+0	3.84E+1	4.23E+2	4.34E+0	3.84E+1	4.23E+2	4.33E+0	3.84E+1	4.23E+2	4.33E+0	3.83E+1	4.22E+2	4.32E+0	3.83E+1	4.22E+2	4.30E+0	3.82E+1	4.21E+2
VII	1.31E+0	9.01E+0	5.95E+1	8.58E-1	5.96E+0	3.93E+1	6.00E-1	4.20E+0	2.78E+1	3.61E-1	2.56E+0	1.70E+1	2.04E-1	1.45E+0	9.60E+0	3.38E-2	2.33E-1	1.54E+0
IX	1.93E-3	1.55E-2	9.48E-2	9.22E-4	7.40E-3	4.53E-2	5.45E-4	4.38E-3	2.68E-2	1.92E-4	1.55E-3	9.46E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.02E+0	3.13E+0	3.46E+0	1.01E+0	3.00E+0	3.31E+0	1.01E+0	2.88E+0	3.17E+0	1.00E+0	2.66E+0	2.92E+0	9.99E-1	2.51E+0	2.74E+0	9.92E-1	2.36E+0	2.57E+0
XII	1.65E-2	1.03E-1	1.70E-1	1.64E-2	1.03E-1	1.70E-1	1.64E-2	1.02E-1	1.70E-1	1.63E-2	1.02E-1	1.69E-1	1.63E-2	1.02E-1	1.69E-1	1.63E-2	1.01E-1	1.68E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4	3.58E-4	3.93E-4	3.93E-4	3.58E-4	3.92E-4	3.92E-4	3.57E-4	3.92E-4	3.92E-4	3.57E-4	3.91E-4	3.91E-4
XVIB	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.57E-4	3.89E-4	3.89E-4	3.57E-4	3.88E-4	3.88E-4	3.56E-4	3.88E-4	3.88E-4
XVIC	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.86E-4	3.86E-4	3.54E-4	3.86E-4	3.86E-4	3.54E-4	3.86E-4	3.86E-4	3.53E-4	3.85E-4	3.85E-4	3.53E-4	3.84E-4	3.84E-4
XVIIIA	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2	2.46E-2	2.65E-2	2.65E-2	2.46E-2	2.65E-2	2.65E-2	2.45E-2	2.64E-2	2.64E-2
XVIIIB	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.37E-2	2.37E-2	2.24E-2	2.37E-2	2.37E-2	2.24E-2	2.36E-2	2.36E-2
XVIIIC	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.87E-2	1.93E-2	1.93E-2	1.87E-2	1.93E-2	1.93E-2	1.87E-2	1.93E-2	1.93E-2
XXA	1.57E-3	1.26E-2	1.00E-1	5.28E-4	4.25E-3	3.38E-2	4.92E-4	3.96E-3	3.14E-2	4.43E-4	3.57E-3	2.84E-2	4.10E-4	3.30E-3	2.62E-2	3.73E-4	3.00E-3	2.39E-2
XXB	1.51E-3	9.09E-3	4.09E-2	5.08E-4	3.06E-3	1.38E-2	4.73E-4	2.85E-3	1.28E-2	4.27E-4	2.57E-3	1.16E-2	3.95E-4	2.38E-3	1.07E-2	3.59E-4	2.16E-3	9.74E-3
XXC	1.38E-3	5.14E-3	1.17E-1	4.65E-4	1.73E-3	3.94E-2	4.34E-4	1.61E-3	3.67E-2	3.91E-4	1.45E-3	3.31E-2	3.61E-4	1.34E-3	3.06E-2	3.29E-4	1.22E-3	2.78E-2
XXIA	2.78E-3	2.82E-2	2.75E-1	2.78E-3	2.82E-2	2.74E-1	2.77E-3	2.81E-2	2.74E-1	2.75E-3	2.79E-2	2.72E-1	2.74E-3	2.77E-2	2.70E-1	2.71E-3	2.75E-2	2.68E-1
XXIB	2.77E-3	2.81E-2	2.64E-1	2.76E-3	2.80E-2	2.63E-1	2.75E-3	2.79E-2	2.63E-1	2.73E-3	2.77E-2	2.61E-1	2.72E-3	2.76E-2	2.59E-1	2.69E-3	2.73E-2	2.57E-1
XXIC	2.75E-3	2.75E-2	2.44E-1	2.74E-3	2.74E-2	2.43E-1	2.73E-3	2.74E-2	2.43E-1	2.71E-3	2.72E-2	2.41E-1	2.70E-3	2.70E-2	2.40E-1	2.67E-3	2.68E-2	2.38E-1
XXII	3.97E-1	9.11E+0	1.69E+1	3.95E-1	9.08E+0	1.68E+1	3.92E-1	9.02E+0	1.67E+1	3.89E-1	8.92E+0	1.66E+1	3.86E-1	8.88E+0	1.65E+1	3.79E-1	8.74E+0	1.62E+1
DOE	1.42E+2	1.26E+3	1.24E+4	1.41E+2	1.26E+3	1.24E+4	1.41E+2	1.26E+3	1.24E+4	1.40E+2	1.25E+3	1.23E+4	1.40E+2	1.25E+3	1.23E+4	1.39E+2	1.24E+3	1.23E+4
DOD	1.65E-2	1.03E-1	1.70E-1	1.64E-2	1.03E-1	1.70E-1	1.64E-2	1.02E-1	1.70E-1	1.63E-2	1.02E-1	1.69E-1	1.63E-2	1.02E-1	1.69E-1	1.63E-2	1.01E-1	1.68E-1
NRC	1.51E+0	2.25E+0	8.46E+0	1.50E+0	2.17E+0	7.65E+0	1.50E+0	2.16E+0	7.60E+0	1.49E+0	2.15E+0	7.53E+0	1.49E+0	2.15E+0	7.47E+0	1.48E+0	2.13E+0	7.38E+0
Total	1.44E+2	1.27E+3	1.24E+4	1.43E+2	1.26E+3	1.24E+4	1.42E+2	1.26E+3	1.24E+4	1.42E+2	1.26E+3	1.24E+4	1.41E+2	1.25E+3	1.23E+4	1.40E+2	1.25E+3	1.23E+4

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 TABLE K-155. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.47E-1	2.74E-1	2.74E-1	2.39E-1	2.65E-1	2.65E-1	2.11E-1	2.34E-1	2.34E-1	1.42E-1	1.57E-1	1.57E-1	3.62E-2	4.00E-2	4.00E-2
II	3.14E+1	3.08E+2	2.65E+3	3.13E+1	3.08E+2	2.65E+3	3.13E+1	3.08E+2	2.63E+3	3.12E+1	3.05E+2	2.58E+3	2.13E+1	2.14E+2	1.83E+3
III	1.05E-1	1.16E-1	1.16E-1	1.04E-1	1.15E-1	1.15E-1	7.63E-2	8.48E-2	8.48E-2	1.22E-2	1.36E-2	1.36E-2	.00E+0	.00E+0	.00E+0
IV	1.93E-1	1.35E+0	2.81E+0	1.88E-1	1.31E+0	2.74E+0	1.71E-1	1.20E+0	2.49E+0	3.07E-2	2.14E-1	4.46E-1	.00E+0	.00E+0	.00E+0
V	6.49E+0	7.16E+0	7.16E+0	6.47E+0	7.13E+0	7.13E+0	6.25E+0	6.88E+0	6.88E+0	4.83E+0	5.32E+0	5.32E+0	1.36E+0	1.50E+0	1.50E+0
VI	4.35E+0	3.84E+1	4.23E+2	4.34E+0	3.84E+1	4.23E+2	4.33E+0	3.84E+1	4.22E+2	4.16E+0	3.72E+1	4.10E+2	3.09E+0	2.83E+1	3.13E+2
VII	1.95E+0	1.38E+1	9.16E+1	1.64E+0	1.13E+1	7.49E+1	5.14E-1	3.62E+0	2.39E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	6.69E-3	5.37E-2	3.29E-1	3.48E-3	2.80E-2	1.71E-1	3.61E-4	2.90E-3	1.78E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.21E+0	3.55E+0	1.01E+0	2.93E+0	3.23E+0	9.61E-1	1.98E+0	2.14E+0	7.71E-1	1.09E+0	1.14E+0
XII	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.70E-1	1.63E-2	1.02E-1	1.69E-1	1.59E-2	9.96E-2	1.65E-1	5.14E-3	3.21E-2	5.31E-2
XIIIA	9.38E-5	7.13E-4	1.91E-3	3.59E-5	2.73E-4	7.32E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	8.92E-5	5.09E-4	8.11E-4	3.42E-5	1.95E-4	3.10E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	8.13E-5	2.85E-4	5.81E-3	3.11E-5	1.09E-4	2.22E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4	3.58E-4	3.93E-4	3.93E-4	3.52E-4	3.86E-4	3.86E-4	2.09E-4	2.30E-4	2.30E-4
XVIB	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.51E-4	3.83E-4	3.83E-4	2.09E-4	2.28E-4	2.28E-4
XVIC	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.87E-4	3.87E-4	3.54E-4	3.86E-4	3.86E-4	3.48E-4	3.79E-4	3.79E-4	2.06E-4	2.26E-4	2.26E-4
XVIIIA	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2	2.46E-2	2.66E-2	2.66E-2	2.36E-2	2.55E-2	2.55E-2	1.62E-2	1.75E-2	1.75E-2
XVIIIB	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.16E-2	2.28E-2	2.28E-2	1.48E-2	1.56E-2	1.56E-2
XVIIIC	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.80E-2	1.86E-2	1.86E-2	1.23E-2	1.27E-2	1.27E-2
XXA	9.03E-3	7.27E-2	5.77E-1	3.93E-3	3.16E-2	2.51E-1	4.49E-4	3.62E-3	2.87E-2	1.70E-4	1.37E-3	1.09E-2	.00E+0	.00E+0	.00E+0
XXB	8.69E-3	5.23E-2	2.35E-1	3.78E-3	2.28E-2	1.02E-1	4.32E-4	2.60E-3	1.17E-2	1.63E-4	9.84E-4	4.44E-3	.00E+0	.00E+0	.00E+0
XXC	7.96E-3	2.96E-2	6.74E-1	3.46E-3	1.29E-2	2.93E-1	3.96E-4	1.47E-3	3.35E-2	1.50E-4	5.56E-4	1.27E-2	.00E+0	.00E+0	.00E+0
XXIA	2.79E-3	2.83E-2	2.75E-1	2.79E-3	2.83E-2	2.75E-1	2.76E-3	2.80E-2	2.73E-1	2.38E-3	2.41E-2	2.35E-1	8.49E-4	8.62E-3	8.39E-2
XXIB	2.77E-3	2.81E-2	2.64E-1	2.77E-3	2.81E-2	2.64E-1	2.75E-3	2.79E-2	2.62E-1	2.36E-3	2.40E-2	2.25E-1	8.44E-4	8.56E-3	8.06E-2
XXIC	2.75E-3	2.75E-2	2.44E-1	2.75E-3	2.75E-2	2.44E-1	2.73E-3	2.73E-2	2.42E-1	2.34E-3	2.35E-2	2.08E-1	8.38E-4	8.39E-3	7.44E-2
XXII	4.00E-1	9.13E+0	1.70E+1	3.99E-1	9.13E+0	1.69E+1	3.91E-1	9.00E+0	1.67E+1	3.57E-1	8.31E+0	1.54E+1	.00E+0	.00E+0	.00E+0
DOE	1.43E+2	1.27E+3	1.25E+4	1.42E+2	1.27E+3	1.25E+4	1.41E+2	1.26E+3	1.24E+4	1.34E+2	1.21E+3	1.20E+4	9.37E+1	8.59E+2	8.94E+3
DOD	1.72E-2	1.07E-1	1.95E-1	1.68E-2	1.04E-1	1.80E-1	1.63E-2	1.02E-1	1.69E-1	1.59E-2	9.96E-2	1.65E-1	5.14E-3	3.21E-2	5.31E-2
NRC	1.61E+0	2.85E+0	1.42E+1	1.54E+0	2.44E+0	1.03E+1	1.49E+0	2.16E+0	7.56E+0	1.42E+0	1.99E+0	6.48E+0	9.54E-1	1.18E+0	2.74E+0
Total	1.44E+2	1.27E+3	1.25E+4	1.44E+2	1.27E+3	1.25E+4	1.42E+2	1.26E+3	1.24E+4	1.36E+2	1.22E+3	1.20E+4	9.47E+1	8.61E+2	8.94E+3

Low Population Density With Agriculture - 09-13-94 4:13p
 TABLE K-156. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.11E-1	2.34E-1	2.34E-1	1.96E-1	2.17E-1	2.17E-1	1.85E-1	2.05E-1	2.05E-1	1.70E-1	1.89E-1	1.89E-1	1.61E-1	1.78E-1	1.78E-1	1.42E-1	1.57E-1	1.57E-1
II	3.13E+1	3.08E+2	2.63E+3	3.13E+1	3.07E+2	2.62E+3	3.13E+1	3.07E+2	2.62E+3	3.13E+1	3.07E+2	2.61E+3	3.12E+1	3.06E+2	2.60E+3	3.12E+1	3.05E+2	2.58E+3
III	7.63E-2	8.48E-2	8.48E-2	6.40E-2	7.11E-2	7.11E-2	5.10E-2	5.66E-2	5.66E-2	3.00E-2	3.34E-2	3.34E-2	1.74E-2	1.93E-2	1.93E-2	1.22E-2	1.36E-2	1.36E-2
IV	1.71E-1	1.20E+0	2.49E+0	1.55E-1	1.09E+0	2.26E+0	1.40E-1	9.77E-1	2.04E+0	1.09E-1	7.59E-1	1.58E+0	7.74E-2	5.41E-1	1.13E+0	3.07E-2	2.14E-1	4.46E-1
V	6.25E+0	6.88E+0	6.88E+0	6.05E+0	6.67E+0	6.67E+0	5.86E+0	6.46E+0	6.46E+0	5.47E+0	6.03E+0	6.03E+0	5.09E+0	5.60E+0	5.60E+0	4.83E+0	5.32E+0	5.32E+0
VI	4.33E+0	3.84E+1	4.22E+2	4.32E+0	3.83E+1	4.22E+2	4.30E+0	3.82E+1	4.21E+2	4.27E+0	3.79E+1	4.18E+2	4.23E+0	3.76E+1	4.15E+2	4.16E+0	3.72E+1	4.10E+2
VII	5.14E-1	3.62E+0	2.39E+1	1.81E-1	1.28E+0	8.52E+0	1.81E-2	1.22E-1	8.06E-1	1.86E-3	1.09E-2	7.00E-2	5.47E-4	3.05E-3	1.94E-2	.00E+0	.00E+0	.00E+0
IX	3.61E-4	2.90E-3	1.78E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.01E+0	2.93E+0	3.23E+0	1.00E+0	2.64E+0	2.90E+0	9.96E-1	2.46E+0	2.69E+0	9.85E-1	2.25E+0	2.45E+0	9.74E-1	2.12E+0	2.30E+0	9.61E-1	1.98E+0	2.14E+0
XII	1.63E-2	1.02E-1	1.69E-1	1.62E-2	1.01E-1	1.68E-1	1.62E-2	1.01E-1	1.68E-1	1.61E-2	1.01E-1	1.67E-1	1.61E-2	1.00E-1	1.66E-1	1.59E-2	9.96E-2	1.65E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.58E-4	3.93E-4	3.93E-4	3.57E-4	3.92E-4	3.92E-4	3.57E-4	3.91E-4	3.91E-4	3.56E-4	3.90E-4	3.90E-4	3.54E-4	3.89E-4	3.89E-4	3.52E-4	3.86E-4	3.86E-4
XVIB	3.58E-4	3.90E-4	3.90E-4	3.57E-4	3.89E-4	3.89E-4	3.56E-4	3.88E-4	3.88E-4	3.55E-4	3.87E-4	3.87E-4	3.54E-4	3.86E-4	3.86E-4	3.51E-4	3.83E-4	3.83E-4
XVIC	3.54E-4	3.86E-4	3.86E-4	3.53E-4	3.85E-4	3.85E-4	3.53E-4	3.84E-4	3.84E-4	3.52E-4	3.83E-4	3.83E-4	3.51E-4	3.82E-4	3.82E-4	3.48E-4	3.79E-4	3.79E-4
XVIIIA	2.46E-2	2.66E-2	2.66E-2	2.46E-2	2.65E-2	2.65E-2	2.45E-2	2.64E-2	2.64E-2	2.42E-2	2.61E-2	2.61E-2	2.40E-2	2.59E-2	2.59E-2	2.36E-2	2.55E-2	2.55E-2
XVIIIB	2.25E-2	2.38E-2	2.38E-2	2.24E-2	2.37E-2	2.37E-2	2.23E-2	2.36E-2	2.36E-2	2.21E-2	2.34E-2	2.34E-2	2.19E-2	2.31E-2	2.31E-2	2.16E-2	2.28E-2	2.28E-2
XVIIIC	1.88E-2	1.94E-2	1.94E-2	1.87E-2	1.93E-2	1.93E-2	1.86E-2	1.92E-2	1.92E-2	1.84E-2	1.90E-2	1.90E-2	1.83E-2	1.88E-2	1.88E-2	1.80E-2	1.86E-2	1.86E-2
XXA	4.49E-4	3.62E-3	2.87E-2	3.80E-4	3.06E-3	2.43E-2	3.36E-4	2.71E-3	2.15E-2	2.81E-4	2.26E-3	1.80E-2	2.37E-4	1.91E-3	1.52E-2	1.70E-4	1.37E-3	1.09E-2
XXB	4.32E-4	2.60E-3	1.17E-2	3.65E-4	2.20E-3	9.91E-3	3.23E-4	1.95E-3	8.77E-3	2.71E-4	1.63E-3	7.34E-3	2.28E-4	1.37E-3	6.19E-3	1.63E-4	9.84E-4	4.44E-3
XXC	3.96E-4	1.47E-3	3.35E-2	3.35E-4	1.24E-3	2.83E-2	2.96E-4	1.10E-3	2.51E-2	2.48E-4	9.21E-4	2.10E-2	2.09E-4	7.76E-4	1.77E-2	1.50E-4	5.56E-4	1.27E-2
XXIA	2.76E-3	2.80E-2	2.73E-1	2.74E-3	2.78E-2	2.70E-1	2.71E-3	2.75E-2	2.68E-1	2.64E-3	2.68E-2	2.61E-1	2.53E-3	2.56E-2	2.50E-1	2.38E-3	2.41E-2	2.35E-1
XXIB	2.75E-3	2.79E-2	2.62E-1	2.72E-3	2.76E-2	2.60E-1	2.69E-3	2.73E-2	2.57E-1	2.62E-3	2.66E-2	2.51E-1	2.51E-3	2.55E-2	2.40E-1	2.36E-3	2.40E-2	2.25E-1
XXIC	2.73E-3	2.73E-2	2.42E-1	2.70E-3	2.70E-2	2.40E-1	2.67E-3	2.68E-2	2.37E-1	2.61E-3	2.61E-2	2.31E-1	2.49E-3	2.50E-2	2.21E-1	2.34E-3	2.35E-2	2.08E-1
XXII	3.91E-1	9.00E+0	1.67E+1	3.87E-1	8.89E+0	1.65E+1	3.77E-1	8.73E+0	1.62E+1	3.66E-1	8.49E+0	1.57E+1	3.63E-1	8.42E+0	1.56E+1	3.57E-1	8.31E+0	1.54E+1
DOE	1.41E+2	1.26E+3	1.24E+4	1.40E+2	1.25E+3	1.23E+4	1.39E+2	1.24E+3	1.23E+4	1.38E+2	1.24E+3	1.22E+4	1.36E+2	1.23E+3	1.21E+4	1.34E+2	1.21E+3	1.20E+4
DOD	1.63E+2	1.02E-1	1.69E-1	1.62E-2	1.01E-1	1.68E-1	1.62E-2	1.01E-1	1.68E-1	1.61E-2	1.01E-1	1.67E-1	1.61E-2	1.00E-1	1.66E-1	1.59E-2	9.96E-2	1.65E-1
NRC	1.49E+0	2.16E+0	7.56E+0	1.49E+0	2.14E+0	7.44E+0	1.48E+0	2.13E+0	7.35E+0	1.47E+0	2.09E+0	7.15E+0	1.45E+0	2.05E+0	6.87E+0	1.42E+0	1.99E+0	6.48E+0
Total	1.42E+2	1.26E+3	1.24E+4	1.41E+2	1.25E+3	1.23E+4	1.40E+2	1.25E+3	1.23E+4	1.39E+2	1.24E+3	1.22E+4	1.38E+2	1.23E+3	1.21E+4	1.36E+2	1.22E+3	1.20E+4

Medium Population Density With Agriculture - 09-13-94 4:12p
 TABLE K-157. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.63E+3	2.86E+3	2.86E+3	2.59E+3	2.81E+3	2.81E+3	2.45E+3	2.66E+3	2.66E+3	1.96E+3	2.13E+3	2.13E+3	8.79E+2	9.54E+2	9.54E+2
II	2.86E+5	6.41E+6	2.37E+7	2.86E+5	6.41E+6	2.37E+7	2.86E+5	6.41E+6	2.36E+7	2.86E+5	6.40E+6	2.34E+7	2.76E+5	6.20E+6	2.22E+7
III	1.13E+3	1.26E+3	1.26E+3	1.13E+3	1.26E+3	1.26E+3	1.06E+3	1.17E+3	1.17E+3	5.60E+2	6.23E+2	6.23E+2	.00E+0	.00E+0	.00E+0
IV	1.77E+3	1.13E+4	2.32E+4	1.75E+3	1.11E+4	2.30E+4	1.67E+3	1.06E+4	2.19E+4	1.31E+3	8.38E+3	1.73E+4	.00E+0	.00E+0	.00E+0
V	6.81E+4	7.41E+4	7.41E+4	6.80E+4	7.40E+4	7.40E+4	6.73E+4	7.32E+4	7.32E+4	6.16E+4	6.70E+4	6.70E+4	4.04E+4	4.39E+4	4.39E+4
VI	4.61E+4	3.83E+5	3.71E+6	4.61E+4	3.83E+5	3.71E+6	4.61E+4	3.83E+5	3.71E+6	4.57E+4	3.81E+5	3.69E+6	4.18E+4	3.54E+5	3.44E+6
VII	1.07E+5	9.24E+5	7.18E+6	8.71E+4	7.51E+5	5.83E+6	6.32E+4	5.44E+5	4.22E+6	1.63E+3	1.40E+4	1.09E+5	.00E+0	.00E+0	.00E+0
IX	4.74E+2	4.14E+3	2.62E+4	3.45E+2	3.01E+3	1.90E+4	1.18E+2	1.03E+3	6.53E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.54E+3	1.88E+4	2.15E+4	1.54E+3	1.88E+4	2.15E+4	1.52E+3	1.82E+4	2.08E+4	1.46E+3	1.22E+4	1.38E+4	1.25E+3	5.66E+3	6.35E+3
XII	3.16E+2	1.83E+3	2.95E+3	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.12E+2	1.80E+3	2.90E+3	2.94E+2	1.70E+3	2.74E+3
XIIIA	8.94E-1	6.00E+0	1.58E+1	6.41E-1	4.30E+0	1.13E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	8.23E-1	4.10E+0	6.65E+0	5.90E-1	2.94E+0	4.77E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	7.12E-1	2.27E+0	4.42E+1	5.11E-1	1.62E+0	3.17E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	4.27E+0	4.53E+0	4.53E+0	4.27E+0	4.53E+0	4.53E+0	4.27E+0	4.52E+0	4.52E+0	4.23E+0	4.48E+0	4.48E+0	3.77E+0	4.01E+0	4.01E+0
XVIB	4.23E+0	4.47E+0	4.47E+0	4.23E+0	4.47E+0	4.47E+0	4.22E+0	4.47E+0	4.47E+0	4.19E+0	4.43E+0	4.43E+0	3.73E+0	3.96E+0	3.96E+0
XVIC	4.14E+0	4.36E+0	4.36E+0	4.14E+0	4.36E+0	4.36E+0	4.13E+0	4.35E+0	4.35E+0	4.10E+0	4.31E+0	4.31E+0	3.65E+0	3.86E+0	3.86E+0
XVIIIA	8.69E+1	9.37E+1	9.37E+1	8.69E+1	9.37E+1	9.37E+1	8.69E+1	9.37E+1	9.37E+1	8.63E+1	9.31E+1	9.31E+1	7.55E+1	8.14E+1	8.14E+1
XVIIIB	7.97E+1	8.47E+1	8.47E+1	7.97E+1	8.47E+1	8.47E+1	7.97E+1	8.46E+1	8.46E+1	7.91E+1	8.41E+1	8.41E+1	6.92E+1	7.35E+1	7.35E+1
XVIIIC	6.77E+1	7.03E+1	7.03E+1	6.77E+1	7.03E+1	7.03E+1	6.77E+1	7.03E+1	7.03E+1	6.72E+1	6.98E+1	6.98E+1	5.88E+1	6.11E+1	6.11E+1
XXA	1.10E+2	8.69E+2	6.71E+3	6.91E+1	5.48E+2	4.23E+3	1.44E+1	1.14E+2	8.83E+2	3.43E+0	2.72E+1	2.10E+2	.00E+0	.00E+0	.00E+0
XXB	1.05E+2	6.21E+2	2.72E+3	6.61E+1	3.92E+2	1.72E+3	1.38E+1	8.18E+1	3.58E+2	3.28E+0	1.94E+1	8.53E+1	.00E+0	.00E+0	.00E+0
XXC	9.56E+1	3.51E+2	7.98E+3	6.03E+1	2.21E+2	5.03E+3	1.26E+1	4.62E+1	1.05E+3	2.99E+0	1.10E+1	2.50E+2	.00E+0	.00E+0	.00E+0
XXIA	4.53E+1	4.65E+2	4.44E+3	4.53E+1	4.65E+2	4.44E+3	4.53E+1	4.64E+2	4.44E+3	4.41E+1	4.52E+2	4.32E+3	2.99E+1	3.07E+2	2.94E+3
XXIB	4.49E+1	4.59E+2	4.15E+3	4.49E+1	4.59E+2	4.15E+3	4.49E+1	4.59E+2	4.14E+3	4.37E+1	4.47E+2	4.04E+3	2.97E+1	3.04E+2	2.74E+3
XXIC	4.46E+1	4.46E+2	3.60E+3	4.46E+1	4.46E+2	3.60E+3	4.45E+1	4.46E+2	3.60E+3	4.33E+1	4.34E+2	3.50E+3	2.95E+1	2.95E+2	2.38E+3
XXII	4.08E+3	8.88E+4	1.50E+5	4.08E+3	8.88E+4	1.50E+5	4.05E+3	8.85E+4	1.50E+5	3.86E+3	8.48E+4	1.43E+5	1.23E+3	4.04E+4	6.84E+4
DOE	1.54E+6	1.68E+7	1.16E+8	1.52E+6	1.66E+7	1.15E+8	1.50E+6	1.64E+7	1.13E+8	1.42E+6	1.57E+7	1.08E+8	1.28E+6	1.46E+7	1.01E+8
DOD	3.23E+2	1.86E+3	3.13E+3	3.21E+2	1.85E+3	3.08E+3	3.16E+2	1.82E+3	2.94E+3	3.12E+2	1.80E+3	2.90E+3	2.94E+2	1.70E+3	2.74E+3
NRC	7.88E+3	2.44E+4	1.76E+5	7.35E+3	2.12E+4	1.46E+5	6.62E+3	1.70E+4	1.06E+5	6.41E+3	1.58E+4	9.52E+4	5.39E+3	1.17E+4	6.41E+4
Total	1.55E+6	1.68E+7	1.16E+8	1.53E+6	1.66E+7	1.15E+8	1.50E+6	1.64E+7	1.13E+8	1.42E+6	1.58E+7	1.08E+8	1.28E+6	1.46E+7	1.01E+8

Medium Population Density With Agriculture - 09-13-94 4:12p
 TABLE K-158. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.45E+3	2.66E+3	2.66E+3	2.35E+3	2.55E+3	2.55E+3	2.26E+3	2.46E+3	2.46E+3	2.15E+3	2.33E+3	2.33E+3	2.06E+3	2.24E+3	2.24E+3	1.96E+3	2.13E+3	2.13E+3
II	2.86E+5	6.41E+6	2.36E+7	2.86E+5	6.41E+6	2.36E+7	2.86E+5	6.41E+6	2.36E+7	2.86E+5	6.41E+6	2.34E+7	2.86E+5	6.40E+6	2.34E+7	2.86E+5	6.40E+6	2.34E+7
III	1.06E+3	1.17E+3	1.17E+3	9.20E+2	1.02E+3	1.02E+3	8.38E+2	9.32E+2	9.32E+2	7.66E+2	8.52E+2	8.52E+2	6.84E+2	7.61E+2	7.61E+2	5.60E+2	6.23E+2	6.23E+2
IV	1.67E+3	1.06E+4	2.19E+4	1.63E+3	1.04E+4	2.14E+4	1.59E+3	1.01E+4	2.08E+4	1.51E+3	9.62E+3	1.98E+4	1.43E+3	9.13E+3	1.88E+4	1.31E+3	8.38E+3	1.73E+4
V	6.73E+4	7.32E+4	7.32E+4	6.65E+4	7.23E+4	7.23E+4	6.57E+4	7.15E+4	7.15E+4	6.46E+4	7.02E+4	7.02E+4	6.34E+4	6.89E+4	6.89E+4	6.16E+4	6.70E+4	6.70E+4
VI	4.61E+4	3.83E+5	3.71E+6	4.60E+4	3.83E+5	3.70E+6	4.60E+4	3.83E+5	3.70E+6	4.59E+4	3.82E+5	3.70E+6	4.58E+4	3.82E+5	3.69E+6	4.57E+4	3.81E+5	3.69E+6
VII	6.32E+4	5.44E+5	4.22E+6	4.18E+4	3.60E+5	2.79E+6	2.94E+4	2.54E+5	1.97E+6	1.80E+4	1.55E+5	1.21E+6	1.01E+4	8.78E+4	6.82E+5	1.63E+3	1.40E+4	1.09E+5
IX	1.18E+2	1.03E+3	6.53E+3	5.65E+1	4.93E+2	3.12E+3	3.34E+1	2.92E+2	1.85E+3	1.18E+1	1.03E+2	6.51E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.52E+3	1.82E+4	2.08E+4	1.51E+3	1.72E+4	1.96E+4	1.50E+3	1.62E+4	1.85E+4	1.48E+3	1.45E+4	1.65E+4	1.47E+3	1.33E+4	1.52E+4	1.46E+3	1.22E+4	1.38E+4
XII	3.16E+2	1.82E+3	2.94E+3	3.15E+2	1.82E+3	2.93E+3	3.15E+2	1.81E+3	2.93E+3	3.14E+2	1.81E+3	2.92E+3	3.13E+2	1.80E+3	2.91E+3	3.12E+2	1.80E+3	2.90E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	4.27E+0	4.52E+0	4.52E+0	4.27E+0	4.52E+0	4.52E+0	4.26E+0	4.52E+0	4.52E+0	4.25E+0	4.50E+0	4.50E+0	4.24E+0	4.49E+0	4.49E+0	4.23E+0	4.48E+0	4.48E+0
XVIB	4.22E+0	4.47E+0	4.47E+0	4.22E+0	4.47E+0	4.47E+0	4.22E+0	4.46E+0	4.46E+0	4.21E+0	4.45E+0	4.45E+0	4.19E+0	4.44E+0	4.44E+0	4.19E+0	4.43E+0	4.43E+0
XVIC	4.13E+0	4.35E+0	4.35E+0	4.13E+0	4.35E+0	4.35E+0	4.13E+0	4.35E+0	4.35E+0	4.12E+0	4.33E+0	4.33E+0	4.11E+0	4.32E+0	4.32E+0	4.10E+0	4.31E+0	4.31E+0
XVIIIA	8.69E+1	9.37E+1	9.37E+1	8.69E+1	9.37E+1	9.37E+1	8.68E+1	9.36E+1	9.36E+1	8.67E+1	9.36E+1	9.36E+1	8.67E+1	9.35E+1	9.35E+1	8.63E+1	9.31E+1	9.31E+1
XVIIIB	7.97E+1	8.46E+1	8.46E+1	7.97E+1	8.46E+1	8.46E+1	7.96E+1	8.46E+1	8.46E+1	7.95E+1	8.45E+1	8.45E+1	7.95E+1	8.44E+1	8.44E+1	7.91E+1	8.41E+1	8.41E+1
XVIIIC	6.77E+1	7.03E+1	7.03E+1	6.77E+1	7.03E+1	7.03E+1	6.76E+1	7.03E+1	7.03E+1	6.76E+1	7.02E+1	7.02E+1	6.75E+1	7.01E+1	7.01E+1	6.72E+1	6.98E+1	6.98E+1
XXA	1.44E+1	1.14E+2	8.83E+2	4.85E+0	3.85E+1	2.97E+2	4.52E+0	3.58E+1	2.77E+2	4.08E+0	3.23E+1	2.50E+2	3.77E+0	2.99E+1	2.31E+2	3.43E+0	2.72E+1	2.10E+2
XXB	1.38E+1	8.18E+1	3.58E+2	4.64E+0	2.75E+1	1.21E+2	4.32E+0	2.56E+1	1.12E+2	3.90E+0	2.31E+1	1.01E+2	3.60E+0	2.14E+1	9.37E+1	3.28E+0	1.94E+1	8.53E+1
XXC	1.26E+1	4.62E+1	1.05E+3	4.23E+0	1.55E+1	3.54E+2	3.94E+0	1.45E+1	3.29E+2	3.55E+0	1.31E+1	2.97E+2	3.29E+0	1.21E+1	2.75E+2	2.99E+0	1.10E+1	2.50E+2
XXIA	4.53E+1	4.64E+2	4.44E+3	4.51E+1	4.63E+2	4.43E+3	4.50E+1	4.62E+2	4.41E+3	4.47E+1	4.59E+2	4.39E+3	4.45E+1	4.56E+2	4.36E+3	4.41E+1	4.52E+2	4.32E+3
XXIB	4.49E+1	4.59E+2	4.14E+3	4.48E+1	4.58E+2	4.13E+3	4.46E+1	4.56E+2	4.12E+3	4.44E+1	4.54E+2	4.10E+3	4.41E+1	4.51E+2	4.07E+3	4.37E+1	4.47E+2	4.04E+3
XXIC	4.45E+1	4.46E+2	3.60E+3	4.44E+1	4.45E+2	3.58E+3	4.43E+1	4.44E+2	3.57E+3	4.40E+1	4.41E+2	3.55E+3	4.37E+1	4.38E+2	3.53E+3	4.33E+1	4.34E+2	3.50E+3
XXII	4.05E+3	8.85E+4	1.50E+5	4.02E+3	8.81E+4	1.49E+5	4.00E+3	8.76E+4	1.48E+5	3.97E+3	8.67E+4	1.47E+5	3.94E+3	8.63E+4	1.46E+5	3.86E+3	8.48E+4	1.43E+5
DOE	1.50E+6	1.64E+7	1.13E+8	1.47E+6	1.62E+7	1.12E+8	1.46E+6	1.61E+7	1.11E+8	1.44E+6	1.59E+7	1.10E+8	1.43E+6	1.59E+7	1.09E+8	1.42E+6	1.57E+7	1.08E+8
DOD	3.16E+2	1.82E+3	2.94E+3	3.15E+2	1.82E+3	2.93E+3	3.15E+2	1.81E+3	2.93E+3	3.14E+2	1.81E+3	2.92E+3	3.13E+2	1.80E+3	2.91E+3	3.12E+2	1.80E+3	2.90E+3
NRC	6.62E+3	1.70E+4	1.06E+5	6.49E+3	1.62E+4	9.84E+4	6.48E+3	1.61E+4	9.79E+4	6.46E+3	1.60E+4	9.70E+4	6.45E+3	1.59E+4	9.63E+4	6.41E+3	1.58E+4	9.52E+4
Total	1.50E+6	1.64E+7	1.13E+8	1.48E+6	1.62E+7	1.12E+8	1.47E+6	1.61E+7	1.11E+8	1.45E+6	1.60E+7	1.10E+8	1.44E+6	1.59E+7	1.09E+8	1.42E+6	1.58E+7	1.08E+8

Medium Population Density With Agriculture - 09-13-94 4:12p
 TABLE K-159. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.62E+3	2.84E+3	2.84E+3	2.53E+3	2.75E+3	2.75E+3	2.24E+3	2.43E+3	2.43E+3	1.50E+3	1.63E+3	1.63E+3	3.83E+2	4.15E+2	4.15E+2
II	2.86E+5	6.41E+6	2.37E+7	2.86E+5	6.41E+6	2.36E+7	2.86E+5	6.41E+6	2.35E+7	2.85E+5	6.37E+6	2.30E+7	1.94E+5	4.45E+6	1.63E+7
III	1.13E+3	1.26E+3	1.26E+3	1.12E+3	1.25E+3	1.25E+3	8.24E+2	9.17E+2	9.17E+2	1.32E+2	1.47E+2	1.47E+2	.00E+0	.00E+0	.00E+0
IV	1.76E+3	1.12E+4	2.31E+4	1.72E+3	1.09E+4	2.25E+4	1.56E+3	9.95E+3	2.05E+4	2.80E+2	1.79E+3	3.68E+3	.00E+0	.00E+0	.00E+0
V	6.81E+4	7.41E+4	7.41E+4	6.78E+4	7.38E+4	7.38E+4	6.55E+4	7.12E+4	7.12E+4	5.06E+4	5.50E+4	5.50E+4	1.42E+4	1.55E+4	1.55E+4
VI	4.61E+4	3.83E+5	3.71E+6	4.61E+4	3.83E+5	3.71E+6	4.60E+4	3.83E+5	3.70E+6	4.42E+4	3.71E+5	3.59E+6	3.28E+4	2.82E+5	2.74E+6
VII	9.68E+4	8.38E+5	6.51E+6	7.95E+4	6.85E+5	5.32E+6	2.53E+4	2.19E+5	1.70E+6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	4.10E+2	3.58E+3	2.26E+4	2.14E+2	1.87E+3	1.18E+4	2.22E+1	1.94E+2	1.22E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.54E+3	1.88E+4	2.15E+4	1.53E+3	1.88E+4	2.14E+4	1.50E+3	1.66E+4	1.89E+4	1.40E+3	9.38E+3	1.06E+4	1.11E+3	3.58E+3	3.97E+3
XII	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.13E+2	1.81E+3	2.92E+3	3.06E+2	1.77E+3	2.85E+3	9.86E+1	5.69E+2	9.18E+2
XIIIA	8.11E-1	5.44E+0	1.43E+1	3.11E-1	2.08E+0	5.48E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	7.47E-1	3.72E+0	6.03E+0	2.86E-1	1.43E+0	2.31E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	6.46E-1	2.06E+0	4.01E+1	2.47E-1	7.87E-1	1.54E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	4.27E+0	4.53E+0	4.53E+0	4.27E+0	4.53E+0	4.53E+0	4.26E+0	4.52E+0	4.52E+0	4.13E+0	4.38E+0	4.38E+0	2.33E+0	2.48E+0	2.48E+0
XVIB	4.23E+0	4.47E+0	4.47E+0	4.23E+0	4.47E+0	4.47E+0	4.22E+0	4.46E+0	4.46E+0	4.09E+0	4.33E+0	4.33E+0	2.30E+0	2.45E+0	2.45E+0
XVIC	4.14E+0	4.36E+0	4.36E+0	4.14E+0	4.36E+0	4.36E+0	4.13E+0	4.35E+0	4.35E+0	4.00E+0	4.22E+0	4.22E+0	2.25E+0	2.38E+0	2.38E+0
XVIIIA	8.69E+1	9.37E+1	9.37E+1	8.69E+1	9.37E+1	9.37E+1	8.68E+1	9.36E+1	9.36E+1	8.32E+1	8.97E+1	8.97E+1	5.71E+1	6.16E+1	6.16E+1
XVIIIB	7.97E+1	8.47E+1	8.47E+1	7.97E+1	8.46E+1	8.46E+1	7.96E+1	8.45E+1	8.45E+1	7.63E+1	8.10E+1	8.10E+1	5.24E+1	5.56E+1	5.56E+1
XVIIIC	6.77E+1	7.03E+1	7.03E+1	6.77E+1	7.03E+1	7.03E+1	6.76E+1	7.02E+1	7.02E+1	6.48E+1	6.73E+1	6.73E+1	4.45E+1	4.62E+1	4.62E+1
XXA	8.30E+1	6.58E+2	5.08E+3	3.61E+1	2.86E+2	2.21E+3	4.13E+0	3.28E+1	2.53E+2	1.56E+0	1.24E+1	9.57E+1	.00E+0	.00E+0	.00E+0
XXB	7.94E+1	4.71E+2	2.06E+3	3.45E+1	2.05E+2	8.97E+2	3.95E+0	2.34E+1	1.03E+2	1.49E+0	8.85E+0	3.89E+1	.00E+0	.00E+0	.00E+0
XXC	7.24E+1	2.66E+2	6.05E+3	3.15E+1	1.16E+2	2.63E+3	3.60E+0	1.32E+1	3.01E+2	1.36E+0	5.00E+0	1.14E+2	.00E+0	.00E+0	.00E+0
XXIA	4.53E+1	4.65E+2	4.44E+3	4.53E+1	4.65E+2	4.44E+3	4.49E+1	4.61E+2	4.41E+3	3.86E+1	3.96E+2	3.79E+3	1.38E+1	1.42E+2	1.35E+3
XXIB	4.49E+1	4.59E+2	4.15E+3	4.49E+1	4.59E+2	4.15E+3	4.46E+1	4.56E+2	4.12E+3	3.83E+1	3.92E+2	3.54E+3	1.37E+1	1.40E+2	1.26E+3
XXIC	4.46E+1	4.46E+2	3.60E+3	4.46E+1	4.46E+2	3.60E+3	4.42E+1	4.43E+2	3.57E+3	3.80E+1	3.81E+2	3.07E+3	1.36E+1	1.36E+2	1.10E+3
XXII	4.08E+3	8.88E+4	1.50E+5	4.07E+3	8.87E+4	1.50E+5	3.98E+3	8.74E+4	1.48E+5	3.64E+3	8.06E+4	1.36E+5	.00E+0	.00E+0	.00E+0
DOE	1.53E+6	1.67E+7	1.15E+8	1.52E+6	1.65E+7	1.14E+8	1.45E+6	1.60E+7	1.10E+8	1.37E+6	1.54E+7	1.05E+8	9.54E+5	1.09E+7	7.86E+7
DOD	3.22E+2	1.86E+3	3.12E+3	3.19E+2	1.84E+3	3.01E+3	3.13E+2	1.81E+3	2.92E+3	3.06E+2	1.77E+3	2.85E+3	9.86E+1	5.69E+2	9.18E+2
NRC	7.53E+3	2.23E+4	1.57E+5	6.91E+3	1.87E+4	1.22E+5	6.47E+3	1.61E+4	9.75E+4	6.08E+3	1.42E+4	8.29E+4	3.82E+3	6.80E+3	3.10E+4
Total	1.54E+6	1.67E+7	1.16E+8	1.52E+6	1.65E+7	1.14E+8	1.46E+6	1.60E+7	1.10E+8	1.37E+6	1.54E+7	1.06E+8	9.58E+5	1.09E+7	7.86E+7

Medium Population Density With Agriculture - 09-13-94 4:12p
 TABLE K-160. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.24E+3	2.43E+3	2.43E+3	2.07E+3	2.25E+3	2.25E+3	1.96E+3	2.12E+3	2.12E+3	1.80E+3	1.96E+3	1.96E+3	1.70E+3	1.85E+3	1.85E+3	1.50E+3	1.63E+3	1.63E+3
II	2.86E+5	6.41E+6	2.35E+7	2.86E+5	6.40E+6	2.34E+7	2.86E+5	6.40E+6	2.34E+7	2.86E+5	6.40E+6	2.33E+7	2.85E+5	6.39E+6	2.32E+7	2.85E+5	6.37E+6	2.30E+7
III	8.24E+2	9.17E+2	9.17E+2	6.92E+2	7.69E+2	7.69E+2	5.51E+2	6.13E+2	6.13E+2	3.25E+2	3.61E+2	3.61E+2	1.88E+2	2.09E+2	2.09E+2	1.32E+2	1.47E+2	1.47E+2
IV	1.56E+3	9.95E+3	2.05E+4	1.42E+3	9.05E+3	1.86E+4	1.28E+3	8.14E+3	1.68E+4	9.92E+2	6.32E+3	1.30E+4	7.07E+2	4.51E+3	9.29E+3	2.80E+2	1.79E+3	3.68E+3
V	6.55E+4	7.12E+4	7.12E+4	6.35E+4	6.90E+4	6.90E+4	6.14E+4	6.68E+4	6.68E+4	5.74E+4	6.24E+4	6.24E+4	5.33E+4	5.80E+4	5.80E+4	5.06E+4	5.50E+4	5.50E+4
VI	4.60E+4	3.83E+5	3.70E+6	4.58E+4	3.82E+5	3.69E+6	4.57E+4	3.81E+5	3.68E+6	4.53E+4	3.78E+5	3.66E+6	4.48E+4	3.75E+5	3.63E+6	4.42E+4	3.71E+5	3.59E+6
VII	2.53E+4	2.19E+5	1.70E+6	8.99E+3	7.79E+4	6.05E+5	8.60E+2	7.37E+3	5.72E+4	7.74E+1	6.40E+2	4.94E+3	2.18E+1	1.77E+2	1.37E+3	.00E+0	.00E+0	.00E+0
IX	2.22E+1	1.94E+2	1.22E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.50E+3	1.66E+4	1.89E+4	1.48E+3	1.43E+4	1.64E+4	1.46E+3	1.29E+4	1.47E+4	1.44E+3	1.14E+4	1.29E+4	1.42E+3	1.04E+4	1.18E+4	1.40E+3	9.38E+3	1.06E+4
XII	3.13E+2	1.81E+3	2.92E+3	3.12E+2	1.80E+3	2.90E+3	3.11E+2	1.79E+3	2.89E+3	3.09E+2	1.79E+3	2.88E+3	3.08E+2	1.78E+3	2.87E+3	3.06E+2	1.77E+3	2.85E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	4.26E+0	4.52E+0	4.52E+0	4.24E+0	4.50E+0	4.50E+0	4.23E+0	4.48E+0	4.48E+0	4.21E+0	4.47E+0	4.47E+0	4.19E+0	4.44E+0	4.44E+0	4.13E+0	4.38E+0	4.38E+0
XVIB	4.22E+0	4.46E+0	4.46E+0	4.20E+0	4.44E+0	4.44E+0	4.19E+0	4.43E+0	4.43E+0	4.17E+0	4.41E+0	4.41E+0	4.14E+0	4.39E+0	4.39E+0	4.09E+0	4.33E+0	4.33E+0
XVIC	4.13E+0	4.35E+0	4.35E+0	4.11E+0	4.33E+0	4.33E+0	4.10E+0	4.32E+0	4.32E+0	4.08E+0	4.30E+0	4.30E+0	4.06E+0	4.27E+0	4.27E+0	4.00E+0	4.22E+0	4.22E+0
XVIIIA	8.68E+1	9.36E+1	9.36E+1	8.66E+1	9.34E+1	9.34E+1	8.62E+1	9.30E+1	9.30E+1	8.54E+1	9.21E+1	9.21E+1	8.45E+1	9.11E+1	9.11E+1	8.32E+1	8.97E+1	8.97E+1
XVIIIB	7.96E+1	8.45E+1	8.45E+1	7.95E+1	8.44E+1	8.44E+1	7.91E+1	8.40E+1	8.40E+1	7.83E+1	8.31E+1	8.31E+1	7.75E+1	8.23E+1	8.23E+1	7.63E+1	8.10E+1	8.10E+1
XVIIIC	6.76E+1	7.02E+1	7.02E+1	6.75E+1	7.01E+1	7.01E+1	6.71E+1	6.98E+1	6.98E+1	6.65E+1	6.91E+1	6.91E+1	6.58E+1	6.84E+1	6.84E+1	6.48E+1	6.73E+1	6.73E+1
XXA	4.13E+0	3.28E+1	2.53E+2	3.49E+0	2.77E+1	2.14E+2	3.09E+0	2.45E+1	1.89E+2	2.58E+0	2.05E+1	1.59E+2	2.18E+0	1.73E+1	1.34E+2	1.56E+0	1.24E+1	9.57E+1
XXB	3.95E+0	2.34E+1	1.03E+2	3.34E+0	1.98E+1	8.68E+1	2.95E+0	1.75E+1	7.68E+1	2.47E+0	1.47E+1	6.43E+1	2.08E+0	1.23E+1	5.42E+1	1.49E+0	8.85E+0	3.89E+1
XXC	3.60E+0	1.32E+1	3.01E+2	3.04E+0	1.12E+1	2.54E+2	2.69E+0	9.89E+0	2.25E+2	2.25E+0	8.28E+0	1.88E+2	1.90E+0	6.98E+0	1.59E+2	1.36E+0	5.00E+0	1.14E+2
XXIA	4.49E+1	4.61E+2	4.41E+3	4.45E+1	4.56E+2	4.36E+3	4.40E+1	4.52E+2	4.32E+3	4.29E+1	4.41E+2	4.21E+3	4.11E+1	4.21E+2	4.03E+3	3.86E+1	3.96E+2	3.79E+3
XXIB	4.46E+1	4.56E+2	4.12E+3	4.41E+1	4.51E+2	4.07E+3	4.37E+1	4.46E+2	4.03E+3	4.26E+1	4.35E+2	3.93E+3	4.07E+1	4.16E+2	3.76E+3	3.83E+1	3.92E+2	3.54E+3
XXIC	4.42E+1	4.43E+2	3.57E+3	4.37E+1	4.38E+2	3.53E+3	4.33E+1	4.34E+2	3.50E+3	4.22E+1	4.23E+2	3.41E+3	4.04E+1	4.05E+2	3.26E+3	3.80E+1	3.81E+2	3.07E+3
XXII	3.98E+3	8.74E+4	1.48E+5	3.94E+3	8.64E+4	1.46E+5	3.85E+3	8.48E+4	1.43E+5	3.74E+3	8.24E+4	1.39E+5	3.70E+3	8.16E+4	1.38E+5	3.64E+3	8.06E+4	1.36E+5
DOE	1.45E+6	1.60E+7	1.10E+8	1.43E+6	1.58E+7	1.09E+8	1.42E+6	1.57E+7	1.08E+8	1.40E+6	1.56E+7	1.07E+8	1.39E+6	1.55E+7	1.07E+8	1.37E+6	1.54E+7	1.05E+8
DOD	3.13E+2	2.81E+3	2.92E+3	3.12E+2	1.80E+3	2.90E+3	3.11E+2	1.79E+3	2.89E+3	3.09E+2	1.79E+3	2.88E+3	3.08E+2	1.78E+3	2.87E+3	3.06E+2	1.77E+3	2.85E+3
NRC	6.47E+3	1.61E+4	9.75E+4	6.44E+3	1.59E+4	9.61E+4	6.40E+3	1.57E+4	9.49E+4	6.32E+3	1.54E+4	9.23E+4	6.22E+3	1.49E+4	8.83E+4	6.08E+3	1.42E+4	8.29E+4
Total	1.46E+6	1.60E+7	1.10E+8	1.44E+6	1.59E+7	1.09E+8	1.42E+6	1.57E+7	1.08E+8	1.41E+6	1.57E+7	1.08E+8	1.39E+6	1.56E+7	1.07E+8	1.37E+6	1.54E+7	1.06E+8

Medium Population Density With Agriculture - 09-13-94 4:12p
 TABLE K-161. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.14E+0	1.24E+0	1.24E+0	1.12E+0	1.22E+0	1.22E+0	1.06E+0	1.15E+0	1.15E+0	8.48E-1	9.26E-1	9.26E-1	3.80E-1	4.15E-1	4.15E-1
II	4.86E+1	4.75E+2	3.84E+3	4.85E+1	4.75E+2	3.84E+3	4.85E+1	4.74E+2	3.84E+3	4.85E+1	4.73E+2	3.79E+3	4.68E+1	4.56E+2	3.60E+3
III	4.91E-1	5.44E-1	5.44E-1	4.91E-1	5.44E-1	5.44E-1	4.58E-1	5.07E-1	5.07E-1	2.43E-1	2.69E-1	2.69E-1	.00E+0	.00E+0	.00E+0
IV	3.70E-1	2.34E+0	4.58E+0	3.66E-1	2.31E+0	4.53E+0	3.49E-1	2.20E+0	4.32E+0	2.75E-1	1.74E+0	3.41E+0	.00E+0	.00E+0	.00E+0
V	2.95E+1	3.22E+1	3.22E+1	2.95E+1	3.22E+1	3.22E+1	2.91E+1	3.18E+1	3.18E+1	2.67E+1	2.91E+1	2.91E+1	1.75E+1	1.91E+1	1.91E+1
VI	1.01E+1	7.87E+1	6.84E+2	1.01E+1	7.87E+1	6.84E+2	1.01E+1	7.87E+1	6.84E+2	1.00E+1	7.82E+1	6.80E+2	9.01E+0	7.25E+1	6.34E+2
VII	7.55E+0	5.63E+1	4.15E+2	6.36E+0	4.60E+1	3.38E+2	4.70E+0	3.34E+1	2.45E+2	1.22E-1	8.63E-1	6.31E+0	.00E+0	.00E+0	.00E+0
IX	2.88E-2	2.45E-1	1.51E+0	2.09E-2	1.78E-1	1.10E+0	7.18E-3	6.12E-2	3.78E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.56E+0	5.13E+0	5.68E+0	1.56E+0	5.13E+0	5.68E+0	1.56E+0	5.00E+0	5.53E+0	1.51E+0	3.74E+0	4.08E+0	1.32E+0	2.25E+0	2.39E+0
XII	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.21E-2	1.30E-1	2.10E-1	2.09E-2	1.22E-1	1.98E-1
XIIIA	2.15E-4	1.44E-3	3.52E-3	1.54E-4	1.03E-3	2.52E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.99E-4	9.81E-4	1.48E-3	1.42E-4	7.03E-4	1.06E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.71E-4	5.42E-4	1.06E-2	1.23E-4	3.89E-4	7.57E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.85E-3	1.97E-3	1.97E-3	1.85E-3	1.97E-3	1.97E-3	1.85E-3	1.96E-3	1.96E-3	1.83E-3	1.95E-3	1.95E-3	1.64E-3	1.75E-3	1.75E-3
XVIB	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.82E-3	1.93E-3	1.93E-3	1.63E-3	1.73E-3	1.73E-3
XVIC	1.79E-3	1.90E-3	1.90E-3	1.79E-3	1.90E-3	1.90E-3	1.79E-3	1.89E-3	1.89E-3	1.78E-3	1.88E-3	1.88E-3	1.59E-3	1.69E-3	1.69E-3
XVIIIA	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.50E-2	3.78E-2	3.78E-2	3.06E-2	3.31E-2	3.31E-2
XVIIIB	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2	3.23E-2	3.43E-2	3.43E-2	2.82E-2	3.00E-2	3.00E-2
XVIIIC	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2	2.74E-2	2.86E-2	2.86E-2	2.40E-2	2.50E-2	2.50E-2
XXA	1.99E-2	1.57E-1	1.08E+0	1.25E-2	9.90E-2	6.83E-1	2.62E-3	2.07E-2	1.43E-1	6.22E-4	4.91E-3	3.40E-2	.00E+0	.00E+0	.00E+0
XXB	1.91E-2	1.12E-1	4.41E-1	1.20E-2	7.09E-2	2.78E-1	2.51E-3	1.48E-2	5.81E-2	5.96E-4	3.52E-3	1.38E-2	.00E+0	.00E+0	.00E+0
XXC	1.74E-2	6.32E-2	1.41E+0	1.09E-2	3.99E-2	8.90E-1	2.29E-3	8.32E-3	1.86E-1	5.43E-4	1.98E-3	4.42E-2	.00E+0	.00E+0	.00E+0
XXIA	1.43E-2	1.48E-1	1.41E+0	1.43E-2	1.48E-1	1.41E+0	1.43E-2	1.48E-1	1.41E+0	1.39E-2	1.44E-1	1.37E+0	9.47E-3	9.80E-2	9.33E-1
XXIB	1.42E-2	1.46E-1	1.30E+0	1.42E-2	1.46E-1	1.30E+0	1.42E-2	1.46E-1	1.30E+0	1.38E-2	1.42E-1	1.26E+0	9.40E-3	9.67E-2	8.59E-1
XXIC	1.41E-2	1.42E-1	1.10E+0	1.41E-2	1.42E-1	1.10E+0	1.40E-2	1.42E-1	1.10E+0	1.37E-2	1.38E-1	1.07E+0	9.29E-3	9.38E-2	7.26E-1
XXII	8.59E-1	1.66E+1	3.11E+1	8.58E-1	1.66E+1	3.11E+1	8.53E-1	1.66E+1	3.09E+1	8.13E-1	1.59E+1	2.97E+1	2.59E-1	7.49E+0	1.41E+1
DOE	3.26E+2	2.47E+3	2.00E+4	3.24E+2	2.46E+3	2.00E+4	3.22E+2	2.45E+3	1.99E+4	3.11E+2	2.39E+3	1.95E+4	2.72E+2	2.18E+3	1.81E+4
DOD	2.41E-2	1.40E-1	2.57E-1	2.36E-2	1.37E-1	2.44E-1	2.24E-2	1.31E-1	2.13E-1	2.21E-2	1.30E-1	2.10E-1	2.09E-2	1.22E-1	1.98E-1
NRC	2.81E+0	7.12E+0	4.40E+1	2.71E+0	6.55E+0	3.89E+1	2.58E+0	5.77E+0	3.21E+1	2.53E+0	5.52E+0	3.00E+1	2.15E+0	4.18E+0	2.05E+1
Total	3.28E+2	2.48E+3	2.01E+4	3.27E+2	2.47E+3	2.00E+4	3.24E+2	2.45E+3	1.99E+4	3.14E+2	2.40E+3	1.95E+4	2.75E+2	2.18E+3	1.81E+4

Medium Population Density With Agriculture - 09-13-94 4:12p
 TABLE K-162. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.06E+0	1.15E+0	1.15E+0	1.01E+0	1.11E+0	1.11E+0	9.78E-1	1.07E+0	1.07E+0	9.29E-1	1.01E+0	1.01E+0	8.91E-1	9.73E-1	9.73E-1	8.48E-1	9.26E-1	9.26E-1
II	4.85E+1	4.74E+2	3.84E+3	4.85E+1	4.74E+2	3.83E+3	4.85E+1	4.74E+2	3.82E+3	4.85E+1	4.73E+2	3.80E+3	4.85E+1	4.73E+2	3.80E+3	4.85E+1	4.73E+2	3.79E+3
III	4.58E-1	5.07E-1	5.07E-1	3.99E-1	4.42E-1	4.42E-1	3.63E-1	4.02E-1	4.02E-1	3.32E-1	3.68E-1	3.68E-1	2.97E-1	3.29E-1	3.29E-1	2.43E-1	2.69E-1	2.69E-1
IV	3.49E-1	2.20E+0	4.32E+0	3.40E-1	2.15E+0	4.21E+0	3.32E-1	2.10E+0	4.11E+0	3.15E-1	1.99E+0	3.91E+0	2.99E-1	1.89E+0	3.71E+0	2.75E-1	1.74E+0	3.41E+0
V	2.91E+1	3.18E+1	3.18E+1	2.88E+1	3.14E+1	3.14E+1	2.85E+1	3.11E+1	3.11E+1	2.80E+1	3.05E+1	3.05E+1	2.74E+1	3.00E+1	3.00E+1	2.67E+1	2.91E+1	2.91E+1
VI	1.01E+1	7.87E+1	6.84E+2	1.01E+1	7.86E+1	6.84E+2	1.01E+1	7.86E+1	6.84E+2	1.01E+1	7.85E+1	6.83E+2	1.00E+1	7.84E+1	6.82E+2	1.00E+1	7.82E+1	6.80E+2
VII	4.70E+0	3.34E+1	2.45E+2	3.08E+0	2.21E+1	1.62E+2	2.15E+0	1.55E+1	1.14E+2	1.29E+0	9.49E+0	6.98E+1	7.27E-1	5.36E+0	3.94E+1	1.22E-1	8.63E-1	6.31E+0
IX	7.18E-3	6.12E-2	3.78E-1	3.43E-3	2.92E-2	1.81E-1	2.03E-3	1.73E-2	1.07E-1	7.16E-4	6.11E-3	3.77E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.56E+0	5.00E+0	5.53E+0	1.55E+0	4.79E+0	5.29E+0	1.54E+0	4.58E+0	5.05E+0	1.53E+0	4.23E+0	4.65E+0	1.52E+0	3.98E+0	4.36E+0	1.51E+0	3.74E+0	4.08E+0
XII	2.24E-2	1.31E-1	2.13E-1	2.23E-2	1.31E-1	2.12E-1	2.23E-2	1.31E-1	2.12E-1	2.22E-2	1.30E-1	2.11E-1	2.21E-2	1.30E-1	2.10E-1	2.21E-2	1.30E-1	2.10E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.85E-3	1.96E-3	1.96E-3	1.85E-3	1.96E-3	1.96E-3	1.85E-3	1.96E-3	1.96E-3	1.84E-3	1.96E-3	1.96E-3	1.84E-3	1.95E-3	1.95E-3	1.83E-3	1.95E-3	1.95E-3
XVIB	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.82E-3	1.93E-3	1.93E-3	1.82E-3	1.93E-3	1.93E-3
XVIC	1.79E-3	1.89E-3	1.89E-3	1.79E-3	1.89E-3	1.89E-3	1.79E-3	1.89E-3	1.89E-3	1.79E-3	1.89E-3	1.89E-3	1.78E-3	1.88E-3	1.88E-3	1.78E-3	1.88E-3	1.88E-3
XVIIIA	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.80E-2	3.80E-2	3.51E-2	3.80E-2	3.80E-2	3.50E-2	3.78E-2	3.78E-2
XVIIIB	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2	3.24E-2	3.45E-2	3.45E-2	3.24E-2	3.44E-2	3.44E-2	3.23E-2	3.43E-2	3.43E-2
XVIIIC	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.87E-2	2.87E-2	2.76E-2	2.87E-2	2.87E-2	2.76E-2	2.87E-2	2.87E-2	2.74E-2	2.86E-2	2.86E-2
XXA	2.62E-3	2.07E-2	1.43E-1	8.80E-4	6.95E-3	4.81E-2	8.20E-4	6.47E-3	4.48E-2	7.39E-4	5.84E-3	4.04E-2	6.84E-4	5.40E-3	3.73E-2	6.22E-4	4.91E-3	3.40E-2
XXB	2.51E-3	1.48E-2	5.81E-2	8.43E-4	4.98E-3	1.96E-2	7.86E-4	4.64E-3	1.82E-2	7.08E-4	4.18E-3	1.64E-2	6.55E-4	3.87E-3	1.52E-2	5.96E-4	3.52E-3	1.38E-2
XXC	2.29E-3	8.32E-3	1.86E-1	7.69E-4	2.80E-3	6.25E-2	7.16E-4	2.61E-3	5.83E-2	6.46E-4	2.35E-3	5.25E-2	5.97E-4	2.17E-3	4.86E-2	5.43E-4	1.98E-3	4.42E-2
XXIA	1.43E-2	1.48E-1	1.41E+0	1.43E-2	1.48E-1	1.41E+0	1.42E-2	1.47E-1	1.40E+0	1.41E-2	1.46E-1	1.39E+0	1.41E-2	1.46E-1	1.39E+0	1.39E-2	1.44E-1	1.37E+0
XXIB	1.42E-2	1.46E-1	1.30E+0	1.42E-2	1.46E-1	1.29E+0	1.41E-2	1.45E-1	1.29E+0	1.40E-2	1.44E-1	1.28E+0	1.40E-2	1.44E-1	1.28E+0	1.38E-2	1.42E-1	1.26E+0
XXIC	1.40E-2	1.42E-1	1.10E+0	1.40E-2	1.41E-1	1.09E+0	1.40E-2	1.41E-1	1.09E+0	1.39E-2	1.40E-1	1.08E+0	1.38E-2	1.39E-1	1.08E+0	1.37E-2	1.38E-1	1.07E+0
XXII	8.53E-1	1.66E+1	3.09E+1	8.48E-1	1.65E+1	3.08E+1	8.42E-1	1.64E+1	3.06E+1	8.37E-1	1.62E+1	3.04E+1	8.30E-1	1.62E+1	3.02E+1	8.13E-1	1.59E+1	2.97E+1
DOE	3.22E+2	2.45E+3	1.99E+4	3.19E+2	2.44E+3	1.98E+4	3.18E+2	2.43E+3	1.97E+4	3.15E+2	2.41E+3	1.96E+4	3.14E+2	2.41E+3	1.96E+4	3.11E+2	2.39E+3	1.95E+4
DOD	2.24E+2	1.31E-1	2.13E-1	2.23E-2	1.31E-1	2.12E-1	2.23E-2	1.31E-1	2.12E-1	2.22E-2	1.30E-1	2.11E-1	2.21E-2	1.30E-1	2.10E-1	2.21E-2	1.30E-1	2.10E-1
NRC	2.58E+0	5.77E+0	3.21E+1	2.55E+0	5.63E+0	3.08E+1	2.55E+0	5.61E+0	3.07E+1	2.52E+0	5.58E+0	3.05E+1	2.54E+0	5.56E+0	3.03E+1	2.53E+0	5.52E+0	3.00E+1
Total	3.24E+2	2.45E+3	1.99E+4	3.22E+2	2.44E+3	1.98E+4	3.20E+2	2.43E+3	1.97E+4	3.18E+2	2.42E+3	1.97E+4	3.16E+2	2.41E+3	1.96E+4	3.14E+2	2.40E+3	1.95E+4

Medium Population Density With Agriculture - 09-13-94 4:12p
 TABLE K-163. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.13E+0	1.23E+0	1.23E+0	1.09E+0	1.19E+0	1.19E+0	9.67E-1	1.06E+0	1.06E+0	6.49E-1	7.09E-1	7.09E-1	1.65E-1	1.81E-1	1.81E-1
II	4.85E+1	4.75E+2	3.84E+3	4.85E+1	4.74E+2	3.84E+3	4.85E+1	4.74E+2	3.81E+3	4.83E+1	4.70E+2	3.74E+3	3.30E+1	3.29E+2	2.65E+3
III	4.91E-1	5.44E-1	5.44E-1	4.86E-1	5.39E-1	5.39E-1	3.58E-1	3.96E-1	3.96E-1	5.72E-2	6.34E-2	6.34E-2	.00E+0	.00E+0	.00E+0
IV	3.68E-1	2.33E+0	4.56E+0	3.59E-1	2.27E+0	4.45E+0	3.26E-1	2.06E+0	4.04E+0	5.85E-2	3.70E-1	7.25E-1	.00E+0	.00E+0	.00E+0
V	2.95E+1	3.22E+1	3.22E+1	2.94E+1	3.21E+1	3.21E+1	2.84E+1	3.10E+1	3.10E+1	2.19E+1	2.39E+1	2.39E+1	6.17E+0	6.73E+0	6.73E+0
VI	1.01E+1	7.87E+1	6.84E+2	1.01E+1	7.87E+1	6.84E+2	1.01E+1	7.85E+1	6.83E+2	9.61E+0	7.60E+1	6.62E+2	6.91E+0	5.76E+1	5.06E+2
VII	6.95E+0	5.12E+1	3.76E+2	5.87E+0	4.20E+1	3.08E+2	1.84E+0	1.34E+1	9.84E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	2.49E-2	2.12E-1	1.31E+0	1.30E-2	1.11E-1	6.82E-1	1.35E-3	1.15E-2	7.08E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.56E+0	5.13E+0	5.68E+0	1.56E+0	5.12E+0	5.67E+0	1.54E+0	4.67E+0	5.15E+0	1.47E+0	3.13E+0	3.38E+0	1.18E+0	1.69E+0	1.77E+0
XII	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.22E-2	1.30E-1	2.11E-1	2.17E-2	1.27E-1	2.06E-1	6.98E-3	4.10E-2	6.63E-2
XIIIA	1.95E-4	1.31E-3	3.19E-3	7.46E-5	5.01E-4	1.22E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.80E-4	8.90E-4	1.35E-3	6.90E-5	3.41E-4	5.15E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.56E-4	4.92E-4	9.58E-3	5.96E-5	1.88E-4	3.67E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.85E-3	1.97E-3	1.97E-3	1.85E-3	1.97E-3	1.97E-3	1.85E-3	1.96E-3	1.96E-3	1.79E-3	1.91E-3	1.91E-3	1.01E-3	1.08E-3	1.08E-3
XVIB	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.78E-3	1.88E-3	1.88E-3	1.01E-3	1.07E-3	1.07E-3
XVIC	1.79E-3	1.90E-3	1.90E-3	1.79E-3	1.89E-3	1.89E-3	1.79E-3	1.89E-3	1.89E-3	1.74E-3	1.84E-3	1.84E-3	9.83E-4	1.04E-3	1.04E-3
XVIIIA	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.37E-2	3.65E-2	3.65E-2	2.31E-2	2.50E-2	2.50E-2
XVIIIB	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2	3.24E-2	3.45E-2	3.45E-2	3.11E-2	3.31E-2	3.31E-2	2.13E-2	2.27E-2	2.27E-2
XVIIIC	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.87E-2	2.87E-2	2.65E-2	2.75E-2	2.75E-2	1.82E-2	1.89E-2	1.89E-2
XXA	1.51E-2	1.19E-1	8.21E-1	6.55E-3	5.17E-2	3.57E-1	7.49E-4	5.92E-3	4.09E-2	2.83E-4	2.23E-3	1.55E-2	.00E+0	.00E+0	.00E+0
XXB	1.44E-2	8.52E-2	3.34E-1	6.28E-3	3.70E-2	1.45E-1	7.18E-4	4.24E-3	1.66E-2	2.71E-4	1.60E-3	6.30E-3	.00E+0	.00E+0	.00E+0
XXC	1.32E-2	4.79E-2	1.07E+0	5.72E-3	2.08E-2	4.65E-1	6.55E-4	2.38E-3	5.32E-2	2.47E-4	9.01E-4	2.01E-2	.00E+0	.00E+0	.00E+0
XXIA	1.43E-2	1.48E-1	1.41E+0	1.43E-2	1.48E-1	1.41E+0	1.42E-2	1.47E-1	1.40E+0	1.22E-2	1.26E-1	1.20E+0	4.36E-3	4.52E-2	4.30E-1
XXIB	1.42E-2	1.46E-1	1.30E+0	1.42E-2	1.46E-1	1.30E+0	1.41E-2	1.45E-1	1.29E+0	1.21E-2	1.25E-1	1.11E+0	4.34E-3	4.46E-2	3.96E-1
XXIC	1.41E-2	1.42E-1	1.10E+0	1.41E-2	1.42E-1	1.10E+0	1.39E-2	1.41E-1	1.09E+0	1.20E-2	1.21E-1	9.36E-1	4.28E-3	4.32E-2	3.35E-1
XXII	8.59E-1	1.66E+1	3.11E+1	8.57E-1	1.66E+1	3.10E+1	8.40E-1	1.64E+1	3.06E+1	7.68E-1	1.51E+1	2.81E+1	.00E+0	.00E+0	.00E+0
DOE	3.25E+2	2.47E+3	2.00E+4	3.24E+2	2.46E+3	1.99E+4	3.17E+2	2.42E+3	1.97E+4	2.96E+2	2.33E+3	1.90E+4	1.98E+2	1.65E+3	1.41E+4
DOD	2.39E-2	1.39E-1	2.53E-1	2.30E-2	1.34E-1	2.28E-1	2.22E-2	1.30E-1	2.11E-1	2.17E-2	1.27E-1	2.06E-1	6.98E-3	4.10E-2	6.63E-2
NRC	2.74E+0	6.75E+0	4.07E+1	2.63E+0	6.08E+0	3.48E+1	2.55E+0	5.60E+0	3.06E+1	2.41E+0	5.02E+0	2.63E+1	1.54E+0	2.51E+0	1.00E+1
Total	3.28E+2	2.48E+3	2.00E+4	3.26E+2	2.46E+3	2.00E+4	3.20E+2	2.43E+3	1.97E+4	2.98E+2	2.33E+3	1.90E+4	1.99E+2	1.65E+3	1.42E+4

Medium Population Density With Agriculture - 09-13-94 4:12p
 TABLE K-164. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	9.67E-1	1.06E+0	1.06E+0	8.94E-1	9.77E-1	9.77E-1	8.45E-1	9.23E-1	9.23E-1	7.78E-1	8.50E-1	8.50E-1	7.36E-1	8.04E-1	8.04E-1	6.49E-1	7.09E-1	7.09E-1
II	4.85E+1	4.74E+2	3.81E+3	4.85E+1	4.73E+2	3.80E+3	4.85E+1	4.73E+2	3.79E+3	4.84E+1	4.72E+2	3.78E+3	4.84E+1	4.71E+2	3.76E+3	4.83E+1	4.70E+2	3.74E+3
III	3.58E-1	3.96E-1	3.96E-1	3.00E-1	3.32E-1	3.32E-1	2.39E-1	2.65E-1	2.65E-1	1.41E-1	1.56E-1	1.56E-1	8.14E-2	9.01E-2	9.01E-2	5.72E-2	6.34E-2	6.34E-2
IV	3.26E-1	2.06E+0	4.04E+0	2.97E-1	1.87E+0	3.68E+0	2.67E-1	1.69E+0	3.31E+0	2.07E-1	1.31E+0	2.57E+0	1.48E-1	9.34E-1	1.83E+0	5.85E-2	3.70E-1	7.25E-1
V	2.84E+1	3.10E+1	3.10E+1	2.75E+1	3.00E+1	3.00E+1	2.66E+1	2.91E+1	2.91E+1	2.49E+1	2.71E+1	2.71E+1	2.31E+1	2.52E+1	2.52E+1	2.19E+1	2.39E+1	2.39E+1
VI	1.01E+1	7.85E+1	6.83E+2	1.00E+1	7.84E+1	6.82E+2	1.00E+1	7.81E+1	6.80E+2	9.89E+0	7.76E+1	6.76E+2	9.78E+0	7.70E+1	6.71E+2	9.61E+0	7.60E+1	6.62E+2
VII	1.84E+0	1.34E+1	9.84E+1	6.46E-1	4.75E+0	3.50E+1	6.55E-2	4.54E-1	3.31E+0	7.01E-3	4.07E-2	2.88E-1	2.09E-3	1.14E-2	7.97E-2	.00E+0	.00E+0	.00E+0
IX	1.35E-3	1.15E-2	7.08E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.54E+0	4.67E+0	5.15E+0	1.53E+0	4.20E+0	4.61E+0	1.52E+0	3.90E+0	4.27E+0	1.50E+0	3.56E+0	3.88E+0	1.49E+0	3.36E+0	3.64E+0	1.47E+0	3.13E+0	3.38E+0
XII	2.22E-2	1.30E-1	2.11E-1	2.21E-2	1.30E-1	2.10E-1	2.20E-2	1.29E-1	2.09E-1	2.19E-2	1.29E-1	2.08E-1	2.18E-2	1.28E-1	2.07E-1	2.17E-2	1.27E-1	2.06E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.85E-3	1.96E-3	1.96E-3	1.84E-3	1.95E-3	1.95E-3	1.83E-3	1.95E-3	1.95E-3	1.82E-3	1.94E-3	1.94E-3	1.81E-3	1.93E-3	1.93E-3	1.79E-3	1.91E-3	1.91E-3
XVIB	1.83E-3	1.94E-3	1.94E-3	1.82E-3	1.93E-3	1.93E-3	1.82E-3	1.93E-3	1.93E-3	1.81E-3	1.92E-3	1.92E-3	1.80E-3	1.91E-3	1.91E-3	1.78E-3	1.88E-3	1.88E-3
XVIC	1.79E-3	1.89E-3	1.89E-3	1.78E-3	1.88E-3	1.88E-3	1.78E-3	1.88E-3	1.88E-3	1.77E-3	1.87E-3	1.87E-3	1.76E-3	1.86E-3	1.86E-3	1.74E-3	1.84E-3	1.84E-3
XVIIIA	3.52E-2	3.81E-2	3.81E-2	3.51E-2	3.80E-2	3.80E-2	3.50E-2	3.78E-2	3.78E-2	3.46E-2	3.74E-2	3.74E-2	3.43E-2	3.70E-2	3.70E-2	3.37E-2	3.65E-2	3.65E-2
XVIIIB	3.24E-2	3.45E-2	3.45E-2	3.24E-2	3.44E-2	3.44E-2	3.22E-2	3.43E-2	3.43E-2	3.19E-2	3.39E-2	3.39E-2	3.16E-2	3.36E-2	3.36E-2	3.11E-2	3.31E-2	3.31E-2
XVIIIC	2.76E-2	2.87E-2	2.87E-2	2.76E-2	2.87E-2	2.87E-2	2.74E-2	2.85E-2	2.85E-2	2.71E-2	2.83E-2	2.83E-2	2.69E-2	2.80E-2	2.80E-2	2.65E-2	2.75E-2	2.75E-2
XXA	7.49E-4	5.92E-3	4.09E-2	6.33E-4	5.00E-3	3.46E-2	5.60E-4	4.42E-3	3.06E-2	4.69E-4	3.70E-3	2.56E-2	3.95E-4	3.12E-3	2.16E-2	2.83E-4	2.23E-3	1.55E-2
XXB	7.18E-4	4.24E-3	1.66E-2	6.06E-4	3.58E-3	1.41E-2	5.37E-4	3.17E-3	1.24E-2	4.49E-4	2.65E-3	1.04E-2	3.78E-4	2.23E-3	8.78E-3	2.71E-4	1.60E-3	6.30E-3
XXC	6.55E-4	2.38E-3	5.32E-2	5.53E-4	2.01E-3	4.50E-2	4.89E-4	1.78E-3	3.98E-2	4.10E-4	1.49E-3	3.33E-2	3.45E-4	1.26E-3	2.81E-2	2.47E-4	9.01E-4	2.01E-2
XXIA	1.42E-2	1.47E-1	1.40E+0	1.41E-2	1.46E-1	1.39E+0	1.39E-2	1.44E-1	1.37E+0	1.36E-2	1.41E-1	1.34E+0	1.30E-2	1.34E-1	1.28E+0	1.22E-2	1.26E-1	1.20E+0
XXIB	1.41E-2	1.45E-1	1.29E+0	1.40E-2	1.44E-1	1.28E+0	1.38E-2	1.42E-1	1.26E+0	1.35E-2	1.39E-1	1.23E+0	1.29E-2	1.33E-1	1.18E+0	1.21E-2	1.25E-1	1.11E+0
XXIC	1.39E-2	1.41E-1	1.09E+0	1.38E-2	1.39E-1	1.08E+0	1.37E-2	1.38E-1	1.07E+0	1.33E-2	1.34E-1	1.04E+0	1.27E-2	1.29E-1	9.95E-1	1.20E-2	1.21E-1	9.36E-1
XXII	8.40E-1	1.64E+1	3.06E+1	8.31E-1	1.62E+1	3.02E+1	8.10E-1	1.59E+1	2.96E+1	7.88E-1	1.55E+1	2.88E+1	7.80E-1	1.53E+1	2.85E+1	7.68E-1	1.51E+1	2.81E+1
DOE	3.17E+2	2.42E+3	1.97E+4	3.14E+2	2.41E+3	1.96E+4	3.11E+2	2.39E+3	1.95E+4	3.06E+2	2.37E+3	1.94E+4	3.01E+2	2.36E+3	1.92E+4	2.96E+2	2.33E+3	1.90E+4
DOD	2.22E+2	1.30E+1	2.11E-1	2.21E-2	1.30E-1	2.10E-1	2.20E-2	1.29E-1	2.09E-1	2.19E-2	1.29E-1	2.08E-1	2.18E-2	1.28E-1	2.07E-1	2.17E-2	1.27E-1	2.06E-1
NRC	2.55E+0	5.60E+0	3.06E+1	2.54E+0	5.55E+0	3.02E+1	2.52E+0	5.51E+0	2.99E+1	2.49E+0	5.40E+0	2.91E+1	2.46E+0	5.24E+0	2.79E+1	2.41E+0	5.02E+0	2.63E+1
Total	3.20E+2	2.43E+3	1.97E+4	3.16E+2	2.41E+3	1.96E+4	3.13E+2	2.40E+3	1.95E+4	3.09E+2	2.38E+3	1.94E+4	3.04E+2	2.36E+3	1.92E+4	2.98E+2	2.33E+3	1.90E+4

Medium Population Density With Agriculture - 09-13-94 4:12p
 TABLE K-165. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.51E-1	8.21E-1	8.21E-1	7.38E-1	8.07E-1	8.07E-1	6.97E-1	7.62E-1	7.62E-1	5.60E-1	6.12E-1	6.12E-1	2.51E-1	2.74E-1	2.74E-1
II	3.57E+1	3.49E+2	2.85E+3	3.57E+1	3.49E+2	2.85E+3	3.56E+1	3.49E+2	2.84E+3	3.56E+1	3.48E+2	2.81E+3	3.44E+1	3.36E+2	2.67E+3
III	3.25E-1	3.60E-1	3.60E-1	3.25E-1	3.60E-1	3.60E-1	3.03E-1	3.36E-1	3.36E-1	1.61E-1	1.78E-1	1.78E-1	.00E+0	.00E+0	.00E+0
IV	2.34E-1	1.45E+0	2.92E+0	2.32E-1	1.44E+0	2.89E+0	2.21E-1	1.37E+0	2.75E+0	1.74E-1	1.08E+0	2.17E+0	.00E+0	.00E+0	.00E+0
V	1.95E+1	2.13E+1	2.13E+1	1.95E+1	2.12E+1	2.12E+1	1.93E+1	2.10E+1	2.10E+1	1.77E+1	1.92E+1	1.92E+1	1.16E+1	1.26E+1	1.26E+1
VI	6.65E+0	5.10E+1	4.64E+2	6.65E+0	5.10E+1	4.64E+2	6.64E+0	5.10E+1	4.64E+2	6.55E+0	5.07E+1	4.62E+2	5.90E+0	4.70E+1	4.30E+2
VII	6.37E+0	4.94E+1	3.71E+2	5.32E+0	4.03E+1	3.01E+2	3.92E+0	2.92E+1	2.18E+2	1.01E-1	7.55E-1	5.63E+0	.00E+0	.00E+0	.00E+0
IX	2.53E-2	2.18E-1	1.35E+0	1.84E-2	1.58E-1	9.82E-1	6.31E-3	5.42E-2	3.37E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.13E+0	3.46E+0	9.92E-1	2.36E+0	2.57E+0	8.69E-1	1.43E+0	1.52E+0
XII	1.89E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.77E-1	1.86E-2	1.09E-1	1.75E-1	1.75E-2	1.02E-1	1.65E-1
XIIIA	1.37E-4	8.95E-4	2.24E-3	9.80E-5	6.42E-4	1.61E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.26E-4	6.09E-4	9.44E-4	9.03E-5	4.37E-4	6.77E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.08E-4	3.35E-4	6.46E-3	7.71E-5	2.40E-4	4.63E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3	1.21E-3	1.29E-3	1.29E-3	1.08E-3	1.16E-3	1.16E-3
XVIB	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.20E-3	1.27E-3	1.27E-3	1.07E-3	1.14E-3	1.14E-3
XVIC	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3	1.18E-3	1.24E-3	1.24E-3	1.05E-3	1.12E-3	1.12E-3
XVIIIA	2.71E-2	2.92E-2	2.92E-2	2.71E-2	2.92E-2	2.92E-2	2.71E-2	2.92E-2	2.92E-2	2.69E-2	2.90E-2	2.90E-2	2.35E-2	2.54E-2	2.54E-2
XVIIIB	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.64E-2	2.64E-2	2.47E-2	2.62E-2	2.62E-2	2.16E-2	2.29E-2	2.29E-2
XVIIIC	2.11E-2	2.19E-2	2.19E-2	2.11E-2	2.19E-2	2.19E-2	2.11E-2	2.19E-2	2.19E-2	2.09E-2	2.17E-2	2.17E-2	1.83E-2	1.90E-2	1.90E-2
XXA	1.23E-2	9.74E-2	7.70E-1	7.76E-3	6.14E-2	4.85E-1	1.62E-3	1.28E-2	1.01E-1	3.85E-4	3.05E-3	2.41E-2	.00E+0	.00E+0	.00E+0
XXB	1.18E-2	6.96E-2	3.11E-1	7.41E-3	4.39E-2	1.96E-1	1.55E-3	9.15E-3	4.09E-2	3.68E-4	2.18E-3	9.75E-3	.00E+0	.00E+0	.00E+0
XXC	1.07E-2	3.92E-2	8.89E-1	6.76E-3	2.47E-2	5.61E-1	1.41E-3	5.16E-3	1.17E-1	3.35E-4	1.23E-3	2.78E-2	.00E+0	.00E+0	.00E+0
XXIA	9.50E-3	9.83E-2	9.36E-1	9.50E-3	9.83E-2	9.36E-1	9.49E-3	9.82E-2	9.35E-1	9.24E-3	9.56E-2	9.11E-1	6.28E-3	6.50E-2	6.19E-1
XXIB	9.44E-3	9.70E-2	8.63E-1	9.44E-3	9.70E-2	8.63E-1	9.44E-3	9.69E-2	8.62E-1	9.19E-3	9.44E-2	8.39E-1	6.24E-3	6.41E-2	5.70E-1
XXIC	9.31E-3	9.41E-2	7.29E-1	9.31E-3	9.41E-2	7.29E-1	9.31E-3	9.40E-2	7.28E-1	9.06E-3	9.15E-2	7.09E-1	6.16E-3	6.22E-2	4.82E-1
XXII	6.01E-1	1.07E+1	2.07E+1	6.00E-1	1.07E+1	2.07E+1	5.97E-1	1.07E+1	2.06E+1	5.69E-1	1.02E+1	1.98E+1	1.81E-1	4.83E+0	9.41E+0
DOE	2.19E+2	1.66E+3	1.39E+4	2.18E+2	1.65E+3	1.39E+4	2.16E+2	1.64E+3	1.38E+4	2.08E+2	1.59E+3	1.35E+4	1.82E+2	1.45E+3	1.25E+4
DOD	1.99E-2	1.15E-1	2.05E-1	1.96E-2	1.14E-1	1.97E-1	1.88E-2	1.10E-1	1.77E-1	1.86E-2	1.09E-1	1.75E-1	1.75E-2	1.02E-1	1.65E-1
NRC	2.05E+0	4.87E+0	2.95E+1	1.99E+0	4.52E+0	2.61E+1	1.91E+0	4.03E+0	2.15E+1	1.88E+0	3.87E+0	2.01E+1	1.60E+0	2.96E+0	1.38E+1
Total	2.21E+2	1.66E+3	1.40E+4	2.20E+2	1.65E+3	1.39E+4	2.18E+2	1.64E+3	1.38E+4	2.10E+2	1.60E+3	1.35E+4	1.84E+2	1.45E+3	1.25E+4

Medium Population Density With Agriculture - 09-13-94 4:12p
 TABLE K-167. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.46E-1	8.15E-1	8.15E-1	7.22E-1	7.89E-1	7.89E-1	6.38E-1	6.97E-1	6.97E-1	4.28E-1	4.68E-1	4.68E-1	1.09E-1	1.19E-1	1.19E-1
II	3.57E+1	3.49E+2	2.85E+3	3.57E+1	3.49E+2	2.85E+3	3.56E+1	3.48E+2	2.83E+3	3.55E+1	3.46E+2	2.77E+3	2.42E+1	2.42E+2	1.96E+3
III	3.25E-1	3.60E-1	3.60E-1	3.22E-1	3.56E-1	3.56E-1	2.37E-1	2.62E-1	2.62E-1	3.79E-2	4.19E-2	4.19E-2	.00E+0	.00E+0	.00E+0
IV	2.33E-1	1.45E+0	2.91E+0	2.27E-1	1.41E+0	2.83E+0	2.07E-1	1.28E+0	2.58E+0	3.71E-2	2.30E-1	4.62E-1	.00E+0	.00E+0	.00E+0
V	1.95E+1	2.13E+1	2.13E+1	1.94E+1	2.12E+1	2.12E+1	1.88E+1	2.04E+1	2.04E+1	1.45E+1	1.58E+1	1.58E+1	4.08E+0	4.44E+0	4.44E+0
VI	6.65E+0	5.10E+1	4.64E+2	6.64E+0	5.10E+1	4.64E+2	6.61E+0	5.09E+1	4.64E+2	6.29E+0	4.92E+1	4.50E+2	4.53E+0	3.73E+1	3.44E+2
VII	5.85E+0	4.49E+1	3.36E+2	4.90E+0	3.68E+1	2.75E+2	1.54E+0	1.17E+1	8.78E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	2.19E-2	1.88E-1	1.17E+0	1.14E-2	9.80E-2	6.09E-1	1.18E-3	1.02E-2	6.31E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.21E+0	3.55E+0	1.01E+0	2.93E+0	3.23E+0	9.61E-1	1.98E+0	2.14E+0	7.71E-1	1.09E+0	1.14E+0
XII	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1	1.87E-2	1.09E-1	1.76E-1	1.82E-2	1.06E-1	1.72E-1	5.87E-3	3.43E-2	5.54E-2
XIIIA	1.24E-4	8.12E-4	2.04E-3	4.75E-5	3.11E-4	7.79E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.14E-4	5.52E-4	8.56E-4	4.38E-5	2.12E-4	3.28E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	9.75E-5	3.04E-4	5.86E-3	3.74E-5	1.16E-4	2.25E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3	1.18E-3	1.26E-3	1.26E-3	6.70E-4	7.17E-4	7.17E-4
XVIB	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.17E-3	1.25E-3	1.25E-3	6.64E-4	7.08E-4	7.08E-4
XVIC	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3	1.18E-3	1.25E-3	1.25E-3	1.15E-3	1.22E-3	1.22E-3	6.51E-4	6.91E-4	6.91E-4
XVIIIA	2.71E-2	2.92E-2	2.92E-2	2.71E-2	2.92E-2	2.92E-2	2.70E-2	2.92E-2	2.92E-2	2.59E-2	2.80E-2	2.80E-2	1.78E-2	1.92E-2	1.92E-2
XVIIIB	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.63E-2	2.63E-2	2.38E-2	2.52E-2	2.52E-2	1.63E-2	1.73E-2	1.73E-2
XVIIIC	2.11E-2	2.19E-2	2.19E-2	2.11E-2	2.19E-2	2.19E-2	2.10E-2	2.19E-2	2.19E-2	2.02E-2	2.09E-2	2.09E-2	1.38E-2	1.44E-2	1.44E-2
XXA	9.32E-3	7.38E-2	5.83E-1	4.05E-3	3.21E-2	2.54E-1	4.64E-4	3.67E-3	2.91E-2	1.75E-4	1.39E-3	1.10E-2	.00E+0	.00E+0	.00E+0
XXB	8.91E-3	5.27E-2	2.36E-1	3.87E-3	2.29E-2	1.03E-1	4.43E-4	2.62E-3	1.17E-2	1.67E-4	9.91E-4	4.44E-3	.00E+0	.00E+0	.00E+0
XXC	8.12E-3	2.97E-2	6.74E-1	3.53E-3	1.29E-2	2.93E-1	4.04E-4	1.48E-3	3.35E-2	1.53E-4	5.58E-4	1.27E-2	.00E+0	.00E+0	.00E+0
XXIA	9.50E-3	9.83E-2	9.36E-1	9.50E-3	9.83E-2	9.36E-1	9.43E-3	9.75E-2	9.29E-1	8.10E-3	8.39E-2	7.98E-1	2.90E-3	3.00E-2	2.85E-1
XXIB	9.44E-3	9.70E-2	8.63E-1	9.44E-3	9.70E-2	8.63E-1	9.37E-3	9.62E-2	8.56E-1	8.06E-3	8.28E-2	7.36E-1	2.88E-3	2.96E-2	2.63E-1
XXIC	9.31E-3	9.41E-2	7.29E-1	9.31E-3	9.41E-2	7.29E-1	9.24E-3	9.33E-2	7.23E-1	7.94E-3	8.02E-2	6.22E-1	2.84E-3	2.87E-2	2.22E-1
XXII	6.01E-1	1.07E+1	2.07E+1	5.99E-1	1.07E+1	2.07E+1	5.87E-1	1.05E+1	2.04E+1	5.37E-1	9.73E+0	1.88E+1	.00E+0	.00E+0	.00E+0
DOE	2.18E+2	1.65E+3	1.39E+4	2.17E+2	1.64E+3	1.38E+4	2.12E+2	1.61E+3	1.36E+4	1.98E+2	1.55E+3	1.31E+4	1.32E+2	1.10E+3	9.77E+3
DOD	1.98E-2	1.15E-1	2.02E-1	1.92E-2	1.12E-1	1.87E-1	1.87E-2	1.09E-1	1.76E-1	1.82E-2	1.06E-1	1.72E-1	5.87E-3	3.43E-2	5.54E-2
NRC	2.01E+0	4.64E+0	2.73E+1	1.94E+0	4.23E+0	2.33E+1	1.89E+0	3.93E+0	2.05E+1	1.79E+0	3.54E+0	1.77E+1	1.15E+0	1.80E+0	6.81E+0
Total	2.21E+2	1.66E+3	1.39E+4	2.19E+2	1.65E+3	1.39E+4	2.14E+2	1.62E+3	1.36E+4	2.00E+2	1.55E+3	1.31E+4	1.33E+2	1.10E+3	9.77E+3

Medium Population Density With Agriculture - 09-13-94 4:12p
 TABLE K-168. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																	
	1.E-4			2.E-4			3.E-4			5.E-4			7.E-4			1.E-3		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.38E-1	6.97E-1	6.97E-1	5.90E-1	6.45E-1	6.45E-1	5.58E-1	6.10E-1	6.10E-1	5.14E-1	5.62E-1	5.62E-1	4.86E-1	5.31E-1	5.31E-1	4.28E-1	4.68E-1	4.68E-1
II	3.56E+1	3.48E+2	2.83E+3	3.56E+1	3.48E+2	2.82E+3	3.56E+1	3.48E+2	2.81E+3	3.56E+1	3.47E+2	2.80E+3	3.55E+1	3.47E+2	2.79E+3	3.55E+1	3.46E+2	2.77E+3
III	2.37E-1	2.62E-1	2.62E-1	1.98E-1	2.20E-1	2.20E-1	1.58E-1	1.75E-1	1.75E-1	9.31E-2	1.03E-1	1.03E-1	5.38E-2	5.96E-2	5.96E-2	3.79E-2	4.19E-2	4.19E-2
IV	2.07E-1	1.28E+0	2.58E+0	1.88E-1	1.17E+0	2.34E+0	1.69E-1	1.05E+0	2.11E+0	1.31E-1	8.15E-1	1.64E+0	9.37E-2	5.81E-1	1.17E+0	3.71E-2	2.30E-1	4.62E-1
V	1.88E+1	2.04E+1	2.04E+1	1.82E+1	1.98E+1	1.98E+1	1.76E+1	1.92E+1	1.92E+1	1.64E+1	1.79E+1	1.79E+1	1.53E+1	1.66E+1	1.66E+1	1.45E+1	1.58E+1	1.58E+1
VI	6.61E+0	5.09E+1	4.64E+2	6.58E+0	5.08E+1	4.63E+2	6.55E+0	5.06E+1	4.62E+2	6.48E+0	5.03E+1	4.59E+2	6.41E+0	4.99E+1	4.55E+2	6.29E+0	4.92E+1	4.50E+2
VII	1.54E+0	1.17E+1	8.78E+1	5.43E-1	4.17E+0	3.12E+1	5.43E-2	3.97E-1	2.95E+0	5.59E-3	3.53E-2	2.56E-1	1.64E-3	9.87E-3	7.10E-2	.00E+0	.00E+0	.00E+0
IX	1.18E-3	1.02E-2	6.31E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.01E+0	2.93E+0	3.23E+0	1.00E+0	2.64E+0	2.90E+0	9.96E-1	2.46E+0	2.69E+0	9.85E-1	2.25E+0	2.45E+0	9.74E-1	2.12E+0	2.30E+0	9.61E-1	1.98E+0	2.14E+0
XII	1.87E-2	1.09E-1	1.76E-1	1.86E-2	1.08E-1	1.75E-1	1.85E-2	1.08E-1	1.75E-1	1.84E-2	1.08E-1	1.74E-1	1.84E-2	1.07E-1	1.73E-1	1.82E-2	1.06E-1	1.72E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.22E-3	1.30E-3	1.30E-3	1.21E-3	1.29E-3	1.29E-3	1.21E-3	1.29E-3	1.29E-3	1.20E-3	1.28E-3	1.28E-3	1.20E-3	1.28E-3	1.28E-3	1.18E-3	1.26E-3	1.26E-3
XVIB	1.21E-3	1.28E-3	1.28E-3	1.20E-3	1.28E-3	1.28E-3	1.20E-3	1.27E-3	1.27E-3	1.27E-3	1.27E-3	1.27E-3	1.19E-3	1.26E-3	1.26E-3	1.17E-3	1.25E-3	1.25E-3
XVIC	1.18E-3	1.25E-3	1.25E-3	1.18E-3	1.25E-3	1.25E-3	1.18E-3	1.24E-3	1.24E-3	1.17E-3	1.24E-3	1.24E-3	1.17E-3	1.23E-3	1.23E-3	1.15E-3	1.22E-3	1.22E-3
XVIIIA	2.70E-2	2.92E-2	2.92E-2	2.70E-2	2.91E-2	2.91E-2	2.69E-2	2.90E-2	2.90E-2	2.66E-2	2.87E-2	2.87E-2	2.63E-2	2.84E-2	2.84E-2	2.59E-2	2.80E-2	2.80E-2
XVIIIB	2.48E-2	2.63E-2	2.63E-2	2.48E-2	2.63E-2	2.63E-2	2.46E-2	2.62E-2	2.62E-2	2.44E-2	2.59E-2	2.59E-2	2.42E-2	2.56E-2	2.56E-2	2.38E-2	2.52E-2	2.52E-2
XVIIIC	2.10E-2	2.19E-2	2.19E-2	2.10E-2	2.18E-2	2.18E-2	2.09E-2	2.17E-2	2.17E-2	2.07E-2	2.15E-2	2.15E-2	2.05E-2	2.13E-2	2.13E-2	2.02E-2	2.09E-2	2.09E-2
XXA	4.64E-4	3.67E-3	2.91E-2	3.92E-4	3.10E-3	2.45E-2	3.46E-4	2.74E-3	2.17E-2	2.90E-4	2.30E-3	1.82E-2	2.44E-4	1.94E-3	1.53E-2	1.75E-4	1.39E-3	1.10E-2
XXB	4.43E-4	2.62E-3	1.17E-2	3.74E-4	2.21E-3	9.92E-3	3.31E-4	1.96E-3	8.78E-3	2.77E-4	1.64E-3	7.35E-3	2.33E-4	1.38E-3	6.19E-3	1.67E-4	9.91E-4	4.44E-3
XXC	4.04E-4	1.48E-3	3.35E-2	3.41E-4	1.25E-3	2.83E-2	3.02E-4	1.10E-3	2.51E-2	2.53E-4	9.24E-4	2.10E-2	2.13E-4	7.79E-4	1.77E-2	1.53E-4	5.58E-4	1.27E-2
XXIA	9.43E-3	9.75E-2	9.29E-1	9.33E-3	9.65E-2	9.19E-1	9.23E-3	9.55E-2	9.10E-1	9.01E-3	9.32E-2	8.87E-1	8.61E-3	8.91E-2	8.49E-1	8.10E-3	8.39E-2	7.98E-1
XXIB	9.37E-3	9.62E-2	8.56E-1	9.27E-3	9.53E-2	8.47E-1	9.18E-3	9.43E-2	8.38E-1	8.95E-3	9.20E-2	8.18E-1	8.56E-3	8.79E-2	7.82E-1	8.06E-3	8.28E-2	7.36E-1
XXIC	9.24E-3	9.33E-2	7.23E-1	9.14E-3	9.24E-2	7.16E-1	9.05E-3	9.14E-2	7.08E-1	8.83E-3	8.92E-2	6.91E-1	8.44E-3	8.53E-2	6.61E-1	7.94E-3	8.02E-2	6.22E-1
XXII	5.87E-1	1.05E+1	2.04E+1	5.81E-1	1.04E+1	2.02E+1	5.67E-1	1.02E+1	1.98E+1	5.51E-1	9.95E+0	1.92E+1	5.45E-1	9.86E+0	1.90E+1	5.37E-1	9.73E+0	1.88E+1
DOE	2.12E+2	1.61E+3	1.36E+4	2.10E+2	1.60E+3	1.35E+4	2.08E+2	1.59E+3	1.35E+4	2.05E+2	1.58E+3	1.34E+4	2.02E+2	1.57E+3	1.33E+4	1.98E+2	1.55E+3	1.31E+4
DOD	1.87E+2	1.09E+1	1.76E-1	1.86E-2	1.08E-1	1.75E-1	1.85E-2	1.08E-1	1.75E-1	1.84E-2	1.08E-1	1.74E-1	1.84E-2	1.07E-1	1.73E-1	1.82E-2	1.06E-1	1.72E-1
NRC	1.89E+0	3.93E+0	2.05E+1	1.89E+0	3.90E+0	2.03E+1	1.88E+0	3.86E+0	2.00E+1	1.85E+0	3.79E+0	1.95E+1	1.83E+0	3.68E+0	1.87E+1	1.79E+0	3.54E+0	1.77E+1
Total	2.14E+2	1.62E+3	1.36E+4	2.12E+2	1.61E+3	1.35E+4	2.10E+2	1.60E+3	1.35E+4	2.07E+2	1.58E+3	1.34E+4	2.04E+2	1.57E+3	1.33E+4	2.00E+2	1.55E+3	1.31E+4

Medium Population Density Without Agriculture - 09-13-94 4:12p
 TABLE K-169. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.16E+3	2.35E+3	2.35E+3	2.12E+3	2.30E+3	2.30E+3	2.01E+3	2.18E+3	2.18E+3	1.61E+3	1.75E+3	1.75E+3	7.21E+2	7.83E+2	7.83E+2
II	1.84E+4	1.71E+5	8.37E+5	1.84E+4	1.71E+5	8.37E+5	1.84E+4	1.71E+5	8.37E+5	1.83E+4	1.70E+5	8.29E+5	1.77E+4	1.64E+5	7.90E+5
III	9.48E+2	1.05E+3	1.05E+3	9.47E+2	1.05E+3	1.05E+3	8.83E+2	9.78E+2	9.78E+2	4.68E+2	5.18E+2	5.18E+2	.00E+0	.00E+0	.00E+0
IV	2.82E+2	7.01E+2	7.07E+2	2.79E+2	6.92E+2	6.99E+2	2.66E+2	6.61E+2	6.67E+2	2.09E+2	5.20E+2	5.25E+2	.00E+0	.00E+0	.00E+0
V	5.61E+4	6.08E+4	6.08E+4	5.60E+4	6.08E+4	6.08E+4	5.54E+4	6.01E+4	6.01E+4	5.07E+4	5.50E+4	5.50E+4	3.33E+4	3.61E+4	3.61E+4
VI	1.52E+4	9.24E+4	2.46E+5	1.52E+4	9.24E+4	2.46E+5	1.52E+4	9.24E+4	2.46E+5	1.50E+4	9.18E+4	2.45E+5	1.34E+4	8.49E+4	2.27E+5
VII	8.24E+4	7.40E+5	6.01E+6	6.74E+4	6.01E+5	4.88E+6	4.89E+4	4.36E+5	3.54E+6	1.26E+3	1.12E+4	9.13E+4	.00E+0	.00E+0	.00E+0
IX	3.79E+2	3.41E+3	2.17E+4	2.76E+2	2.48E+3	1.58E+4	9.46E+1	8.50E+2	5.42E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.39E+3	1.86E+4	2.12E+4	1.39E+3	1.86E+4	2.11E+4	1.38E+3	1.80E+4	2.05E+4	1.35E+3	1.20E+4	1.36E+4	1.19E+3	5.57E+3	6.23E+3
XII	5.11E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.03E+1	1.54E+2	1.58E+2	4.75E+1	1.45E+2	1.49E+2
XIIIA	2.13E-1	6.93E-1	8.00E-1	1.53E-1	4.97E-1	5.74E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.71E-1	3.05E-1	3.25E-1	1.23E-1	2.19E-1	2.33E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.13E-1	1.34E-1	4.16E+1	8.10E-2	9.59E-2	2.98E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E+0	3.84E+0	3.84E+0	3.65E+0	3.84E+0	3.84E+0	3.65E+0	3.84E+0	3.84E+0	3.61E+0	3.80E+0	3.80E+0	3.18E+0	3.36E+0	3.36E+0
XVIB	3.61E+0	3.79E+0	3.79E+0	3.61E+0	3.79E+0	3.79E+0	3.61E+0	3.78E+0	3.78E+0	3.57E+0	3.75E+0	3.75E+0	3.14E+0	3.31E+0	3.31E+0
XVIC	3.52E+0	3.67E+0	3.67E+0	3.52E+0	3.67E+0	3.67E+0	3.52E+0	3.67E+0	3.67E+0	3.48E+0	3.64E+0	3.64E+0	3.06E+0	3.21E+0	3.21E+0
XVIIIA	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.02E+1	1.13E+1	1.13E+1	8.93E+0	9.88E+0	9.88E+0
XVIIIB	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	1.00E+1	1.11E+1	1.11E+1	8.78E+0	9.70E+0	9.70E+0
XVIIIC	9.79E+0	1.07E+1	1.07E+1	9.79E+0	1.07E+1	1.07E+1	9.79E+0	1.07E+1	1.07E+1	9.72E+0	1.06E+1	1.06E+1	8.50E+0	9.27E+0	9.27E+0
XXA	3.02E+0	1.07E+1	3.69E+1	1.91E+0	6.72E+0	2.33E+1	3.97E-1	1.40E+0	4.86E+0	9.35E-2	3.30E-1	1.15E+0	.00E+0	.00E+0	.00E+0
XXB	2.44E+0	4.69E+0	1.07E+1	1.54E+0	2.96E+0	6.73E+0	3.20E-1	6.16E-1	1.40E+0	7.54E-2	1.45E-1	3.33E-1	.00E+0	.00E+0	.00E+0
XXC	1.61E+0	2.02E+0	7.02E+3	1.01E+0	1.28E+0	4.42E+3	2.11E-1	2.66E-1	9.23E+2	4.98E-2	6.27E-2	2.20E+2	.00E+0	.00E+0	.00E+0
XXIA	2.89E+1	3.00E+2	2.84E+3	2.89E+1	3.00E+2	2.84E+3	2.89E+1	3.00E+2	2.84E+3	2.81E+1	2.92E+2	2.77E+3	1.91E+1	1.99E+2	1.88E+3
XXIB	2.87E+1	2.97E+2	2.57E+3	2.87E+1	2.97E+2	2.57E+3	2.87E+1	2.96E+2	2.57E+3	2.79E+1	2.89E+2	2.50E+3	1.90E+1	1.96E+2	1.70E+3
XXIC	2.83E+1	2.86E+2	2.07E+3	2.83E+1	2.86E+2	2.07E+3	2.83E+1	2.85E+2	2.07E+3	2.76E+1	2.78E+2	2.02E+3	1.87E+1	1.89E+2	1.37E+3
XXII	8.67E+2	5.75E+4	9.23E+4	8.66E+2	5.75E+4	9.23E+4	8.61E+2	5.74E+4	9.21E+4	8.21E+2	5.50E+4	8.83E+4	2.59E+2	2.57E+4	4.19E+4
DOE	5.14E+5	3.49E+6	1.32E+7	4.99E+5	3.35E+6	1.20E+7	4.79E+5	3.18E+6	1.07E+7	4.20E+5	2.72E+6	7.15E+6	3.58E+5	2.31E+6	6.28E+6
DOD	5.25E+1	1.59E+2	2.81E+2	5.20E+1	1.58E+2	2.47E+2	5.10E+1	1.56E+2	1.60E+2	5.03E+1	1.54E+2	1.58E+2	4.75E+1	1.45E+2	1.49E+2
NRC	1.75E+3	7.72E+3	8.90E+4	1.73E+3	7.69E+3	7.69E+4	1.72E+3	7.65E+3	6.04E+4	1.69E+3	7.46E+3	5.56E+4	1.36E+3	5.30E+3	3.73E+4
Total	5.16E+5	3.50E+6	1.33E+7	5.01E+5	3.36E+6	1.21E+7	4.81E+5	3.19E+6	1.07E+7	4.22E+5	2.72E+6	7.21E+6	3.60E+5	2.32E+6	6.32E+6

Medium Population Density Without Agriculture - 09-13-94 4:12p
 TABLE K-171. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.15E+3	2.33E+3	2.33E+3	2.08E+3	2.25E+3	2.25E+3	1.84E+3	1.99E+3	1.99E+3	1.23E+3	1.34E+3	1.34E+3	3.14E+2	3.41E+2	3.41E+2
II	1.84E+4	1.71E+5	8.37E+5	1.84E+4	1.71E+5	8.37E+5	1.83E+4	1.71E+5	8.32E+5	1.82E+4	1.69E+5	8.18E+5	1.24E+4	1.19E+5	5.80E+5
III	9.48E+2	1.05E+3	1.05E+3	9.38E+2	1.04E+3	1.04E+3	6.90E+2	7.64E+2	7.64E+2	1.10E+2	1.22E+2	1.22E+2	.00E+0	.00E+0	.00E+0
IV	2.81E+2	6.97E+2	7.04E+2	2.73E+2	6.80E+2	6.86E+2	2.49E+2	6.18E+2	6.24E+2	4.46E+1	1.11E+2	1.12E+2	.00E+0	.00E+0	.00E+0
V	5.61E+4	6.08E+4	6.08E+4	5.58E+4	6.06E+4	6.06E+4	5.39E+4	5.85E+4	5.85E+4	4.17E+4	4.52E+4	4.52E+4	1.17E+4	1.27E+4	1.27E+4
VI	1.52E+4	9.24E+4	2.46E+5	1.52E+4	9.24E+4	2.46E+5	1.51E+4	9.22E+4	2.46E+5	1.44E+4	8.91E+4	2.38E+5	1.01E+4	6.72E+4	1.81E+5
VII	7.49E+4	6.71E+5	5.45E+6	6.15E+4	5.48E+5	4.45E+6	1.96E+4	1.75E+5	1.42E+6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	3.28E+2	2.95E+3	1.88E+4	1.71E+2	1.54E+3	9.79E+3	1.77E+1	1.59E+2	1.02E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.39E+3	1.86E+4	2.12E+4	1.39E+3	1.85E+4	2.11E+4	1.37E+3	1.64E+4	1.86E+4	1.31E+3	9.26E+3	1.05E+4	1.05E+3	3.52E+3	3.89E+3
XII	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.05E+1	1.54E+2	1.58E+2	4.94E+1	1.51E+2	1.55E+2	1.59E+1	4.86E+1	4.99E+1
XIIIA	1.93E-1	6.29E-1	7.26E-1	7.40E-2	2.41E-1	2.78E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.56E-1	2.77E-1	2.95E-1	5.96E-2	1.06E-1	1.13E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.03E-1	1.21E-1	3.77E+1	3.93E-2	4.65E-2	1.45E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E+0	3.84E+0	3.84E+0	3.65E+0	3.84E+0	3.84E+0	3.64E+0	3.83E+0	3.83E+0	3.52E+0	3.70E+0	3.70E+0	1.95E+0	2.07E+0	2.07E+0
XVIB	3.61E+0	3.79E+0	3.79E+0	3.61E+0	3.79E+0	3.79E+0	3.60E+0	3.78E+0	3.78E+0	3.48E+0	3.65E+0	3.65E+0	1.93E+0	2.04E+0	2.04E+0
XVIC	3.52E+0	3.67E+0	3.67E+0	3.52E+0	3.67E+0	3.67E+0	3.51E+0	3.66E+0	3.66E+0	3.39E+0	3.54E+0	3.54E+0	1.88E+0	1.97E+0	1.97E+0
XVIIIA	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	9.85E+0	1.09E+1	1.09E+1	6.76E+0	7.48E+0	7.48E+0
XVIIIB	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	9.68E+0	1.07E+1	1.07E+1	6.64E+0	7.34E+0	7.34E+0
XVIIIC	9.79E+0	1.07E+1	1.07E+1	9.79E+0	1.07E+1	1.07E+1	9.78E+0	1.07E+1	1.07E+1	9.37E+0	1.02E+1	1.02E+1	6.43E+0	7.01E+0	7.01E+0
XXA	2.29E+0	8.08E+0	2.80E+1	9.95E-1	3.51E+0	1.22E+1	1.13E-1	3.99E-1	1.39E+0	4.22E-2	1.49E-1	5.24E-1	.00E+0	.00E+0	.00E+0
XXB	1.85E+0	3.55E+0	8.09E+0	8.02E-1	1.54E+0	3.52E+0	9.10E-2	1.75E-1	4.02E-1	3.41E-2	6.57E-2	1.51E-1	.00E+0	.00E+0	.00E+0
XXC	1.22E+0	1.53E+0	5.32E+3	5.30E-1	6.67E-1	2.31E+3	6.01E-2	7.57E-2	2.65E+2	2.25E-2	2.83E-2	1.00E+2	.00E+0	.00E+0	.00E+0
XXIA	2.89E+1	3.00E+2	2.84E+3	2.89E+1	3.00E+2	2.84E+3	2.87E+1	2.98E+2	2.82E+3	2.47E+1	2.56E+2	2.43E+3	8.81E+0	9.16E+1	8.67E+2
XXIB	2.87E+1	2.97E+2	2.57E+3	2.87E+1	2.97E+2	2.57E+3	2.85E+1	2.94E+2	2.55E+3	2.45E+1	2.53E+2	2.19E+3	8.76E+0	9.04E+1	7.83E+2
XXIC	2.83E+1	2.86E+2	2.07E+3	2.83E+1	2.86E+2	2.07E+3	2.81E+1	2.83E+2	2.06E+3	2.42E+1	2.44E+2	1.77E+3	8.64E+0	8.71E+1	6.32E+2
XXII	8.66E+2	5.75E+4	9.23E+4	8.65E+2	5.75E+4	9.23E+4	8.49E+2	5.67E+4	9.09E+4	7.76E+2	5.25E+4	8.39E+4	.00E+0	.00E+0	.00E+0
DOE	5.07E+5	3.42E+6	1.26E+7	4.93E+5	3.30E+6	1.16E+7	4.46E+5	2.91E+6	8.54E+6	3.94E+5	2.61E+6	6.86E+6	2.56E+5	1.66E+6	4.71E+6
DOD	5.23E+1	1.59E+2	2.70E+2	5.15E+1	1.57E+2	2.02E+2	5.05E+1	1.54E+2	1.58E+2	4.94E+1	1.51E+2	1.55E+2	1.59E+1	4.86E+1	4.99E+1
NRC	1.74E+3	7.70E+3	8.11E+4	1.72E+3	7.67E+3	6.69E+4	1.71E+3	7.59E+3	5.69E+4	1.58E+3	6.65E+3	4.84E+4	8.49E+2	2.68E+3	1.74E+4
Total	5.08E+5	3.43E+6	1.27E+7	4.94E+5	3.31E+6	1.17E+7	4.48E+5	2.92E+6	8.60E+6	3.95E+5	2.62E+6	6.90E+6	2.57E+5	1.66E+6	4.73E+6

Medium Population Density Without Agriculture - 09-13-94 4:12p
 TABLE K-173. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.48E-1	9.22E-1	9.22E-1	8.33E-1	9.06E-1	9.06E-1	7.87E-1	8.56E-1	8.56E-1	6.32E-1	6.87E-1	6.87E-1	2.83E-1	3.08E-1	3.08E-1
II	7.34E+0	6.83E+1	3.37E+2	7.33E+0	6.83E+1	3.37E+2	7.33E+0	6.83E+1	3.37E+2	7.33E+0	6.81E+1	3.34E+2	7.08E+0	6.57E+1	3.18E+2
III	3.71E-1	4.11E-1	4.11E-1	3.70E-1	4.11E-1	4.11E-1	3.45E-1	3.83E-1	3.83E-1	1.83E-1	2.03E-1	2.03E-1	.00E+0	.00E+0	.00E+0
IV	6.06E-2	1.51E-1	1.53E-1	5.99E-2	1.49E-1	1.51E-1	5.71E-2	1.42E-1	1.44E-1	4.50E-2	1.12E-1	1.14E-1	.00E+0	.00E+0	.00E+0
V	2.20E+1	2.39E+1	2.39E+1	2.20E+1	2.38E+1	2.38E+1	2.18E+1	2.36E+1	2.36E+1	1.99E+1	2.16E+1	2.16E+1	1.31E+1	1.41E+1	1.41E+1
VI	3.50E+0	1.84E+1	6.43E+1	3.50E+0	1.84E+1	6.43E+1	3.49E+0	1.84E+1	6.43E+1	3.41E+0	1.83E+1	6.39E+1	2.94E+0	1.68E+1	5.93E+1
VII	5.51E+0	4.25E+1	3.30E+2	4.64E+0	3.47E+1	2.68E+2	3.43E+0	2.52E+1	1.94E+2	8.90E-2	6.51E-1	5.02E+0	.00E+0	.00E+0	.00E+0
IX	2.18E-2	1.92E-1	1.19E+0	1.59E-2	1.39E-1	8.65E-1	5.44E-3	4.78E-2	2.97E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.49E+0	5.05E+0	5.58E+0	1.49E+0	5.04E+0	5.58E+0	1.49E+0	4.92E+0	5.43E+0	1.45E+0	3.67E+0	4.00E+0	1.28E+0	2.19E+0	2.33E+0
XII	2.97E-3	9.20E-3	9.46E-3	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.18E-3	9.44E-3	2.92E-3	9.07E-3	9.32E-3	2.76E-3	8.56E-3	8.80E-3
XIIIA	5.18E-5	1.69E-4	2.07E-4	3.71E-5	1.21E-4	1.49E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	4.17E-5	7.41E-5	8.17E-5	2.99E-5	5.31E-5	5.86E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.75E-5	3.26E-5	9.93E-3	1.97E-5	2.33E-5	7.12E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-3	1.53E-3	1.53E-3	1.46E-3	1.53E-3	1.53E-3	1.46E-3	1.53E-3	1.53E-3	1.44E-3	1.52E-3	1.52E-3	1.27E-3	1.34E-3	1.34E-3
XVIB	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.51E-3	1.51E-3	1.42E-3	1.49E-3	1.49E-3	1.25E-3	1.32E-3	1.32E-3
XVIC	1.40E-3	1.47E-3	1.47E-3	1.40E-3	1.47E-3	1.47E-3	1.40E-3	1.46E-3	1.46E-3	1.39E-3	1.45E-3	1.45E-3	1.22E-3	1.28E-3	1.28E-3
XVIIIA	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.00E-3	4.42E-3	4.42E-3	3.50E-3	3.87E-3	3.87E-3
XVIIIB	3.96E-3	4.38E-3	4.38E-3	3.96E-3	4.38E-3	4.38E-3	3.96E-3	4.38E-3	4.38E-3	3.93E-3	4.35E-3	4.35E-3	3.44E-3	3.81E-3	3.81E-3
XVIIIC	3.82E-3	4.17E-3	4.17E-3	3.82E-3	4.17E-3	4.17E-3	3.82E-3	4.17E-3	4.17E-3	3.79E-3	4.14E-3	4.14E-3	3.31E-3	3.62E-3	3.62E-3
XXA	5.28E-4	2.03E-3	1.24E-2	3.33E-4	1.28E-3	7.79E-3	6.93E-5	2.66E-4	1.63E-3	1.62E-5	6.26E-5	3.86E-4	.00E+0	.00E+0	.00E+0
XXB	4.26E-4	8.97E-4	3.21E-3	2.69E-4	5.66E-4	2.02E-3	5.59E-5	1.18E-4	4.22E-4	1.31E-5	2.77E-5	1.00E-4	.00E+0	.00E+0	.00E+0
XXC	2.82E-4	3.78E-4	1.26E+0	1.78E-4	2.38E-4	7.92E-1	3.69E-5	4.96E-5	1.65E-1	8.65E-6	1.16E-5	3.93E-2	.00E+0	.00E+0	.00E+0
XXIA	1.13E-2	1.18E-1	1.11E+0	1.13E-2	1.18E-1	1.11E+0	1.13E-2	1.18E-1	1.11E+0	1.10E-2	1.15E-1	1.08E+0	7.46E-3	7.78E-2	7.34E-1
XXIB	1.12E-2	1.16E-1	1.00E+0	1.12E-2	1.16E-1	1.00E+0	1.12E-2	1.16E-1	1.00E+0	1.09E-2	1.13E-1	9.77E-1	7.40E-3	7.66E-2	6.64E-1
XXIC	1.10E-2	1.12E-1	8.13E-1	1.10E-2	1.12E-1	8.13E-1	1.10E-2	1.12E-1	8.13E-1	1.07E-2	1.09E-1	7.91E-1	7.29E-3	7.38E-2	5.38E-1
XXII	3.38E-1	1.32E+1	2.12E+1	3.38E-1	1.32E+1	2.12E+1	3.36E-1	1.32E+1	2.11E+1	3.21E-1	1.26E+1	2.03E+1	1.01E-1	5.88E+0	9.57E+0
DOE	1.20E+2	6.51E+2	2.31E+3	1.19E+2	6.43E+2	2.24E+3	1.17E+2	6.33E+2	2.17E+3	1.09E+2	5.97E+2	1.96E+3	8.93E+1	5.04E+2	1.75E+3
DOD	3.31E-3	9.98E-3	3.84E-2	3.21E-3	9.75E-3	3.02E-2	2.96E-3	9.18E-3	9.44E-3	2.92E-3	9.07E-3	9.32E-3	2.76E-3	8.56E-3	8.80E-3
NRC	6.79E-1	3.01E+0	2.79E+1	6.76E-1	3.00E+0	2.57E+1	6.73E-1	2.99E+0	2.27E+1	6.63E-1	2.92E+0	2.15E+1	5.34E-1	2.08E+0	1.46E+1
Total	1.20E+2	6.54E+2	2.33E+3	1.19E+2	6.46E+2	2.27E+3	1.18E+2	6.36E+2	2.19E+3	1.10E+2	6.00E+2	1.98E+3	8.98E+1	5.06E+2	1.76E+3

Medium Population Density Without Agriculture - 09-13-94 4:12p
 TABLE K-175. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.42E-1	9.15E-1	9.15E-1	8.15E-1	8.86E-1	8.86E-1	7.20E-1	7.83E-1	7.83E-1	4.83E-1	5.26E-1	5.26E-1	1.23E-1	1.34E-1	1.34E-1
II	7.34E+0	6.83E+1	3.37E+2	7.33E+0	6.83E+1	3.37E+2	7.33E+0	6.82E+1	3.36E+2	7.29E+0	6.77E+1	3.30E+2	4.98E+0	4.75E+1	2.34E+2
III	3.71E-1	4.11E-1	4.11E-1	3.67E-1	4.07E-1	4.07E-1	2.70E-1	2.99E-1	2.99E-1	4.32E-2	4.79E-2	4.79E-2	.00E+0	.00E+0	.00E+0
IV	6.03E-2	1.50E-1	1.52E-1	5.88E-2	1.46E-1	1.48E-1	5.35E-2	1.33E-1	1.35E-1	9.58E-3	2.39E-2	2.42E-2	.00E+0	.00E+0	.00E+0
V	2.20E+1	2.39E+1	2.39E+1	2.19E+1	2.38E+1	2.38E+1	2.12E+1	2.29E+1	2.29E+1	1.64E+1	1.77E+1	1.77E+1	4.60E+0	4.99E+0	4.99E+0
VI	3.50E+0	1.84E+1	6.43E+1	3.49E+0	1.84E+1	6.43E+1	3.46E+0	1.84E+1	6.42E+1	3.22E+0	1.77E+1	6.21E+1	2.14E+0	1.32E+1	4.72E+1
VII	5.08E+0	3.86E+1	2.99E+2	4.29E+0	3.17E+1	2.45E+2	1.34E+0	1.01E+1	7.82E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	1.89E-2	1.66E-1	1.03E+0	9.83E-3	8.64E-2	5.36E-1	1.02E-3	8.96E-3	5.56E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.49E+0	5.05E+0	5.58E+0	1.49E+0	5.04E+0	5.57E+0	1.48E+0	4.59E+0	5.06E+0	1.41E+0	3.06E+0	3.31E+0	1.14E+0	1.65E+0	1.73E+0
XII	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.19E-3	9.45E-3	2.94E-3	9.10E-3	9.36E-3	2.87E-3	8.89E-3	9.15E-3	9.23E-4	2.86E-3	2.95E-3
XIIIA	4.70E-5	1.54E-4	1.88E-4	1.80E-5	5.88E-5	7.21E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.79E-5	6.72E-5	7.41E-5	1.45E-5	2.57E-5	2.84E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.50E-5	2.95E-5	9.01E-3	9.56E-6	1.13E-5	3.45E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-3	1.53E-3	1.53E-3	1.46E-3	1.53E-3	1.53E-3	1.45E-3	1.53E-3	1.53E-3	1.40E-3	1.48E-3	1.48E-3	7.79E-4	8.24E-4	8.24E-4
XVIB	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.51E-3	1.51E-3	1.43E-3	1.50E-3	1.50E-3	1.39E-3	1.45E-3	1.45E-3	7.68E-4	8.10E-4	8.10E-4
XVIC	1.40E-3	1.47E-3	1.47E-3	1.40E-3	1.47E-3	1.47E-3	1.40E-3	1.46E-3	1.46E-3	1.35E-3	1.41E-3	1.41E-3	7.49E-4	7.86E-4	7.86E-4
XVIIIA	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.02E-3	4.45E-3	4.45E-3	3.86E-3	4.26E-3	4.26E-3	2.65E-3	2.93E-3	2.93E-3
XVIIIB	3.96E-3	4.38E-3	4.38E-3	3.96E-3	4.38E-3	4.38E-3	3.95E-3	4.38E-3	4.38E-3	3.79E-3	4.20E-3	4.20E-3	2.60E-3	2.88E-3	2.88E-3
XVIIIC	3.82E-3	4.17E-3	4.17E-3	3.82E-3	4.17E-3	4.17E-3	3.81E-3	4.17E-3	4.17E-3	3.65E-3	3.99E-3	3.99E-3	2.51E-3	2.74E-3	2.74E-3
XXA	4.00E-4	1.54E-3	9.36E-3	1.74E-4	6.69E-4	4.07E-3	1.96E-5	7.56E-5	4.66E-4	7.30E-6	2.82E-5	1.76E-4	.00E+0	.00E+0	.00E+0
XXB	3.23E-4	6.80E-4	2.43E-3	1.40E-4	2.95E-4	1.06E-3	1.58E-5	3.34E-5	1.21E-4	5.89E-6	1.25E-5	4.54E-5	.00E+0	.00E+0	.00E+0
XXC	2.13E-4	2.86E-4	9.51E-1	9.27E-5	1.24E-4	4.14E-1	1.05E-5	1.41E-5	4.73E-2	3.89E-6	5.24E-6	1.79E-2	.00E+0	.00E+0	.00E+0
XXIA	1.13E-2	1.18E-1	1.11E+0	1.13E-2	1.18E-1	1.11E+0	1.12E-2	1.17E-1	1.10E+0	9.63E-3	1.00E-1	9.47E-1	3.44E-3	3.59E-2	3.38E-1
XXIB	1.12E-2	1.16E-1	1.00E+0	1.12E-2	1.16E-1	1.00E+0	1.11E-2	1.15E-1	9.96E-1	9.55E-3	9.89E-2	8.56E-1	3.41E-3	3.53E-2	3.06E-1
XXIC	1.10E-2	1.12E-1	8.13E-1	1.10E-2	1.12E-1	8.13E-1	1.09E-2	1.11E-1	8.07E-1	9.40E-3	9.53E-2	6.94E-1	3.36E-3	3.40E-2	2.48E-1
XXII	3.38E-1	1.32E+1	2.12E+1	3.38E-1	1.32E+1	2.12E+1	3.31E-1	1.30E+1	2.09E+1	3.03E-1	1.20E+1	1.93E+1	.00E+0	.00E+0	.00E+0
DOE	1.19E+2	6.47E+2	2.28E+3	1.18E+2	6.40E+2	2.22E+3	1.13E+2	6.14E+2	2.05E+3	1.01E+2	5.73E+2	1.90E+3	5.94E+1	3.53E+2	1.31E+3
DOD	3.27E+3	9.90E+3	3.57E+2	3.08E+3	9.46E+3	1.95E+2	2.94E+3	9.10E+3	9.36E+3	2.87E+3	8.89E+3	9.15E+3	9.23E+4	2.86E+3	2.95E+3
NRC	6.77E-1	3.01E+0	2.64E+1	6.75E-1	3.00E+0	2.39E+1	6.70E-1	2.97E+0	2.20E+1	6.20E-1	2.60E+0	1.88E+1	3.33E-1	1.05E+0	6.82E+0
Total	1.20E+2	6.50E+2	2.30E+3	1.19E+2	6.43E+2	2.24E+3	1.14E+2	6.17E+2	2.07E+3	1.02E+2	5.76E+2	1.91E+3	5.98E+1	3.54E+2	1.32E+3

Medium Population Density Without Agriculture - 09-13-94 4:12p
 TABLE K-177. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.58E-1	6.07E-1	6.07E-1	5.48E-1	5.96E-1	5.96E-1	5.18E-1	5.64E-1	5.64E-1	4.16E-1	4.52E-1	4.52E-1	1.86E-1	2.03E-1	2.03E-1
II	4.83E+0	4.51E+1	2.22E+2	4.82E+0	4.51E+1	2.22E+2	4.82E+0	4.50E+1	2.22E+2	4.82E+0	4.49E+1	2.19E+2	4.65E+0	4.33E+1	2.09E+2
III	2.45E-1	2.70E-1	2.70E-1	2.44E-1	2.70E-1	2.70E-1	2.28E-1	2.52E-1	2.52E-1	1.21E-1	1.33E-1	1.33E-1	.00E+0	.00E+0	.00E+0
IV	4.49E-2	1.12E-1	1.13E-1	4.43E-2	1.10E-1	1.12E-1	4.23E-2	1.05E-1	1.07E-1	3.33E-2	8.29E-2	8.39E-2	.00E+0	.00E+0	.00E+0
V	1.44E+1	1.57E+1	1.57E+1	1.44E+1	1.57E+1	1.57E+1	1.43E+1	1.55E+1	1.55E+1	1.30E+1	1.42E+1	1.42E+1	8.55E+0	9.33E+0	9.33E+0
VI	2.55E+0	1.39E+1	4.56E+1	2.55E+0	1.39E+1	4.56E+1	2.55E+0	1.39E+1	4.56E+1	2.50E+0	1.38E+1	4.53E+1	2.17E+0	1.27E+1	4.21E+1
VII	4.72E+0	3.80E+1	2.99E+2	3.94E+0	3.10E+1	2.43E+2	2.90E+0	2.25E+1	1.76E+2	7.52E-2	5.81E-1	4.54E+0	.00E+0	.00E+0	.00E+0
IX	1.95E-2	1.72E-1	1.08E+0	1.42E-2	1.25E-1	7.84E-1	4.86E-3	4.30E-2	2.69E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.79E-1	3.16E+0	3.49E+0	9.79E-1	3.16E+0	3.49E+0	9.76E-1	3.08E+0	3.40E+0	9.53E-1	2.31E+0	2.52E+0	8.38E-1	1.40E+0	1.48E+0
XII	2.64E-3	8.16E-3	8.39E-3	2.64E-3	8.15E-3	8.38E-3	2.63E-3	8.14E-3	8.38E-3	2.60E-3	8.04E-3	8.27E-3	2.46E-3	7.59E-3	7.81E-3
XIIIA	3.74E-5	1.22E-4	1.48E-4	2.68E-5	8.73E-5	1.06E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.01E-5	5.35E-5	5.85E-5	2.16E-5	3.84E-5	4.19E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.99E-5	2.35E-5	6.08E-3	1.42E-5	1.68E-5	4.36E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.57E-4	1.01E-3	1.01E-3	9.57E-4	1.01E-3	1.01E-3	9.56E-4	1.01E-3	1.01E-3	9.46E-4	9.95E-4	9.95E-4	8.32E-4	8.79E-4	8.79E-4
XVIB	9.47E-4	9.93E-4	9.93E-4	9.47E-4	9.93E-4	9.93E-4	9.47E-4	9.93E-4	9.93E-4	9.37E-4	9.83E-4	9.83E-4	8.24E-4	8.68E-4	8.68E-4
XVIC	9.23E-4	9.63E-4	9.63E-4	9.23E-4	9.63E-4	9.63E-4	9.22E-4	9.63E-4	9.63E-4	9.13E-4	9.53E-4	9.53E-4	8.02E-4	8.40E-4	8.40E-4
XVIIIA	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.63E-3	2.91E-3	2.91E-3	2.30E-3	2.55E-3	2.55E-3
XVIIIB	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.88E-3	2.88E-3	2.59E-3	2.86E-3	2.86E-3	2.27E-3	2.50E-3	2.50E-3
XVIIIC	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.51E-3	2.73E-3	2.73E-3	2.19E-3	2.39E-3	2.39E-3
XXA	4.11E-4	1.54E-3	8.34E-3	2.59E-4	9.72E-4	5.26E-3	5.39E-5	2.02E-4	1.10E-3	1.27E-5	4.77E-5	2.61E-4	.00E+0	.00E+0	.00E+0
XXB	3.31E-4	6.81E-4	2.20E-3	2.09E-4	4.29E-4	1.39E-3	4.35E-5	8.93E-5	2.89E-4	1.02E-5	2.10E-5	6.87E-5	.00E+0	.00E+0	.00E+0
XXC	2.19E-4	2.89E-4	7.80E-1	1.38E-4	1.82E-4	4.92E-1	2.87E-5	3.79E-5	1.03E-1	6.75E-6	8.91E-6	2.44E-2	.00E+0	.00E+0	.00E+0
XXIA	7.47E-3	7.80E-2	7.34E-1	7.47E-3	7.80E-2	7.34E-1	7.46E-3	7.79E-2	7.34E-1	7.26E-3	7.58E-2	7.14E-1	4.94E-3	5.15E-2	4.85E-1
XXIB	7.41E-3	7.67E-2	6.64E-1	7.41E-3	7.67E-2	6.64E-1	7.40E-3	7.66E-2	6.64E-1	7.21E-3	7.46E-2	6.46E-1	4.90E-3	5.07E-2	4.39E-1
XXIC	7.30E-3	7.39E-2	5.38E-1	7.30E-3	7.39E-2	5.38E-1	7.29E-3	7.39E-2	5.37E-1	7.10E-3	7.19E-2	5.23E-1	4.82E-3	4.89E-2	3.56E-1
XXII	2.24E-1	8.19E+0	1.38E+1	2.24E-1	8.19E+0	1.38E+1	2.22E-1	8.18E+0	1.37E+1	2.12E-1	7.84E+0	1.31E+1	6.68E-2	3.65E+0	6.22E+0
DOE	8.54E+1	4.76E+2	1.67E+3	8.46E+1	4.69E+2	1.62E+3	8.32E+1	4.60E+2	1.55E+3	7.77E+1	4.31E+2	1.36E+3	6.40E+1	3.68E+2	1.22E+3
DOD	2.89E-3	8.72E-3	2.62E-2	2.81E-3	8.55E-3	2.11E-2	2.63E-3	8.14E-3	8.38E-3	2.60E-3	8.04E-3	8.27E-3	2.46E-3	7.59E-3	7.81E-3
NRC	4.48E-1	1.99E+0	1.82E+1	4.47E-1	1.99E+0	1.68E+1	4.44E-1	1.98E+0	1.50E+1	4.37E-1	1.93E+0	1.42E+1	3.52E-1	1.37E+0	9.65E+0
Total	8.58E+1	4.78E+2	1.69E+3	8.50E+1	4.71E+2	1.63E+3	8.36E+1	4.62E+2	1.56E+3	7.81E+1	4.32E+2	1.38E+3	6.43E+1	3.69E+2	1.23E+3

Medium Population Density Without Agriculture - 09-13-94 4:12p
 TABLE K-179. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.54E-1	6.03E-1	6.03E-1	5.36E-1	5.83E-1	5.83E-1	4.74E-1	5.16E-1	5.16E-1	3.18E-1	3.46E-1	3.46E-1	8.10E-2	8.82E-2	8.82E-2
II	4.82E+0	4.51E+1	2.22E+2	4.82E+0	4.50E+1	2.22E+2	4.82E+0	4.50E+1	2.21E+2	4.80E+0	4.46E+1	2.17E+2	3.28E+0	3.13E+1	1.54E+2
III	2.45E-1	2.70E-1	2.70E-1	2.42E-1	2.67E-1	2.67E-1	1.78E-1	1.96E-1	1.96E-1	2.85E-2	3.14E-2	3.14E-2	.00E+0	.00E+0	.00E+0
IV	4.46E-2	1.11E-1	1.12E-1	4.35E-2	1.08E-1	1.10E-1	3.96E-2	9.84E-2	9.97E-2	7.10E-3	1.76E-2	1.79E-2	.00E+0	.00E+0	.00E+0
V	1.44E+1	1.57E+1	1.57E+1	1.44E+1	1.57E+1	1.57E+1	1.39E+1	1.51E+1	1.51E+1	1.07E+1	1.17E+1	1.17E+1	3.01E+0	3.29E+0	3.29E+0
VI	2.55E+0	1.39E+1	4.56E+1	2.55E+0	1.39E+1	4.56E+1	2.53E+0	1.39E+1	4.55E+1	2.36E+0	1.34E+1	4.40E+1	1.59E+0	9.99E+0	3.35E+1
VII	4.33E+0	3.45E+1	2.71E+2	3.63E+0	2.83E+1	2.21E+2	1.14E+0	9.03E+0	7.07E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	1.69E-2	1.49E-1	9.32E-1	8.79E-3	7.77E-2	4.86E-1	9.12E-4	8.06E-3	5.04E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	9.79E-1	3.16E+0	3.49E+0	9.78E-1	3.15E+0	3.48E+0	9.69E-1	2.88E+0	3.16E+0	9.25E-1	1.94E+0	2.09E+0	7.44E-1	1.06E+0	1.11E+0
XII	2.64E-3	8.15E-3	8.39E-3	2.64E-3	8.15E-3	8.38E-3	2.61E-3	8.07E-3	8.31E-3	2.55E-3	7.89E-3	8.11E-3	8.22E-4	2.54E-3	2.61E-3
XIIIA	3.39E-5	1.10E-4	1.34E-4	1.30E-5	4.23E-5	5.13E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.73E-5	4.85E-5	5.31E-5	1.05E-5	1.86E-5	2.03E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.80E-5	2.13E-5	5.51E-3	6.90E-6	8.16E-6	2.11E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.57E-4	1.01E-3	1.01E-3	9.56E-4	1.01E-3	1.01E-3	9.54E-4	1.00E-3	1.00E-3	9.22E-4	9.70E-4	9.70E-4	5.11E-4	5.41E-4	5.41E-4
XVIB	9.47E-4	9.93E-4	9.93E-4	9.47E-4	9.93E-4	9.93E-4	9.45E-4	9.91E-4	9.91E-4	9.13E-4	9.58E-4	9.58E-4	5.06E-4	5.34E-4	5.34E-4
XVIC	9.23E-4	9.63E-4	9.63E-4	9.22E-4	9.63E-4	9.63E-4	9.20E-4	9.60E-4	9.60E-4	8.89E-4	9.29E-4	9.29E-4	4.92E-4	5.16E-4	5.16E-4
XVIIIA	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.54E-3	2.81E-3	2.81E-3	1.74E-3	1.93E-3	1.93E-3
XVIIIB	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.87E-3	2.87E-3	2.50E-3	2.75E-3	2.75E-3	1.71E-3	1.89E-3	1.89E-3
XVIIIC	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.42E-3	2.64E-3	2.64E-3	1.66E-3	1.81E-3	1.81E-3
XXA	3.12E-4	1.17E-3	6.32E-3	1.35E-4	5.08E-4	2.75E-3	1.53E-5	5.75E-5	3.14E-4	5.71E-6	2.15E-5	1.19E-4	.00E+0	.00E+0	.00E+0
XXB	2.51E-4	5.16E-4	1.67E-3	1.09E-4	2.24E-4	7.25E-4	1.23E-5	2.54E-5	8.28E-5	4.60E-6	9.49E-6	3.12E-5	.00E+0	.00E+0	.00E+0
XXC	1.66E-4	2.19E-4	5.91E-1	7.21E-5	9.50E-5	2.57E-1	8.15E-6	1.08E-5	2.94E-2	3.04E-6	4.02E-6	1.11E-2	.00E+0	.00E+0	.00E+0
XXIA	7.47E-3	7.80E-2	7.34E-1	7.47E-3	7.80E-2	7.34E-1	7.41E-3	7.73E-2	7.28E-1	6.37E-3	6.65E-2	6.26E-1	2.28E-3	2.38E-2	2.24E-1
XXIB	7.41E-3	7.67E-2	6.64E-1	7.41E-3	7.67E-2	6.64E-1	7.35E-3	7.61E-2	6.59E-1	6.32E-3	6.54E-2	5.67E-1	2.26E-3	2.34E-2	2.03E-1
XXIC	7.30E-3	7.39E-2	5.38E-1	7.30E-3	7.39E-2	5.38E-1	7.24E-3	7.33E-2	5.34E-1	6.22E-3	6.31E-2	4.59E-1	2.22E-3	2.25E-2	1.64E-1
XXII	2.24E-1	8.19E+0	1.38E+1	2.23E-1	8.19E+0	1.37E+1	2.19E-1	8.08E+0	1.35E+1	2.00E-1	7.48E+0	1.25E+1	.00E+0	.00E+0	.00E+0
DOE	8.50E+1	4.73E+2	1.64E+3	8.42E+1	4.66E+2	1.59E+3	8.05E+1	4.44E+2	1.44E+3	7.19E+1	4.14E+2	1.32E+3	4.33E+1	2.63E+2	9.18E+2
DOD	2.86E+3	8.66E+3	2.45E+2	2.72E+3	8.34E+3	1.46E+2	2.61E+3	8.07E+3	8.31E+3	2.55E+3	7.89E+3	8.11E+3	8.22E+4	2.54E+3	2.61E+3
NRC	4.47E-1	1.99E+0	1.73E+1	4.45E-1	1.98E+0	1.57E+1	4.42E-1	1.97E+0	1.45E+1	4.09E-1	1.72E+0	1.25E+1	2.20E-1	6.95E-1	4.51E+0
Total	8.54E+1	4.75E+2	1.66E+3	8.46E+1	4.68E+2	1.61E+3	8.10E+1	4.46E+2	1.45E+3	7.24E+1	4.16E+2	1.33E+3	4.35E+1	2.63E+2	9.22E+2

Reasonable Occupancy Scenario - 09-13-94 4:14p
 TABLE K-181. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.63E+3	2.86E+3	2.86E+3	2.59E+3	2.81E+3	2.81E+3	2.45E+3	2.66E+3	2.66E+3	1.96E+3	2.13E+3	2.13E+3	8.79E+2	9.54E+2	9.54E+2
II	1.84E+5	1.71E+6	8.37E+6	1.84E+5	1.71E+6	8.37E+6	1.84E+5	1.71E+6	8.37E+6	1.83E+5	1.70E+6	8.29E+6	1.77E+5	1.64E+6	7.90E+6
III	1.13E+3	1.26E+3	1.26E+3	1.13E+3	1.26E+3	1.26E+3	1.06E+3	1.17E+3	1.17E+3	5.60E+2	6.23E+2	6.23E+2	.00E+0	.00E+0	.00E+0
IV	2.05E+3	1.20E+4	2.39E+4	2.03E+3	1.18E+4	2.37E+4	1.94E+3	1.13E+4	2.26E+4	1.53E+3	8.91E+3	1.78E+4	.00E+0	.00E+0	.00E+0
V	6.81E+4	7.41E+4	7.41E+4	6.80E+4	7.40E+4	7.40E+4	6.73E+4	7.32E+4	7.32E+4	6.16E+4	6.70E+4	6.70E+4	4.04E+4	4.39E+4	4.39E+4
VI	7.65E+4	5.67E+5	4.20E+6	7.65E+4	5.67E+5	4.20E+6	7.64E+4	5.67E+5	4.20E+6	7.56E+4	5.64E+5	4.17E+6	6.85E+4	5.23E+5	3.89E+6
VII	3.24E+4	2.58E+5	1.76E+6	2.65E+4	2.10E+5	1.43E+6	1.92E+4	1.52E+5	1.04E+6	4.96E+2	3.92E+3	2.68E+4	.00E+0	.00E+0	.00E+0
IX	8.54E+2	7.56E+3	4.77E+4	6.21E+2	5.49E+3	3.47E+4	2.13E+2	1.88E+3	1.19E+4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.54E+3	1.88E+4	2.15E+4	1.54E+3	1.88E+4	2.15E+4	1.52E+3	1.82E+4	2.08E+4	1.46E+3	1.22E+4	1.38E+4	1.25E+3	5.66E+3	6.35E+3
XII	5.11E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.03E+2	1.54E+3	1.58E+3	4.75E+2	1.45E+3	1.49E+3
XIIIA	1.11E+0	6.70E+0	1.66E+1	7.92E-1	4.80E+0	1.19E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.00E+0	4.41E+0	6.98E+0	7.17E-1	3.16E+0	5.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	8.24E-1	2.40E+0	4.43E+1	5.91E-1	1.72E+0	3.18E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	7.90E+0	8.36E+0	8.36E+0	7.90E+0	8.36E+0	8.36E+0	7.89E+0	8.36E+0	8.36E+0	7.82E+0	8.28E+0	8.28E+0	6.93E+0	7.37E+0	7.37E+0
XVIB	7.84E+0	8.27E+0	8.27E+0	7.84E+0	8.27E+0	8.27E+0	7.84E+0	8.27E+0	8.27E+0	7.76E+0	8.19E+0	8.19E+0	6.87E+0	7.29E+0	7.29E+0
XVIC	7.65E+0	8.03E+0	8.03E+0	7.65E+0	8.03E+0	8.03E+0	7.65E+0	8.02E+0	8.02E+0	7.57E+0	7.95E+0	7.95E+0	6.71E+0	7.06E+0	7.06E+0
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.02E+2	1.13E+2	1.13E+2	8.93E+1	9.88E+1	9.88E+1
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.00E+2	1.11E+2	1.11E+2	8.78E+1	9.70E+1	9.70E+1
XVIIIC	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.72E+1	1.06E+2	1.06E+2	8.50E+1	9.27E+1	9.27E+1
XXA	1.13E+2	8.79E+2	6.73E+3	7.10E+1	5.54E+2	4.24E+3	1.48E+1	1.16E+2	8.86E+2	3.52E+0	2.75E+1	2.11E+2	.00E+0	.00E+0	.00E+0
XXB	1.07E+2	6.27E+2	2.74E+3	6.77E+1	3.95E+2	1.73E+3	1.41E+1	8.25E+1	3.61E+2	3.36E+0	1.96E+1	8.60E+1	.00E+0	.00E+0	.00E+0
XXC	9.72E+1	3.52E+2	7.98E+3	6.13E+1	2.22E+2	5.03E+3	1.28E+1	4.63E+1	1.05E+3	3.04E+0	1.10E+1	2.50E+2	.00E+0	.00E+0	.00E+0
XXIA	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.81E+2	2.92E+3	2.77E+4	1.91E+2	1.99E+3	1.88E+4
XXIB	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.96E+3	2.57E+4	2.79E+2	2.89E+3	2.50E+4	1.90E+2	1.96E+3	1.70E+4
XXIC	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.85E+3	2.07E+4	2.76E+2	2.78E+3	2.02E+4	1.87E+2	1.89E+3	1.37E+4
XXII	1.21E+4	1.46E+5	3.04E+5	1.21E+4	1.46E+5	3.04E+5	1.21E+4	1.45E+5	3.03E+5	1.15E+4	1.39E+5	2.90E+5	3.62E+3	6.48E+4	1.36E+5
DOE	2.11E+6	1.60E+7	1.08E+8	2.11E+6	1.59E+7	1.07E+8	2.10E+6	1.58E+7	1.07E+8	2.05E+6	1.56E+7	1.05E+8	1.80E+6	1.40E+7	9.72E+7
DOD	5.19E+2	1.60E+3	1.79E+3	5.16E+2	1.59E+3	1.74E+3	5.10E+2	1.56E+3	1.60E+3	5.03E+2	1.54E+3	1.58E+3	4.75E+2	1.45E+3	1.49E+3
NRC	1.51E+4	8.14E+4	6.39E+5	1.46E+4	7.82E+4	6.08E+5	1.38E+4	7.38E+4	5.67E+5	1.34E+4	7.12E+4	5.45E+5	1.05E+4	4.98E+4	3.70E+5
Total	2.13E+6	1.61E+7	1.08E+8	2.12E+6	1.60E+7	1.08E+8	2.11E+6	1.59E+7	1.07E+8	2.06E+6	1.56E+7	1.06E+8	1.81E+6	1.41E+7	9.76E+7

Reasonable Occupancy Scenario - 09-13-94 4:14p
 TABLE K-183. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.62E+3	2.84E+3	2.84E+3	2.53E+3	2.75E+3	2.75E+3	2.24E+3	2.43E+3	2.43E+3	1.50E+3	1.63E+3	1.63E+3	3.83E+2	4.15E+2	4.15E+2
II	1.84E+5	1.71E+6	8.37E+6	1.84E+5	1.71E+6	8.37E+6	1.83E+5	1.71E+6	8.32E+6	1.82E+5	1.69E+6	8.18E+6	1.24E+5	1.19E+6	5.80E+6
III	1.13E+3	1.26E+3	1.26E+3	1.12E+3	1.25E+3	1.25E+3	8.24E+2	9.17E+2	9.17E+2	1.32E+2	1.47E+2	1.47E+2	.00E+0	.00E+0	.00E+0
IV	2.04E+3	1.19E+4	2.38E+4	1.99E+3	1.16E+4	2.32E+4	1.81E+3	1.06E+4	2.11E+4	3.25E+2	1.90E+3	3.79E+3	.00E+0	.00E+0	.00E+0
V	6.81E+4	7.41E+4	7.41E+4	6.78E+4	7.38E+4	7.38E+4	6.55E+4	7.12E+4	7.12E+4	5.06E+4	5.50E+4	5.50E+4	1.42E+4	1.55E+4	1.55E+4
VI	7.65E+4	5.67E+5	4.20E+6	7.65E+4	5.67E+5	4.20E+6	7.62E+4	5.66E+5	4.19E+6	7.28E+4	5.48E+5	4.06E+6	5.30E+4	4.16E+5	3.11E+6
VII	2.94E+4	2.34E+5	1.60E+6	2.42E+4	1.91E+5	1.31E+6	7.70E+3	6.11E+4	4.18E+5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	7.38E+2	6.53E+3	4.12E+4	3.85E+2	3.40E+3	2.15E+4	3.99E+1	3.53E+2	2.23E+3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.54E+3	1.88E+4	2.15E+4	1.53E+3	1.88E+4	2.14E+4	1.50E+3	1.66E+4	1.89E+4	1.40E+3	9.38E+3	1.06E+4	1.11E+3	3.58E+3	3.97E+3
XII	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.05E+2	1.54E+3	1.58E+3	4.94E+2	1.51E+3	1.55E+3	1.59E+2	4.86E+2	4.99E+2
XIIIA	1.00E+0	6.08E+0	1.51E+1	3.84E-1	2.33E+0	5.77E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	9.07E-1	4.00E+0	6.33E+0	3.47E-1	1.53E+0	2.42E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	7.47E-1	2.18E+0	4.02E+1	2.86E-1	8.33E-1	1.54E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	7.90E+0	8.36E+0	8.36E+0	7.90E+0	8.36E+0	8.36E+0	7.88E+0	8.34E+0	8.34E+0	7.63E+0	8.08E+0	8.08E+0	4.27E+0	4.55E+0	4.55E+0
XVIB	7.84E+0	8.27E+0	8.27E+0	7.84E+0	8.27E+0	8.27E+0	7.82E+0	8.25E+0	8.25E+0	7.57E+0	8.00E+0	8.00E+0	4.23E+0	4.50E+0	4.50E+0
XVIC	7.65E+0	8.03E+0	8.03E+0	7.65E+0	8.03E+0	8.03E+0	7.63E+0	8.01E+0	8.01E+0	7.39E+0	7.76E+0	7.76E+0	4.13E+0	4.36E+0	4.36E+0
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	9.85E+1	1.09E+2	1.09E+2	6.76E+1	7.48E+1	7.48E+1
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	9.68E+1	1.07E+2	1.07E+2	6.64E+1	7.34E+1	7.34E+1
XVIIIC	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.78E+1	1.07E+2	1.07E+2	9.37E+1	1.02E+2	1.02E+2	6.43E+1	7.01E+1	7.01E+1
XXA	8.53E+1	6.66E+2	5.10E+3	3.71E+1	2.90E+2	2.22E+3	4.24E+0	3.31E+1	2.54E+2	1.60E+0	1.25E+1	9.61E+1	.00E+0	.00E+0	.00E+0
XXB	8.13E+1	4.75E+2	2.08E+3	3.54E+1	2.07E+2	9.04E+2	4.05E+0	2.36E+1	1.04E+2	1.53E+0	8.93E+0	3.92E+1	.00E+0	.00E+0	.00E+0
XXC	7.36E+1	2.67E+2	6.05E+3	3.20E+1	1.16E+2	2.63E+3	3.66E+0	1.33E+1	3.01E+2	1.38E+0	5.01E+0	1.14E+2	.00E+0	.00E+0	.00E+0
XXIA	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.87E+2	2.98E+3	2.82E+4	2.47E+2	2.56E+3	2.43E+4	8.81E+1	9.16E+2	8.67E+3
XXIB	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.85E+2	2.94E+3	2.55E+4	2.45E+2	2.53E+3	2.19E+4	8.76E+1	9.04E+2	7.83E+3
XXIC	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.81E+2	2.83E+3	2.06E+4	2.42E+2	2.44E+3	1.77E+4	8.64E+1	8.71E+2	6.32E+3
XXII	1.21E+4	1.46E+5	3.04E+5	1.21E+4	1.46E+5	3.04E+5	1.19E+4	1.44E+5	2.99E+5	1.09E+4	1.32E+5	2.75E+5	.00E+0	.00E+0	.00E+0
DOE	2.11E+6	1.59E+7	1.08E+8	2.10E+6	1.59E+7	1.07E+8	2.07E+6	1.57E+7	1.06E+8	1.96E+6	1.51E+7	1.02E+8	1.34E+6	1.07E+7	7.63E+7
DOD	5.18E+2	1.59E+3	1.77E+3	5.13E+2	1.57E+3	1.67E+3	5.05E+2	1.54E+3	1.58E+3	4.94E+2	1.51E+3	1.55E+3	1.59E+2	4.86E+2	4.99E+2
NRC	1.47E+4	7.93E+4	6.19E+5	1.41E+4	7.56E+4	5.84E+5	1.36E+4	7.25E+4	5.56E+5	1.24E+4	6.30E+4	4.77E+5	6.61E+4	2.49E+4	1.73E+5
Total	2.12E+6	1.60E+7	1.08E+8	2.12E+6	1.60E+7	1.08E+8	2.09E+6	1.58E+7	1.07E+8	1.98E+6	1.52E+7	1.03E+8	1.35E+6	1.07E+7	7.65E+7

Reasonable Occupancy Scenario - 09-13-94 4:14p
 TABLE K-185. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.14E+0	1.24E+0	1.24E+0	1.12E+0	1.22E+0	1.22E+0	1.06E+0	1.15E+0	1.15E+0	8.48E-1	9.26E-1	9.26E-1	3.80E-1	4.15E-1	4.15E-1
II	7.34E+1	6.83E+2	3.37E+3	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.81E+2	3.34E+3	7.08E+1	6.57E+2	3.18E+3
III	4.91E-1	5.44E-1	5.44E-1	4.91E-1	5.44E-1	5.44E-1	4.58E-1	5.07E-1	5.07E-1	2.43E-1	2.69E-1	2.69E-1	.00E+0	.00E+0	.00E+0
IV	4.31E-1	2.49E+0	4.74E+0	4.26E-1	2.46E+0	4.68E+0	4.06E-1	2.35E+0	4.47E+0	3.20E-1	1.85E+0	3.52E+0	.00E+0	.00E+0	.00E+0
V	2.95E+1	3.22E+1	3.22E+1	2.95E+1	3.22E+1	3.22E+1	2.91E+1	3.18E+1	3.18E+1	2.67E+1	2.91E+1	2.91E+1	1.75E+1	1.91E+1	1.91E+1
VI	1.71E+1	1.16E+2	8.13E+2	1.71E+1	1.16E+2	8.13E+2	1.71E+1	1.16E+2	8.13E+2	1.68E+1	1.15E+2	8.09E+2	1.49E+1	1.06E+2	7.53E+2
VII	2.60E+0	1.81E+1	1.19E+2	2.18E+0	1.48E+1	9.64E+1	1.61E+0	1.07E+1	6.98E+1	4.18E-2	2.77E-1	1.80E+0	.00E+0	.00E+0	.00E+0
IX	5.07E-2	4.37E-1	2.71E+0	3.69E-2	3.18E-1	1.97E+0	1.26E-2	1.09E-1	6.75E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.56E+0	5.13E+0	5.68E+0	1.56E+0	5.13E+0	5.68E+0	1.56E+0	5.00E+0	5.53E+0	1.51E+0	3.74E+0	4.08E+0	1.32E+0	2.25E+0	2.39E+0
XII	2.97E-2	9.20E-2	9.46E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.18E-2	9.44E-2	2.92E-2	9.07E-2	9.32E-2	2.76E-2	8.56E-2	8.80E-2
XIIIA	2.66E-4	1.61E-3	3.73E-3	1.91E-4	1.15E-3	2.67E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.40E-4	1.06E-3	1.57E-3	1.72E-4	7.58E-4	1.12E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.99E-4	5.75E-4	1.06E-2	1.43E-4	4.12E-4	7.57E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.50E-3	3.50E-3	3.27E-3	3.46E-3	3.46E-3	2.90E-3	3.09E-3	3.09E-3
XVIB	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.45E-3	3.45E-3	3.24E-3	3.42E-3	3.42E-3	2.88E-3	3.05E-3	3.05E-3
XVIC	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.17E-3	3.33E-3	3.33E-3	2.81E-3	2.96E-3	2.96E-3
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.00E-2	4.42E-2	4.42E-2	3.50E-2	3.87E-2	3.87E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.93E-2	4.35E-2	4.35E-2	3.44E-2	3.81E-2	3.81E-2
XVIIIC	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.79E-2	4.14E-2	4.14E-2	3.31E-2	3.62E-2	3.62E-2
XXA	2.04E-2	1.59E-1	1.10E+0	1.29E-2	1.00E-1	6.92E-1	2.69E-3	2.09E-2	1.44E-1	6.39E-4	4.98E-3	3.44E-2	.00E+0	.00E+0	.00E+0
XXB	1.95E-2	1.13E-1	4.44E-1	1.23E-2	7.14E-2	2.80E-1	2.56E-3	1.49E-2	5.84E-2	6.08E-4	3.54E-3	1.39E-2	.00E+0	.00E+0	.00E+0
XXC	1.77E-2	6.37E-2	1.41E+0	1.11E-2	4.01E-2	8.91E-1	2.33E-3	8.38E-3	1.86E-1	5.53E-4	1.99E-3	4.42E-2	.00E+0	.00E+0	.00E+0
XXIA	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.10E-1	1.15E+0	1.08E+1	7.46E-2	7.78E-1	7.34E+0
XXIB	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.09E-1	1.13E+0	9.77E+0	7.40E-2	7.66E-1	6.64E+0
XXIC	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.07E-1	1.09E+0	7.91E+0	7.29E-2	7.38E-1	5.38E+0
XXII	4.74E+0	4.77E+1	1.04E+2	4.73E+0	4.77E+1	1.04E+2	4.71E+0	4.75E+1	1.03E+2	4.49E+0	4.55E+1	9.90E+1	1.41E+0	2.12E+1	4.61E+1
DOE	5.31E+2	3.70E+3	2.27E+4	5.30E+2	3.69E+3	2.27E+4	5.29E+2	3.69E+3	2.27E+4	5.16E+2	3.64E+3	2.24E+4	4.38E+2	3.23E+3	2.06E+4
DOD	3.16E-2	1.01E-1	1.40E-1	3.11E-2	9.85E-2	1.27E-1	2.96E-2	9.18E-2	9.44E-2	2.92E-2	9.07E-2	9.32E-2	2.76E-2	8.56E-2	8.80E-2
NRC	5.61E+0	3.01E+1	2.32E+2	5.51E+0	2.95E+1	2.27E+2	5.38E+0	2.87E+1	2.19E+2	5.26E+0	2.78E+1	2.12E+2	4.13E+0	1.95E+1	1.45E+2
Total	5.37E+2	3.73E+3	2.30E+4	5.36E+2	3.72E+3	2.29E+4	5.34E+2	3.71E+3	2.29E+4	5.21E+2	3.66E+3	2.26E+4	4.42E+2	3.25E+3	2.08E+4

Reasonable Occupancy Scenario - 09-13-94 4:14p
 TABLE K-187. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.13E+0	1.23E+0	1.23E+0	1.09E+0	1.19E+0	1.19E+0	9.67E-1	1.06E+0	1.06E+0	6.49E-1	7.09E-1	7.09E-1	1.65E-1	1.81E-1	1.81E-1
II	7.34E+1	6.83E+2	3.37E+3	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.82E+2	3.36E+3	7.29E+1	6.77E+2	3.30E+3	4.98E+1	4.75E+2	2.34E+3
III	4.91E-1	5.44E-1	5.44E-1	4.86E-1	5.39E-1	5.39E-1	3.58E-1	3.96E-1	3.96E-1	5.72E-2	6.34E-2	6.34E-2	.00E+0	.00E+0	.00E+0
IV	4.29E-1	2.48E+0	4.71E+0	4.18E-1	2.41E+0	4.60E+0	3.80E-1	2.20E+0	4.18E+0	6.82E-2	3.94E-1	7.49E-1	.00E+0	.00E+0	.00E+0
V	2.95E+1	3.22E+1	3.22E+1	2.94E+1	3.21E+1	3.21E+1	2.84E+1	3.10E+1	3.10E+1	2.19E+1	2.39E+1	2.39E+1	6.17E+0	6.73E+0	6.73E+0
VI	1.71E+1	1.16E+2	8.13E+2	1.71E+1	1.16E+2	8.13E+2	1.70E+1	1.15E+2	8.12E+2	1.61E+1	1.11E+2	7.87E+2	1.12E+1	8.40E+1	6.01E+2
VII	2.39E+0	1.64E+1	1.08E+2	2.02E+0	1.35E+1	8.79E+1	6.32E-1	4.30E+0	2.81E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	4.38E-2	3.78E-1	2.34E+0	2.28E-2	1.97E-1	1.22E+0	2.37E-3	2.04E-2	1.27E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.56E+0	5.13E+0	5.68E+0	1.56E+0	5.12E+0	5.67E+0	1.54E+0	4.67E+0	5.15E+0	1.47E+0	3.13E+0	3.38E+0	1.18E+0	1.69E+0	1.77E+0
XII	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.94E-2	9.10E-2	9.36E-2	2.87E-2	8.89E-2	9.15E-2	9.23E-3	2.86E-2	2.95E-2
XIIIA	2.42E-4	1.46E-3	3.38E-3	9.26E-5	5.59E-4	1.30E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.18E-4	9.60E-4	1.42E-3	8.35E-5	3.68E-4	5.45E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.80E-4	5.21E-4	9.58E-3	6.91E-5	2.00E-4	3.67E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.49E-3	3.49E-3	3.19E-3	3.38E-3	3.38E-3	1.79E-3	1.91E-3	1.91E-3
XVIB	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.45E-3	3.45E-3	3.27E-3	3.45E-3	3.45E-3	3.16E-3	3.34E-3	3.34E-3	1.77E-3	1.88E-3	1.88E-3
XVIC	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.19E-3	3.35E-3	3.35E-3	3.09E-3	3.25E-3	3.25E-3	1.73E-3	1.83E-3	1.83E-3
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.02E-2	4.45E-2	4.45E-2	3.86E-2	4.26E-2	4.26E-2	2.65E-2	2.93E-2	2.93E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.95E-2	4.38E-2	4.38E-2	3.79E-2	4.20E-2	4.20E-2	2.60E-2	2.88E-2	2.88E-2
XVIIIC	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.81E-2	4.17E-2	4.17E-2	3.65E-2	3.99E-2	3.99E-2	2.51E-2	2.74E-2	2.74E-2
XXA	1.55E-2	1.21E-1	8.31E-1	6.73E-3	5.24E-2	3.61E-1	7.70E-4	5.99E-3	4.14E-2	2.90E-4	2.26E-3	1.57E-2	.00E+0	.00E+0	.00E+0
XXB	1.47E-2	8.58E-2	3.36E-1	6.41E-3	3.73E-2	1.46E-1	7.33E-4	4.27E-3	1.67E-2	2.77E-4	1.61E-3	6.33E-3	.00E+0	.00E+0	.00E+0
XXC	1.34E-2	4.82E-2	1.07E+0	5.82E-3	2.10E-2	4.65E-1	6.66E-4	2.40E-3	5.33E-2	2.52E-4	9.07E-4	2.01E-2	.00E+0	.00E+0	.00E+0
XXIA	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.12E-1	1.17E+0	1.10E+1	9.63E-2	1.00E+0	9.47E+0	3.44E-2	3.59E-1	3.38E+0
XXIB	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.11E-1	1.15E+0	9.96E+0	9.55E-2	9.89E-1	8.56E+0	3.41E-2	3.53E-1	3.06E+0
XXIC	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.09E-1	1.11E+0	8.07E+0	9.40E-2	9.53E-1	6.94E+0	3.36E-2	3.40E-1	2.48E+0
XXII	4.74E+0	4.77E+1	1.04E+2	4.73E+0	4.76E+1	1.04E+2	4.64E+0	4.69E+1	1.02E+2	4.24E+0	4.32E+1	9.38E+1	.00E+0	.00E+0	.00E+0
DOE	5.31E+2	3.70E+3	2.27E+4	5.30E+2	3.69E+3	2.27E+4	5.24E+2	3.67E+3	2.26E+4	4.91E+2	3.53E+3	2.18E+4	3.11E+2	2.39E+3	1.60E+4
DOD	3.14E-2	1.00E-1	1.35E-1	3.03E-2	9.51E-2	1.10E-1	2.94E-2	9.10E-2	9.36E-2	2.87E-2	8.89E-2	9.15E-2	9.23E-3	2.86E-2	2.95E-2
NRC	5.55E+0	2.97E+1	2.28E+2	5.43E+0	2.90E+1	2.22E+2	5.33E+0	2.83E+1	2.17E+2	4.87E+0	2.47E+1	1.86E+2	2.60E+0	9.75E+0	6.75E+1
Total	5.36E+2	3.73E+3	2.29E+4	5.35E+2	3.72E+3	2.29E+4	5.29E+2	3.70E+3	2.28E+4	4.96E+2	3.56E+3	2.20E+4	3.14E+2	2.40E+3	1.61E+4

Reasonable Occupancy Scenario - 09-13-94 4:14p
 TABLE K-189. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC RISK OF CANCER INCIDENCE FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	1.E-6			1.E-5			1.E-4			1.E-3			1.E-2		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.51E-1	8.21E-1	8.21E-1	7.38E-1	8.07E-1	8.07E-1	6.97E-1	7.62E-1	7.62E-1	5.60E-1	6.12E-1	6.12E-1	2.51E-1	2.74E-1	2.74E-1
II	4.83E+1	4.51E+2	2.22E+3	4.82E+1	4.51E+2	2.22E+3	4.82E+1	4.50E+2	2.22E+3	4.82E+1	4.49E+2	2.19E+3	4.65E+1	4.33E+2	2.09E+3
III	3.25E-1	3.60E-1	3.60E-1	3.25E-1	3.60E-1	3.60E-1	3.03E-1	3.36E-1	3.36E-1	1.61E-1	1.78E-1	1.78E-1	.00E+0	.00E+0	.00E+0
IV	2.79E-1	1.57E+0	3.04E+0	2.76E-1	1.55E+0	3.00E+0	2.63E-1	1.48E+0	2.86E+0	2.07E-1	1.16E+0	2.26E+0	.00E+0	.00E+0	.00E+0
V	1.95E+1	2.13E+1	2.13E+1	1.95E+1	2.12E+1	2.12E+1	1.93E+1	2.10E+1	2.10E+1	1.77E+1	1.92E+1	1.92E+1	1.16E+1	1.26E+1	1.26E+1
VI	1.18E+1	7.88E+1	5.55E+2	1.17E+1	7.88E+1	5.55E+2	1.17E+1	7.88E+1	5.55E+2	1.15E+1	7.83E+1	5.52E+2	1.02E+1	7.24E+1	5.14E+2
VII	2.13E+0	1.52E+1	1.01E+2	1.78E+0	1.24E+1	8.21E+1	1.31E+0	9.01E+0	5.95E+1	3.38E-2	2.33E-1	1.54E+0	.00E+0	.00E+0	.00E+0
IX	4.48E-2	3.90E-1	2.43E+0	3.26E-2	2.84E-1	1.77E+0	1.12E-2	9.73E-2	6.06E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
X	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.13E+0	3.46E+0	9.92E-1	2.36E+0	2.57E+0	8.69E-1	1.43E+0	1.52E+0
XII	2.64E-2	8.16E-2	8.39E-2	2.64E-2	8.15E-2	8.38E-2	2.63E-2	8.14E-2	8.38E-2	2.60E-2	8.04E-2	8.27E-2	2.46E-2	7.59E-2	7.81E-2
XIIIA	1.74E-4	1.02E-3	2.39E-3	1.25E-4	7.29E-4	1.71E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.56E-4	6.62E-4	1.00E-3	1.12E-4	4.75E-4	7.17E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.27E-4	3.58E-4	6.47E-3	9.14E-5	2.57E-4	4.64E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.30E-3	2.30E-3	2.16E-3	2.28E-3	2.28E-3	1.91E-3	2.04E-3	2.04E-3
XVIB	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.13E-3	2.26E-3	2.26E-3	1.90E-3	2.01E-3	2.01E-3
XVIC	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.09E-3	2.20E-3	2.20E-3	1.86E-3	1.96E-3	1.96E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.63E-2	2.91E-2	2.91E-2	2.30E-2	2.55E-2	2.55E-2
XVIIIB	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.59E-2	2.86E-2	2.86E-2	2.27E-2	2.50E-2	2.50E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.51E-2	2.73E-2	2.73E-2	2.19E-2	2.39E-2	2.39E-2
XXA	1.27E-2	9.89E-2	7.78E-1	8.01E-3	6.24E-2	4.91E-1	1.67E-3	1.30E-2	1.02E-1	3.97E-4	3.10E-3	2.44E-2	.00E+0	.00E+0	.00E+0
XXB	1.21E-2	7.03E-2	3.13E-1	7.62E-3	4.43E-2	1.98E-1	1.59E-3	9.25E-3	4.12E-2	3.78E-4	2.20E-3	9.82E-3	.00E+0	.00E+0	.00E+0
XXC	1.09E-2	3.95E-2	8.91E-1	6.89E-3	2.49E-2	5.62E-1	1.44E-3	5.20E-3	1.17E-1	3.42E-4	1.24E-3	2.79E-2	.00E+0	.00E+0	.00E+0
XXIA	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.46E-2	7.79E-1	7.34E+0	7.26E-2	7.58E-1	7.14E+0	4.94E-2	5.15E-1	4.85E+0
XXIB	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.40E-2	7.66E-1	6.64E+0	7.21E-2	7.46E-1	6.46E+0	4.90E-2	5.07E-1	4.39E+0
XXIC	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.29E-2	7.39E-1	5.37E+0	7.10E-2	7.19E-1	5.23E+0	4.82E-2	4.89E-1	3.56E+0
XXII	3.13E+0	3.11E+1	6.84E+1	3.13E+0	3.10E+1	6.83E+1	3.11E+0	3.09E+1	6.80E+1	2.97E+0	2.96E+1	6.52E+1	9.35E-1	1.38E+1	3.04E+1
DOE	3.61E+2	2.50E+3	1.54E+4	3.60E+2	2.49E+3	1.54E+4	3.59E+2	2.49E+3	1.54E+4	3.50E+2	2.45E+3	1.52E+4	2.98E+2	2.19E+3	1.40E+4
DOD	2.77E-2	8.73E-2	1.12E-1	2.73E-2	8.56E-2	1.04E-1	2.63E-2	8.14E-2	8.38E-2	2.60E-2	8.04E-2	8.27E-2	2.46E-2	7.59E-2	7.81E-2
NRC	3.70E+0	1.98E+1	1.53E+2	3.63E+0	1.95E+1	1.50E+2	3.55E+0	1.90E+1	1.45E+2	3.48E+0	1.84E+1	1.40E+2	2.73E+0	1.29E+1	9.57E+1
Total	3.65E+2	2.52E+3	1.56E+4	3.64E+2	2.51E+3	1.56E+4	3.62E+2	2.51E+3	1.55E+4	3.54E+2	2.47E+3	1.53E+4	3.01E+2	2.20E+3	1.41E+4



Radiation Site Cleanup Regulations:

Technical Support Document
For The Development Of
Radionuclide Cleanup Levels
For Soil

Appendices L-O

Review Draft

Radiation Site Cleanup Regulations:

Technical Support Document
For The Development Of Radionuclide
Cleanup Levels For Soil

Review Draft

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Office of Radiation and Indoor Air
401 M Street, S.W.
Washington, DC 20460**

September 26, 1994

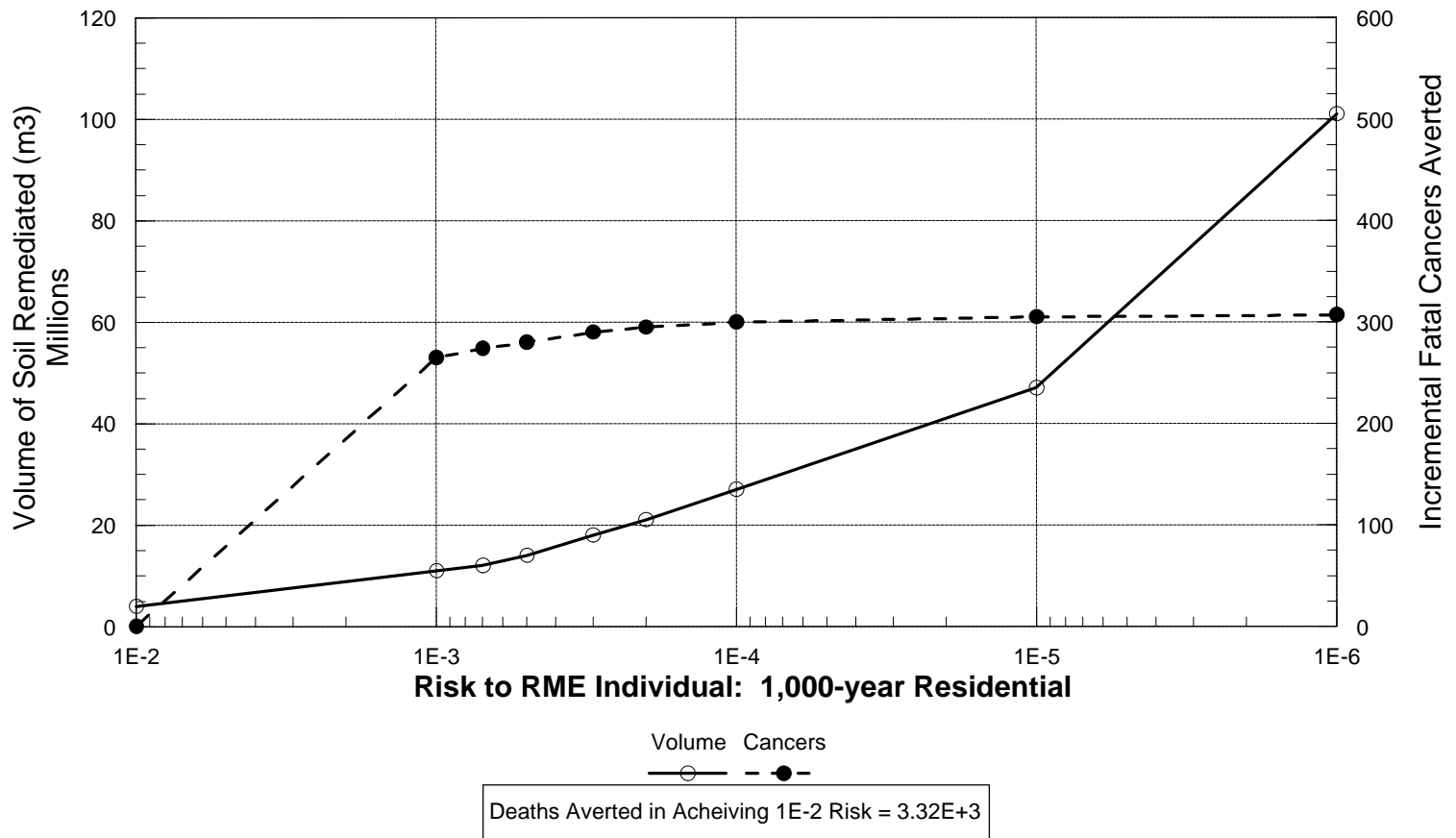
APPENDIX L

GRAPHICAL RESULTS OF REFERENCE SITE ANALYSES

Weighted Total, All Sites: 1000 yr, Including Rn

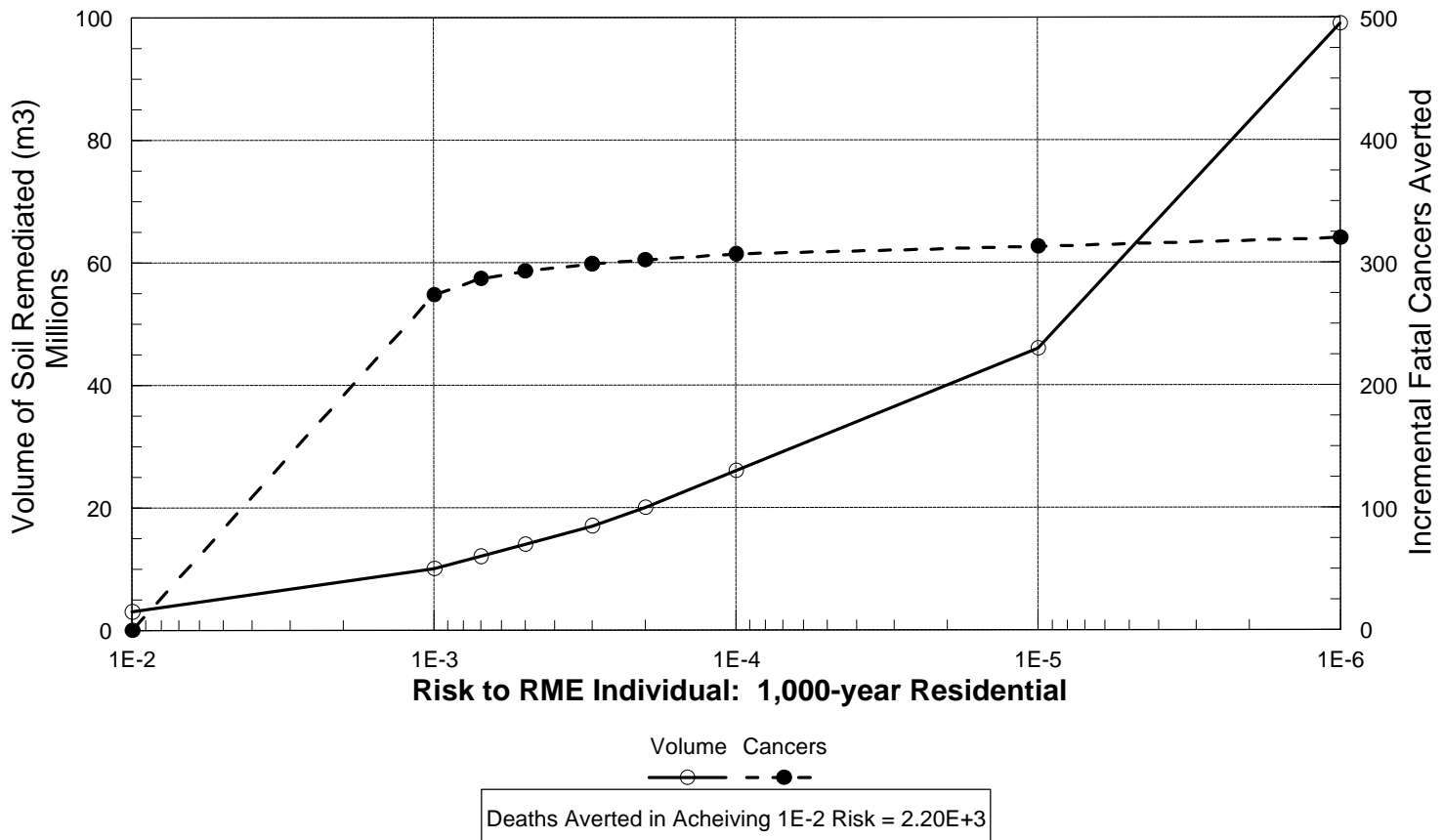
Volume of Soil Remediated: Rural Residential

Fatal Cancers Averted: Reasonable Scenario



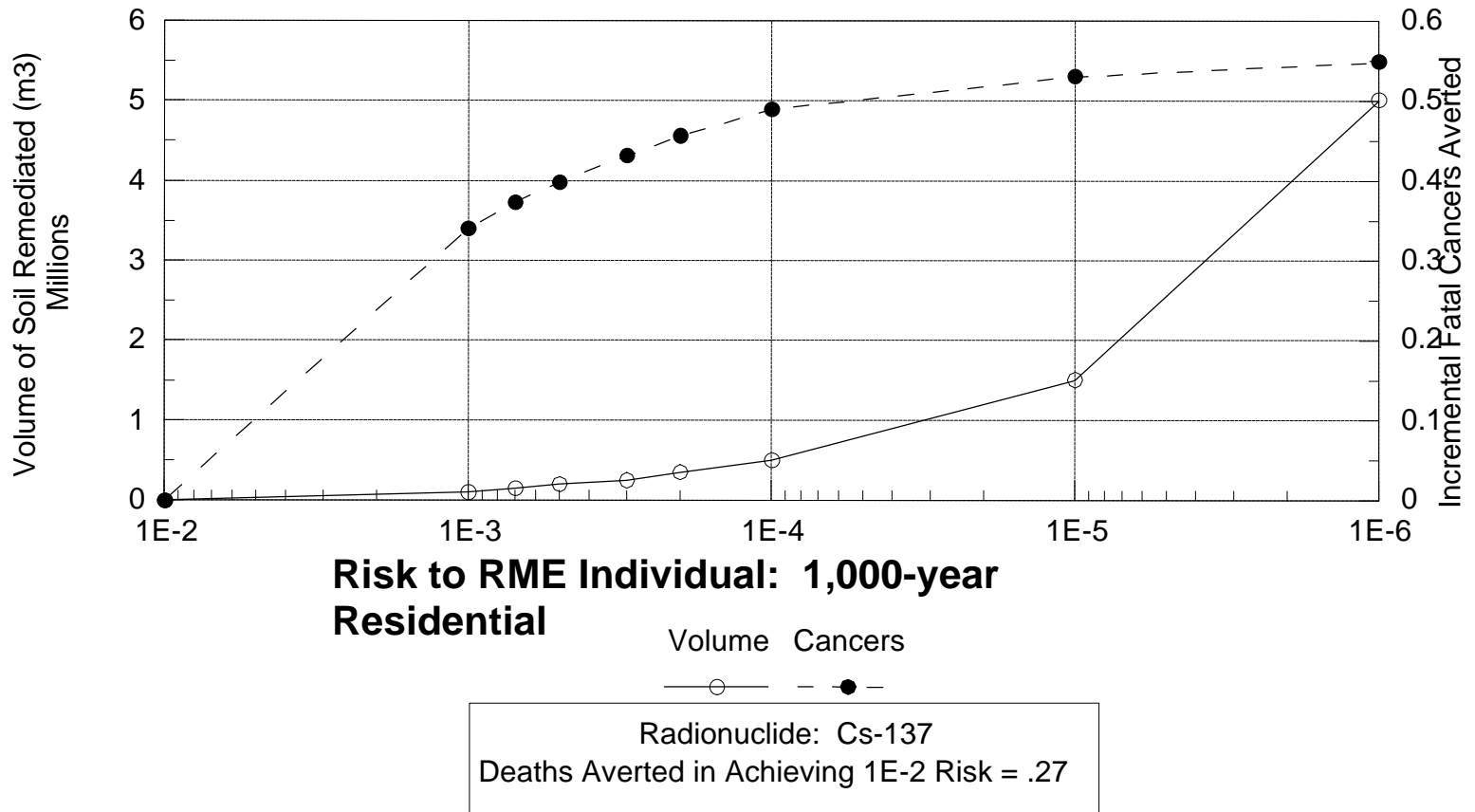
Weighted Total, All Sites: 1000 yr, Excluding Rn

Volume of Soil Remediated: Rural Residential
Fatal Cancers Averted: Reasonable Scenario



Reference Site I: 1,000 years

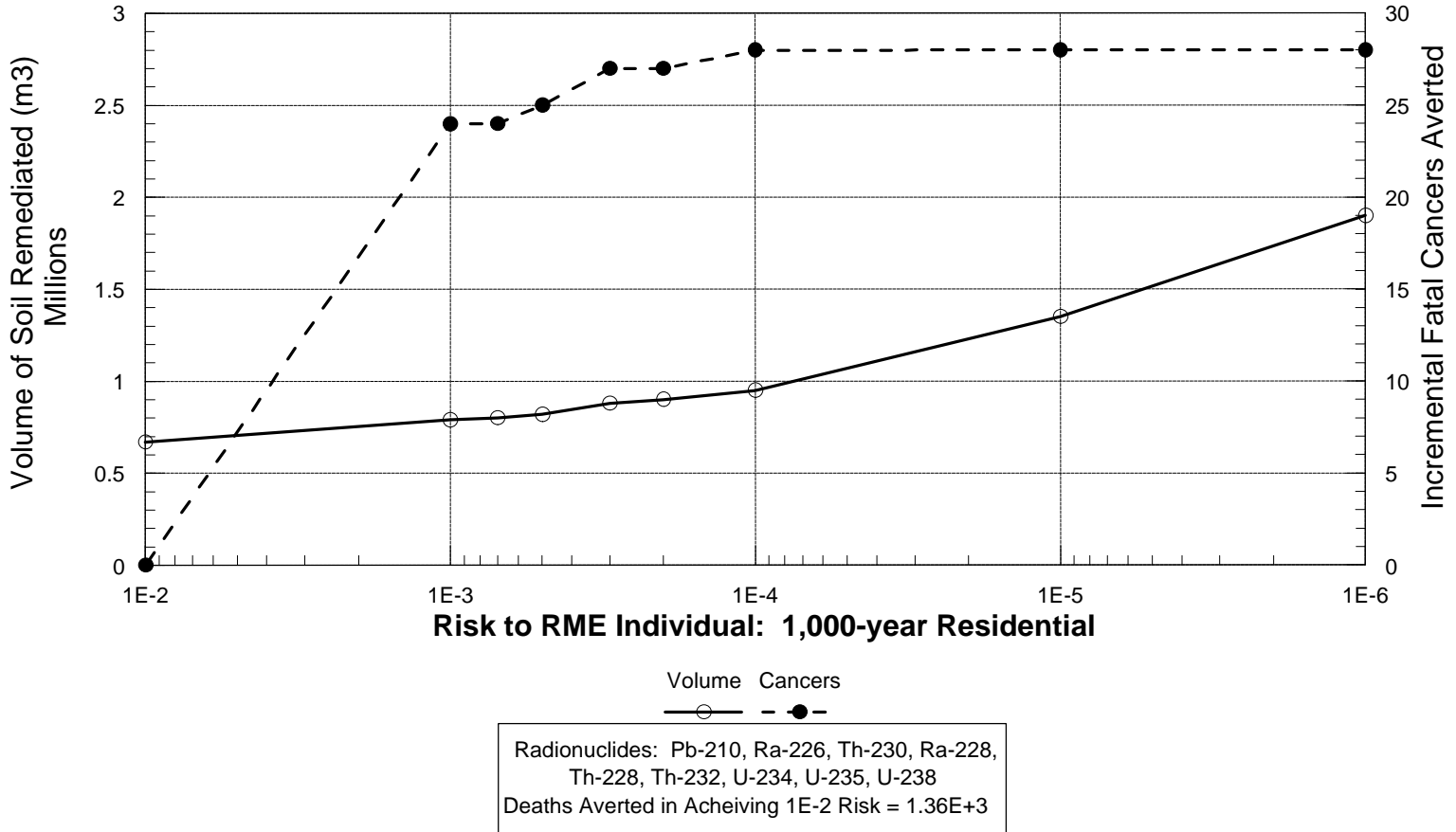
Volume of Soil Remediated: Rural Residential
Fatal Cancers Averted: Reasonable Scenario



Reference Site II: 1,000 years, Including Rn

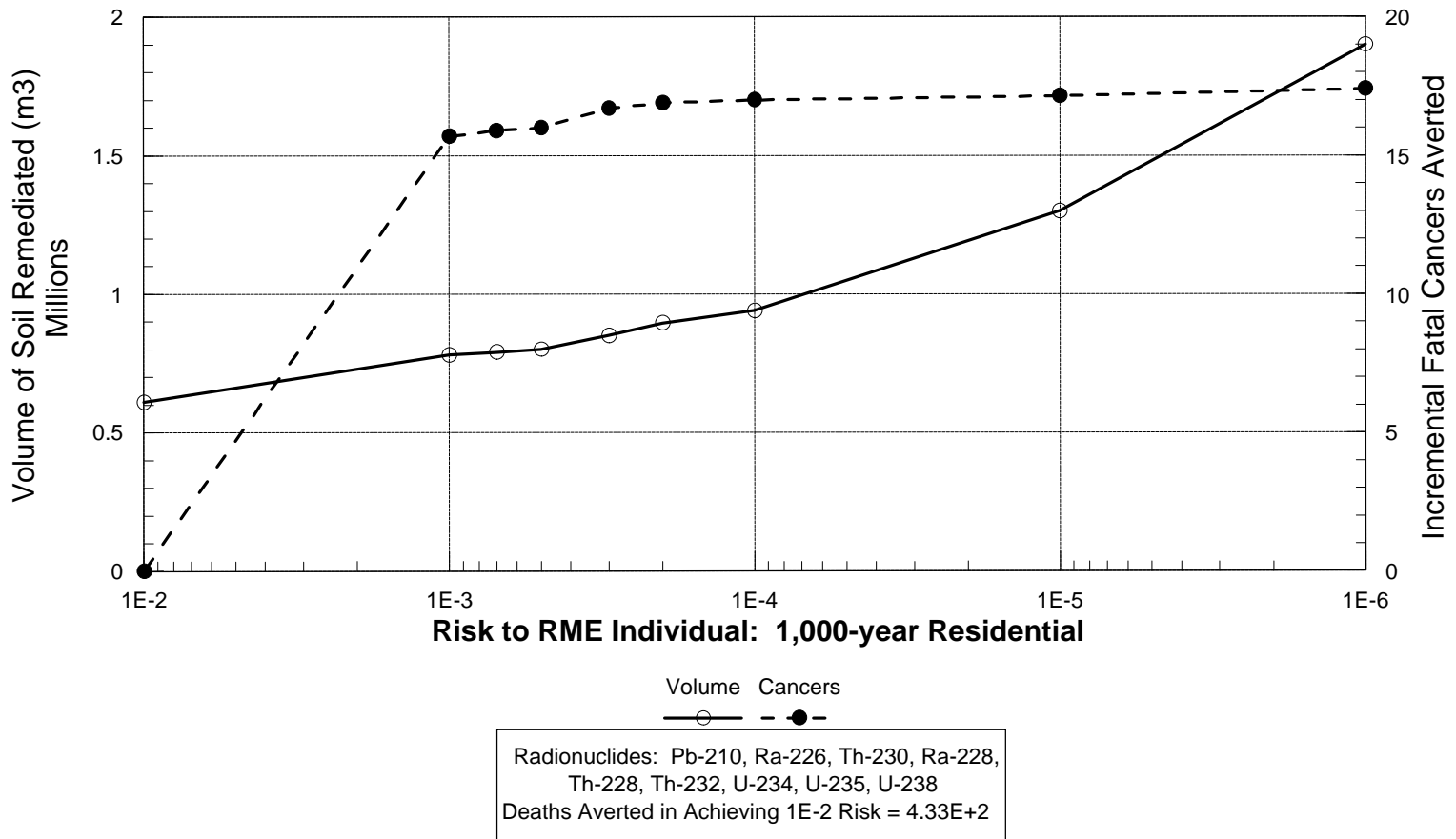
Volume of Soil Remediated: Rural Residential

Fatal Cancers Averted: Reasonable Scenario



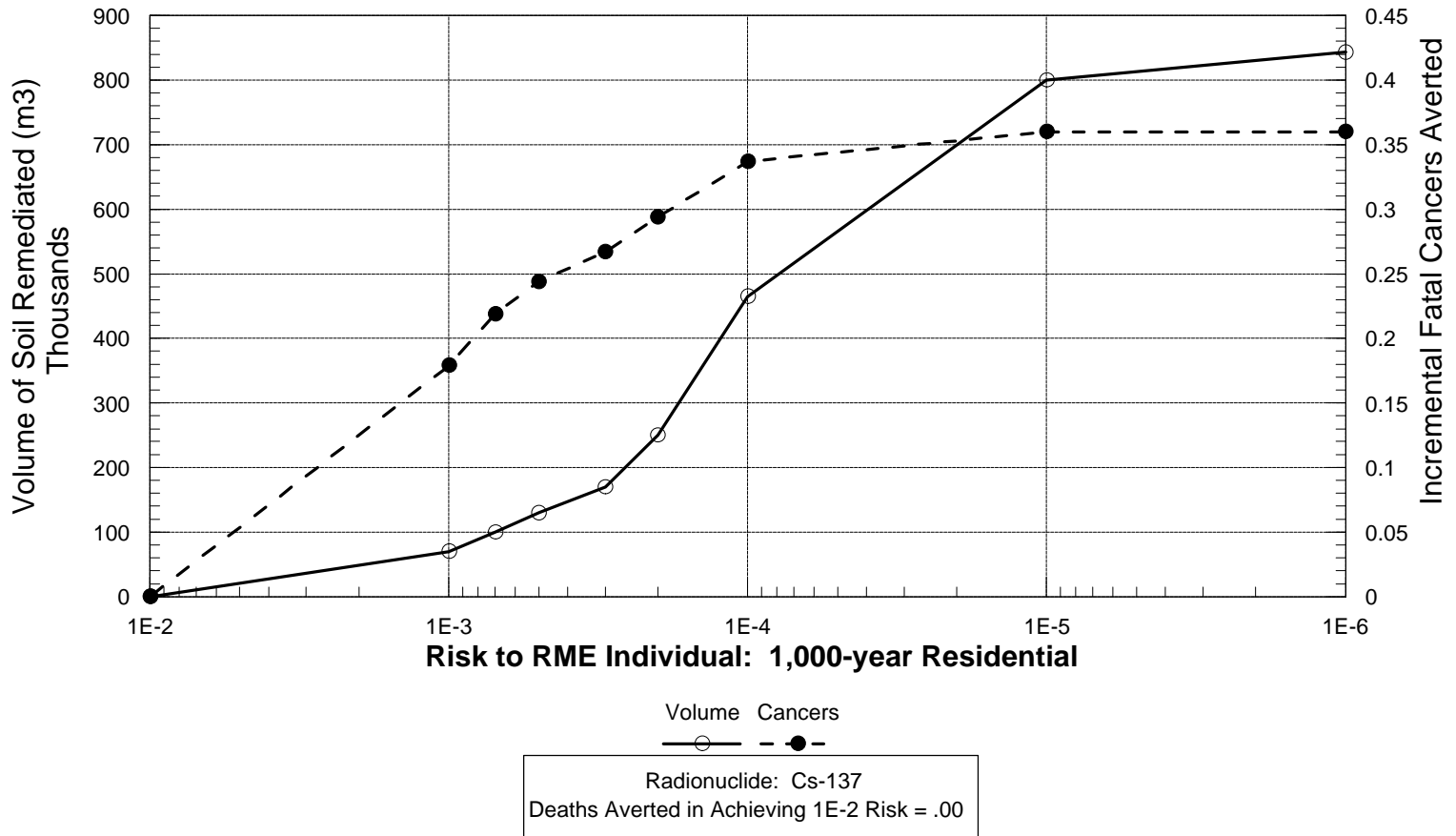
Reference Site II: 1,000 years, Excluding Rn

Volume of Soil Remediated: Rural Residential
Fatal Cancers Averted: Reasonable Scenario



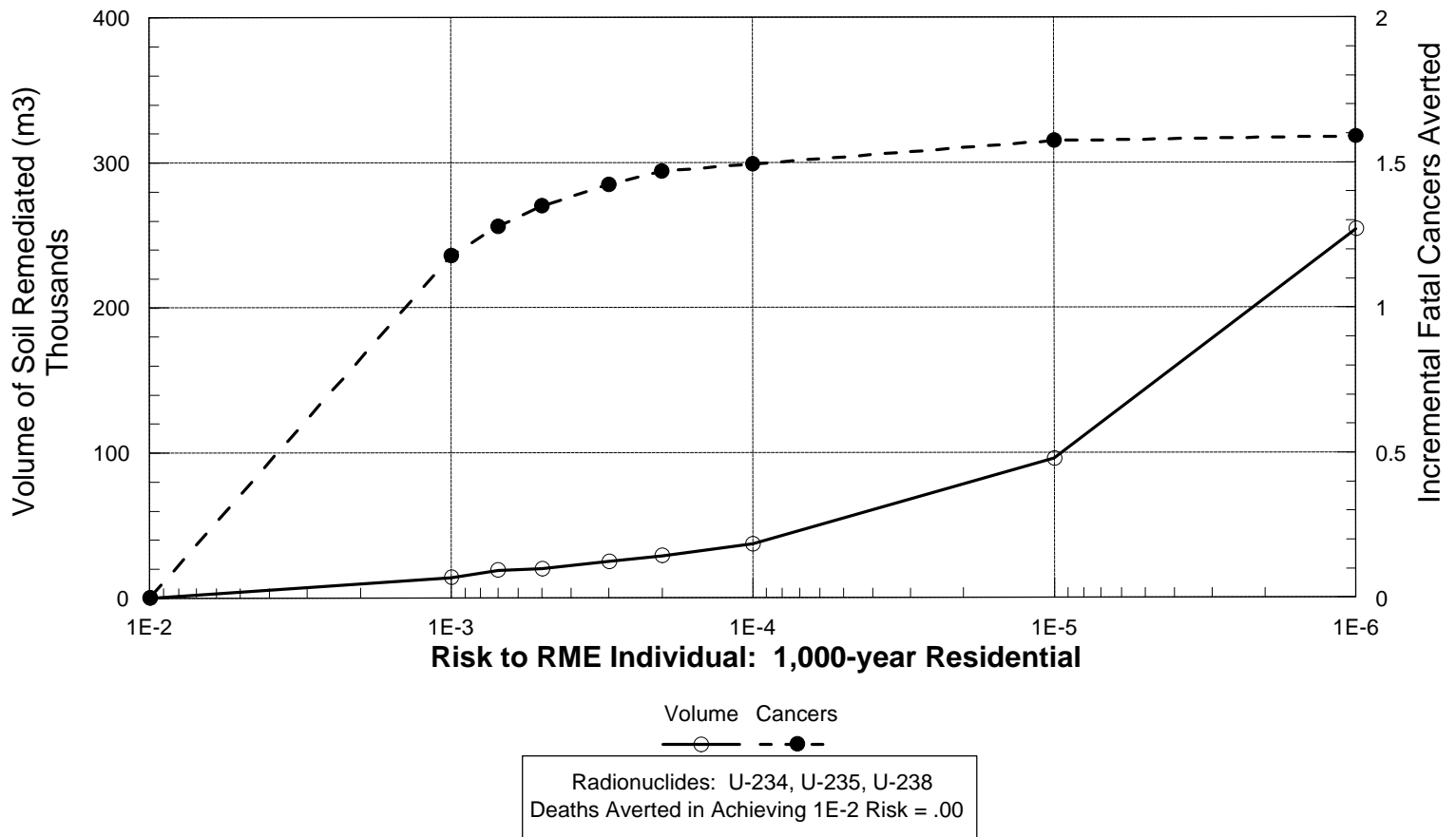
Reference Site III: 1,000 years

Volume of Soil Remediated: Rural Residential
Fatal Cancers Averted: Reasonable Scenario



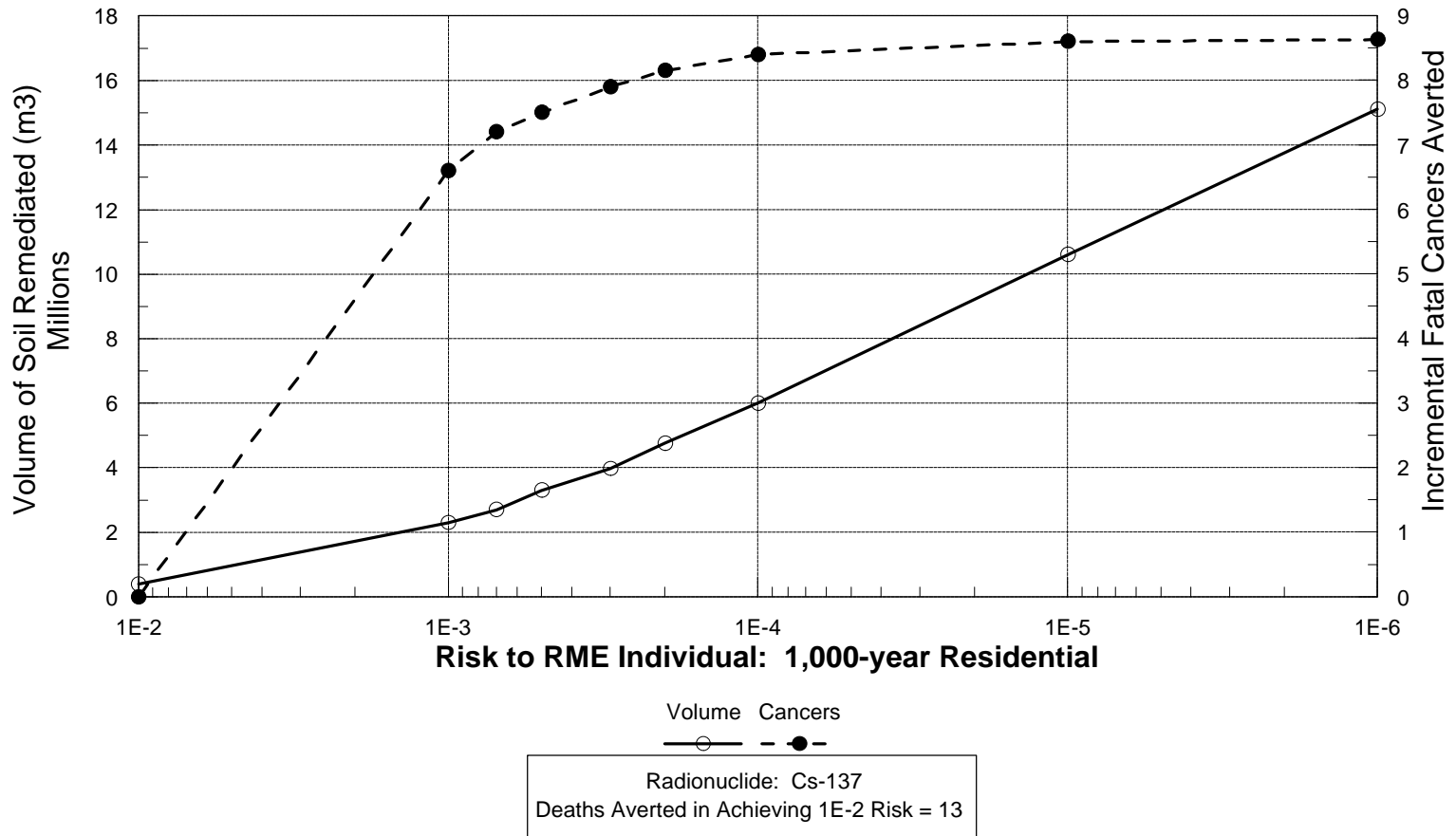
Reference Site IV: 1,000 years, Including Rn

Volume of Soil Remediated: Rural Residential
Fatal Cancers Averted: Reasonable Scenario



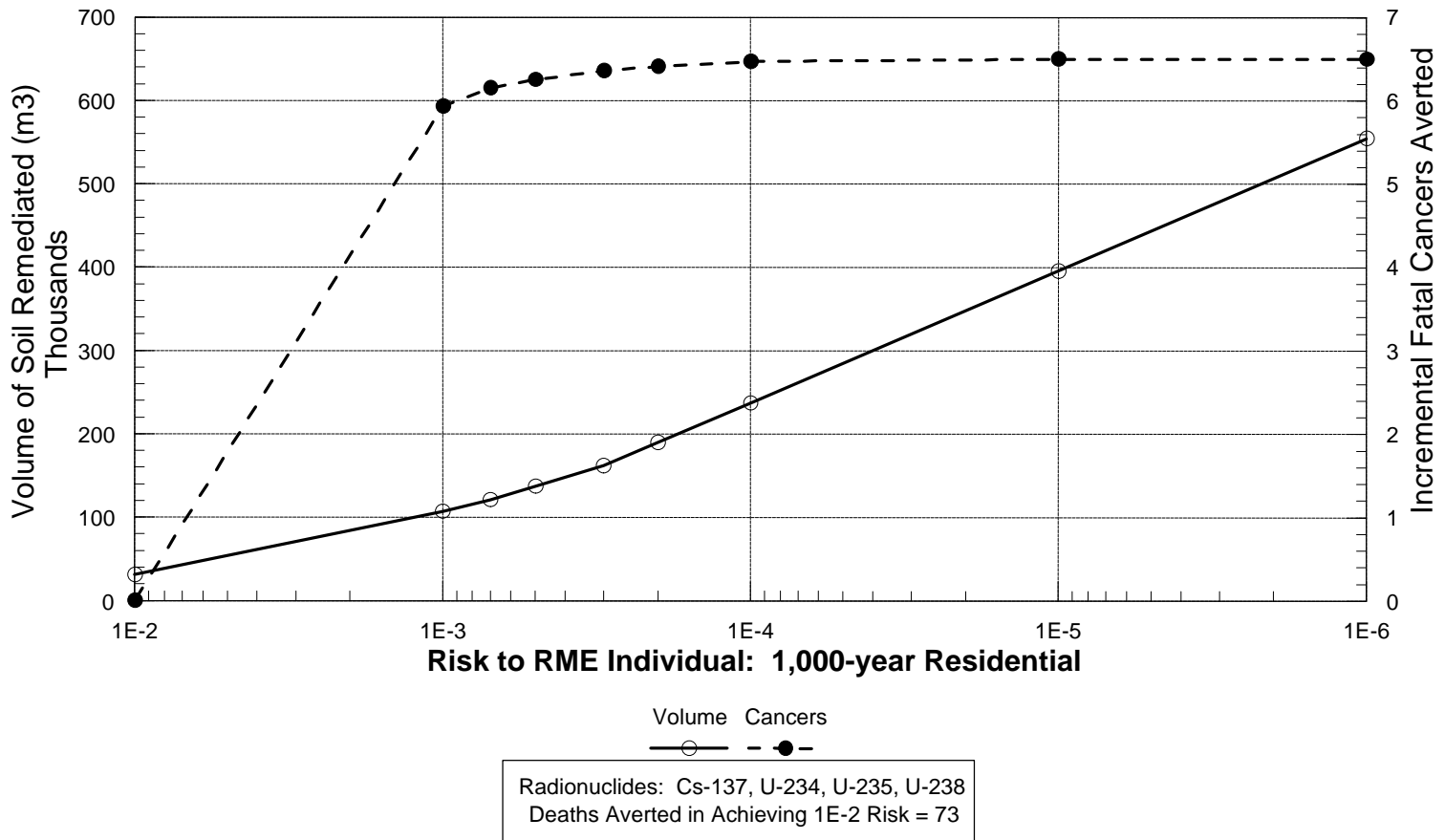
Reference Site V: 1,000 years

Volume of Soil Remediated: Rural Residential
Fatal Cancers Averted: Reasonable Scenario



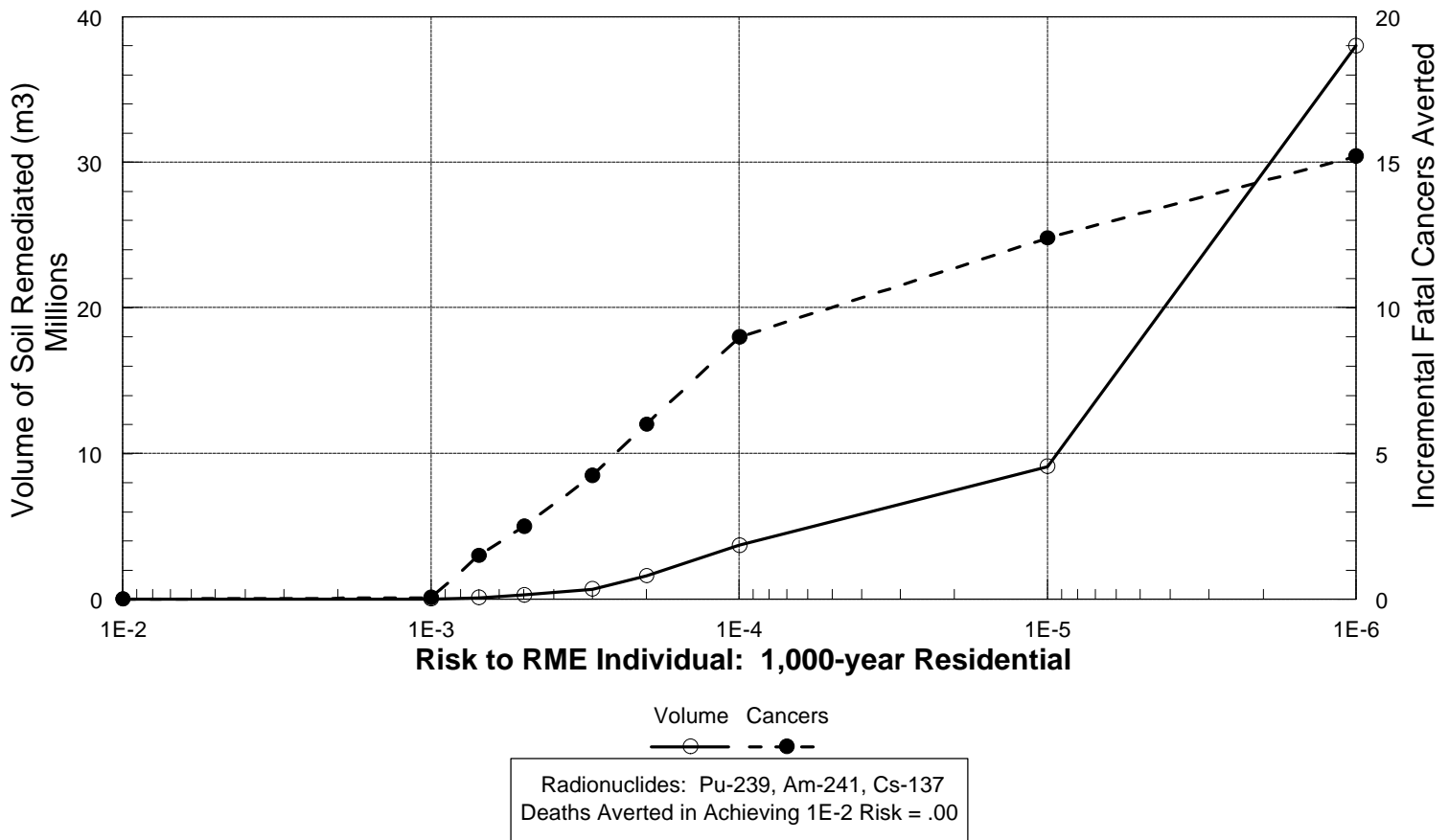
Reference Site VI: 1,000 years, Including Rn

Volume of Soil Remediated: Rural Residential
Fatal Cancers Averted: Reasonable Scenario



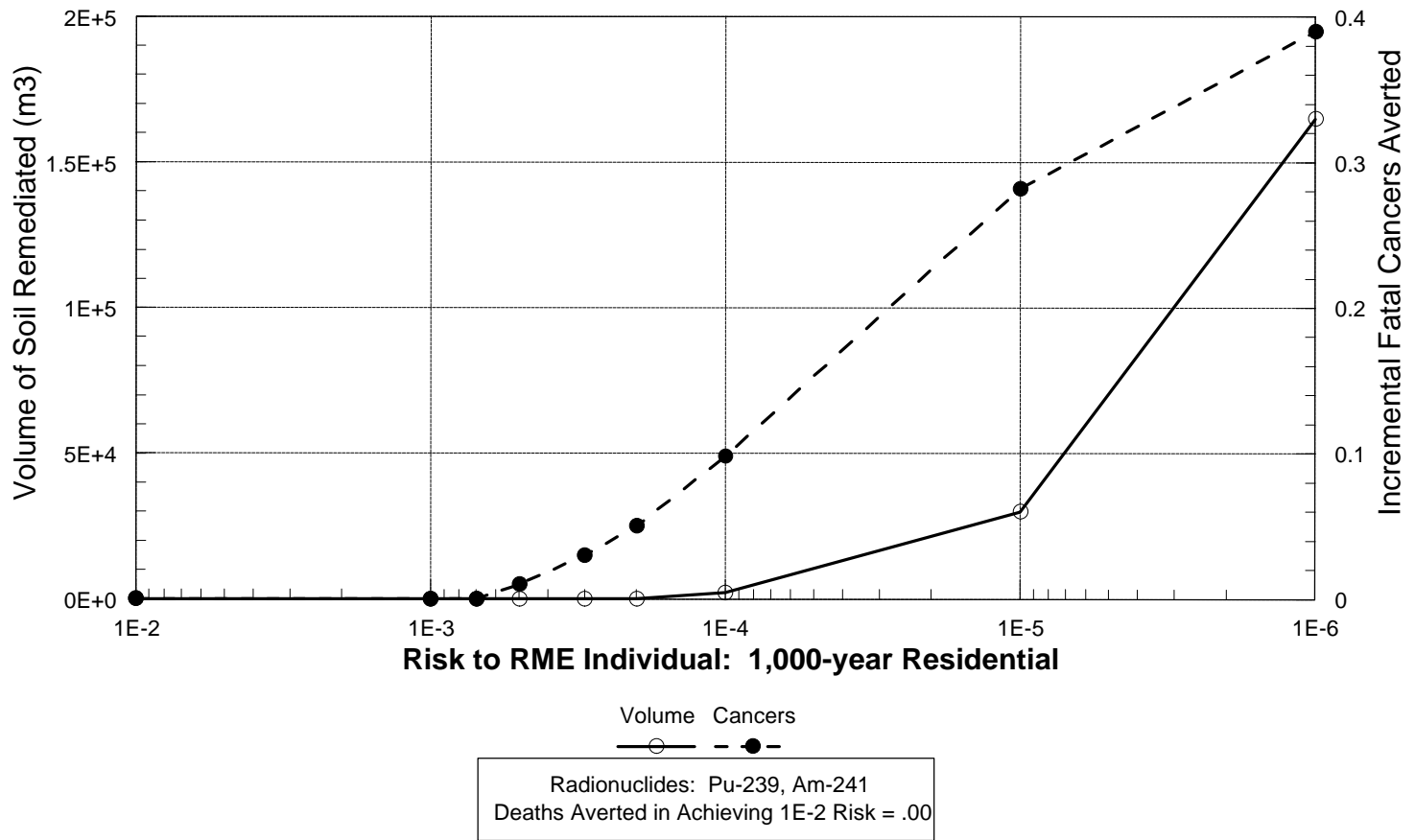
Reference Site VII: 1,000 years

Volume of Soil Remediated: Rural Residential Fatal Cancers Averted: Reasonable Scenario



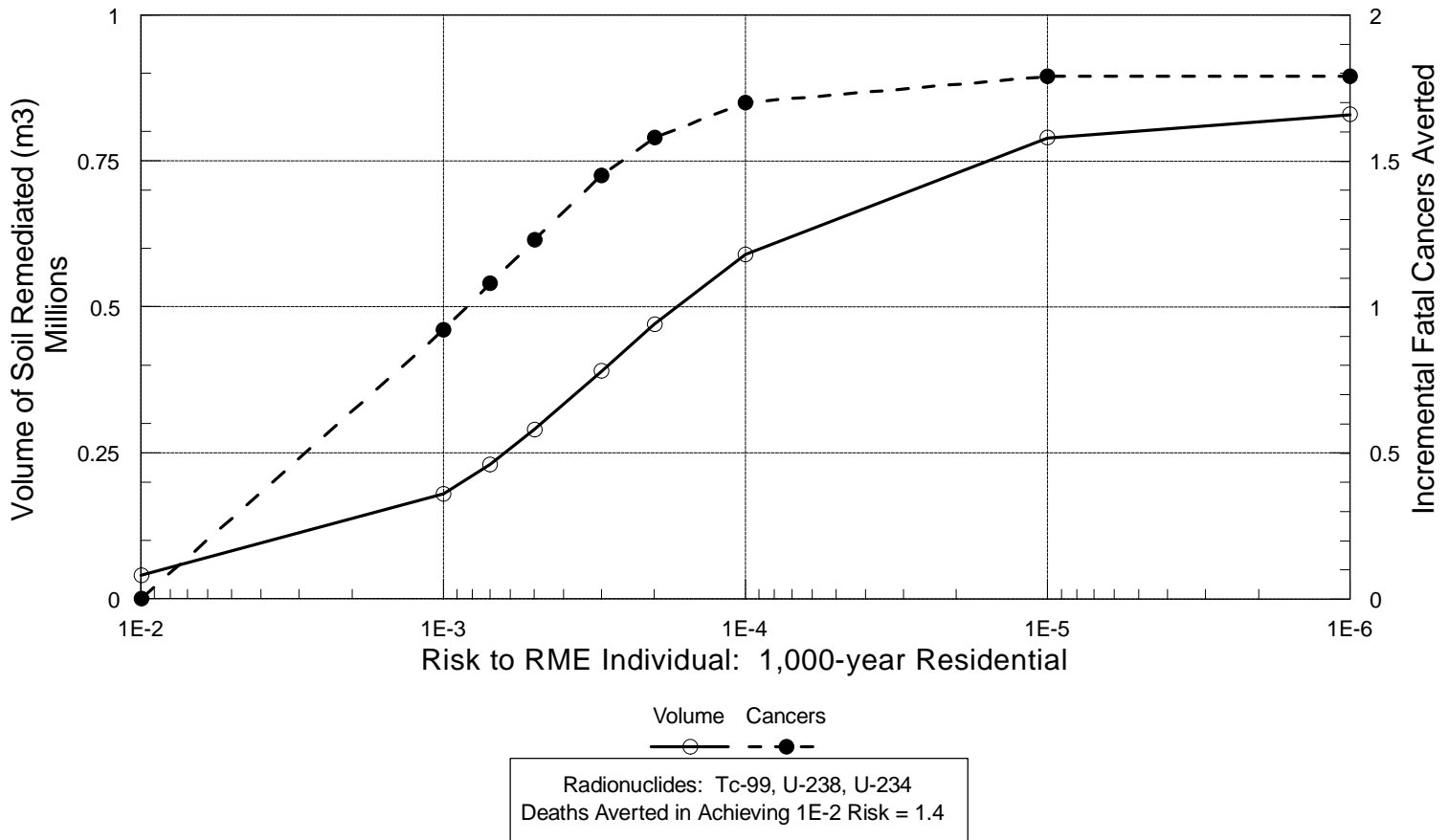
Reference Site IX: 1,000 years

Volume of Soil Remediated: Rural Residential
Fatal Cancers Averted: Reasonable Scenario



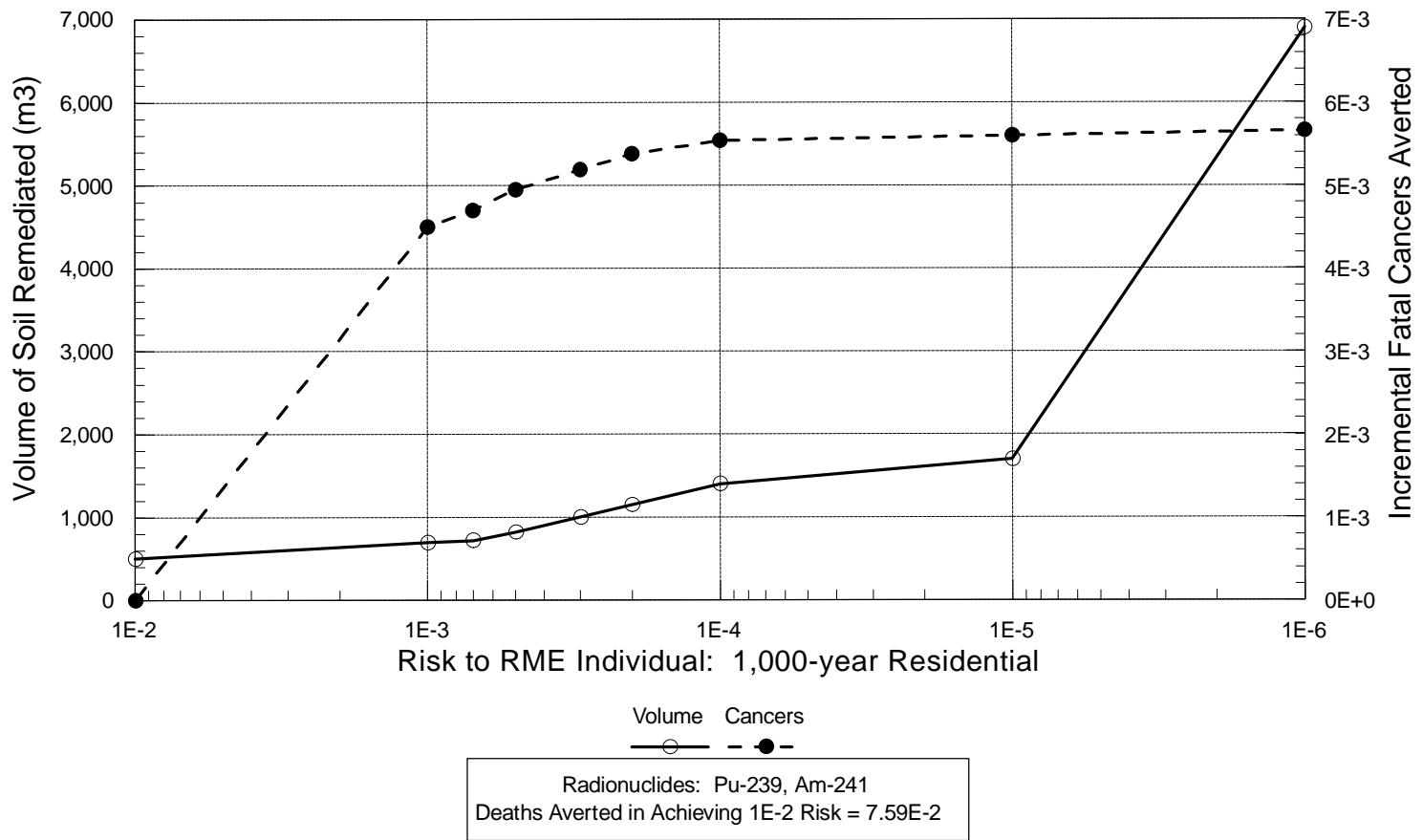
Reference Site X: 1000 year

Volume of Soil Remediated: Rural Residential Fatal Cancers Averted: Reasonable Scenario



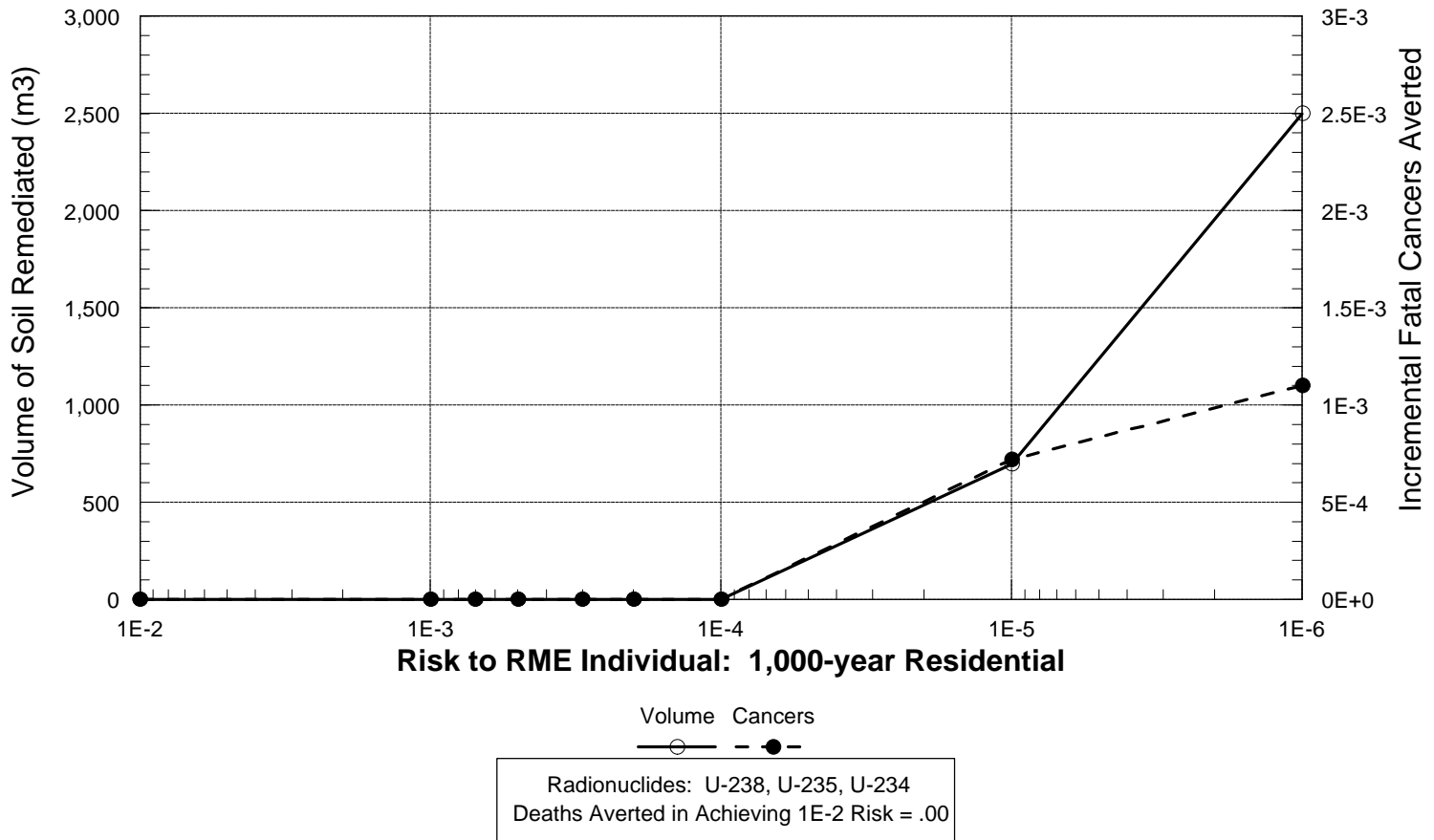
Reference Site XII: 1,000 years

Volume of Soil Remediated: Rural Residential Fatal Cancers Averted: Reasonable Scenario



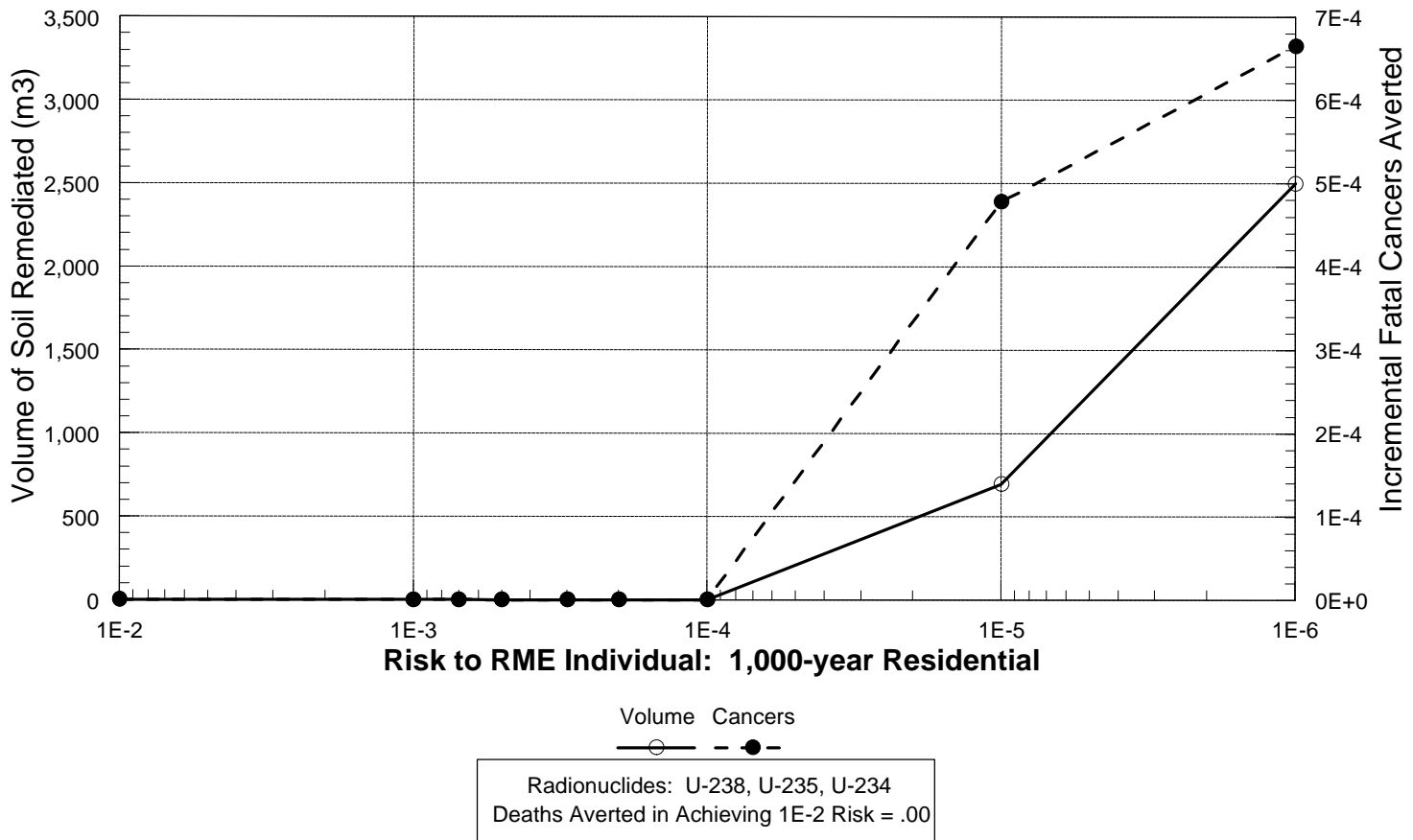
Reference Site XIII A: 1,000 years, Including Rn

Volume of Soil Remediated: Rural Residential
Fatal Cancers Averted: Reasonable Scenario



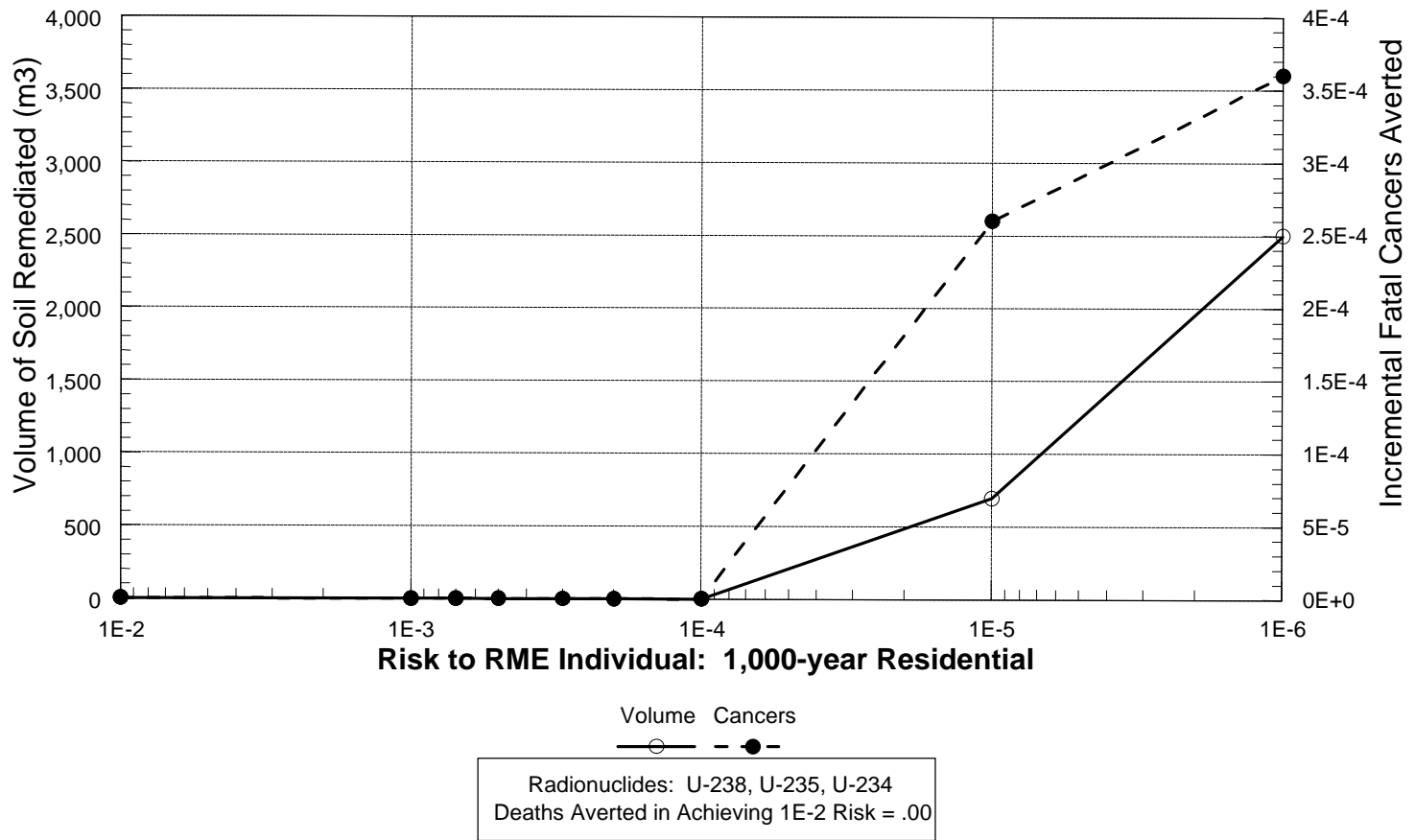
Reference Site XIIIB: 1,000 years, Including Rn

Volume of Soil Remediated: Rural Residential
Fatal Cancers Averted: Reasonable Scenario



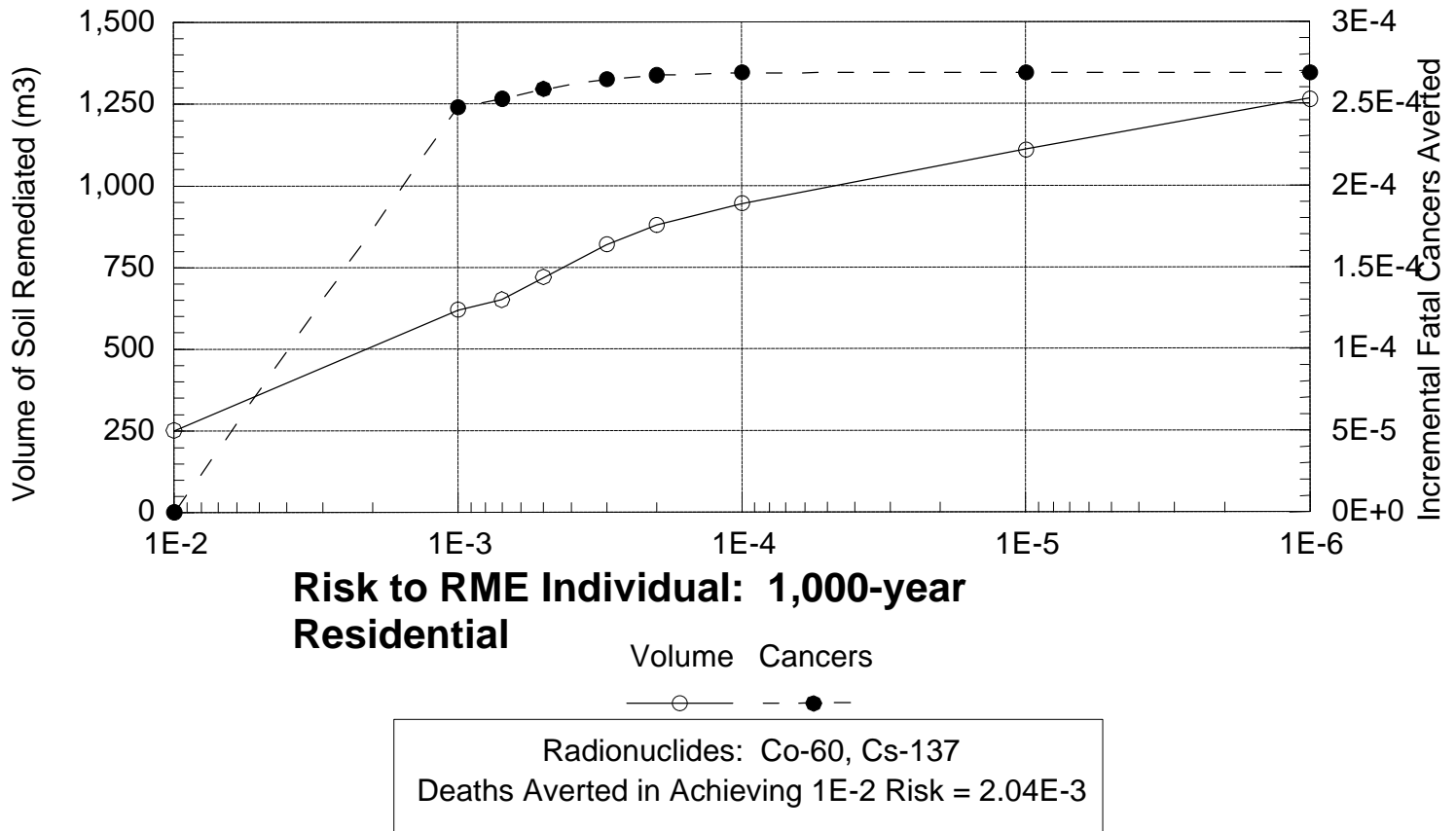
Reference Site XIIC: 1,000 years, Including Rn

Volume of Soil Remediated: Rural Residential
Fatal Cancers Averted: Reasonable Scenario



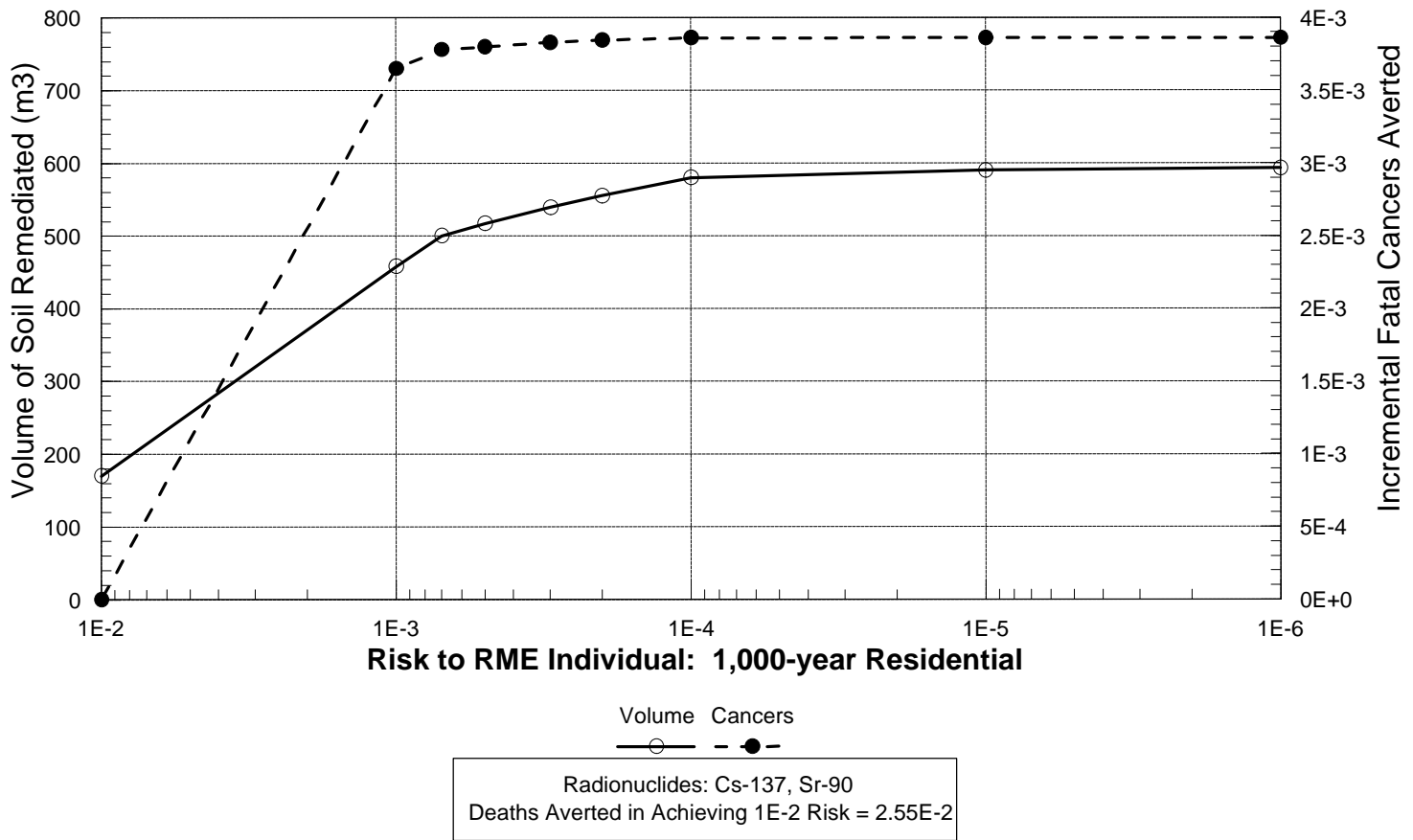
Reference Site XVIA: 1,000 years

Volume of Soil Remediated: Rural Residential
Fatal Cancers Averted: Reasonable Scenario



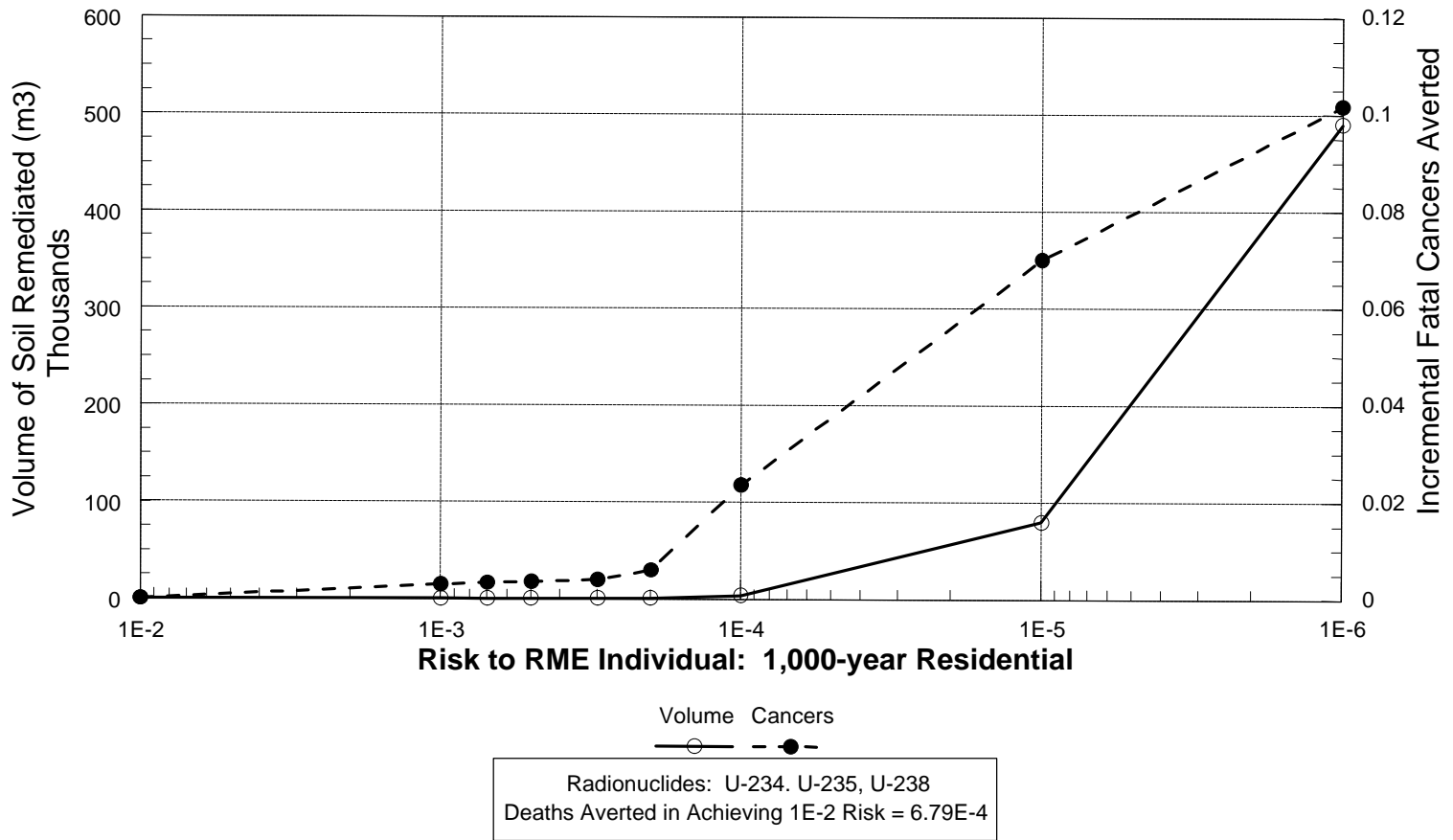
Reference Site XVIII A: 1,000 years

Volume of Soil Remediated: Rural Residential Fatal Cancers Averted: Reasonable Scenario



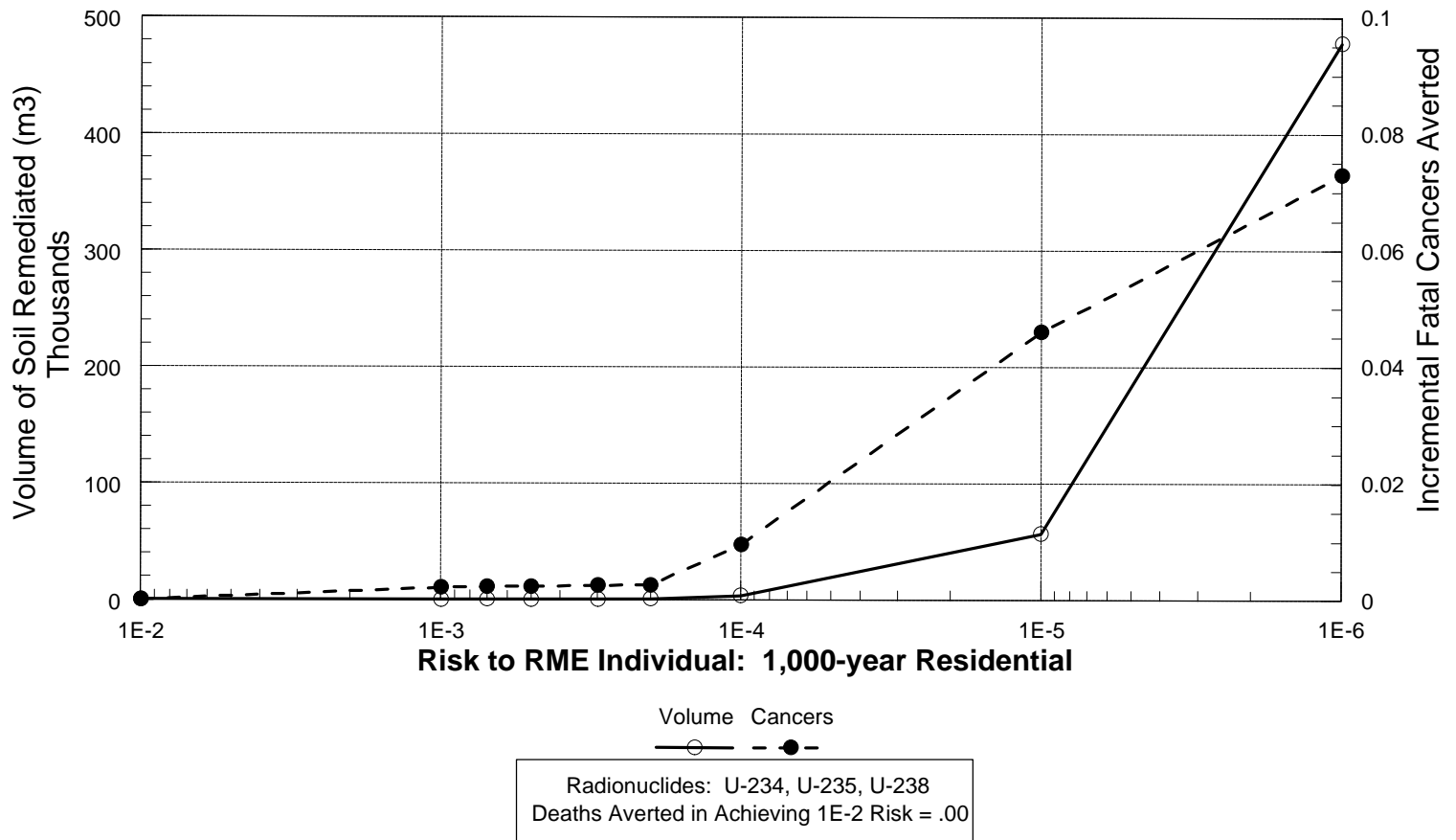
Reference Site XXA: 1,000 years, Including Rn

Volume of Soil Remediated: Rural Residential
Fatal Cancers Averted: Reasonable Scenario



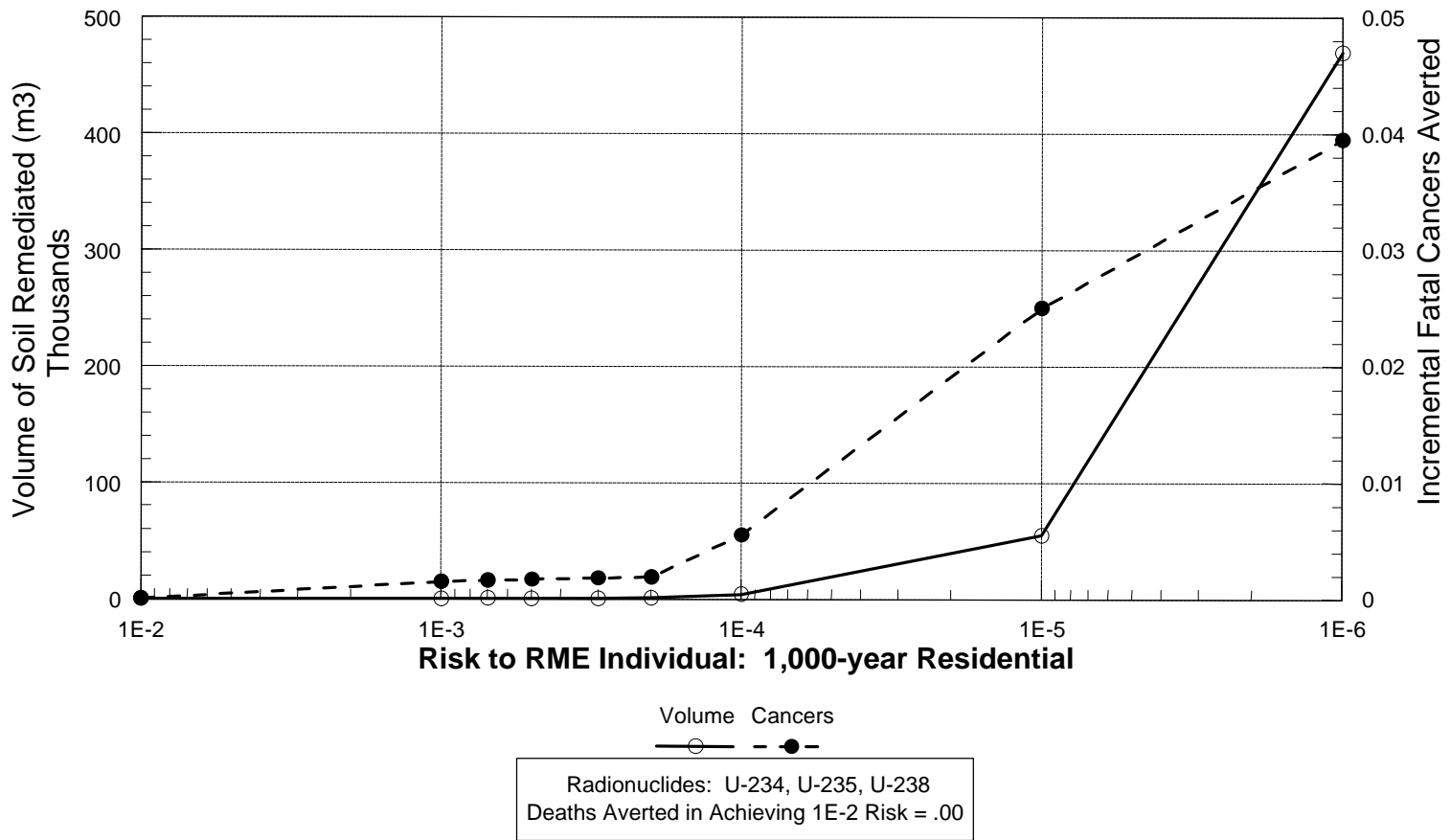
Reference Site XXB: 1,000 years, Including Rn

Volume of Soil Remediated: Rural Residential
Fatal Cancers Averted: Reasonable Scenario



Reference Site XXC: 1,000 years, Including Rn

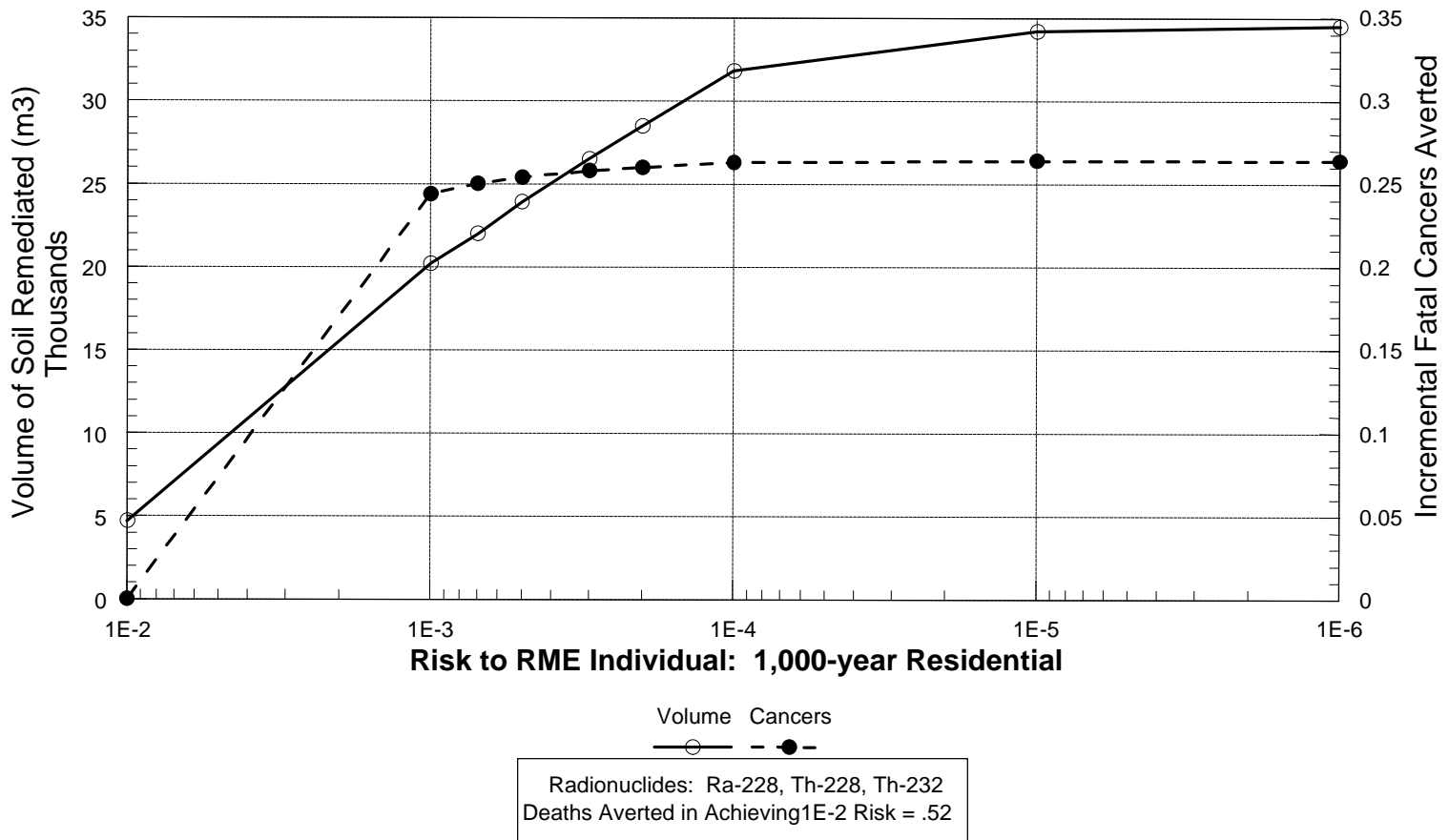
Volume of Soil Remediated: Rural Residential
Fatal Cancers Averted: Reasonable Scenario



Reference Site XXIA: 1,000 years

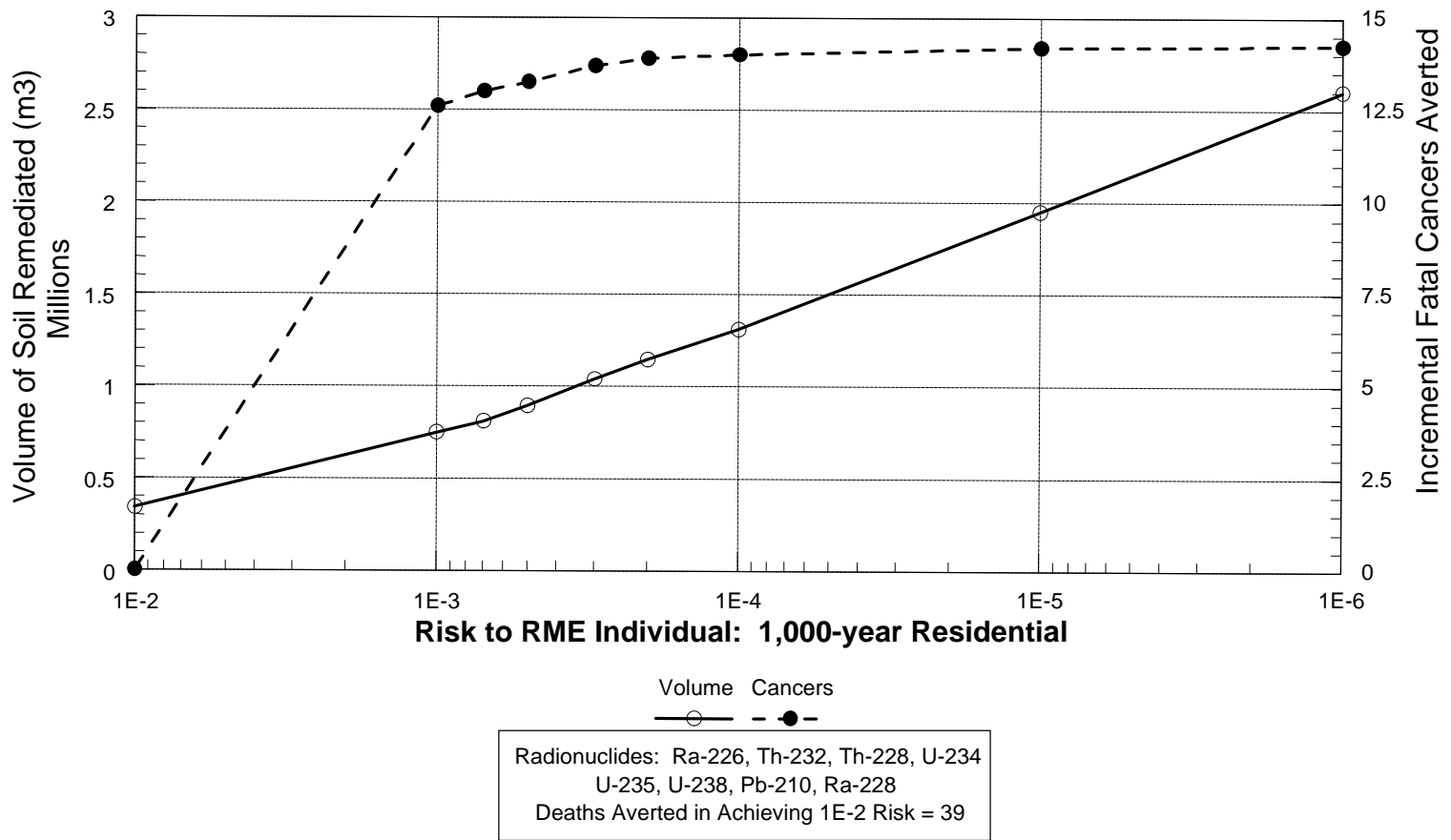
Volume of Soil Remediated: Rural Residential

Fatal Cancers Averted: Reasonable Scenario



Reference Site XXII: 1,000 years, Including Rn

Volume of Soil Remediated: Rural Residential
Fatal Cancers Averted: Reasonable Scenario



Reference Site XXII: 1,000 years, Excluding Rn

Volume of Soil Remediated: Rural Residential
Fatal Cancers Averted: Reasonable Scenario

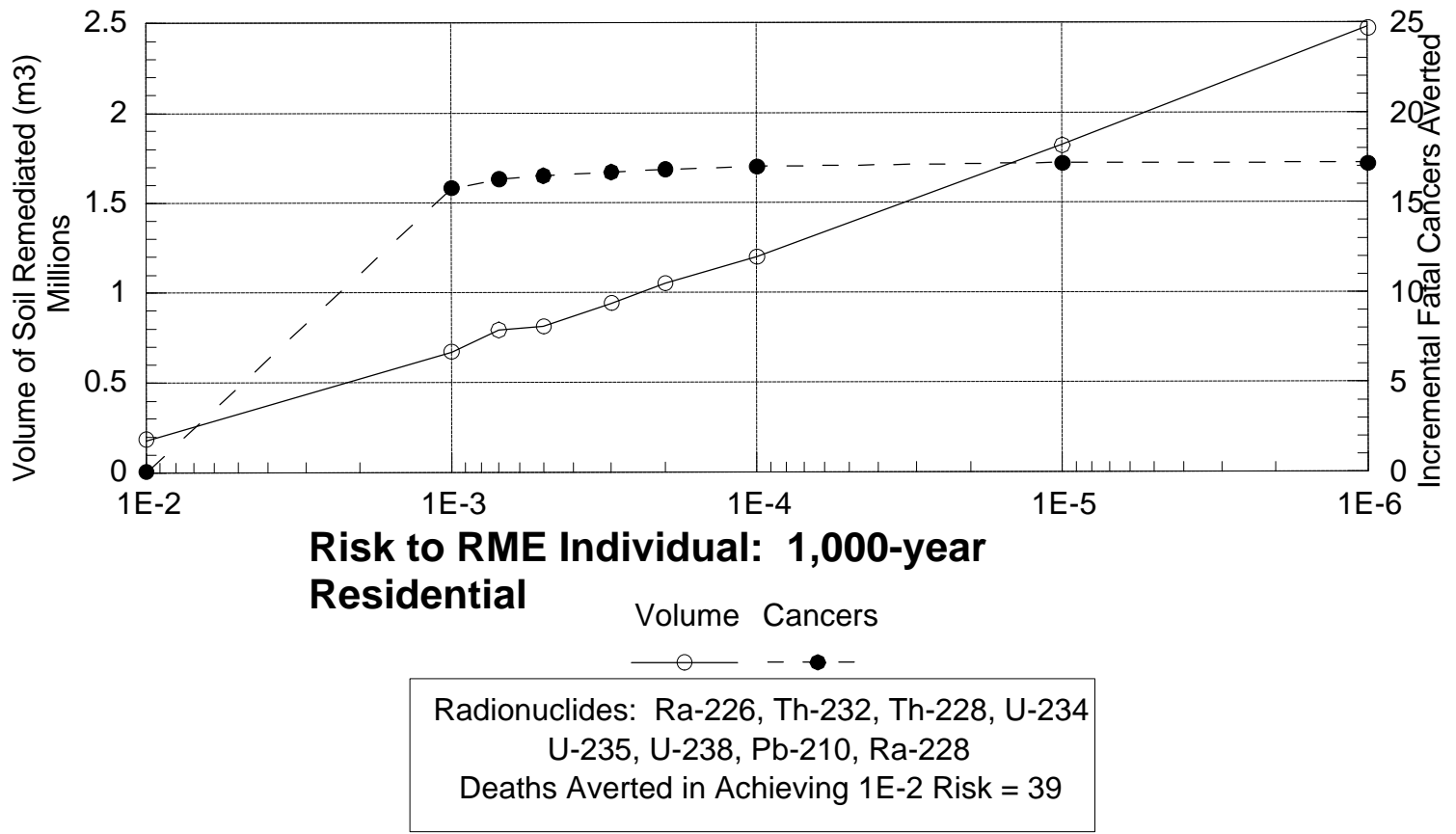


Table M-1. CLEANUP VOLUMES (m**3)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	3.36E+6	3.36E+6	3.36E+6	1.47E+6	1.47E+6	1.47E+6	1.03E+6	1.03E+6	1.03E+6	5.83E+5	5.83E+5	5.83E+5	4.48E+5	4.48E+5	4.48E+5
II	1.76E+6	1.78E+6	1.78E+6	1.40E+6	1.41E+6	1.41E+6	1.26E+6	1.27E+6	1.27E+6	9.64E+5	9.67E+5	9.67E+5	9.42E+5	9.48E+5	9.48E+5
III	8.38E+5	8.38E+5	8.38E+5	7.95E+5	7.95E+5	7.95E+5	7.45E+5	7.45E+5	7.45E+5	5.73E+5	5.73E+5	5.73E+5	4.40E+5	4.40E+5	4.40E+5
IV	2.34E+5	2.34E+5	2.34E+5	1.19E+5	1.19E+5	1.19E+5	8.91E+4	8.91E+4	8.91E+4	5.63E+4	5.63E+4	5.63E+4	4.54E+4	4.54E+4	4.54E+4
V	1.35E+7	1.35E+7	1.35E+7	1.04E+7	1.04E+7	1.04E+7	9.03E+6	9.03E+6	9.03E+6	6.87E+6	6.87E+6	6.87E+6	5.86E+6	5.86E+6	5.86E+6
VI	5.03E+5	5.03E+5	5.03E+5	3.90E+5	3.90E+5	3.90E+5	3.42E+5	3.42E+5	3.42E+5	2.66E+5	2.66E+5	2.66E+5	2.31E+5	2.31E+5	2.31E+5
VII	5.90E+7	5.90E+7	5.90E+7	4.02E+7	4.02E+7	4.02E+7	2.63E+7	2.63E+7	2.63E+7	1.34E+7	1.34E+7	1.34E+7	9.81E+6	9.81E+6	9.81E+6
IX	3.66E+5	3.66E+5	3.66E+5	1.73E+5	1.73E+5	1.73E+5	1.12E+5	1.12E+5	1.12E+5	5.07E+4	5.07E+4	5.07E+4	3.26E+4	3.26E+4	3.26E+4
X	7.69E+5	8.00E+5	8.00E+5	6.26E+5	7.88E+5	7.88E+5	5.16E+5	7.74E+5	7.74E+5	3.38E+5	7.19E+5	7.19E+5	2.63E+5	6.59E+5	6.59E+5
XII	1.34E+4	1.34E+4	1.34E+4	7.43E+3	7.43E+3	7.43E+3	4.67E+3	4.67E+3	4.67E+3	2.24E+3	2.24E+3	2.24E+3	1.71E+3	1.71E+3	1.71E+3
XIIIA	2.15E+3	2.15E+3	2.15E+3	8.80E+2	8.80E+2	8.80E+2	3.72E+2	3.72E+2	3.72E+2	5.32E+1	5.32E+1	5.32E+1	.00E+0	.00E+0	.00E+0
XIIIB	2.15E+3	2.15E+3	2.15E+3	8.80E+2	8.80E+2	8.80E+2	3.72E+2	3.72E+2	3.72E+2	5.32E+1	5.32E+1	5.32E+1	.00E+0	.00E+0	.00E+0
XIIIC	2.15E+3	2.15E+3	2.15E+3	8.80E+2	8.80E+2	8.80E+2	3.72E+2	3.72E+2	3.72E+2	5.32E+1	5.32E+1	5.32E+1	.00E+0	.00E+0	.00E+0
XVIA	1.21E+3	1.21E+3	1.21E+3	1.10E+3	1.10E+3	1.10E+3	1.06E+3	1.06E+3	1.06E+3	9.78E+2	9.78E+2	9.78E+2	9.34E+2	9.34E+2	9.34E+2
XVIB	1.21E+3	1.21E+3	1.21E+3	1.10E+3	1.10E+3	1.10E+3	1.06E+3	1.06E+3	1.06E+3	9.78E+2	9.78E+2	9.78E+2	9.34E+2	9.34E+2	9.34E+2
XVIC	1.21E+3	1.21E+3	1.21E+3	1.10E+3	1.10E+3	1.10E+3	1.06E+3	1.06E+3	1.06E+3	9.78E+2	9.78E+2	9.78E+2	9.34E+2	9.34E+2	9.34E+2
XVIIIA	5.92E+2	5.92E+2	5.92E+2	5.88E+2	5.88E+2	5.88E+2	5.86E+2	5.86E+2	5.86E+2	5.82E+2	5.82E+2	5.82E+2	5.80E+2	5.80E+2	5.80E+2
XVIIIB	5.92E+2	5.92E+2	5.92E+2	5.88E+2	5.88E+2	5.88E+2	5.86E+2	5.86E+2	5.86E+2	5.82E+2	5.82E+2	5.82E+2	5.80E+2	5.80E+2	5.80E+2
XVIIIC	5.92E+2	5.92E+2	5.92E+2	5.88E+2	5.88E+2	5.88E+2	5.86E+2	5.86E+2	5.86E+2	5.82E+2	5.82E+2	5.82E+2	5.80E+2	5.80E+2	5.80E+2
XXA	4.94E+5	4.94E+5	4.94E+5	1.14E+5	1.72E+5	1.72E+5	5.98E+4	9.00E+4	9.00E+4	2.13E+4	3.22E+4	3.22E+4	1.18E+4	1.95E+4	1.95E+4
XXB	4.94E+5	4.94E+5	4.94E+5	1.14E+5	1.14E+5	1.14E+5	5.98E+4	5.98E+4	5.98E+4	2.13E+4	2.13E+4	2.13E+4	1.18E+4	1.18E+4	1.18E+4
XXC	4.94E+5	4.94E+5	4.94E+5	1.14E+5	1.14E+5	1.14E+5	5.98E+4	5.98E+4	5.98E+4	2.13E+4	2.13E+4	2.13E+4	1.18E+4	1.18E+4	1.18E+4
XXIA	3.44E+4	3.44E+4	3.44E+4	3.42E+4	3.42E+4	3.42E+4	3.40E+4	3.40E+4	3.40E+4	3.29E+4	3.29E+4	3.29E+4	3.18E+4	3.18E+4	3.18E+4
XXIB	3.44E+4	3.44E+4	3.44E+4	3.42E+4	3.42E+4	3.42E+4	3.40E+4	3.40E+4	3.40E+4	3.29E+4	3.29E+4	3.29E+4	3.18E+4	3.18E+4	3.18E+4
XXIC	3.44E+4	3.44E+4	3.44E+4	3.42E+4	3.42E+4	3.42E+4	3.40E+4	3.40E+4	3.40E+4	3.29E+4	3.29E+4	3.29E+4	3.18E+4	3.18E+4	3.18E+4
XXII	2.56E+6	2.56E+6	2.56E+6	2.10E+6	2.10E+6	2.10E+6	1.90E+6	1.90E+6	1.90E+6	1.59E+6	1.59E+6	1.59E+6	1.45E+6	1.45E+6	1.45E+6
DOE	1.09E+8	1.09E+8	1.09E+8	7.86E+7	7.88E+7	7.88E+7	6.01E+7	6.03E+7	6.03E+7	3.99E+7	4.03E+7	4.03E+7	3.31E+7	3.36E+7	3.36E+7
DOD	3.16E+4	3.16E+4	3.16E+4	1.49E+4	1.49E+4	1.49E+4	7.84E+3	7.84E+3	7.84E+3	2.69E+3	2.69E+3	2.69E+3	1.71E+3	1.71E+3	1.71E+3
NRC	7.87E+6	7.87E+6	7.87E+6	2.53E+6	2.80E+6	2.80E+6	1.75E+6	1.89E+6	1.89E+6	1.18E+6	1.23E+6	1.23E+6	1.02E+6	1.05E+6	1.05E+6
Total	1.17E+8	1.17E+8	1.17E+8	8.12E+7	8.16E+7	8.16E+7	6.18E+7	6.23E+7	6.23E+7	4.11E+7	4.16E+7	4.16E+7	3.41E+7	3.46E+7	3.46E+7

Table M-2. CLEANUP VOLUMES (m**3)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.87E+5	2.87E+5	2.87E+5	2.13E+5	2.13E+5	2.13E+5	1.47E+5	1.47E+5	1.47E+5	6.55E+4	6.55E+4	6.55E+4	5.53E+4	5.53E+4	5.53E+4
II	9.07E+5	9.26E+5	9.26E+5	8.74E+5	9.04E+5	9.04E+5	8.16E+5	8.62E+5	8.62E+5	7.81E+5	7.89E+5	7.89E+5	7.73E+5	7.81E+5	7.81E+5
III	2.28E+5	2.28E+5	2.28E+5	1.66E+5	1.66E+5	1.66E+5	1.24E+5	1.24E+5	1.24E+5	2.87E+4	2.87E+4	2.87E+4	1.38E+4	1.38E+4	1.38E+4
IV	3.42E+4	3.42E+4	3.42E+4	3.03E+4	3.03E+4	3.03E+4	2.54E+4	2.54E+4	2.54E+4	1.49E+4	1.49E+4	1.49E+4	1.22E+4	1.22E+4	1.22E+4
V	4.50E+6	4.50E+6	4.50E+6	3.84E+6	3.84E+6	3.84E+6	3.12E+6	3.12E+6	3.12E+6	1.57E+6	1.57E+6	1.57E+6	1.17E+6	1.17E+6	1.17E+6
VI	1.85E+5	1.85E+5	1.85E+5	1.59E+5	1.59E+5	1.59E+5	1.35E+5	1.35E+5	1.35E+5	8.82E+4	8.82E+4	8.82E+4	7.62E+4	7.62E+4	7.62E+4
VII	6.63E+6	6.63E+6	6.63E+6	5.18E+6	5.18E+6	5.18E+6	2.84E+6	2.84E+6	2.84E+6	4.88E+5	4.88E+5	4.88E+5	3.26E+5	3.26E+5	3.26E+5
IX	1.74E+4	1.74E+4	1.74E+4	1.06E+4	1.06E+4	1.06E+4	6.22E+3	6.22E+3	6.22E+3	1.34E+3	1.34E+3	1.34E+3	7.55E+2	7.55E+2	7.55E+2
X	1.88E+5	5.34E+5	5.34E+5	1.55E+5	4.39E+5	4.39E+5	1.20E+5	3.14E+5	3.14E+5	6.18E+4	1.14E+5	1.14E+5	4.81E+4	8.78E+4	8.78E+4
XII	1.65E+3	1.65E+3	1.65E+3	1.61E+3	1.61E+3	1.61E+3	1.57E+3	1.57E+3	1.57E+3	1.28E+3	1.28E+3	1.28E+3	1.17E+3	1.17E+3	1.17E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	8.70E+2	8.70E+2	8.70E+2	7.94E+2	7.94E+2	7.94E+2	6.92E+2	6.92E+2	6.92E+2	5.65E+2	5.65E+2	5.65E+2	5.34E+2	5.34E+2	5.34E+2
XVIB	8.70E+2	8.70E+2	8.70E+2	7.94E+2	7.94E+2	7.94E+2	6.92E+2	6.92E+2	6.92E+2	5.65E+2	5.65E+2	5.65E+2	5.34E+2	5.34E+2	5.34E+2
XVIC	8.70E+2	8.70E+2	8.70E+2	7.94E+2	7.94E+2	7.94E+2	6.92E+2	6.92E+2	6.92E+2	5.65E+2	5.65E+2	5.65E+2	5.34E+2	5.34E+2	5.34E+2
XVIII	5.55E+2	5.55E+2	5.55E+2	5.36E+2	5.36E+2	5.36E+2	5.13E+2	5.13E+2	5.13E+2	4.00E+2	4.00E+2	4.00E+2	3.65E+2	3.65E+2	3.65E+2
XVIII A	5.55E+2	5.55E+2	5.55E+2	5.36E+2	5.36E+2	5.36E+2	5.13E+2	5.13E+2	5.13E+2	4.00E+2	4.00E+2	4.00E+2	3.65E+2	3.65E+2	3.65E+2
XVIII B	5.55E+2	5.55E+2	5.55E+2	5.36E+2	5.36E+2	5.36E+2	5.13E+2	5.13E+2	5.13E+2	4.00E+2	4.00E+2	4.00E+2	3.65E+2	3.65E+2	3.65E+2
XVIII C	5.55E+2	5.55E+2	5.55E+2	5.36E+2	5.36E+2	5.36E+2	5.13E+2	5.13E+2	5.13E+2	4.00E+2	4.00E+2	4.00E+2	3.65E+2	3.65E+2	3.65E+2
XXA	3.17E+3	7.28E+3	7.28E+3	5.48E+2	3.36E+3	3.36E+3	1.10E+2	3.95E+2	3.95E+2	4.19E+1	6.16E+1	6.16E+1	3.25E+1	4.78E+1	4.78E+1
XXB	3.17E+3	3.17E+3	3.17E+3	5.48E+2	5.48E+2	5.48E+2	1.10E+2	1.10E+2	1.10E+2	4.19E+1	4.19E+1	4.19E+1	3.25E+1	3.25E+1	3.25E+1
XXC	3.17E+3	3.17E+3	3.17E+3	5.48E+2	5.48E+2	5.48E+2	1.10E+2	1.10E+2	1.10E+2	4.19E+1	4.19E+1	4.19E+1	3.25E+1	3.25E+1	3.25E+1
XXIA	2.85E+4	2.85E+4	2.85E+4	2.64E+4	2.64E+4	2.64E+4	2.38E+4	2.38E+4	2.38E+4	1.82E+4	1.82E+4	1.82E+4	1.57E+4	1.57E+4	1.57E+4
XXIB	2.85E+4	2.85E+4	2.85E+4	2.64E+4	2.64E+4	2.64E+4	2.38E+4	2.38E+4	2.38E+4	1.82E+4	1.82E+4	1.82E+4	1.57E+4	1.57E+4	1.57E+4
XXIC	2.85E+4	2.85E+4	2.85E+4	2.64E+4	2.64E+4	2.64E+4	2.38E+4	2.38E+4	2.38E+4	1.82E+4	1.82E+4	1.82E+4	1.57E+4	1.57E+4	1.57E+4
XXII	1.25E+6	1.26E+6	1.26E+6	1.14E+6	1.15E+6	1.15E+6	1.00E+6	1.03E+6	1.03E+6	7.46E+5	7.69E+5	7.69E+5	6.80E+5	6.99E+5	6.99E+5
DOE	2.57E+7	2.61E+7	2.61E+7	2.20E+7	2.24E+7	2.24E+7	1.72E+7	1.77E+7	1.77E+7	1.02E+7	1.04E+7	1.04E+7	8.82E+6	9.00E+6	9.00E+6
DOD	1.65E+3	1.65E+3	1.65E+3	1.61E+3	1.61E+3	1.61E+3	1.57E+3	1.57E+3	1.57E+3	1.28E+3	1.28E+3	1.28E+3	1.17E+3	1.17E+3	1.17E+3
NRC	8.15E+5	8.34E+5	8.34E+5	7.22E+5	7.35E+5	7.35E+5	6.44E+5	6.46E+5	6.46E+5	4.97E+5	4.98E+5	4.98E+5	4.35E+5	4.36E+5	4.36E+5
Total	2.65E+7	2.69E+7	2.69E+7	2.27E+7	2.31E+7	2.31E+7	1.78E+7	1.83E+7	1.83E+7	1.07E+7	1.09E+7	1.09E+7	9.26E+6	9.44E+6	9.44E+6

Table M-3. CLEANUP VOLUMES (m**3)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.98E+6	1.98E+6	1.98E+6	8.65E+5	8.65E+5	8.65E+5	6.05E+5	6.05E+5	6.05E+5	3.26E+5	3.26E+5	3.26E+5	2.25E+5	2.25E+5	2.25E+5
II	1.51E+6	1.51E+6	1.51E+6	1.15E+6	1.16E+6	1.16E+6	9.61E+5	9.64E+5	9.64E+5	9.13E+5	9.30E+5	9.30E+5	8.73E+5	9.03E+5	9.03E+5
III	8.19E+5	8.19E+5	8.19E+5	7.07E+5	7.07E+5	7.07E+5	5.89E+5	5.89E+5	5.89E+5	2.83E+5	2.83E+5	2.83E+5	1.71E+5	1.71E+5	1.71E+5
IV	1.46E+5	1.46E+5	1.46E+5	7.42E+4	7.42E+4	7.42E+4	5.55E+4	5.55E+4	5.55E+4	3.51E+4	3.51E+4	3.51E+4	3.00E+4	3.00E+4	3.00E+4
V	1.15E+7	1.15E+7	1.15E+7	8.37E+6	8.37E+6	8.37E+6	7.01E+6	7.01E+6	7.01E+6	4.85E+6	4.85E+6	4.85E+6	3.95E+6	3.95E+6	3.95E+6
VI	4.31E+5	4.31E+5	4.31E+5	3.19E+5	3.19E+5	3.19E+5	2.71E+5	2.71E+5	2.71E+5	1.97E+5	1.97E+5	1.97E+5	1.63E+5	1.63E+5	1.63E+5
VII	5.07E+7	5.07E+7	5.07E+7	1.89E+7	1.89E+7	1.89E+7	1.24E+7	1.24E+7	1.24E+7	6.61E+6	6.61E+6	6.61E+6	4.67E+6	4.67E+6	4.67E+6
IX	2.10E+5	2.10E+5	2.10E+5	7.84E+4	7.84E+4	7.84E+4	4.62E+4	4.62E+4	4.62E+4	1.70E+4	1.70E+4	1.70E+4	1.70E+4	8.75E+3	8.75E+3
X	7.10E+5	7.96E+5	7.96E+5	4.75E+5	7.72E+5	7.72E+5	3.68E+5	7.42E+5	7.42E+5	2.20E+5	6.20E+5	6.20E+5	1.74E+5	5.18E+5	5.18E+5
XII	7.73E+3	7.73E+3	7.73E+3	2.63E+3	2.63E+3	2.63E+3	1.71E+3	1.71E+3	1.71E+3	1.62E+3	1.62E+3	1.62E+3	1.57E+3	1.57E+3	1.57E+3
XIIIA	1.23E+3	1.23E+3	1.23E+3	3.30E+2	3.30E+2	3.30E+2	5.42E+1	5.42E+1	5.42E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.23E+3	1.23E+3	1.23E+3	3.30E+2	3.30E+2	3.30E+2	5.42E+1	5.42E+1	5.42E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.23E+3	1.23E+3	1.23E+3	3.30E+2	3.30E+2	3.30E+2	5.42E+1	5.42E+1	5.42E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.15E+3	1.15E+3	1.15E+3	1.03E+3	1.03E+3	1.03E+3	9.87E+2	9.87E+2	9.87E+2	8.93E+2	8.93E+2	8.93E+2	8.14E+2	8.14E+2	8.14E+2
XVIC	1.15E+3	1.15E+3	1.15E+3	1.03E+3	1.03E+3	1.03E+3	9.87E+2	9.87E+2	9.87E+2	8.93E+2	8.93E+2	8.93E+2	8.14E+2	8.14E+2	8.14E+2
XVIIIA	5.90E+2	5.90E+2	5.90E+2	5.84E+2	5.84E+2	5.84E+2	5.81E+2	5.81E+2	5.81E+2	5.59E+2	5.59E+2	5.59E+2	5.36E+2	5.36E+2	5.36E+2
XVIIIB	5.90E+2	5.90E+2	5.90E+2	5.84E+2	5.84E+2	5.84E+2	5.81E+2	5.81E+2	5.81E+2	5.59E+2	5.59E+2	5.59E+2	5.36E+2	5.36E+2	5.36E+2
XVIIIC	5.90E+2	5.90E+2	5.90E+2	5.84E+2	5.84E+2	5.84E+2	5.81E+2	5.81E+2	5.81E+2	5.59E+2	5.59E+2	5.59E+2	5.36E+2	5.36E+2	5.36E+2
XXA	1.45E+5	2.48E+5	2.48E+5	3.21E+4	5.49E+4	5.49E+4	1.58E+4	2.87E+4	2.87E+4	1.69E+3	7.05E+3	7.05E+3	1.72E+2	2.25E+3	2.25E+3
XXB	1.45E+5	2.12E+5	2.12E+5	3.21E+4	4.70E+4	4.70E+4	1.58E+4	2.46E+4	2.46E+4	1.69E+3	5.13E+3	5.13E+3	1.72E+2	1.07E+3	1.07E+3
XXC	1.45E+5	1.45E+5	1.45E+5	3.21E+4	3.21E+4	3.21E+4	1.58E+4	1.58E+4	1.58E+4	1.69E+3	1.69E+3	1.69E+3	1.72E+2	1.72E+2	1.72E+2
XXIA	3.43E+4	3.43E+4	3.43E+4	3.37E+4	3.37E+4	3.37E+4	3.28E+4	3.28E+4	3.28E+4	2.88E+4	2.88E+4	2.88E+4	2.62E+4	2.62E+4	2.62E+4
XXIB	3.43E+4	3.43E+4	3.43E+4	3.37E+4	3.37E+4	3.37E+4	3.28E+4	3.28E+4	3.28E+4	2.88E+4	2.88E+4	2.88E+4	2.62E+4	2.62E+4	2.62E+4
XXIC	3.43E+4	3.43E+4	3.43E+4	3.37E+4	3.37E+4	3.37E+4	3.28E+4	3.28E+4	3.28E+4	2.88E+4	2.88E+4	2.88E+4	2.62E+4	2.62E+4	2.62E+4
XXII	2.25E+6	2.25E+6	2.25E+6	1.80E+6	1.80E+6	1.80E+6	1.60E+6	1.60E+6	1.60E+6	1.29E+6	1.30E+6	1.30E+6	1.15E+6	1.16E+6	1.16E+6
DOE	9.30E+7	9.31E+7	9.31E+7	5.04E+7	5.07E+7	5.07E+7	3.92E+7	3.97E+7	3.97E+7	2.66E+7	2.71E+7	2.71E+7	2.17E+7	2.23E+7	2.23E+7
DOD	1.82E+4	1.82E+4	1.82E+4	5.44E+3	5.44E+3	5.44E+3	2.18E+3	2.18E+3	2.18E+3	1.62E+3	1.62E+3	1.62E+3	1.57E+3	1.57E+3	1.57E+3
NRC	2.96E+6	3.76E+6	3.76E+6	1.36E+6	1.53E+6	1.53E+6	1.10E+6	1.20E+6	1.20E+6	8.05E+5	8.46E+5	8.46E+5	7.15E+5	7.29E+5	7.29E+5
Total	9.60E+7	9.69E+7	9.69E+7	5.17E+7	5.22E+7	5.22E+7	4.03E+7	4.09E+7	4.09E+7	2.75E+7	2.80E+7	2.80E+7	2.25E+7	2.30E+7	2.30E+7

Table M-4. CLEANUP VOLUMES (m**3)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.35E+5	1.35E+5	1.35E+5	1.00E+5	1.00E+5	1.00E+5	6.86E+4	6.86E+4	6.86E+4	2.48E+4	2.48E+4	2.48E+4	1.71E+4	1.71E+4	1.71E+4
II	7.99E+5	8.42E+5	8.42E+5	7.92E+5	7.99E+5	7.99E+5	7.82E+5	7.90E+5	7.90E+5	7.45E+5	7.52E+5	7.52E+5	7.32E+5	7.38E+5	7.38E+5
III	1.14E+5	1.14E+5	1.14E+5	7.57E+4	7.57E+4	7.57E+4	3.35E+4	3.35E+4	3.35E+4	3.69E+3	3.69E+3	3.69E+3	1.82E+3	1.82E+3	1.82E+3
IV	2.34E+4	2.34E+4	2.34E+4	1.95E+4	1.95E+4	1.95E+4	1.46E+4	1.46E+4	1.46E+4	4.09E+3	4.09E+3	4.09E+3	1.33E+3	1.33E+3	1.33E+3
V	2.97E+6	2.97E+6	2.97E+6	2.40E+6	2.40E+6	2.40E+6	1.68E+6	1.68E+6	1.68E+6	6.84E+5	6.84E+5	6.84E+5	5.79E+5	5.79E+5	5.79E+5
VI	1.30E+5	1.30E+5	1.30E+5	1.13E+5	1.13E+5	1.13E+5	9.07E+4	9.07E+4	9.07E+4	4.94E+4	4.94E+4	4.94E+4	4.26E+4	4.26E+4	4.26E+4
VII	1.92E+6	1.92E+6	1.92E+6	9.44E+5	9.44E+5	9.44E+5	4.27E+5	4.27E+5	4.27E+5	1.40E+3	1.40E+3	1.40E+3	.00E+0	.00E+0	.00E+0
IX	4.19E+3	4.19E+3	4.19E+3	2.11E+3	2.11E+3	2.11E+3	1.08E+3	1.08E+3	1.08E+3	9.24E+1	9.24E+1	9.24E+1	.00E+0	.00E+0	.00E+0
X	1.26E+5	3.51E+5	3.51E+5	1.01E+5	2.53E+5	2.53E+5	7.63E+4	1.55E+5	1.55E+5	3.04E+4	5.31E+4	5.31E+4	2.37E+4	3.80E+4	3.80E+4
XII	1.49E+3	1.49E+3	1.49E+3	1.31E+3	1.31E+3	1.31E+3	1.11E+3	1.11E+3	1.11E+3	7.75E+2	7.75E+2	7.75E+2	7.15E+2	7.15E+2	7.15E+2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	6.77E+2	6.77E+2	6.77E+2	6.27E+2	6.27E+2	6.27E+2	5.76E+2	5.76E+2	5.76E+2	3.95E+2	3.95E+2	3.95E+2	3.38E+2	3.38E+2	3.38E+2
XVIB	6.77E+2	6.77E+2	6.77E+2	6.27E+2	6.27E+2	6.27E+2	5.76E+2	5.76E+2	5.76E+2	3.95E+2	3.95E+2	3.95E+2	3.38E+2	3.38E+2	3.38E+2
XVIC	6.77E+2	6.77E+2	6.77E+2	6.27E+2	6.27E+2	6.27E+2	5.76E+2	5.76E+2	5.76E+2	3.95E+2	3.95E+2	3.95E+2	3.38E+2	3.38E+2	3.38E+2
XVIII A	5.04E+2	5.04E+2	5.04E+2	4.62E+2	4.62E+2	4.62E+2	3.99E+2	3.99E+2	3.99E+2	2.61E+2	2.61E+2	2.61E+2	2.25E+2	2.25E+2	2.25E+2
XVIII B	5.04E+2	5.04E+2	5.04E+2	4.62E+2	4.62E+2	4.62E+2	3.99E+2	3.99E+2	3.99E+2	2.61E+2	2.61E+2	2.61E+2	2.25E+2	2.25E+2	2.25E+2
XVIII C	5.04E+2	5.04E+2	5.04E+2	4.62E+2	4.62E+2	4.62E+2	3.99E+2	3.99E+2	3.99E+2	2.61E+2	2.61E+2	2.61E+2	2.25E+2	2.25E+2	2.25E+2
XXA	7.46E+1	1.24E+2	1.24E+2	5.22E+1	8.67E+1	8.67E+1	3.33E+1	5.53E+1	5.53E+1	1.32E+1	2.10E+1	2.10E+1	9.84E+0	1.65E+1	1.65E+1
XXB	7.46E+1	1.07E+2	1.07E+2	5.22E+1	7.48E+1	7.48E+1	3.33E+1	4.77E+1	4.77E+1	1.32E+1	1.81E+1	1.81E+1	9.84E+0	1.46E+1	1.46E+1
XXC	7.46E+1	7.46E+1	7.46E+1	5.22E+1	5.22E+1	5.22E+1	3.33E+1	3.33E+1	3.33E+1	1.32E+1	1.32E+1	1.32E+1	9.84E+0	9.84E+0	9.84E+0
XXIA	2.27E+4	2.27E+4	2.27E+4	2.06E+4	2.06E+4	2.06E+4	1.80E+4	1.80E+4	1.80E+4	8.32E+3	8.32E+3	8.32E+3	6.50E+3	6.50E+3	6.50E+3
XXIB	2.27E+4	2.27E+4	2.27E+4	2.06E+4	2.06E+4	2.06E+4	1.80E+4	1.80E+4	1.80E+4	8.32E+3	8.32E+3	8.32E+3	6.50E+3	6.50E+3	6.50E+3
XXIC	2.27E+4	2.27E+4	2.27E+4	2.06E+4	2.06E+4	2.06E+4	1.80E+4	1.80E+4	1.80E+4	8.32E+3	8.32E+3	8.32E+3	6.50E+3	6.50E+3	6.50E+3
XXII	9.62E+5	1.01E+6	1.01E+6	8.46E+5	8.97E+5	8.97E+5	7.52E+5	7.83E+5	7.83E+5	5.36E+5	5.49E+5	5.49E+5	5.06E+5	5.19E+5	5.19E+5
DOE	1.57E+7	1.63E+7	1.63E+7	1.28E+7	1.34E+7	1.34E+7	1.03E+7	1.06E+7	1.06E+7	6.32E+6	6.44E+6	6.44E+6	5.82E+6	5.93E+6	5.93E+6
DOD	1.49E+3	1.49E+3	1.49E+3	1.31E+3	1.31E+3	1.31E+3	1.11E+3	1.11E+3	1.11E+3	7.75E+2	7.75E+2	7.75E+2	7.15E+2	7.15E+2	7.15E+2
NRC	6.17E+5	6.17E+5	6.17E+5	5.62E+5	5.63E+5	5.63E+5	4.95E+5	4.95E+5	4.95E+5	2.49E+5	2.49E+5	2.49E+5	2.00E+5	2.00E+5	2.00E+5
Total	1.63E+7	1.69E+7	1.69E+7	1.34E+7	1.39E+7	1.39E+7	1.08E+7	1.11E+7	1.11E+7	6.57E+6	6.69E+6	6.69E+6	6.02E+6	6.13E+6	6.13E+6

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 Table M-5. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.15E+4	2.34E+4	2.34E+4	2.12E+4	2.30E+4	2.30E+4	2.10E+4	2.28E+4	2.28E+4	2.04E+4	2.21E+4	2.21E+4	2.00E+4	2.17E+4	2.17E+4
II	5.02E+5	4.89E+6	3.96E+7	5.02E+5	4.89E+6	3.96E+7	5.02E+5	4.89E+6	3.96E+7	5.02E+5	4.89E+6	3.96E+7	5.02E+5	4.89E+6	3.95E+7
III	9.48E+3	1.05E+4	1.05E+4	9.47E+3	1.05E+4	1.05E+4	9.44E+3	1.05E+4	1.05E+4	9.17E+3	1.02E+4	1.02E+4	8.75E+3	9.69E+3	9.69E+3
IV	2.82E+3	7.34E+3	8.21E+4	2.80E+3	7.28E+3	8.15E+4	2.78E+3	7.24E+3	8.10E+4	2.73E+3	7.12E+3	7.96E+4	2.70E+3	7.03E+3	7.87E+4
V	5.61E+5	6.08E+5	6.08E+5	5.60E+5	6.08E+5	6.08E+5	5.59E+5	6.07E+5	6.07E+5	5.56E+5	6.04E+5	6.04E+5	5.53E+5	6.01E+5	6.01E+5
VI	1.52E+5	9.32E+5	5.70E+6	1.52E+5	9.32E+5	5.70E+6	1.52E+5	9.32E+5	5.70E+6	1.52E+5	9.31E+5	5.70E+6	1.52E+5	9.31E+5	5.70E+6
VII	8.49E+5	7.63E+6	6.20E+7	8.27E+5	7.43E+6	6.03E+7	7.96E+5	7.14E+6	5.80E+7	7.27E+5	6.50E+6	5.28E+7	6.83E+5	6.10E+6	4.95E+7
IX	4.02E+3	3.61E+4	2.30E+5	3.81E+3	3.43E+4	2.18E+5	3.62E+3	3.26E+4	2.07E+5	3.15E+3	2.83E+4	1.80E+5	2.83E+3	2.54E+4	1.62E+5
X	1.39E+3	1.86E+4	2.50E+4	1.39E+3	1.86E+4	2.50E+4	1.39E+3	1.86E+4	2.50E+4	1.39E+3	1.85E+4	2.49E+4	1.38E+3	1.84E+4	2.46E+4
XII	5.11E+2	1.56E+3	1.60E+3	5.11E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3
XIIIA	2.09E+0	6.83E+0	1.82E+1	1.68E+0	5.48E+0	1.46E+1	1.17E+0	3.83E+0	1.02E+1	2.31E-1	7.54E-1	2.01E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.68E+0	3.02E+0	1.05E+1	1.35E+0	2.42E+0	8.39E+0	9.43E-1	1.69E+0	5.86E+0	1.86E-1	3.34E-1	1.15E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.11E+0	1.34E+0	4.60E+1	8.91E-1	1.07E+0	3.69E+1	6.22E-1	7.50E-1	2.58E+1	1.23E-1	1.48E-1	5.08E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E+1	3.84E+1	3.84E+1	3.65E+1	3.84E+1	3.84E+1	3.65E+1	3.84E+1	3.84E+1	3.65E+1	3.84E+1	3.84E+1	3.65E+1	3.84E+1	3.84E+1
XVIB	3.61E+1	3.79E+1	3.79E+1	3.61E+1	3.79E+1	3.79E+1	3.61E+1	3.79E+1	3.79E+1	3.61E+1	3.79E+1	3.79E+1	3.61E+1	3.78E+1	3.78E+1
XVIC	3.52E+1	3.67E+1	3.67E+1	3.52E+1	3.67E+1	3.67E+1	3.52E+1	3.67E+1	3.67E+1	3.52E+1	3.67E+1	3.67E+1	3.52E+1	3.67E+1	3.67E+1
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2
XVIIIC	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2
XXA	3.05E+1	1.51E+2	1.63E+4	2.31E+1	1.25E+2	1.35E+4	1.96E+1	1.08E+2	1.16E+4	1.36E+1	7.95E+1	8.57E+3	1.02E+1	6.50E+1	7.00E+3
XXB	2.46E+1	8.93E+1	1.12E+4	1.86E+1	6.76E+1	8.51E+3	1.58E+1	5.73E+1	7.22E+3	1.10E+1	3.98E+1	5.02E+3	8.27E+0	3.00E+1	3.78E+3
XXC	1.62E+1	5.88E+1	1.32E+4	1.23E+1	4.46E+1	9.99E+3	1.04E+1	3.78E+1	8.47E+3	7.25E+0	2.63E+1	5.89E+3	5.46E+0	1.98E+1	4.44E+3
XXIA	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4
XXIB	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.96E+3	2.57E+4
XXIC	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.85E+3	2.07E+4
XXII	1.55E+4	1.73E+5	3.82E+5	1.55E+4	1.73E+5	3.82E+5	1.55E+4	1.73E+5	3.82E+5	1.55E+4	1.73E+5	3.82E+5	1.54E+4	1.73E+5	3.82E+5
DOE	5.52E+6	3.56E+7	2.35E+8	5.50E+6	3.54E+7	2.33E+8	5.46E+6	3.51E+7	2.31E+8	5.39E+6	3.44E+7	2.25E+8	5.34E+6	3.40E+7	2.22E+8
DOD	5.24E+2	1.59E+3	1.81E+3	5.22E+2	1.58E+3	1.77E+3	5.18E+2	1.58E+3	1.72E+3	5.12E+2	1.56E+3	1.62E+3	5.10E+2	1.56E+3	1.60E+3
NRC	1.75E+4	7.78E+4	7.51E+5	1.74E+4	7.75E+4	7.10E+5	1.73E+4	7.74E+4	6.88E+5	1.73E+4	7.71E+4	6.52E+5	1.72E+4	7.69E+4	6.31E+5
Total	5.54E+6	3.56E+7	2.35E+8	5.51E+6	3.54E+7	2.34E+8	5.48E+6	3.52E+7	2.31E+8	5.40E+6	3.45E+7	2.26E+8	5.35E+6	3.41E+7	2.23E+8

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 Table M-6. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.91E+4	2.08E+4	2.08E+4	1.84E+4	2.00E+4	2.00E+4	1.75E+4	1.90E+4	1.90E+4	1.49E+4	1.62E+4	1.62E+4	1.42E+4	1.54E+4	1.54E+4
II	5.02E+5	4.89E+6	3.95E+7	5.02E+5	4.89E+6	3.95E+7	5.02E+5	4.88E+6	3.94E+7	5.02E+5	4.88E+6	3.91E+7	5.02E+5	4.87E+6	3.91E+7
III	7.52E+3	8.32E+3	8.32E+3	6.94E+3	7.69E+3	7.69E+3	6.27E+3	6.95E+3	6.95E+3	2.90E+3	3.21E+3	3.21E+3	1.88E+3	2.08E+3	2.08E+3
IV	2.64E+3	6.87E+3	7.68E+4	2.60E+3	6.77E+3	7.57E+4	2.52E+3	6.57E+3	7.35E+4	2.14E+3	5.58E+3	6.24E+4	1.95E+3	5.08E+3	5.68E+4
V	5.46E+5	5.93E+5	5.93E+5	5.40E+5	5.86E+5	5.86E+5	5.29E+5	5.75E+5	5.75E+5	4.77E+5	5.17E+5	5.17E+5	4.50E+5	4.88E+5	4.88E+5
VI	1.52E+5	9.31E+5	5.70E+6	1.52E+5	9.30E+5	5.69E+6	1.51E+5	9.29E+5	5.69E+6	1.49E+5	9.20E+5	5.64E+6	1.47E+5	9.15E+5	5.61E+6
VII	6.15E+5	5.48E+6	4.45E+7	5.64E+5	5.02E+6	4.07E+7	4.38E+5	3.90E+6	3.16E+7	1.85E+5	1.66E+6	1.35E+7	1.47E+5	1.32E+6	1.07E+7
IX	2.36E+3	2.12E+4	1.35E+5	1.99E+3	1.78E+4	1.14E+5	1.62E+3	1.46E+4	9.28E+4	7.60E+2	6.83E+3	4.35E+4	5.33E+2	4.79E+3	3.05E+4
X	1.37E+3	1.77E+4	2.37E+4	1.36E+3	1.68E+4	2.25E+4	1.34E+3	1.51E+4	2.01E+4	1.27E+3	9.78E+3	1.29E+4	1.24E+3	8.64E+3	1.13E+4
XII	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.09E+2	1.56E+3	1.60E+3	5.09E+2	1.55E+3	1.60E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.64E+1	3.83E+1	3.83E+1	3.64E+1	3.83E+1	3.83E+1	3.63E+1	3.82E+1	3.82E+1	3.59E+1	3.78E+1	3.78E+1	3.57E+1	3.76E+1	3.76E+1
XVIB	3.60E+1	3.78E+1	3.78E+1	3.60E+1	3.78E+1	3.78E+1	3.58E+1	3.76E+1	3.76E+1	3.55E+1	3.73E+1	3.73E+1	3.53E+1	3.71E+1	3.71E+1
XVIC	3.52E+1	3.67E+1	3.67E+1	3.51E+1	3.66E+1	3.66E+1	3.50E+1	3.65E+1	3.65E+1	3.47E+1	3.62E+1	3.62E+1	3.45E+1	3.60E+1	3.60E+1
XVIII	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.11E+2	1.11E+2
XVIII A	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.11E+2	1.11E+2	9.96E+1	1.10E+2	1.10E+2	9.89E+1	1.09E+2	1.09E+2
XVIII B	9.79E+1	1.07E+2	1.07E+2	9.78E+1	1.07E+2	1.07E+2	9.77E+1	1.07E+2	1.07E+2	9.65E+1	1.05E+2	1.05E+2	9.58E+1	1.04E+2	1.04E+2
XXA	4.86E+0	3.90E+1	4.21E+3	2.01E+0	2.50E+1	2.70E+3	1.30E+0	8.87E+0	9.59E+2	1.04E+0	5.70E+0	6.18E+2	9.61E-1	5.35E+0	5.80E+2
XXB	3.92E+0	1.43E+1	1.80E+3	1.62E+0	5.89E+0	7.44E+2	1.05E+0	3.83E+0	4.84E+2	8.36E-1	3.05E+0	3.87E+2	7.75E-1	2.83E+0	3.59E+2
XXC	2.59E+0	9.40E+0	2.11E+3	1.07E+0	3.89E+0	8.73E+2	6.93E-1	2.53E+0	5.68E+2	5.52E-1	2.02E+0	4.54E+2	5.12E-1	1.87E+0	4.21E+2
XXIA	2.88E+2	2.99E+3	2.83E+4	2.87E+2	2.98E+3	2.83E+4	2.86E+2	2.97E+3	2.81E+4	2.77E+2	2.88E+3	2.73E+4	2.70E+2	2.80E+3	2.65E+4
XXIB	2.86E+2	2.96E+3	2.56E+4	2.85E+2	2.95E+3	2.55E+4	2.84E+2	2.93E+3	2.54E+4	2.75E+2	2.84E+3	2.46E+4	2.68E+2	2.77E+3	2.40E+4
XXIC	2.82E+2	2.85E+3	2.07E+4	2.82E+2	2.84E+3	2.06E+4	2.80E+2	2.82E+3	2.05E+4	2.72E+2	2.74E+3	1.99E+4	2.64E+2	2.66E+3	1.93E+4
XXII	1.54E+4	1.72E+5	3.81E+5	1.54E+4	1.72E+5	3.80E+5	1.53E+4	1.71E+5	3.78E+5	1.50E+4	1.68E+5	3.71E+5	1.48E+4	1.66E+5	3.67E+5
DOE	5.25E+6	3.34E+7	2.17E+8	5.18E+6	3.29E+7	2.13E+8	5.03E+6	3.17E+7	2.04E+8	4.66E+6	2.91E+7	1.84E+8	4.57E+6	2.86E+7	1.80E+8
DOD	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.09E+2	1.56E+3	1.60E+3	5.09E+2	1.55E+3	1.60E+3
NRC	1.72E+4	7.65E+4	5.97E+5	1.71E+4	7.61E+4	5.77E+5	1.70E+4	7.57E+4	5.63E+5	1.67E+4	7.36E+4	5.45E+5	7.19E+4	7.19E+4	5.30E+5
Total	5.27E+6	3.34E+7	2.17E+8	5.20E+6	3.29E+7	2.13E+8	5.05E+6	3.18E+7	2.04E+8	4.68E+6	2.92E+7	1.84E+8	4.58E+6	2.87E+7	1.81E+8

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 Table M-7. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.13E+4	2.32E+4	2.32E+4	2.08E+4	2.26E+4	2.26E+4	2.04E+4	2.22E+4	2.22E+4	1.94E+4	2.11E+4	2.11E+4	1.86E+4	2.02E+4	2.02E+4
II	5.02E+5	4.89E+6	3.96E+7	5.02E+5	4.89E+6	3.96E+7	5.02E+5	4.89E+6	3.96E+7	5.02E+5	4.89E+6	3.95E+7	5.02E+5	4.89E+6	3.95E+7
III	9.48E+3	1.05E+4	1.05E+4	9.40E+3	1.04E+4	1.04E+4	9.20E+3	1.02E+4	1.02E+4	7.92E+3	8.77E+3	8.77E+3	7.00E+3	7.75E+3	7.75E+3
IV	2.80E+3	7.31E+3	8.17E+4	2.76E+3	7.20E+3	8.05E+4	2.73E+3	7.12E+3	7.96E+4	2.64E+3	6.89E+3	7.70E+4	2.60E+3	6.76E+3	7.56E+4
V	5.60E+5	6.08E+5	6.08E+5	5.59E+5	6.06E+5	6.06E+5	5.57E+5	6.04E+5	6.04E+5	5.48E+5	5.95E+5	5.95E+5	5.41E+5	5.87E+5	5.87E+5
VI	1.52E+5	9.32E+5	5.70E+6	1.52E+5	9.32E+5	5.70E+6	1.52E+5	9.31E+5	5.70E+6	1.52E+5	9.31E+5	5.70E+6	1.52E+5	9.30E+5	5.69E+6
VII	8.41E+5	7.55E+6	6.14E+7	7.66E+5	6.86E+6	5.58E+7	7.16E+5	6.40E+6	5.20E+7	6.14E+5	5.47E+6	4.44E+7	5.41E+5	4.82E+6	3.91E+7
IX	3.88E+3	3.49E+4	2.22E+5	3.42E+3	3.07E+4	1.96E+5	3.08E+3	2.77E+4	1.77E+5	2.35E+3	2.11E+4	1.34E+5	1.86E+3	1.67E+4	1.06E+5
X	1.39E+3	1.86E+4	2.50E+4	1.39E+3	1.86E+4	2.50E+4	1.39E+3	1.86E+4	2.49E+4	1.37E+3	1.82E+4	2.44E+4	1.36E+3	1.75E+4	2.35E+4
XII	5.11E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3
XIIIA	1.87E+0	6.10E+0	1.63E+1	1.11E+0	3.63E+0	9.70E+0	2.35E-1	7.69E-1	2.05E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.50E+0	2.70E+0	9.33E+0	8.95E-1	1.61E+0	5.56E+0	1.89E-1	3.40E-1	1.18E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	9.91E-1	1.20E+0	4.11E+1	5.90E-1	7.12E-1	2.45E+1	1.25E-1	1.51E-1	5.18E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E+1	3.84E+1	3.84E+1	3.65E+1	3.84E+1	3.84E+1	3.65E+1	3.84E+1	3.84E+1	3.64E+1	3.84E+1	3.84E+1	3.64E+1	3.83E+1	3.83E+1
XVIB	3.61E+1	3.79E+1	3.79E+1	3.61E+1	3.79E+1	3.79E+1	3.61E+1	3.79E+1	3.79E+1	3.60E+1	3.78E+1	3.78E+1	3.60E+1	3.78E+1	3.78E+1
XVIC	3.52E+1	3.67E+1	3.67E+1	3.52E+1	3.67E+1	3.67E+1	3.52E+1	3.67E+1	3.67E+1	3.52E+1	3.67E+1	3.67E+1	3.51E+1	3.67E+1	3.67E+1
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2
XVIIIC	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	9.79E+1	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.78E+1	1.07E+2
XXA	2.43E+1	1.34E+2	1.45E+4	1.60E+1	9.46E+1	1.02E+4	1.19E+1	7.62E+1	8.21E+3	3.38E+0	3.83E+1	4.13E+3	1.42E+0	1.97E+1	2.13E+3
XXB	1.96E+1	7.70E+1	9.70E+3	1.29E+1	5.33E+1	6.72E+3	9.57E+0	4.23E+1	5.34E+3	2.73E+0	1.89E+1	2.39E+3	1.15E+0	7.84E+0	9.90E+2
XXC	1.30E+1	4.69E+1	1.05E+4	8.54E+0	3.09E+1	6.94E+3	6.32E+0	2.29E+1	5.14E+3	1.80E+0	6.54E+0	1.47E+3	7.57E-1	2.76E+0	6.20E+2
XXIA	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.88E+2	2.99E+3	2.84E+4	2.87E+2	2.98E+3	2.83E+4
XXIB	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.86E+2	2.96E+3	2.56E+4	2.85E+2	2.95E+3	2.55E+4
XXIC	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.85E+3	2.07E+4	2.81E+2	2.84E+3	2.06E+4
XXII	1.55E+4	1.73E+5	3.82E+5	1.55E+4	1.73E+5	3.82E+5	1.55E+4	1.73E+5	3.82E+5	1.54E+4	1.73E+5	3.81E+5	1.54E+4	1.72E+5	3.80E+5
DOE	5.51E+6	3.55E+7	2.34E+8	5.43E+6	3.48E+7	2.28E+8	5.38E+6	3.43E+7	2.24E+8	5.25E+6	3.34E+7	2.17E+8	5.16E+6	3.27E+7	2.11E+8
DOD	5.23E+2	1.59E+3	1.79E+3	5.18E+2	1.58E+3	1.71E+3	5.12E+2	1.56E+3	1.62E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3
NRC	1.74E+4	7.76E+4	7.23E+5	1.73E+4	7.73E+4	6.72E+5	1.73E+4	7.71E+4	6.48E+5	1.71E+4	7.65E+4	5.96E+5	1.71E+4	7.61E+4	5.74E+5
Total	5.53E+6	3.56E+7	2.35E+8	5.45E+6	3.49E+7	2.29E+8	5.39E+6	3.44E+7	2.25E+8	5.27E+6	3.34E+7	2.17E+8	5.18E+6	3.27E+7	2.12E+8

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 Table M-8. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.72E+4	1.87E+4	1.87E+4	1.63E+4	1.77E+4	1.77E+4	1.51E+4	1.63E+4	1.63E+4	1.08E+4	1.17E+4	1.17E+4	9.40E+3	1.02E+4	1.02E+4
II	5.02E+5	4.88E+6	3.94E+7	5.02E+5	4.88E+6	3.92E+7	5.02E+5	4.88E+6	3.91E+7	5.01E+5	4.86E+6	3.88E+7	5.01E+5	4.85E+6	3.86E+7
III	6.06E+3	6.71E+3	6.71E+3	5.01E+3	5.54E+3	5.54E+3	3.18E+3	3.52E+3	3.52E+3	8.35E+2	9.24E+2	9.24E+2	4.71E+2	5.21E+2	5.21E+2
IV	2.48E+3	6.45E+3	7.22E+4	2.36E+3	6.15E+3	6.87E+4	2.12E+3	5.53E+3	6.18E+4	9.42E+2	2.45E+3	2.74E+4	3.51E+2	9.14E+2	1.02E+4
V	5.26E+5	5.71E+5	5.71E+5	5.12E+5	5.55E+5	5.55E+5	4.82E+5	5.23E+5	5.23E+5	4.02E+5	4.37E+5	4.37E+5	3.83E+5	4.16E+5	4.16E+5
VI	1.51E+5	9.28E+5	5.68E+6	1.50E+5	9.26E+5	5.67E+6	1.49E+5	9.21E+5	5.64E+6	1.42E+5	8.92E+5	5.48E+6	1.40E+5	8.82E+5	5.43E+6
VII	3.65E+5	3.26E+6	2.64E+7	2.60E+5	2.32E+6	1.88E+7	1.72E+5	1.54E+6	1.25E+7	9.55E+2	8.23E+3	6.65E+4	.00E+0	.00E+0	.00E+0
IX	1.35E+3	1.22E+4	7.75E+4	9.77E+2	8.78E+3	5.59E+4	6.68E+2	6.00E+3	3.82E+4	1.21E+2	1.09E+3	6.94E+3	.00E+0	.00E+0	.00E+0
X	1.34E+3	1.57E+4	2.09E+4	1.32E+3	1.38E+4	1.84E+4	1.30E+3	1.12E+4	1.49E+4	1.18E+3	6.76E+3	8.80E+3	1.14E+3	5.72E+3	7.39E+3
XII	5.10E+2	1.56E+3	1.60E+3	5.09E+2	1.56E+3	1.60E+3	5.08E+2	1.55E+3	1.59E+3	5.05E+2	1.54E+3	1.58E+3	5.04E+2	1.54E+3	1.58E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.62E+1	3.81E+1	3.81E+1	3.61E+1	3.80E+1	3.80E+1	3.60E+1	3.79E+1	3.79E+1	3.45E+1	3.64E+1	3.64E+1	3.37E+1	3.56E+1	3.56E+1
XVIB	3.58E+1	3.76E+1	3.76E+1	3.57E+1	3.75E+1	3.75E+1	3.56E+1	3.73E+1	3.73E+1	3.41E+1	3.59E+1	3.59E+1	3.33E+1	3.51E+1	3.51E+1
XVIC	3.50E+1	3.65E+1	3.65E+1	3.49E+1	3.64E+1	3.64E+1	3.47E+1	3.62E+1	3.62E+1	3.33E+1	3.48E+1	3.48E+1	3.25E+1	3.40E+1	3.40E+1
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.02E+2	1.13E+2	1.13E+2	1.01E+2	1.12E+2	1.12E+2	9.68E+1	1.07E+2	1.07E+2	9.45E+1	1.05E+2	1.05E+2
XVIIIB	1.01E+2	1.11E+2	1.11E+2	1.00E+2	1.11E+2	1.11E+2	9.96E+1	1.10E+2	1.10E+2	9.51E+1	1.05E+2	1.05E+2	9.29E+1	1.03E+2	1.03E+2
XVIIIC	9.77E+1	1.06E+2	1.06E+2	9.73E+1	1.06E+2	1.06E+2	9.64E+1	1.05E+2	1.05E+2	9.21E+1	1.00E+2	1.00E+2	9.00E+1	9.81E+1	9.81E+1
XXA	1.20E+0	6.62E+0	7.17E+2	1.10E+0	6.16E+0	6.68E+2	9.68E-1	5.55E+0	6.02E+2	6.67E-1	4.11E+0	4.47E+2	5.63E-1	3.72E+0	4.05E+2
XXB	9.67E-1	3.80E+0	4.82E+2	8.87E-1	3.53E+0	4.47E+2	7.81E-1	3.16E+0	4.01E+2	5.38E-1	2.29E+0	2.91E+2	4.54E-1	2.08E+0	2.64E+2
XXC	6.39E-1	2.33E+0	5.24E+2	5.86E-1	2.14E+0	4.81E+2	5.16E-1	1.89E+0	4.24E+2	3.56E-1	1.30E+0	2.94E+2	3.00E-1	1.10E+0	2.48E+2
XXIA	2.85E+2	2.96E+3	2.80E+4	2.82E+2	2.93E+3	2.77E+4	2.77E+2	2.87E+3	2.72E+4	2.32E+2	2.42E+3	2.29E+4	2.16E+2	2.25E+3	2.13E+4
XXIB	2.83E+2	2.92E+3	2.53E+4	2.80E+2	2.89E+3	2.51E+4	2.75E+2	2.84E+3	2.46E+4	2.31E+2	2.39E+3	2.07E+4	2.15E+2	2.22E+3	1.92E+4
XXIC	2.79E+2	2.81E+3	2.04E+4	2.76E+2	2.79E+3	2.02E+4	2.71E+2	2.73E+3	1.98E+4	2.28E+2	2.30E+3	1.67E+4	2.12E+2	2.14E+3	1.55E+4
XXII	1.53E+4	1.71E+5	3.78E+5	1.51E+4	1.70E+5	3.76E+5	1.50E+4	1.68E+5	3.72E+5	1.42E+4	1.60E+5	3.54E+5	1.40E+4	1.58E+5	3.49E+5
DOE	4.95E+6	3.10E+7	1.98E+8	4.82E+6	3.00E+7	1.90E+8	4.66E+6	2.90E+7	1.83E+8	4.25E+6	2.67E+7	1.66E+8	4.17E+6	2.64E+7	1.65E+8
DOD	5.10E+2	1.56E+3	1.60E+3	5.09E+2	1.56E+3	1.60E+3	5.08E+2	1.55E+3	1.59E+3	5.05E+2	1.54E+3	1.58E+3	5.04E+2	1.54E+3	1.58E+3
NRC	1.70E+4	7.54E+4	5.60E+5	1.69E+4	7.48E+4	5.54E+5	1.67E+4	7.35E+4	5.44E+5	1.53E+4	6.31E+4	4.57E+5	1.47E+4	5.92E+4	4.26E+5
Total	4.97E+6	3.11E+7	1.99E+8	4.83E+6	3.01E+7	1.91E+8	4.68E+6	2.91E+7	1.84E+8	4.26E+6	2.68E+7	1.67E+8	4.19E+6	2.65E+7	1.65E+8

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 Table M-9. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.45E+0	9.18E+0	9.18E+0	8.32E+0	9.05E+0	9.05E+0	8.23E+0	8.95E+0	8.95E+0	8.00E+0	8.70E+0	8.70E+0	7.85E+0	8.53E+0	8.53E+0
II	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4
III	3.71E+0	4.11E+0	4.11E+0	3.70E+0	4.10E+0	4.10E+0	3.69E+0	4.09E+0	4.09E+0	3.59E+0	3.97E+0	3.97E+0	3.42E+0	3.79E+0	3.79E+0
IV	6.05E-1	1.61E+0	2.48E+1	6.01E-1	1.60E+0	2.46E+1	5.97E-1	1.59E+0	2.45E+1	5.88E-1	1.57E+0	2.41E+1	5.80E-1	1.55E+0	2.38E+1
V	2.20E+2	2.39E+2	2.39E+2	2.20E+2	2.38E+2	2.38E+2	2.20E+2	2.38E+2	2.38E+2	2.18E+2	2.37E+2	2.37E+2	2.17E+2	2.36E+2	2.36E+2
VI	3.50E+1	1.87E+2	1.65E+3	3.50E+1	1.87E+2	1.65E+3	3.50E+1	1.87E+2	1.65E+3	3.49E+1	1.87E+2	1.65E+3	3.49E+1	1.86E+2	1.65E+3
VII	5.65E+1	4.38E+2	3.40E+3	5.53E+1	4.27E+2	3.31E+3	5.35E+1	4.11E+2	3.19E+3	4.95E+1	3.75E+2	2.90E+3	4.69E+1	3.52E+2	2.72E+3
IX	2.31E-1	2.03E+0	1.26E+1	2.19E-1	1.93E+0	1.20E+1	2.08E-1	1.83E+0	1.14E+1	1.81E-1	1.59E+0	9.87E+0	1.63E-1	1.43E+0	8.87E+0
X	1.49E+0	5.07E+0	6.77E+0	1.49E+0	5.07E+0	6.77E+0	1.49E+0	5.06E+0	6.77E+0	1.49E+0	5.05E+0	6.74E+0	1.48E+0	5.01E+0	6.69E+0
XII	2.97E-2	9.20E-2	9.46E-2	2.97E-2	9.20E-2	9.46E-2	2.96E-2	9.19E-2	9.46E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2
XIIIA	5.08E-4	1.67E-3	5.26E-3	4.08E-4	1.34E-3	4.22E-3	2.85E-4	9.37E-4	2.95E-3	5.62E-5	1.85E-4	5.81E-4	.00E+0	.00E+0	.00E+0
XIIIB	4.10E-4	7.36E-4	3.06E-3	3.29E-4	5.91E-4	2.45E-3	2.30E-4	4.12E-4	1.71E-3	4.53E-5	8.13E-5	3.38E-4	.00E+0	.00E+0	.00E+0
XIIIC	2.70E-4	3.27E-4	1.13E-2	2.17E-4	2.63E-4	9.08E-3	1.51E-4	1.83E-4	6.34E-3	2.99E-5	3.62E-5	1.25E-3	.00E+0	.00E+0	.00E+0
XVIA	1.46E-2	1.53E-2	1.53E-2	1.46E-2	1.53E-2	1.53E-2	1.46E-2	1.53E-2	1.46E-2	1.46E-2	1.53E-2	1.53E-2	1.46E-2	1.53E-2	1.53E-2
XVIB	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.51E-2	1.51E-2
XVIC	1.40E-2	1.47E-2	1.47E-2	1.40E-2	1.47E-2	1.47E-2	1.40E-2	1.47E-2	1.47E-2	1.40E-2	1.47E-2	1.47E-2	1.40E-2	1.46E-2	1.46E-2
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2
XVIIIC	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2
XXA	5.33E-3	3.42E-2	5.07E+0	4.04E-3	2.83E-2	4.20E+0	3.42E-3	2.44E-2	3.63E+0	2.38E-3	1.80E-2	2.67E+0	1.79E-3	1.47E-2	2.18E+0
XXB	4.31E-3	2.21E-2	3.49E+0	3.26E-3	1.67E-2	2.64E+0	2.76E-3	1.42E-2	2.24E+0	1.92E-3	9.86E-3	1.56E+0	1.45E-3	7.43E-3	1.17E+0
XXC	2.85E-3	1.57E-2	3.17E+0	2.16E-3	1.19E-2	2.40E+0	1.83E-3	1.01E-2	2.04E+0	1.27E-3	7.02E-3	1.42E+0	9.58E-4	5.29E-3	1.07E+0
XXIA	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1
XXIB	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1
XXIC	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0
XXII	5.51E+0	5.41E+1	1.23E+2	5.51E+0	5.41E+1	1.23E+2	5.51E+0	5.41E+1	1.23E+2	5.50E+0	5.40E+1	1.23E+2	5.49E+0	5.40E+1	1.23E+2
DOE	1.30E+3	6.98E+3	5.50E+4	1.29E+3	6.97E+3	5.49E+4	1.29E+3	6.96E+3	5.48E+4	1.29E+3	6.92E+3	5.45E+4	1.28E+3	6.89E+3	5.43E+4
DOD	3.30E-2	9.97E-2	1.50E-1	3.24E-2	9.82E-2	1.39E-1	3.15E-2	9.63E-2	1.26E-1	3.00E-2	9.28E-2	1.01E-1	2.96E-2	9.19E-2	9.45E-2
NRC	6.79E+0	3.03E+1	2.74E+2	6.77E+0	3.02E+1	2.62E+2	6.77E+0	3.02E+1	2.56E+2	6.75E+0	3.01E+1	2.46E+2	6.74E+0	3.00E+1	2.40E+2
Total	1.30E+3	7.02E+3	5.53E+4	1.30E+3	7.00E+3	5.52E+4	1.30E+3	6.99E+3	5.50E+4	1.29E+3	6.95E+3	5.47E+4	1.29E+3	6.92E+3	5.45E+4

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 Table M-10. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.50E+0	8.16E+0	8.16E+0	7.24E+0	7.87E+0	7.87E+0	6.86E+0	7.46E+0	7.46E+0	5.84E+0	6.35E+0	6.35E+0	5.58E+0	6.07E+0	6.07E+0
II	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.67E+3	1.30E+4	1.72E+2	1.67E+3	1.29E+4	1.72E+2	1.67E+3	1.29E+4
III	2.94E+0	3.26E+0	3.26E+0	2.72E+0	3.01E+0	3.01E+0	2.45E+0	2.72E+0	2.72E+0	1.14E+0	1.26E+0	1.26E+0	7.33E-1	8.13E-1	8.13E-1
IV	5.67E-1	1.51E+0	2.32E+1	5.59E-1	1.49E+0	2.29E+1	5.42E-1	1.44E+0	2.22E+1	4.60E-1	1.23E+0	1.88E+1	4.19E-1	1.12E+0	1.72E+1
V	2.14E+2	2.32E+2	2.32E+2	2.12E+2	2.30E+2	2.30E+2	2.08E+2	2.25E+2	2.25E+2	1.87E+2	2.03E+2	2.03E+2	1.77E+2	1.91E+2	1.91E+2
VI	3.48E+1	1.86E+2	1.65E+3	3.47E+1	1.86E+2	1.64E+3	3.45E+1	1.86E+2	1.64E+3	3.38E+1	1.84E+2	1.63E+3	3.34E+1	1.83E+2	1.62E+3
VII	4.29E+1	3.17E+2	2.44E+3	3.94E+1	2.90E+2	2.24E+3	3.07E+1	2.26E+2	1.74E+3	1.27E+1	9.55E+1	7.40E+2	9.97E+0	7.58E+1	5.87E+2
IX	1.36E-1	1.19E+0	7.40E+0	1.14E-1	1.00E+0	6.22E+0	9.32E-2	8.19E-1	5.08E+0	4.37E-2	3.84E-1	2.38E+0	3.06E-2	2.69E-1	1.67E+0
X	1.47E+0	4.86E+0	6.47E+0	1.46E+0	4.68E+0	6.21E+0	1.44E+0	4.32E+0	5.67E+0	1.36E+0	3.18E+0	4.02E+0	1.33E+0	2.93E+0	3.65E+0
XII	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.17E-2	9.44E-2	2.95E-2	9.16E-2	9.43E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-2	1.53E-2	1.53E-2	1.45E-2	1.53E-2	1.53E-2	1.45E-2	1.52E-2	1.52E-2	1.43E-2	1.51E-2	1.51E-2	1.43E-2	1.50E-2	1.50E-2
XVIB	1.44E-2	1.51E-2	1.51E-2	1.43E-2	1.50E-2	1.50E-2	1.43E-2	1.50E-2	1.50E-2	1.42E-2	1.49E-2	1.49E-2	1.41E-2	1.48E-2	1.48E-2
XVIC	1.40E-2	1.46E-2	1.46E-2	1.40E-2	1.46E-2	1.46E-2	1.40E-2	1.46E-2	1.46E-2	1.38E-2	1.44E-2	1.44E-2	1.38E-2	1.44E-2	1.44E-2
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.02E-2	4.44E-2	4.44E-2	3.97E-2	4.39E-2	4.39E-2	3.94E-2	4.36E-2	4.36E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.95E-2	4.38E-2	4.38E-2	3.95E-2	4.37E-2	4.37E-2	3.90E-2	4.32E-2	4.32E-2	3.87E-2	4.29E-2	4.29E-2
XVIIIC	3.82E-2	4.17E-2	4.17E-2	3.81E-2	4.17E-2	4.17E-2	3.81E-2	4.16E-2	4.16E-2	3.76E-2	4.11E-2	4.11E-2	3.73E-2	4.08E-2	4.08E-2
XXA	8.50E-4	8.82E-3	1.31E+0	3.50E-4	5.65E-3	8.41E-1	2.26E-4	2.00E-3	2.99E-1	1.80E-4	1.29E-3	1.93E-1	1.67E-4	1.21E-3	1.81E-1
XXB	6.86E-4	3.53E-3	5.58E-1	2.82E-4	1.46E-3	2.31E-1	1.83E-4	9.47E-4	1.50E-1	1.45E-4	7.55E-4	1.20E-1	1.35E-4	7.01E-4	1.11E-1
XXC	4.54E-4	2.51E-3	5.08E-1	1.87E-4	1.04E-3	2.10E-1	1.21E-4	6.75E-4	1.37E-1	9.63E-5	5.39E-4	1.09E-1	8.93E-5	5.00E-4	1.01E-1
XXIA	1.12E-1	1.17E+0	1.11E+1	1.12E-1	1.17E+0	1.10E+1	1.11E-1	1.16E+0	1.10E+1	1.08E-1	1.13E+0	1.06E+1	1.05E-1	1.10E+0	1.04E+1
XXIB	1.12E-1	1.16E+0	1.00E+1	1.11E-1	1.15E+0	9.97E+0	1.11E-1	1.15E+0	9.92E+0	1.07E-1	1.11E+0	9.62E+0	1.04E-1	1.08E+0	9.36E+0
XXIC	1.10E-1	1.11E+0	8.10E+0	1.10E-1	1.11E+0	8.08E+0	1.09E-1	1.10E+0	8.03E+0	1.06E-1	1.07E+0	7.79E+0	1.03E-1	1.04E+0	7.58E+0
XXII	5.48E+0	5.39E+1	1.23E+2	5.47E+0	5.38E+1	1.22E+2	5.44E+0	5.36E+1	1.22E+2	5.33E+0	5.25E+1	1.20E+2	5.27E+0	5.19E+1	1.18E+2
DOE	1.27E+3	6.85E+3	5.40E+4	1.26E+3	6.81E+3	5.37E+4	1.24E+3	6.73E+3	5.32E+4	1.18E+3	6.52E+3	5.17E+4	1.16E+3	6.45E+3	5.13E+4
DOD	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.17E-2	9.44E-2	2.95E-2	9.16E-2	9.43E-2
NRC	6.73E+0	2.99E+1	2.30E+2	6.71E+0	2.98E+1	2.24E+2	6.68E+0	2.96E+1	2.19E+2	6.56E+0	2.88E+1	2.12E+2	6.47E+0	2.81E+1	2.07E+2
Total	1.28E+3	6.88E+3	5.42E+4	1.27E+3	6.84E+3	5.40E+4	1.25E+3	6.76E+3	5.34E+4	1.19E+3	6.55E+3	5.19E+4	1.17E+3	6.48E+3	5.15E+4

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 Table M-11. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.38E+0	9.11E+0	9.11E+0	8.17E+0	8.89E+0	8.89E+0	8.02E+0	8.72E+0	8.72E+0	7.61E+0	8.27E+0	8.27E+0	7.29E+0	7.92E+0	7.92E+0
II	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4
III	3.71E+0	4.11E+0	4.11E+0	3.68E+0	4.08E+0	4.08E+0	3.60E+0	3.99E+0	3.99E+0	3.10E+0	3.43E+0	3.43E+0	2.74E+0	3.04E+0	3.04E+0
IV	6.03E-1	1.61E+0	2.47E+1	5.94E-1	1.58E+0	2.43E+1	5.87E-1	1.56E+0	2.40E+1	5.68E-1	1.51E+0	2.33E+1	5.58E-1	1.49E+0	2.28E+1
V	2.20E+2	2.38E+2	2.38E+2	2.19E+2	2.38E+2	2.38E+2	2.19E+2	2.37E+2	2.37E+2	2.15E+2	2.33E+2	2.33E+2	2.12E+2	2.30E+2	2.30E+2
VI	3.50E+1	1.87E+2	1.65E+3	3.50E+1	1.87E+2	1.65E+3	3.49E+1	1.87E+2	1.65E+3	3.48E+1	1.86E+2	1.65E+3	3.47E+1	1.86E+2	1.64E+3
VII	5.60E+1	4.34E+2	3.37E+3	5.17E+1	3.95E+2	3.06E+3	4.89E+1	3.69E+2	2.86E+3	4.28E+1	3.16E+2	2.44E+3	3.79E+1	2.79E+2	2.15E+3
IX	2.23E-1	1.96E+0	1.22E+1	1.97E-1	1.73E+0	1.07E+1	1.77E-1	1.56E+0	9.67E+0	1.35E-1	1.19E+0	7.35E+0	1.07E-1	9.38E-1	5.82E+0
X	1.49E+0	5.07E+0	6.77E+0	1.49E+0	5.06E+0	6.77E+0	1.49E+0	5.06E+0	6.75E+0	1.47E+0	4.97E+0	6.63E+0	1.46E+0	4.84E+0	6.43E+0
XII	2.97E-2	9.20E-2	9.46E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2
XIIIA	4.54E-4	1.49E-3	4.69E-3	2.70E-4	8.88E-4	2.80E-3	5.72E-5	1.88E-4	5.92E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.66E-4	6.57E-4	2.73E-3	2.18E-4	3.91E-4	1.63E-3	4.61E-5	8.29E-5	3.44E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.41E-4	2.92E-4	1.01E-2	1.44E-4	1.74E-4	6.01E-3	3.04E-5	3.69E-5	1.27E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-2	1.53E-2	1.53E-2	1.46E-2	1.53E-2	1.53E-2	1.46E-2	1.53E-2	1.53E-2	1.46E-2	1.53E-2	1.53E-2	1.45E-2	1.53E-2	1.53E-2
XVIB	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.50E-2	1.50E-2
XVIC	1.40E-2	1.47E-2	1.47E-2	1.40E-2	1.47E-2	1.47E-2	1.40E-2	1.47E-2	1.47E-2	1.40E-2	1.46E-2	1.46E-2	1.40E-2	1.46E-2	1.46E-2
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.95E-2	4.38E-2	4.38E-2
XVIIIC	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.81E-2	4.17E-2	4.17E-2
XXA	4.26E-3	3.03E-2	4.51E+0	2.80E-3	2.14E-2	3.18E+0	2.08E-3	1.72E-2	2.56E+0	5.90E-4	8.66E-3	1.29E+0	2.47E-4	4.45E-3	6.62E-1
XXB	3.43E-3	1.91E-2	3.01E+0	2.26E-3	1.32E-2	2.08E+0	1.68E-3	1.05E-2	1.66E+0	4.76E-4	4.68E-3	7.40E-1	2.00E-4	1.94E-3	3.07E-1
XXC	2.27E-3	1.25E-2	2.53E+0	1.50E-3	8.27E-3	1.67E+0	1.11E-3	6.12E-3	1.24E+0	3.15E-4	1.75E-3	3.53E-1	1.32E-4	7.37E-4	1.49E-1
XXIA	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.17E+0	1.11E+1	1.12E-1	1.17E+0	1.10E+1
XXIB	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.11E-1	1.15E+0	9.97E+0
XXIC	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.11E+0	8.11E+0	1.09E-1	1.11E+0	8.08E+0
XXII	5.51E+0	5.41E+1	1.23E+2	5.50E+0	5.41E+1	1.23E+2	5.50E+0	5.40E+1	1.23E+2	5.48E+0	5.39E+1	1.23E+2	5.47E+0	5.38E+1	1.22E+2
DOE	1.30E+3	6.98E+3	5.50E+4	1.29E+3	6.94E+3	5.46E+4	1.28E+3	6.91E+3	5.44E+4	1.27E+3	6.85E+3	5.40E+4	1.26E+3	6.80E+3	5.37E+4
DOD	3.27E-2	9.89E-2	1.44E-1	3.14E-2	9.60E-2	1.24E-1	3.00E-2	9.28E-2	1.01E-1	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2
NRC	6.77E+0	3.02E+1	2.66E+2	6.76E+0	3.01E+1	2.52E+2	6.75E+0	3.01E+1	2.45E+2	6.72E+0	2.99E+1	2.30E+2	6.71E+0	2.98E+1	2.23E+2
Total	1.30E+3	7.01E+3	5.52E+4	1.30E+3	6.97E+3	5.49E+4	1.29E+3	6.94E+3	5.47E+4	1.28E+3	6.88E+3	5.42E+4	1.27E+3	6.83E+3	5.39E+4

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 Table M-12. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.77E+0	7.36E+0	7.36E+0	6.41E+0	6.97E+0	6.97E+0	5.91E+0	6.43E+0	6.43E+0	4.24E+0	4.61E+0	4.61E+0	3.69E+0	4.01E+0	4.01E+0
II	1.72E+2	1.67E+3	1.30E+4	1.72E+2	1.67E+3	1.29E+4	1.72E+2	1.67E+3	1.29E+4	1.72E+2	1.67E+3	1.28E+4	1.72E+2	1.66E+3	1.28E+4
III	2.37E+0	2.63E+0	2.63E+0	1.96E+0	2.17E+0	2.17E+0	1.24E+0	1.38E+0	1.38E+0	3.26E-1	3.62E-1	3.62E-1	1.84E-1	2.04E-1	2.04E-1
IV	5.32E-1	1.42E+0	2.18E+1	5.07E-1	1.35E+0	2.08E+1	4.56E-1	1.22E+0	1.87E+1	2.02E-1	5.39E-1	8.29E+0	7.54E-2	2.01E-1	3.09E+0
V	2.07E+2	2.24E+2	2.24E+2	2.01E+2	2.18E+2	2.18E+2	1.89E+2	2.05E+2	2.05E+2	1.58E+2	1.71E+2	1.71E+2	1.50E+2	1.63E+2	1.63E+2
VI	3.45E+1	1.86E+2	1.64E+3	3.43E+1	1.85E+2	1.64E+3	3.38E+1	1.84E+2	1.63E+3	3.19E+1	1.78E+2	1.58E+3	3.13E+1	1.76E+2	1.57E+3
VII	2.55E+1	1.88E+2	1.45E+3	1.80E+1	1.34E+2	1.03E+3	1.17E+1	8.87E+1	6.87E+2	7.84E-2	4.89E-1	3.67E+0	.00E+0	.00E+0	.00E+0
IX	7.78E-2	6.84E-1	4.24E+0	5.62E-2	4.94E-1	3.06E+0	3.84E-2	3.37E-1	2.09E+0	6.97E-3	6.12E-2	3.80E-1	.00E+0	.00E+0	.00E+0
X	1.44E+0	4.45E+0	5.86E+0	1.42E+0	4.06E+0	5.29E+0	1.39E+0	3.50E+0	4.48E+0	1.27E+0	2.49E+0	3.03E+0	1.23E+0	2.23E+0	2.68E+0
XII	2.96E-2	9.18E-2	9.45E-2	2.96E-2	9.17E-2	9.44E-2	2.95E-2	9.16E-2	9.42E-2	2.93E-2	9.09E-2	9.35E-2	2.92E-2	9.07E-2	9.33E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.45E-2	1.52E-2	1.52E-2	1.44E-2	1.52E-2	1.52E-2	1.44E-2	1.51E-2	1.51E-2	1.38E-2	1.45E-2	1.45E-2	1.35E-2	1.42E-2	1.42E-2
XVIB	1.43E-2	1.50E-2	1.50E-2	1.42E-2	1.49E-2	1.49E-2	1.42E-2	1.49E-2	1.49E-2	1.36E-2	1.43E-2	1.43E-2	1.33E-2	1.40E-2	1.40E-2
XVIC	1.39E-2	1.46E-2	1.46E-2	1.39E-2	1.45E-2	1.45E-2	1.38E-2	1.44E-2	1.44E-2	1.33E-2	1.39E-2	1.39E-2	1.30E-2	1.35E-2	1.35E-2
XVIIIA	4.02E-2	4.44E-2	4.44E-2	4.00E-2	4.43E-2	4.43E-2	3.97E-2	4.39E-2	4.39E-2	3.79E-2	4.19E-2	4.19E-2	3.70E-2	4.09E-2	4.09E-2
XVIIIB	3.95E-2	4.37E-2	4.37E-2	3.93E-2	4.35E-2	4.35E-2	3.90E-2	4.32E-2	4.32E-2	3.72E-2	4.12E-2	4.12E-2	3.64E-2	4.03E-2	4.03E-2
XVIIIC	3.81E-2	4.16E-2	4.16E-2	3.79E-2	4.14E-2	4.14E-2	3.76E-2	4.11E-2	4.11E-2	3.59E-2	3.92E-2	3.92E-2	3.51E-2	3.83E-2	3.83E-2
XXA	2.09E-4	1.49E-3	2.23E-1	1.91E-4	1.39E-3	2.08E-1	1.68E-4	1.25E-3	1.88E-1	1.16E-4	9.28E-4	1.39E-1	9.75E-5	8.38E-4	1.26E-1
XXB	1.68E-4	9.41E-4	1.49E-1	1.54E-4	8.73E-4	1.39E-1	1.36E-4	7.83E-4	1.24E-1	9.33E-5	5.68E-4	9.04E-2	7.87E-5	5.14E-4	8.19E-2
XXC	1.11E-4	6.23E-4	1.26E-1	1.02E-4	5.72E-4	1.16E-1	9.00E-5	5.04E-4	1.02E-1	6.18E-5	3.49E-4	7.07E-2	5.21E-5	2.94E-4	5.98E-2
XXIA	1.11E-1	1.16E+0	1.09E+1	1.10E-1	1.15E+0	1.08E+1	1.08E-1	1.13E+0	1.06E+1	9.07E-2	9.47E-1	8.93E+0	8.45E-2	8.81E-1	8.31E+0
XXIB	1.10E-1	1.14E+0	9.88E+0	1.09E-1	1.13E+0	9.79E+0	1.07E-1	1.11E+0	9.61E+0	9.00E-2	9.32E-1	8.07E+0	8.38E-2	8.67E-1	7.51E+0
XXIC	1.08E-1	1.10E+0	8.00E+0	1.07E-1	1.09E+0	7.93E+0	1.05E-1	1.07E+0	7.78E+0	8.86E-2	8.98E-1	6.54E+0	8.25E-2	8.36E-1	6.08E+0
XXII	5.43E+0	5.35E+1	1.22E+2	5.39E+0	5.32E+1	1.21E+2	5.33E+0	5.26E+1	1.20E+2	5.06E+0	5.01E+1	1.14E+2	4.98E+0	4.94E+1	1.12E+2
DOE	1.24E+3	6.69E+3	5.28E+4	1.22E+3	6.61E+3	5.23E+4	1.19E+3	6.52E+3	5.17E+4	1.10E+3	6.23E+3	4.97E+4	1.07E+3	6.16E+3	4.93E+4
DOD	2.96E-2	9.18E-2	9.45E-2	2.96E-2	9.17E-2	9.44E-2	2.95E-2	9.16E-2	9.42E-2	2.93E-2	9.09E-2	9.35E-2	2.92E-2	9.07E-2	9.33E-2
NRC	6.67E+0	2.95E+1	2.18E+2	6.64E+0	2.93E+1	2.16E+2	6.56E+0	2.88E+1	2.12E+2	6.00E+0	2.47E+1	1.78E+2	5.77E+0	2.32E+1	1.66E+2
Total	1.24E+3	6.72E+3	5.31E+4	1.22E+3	6.64E+3	5.25E+4	1.19E+3	6.55E+3	5.19E+4	1.10E+3	6.25E+3	4.99E+4	1.08E+3	6.18E+3	4.95E+4

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 Table M-13. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.55E+0	6.05E+0	6.05E+0	5.47E+0	5.96E+0	5.96E+0	5.41E+0	5.89E+0	5.89E+0	5.26E+0	5.73E+0	5.73E+0	5.16E+0	5.62E+0	5.62E+0
II	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4
III	2.45E+0	2.70E+0	2.70E+0	2.44E+0	2.70E+0	2.70E+0	2.44E+0	2.69E+0	2.69E+0	2.37E+0	2.61E+0	2.61E+0	2.26E+0	2.49E+0	2.49E+0
IV	4.48E-1	1.21E+0	2.32E+1	4.45E-1	1.21E+0	2.30E+1	4.42E-1	1.20E+0	2.29E+1	4.35E-1	1.18E+0	2.25E+1	4.30E-1	1.16E+0	2.22E+1
V	1.44E+2	1.57E+2	1.57E+2	1.44E+2	1.57E+2	1.57E+2	1.44E+2	1.57E+2	1.57E+2	1.43E+2	1.56E+2	1.56E+2	1.42E+2	1.55E+2	1.55E+2
VI	2.55E+1	1.41E+2	1.42E+3	2.55E+1	1.41E+2	1.42E+3	2.55E+1	1.41E+2	1.42E+3	2.55E+1	1.41E+2	1.42E+3	2.55E+1	1.41E+2	1.42E+3
VII	4.84E+1	3.92E+2	3.08E+3	4.73E+1	3.82E+2	3.00E+3	4.58E+1	3.67E+2	2.88E+3	4.22E+1	3.35E+2	2.62E+3	3.99E+1	3.14E+2	2.46E+3
IX	2.07E-1	1.83E+0	1.14E+1	1.96E-1	1.73E+0	1.08E+1	1.86E-1	1.65E+0	1.03E+1	1.62E-1	1.43E+0	8.95E+0	1.45E-1	1.29E+0	8.04E+0
X	9.80E-1	3.18E+0	4.61E+0	9.80E-1	3.18E+0	4.61E+0	9.79E-1	3.17E+0	4.61E+0	9.75E-1	3.16E+0	4.59E+0	9.71E-1	3.14E+0	4.55E+0
XII	2.64E-2	8.16E-2	8.39E-2	2.64E-2	8.16E-2	8.39E-2	2.64E-2	8.16E-2	8.39E-2	2.64E-2	8.15E-2	8.39E-2	2.64E-2	8.15E-2	8.38E-2
XIIIA	3.67E-4	1.20E-3	4.51E-3	2.94E-4	9.67E-4	3.62E-3	2.06E-4	6.75E-4	2.53E-3	4.05E-5	1.33E-4	4.98E-4	.00E+0	.00E+0	.00E+0
XIIIB	2.96E-4	5.33E-4	2.72E-3	2.37E-4	4.28E-4	2.18E-3	1.66E-4	2.99E-4	1.52E-3	3.27E-5	5.89E-5	3.00E-4	.00E+0	.00E+0	.00E+0
XIIIC	1.95E-4	2.38E-4	7.36E-3	1.57E-4	1.91E-4	5.90E-3	1.09E-4	1.33E-4	4.12E-3	2.15E-5	2.63E-5	8.12E-4	.00E+0	.00E+0	.00E+0
XVIA	9.57E-3	1.01E-2	1.01E-2	9.57E-3	1.01E-2	1.01E-2	9.56E-3	1.01E-2	1.01E-2	9.56E-3	1.01E-2	1.01E-2	9.56E-3	1.01E-2	1.01E-2
XVIB	9.47E-3	9.93E-3	9.93E-3	9.47E-3	9.93E-3	9.93E-3	9.47E-3	9.93E-3	9.93E-3	9.47E-3	9.93E-3	9.93E-3	9.47E-3	9.93E-3	9.93E-3
XVIC	9.23E-3	9.63E-3	9.63E-3	9.23E-3	9.63E-3	9.63E-3	9.22E-3	9.63E-3	9.63E-3	9.22E-3	9.63E-3	9.63E-3	9.22E-3	9.63E-3	9.62E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2
XVIIIB	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2
XXA	4.16E-3	2.85E-2	4.78E+0	3.15E-3	2.36E-2	3.95E+0	2.67E-3	2.04E-2	3.42E+0	1.85E-3	1.50E-2	2.51E+0	1.40E-3	1.23E-2	2.05E+0
XXB	3.35E-3	1.92E-2	3.31E+0	2.54E-3	1.46E-2	2.51E+0	2.15E-3	1.23E-2	2.12E+0	1.49E-3	8.59E-3	1.48E+0	1.13E-3	6.47E-3	1.11E+0
XXC	2.22E-3	1.42E-2	2.59E+0	1.68E-3	1.08E-2	1.96E+0	1.42E-3	9.13E-3	1.66E+0	9.89E-4	6.35E-3	1.16E+0	7.45E-4	4.79E-3	8.71E-1
XXIA	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.46E-2	7.79E-1	7.34E+0	7.46E-2	7.79E-1	7.34E+0
XXIB	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.40E-2	7.66E-1	6.64E+0
XXIC	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.29E-2	7.39E-1	5.38E+0	7.29E-2	7.39E-1	5.37E+0
XXII	4.25E+0	4.01E+1	9.41E+1	4.25E+0	4.01E+1	9.41E+1	4.25E+0	4.01E+1	9.40E+1	4.24E+0	4.00E+1	9.39E+1	4.24E+0	4.00E+1	9.39E+1
DOE	9.53E+2	5.44E+3	4.75E+4	9.52E+2	5.43E+3	4.74E+4	9.50E+2	5.42E+3	4.73E+4	9.45E+2	5.38E+3	4.70E+4	9.41E+2	5.36E+3	4.68E+4
DOD	2.88E-2	8.72E-2	1.25E-1	2.83E-2	8.61E-2	1.17E-1	2.77E-2	8.47E-2	1.07E-1	2.66E-2	8.21E-2	8.84E-2	2.64E-2	8.15E-2	8.38E-2
NRC	4.48E+0	2.01E+1	1.95E+2	4.47E+0	2.00E+1	1.84E+2	4.47E+0	2.00E+1	1.79E+2	4.46E+0	1.99E+1	1.69E+2	4.45E+0	1.99E+1	1.64E+2
Total	9.58E+2	5.46E+3	4.77E+4	9.56E+2	5.45E+3	4.76E+4	9.54E+2	5.44E+3	4.75E+4	9.49E+2	5.40E+3	4.72E+4	9.45E+2	5.38E+3	4.70E+4

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 Table M-14. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.93E+0	5.37E+0	5.37E+0	4.76E+0	5.18E+0	5.18E+0	4.51E+0	4.91E+0	4.91E+0	3.84E+0	4.18E+0	4.18E+0	3.67E+0	4.00E+0	4.00E+0
II	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.39E+3	1.12E+4
III	1.94E+0	2.14E+0	2.14E+0	1.79E+0	1.98E+0	1.98E+0	1.62E+0	1.79E+0	1.79E+0	7.49E-1	8.27E-1	8.27E-1	4.84E-1	5.34E-1	5.34E-1
IV	4.20E-1	1.14E+0	2.17E+1	4.14E-1	1.12E+0	2.14E+1	4.02E-1	1.09E+0	2.08E+1	3.41E-1	9.23E-1	1.76E+1	3.10E-1	8.40E-1	1.61E+1
V	1.40E+2	1.53E+2	1.53E+2	1.39E+2	1.51E+2	1.51E+2	1.36E+2	1.49E+2	1.49E+2	1.23E+2	1.34E+2	1.34E+2	1.16E+2	1.26E+2	1.26E+2
VI	2.54E+1	1.41E+2	1.42E+3	2.53E+1	1.41E+2	1.41E+3	2.52E+1	1.41E+2	1.41E+3	2.47E+1	1.39E+2	1.40E+3	2.44E+1	1.38E+2	1.39E+3
VII	3.63E+1	2.83E+2	2.21E+3	3.34E+1	2.59E+2	2.03E+3	2.60E+1	2.01E+2	1.57E+3	1.08E+1	8.54E+1	6.69E+2	8.50E+0	6.77E+1	5.31E+2
IX	1.21E-1	1.07E+0	6.71E+0	1.02E-1	9.03E-1	5.64E+0	8.33E-2	7.37E-1	4.61E+0	3.91E-2	3.45E-1	2.16E+0	2.74E-2	2.42E-1	1.51E+0
X	9.62E-1	3.05E+0	4.41E+0	9.55E-1	2.94E+0	4.22E+0	9.43E-1	2.72E+0	3.85E+0	8.95E-1	2.02E+0	2.72E+0	8.73E-1	1.86E+0	2.47E+0
XII	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2	2.63E-2	8.14E-2	8.37E-2	2.63E-2	8.13E-2	8.36E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.55E-3	1.00E-2	1.00E-2	9.54E-3	1.00E-2	1.00E-2	9.51E-3	1.00E-2	1.00E-2	9.42E-3	9.90E-3	9.90E-3	9.37E-3	9.86E-3	9.86E-3
XVIB	9.46E-3	9.92E-3	9.92E-3	9.44E-3	9.91E-3	9.91E-3	9.41E-3	9.87E-3	9.87E-3	9.32E-3	9.78E-3	9.78E-3	9.28E-3	9.74E-3	9.74E-3
XVIC	9.21E-3	9.62E-3	9.62E-3	9.20E-3	9.60E-3	9.60E-3	9.17E-3	9.57E-3	9.57E-3	9.08E-3	9.48E-3	9.48E-3	9.04E-3	9.44E-3	9.44E-3
XVIII	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.61E-2	2.89E-2	2.89E-2	2.59E-2	2.87E-2	2.87E-2
XVIII A	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.87E-2	2.87E-2	2.60E-2	2.87E-2	2.87E-2	2.57E-2	2.83E-2	2.83E-2	2.55E-2	2.81E-2	2.81E-2
XVIII B	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.49E-2	2.71E-2	2.71E-2	2.47E-2	2.69E-2	2.69E-2
XVIII C	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.49E-2	2.71E-2	2.71E-2	2.47E-2	2.69E-2	2.69E-2
XXA	6.63E-4	7.36E-3	1.23E+0	2.73E-4	4.72E-3	7.92E-1	1.77E-4	1.67E-3	2.81E-1	1.41E-4	1.08E-3	1.81E-1	1.31E-4	1.01E-3	1.70E-1
XXB	5.34E-4	3.07E-3	5.29E-1	2.20E-4	1.27E-3	2.19E-1	1.43E-4	8.26E-4	1.43E-1	1.13E-4	6.59E-4	1.14E-1	1.05E-4	6.12E-4	1.06E-1
XXC	3.53E-4	2.27E-3	4.14E-1	1.46E-4	9.40E-4	1.71E-1	9.43E-5	6.12E-4	1.11E-1	7.51E-5	4.88E-4	8.90E-2	6.96E-5	4.53E-4	8.26E-2
XXIA	7.44E-2	7.77E-1	7.31E+0	7.42E-2	7.75E-1	7.29E+0	7.37E-2	7.70E-1	7.25E+0	7.16E-2	7.47E-1	7.04E+0	6.96E-2	7.27E-1	6.85E+0
XXIB	7.38E-2	7.64E-1	6.62E+0	7.36E-2	7.62E-1	6.60E+0	7.32E-2	7.57E-1	6.56E+0	7.10E-2	7.35E-1	6.37E+0	6.91E-2	7.15E-1	6.20E+0
XXIC	7.27E-2	7.37E-1	5.36E+0	7.25E-2	7.34E-1	5.34E+0	7.21E-2	7.30E-1	5.31E+0	6.99E-2	7.08E-1	5.15E+0	6.80E-2	6.89E-1	5.02E+0
XXII	4.23E+0	3.99E+1	9.36E+1	4.22E+0	3.98E+1	9.34E+1	4.20E+0	3.97E+1	9.31E+1	4.11E+0	3.89E+1	9.13E+1	4.06E+0	3.85E+1	9.03E+1
DOE	9.33E+2	5.32E+3	4.66E+4	9.26E+2	5.29E+3	4.63E+4	9.13E+2	5.22E+3	4.58E+4	8.70E+2	5.05E+3	4.45E+4	8.54E+2	5.00E+3	4.42E+4
DOD	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2	2.63E-2	8.14E-2	8.37E-2	2.63E-2	8.13E-2	8.36E-2
NRC	4.44E+0	1.98E+1	1.55E+2	4.43E+0	1.97E+1	1.50E+2	4.41E+0	1.96E+1	1.46E+2	4.33E+0	1.91E+1	1.41E+2	4.27E+0	1.86E+1	1.37E+2
Total	9.37E+2	5.34E+3	4.67E+4	9.31E+2	5.31E+3	4.65E+4	9.18E+2	5.24E+3	4.60E+4	8.75E+2	5.07E+3	4.47E+4	8.58E+2	5.02E+3	4.43E+4

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 Table M-15. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.51E+0	6.00E+0	6.00E+0	5.37E+0	5.85E+0	5.85E+0	5.28E+0	5.74E+0	5.74E+0	5.00E+0	5.45E+0	5.45E+0	4.79E+0	5.22E+0	5.22E+0
II	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4
III	2.45E+0	2.70E+0	2.70E+0	2.43E+0	2.68E+0	2.68E+0	2.38E+0	2.62E+0	2.62E+0	2.04E+0	2.26E+0	2.26E+0	1.81E+0	2.00E+0	2.00E+0
IV	4.46E-1	1.21E+0	2.31E+1	4.40E-1	1.19E+0	2.28E+1	4.35E-1	1.18E+0	2.25E+1	4.21E-1	1.14E+0	2.18E+1	4.13E-1	1.12E+0	2.14E+1
V	1.44E+2	1.57E+2	1.57E+2	1.44E+2	1.57E+2	1.57E+2	1.43E+2	1.56E+2	1.56E+2	1.41E+2	1.54E+2	1.54E+2	1.39E+2	1.52E+2	1.52E+2
VI	2.55E+1	1.41E+2	1.42E+3	2.55E+1	1.41E+2	1.42E+3	2.55E+1	1.41E+2	1.42E+3	2.54E+1	1.41E+2	1.42E+3	2.53E+1	1.41E+2	1.41E+3
VII	4.80E+1	3.88E+2	3.05E+3	4.42E+1	3.53E+2	2.77E+3	4.16E+1	3.30E+2	2.59E+3	3.63E+1	2.82E+2	2.21E+3	3.20E+1	2.49E+2	1.94E+3
IX	2.00E-1	1.77E+0	1.10E+1	1.76E-1	1.56E+0	9.73E+0	1.59E-1	1.40E+0	8.76E+0	1.21E-1	1.07E+0	6.67E+0	9.55E-2	8.44E-1	5.28E+0
X	9.80E-1	3.18E+0	4.61E+0	9.79E-1	3.17E+0	4.61E+0	9.76E-1	3.17E+0	4.60E+0	9.67E-1	3.12E+0	4.52E+0	9.60E-1	3.04E+0	4.38E+0
XII	2.64E-2	8.16E-2	8.39E-2	2.64E-2	8.15E-2	8.39E-2	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2
XIIIA	3.27E-4	1.07E-3	4.02E-3	1.95E-4	6.40E-4	2.40E-3	4.13E-5	1.36E-4	5.07E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.64E-4	4.76E-4	2.43E-3	1.57E-4	2.83E-4	1.45E-3	3.33E-5	6.00E-5	3.06E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.74E-4	2.12E-4	6.57E-3	1.04E-4	1.26E-4	3.91E-3	2.20E-5	2.68E-5	8.28E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.57E-3	1.01E-2	1.01E-2	9.56E-3	1.01E-2	1.01E-2	9.56E-3	1.01E-2	1.01E-2	9.56E-3	1.00E-2	1.00E-2	9.54E-3	1.00E-2	1.00E-2
XVIB	9.47E-3	9.93E-3	9.93E-3	9.47E-3	9.93E-3	9.93E-3	9.47E-3	9.93E-3	9.93E-3	9.46E-3	9.92E-3	9.92E-3	9.45E-3	9.91E-3	9.91E-3
XVIC	9.23E-3	9.63E-3	9.63E-3	9.22E-3	9.63E-3	9.63E-3	9.22E-3	9.63E-3	9.63E-3	9.22E-3	9.62E-3	9.62E-3	9.20E-3	9.61E-3	9.61E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2
XVIIIB	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.87E-2	2.87E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2
XXA	3.32E-3	2.53E-2	4.24E+0	2.18E-3	1.78E-2	2.99E+0	1.62E-3	1.44E-2	2.41E+0	4.60E-4	7.23E-3	1.21E+0	1.93E-4	3.72E-3	6.24E-1
XXB	2.67E-3	1.66E-2	2.86E+0	1.76E-3	1.15E-2	1.98E+0	1.30E-3	9.13E-3	1.57E+0	3.71E-4	4.08E-3	7.03E-1	1.56E-4	1.69E-3	2.92E-1
XXC	1.77E-3	1.14E-2	2.07E+0	1.17E-3	7.48E-3	1.36E+0	8.63E-4	5.54E-3	1.01E+0	2.45E-4	1.58E-3	2.88E-1	1.03E-4	6.68E-4	1.22E-1
XXIA	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.46E-2	7.79E-1	7.34E+0	7.44E-2	7.77E-1	7.32E+0	7.42E-2	7.74E-1	7.29E+0
XXIB	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.39E-2	7.64E-1	6.62E+0	7.36E-2	7.62E-1	6.60E+0
XXIC	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.29E-2	7.39E-1	5.38E+0	7.27E-2	7.37E-1	5.36E+0	7.25E-2	7.34E-1	5.34E+0
XXII	4.25E+0	4.01E+1	9.41E+1	4.25E+0	4.01E+1	9.40E+1	4.24E+0	4.00E+1	9.40E+1	4.23E+0	3.99E+1	9.37E+1	4.22E+0	3.98E+1	9.35E+1
DOE	9.53E+2	5.44E+3	4.74E+4	9.48E+2	5.40E+3	4.72E+4	9.44E+2	5.38E+3	4.70E+4	9.34E+2	5.32E+3	4.66E+4	9.26E+2	5.28E+3	4.63E+4
DOD	2.86E-2	8.66E-2	1.21E-1	2.77E-2	8.45E-2	1.06E-1	2.66E-2	8.21E-2	8.85E-2	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2
NRC	4.47E+0	2.00E+1	1.88E+2	4.46E+0	2.00E+1	1.75E+2	4.45E+0	1.99E+1	1.68E+2	4.44E+0	1.98E+1	1.55E+2	4.42E+0	1.97E+1	1.49E+2
Total	9.57E+2	5.46E+3	4.76E+4	9.52E+2	5.42E+3	4.73E+4	9.49E+2	5.40E+3	4.71E+4	9.39E+2	5.34E+3	4.67E+4	9.30E+2	5.30E+3	4.64E+4

High Population Density Without Agriculture - 09-19-94 1:52p
 Table M-16. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.45E+0	4.84E+0	4.84E+0	4.22E+0	4.59E+0	4.59E+0	3.89E+0	4.23E+0	4.23E+0	2.79E+0	3.04E+0	3.04E+0	2.43E+0	2.64E+0	2.64E+0
II	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.38E+3	1.12E+4	1.42E+2	1.38E+3	1.11E+4
III	1.56E+0	1.73E+0	1.73E+0	1.29E+0	1.43E+0	1.43E+0	8.21E-1	9.06E-1	9.06E-1	2.15E-1	2.38E-1	2.38E-1	1.21E-1	1.34E-1	1.34E-1
IV	3.94E-1	1.07E+0	2.04E+1	3.75E-1	1.02E+0	1.94E+1	3.38E-1	9.15E-1	1.75E+1	1.50E-1	4.06E-1	7.76E+0	5.59E-2	1.51E-1	2.89E+0
V	1.35E+2	1.48E+2	1.48E+2	1.32E+2	1.43E+2	1.43E+2	1.24E+2	1.35E+2	1.35E+2	1.04E+2	1.13E+2	1.13E+2	9.86E+1	1.07E+2	1.07E+2
VI	2.52E+1	1.41E+2	1.41E+3	2.50E+1	1.40E+2	1.41E+3	2.47E+1	1.39E+2	1.40E+3	2.34E+1	1.35E+2	1.36E+3	2.30E+1	1.33E+2	1.35E+3
VII	2.16E+1	1.68E+2	1.31E+3	1.52E+1	1.19E+2	9.35E+2	9.99E+0	7.93E+1	6.22E+2	6.37E-2	4.33E-1	3.31E+0	.00E+0	.00E+0	.00E+0
IX	6.96E-2	6.15E-1	3.85E+0	5.02E-2	4.44E-1	2.78E+0	3.43E-2	3.04E-1	1.90E+0	6.23E-3	5.51E-2	3.44E-1	.00E+0	.00E+0	.00E+0
X	9.46E-1	2.79E+0	3.98E+0	9.33E-1	2.56E+0	3.59E+0	9.13E-1	2.21E+0	3.03E+0	8.30E-1	1.58E+0	2.04E+0	8.05E-1	1.43E+0	1.80E+0
XII	2.64E-2	8.15E-2	8.38E-2	2.63E-2	8.14E-2	8.37E-2	2.63E-2	8.12E-2	8.36E-2	2.61E-2	8.07E-2	8.30E-2	2.60E-2	8.05E-2	8.28E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.50E-3	9.99E-3	9.99E-3	9.47E-3	9.96E-3	9.96E-3	9.43E-3	9.92E-3	9.92E-3	9.05E-3	9.53E-3	9.53E-3	8.83E-3	9.31E-3	9.31E-3
XVIB	9.40E-3	9.87E-3	9.87E-3	9.38E-3	9.84E-3	9.84E-3	9.33E-3	9.79E-3	9.79E-3	8.96E-3	9.41E-3	9.41E-3	8.74E-3	9.19E-3	9.19E-3
XVIC	9.16E-3	9.56E-3	9.56E-3	9.13E-3	9.54E-3	9.54E-3	9.09E-3	9.49E-3	9.49E-3	8.72E-3	9.12E-3	9.12E-3	8.51E-3	8.90E-3	8.90E-3
XVIIIA	2.64E-2	2.93E-2	2.93E-2	2.63E-2	2.91E-2	2.91E-2	2.61E-2	2.89E-2	2.89E-2	2.49E-2	2.76E-2	2.76E-2	2.44E-2	2.70E-2	2.70E-2
XVIIIB	2.60E-2	2.87E-2	2.87E-2	2.59E-2	2.86E-2	2.86E-2	2.57E-2	2.83E-2	2.83E-2	2.45E-2	2.71E-2	2.71E-2	2.40E-2	2.64E-2	2.64E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.51E-2	2.74E-2	2.74E-2	2.49E-2	2.71E-2	2.71E-2	2.37E-2	2.59E-2	2.59E-2	2.32E-2	2.53E-2	2.53E-2
XXA	1.63E-4	1.25E-3	2.10E-1	1.49E-4	1.16E-3	1.96E-1	1.32E-4	1.05E-3	1.77E-1	9.05E-5	7.76E-4	1.31E-1	7.63E-5	7.02E-4	1.19E-1
XXB	1.31E-4	8.21E-4	1.42E-1	1.20E-4	7.62E-4	1.32E-1	1.06E-4	6.83E-4	1.18E-1	7.29E-5	4.96E-4	8.58E-2	6.15E-5	4.49E-4	7.78E-2
XXC	8.69E-5	5.64E-4	1.03E-1	7.97E-5	5.18E-4	9.44E-2	7.02E-5	4.56E-4	8.33E-2	4.83E-5	3.16E-4	5.77E-2	4.07E-5	2.67E-4	4.88E-2
XXIA	7.35E-2	7.67E-1	7.22E+0	7.28E-2	7.60E-1	7.16E+0	7.14E-2	7.46E-1	7.02E+0	6.00E-2	6.27E-1	5.90E+0	5.59E-2	5.83E-1	5.49E+0
XXIB	7.29E-2	7.55E-1	6.54E+0	7.22E-2	7.48E-1	6.48E+0	7.09E-2	7.34E-1	6.36E+0	5.96E-2	6.16E-1	5.34E+0	5.54E-2	5.74E-1	4.97E+0
XXIC	7.18E-2	7.27E-1	5.29E+0	7.11E-2	7.21E-1	5.24E+0	6.98E-2	7.07E-1	5.15E+0	5.87E-2	5.94E-1	4.32E+0	5.46E-2	5.53E-1	4.02E+0
XXII	4.19E+0	3.96E+1	9.30E+1	4.16E+0	3.94E+1	9.24E+1	4.11E+0	3.90E+1	9.14E+1	3.90E+0	3.71E+1	8.69E+1	3.84E+0	3.66E+1	8.57E+1
DOE	9.07E+2	5.18E+3	4.55E+4	8.93E+2	5.12E+3	4.50E+4	8.72E+2	5.05E+3	4.45E+4	8.08E+2	4.82E+3	4.28E+4	7.92E+2	4.77E+3	4.24E+4
DOD	2.64E-2	8.15E-2	8.38E-2	2.63E-2	8.14E-2	8.37E-2	2.63E-2	8.12E-2	8.36E-2	2.61E-2	8.07E-2	8.30E-2	2.60E-2	8.05E-2	8.28E-2
NRC	4.40E+0	1.95E+1	1.45E+2	4.38E+0	1.94E+1	1.43E+2	4.33E+0	1.90E+1	1.41E+2	3.96E+0	1.63E+1	1.18E+2	3.81E+0	1.53E+1	1.10E+2
Total	9.11E+2	5.20E+3	4.57E+4	8.97E+2	5.14E+3	4.52E+4	8.76E+2	5.06E+3	4.47E+4	8.12E+2	4.84E+3	4.29E+4	7.96E+2	4.79E+3	4.26E+4

Table M-17. DOSE TO WORKERS (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.30E+1	1.30E+1	1.30E+1	1.28E+1	1.28E+1	1.28E+1	1.26E+1	1.26E+1	1.26E+1	1.23E+1	1.23E+1	1.23E+1	1.20E+1	1.20E+1	1.20E+1
II	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2
III	5.36E+0	5.36E+0	5.36E+0	5.36E+0	5.36E+0	5.36E+0	5.34E+0	5.34E+0	5.34E+0	5.19E+0	5.19E+0	5.19E+0	4.95E+0	4.95E+0	4.95E+0
IV	5.00E+0	5.00E+0	5.00E+0	4.96E+0	4.96E+0	4.96E+0	4.93E+0	4.93E+0	4.93E+0	4.85E+0	4.85E+0	4.85E+0	4.79E+0	4.79E+0	4.79E+0
V	3.39E+2	3.39E+2	3.39E+2	3.39E+2	3.39E+2	3.39E+2	3.38E+2	3.38E+2	3.38E+2	3.37E+2	3.37E+2	3.37E+2	3.35E+2	3.35E+2	3.35E+2
VI	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.14E+2	1.14E+2	1.14E+2
VII	7.82E+2	7.82E+2	7.82E+2	7.62E+2	7.62E+2	7.62E+2	7.33E+2	7.33E+2	7.33E+2	6.68E+2	6.68E+2	6.68E+2	6.27E+2	6.27E+2	6.27E+2
IX	3.16E+0	3.16E+0	3.16E+0	2.99E+0	2.99E+0	2.99E+0	2.84E+0	2.84E+0	2.84E+0	2.47E+0	2.47E+0	2.47E+0	2.22E+0	2.22E+0	2.22E+0
X	1.03E+0	1.03E+0	1.03E+0	1.01E+0	1.03E+0	1.03E+0	9.66E-1	1.03E+0	1.03E+0	8.43E-1	1.03E+0	1.03E+0	7.60E-1	1.02E+0	1.02E+0
XII	8.81E+0	8.81E+0	8.81E+0	8.81E+0	8.81E+0	8.81E+0	8.81E+0	8.81E+0	8.81E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0
XIIIA	2.31E-3	2.31E-3	2.31E-3	1.86E-3	1.86E-3	1.86E-3	1.30E-3	1.30E-3	1.30E-3	2.56E-4	2.56E-4	2.56E-4	.00E+0	.00E+0	.00E+0
XIIIB	2.31E-3	2.31E-3	2.31E-3	1.86E-3	1.86E-3	1.86E-3	1.30E-3	1.30E-3	1.30E-3	2.56E-4	2.56E-4	2.56E-4	.00E+0	.00E+0	.00E+0
XIIIC	2.31E-3	2.31E-3	2.31E-3	1.86E-3	1.86E-3	1.86E-3	1.30E-3	1.30E-3	1.30E-3	2.56E-4	2.56E-4	2.56E-4	.00E+0	.00E+0	.00E+0
XVIA	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1
XVIB	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1
XVIC	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1
XVIIIA	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2
XVIIIB	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2
XVIIIC	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2
XXA	3.40E-1	3.40E-1	3.40E-1	2.57E-1	2.81E-1	2.81E-1	2.18E-1	2.43E-1	2.43E-1	1.52E-1	1.79E-1	1.79E-1	1.14E-1	1.46E-1	1.46E-1
XXB	3.40E-1	3.40E-1	3.40E-1	2.57E-1	2.57E-1	2.57E-1	2.18E-1	2.18E-1	2.18E-1	1.52E-1	1.52E-1	1.52E-1	1.14E-1	1.14E-1	1.14E-1
XXC	3.40E-1	3.40E-1	3.40E-1	2.57E-1	2.57E-1	2.57E-1	2.18E-1	2.18E-1	2.18E-1	1.52E-1	1.52E-1	1.52E-1	1.14E-1	1.14E-1	1.14E-1
XXIA	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0
XXIB	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0
XXIC	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0
XXII	6.43E+1	6.43E+1	6.43E+1	6.43E+1	6.43E+1	6.43E+1	6.42E+1	6.42E+1	6.42E+1	6.42E+1	6.42E+1	6.42E+1	6.41E+1	6.41E+1	6.41E+1
DOE	4.46E+3	4.46E+3	4.46E+3	4.44E+3	4.44E+3	4.44E+3	4.41E+3	4.41E+3	4.41E+3	4.34E+3	4.34E+3	4.34E+3	4.29E+3	4.29E+3	4.29E+3
DOD	8.83E+0	8.83E+0	8.83E+0	8.82E+0	8.82E+0	8.82E+0	8.82E+0	8.82E+0	8.82E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0
NRC	8.10E+1	8.10E+1	8.10E+1	7.99E+1	8.00E+1	8.00E+1	7.93E+1	7.94E+1	7.94E+1	7.84E+1	7.85E+1	7.85E+1	7.78E+1	7.79E+1	7.79E+1
Total	4.55E+3	4.55E+3	4.55E+3	4.53E+3	4.53E+3	4.53E+3	4.50E+3	4.50E+3	4.50E+3	4.42E+3	4.42E+3	4.42E+3	4.38E+3	4.38E+3	4.38E+3

Table M-18. DOSE TO WORKERS (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.15E+1	1.15E+1	1.15E+1	1.11E+1	1.11E+1	1.11E+1	1.05E+1	1.05E+1	1.05E+1	8.96E+0	8.96E+0	8.96E+0	8.56E+0	8.56E+0	8.56E+0
II	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.63E+2	2.64E+2	2.64E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2
III	4.25E+0	4.25E+0	4.25E+0	3.93E+0	3.93E+0	3.93E+0	3.55E+0	3.55E+0	3.55E+0	1.64E+0	1.64E+0	1.64E+0	1.06E+0	1.06E+0	1.06E+0
IV	4.68E+0	4.68E+0	4.68E+0	4.61E+0	4.61E+0	4.61E+0	4.48E+0	4.48E+0	4.48E+0	3.80E+0	3.80E+0	3.80E+0	3.46E+0	3.46E+0	3.46E+0
V	3.30E+2	3.30E+2	3.30E+2	3.27E+2	3.27E+2	3.27E+2	3.20E+2	3.20E+2	3.20E+2	2.88E+2	2.88E+2	2.88E+2	2.72E+2	2.72E+2	2.72E+2
VI	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.12E+2	1.12E+2	1.12E+2	1.11E+2	1.11E+2	1.11E+2
VII	5.64E+2	5.64E+2	5.64E+2	5.17E+2	5.17E+2	5.17E+2	4.02E+2	4.02E+2	4.02E+2	1.70E+2	1.70E+2	1.70E+2	1.35E+2	1.35E+2	1.35E+2
IX	1.86E+0	1.86E+0	1.86E+0	1.56E+0	1.56E+0	1.56E+0	1.27E+0	1.27E+0	1.27E+0	5.97E-1	5.97E-1	5.97E-1	4.18E-1	4.18E-1	4.18E-1
X	6.51E-1	9.74E-1	9.74E-1	5.93E-1	9.23E-1	9.23E-1	5.20E-1	8.19E-1	8.19E-1	3.62E-1	5.07E-1	5.07E-1	3.13E-1	4.40E-1	4.40E-1
XII	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.79E+0	8.79E+0	8.79E+0	8.78E+0	8.78E+0	8.78E+0
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	1.10E-1	1.10E-1	1.10E-1	1.09E-1	1.09E-1	1.09E-1
XVIB	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	1.10E-1	1.10E-1	1.10E-1	1.09E-1	1.09E-1	1.09E-1
XVIC	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	1.10E-1	1.10E-1	1.10E-1	1.09E-1	1.09E-1	1.09E-1
XVIII A	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2	9.85E-2	9.85E-2	9.85E-2	9.73E-2	9.73E-2	9.73E-2	9.65E-2	9.65E-2	9.65E-2
XVIII B	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2	9.85E-2	9.85E-2	9.85E-2	9.73E-2	9.73E-2	9.73E-2	9.65E-2	9.65E-2	9.65E-2
XVIII C	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2	9.85E-2	9.85E-2	9.85E-2	9.73E-2	9.73E-2	9.73E-2	9.65E-2	9.65E-2	9.65E-2
XXA	5.43E-2	8.79E-2	8.79E-2	2.25E-2	5.63E-2	5.63E-2	1.46E-2	2.00E-2	2.00E-2	1.17E-2	1.29E-2	1.29E-2	1.08E-2	1.21E-2	1.21E-2
XXB	5.43E-2	5.43E-2	5.43E-2	2.25E-2	2.25E-2	2.25E-2	1.46E-2	1.46E-2	1.46E-2	1.17E-2	1.17E-2	1.17E-2	1.08E-2	1.08E-2	1.08E-2
XXC	5.43E-2	5.43E-2	5.43E-2	2.25E-2	2.25E-2	2.25E-2	1.46E-2	1.46E-2	1.46E-2	1.17E-2	1.17E-2	1.17E-2	1.08E-2	1.08E-2	1.08E-2
XXIA	2.54E+0	2.54E+0	2.54E+0	2.53E+0	2.53E+0	2.53E+0	2.51E+0	2.51E+0	2.51E+0	2.44E+0	2.44E+0	2.44E+0	2.37E+0	2.37E+0	2.37E+0
XXIB	2.54E+0	2.54E+0	2.54E+0	2.53E+0	2.53E+0	2.53E+0	2.51E+0	2.51E+0	2.51E+0	2.44E+0	2.44E+0	2.44E+0	2.37E+0	2.37E+0	2.37E+0
XXIC	2.54E+0	2.54E+0	2.54E+0	2.53E+0	2.53E+0	2.53E+0	2.51E+0	2.51E+0	2.51E+0	2.44E+0	2.44E+0	2.44E+0	2.37E+0	2.37E+0	2.37E+0
XXII	6.40E+1	6.40E+1	6.40E+1	6.38E+1	6.38E+1	6.38E+1	6.35E+1	6.36E+1	6.36E+1	6.22E+1	6.24E+1	6.24E+1	6.15E+1	6.17E+1	6.17E+1
DOE	4.22E+3	4.22E+3	4.22E+3	4.16E+3	4.16E+3	4.16E+3	4.03E+3	4.03E+3	4.03E+3	3.71E+3	3.72E+3	3.72E+3	3.64E+3	3.64E+3	3.64E+3
DOD	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.79E+0	8.79E+0	8.79E+0	8.78E+0	8.78E+0	8.78E+0
NRC	7.68E+1	7.69E+1	7.69E+1	7.61E+1	7.63E+1	7.63E+1	7.56E+1	7.56E+1	7.56E+1	7.37E+1	7.37E+1	7.37E+1	7.21E+1	7.21E+1	7.21E+1
Total	4.30E+3	4.30E+3	4.30E+3	4.25E+3	4.25E+3	4.25E+3	4.11E+3	4.11E+3	4.11E+3	3.80E+3	3.80E+3	3.80E+3	3.72E+3	3.72E+3	3.72E+3

Table M-19. DOSE TO WORKERS (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.28E+1	1.28E+1	1.28E+1	1.25E+1	1.25E+1	1.25E+1	1.23E+1	1.23E+1	1.23E+1	1.17E+1	1.17E+1	1.17E+1	1.12E+1	1.12E+1	1.12E+1
II	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2
III	5.36E+0	5.36E+0	5.36E+0	5.32E+0	5.32E+0	5.32E+0	5.21E+0	5.21E+0	5.21E+0	4.48E+0	4.48E+0	4.48E+0	3.96E+0	3.96E+0	3.96E+0
IV	4.98E+0	4.98E+0	4.98E+0	4.90E+0	4.90E+0	4.90E+0	4.85E+0	4.85E+0	4.85E+0	4.69E+0	4.69E+0	4.69E+0	4.61E+0	4.61E+0	4.61E+0
V	3.39E+2	3.39E+2	3.39E+2	3.38E+2	3.38E+2	3.38E+2	3.37E+2	3.37E+2	3.37E+2	3.32E+2	3.32E+2	3.32E+2	3.27E+2	3.27E+2	3.27E+2
VI	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2
VII	7.74E+2	7.74E+2	7.74E+2	7.05E+2	7.05E+2	7.05E+2	6.58E+2	6.58E+2	6.58E+2	5.64E+2	5.64E+2	5.64E+2	4.96E+2	4.96E+2	4.96E+2
IX	3.05E+0	3.05E+0	3.05E+0	2.69E+0	2.69E+0	2.69E+0	2.42E+0	2.42E+0	2.42E+0	1.84E+0	1.84E+0	1.84E+0	1.46E+0	1.46E+0	1.46E+0
X	1.02E+0	1.03E+0	1.03E+0	9.44E-1	1.03E+0	1.03E+0	8.69E-1	1.03E+0	1.03E+0	7.01E-1	1.01E+0	1.01E+0	6.27E-1	9.67E-1	9.67E-1
XII	8.81E+0	8.81E+0	8.81E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0
XIIIA	2.06E-3	2.06E-3	2.06E-3	1.23E-3	1.23E-3	1.23E-3	2.60E-4	2.60E-4	2.60E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.06E-3	2.06E-3	2.06E-3	1.23E-3	1.23E-3	1.23E-3	2.60E-4	2.60E-4	2.60E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.06E-3	2.06E-3	2.06E-3	1.23E-3	1.23E-3	1.23E-3	2.60E-4	2.60E-4	2.60E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1
XVIB	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1
XVIC	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1
XVIIIA	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2
XVIIIB	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2
XVIIIC	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2
XXA	2.71E-1	3.02E-1	3.02E-1	1.79E-1	2.13E-1	2.13E-1	1.32E-1	1.72E-1	1.72E-1	3.78E-2	8.63E-2	8.63E-2	1.59E-2	4.44E-2	4.44E-2
XXB	2.71E-1	2.93E-1	2.93E-1	1.79E-1	2.03E-1	2.03E-1	1.32E-1	1.61E-1	1.61E-1	3.78E-2	7.21E-2	7.21E-2	1.59E-2	2.99E-2	2.99E-2
XXC	2.71E-1	2.71E-1	2.71E-1	1.79E-1	1.79E-1	1.79E-1	1.32E-1	1.32E-1	1.32E-1	3.78E-2	3.78E-2	3.78E-2	1.59E-2	1.59E-2	1.59E-2
XXIA	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.53E+0	2.53E+0	2.53E+0
XXIB	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.53E+0	2.53E+0	2.53E+0
XXIC	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.53E+0	2.53E+0	2.53E+0
XXII	6.43E+1	6.43E+1	6.43E+1	6.42E+1	6.42E+1	6.42E+1	6.42E+1	6.42E+1	6.42E+1	6.40E+1	6.40E+1	6.40E+1	6.38E+1	6.39E+1	6.39E+1
DOE	4.45E+3	4.45E+3	4.45E+3	4.38E+3	4.38E+3	4.38E+3	4.33E+3	4.33E+3	4.33E+3	4.22E+3	4.22E+3	4.22E+3	4.14E+3	4.14E+3	4.14E+3
DOD	8.83E+0	8.83E+0	8.83E+0	8.81E+0	8.81E+0	8.81E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0
NRC	8.00E+1	8.03E+1	8.03E+1	7.87E+1	7.90E+1	7.90E+1	7.81E+1	7.84E+1	7.84E+1	7.66E+1	7.70E+1	7.70E+1	7.60E+1	7.62E+1	7.62E+1
Total	4.54E+3	4.54E+3	4.54E+3	4.47E+3	4.47E+3	4.47E+3	4.41E+3	4.42E+3	4.42E+3	4.31E+3	4.31E+3	4.31E+3	4.23E+3	4.23E+3	4.23E+3

Table M-20. DOSE TO WORKERS (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.04E+1	1.04E+1	1.04E+1	9.84E+0	9.84E+0	9.84E+0	9.06E+0	9.06E+0	9.06E+0	6.51E+0	6.51E+0	6.51E+0	5.66E+0	5.66E+0	5.66E+0
II	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.62E+2	2.62E+2	2.62E+2	2.61E+2	2.62E+2	2.62E+2
III	3.43E+0	3.43E+0	3.43E+0	2.83E+0	2.83E+0	2.83E+0	1.80E+0	1.80E+0	1.80E+0	4.72E-1	4.72E-1	4.72E-1	2.66E-1	2.66E-1	2.66E-1
IV	4.40E+0	4.40E+0	4.40E+0	4.19E+0	4.19E+0	4.19E+0	3.77E+0	3.77E+0	3.77E+0	1.67E+0	1.67E+0	1.67E+0	6.23E-1	6.23E-1	6.23E-1
V	3.19E+2	3.19E+2	3.19E+2	3.10E+2	3.10E+2	3.10E+2	2.92E+2	2.92E+2	2.92E+2	2.43E+2	2.43E+2	2.43E+2	2.32E+2	2.32E+2	2.32E+2
VI	1.14E+2	1.14E+2	1.14E+2	1.13E+2	1.13E+2	1.13E+2	1.12E+2	1.12E+2	1.12E+2	1.08E+2	1.08E+2	1.08E+2	1.06E+2	1.06E+2	1.06E+2
VII	3.35E+2	3.35E+2	3.35E+2	2.38E+2	2.38E+2	2.38E+2	1.58E+2	1.58E+2	1.58E+2	8.64E-1	8.64E-1	8.64E-1	.00E+0	.00E+0	.00E+0
IX	1.06E+0	1.06E+0	1.06E+0	7.67E-1	7.67E-1	7.67E-1	5.24E-1	5.24E-1	5.24E-1	9.51E-2	9.51E-2	9.51E-2	.00E+0	.00E+0	.00E+0
X	5.33E-1	8.55E-1	8.55E-1	4.74E-1	7.46E-1	7.46E-1	4.08E-1	5.92E-1	5.92E-1	2.38E-1	3.32E-1	3.32E-1	2.05E-1	2.72E-1	2.72E-1
XII	8.80E+0	8.80E+0	8.80E+0	8.79E+0	8.79E+0	8.79E+0	8.77E+0	8.77E+0	8.77E+0	8.71E+0	8.71E+0	8.71E+0	8.69E+0	8.69E+0	8.69E+0
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.10E-1	1.10E-1	1.10E-1	1.04E-1	1.04E-1	1.04E-1	1.00E-1	1.00E-1	1.00E-1
XVIB	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.10E-1	1.10E-1	1.10E-1	1.04E-1	1.04E-1	1.04E-1	1.00E-1	1.00E-1	1.00E-1
XVIC	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.10E-1	1.10E-1	1.10E-1	1.04E-1	1.04E-1	1.04E-1	1.00E-1	1.00E-1	1.00E-1
XVIIIA	9.85E-2	9.85E-2	9.85E-2	9.81E-2	9.81E-2	9.81E-2	9.72E-2	9.72E-2	9.72E-2	9.29E-2	9.29E-2	9.29E-2	9.07E-2	9.07E-2	9.07E-2
XVIIIB	9.85E-2	9.85E-2	9.85E-2	9.81E-2	9.81E-2	9.81E-2	9.72E-2	9.72E-2	9.72E-2	9.29E-2	9.29E-2	9.29E-2	9.07E-2	9.07E-2	9.07E-2
XVIIIC	9.85E-2	9.85E-2	9.85E-2	9.81E-2	9.81E-2	9.81E-2	9.72E-2	9.72E-2	9.72E-2	9.29E-2	9.29E-2	9.29E-2	9.07E-2	9.07E-2	9.07E-2
XXA	1.35E-2	1.49E-2	1.49E-2	1.24E-2	1.39E-2	1.39E-2	1.09E-2	1.25E-2	1.25E-2	7.54E-3	9.30E-3	9.30E-3	6.37E-3	8.41E-3	8.41E-3
XXB	1.35E-2	1.45E-2	1.45E-2	1.24E-2	1.35E-2	1.35E-2	1.09E-2	1.21E-2	1.21E-2	7.54E-3	8.77E-3	8.77E-3	6.37E-3	7.94E-3	7.94E-3
XXC	1.35E-2	1.35E-2	1.35E-2	1.24E-2	1.24E-2	1.24E-2	1.09E-2	1.09E-2	1.09E-2	7.54E-3	7.54E-3	7.54E-3	6.37E-3	6.37E-3	6.37E-3
XXIA	2.50E+0	2.50E+0	2.50E+0	2.48E+0	2.48E+0	2.48E+0	2.43E+0	2.43E+0	2.43E+0	2.05E+0	2.05E+0	2.05E+0	1.90E+0	1.90E+0	1.90E+0
XXIB	2.50E+0	2.50E+0	2.50E+0	2.48E+0	2.48E+0	2.48E+0	2.43E+0	2.43E+0	2.43E+0	2.05E+0	2.05E+0	2.05E+0	1.90E+0	1.90E+0	1.90E+0
XXIC	2.50E+0	2.50E+0	2.50E+0	2.48E+0	2.48E+0	2.48E+0	2.43E+0	2.43E+0	2.43E+0	2.05E+0	2.05E+0	2.05E+0	1.90E+0	1.90E+0	1.90E+0
XXII	6.34E+1	6.36E+1	6.36E+1	6.30E+1	6.32E+1	6.32E+1	6.23E+1	6.26E+1	6.26E+1	5.92E+1	5.95E+1	5.95E+1	5.83E+1	5.88E+1	5.88E+1
DOE	3.96E+3	3.96E+3	3.96E+3	3.84E+3	3.84E+3	3.84E+3	3.71E+3	3.71E+3	3.71E+3	3.37E+3	3.37E+3	3.37E+3	3.32E+3	3.32E+3	3.32E+3
DOD	8.80E+0	8.80E+0	8.80E+0	8.79E+0	8.79E+0	8.79E+0	8.77E+0	8.77E+0	8.77E+0	8.71E+0	8.71E+0	8.71E+0	8.69E+0	8.69E+0	8.69E+0
NRC	7.54E+1	7.54E+1	7.54E+1	7.48E+1	7.48E+1	7.48E+1	7.36E+1	7.36E+1	7.36E+1	6.39E+1	6.40E+1	6.40E+1	6.02E+1	6.02E+1	6.02E+1
Total	4.04E+3	4.04E+3	4.04E+3	3.92E+3	3.92E+3	3.92E+3	3.79E+3	3.79E+3	3.79E+3	3.44E+3	3.45E+3	3.45E+3	3.38E+3	3.39E+3	3.39E+3

Table M-21. POTENTIAL CANCERS AMONG WORKERS--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.95E-3	8.95E-3	8.95E-3	8.82E-3	8.82E-3	8.82E-3	8.72E-3	8.72E-3	8.72E-3	8.48E-3	8.48E-3	8.48E-3	8.32E-3	8.32E-3	8.32E-3
II	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1
III	3.71E-3	3.71E-3	3.71E-3	3.70E-3	3.70E-3	3.70E-3	3.69E-3	3.69E-3	3.69E-3	3.58E-3	3.58E-3	3.58E-3	3.42E-3	3.42E-3	3.42E-3
IV	7.32E-4	7.32E-4	7.32E-4	7.27E-4	7.27E-4	7.27E-4	7.22E-4	7.22E-4	7.22E-4	7.11E-4	7.11E-4	7.11E-4	7.02E-4	7.02E-4	7.02E-4
V	2.35E-1	2.35E-1	2.35E-1	2.34E-1	2.34E-1	2.34E-1	2.34E-1	2.34E-1	2.34E-1	2.33E-1	2.33E-1	2.33E-1	2.32E-1	2.32E-1	2.32E-1
VI	2.61E-2	2.61E-2	2.61E-2	2.61E-2	2.61E-2	2.61E-2	2.60E-2	2.60E-2	2.60E-2	2.60E-2	2.60E-2	2.60E-2	2.60E-2	2.60E-2	2.60E-2
VII	6.17E-2	6.17E-2	6.17E-2	6.04E-2	6.04E-2	6.04E-2	5.84E-2	5.84E-2	5.84E-2	5.40E-2	5.40E-2	5.40E-2	5.12E-2	5.12E-2	5.12E-2
IX	2.15E-4	2.15E-4	2.15E-4	2.04E-4	2.04E-4	2.04E-4	1.94E-4	1.94E-4	1.94E-4	1.68E-4	1.68E-4	1.68E-4	1.51E-4	1.51E-4	1.51E-4
X	1.45E-4	1.45E-4	1.45E-4	1.42E-4	1.45E-4	1.45E-4	1.36E-4	1.45E-4	1.45E-4	1.19E-4	1.45E-4	1.45E-4	1.07E-4	1.43E-4	1.43E-4
XII	6.00E-4	6.00E-4	6.00E-4	6.00E-4	6.00E-4	6.00E-4	6.00E-4	6.00E-4	6.00E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4
XIIIA	3.95E-7	3.95E-7	3.95E-7	3.17E-7	3.17E-7	3.17E-7	2.21E-7	2.21E-7	2.21E-7	4.36E-8	4.36E-8	4.36E-8	.00E+0	.00E+0	.00E+0
XIIIB	3.95E-7	3.95E-7	3.95E-7	3.17E-7	3.17E-7	3.17E-7	2.21E-7	2.21E-7	2.21E-7	4.36E-8	4.36E-8	4.36E-8	.00E+0	.00E+0	.00E+0
XIIIC	3.95E-7	3.95E-7	3.95E-7	3.17E-7	3.17E-7	3.17E-7	2.21E-7	2.21E-7	2.21E-7	4.36E-8	4.36E-8	4.36E-8	.00E+0	.00E+0	.00E+0
XVIA	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.04E-5	8.04E-5	8.04E-5
XVIB	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.04E-5	8.04E-5	8.04E-5
XVIC	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.04E-5	8.04E-5	8.04E-5
XVIIIA	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5
XVIIIB	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5
XVIIIC	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5
XXA	4.23E-5	4.23E-5	4.23E-5	3.20E-5	3.50E-5	3.50E-5	2.71E-5	3.02E-5	3.02E-5	1.89E-5	2.23E-5	2.23E-5	1.42E-5	1.82E-5	1.82E-5
XXB	4.23E-5	4.23E-5	4.23E-5	3.20E-5	3.20E-5	3.20E-5	2.71E-5	2.71E-5	2.71E-5	1.89E-5	1.89E-5	1.89E-5	1.42E-5	1.42E-5	1.42E-5
XXC	4.23E-5	4.23E-5	4.23E-5	3.20E-5	3.20E-5	3.20E-5	2.71E-5	2.71E-5	2.71E-5	1.89E-5	1.89E-5	1.89E-5	1.42E-5	1.42E-5	1.42E-5
XXIA	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3
XXIB	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3
XXIC	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3
XXII	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.95E-2	2.95E-2	2.95E-2	2.95E-2	2.95E-2	2.95E-2
DOE	1.26E+0	1.26E+0	1.26E+0	1.26E+0	1.26E+0	1.26E+0	1.26E+0	1.26E+0	1.26E+0	1.25E+0	1.25E+0	1.25E+0	1.24E+0	1.24E+0	1.24E+0
DOD	6.03E-4	6.03E-4	6.03E-4	6.02E-4	6.02E-4	6.02E-4	6.01E-4	6.01E-4	6.01E-4	6.00E-4	6.00E-4	6.00E-4	5.99E-4	5.99E-4	5.99E-4
NRC	4.06E-2	4.06E-2	4.06E-2	4.04E-2	4.04E-2	4.04E-2	4.03E-2	4.04E-2	4.04E-2	4.02E-2	4.02E-2	4.02E-2	4.01E-2	4.02E-2	4.02E-2
Total	1.30E+0	1.30E+0	1.30E+0	1.30E+0	1.30E+0	1.30E+0	1.30E+0	1.30E+0	1.30E+0	1.29E+0	1.29E+0	1.29E+0	1.28E+0	1.28E+0	1.28E+0

Table M-22. POTENTIAL CANCERS AMONG WORKERS--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.95E-3	7.95E-3	7.95E-3	7.67E-3	7.67E-3	7.67E-3	7.27E-3	7.27E-3	7.27E-3	6.20E-3	6.20E-3	6.20E-3	5.92E-3	5.92E-3	5.92E-3
II	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1
III	2.94E-3	2.94E-3	2.94E-3	2.71E-3	2.71E-3	2.71E-3	2.45E-3	2.45E-3	2.45E-3	1.14E-3	1.14E-3	1.14E-3	7.33E-4	7.33E-4	7.33E-4
IV	6.86E-4	6.86E-4	6.86E-4	6.76E-4	6.76E-4	6.76E-4	6.56E-4	6.56E-4	6.56E-4	5.56E-4	5.56E-4	5.56E-4	5.07E-4	5.07E-4	5.07E-4
V	2.28E-1	2.28E-1	2.28E-1	2.26E-1	2.26E-1	2.26E-1	2.21E-1	2.21E-1	2.21E-1	1.99E-1	1.99E-1	1.99E-1	1.88E-1	1.88E-1	1.88E-1
VI	2.59E-2	2.59E-2	2.59E-2	2.58E-2	2.58E-2	2.58E-2	2.56E-2	2.56E-2	2.56E-2	2.49E-2	2.49E-2	2.49E-2	2.46E-2	2.46E-2	2.46E-2
VII	4.67E-2	4.67E-2	4.67E-2	4.30E-2	4.30E-2	4.30E-2	3.35E-2	3.35E-2	3.35E-2	1.38E-2	1.38E-2	1.38E-2	1.09E-2	1.09E-2	1.09E-2
IX	1.26E-4	1.26E-4	1.26E-4	1.06E-4	1.06E-4	1.06E-4	8.67E-5	8.67E-5	8.67E-5	4.06E-5	4.06E-5	4.06E-5	2.85E-5	2.85E-5	2.85E-5
X	9.17E-5	1.37E-4	1.37E-4	8.35E-5	1.30E-4	1.30E-4	7.33E-5	1.15E-4	1.15E-4	5.10E-5	7.15E-5	7.15E-5	4.41E-5	6.20E-5	6.20E-5
XII	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.98E-4	5.98E-4	5.98E-4	5.98E-4	5.98E-4	5.98E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	8.04E-5	8.04E-5	8.04E-5	8.02E-5	8.02E-5	8.02E-5	7.98E-5	7.98E-5	7.98E-5	7.87E-5	7.87E-5	7.87E-5	7.82E-5	7.82E-5	7.82E-5
XVIB	8.04E-5	8.04E-5	8.04E-5	8.02E-5	8.02E-5	8.02E-5	7.98E-5	7.98E-5	7.98E-5	7.87E-5	7.87E-5	7.87E-5	7.82E-5	7.82E-5	7.82E-5
XVIC	8.04E-5	8.04E-5	8.04E-5	8.02E-5	8.02E-5	8.02E-5	7.98E-5	7.98E-5	7.98E-5	7.87E-5	7.87E-5	7.87E-5	7.82E-5	7.82E-5	7.82E-5
XVIII	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.74E-5	6.74E-5	6.74E-5	6.66E-5	6.66E-5	6.66E-5	6.61E-5	6.61E-5	6.61E-5
XVIII A	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.74E-5	6.74E-5	6.74E-5	6.66E-5	6.66E-5	6.66E-5	6.61E-5	6.61E-5	6.61E-5
XVIII B	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.74E-5	6.74E-5	6.74E-5	6.66E-5	6.66E-5	6.66E-5	6.61E-5	6.61E-5	6.61E-5
XVIII C	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.74E-5	6.74E-5	6.74E-5	6.66E-5	6.66E-5	6.66E-5	6.61E-5	6.61E-5	6.61E-5
XXA	6.75E-6	1.09E-5	1.09E-5	2.79E-6	7.00E-6	7.00E-6	1.81E-6	2.48E-6	2.48E-6	1.44E-6	1.60E-6	1.60E-6	1.34E-6	1.50E-6	1.50E-6
XXB	6.75E-6	6.75E-6	6.75E-6	2.79E-6	2.79E-6	2.79E-6	1.81E-6	1.81E-6	1.81E-6	1.44E-6	1.44E-6	1.44E-6	1.34E-6	1.34E-6	1.34E-6
XXC	6.75E-6	6.75E-6	6.75E-6	2.79E-6	2.79E-6	2.79E-6	1.81E-6	1.81E-6	1.81E-6	1.44E-6	1.44E-6	1.44E-6	1.34E-6	1.34E-6	1.34E-6
XXIA	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.15E-3	1.15E-3	1.15E-3	1.12E-3	1.12E-3	1.12E-3	1.09E-3	1.09E-3	1.09E-3
XXIB	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.15E-3	1.15E-3	1.15E-3	1.12E-3	1.12E-3	1.12E-3	1.09E-3	1.09E-3	1.09E-3
XXIC	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.15E-3	1.15E-3	1.15E-3	1.12E-3	1.12E-3	1.12E-3	1.09E-3	1.09E-3	1.09E-3
XXII	2.95E-2	2.95E-2	2.95E-2	2.94E-2	2.94E-2	2.94E-2	2.92E-2	2.93E-2	2.93E-2	2.86E-2	2.87E-2	2.87E-2	2.83E-2	2.84E-2	2.84E-2
DOE	1.23E+0	1.23E+0	1.23E+0	1.22E+0	1.22E+0	1.22E+0	1.20E+0	1.20E+0	1.20E+0	1.14E+0	1.14E+0	1.14E+0	1.11E+0	1.11E+0	1.11E+0
DOD	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.98E-4	5.98E-4	5.98E-4	5.98E-4	5.98E-4	5.98E-4
NRC	3.99E-2	4.00E-2	4.00E-2	3.98E-2	3.98E-2	3.98E-2	3.96E-2	3.96E-2	3.96E-2	3.86E-2	3.86E-2	3.86E-2	3.79E-2	3.79E-2	3.79E-2
Total	1.27E+0	1.27E+0	1.27E+0	1.26E+0	1.26E+0	1.26E+0	1.24E+0	1.24E+0	1.24E+0	1.18E+0	1.18E+0	1.18E+0	1.15E+0	1.15E+0	1.15E+0

Table M-23. POTENTIAL CANCERS AMONG WORKERS--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.88E-3	8.88E-3	8.88E-3	8.66E-3	8.66E-3	8.66E-3	8.50E-3	8.50E-3	8.50E-3	8.07E-3	8.07E-3	8.07E-3	7.73E-3	7.73E-3	7.73E-3
II	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1
III	3.71E-3	3.71E-3	3.71E-3	3.68E-3	3.68E-3	3.68E-3	3.60E-3	3.60E-3	3.60E-3	3.10E-3	3.10E-3	3.10E-3	2.74E-3	2.74E-3	2.74E-3
IV	7.29E-4	7.29E-4	7.29E-4	7.19E-4	7.19E-4	7.19E-4	7.10E-4	7.10E-4	7.10E-4	6.87E-4	6.87E-4	6.87E-4	6.75E-4	6.75E-4	6.75E-4
V	2.34E-1	2.34E-1	2.34E-1	2.34E-1	2.34E-1	2.34E-1	2.33E-1	2.33E-1	2.33E-1	2.29E-1	2.29E-1	2.29E-1	2.26E-1	2.26E-1	2.26E-1
VI	2.61E-2	2.61E-2	2.61E-2	2.60E-2	2.60E-2	2.60E-2	2.60E-2	2.60E-2	2.60E-2	2.59E-2	2.59E-2	2.59E-2	2.58E-2	2.58E-2	2.58E-2
VII	6.12E-2	6.12E-2	6.12E-2	5.65E-2	5.65E-2	5.65E-2	5.33E-2	5.33E-2	5.33E-2	4.67E-2	4.67E-2	4.67E-2	4.13E-2	4.13E-2	4.13E-2
IX	2.08E-4	2.08E-4	2.08E-4	1.83E-4	1.83E-4	1.83E-4	1.65E-4	1.65E-4	1.65E-4	1.25E-4	1.25E-4	1.25E-4	9.93E-5	9.93E-5	9.93E-5
X	1.45E-4	1.45E-4	1.45E-4	1.33E-4	1.45E-4	1.45E-4	1.23E-4	1.45E-4	1.45E-4	9.88E-5	1.42E-4	1.42E-4	8.84E-5	1.36E-4	1.36E-4
XII	6.00E-4	6.00E-4	6.00E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4
XIIIA	3.53E-7	3.53E-7	3.53E-7	2.10E-7	2.10E-7	2.10E-7	4.45E-8	4.45E-8	4.45E-8	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.53E-7	3.53E-7	3.53E-7	2.10E-7	2.10E-7	2.10E-7	4.45E-8	4.45E-8	4.45E-8	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	3.53E-7	3.53E-7	3.53E-7	2.10E-7	2.10E-7	2.10E-7	4.45E-8	4.45E-8	4.45E-8	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.04E-5	8.04E-5	8.04E-5	8.02E-5	8.02E-5	8.02E-5
XVIB	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.04E-5	8.04E-5	8.04E-5	8.02E-5	8.02E-5	8.02E-5
XVIC	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.04E-5	8.04E-5	8.04E-5	8.02E-5	8.02E-5	8.02E-5
XVIIIA	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5
XVIIIB	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5
XVIIIC	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5
XXA	3.37E-5	3.76E-5	3.76E-5	2.22E-5	2.65E-5	2.65E-5	1.65E-5	2.13E-5	2.13E-5	4.69E-6	1.07E-5	1.07E-5	1.98E-6	5.51E-6	5.51E-6
XXB	3.37E-5	3.65E-5	3.65E-5	2.22E-5	2.53E-5	2.53E-5	1.65E-5	2.01E-5	2.01E-5	4.69E-6	8.96E-6	8.96E-6	1.98E-6	3.71E-6	3.71E-6
XXC	3.37E-5	3.37E-5	3.37E-5	2.22E-5	2.22E-5	2.22E-5	1.65E-5	1.65E-5	1.65E-5	4.69E-6	4.69E-6	4.69E-6	1.98E-6	1.98E-6	1.98E-6
XXIA	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3
XXIB	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3
XXIC	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3
XXII	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.95E-2	2.95E-2	2.95E-2	2.94E-2	2.94E-2	2.94E-2
DOE	1.26E+0	1.26E+0	1.26E+0	1.25E+0	1.25E+0	1.25E+0	1.25E+0	1.25E+0	1.25E+0	1.23E+0	1.23E+0	1.23E+0	1.22E+0	1.22E+0	1.22E+0
DOD	6.03E-4	6.03E-4	6.03E-4	6.01E-4	6.01E-4	6.01E-4	6.00E-4	6.00E-4	6.00E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4
NRC	4.04E-2	4.05E-2	4.05E-2	4.03E-2	4.03E-2	4.03E-2	4.02E-2	4.02E-2	4.02E-2	3.99E-2	4.00E-2	4.00E-2	3.98E-2	3.98E-2	3.98E-2
Total	1.30E+0	1.30E+0	1.30E+0	1.29E+0	1.29E+0	1.29E+0	1.29E+0	1.29E+0	1.29E+0	1.27E+0	1.27E+0	1.27E+0	1.26E+0	1.26E+0	1.26E+0

Table M-24. POTENTIAL CANCERS AMONG WORKERS--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.17E-3	7.17E-3	7.17E-3	6.80E-3	6.80E-3	6.80E-3	6.27E-3	6.27E-3	6.27E-3	4.50E-3	4.50E-3	4.50E-3	3.91E-3	3.91E-3	3.91E-3
II	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1
III	2.37E-3	2.37E-3	2.37E-3	1.96E-3	1.96E-3	1.96E-3	1.24E-3	1.24E-3	1.24E-3	3.26E-4	3.26E-4	3.26E-4	1.84E-4	1.84E-4	1.84E-4
IV	6.44E-4	6.44E-4	6.44E-4	6.13E-4	6.13E-4	6.13E-4	5.52E-4	5.52E-4	5.52E-4	2.45E-4	2.45E-4	2.45E-4	9.12E-5	9.12E-5	9.12E-5
V	2.20E-1	2.20E-1	2.20E-1	2.14E-1	2.14E-1	2.14E-1	2.02E-1	2.02E-1	2.02E-1	1.68E-1	1.68E-1	1.68E-1	1.60E-1	1.60E-1	1.60E-1
VI	2.56E-2	2.56E-2	2.56E-2	2.54E-2	2.54E-2	2.54E-2	2.50E-2	2.50E-2	2.50E-2	2.33E-2	2.33E-2	2.33E-2	2.28E-2	2.28E-2	2.28E-2
VII	2.78E-2	2.78E-2	2.78E-2	1.96E-2	1.96E-2	1.96E-2	1.28E-2	1.28E-2	1.28E-2	8.47E-5	8.47E-5	8.47E-5	.00E+0	.00E+0	.00E+0
IX	7.23E-5	7.23E-5	7.23E-5	5.22E-5	5.22E-5	5.22E-5	3.57E-5	3.57E-5	3.57E-5	6.48E-6	6.48E-6	6.48E-6	.00E+0	.00E+0	.00E+0
X	7.51E-5	1.21E-4	1.21E-4	6.68E-5	1.05E-4	1.05E-4	5.74E-5	8.34E-5	8.34E-5	3.35E-5	4.67E-5	4.67E-5	2.88E-5	3.83E-5	3.83E-5
XII	5.99E-4	5.99E-4	5.99E-4	5.98E-4	5.98E-4	5.98E-4	5.97E-4	5.97E-4	5.97E-4	5.93E-4	5.93E-4	5.93E-4	5.92E-4	5.92E-4	5.92E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	7.97E-5	7.97E-5	7.97E-5	7.94E-5	7.94E-5	7.94E-5	7.89E-5	7.89E-5	7.89E-5	7.43E-5	7.43E-5	7.43E-5	7.17E-5	7.17E-5	7.17E-5
XVIB	7.97E-5	7.97E-5	7.97E-5	7.94E-5	7.94E-5	7.94E-5	7.89E-5	7.89E-5	7.89E-5	7.43E-5	7.43E-5	7.43E-5	7.17E-5	7.17E-5	7.17E-5
XVIC	7.97E-5	7.97E-5	7.97E-5	7.94E-5	7.94E-5	7.94E-5	7.89E-5	7.89E-5	7.89E-5	7.43E-5	7.43E-5	7.43E-5	7.17E-5	7.17E-5	7.17E-5
XVIIIA	6.74E-5	6.74E-5	6.74E-5	6.71E-5	6.71E-5	6.71E-5	6.65E-5	6.65E-5	6.65E-5	6.36E-5	6.36E-5	6.36E-5	6.21E-5	6.21E-5	6.21E-5
XVIIIB	6.74E-5	6.74E-5	6.74E-5	6.71E-5	6.71E-5	6.71E-5	6.65E-5	6.65E-5	6.65E-5	6.36E-5	6.36E-5	6.36E-5	6.21E-5	6.21E-5	6.21E-5
XVIIIC	6.74E-5	6.74E-5	6.74E-5	6.71E-5	6.71E-5	6.71E-5	6.65E-5	6.65E-5	6.65E-5	6.36E-5	6.36E-5	6.36E-5	6.21E-5	6.21E-5	6.21E-5
XXA	1.67E-6	1.85E-6	1.85E-6	1.53E-6	1.72E-6	1.72E-6	1.35E-6	1.55E-6	1.55E-6	9.31E-7	1.15E-6	1.15E-6	7.86E-7	1.04E-6	1.04E-6
XXB	1.67E-6	1.80E-6	1.80E-6	1.53E-6	1.67E-6	1.67E-6	1.35E-6	1.50E-6	1.50E-6	9.31E-7	1.08E-6	1.08E-6	7.86E-7	9.82E-7	9.82E-7
XXC	1.67E-6	1.67E-6	1.67E-6	1.53E-6	1.53E-6	1.53E-6	1.35E-6	1.35E-6	1.35E-6	9.31E-7	9.31E-7	9.31E-7	7.86E-7	7.86E-7	7.86E-7
XXIA	1.15E-3	1.15E-3	1.15E-3	1.14E-3	1.14E-3	1.14E-3	1.12E-3	1.12E-3	1.12E-3	9.37E-4	9.37E-4	9.37E-4	8.72E-4	8.72E-4	8.72E-4
XXIB	1.15E-3	1.15E-3	1.15E-3	1.14E-3	1.14E-3	1.14E-3	1.12E-3	1.12E-3	1.12E-3	9.37E-4	9.37E-4	9.37E-4	8.72E-4	8.72E-4	8.72E-4
XXIC	1.15E-3	1.15E-3	1.15E-3	1.14E-3	1.14E-3	1.14E-3	1.12E-3	1.12E-3	1.12E-3	9.37E-4	9.37E-4	9.37E-4	8.72E-4	8.72E-4	8.72E-4
XXII	2.92E-2	2.93E-2	2.93E-2	2.90E-2	2.91E-2	2.91E-2	2.87E-2	2.88E-2	2.88E-2	2.73E-2	2.74E-2	2.74E-2	2.68E-2	2.70E-2	2.70E-2
DOE	1.19E+0	1.19E+0	1.19E+0	1.17E+0	1.17E+0	1.17E+0	1.14E+0	1.14E+0	1.14E+0	1.04E+0	1.05E+0	1.05E+0	1.02E+0	1.02E+0	1.02E+0
DOD	5.99E-4	5.99E-4	5.99E-4	5.98E-4	5.98E-4	5.98E-4	5.97E-4	5.97E-4	5.97E-4	5.93E-4	5.93E-4	5.93E-4	5.92E-4	5.92E-4	5.92E-4
NRC	3.95E-2	3.95E-2	3.95E-2	3.92E-2	3.92E-2	3.92E-2	3.86E-2	3.86E-2	3.86E-2	3.39E-2	3.39E-2	3.39E-2	3.21E-2	3.21E-2	3.21E-2
Total	1.23E+0	1.23E+0	1.23E+0	1.21E+0	1.21E+0	1.21E+0	1.18E+0	1.18E+0	1.18E+0	1.08E+0	1.08E+0	1.08E+0	1.05E+0	1.05E+0	1.05E+0

Table M-25. POTENTIAL CANCER DEATHS OF WORKERS--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.89E-3	5.89E-3	5.89E-3	5.81E-3	5.81E-3	5.81E-3	5.74E-3	5.74E-3	5.74E-3	5.58E-3	5.58E-3	5.58E-3	5.48E-3	5.48E-3	5.48E-3
II	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1
III	2.44E-3	2.44E-3	2.44E-3	2.44E-3	2.44E-3	2.44E-3	2.43E-3	2.43E-3	2.43E-3	2.36E-3	2.36E-3	2.36E-3	2.25E-3	2.25E-3	2.25E-3
IV	6.14E-4	6.14E-4	6.14E-4	6.10E-4	6.10E-4	6.10E-4	6.06E-4	6.06E-4	6.06E-4	5.96E-4	5.96E-4	5.96E-4	5.89E-4	5.89E-4	5.89E-4
V	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.53E-1	1.53E-1	1.53E-1	1.52E-1	1.52E-1	1.52E-1
VI	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2
VII	5.32E-2	5.32E-2	5.32E-2	5.19E-2	5.19E-2	5.19E-2	5.02E-2	5.02E-2	5.02E-2	4.62E-2	4.62E-2	4.62E-2	4.37E-2	4.37E-2	4.37E-2
IX	1.93E-4	1.93E-4	1.93E-4	1.83E-4	1.83E-4	1.83E-4	1.74E-4	1.74E-4	1.74E-4	1.51E-4	1.51E-4	1.51E-4	1.36E-4	1.36E-4	1.36E-4
X	1.24E-4	1.24E-4	1.24E-4	1.21E-4	1.24E-4	1.24E-4	1.16E-4	1.24E-4	1.24E-4	1.01E-4	1.23E-4	1.23E-4	9.12E-5	1.22E-4	1.22E-4
XII	5.39E-4	5.39E-4	5.39E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4
XIIIA	3.16E-7	3.16E-7	3.16E-7	2.54E-7	2.54E-7	2.54E-7	1.77E-7	1.77E-7	1.77E-7	3.49E-8	3.49E-8	3.49E-8	.00E+0	.00E+0	.00E+0
XIIIB	3.16E-7	3.16E-7	3.16E-7	2.54E-7	2.54E-7	2.54E-7	1.77E-7	1.77E-7	1.77E-7	3.49E-8	3.49E-8	3.49E-8	.00E+0	.00E+0	.00E+0
XIIIC	3.16E-7	3.16E-7	3.16E-7	2.54E-7	2.54E-7	2.54E-7	1.77E-7	1.77E-7	1.77E-7	3.49E-8	3.49E-8	3.49E-8	.00E+0	.00E+0	.00E+0
XVIA	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5
XVIB	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5
XVIC	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5
XVIIIA	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5
XVIIIB	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5
XVIIIC	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5
XXA	3.75E-5	3.75E-5	3.75E-5	2.84E-5	3.10E-5	3.10E-5	2.41E-5	2.68E-5	2.68E-5	1.67E-5	1.97E-5	1.97E-5	1.26E-5	1.61E-5	1.61E-5
XXB	3.75E-5	3.75E-5	3.75E-5	2.84E-5	2.84E-5	2.84E-5	2.41E-5	2.41E-5	2.41E-5	1.67E-5	1.67E-5	1.67E-5	1.26E-5	1.26E-5	1.26E-5
XXC	3.75E-5	3.75E-5	3.75E-5	2.84E-5	2.84E-5	2.84E-5	2.41E-5	2.41E-5	2.41E-5	1.67E-5	1.67E-5	1.67E-5	1.26E-5	1.26E-5	1.26E-5
XXIA	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.83E-4	7.83E-4	7.83E-4	7.83E-4	7.83E-4	7.83E-4
XXIB	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.83E-4	7.83E-4	7.83E-4	7.83E-4	7.83E-4	7.83E-4
XXIC	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.83E-4	7.83E-4	7.83E-4	7.83E-4	7.83E-4	7.83E-4
XXII	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2
DOE	9.05E-1	9.05E-1	9.05E-1	9.03E-1	9.03E-1	9.03E-1	9.01E-1	9.01E-1	9.01E-1	8.95E-1	8.95E-1	8.95E-1	8.91E-1	8.91E-1	8.91E-1
DOD	5.41E-4	5.41E-4	5.41E-4	5.41E-4	5.41E-4	5.41E-4	5.40E-4	5.40E-4	5.40E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4
NRC	2.72E-2	2.72E-2	2.72E-2	2.71E-2	2.71E-2	2.71E-2	2.70E-2	2.70E-2	2.70E-2	2.69E-2	2.69E-2	2.69E-2	2.68E-2	2.68E-2	2.68E-2
Total	9.33E-1	9.33E-1	9.33E-1	9.31E-1	9.31E-1	9.31E-1	9.29E-1	9.29E-1	9.29E-1	9.23E-1	9.23E-1	9.23E-1	9.18E-1	9.18E-1	9.18E-1

Table M-196. ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	2.97E+1	2.97E+1	2.97E+1	2.82E+1	2.82E+1	2.82E+1	2.60E+1	2.60E+1	2.60E+1	1.86E+1	1.86E+1	1.86E+1	1.62E+1	1.62E+1	1.62E+1
II	Ra-226	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.71E+2	1.72E+2	1.72E+2	1.70E+2	1.70E+2	1.70E+2	1.69E+2	1.70E+2	1.70E+2
	Th-230	1.69E+2	1.69E+2	1.69E+2	1.69E+2	1.69E+2	1.69E+2	1.68E+2	1.68E+2	1.68E+2	1.64E+2	1.65E+2	1.65E+2	1.62E+2	1.63E+2	1.63E+2
	Ra-228	8.51E+0	8.52E+0	8.52E+0	8.51E+0	8.51E+0	8.51E+0	8.49E+0	8.50E+0	8.50E+0	8.37E+0	8.41E+0	8.41E+0	8.30E+0	8.35E+0	8.35E+0
	Th-232	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.03E+0	3.04E+0	3.04E+0	2.97E+0	2.99E+0	2.99E+0	2.95E+0	2.97E+0	2.97E+0
	U-234	2.18E+2	2.18E+2	2.18E+2	2.17E+2	2.18E+2	2.18E+2	2.16E+2	2.17E+2	2.17E+2	2.10E+2	2.11E+2	2.11E+2	2.07E+2	2.08E+2	2.08E+2
	U-235	3.61E+0	3.61E+0	3.61E+0	3.60E+0	3.60E+0	3.60E+0	3.59E+0	3.59E+0	3.59E+0	3.53E+0	3.55E+0	3.55E+0	3.51E+0	3.52E+0	3.52E+0
	U-238	9.80E+1	9.80E+1	9.80E+1	9.79E+1	9.79E+1	9.79E+1	9.78E+1	9.79E+1	9.79E+1	9.70E+1	9.72E+1	9.72E+1	9.65E+1	9.68E+1	9.68E+1
III	Cs-137	9.82E+0	9.82E+0	9.82E+0	8.11E+0	8.11E+0	8.11E+0	5.15E+0	5.15E+0	5.15E+0	1.35E+0	1.35E+0	1.35E+0	7.62E-1	7.62E-1	7.62E-1
IV	U-234	3.08E+1	3.08E+1	3.08E+1	2.93E+1	2.93E+1	2.93E+1	2.64E+1	2.64E+1	2.64E+1	1.17E+1	1.17E+1	1.17E+1	4.36E+0	4.36E+0	4.36E+0
	U-235	1.45E+0	1.45E+0	1.45E+0	1.38E+0	1.38E+0	1.38E+0	1.24E+0	1.24E+0	1.24E+0	5.50E-1	5.50E-1	5.50E-1	2.05E-1	2.05E-1	2.05E-1
	U-238	3.08E+1	3.08E+1	3.08E+1	2.93E+1	2.93E+1	2.93E+1	2.64E+1	2.64E+1	2.64E+1	1.17E+1	1.17E+1	1.17E+1	4.36E+0	4.36E+0	4.36E+0
V	Cs-137	9.12E+2	9.12E+2	9.12E+2	8.87E+2	8.87E+2	8.87E+2	8.36E+2	8.36E+2	8.36E+2	6.97E+2	6.97E+2	6.97E+2	6.64E+2	6.64E+2	6.64E+2
VI	Cs-137	4.68E+1	4.68E+1	4.68E+1	4.61E+1	4.61E+1	4.61E+1	4.48E+1	4.48E+1	4.48E+1	3.95E+1	3.95E+1	3.95E+1	3.78E+1	3.78E+1	3.78E+1
	U-234	6.83E+2	6.83E+2	6.83E+2	6.81E+2	6.81E+2	6.81E+2	6.78E+2	6.78E+2	6.78E+2	6.59E+2	6.59E+2	6.59E+2	6.52E+2	6.52E+2	6.52E+2
	U-235	3.21E+1	3.21E+1	3.21E+1	3.20E+1	3.20E+1	3.20E+1	3.19E+1	3.19E+1	3.19E+1	3.10E+1	3.10E+1	3.10E+1	3.07E+1	3.07E+1	3.07E+1
	U-238	6.83E+2	6.83E+2	6.83E+2	6.81E+2	6.81E+2	6.81E+2	6.78E+2	6.78E+2	6.78E+2	6.59E+2	6.59E+2	6.59E+2	6.52E+2	6.52E+2	6.52E+2
VII	Pu-239	1.33E+3	1.33E+3	1.33E+3	9.49E+2	9.49E+2	9.49E+2	6.31E+2	6.31E+2	6.31E+2	3.35E+0	3.35E+0	3.35E+0	.00E+0	.00E+0	.00E+0
	Am-241	2.22E+2	2.22E+2	2.22E+2	1.58E+2	1.58E+2	1.58E+2	1.05E+2	1.05E+2	1.05E+2	5.59E-1	5.59E-1	5.59E-1	.00E+0	.00E+0	.00E+0
	Cs-137	2.30E+1	2.30E+1	2.30E+1	1.54E+1	1.54E+1	1.54E+1	9.32E+0	9.32E+0	9.32E+0	1.19E-1	1.19E-1	1.19E-1	.00E+0	.00E+0	.00E+0
IX	Pu-239	4.33E+0	4.33E+0	4.33E+0	3.13E+0	3.13E+0	3.13E+0	2.14E+0	2.14E+0	2.14E+0	3.88E-1	3.88E-1	3.88E-1	.00E+0	.00E+0	.00E+0
	Am-241	7.22E-1	7.22E-1	7.22E-1	5.21E-1	5.21E-1	5.21E-1	3.56E-1	3.56E-1	3.56E-1	6.46E-2	6.46E-2	6.46E-2	.00E+0	.00E+0	.00E+0
X	Tc-99	2.06E+2	2.12E+2	2.12E+2	2.03E+2	2.11E+2	2.11E+2	1.98E+2	2.08E+2	2.08E+2	1.80E+2	1.92E+2	1.92E+2	1.75E+2	1.85E+2	1.85E+2
	U-238	3.90E+0	6.27E+0	6.27E+0	3.47E+0	5.47E+0	5.47E+0	2.98E+0	4.34E+0	4.34E+0	1.74E+0	2.42E+0	2.42E+0	1.49E+0	1.99E+0	1.99E+0
	U-234	3.90E+0	6.27E+0	6.27E+0	3.47E+0	5.47E+0	5.47E+0	2.98E+0	4.34E+0	4.34E+0	1.74E+0	2.42E+0	2.42E+0	1.49E+0	1.99E+0	1.99E+0
XII	Pu-239	3.58E+1	3.58E+1	3.58E+1	3.58E+1	3.58E+1	3.58E+1	3.57E+1	3.57E+1	3.57E+1	3.55E+1	3.55E+1	3.55E+1	3.54E+1	3.54E+1	3.54E+1
	Am-241	5.97E+0	5.97E+0	5.97E+0	5.97E+0	5.97E+0	5.97E+0	5.96E+0	5.96E+0	5.96E+0	5.91E+0	5.91E+0	5.91E+0	5.90E+0	5.90E+0	5.90E+0
XIIIA	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0

09-19-94 1:56p
ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	Co-60	6.03E-2	6.03E-2	6.03E-2	6.00E-2	6.00E-2	6.00E-2	5.96E-2	5.96E-2	5.96E-2	5.57E-2	5.57E-2	5.57E-2	5.35E-2	5.35E-2	5.35E-2
	Cs-137	4.84E-2	4.84E-2	4.84E-2	4.83E-2	4.83E-2	4.83E-2	4.83E-2	4.83E-2	4.83E-2	4.76E-2	4.76E-2	4.76E-2	4.72E-2	4.72E-2	4.72E-2
XVIB	Co-60	6.03E-2	6.03E-2	6.03E-2	6.00E-2	6.00E-2	6.00E-2	5.96E-2	5.96E-2	5.96E-2	5.57E-2	5.57E-2	5.57E-2	5.35E-2	5.35E-2	5.35E-2
	Cs-137	4.84E-2	4.84E-2	4.84E-2	4.83E-2	4.83E-2	4.83E-2	4.83E-2	4.83E-2	4.83E-2	4.76E-2	4.76E-2	4.76E-2	4.72E-2	4.72E-2	4.72E-2
XVIC	Co-60	6.03E-2	6.03E-2	6.03E-2	6.00E-2	6.00E-2	6.00E-2	5.96E-2	5.96E-2	5.96E-2	5.57E-2	5.57E-2	5.57E-2	5.35E-2	5.35E-2	5.35E-2
	Cs-137	4.84E-2	4.84E-2	4.84E-2	4.83E-2	4.83E-2	4.83E-2	4.83E-2	4.83E-2	4.83E-2	4.76E-2	4.76E-2	4.76E-2	4.72E-2	4.72E-2	4.72E-2
XVIII A	Cs-137	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.76E-1	2.76E-1	2.76E-1	2.63E-1	2.63E-1	2.63E-1	2.57E-1	2.57E-1	2.57E-1
	Sr-90	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.76E-1	2.76E-1	2.76E-1	2.63E-1	2.63E-1	2.63E-1	2.57E-1	2.57E-1	2.57E-1
XVIII B	Cs-137	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.76E-1	2.76E-1	2.76E-1	2.63E-1	2.63E-1	2.63E-1	2.57E-1	2.57E-1	2.57E-1
	Sr-90	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.76E-1	2.76E-1	2.76E-1	2.63E-1	2.63E-1	2.63E-1	2.57E-1	2.57E-1	2.57E-1
XVIII C	Cs-137	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.76E-1	2.76E-1	2.76E-1	2.63E-1	2.63E-1	2.63E-1	2.57E-1	2.57E-1	2.57E-1
	Sr-90	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.76E-1	2.76E-1	2.76E-1	2.63E-1	2.63E-1	2.63E-1	2.57E-1	2.57E-1	2.57E-1
XXA	U-234	1.65E-1	1.65E-1	1.65E-1	1.52E-1	1.52E-1	1.52E-1	1.34E-1	1.34E-1	1.34E-1	9.28E-2	9.28E-2	9.28E-2	7.85E-2	7.85E-2	7.85E-2
	U-235	5.25E-3	5.25E-3	5.25E-3	4.79E-3	4.79E-3	4.79E-3	4.19E-3	4.19E-3	4.19E-3	2.81E-3	2.81E-3	2.81E-3	2.35E-3	2.35E-3	2.35E-3
	U-238	2.84E-2	2.84E-2	2.84E-2	2.60E-2	2.60E-2	2.60E-2	2.30E-2	2.30E-2	2.30E-2	1.59E-2	1.59E-2	1.59E-2	1.35E-2	1.35E-2	1.35E-2
XXB	U-234	1.65E-1	1.65E-1	1.65E-1	1.52E-1	1.52E-1	1.52E-1	1.34E-1	1.34E-1	1.34E-1	9.28E-2	9.28E-2	9.28E-2	7.85E-2	7.85E-2	7.85E-2
	U-235	5.25E-3	5.25E-3	5.25E-3	4.79E-3	4.79E-3	4.79E-3	4.19E-3	4.19E-3	4.19E-3	2.81E-3	2.81E-3	2.81E-3	2.35E-3	2.35E-3	2.35E-3
	U-238	2.84E-2	2.84E-2	2.84E-2	2.60E-2	2.60E-2	2.60E-2	2.30E-2	2.30E-2	2.30E-2	1.59E-2	1.59E-2	1.59E-2	1.35E-2	1.35E-2	1.35E-2
XXC	U-234	1.65E-1	1.65E-1	1.65E-1	1.52E-1	1.52E-1	1.52E-1	1.34E-1	1.34E-1	1.34E-1	9.28E-2	9.28E-2	9.28E-2	7.85E-2	7.85E-2	7.85E-2
	U-235	5.25E-3	5.25E-3	5.25E-3	4.79E-3	4.79E-3	4.79E-3	4.19E-3	4.19E-3	4.19E-3	2.81E-3	2.81E-3	2.81E-3	2.35E-3	2.35E-3	2.35E-3
	U-238	2.84E-2	2.84E-2	2.84E-2	2.60E-2	2.60E-2	2.60E-2	2.30E-2	2.30E-2	2.30E-2	1.59E-2	1.59E-2	1.59E-2	1.35E-2	1.35E-2	1.35E-2
XXIA	Th-232	9.96E-1	9.96E-1	9.96E-1	9.87E-1	9.87E-1	9.87E-1	9.69E-1	9.69E-1	9.69E-1	8.14E-1	8.14E-1	8.14E-1	7.58E-1	7.58E-1	7.58E-1
XXIB	Th-232	9.96E-1	9.96E-1	9.96E-1	9.87E-1	9.87E-1	9.87E-1	9.69E-1	9.69E-1	9.69E-1	8.14E-1	8.14E-1	8.14E-1	7.58E-1	7.58E-1	7.58E-1
XXIC	Th-232	9.96E-1	9.96E-1	9.96E-1	9.87E-1	9.87E-1	9.87E-1	9.69E-1	9.69E-1	9.69E-1	8.14E-1	8.14E-1	8.14E-1	7.58E-1	7.58E-1	7.58E-1

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 ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XXII	Ra-226	3.65E+0	3.66E+0	3.66E+0	3.58E+0	3.63E+0	3.63E+0	3.45E+0	3.51E+0	3.51E+0	3.31E+0	3.35E+0	3.35E+0	3.01E+0	3.30E+0	3.30E+0
	Th-232	2.22E+1	2.23E+1	2.23E+1	2.17E+1	2.20E+1	2.20E+1	2.11E+1	2.13E+1	2.13E+1	2.00E+1	2.04E+1	2.04E+1	1.71E+1	1.99E+1	1.99E+1
	U-234	1.96E+1	1.97E+1	1.97E+1	1.93E+1	1.95E+1	1.95E+1	1.88E+1	1.91E+1	1.91E+1	1.81E+1	1.83E+1	1.83E+1	1.57E+1	1.81E+1	1.81E+1
	U-235	9.23E-1	9.27E-1	9.27E-1	9.08E-1	9.18E-1	9.18E-1	8.85E-1	8.97E-1	8.97E-1	8.52E-1	8.62E-1	8.62E-1	7.36E-1	8.48E-1	8.48E-1
	U-238	1.96E+1	1.97E+1	1.97E+1	1.93E+1	1.95E+1	1.95E+1	1.88E+1	1.91E+1	1.91E+1	1.81E+1	1.83E+1	1.83E+1	1.57E+1	1.81E+1	1.81E+1

Table M-197. MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		.10			.50			1.00			3.00			5.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	8.13E-2	8.13E-2	8.13E-2	4.06E-1	4.06E-1	4.06E-1	8.13E-1	8.13E-1	8.13E-1	2.44E+0	2.44E+0	2.44E+0	4.07E+0	4.07E+0	4.07E+0
II-1	Ra-226	8.94E-3	8.60E-3	8.60E-3	3.54E-2	3.45E-2	3.45E-2	6.44E-2	6.28E-2	6.28E-2	9.07E-2	9.04E-2	9.04E-2	9.15E-2	9.08E-2	9.08E-2
	Th-230	6.87E-3	6.61E-3	6.61E-3	2.72E-2	2.65E-2	2.65E-2	4.95E-2	4.82E-2	4.82E-2	2.97E+0	1.44E+0	1.44E+0	6.64E+0	3.22E+0	3.22E+0
	Ra-228	.00E+0	.00E+0	.00E+0	3.86E-3	3.66E-3	3.66E-3	9.90E-3	9.58E-3	9.58E-3	1.46E-2	1.46E-2	1.46E-2	1.48E-2	1.46E-2	1.46E-2
	Th-232	.00E+0	.00E+0	.00E+0	1.96E-3	1.79E-3	1.79E-3	7.29E-3	7.01E-3	7.01E-3	1.15E-2	1.14E-2	1.14E-2	1.16E-2	1.15E-2	1.15E-2
	U-234	8.03E-3	7.73E-3	7.73E-3	2.96E-2	2.90E-2	2.90E-2	5.01E-2	4.90E-2	4.90E-2	6.60E-2	6.59E-2	6.59E-2	6.65E-2	6.61E-2	6.61E-2
	U-235	.00E+0	.00E+0	.00E+0	1.47E-4	9.80E-5	9.80E-5	1.66E-3	1.58E-3	1.58E-3	2.84E-3	2.82E-3	2.82E-3	2.87E-3	2.84E-3	2.84E-3
	U-238	8.73E-3	8.41E-3	8.41E-3	3.22E-2	3.15E-2	3.15E-2	5.45E-2	5.33E-2	5.33E-2	7.19E-2	7.17E-2	7.17E-2	7.24E-2	7.19E-2	7.19E-2
II-2	Ra-226	8.18E-4	7.44E-4	7.44E-4	3.93E-3	3.85E-3	3.85E-3	6.18E-3	6.08E-3	6.08E-3	1.15E-2	1.15E-2	1.15E-2	1.16E-2	1.15E-2	1.15E-2
	Th-230	1.08E-2	1.03E-2	1.03E-2	3.07E-2	3.01E-2	3.01E-2	4.50E-2	4.44E-2	4.44E-2	8.36E-1	4.09E-1	4.09E-1	4.44E+0	2.17E+0	2.17E+0
	Ra-228	5.27E-3	4.96E-3	4.96E-3	1.83E-2	1.80E-2	1.80E-2	2.78E-2	2.73E-2	2.73E-2	5.02E-2	5.01E-2	5.01E-2	5.04E-2	5.02E-2	5.02E-2
	Th-232	.00E+0	.00E+0	.00E+0	7.88E-3	7.55E-3	7.55E-3	1.63E-2	1.60E-2	1.60E-2	3.64E-2	3.64E-2	3.64E-2	3.66E-2	3.65E-2	3.65E-2
	U-234	3.05E-2	2.92E-2	2.92E-2	1.32E-1	1.04E-1	1.04E-1	9.42E-1	8.90E-1	8.90E-1	3.81E+0	3.81E+0	3.81E+0	3.85E+0	3.82E+0	3.82E+0
	U-235	.00E+0	.00E+0	.00E+0	1.42E-3	1.21E-3	1.21E-3	5.33E-2	4.94E-2	4.94E-2	2.59E-1	2.58E-1	2.58E-1	2.61E-1	2.60E-1	2.60E-1
	U-238	3.51E-2	3.36E-2	3.36E-2	3.94E-1	3.62E-1	3.62E-1	1.37E+0	1.32E+0	1.32E+0	4.80E+0	4.79E+0	4.79E+0	4.84E+0	4.81E+0	4.81E+0
II-3	Ra-226	.00E+0	.00E+0	.00E+0	8.61E-4	8.21E-4	8.21E-4	3.10E-3	3.00E-3	3.00E-3	7.04E-3	6.72E-3	6.72E-3	8.29E-2	4.96E-2	4.96E-2
	Th-230	4.98E-3	4.88E-3	4.88E-3	1.95E-2	1.91E-2	1.91E-2	3.67E-2	3.61E-2	3.61E-2	1.06E+0	7.35E-1	7.35E-1	1.94E+0	1.54E+0	1.54E+0
	Ra-228	4.23E-3	4.14E-3	4.14E-3	1.65E-2	1.62E-2	1.62E-2	3.11E-2	3.06E-2	3.06E-2	4.48E-2	4.40E-2	4.40E-2	4.63E-2	4.57E-2	4.57E-2
	Th-232	1.65E-3	1.56E-3	1.56E-3	1.34E-2	1.31E-2	1.31E-2	2.74E-2	2.69E-2	2.69E-2	4.05E-2	3.98E-2	3.98E-2	4.20E-2	4.14E-2	4.14E-2
	U-234	8.70E-3	8.52E-3	8.52E-3	3.40E-2	3.33E-2	3.33E-2	6.41E-2	6.30E-2	6.30E-2	2.19E+0	1.56E+0	1.56E+0	4.04E+0	3.17E+0	3.17E+0
	U-235	2.66E-4	2.52E-4	2.52E-4	2.17E-3	2.12E-3	2.12E-3	2.43E-2	1.93E-2	1.93E-2	1.12E+0	9.19E-1	9.19E-1	1.68E+0	1.43E+0	1.43E+0
	U-238	8.69E-3	8.51E-3	8.51E-3	3.39E-2	3.33E-2	3.33E-2	6.40E-2	6.29E-2	6.29E-2	1.90E+0	1.36E+0	1.36E+0	3.65E+0	2.83E+0	2.83E+0
II-4	Ra-226	1.53E-3	1.45E-3	1.45E-3	5.78E-3	5.69E-3	5.69E-3	5.89E-3	5.83E-3	5.83E-3	6.36E-3	6.05E-3	6.05E-3	6.86E-3	6.28E-3	6.28E-3
	Th-230	1.29E-2	1.23E-2	1.23E-2	8.64E-2	4.79E-2	4.79E-2	9.92E-1	4.84E-1	4.84E-1	4.59E+0	2.25E+0	2.25E+0	8.17E+0	4.01E+0	4.01E+0
	Ra-228	2.17E-3	2.00E-3	2.00E-3	1.13E-2	1.11E-2	1.11E-2	1.15E-2	1.14E-2	1.14E-2	1.25E-2	1.19E-2	1.19E-2	1.44E-2	1.24E-2	1.24E-2
	Th-232	2.47E-3	2.28E-3	2.28E-3	1.28E-2	1.26E-2	1.26E-2	1.31E-2	1.30E-2	1.30E-2	1.43E-2	1.35E-2	1.35E-2	1.55E-2	1.41E-2	1.41E-2
	U-234	1.85E-2	1.76E-2	1.76E-2	5.86E-2	5.79E-2	5.79E-2	5.95E-2	5.90E-2	5.90E-2	2.44E-1	1.06E-1	1.06E-1	4.67E-1	2.08E-1	2.08E-1
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	4.40E-5	7.35E-6	7.35E-6	2.98E-4	1.32E-4	1.32E-4	5.58E-4	2.55E-4	2.55E-4
	U-238	1.20E-2	1.14E-2	1.14E-2	3.79E-2	3.75E-2	3.75E-2	3.85E-2	3.82E-2	3.82E-2	4.08E-2	3.93E-2	3.93E-2	4.32E-2	4.04E-2	4.04E-2
II-5	Ra-226	1.61E-4	1.61E-4	1.61E-4	1.85E-2	1.82E-2	1.82E-2	3.95E-2	3.91E-2	3.91E-2	1.51E-1	1.50E-1	1.50E-1	3.33E-1	3.32E-1	3.32E-1
	Th-230	.00E+0	.00E+0	.00E+0	9.26E-3	9.15E-3	9.15E-3	1.84E-2	1.82E-2	1.82E-2	2.55E-2	2.55E-2	2.55E-2	2.57E-2	2.57E-2	2.57E-2
	Ra-228	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	7.80E-3	7.63E-3	7.63E-3	1.54E-2	1.54E-2	1.54E-2	1.56E-2	1.56E-2	1.56E-2
	Th-232	5.28E-3	5.28E-3	5.28E-3	1.46E-2	1.45E-2	1.45E-2	2.36E-2	2.34E-2	2.34E-2	3.07E-2	3.07E-2	3.07E-2	3.08E-2	3.08E-2	3.08E-2
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	2.09E-4	1.99E-4	1.99E-4	9.72E-4	9.57E-4	9.57E-4	1.57E-3	1.57E-3	1.57E-3	1.58E-3	1.58E-3	1.58E-3
	U-238	.00E+0	.00E+0	.00E+0	1.38E-2	1.36E-2	1.36E-2	2.73E-2	2.70E-2	2.70E-2	3.79E-2	3.79E-2	3.79E-2	3.81E-2	3.81E-2	3.81E-2

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 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		.10			.50			1.00			3.00			5.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
II-6	Ra-226	.00E+0	.00E+0	.00E+0	2.11E-2	2.02E-2	2.02E-2	4.49E-2	4.37E-2	4.37E-2	6.79E-2	6.70E-2	6.70E-2	7.19E-2	6.94E-2	6.94E-2
	Th-230	1.71E-2	1.60E-2	1.60E-2	3.13E-2	3.07E-2	3.07E-2	4.71E-2	4.63E-2	4.63E-2	1.15E+0	6.66E-1	6.66E-1	3.80E+0	2.15E+0	2.15E+0
	Ra-228	.00E+0	.00E+0	.00E+0	6.41E-3	6.07E-3	6.07E-3	1.52E-2	1.48E-2	1.48E-2	2.38E-2	2.35E-2	2.35E-2	2.52E-2	2.43E-2	2.43E-2
	Th-232	2.27E-3	1.99E-3	1.99E-3	6.00E-3	5.84E-3	5.84E-3	1.02E-2	9.96E-3	9.96E-3	1.42E-2	1.41E-2	1.41E-2	1.49E-2	1.45E-2	1.45E-2
	U-234	2.11E-2	1.98E-2	1.98E-2	3.80E-2	3.73E-2	3.73E-2	5.70E-2	5.61E-2	5.61E-2	1.14E+1	1.01E+1	1.01E+1	1.77E+1	1.38E+1	1.38E+1
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
U-238	3.19E-2	3.01E-2	3.01E-2	5.37E-2	5.28E-2	5.28E-2	3.60E-1	3.30E-1	3.30E-1	1.22E+0	1.18E+0	1.18E+0	1.41E+0	1.29E+0	1.29E+0	
II-7	U-234	1.14E+0	1.14E+0	1.14E+0	5.70E+0	5.70E+0	5.70E+0	1.14E+1	1.14E+1	1.14E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1
	U-235	5.36E-2	5.36E-2	5.36E-2	2.68E-1	2.68E-1	2.68E-1	5.36E-1	5.36E-1	5.36E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1
	U-238	1.14E+0	1.14E+0	1.14E+0	5.70E+0	5.70E+0	5.70E+0	1.14E+1	1.14E+1	1.14E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1
III	Cs-137	8.14E-2	8.14E-2	8.14E-2	4.07E-1	4.07E-1	4.07E-1	8.13E-1	8.13E-1	8.13E-1	2.44E+0	2.44E+0	2.44E+0	4.07E+0	4.07E+0	4.07E+0
IV	U-234	6.20E-1	6.20E-1	6.20E-1	3.09E+0	3.09E+0	3.09E+0	6.19E+0	6.19E+0	6.19E+0	1.86E+1	1.86E+1	1.86E+1	3.10E+1	3.10E+1	3.10E+1
	U-235	2.91E-2	2.91E-2	2.91E-2	1.45E-1	1.45E-1	1.45E-1	2.91E-1	2.91E-1	2.91E-1	8.73E-1	8.73E-1	8.73E-1	1.45E+0	1.45E+0	1.45E+0
	U-238	6.20E-1	6.20E-1	6.20E-1	3.09E+0	3.09E+0	3.09E+0	6.19E+0	6.19E+0	6.19E+0	1.86E+1	1.86E+1	1.86E+1	3.10E+1	3.10E+1	3.10E+1
V	Cs-137	8.13E-2	8.13E-2	8.13E-2	4.07E-1	4.07E-1	4.07E-1	8.13E-1	8.13E-1	8.13E-1	2.44E+0	2.44E+0	2.44E+0	4.07E+0	4.07E+0	4.07E+0
VI	Cs-137	8.12E-2	8.12E-2	8.12E-2	4.06E-1	4.06E-1	4.06E-1	8.11E-1	8.11E-1	8.11E-1	2.41E+0	2.41E+0	2.41E+0	3.98E+0	3.98E+0	3.98E+0
	U-234	1.09E-4	1.09E-4	1.09E-4	4.93E-3	4.93E-3	4.93E-3	2.54E-2	2.54E-2	2.54E-2	3.37E-1	3.37E-1	3.37E-1	1.10E+0	1.10E+0	1.10E+0
	U-235	5.11E-6	5.11E-6	5.11E-6	2.32E-4	2.32E-4	2.32E-4	1.19E-3	1.19E-3	1.19E-3	1.58E-2	1.58E-2	1.58E-2	5.19E-2	5.19E-2	5.19E-2
	U-238	1.09E-4	1.09E-4	1.09E-4	4.93E-3	4.93E-3	4.93E-3	2.54E-2	2.54E-2	2.54E-2	3.37E-1	3.37E-1	3.37E-1	1.10E+0	1.10E+0	1.10E+0
VII	Pu-239	2.00E+0	2.00E+0	2.00E+0	3.73E+0	3.73E+0	3.73E+0	7.46E+0	7.46E+0	7.46E+0	2.24E+1	2.24E+1	2.24E+1	3.73E+1	3.73E+1	3.73E+1
	Am-241	3.30E-1	3.30E-1	3.30E-1	6.23E-1	6.23E-1	6.23E-1	1.26E+0	1.26E+0	1.26E+0	3.77E+0	3.77E+0	3.77E+0	6.25E+0	6.25E+0	6.25E+0
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	Pu-239	8.99E-1	8.99E-1	8.99E-1	4.49E+0	4.49E+0	4.49E+0	8.99E+0	8.99E+0	8.99E+0	2.70E+1	2.70E+1	2.70E+1	4.50E+1	4.50E+1	4.50E+1
	Am-241	1.50E-1	1.50E-1	1.50E-1	7.49E-1	7.49E-1	7.49E-1	1.50E+0	1.50E+0	1.50E+0	4.50E+0	4.50E+0	4.50E+0	7.49E+0	7.49E+0	7.49E+0
X	Tc-99	1.33E-1	7.39E-2	7.39E-2	6.09E-1	9.23E-2	9.23E-2	1.42E+0	1.22E-1	1.22E-1	5.50E+0	3.32E-1	3.32E-1	1.00E+1	4.86E-1	4.86E-1
	U-238	2.37E-1	1.55E-2	1.55E-2	1.28E+0	9.96E-2	9.96E-2	2.21E+0	2.04E-1	2.04E-1	4.41E+0	6.16E-1	6.16E-1	5.81E+0	1.03E+0	1.03E+0
	U-234	2.37E-1	1.55E-2	1.55E-2	1.28E+0	9.96E-2	9.96E-2	2.21E+0	2.04E-1	2.04E-1	4.41E+0	6.16E-1	6.16E-1	5.81E+0	1.03E+0	1.03E+0
XII	Pu-239	2.25E-1	2.25E-1	2.25E-1	1.13E+0	1.13E+0	1.13E+0	2.25E+0	2.25E+0	2.25E+0	6.75E+0	6.75E+0	6.75E+0	1.12E+1	1.12E+1	1.12E+1
	Am-241	3.75E-2	3.75E-2	3.75E-2	1.88E-1	1.88E-1	1.88E-1	3.75E-1	3.75E-1	3.75E-1	1.12E+0	1.12E+0	1.12E+0	1.87E+0	1.87E+0	1.87E+0
XIIIA	U-238	1.20E+0	1.20E+0	1.20E+0	6.00E+0	6.00E+0	6.00E+0	1.20E+1	1.20E+1	1.20E+1	3.60E+1	3.60E+1	3.60E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	1.92E-2	1.92E-2	1.92E-2	9.70E-2	9.70E-2	9.70E-2	1.98E-1	1.98E-1	1.98E-1	5.84E-1	5.84E-1	5.84E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	1.13E-1	1.13E-1	1.13E-1	5.62E-1	5.62E-1	5.62E-1	1.12E+0	1.12E+0	1.12E+0	3.37E+0	3.37E+0	3.37E+0	3.69E+0	3.69E+0	3.69E+0
XIIIB	U-238	1.20E+0	1.20E+0	1.20E+0	6.00E+0	6.00E+0	6.00E+0	1.20E+1	1.20E+1	1.20E+1	3.60E+1	3.60E+1	3.60E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	1.92E-2	1.92E-2	1.92E-2	9.70E-2	9.70E-2	9.70E-2	1.98E-1	1.98E-1	1.98E-1	5.84E-1	5.84E-1	5.84E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	1.13E-1	1.13E-1	1.13E-1	5.62E-1	5.62E-1	5.62E-1	1.12E+0	1.12E+0	1.12E+0	3.37E+0	3.37E+0	3.37E+0	3.69E+0	3.69E+0	3.69E+0

09-19-94 1:56p
 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		.10			.50			1.00			3.00			5.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	1.20E+0	1.20E+0	1.20E+0	6.00E+0	6.00E+0	6.00E+0	1.20E+1	1.20E+1	1.20E+1	3.60E+1	3.60E+1	3.60E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	1.92E-2	1.92E-2	1.92E-2	9.70E-2	9.70E-2	9.70E-2	1.98E-1	1.98E-1	1.98E-1	5.84E-1	5.84E-1	5.84E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	1.13E-1	1.13E-1	1.13E-1	5.62E-1	5.62E-1	5.62E-1	1.12E+0	1.12E+0	1.12E+0	3.37E+0	3.37E+0	3.37E+0	3.69E+0	3.69E+0	3.69E+0
XVIA	Co-60	1.07E-2	1.07E-2	1.07E-2	5.36E-2	5.36E-2	5.36E-2	1.07E-1	1.07E-1	1.07E-1	3.22E-1	3.22E-1	3.22E-1	5.36E-1	5.36E-1	5.36E-1
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIB	Co-60	1.07E-2	1.07E-2	1.07E-2	5.36E-2	5.36E-2	5.36E-2	1.07E-1	1.07E-1	1.07E-1	3.22E-1	3.22E-1	3.22E-1	5.36E-1	5.36E-1	5.36E-1
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIC	Co-60	1.07E-2	1.07E-2	1.07E-2	5.36E-2	5.36E-2	5.36E-2	1.07E-1	1.07E-1	1.07E-1	3.22E-1	3.22E-1	3.22E-1	5.36E-1	5.36E-1	5.36E-1
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIII A	Cs-137	4.05E-2	4.05E-2	4.05E-2	2.02E-1	2.02E-1	2.02E-1	4.05E-1	4.05E-1	4.05E-1	1.21E+0	1.21E+0	1.21E+0	2.02E+0	2.02E+0	2.02E+0
	Sr-90	4.05E-2	4.05E-2	4.05E-2	2.02E-1	2.02E-1	2.02E-1	4.05E-1	4.05E-1	4.05E-1	1.21E+0	1.21E+0	1.21E+0	2.02E+0	2.02E+0	2.02E+0
XVIII B	Cs-137	4.05E-2	4.05E-2	4.05E-2	2.02E-1	2.02E-1	2.02E-1	4.05E-1	4.05E-1	4.05E-1	1.21E+0	1.21E+0	1.21E+0	2.02E+0	2.02E+0	2.02E+0
	Sr-90	4.05E-2	4.05E-2	4.05E-2	2.02E-1	2.02E-1	2.02E-1	4.05E-1	4.05E-1	4.05E-1	1.21E+0	1.21E+0	1.21E+0	2.02E+0	2.02E+0	2.02E+0
XVIII C	Cs-137	4.05E-2	4.05E-2	4.05E-2	2.02E-1	2.02E-1	2.02E-1	4.05E-1	4.05E-1	4.05E-1	1.21E+0	1.21E+0	1.21E+0	2.02E+0	2.02E+0	2.02E+0
	Sr-90	4.05E-2	4.05E-2	4.05E-2	2.02E-1	2.02E-1	2.02E-1	4.05E-1	4.05E-1	4.05E-1	1.21E+0	1.21E+0	1.21E+0	2.02E+0	2.02E+0	2.02E+0
XXA	U-234	8.30E-1	8.30E-1	8.30E-1	3.97E+0	3.97E+0	3.97E+0	7.93E+0	7.93E+0	7.93E+0	2.38E+1	2.38E+1	2.38E+1	3.97E+1	3.97E+1	3.97E+1
	U-235	2.79E-2	2.79E-2	2.79E-2	1.34E-1	1.34E-1	1.34E-1	2.67E-1	2.67E-1	2.67E-1	8.01E-1	8.01E-1	8.01E-1	1.34E+0	1.34E+0	1.34E+0
	U-238	1.42E-1	1.42E-1	1.42E-1	6.80E-1	6.80E-1	6.80E-1	1.36E+0	1.36E+0	1.36E+0	4.08E+0	4.08E+0	4.08E+0	6.80E+0	6.80E+0	6.80E+0
XXB	U-234	8.30E-1	8.30E-1	8.30E-1	3.97E+0	3.97E+0	3.97E+0	7.93E+0	7.93E+0	7.93E+0	2.38E+1	2.38E+1	2.38E+1	3.97E+1	3.97E+1	3.97E+1
	U-235	2.79E-2	2.79E-2	2.79E-2	1.34E-1	1.34E-1	1.34E-1	2.67E-1	2.67E-1	2.67E-1	8.01E-1	8.01E-1	8.01E-1	1.34E+0	1.34E+0	1.34E+0
	U-238	1.42E-1	1.42E-1	1.42E-1	6.80E-1	6.80E-1	6.80E-1	1.36E+0	1.36E+0	1.36E+0	4.08E+0	4.08E+0	4.08E+0	6.80E+0	6.80E+0	6.80E+0
XXC	U-234	8.30E-1	8.30E-1	8.30E-1	3.97E+0	3.97E+0	3.97E+0	7.93E+0	7.93E+0	7.93E+0	2.38E+1	2.38E+1	2.38E+1	3.97E+1	3.97E+1	3.97E+1
	U-235	2.79E-2	2.79E-2	2.79E-2	1.34E-1	1.34E-1	1.34E-1	2.67E-1	2.67E-1	2.67E-1	8.01E-1	8.01E-1	8.01E-1	1.34E+0	1.34E+0	1.34E+0
	U-238	1.42E-1	1.42E-1	1.42E-1	6.80E-1	6.80E-1	6.80E-1	1.36E+0	1.36E+0	1.36E+0	4.08E+0	4.08E+0	4.08E+0	6.80E+0	6.80E+0	6.80E+0
XXIA	Th-232	7.28E-3	7.28E-3	7.28E-3	3.64E-2	3.64E-2	3.64E-2	7.28E-2	7.28E-2	7.28E-2	2.18E-1	2.18E-1	2.18E-1	3.64E-1	3.64E-1	3.64E-1
XXIB	Th-232	7.28E-3	7.28E-3	7.28E-3	3.64E-2	3.64E-2	3.64E-2	7.28E-2	7.28E-2	7.28E-2	2.18E-1	2.18E-1	2.18E-1	3.64E-1	3.64E-1	3.64E-1
XXIC	Th-232	7.28E-3	7.28E-3	7.28E-3	3.64E-2	3.64E-2	3.64E-2	7.28E-2	7.28E-2	7.28E-2	2.18E-1	2.18E-1	2.18E-1	3.64E-1	3.64E-1	3.64E-1
XXII	Ra-226	1.24E-3	1.24E-3	1.24E-3	6.15E-3	6.14E-3	6.14E-3	1.23E-2	1.22E-2	1.22E-2	3.64E-2	3.53E-2	3.53E-2	5.97E-2	5.55E-2	5.55E-2
	Th-232	6.09E-3	6.09E-3	6.09E-3	3.04E-2	3.04E-2	3.04E-2	6.09E-2	6.07E-2	6.07E-2	1.81E-1	1.76E-1	1.76E-1	2.98E-1	2.77E-1	2.77E-1
	U-234	6.85E-7	6.85E-7	6.85E-7	9.47E-5	9.46E-5	9.46E-5	7.92E-4	7.83E-4	7.83E-4	2.24E-2	2.04E-2	2.04E-2	1.03E-1	8.17E-2	8.17E-2
	U-235	3.22E-8	3.22E-8	3.22E-8	4.45E-6	4.45E-6	4.45E-6	3.72E-5	3.68E-5	3.68E-5	1.05E-3	9.59E-4	9.59E-4	4.82E-3	3.84E-3	3.84E-3
	U-238	6.85E-7	6.85E-7	6.85E-7	9.47E-5	9.46E-5	9.46E-5	7.92E-4	7.83E-4	7.83E-4	2.24E-2	2.04E-2	2.04E-2	1.03E-1	8.17E-2	8.17E-2

Table M-198. MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	8.13E+0	8.13E+0	8.13E+0	1.22E+1	1.22E+1	1.22E+1	2.03E+1	2.03E+1	2.03E+1	6.09E+1	6.09E+1	6.09E+1	8.13E+1	8.13E+1	8.13E+1
II-1	Ra-226	1.81E-1	9.17E-2	9.17E-2	6.34E-1	9.25E-2	9.25E-2	1.54E+0	7.71E-1	7.71E-1	6.02E+0	5.05E+0	5.05E+0	8.23E+0	7.10E+0	7.10E+0
	Th-230	1.41E+1	7.67E+0	7.67E+0	1.45E+1	1.21E+1	1.21E+1	1.54E+1	1.47E+1	1.47E+1	2.03E+1	1.89E+1	1.89E+1	2.32E+1	2.18E+1	2.18E+1
	Ra-228	1.50E-2	1.48E-2	1.48E-2	1.50E-2	1.49E-2	1.49E-2	1.50E-2	1.50E-2	1.50E-2	1.51E-2	1.51E-2	1.51E-2	1.52E-2	1.52E-2	1.52E-2
	Th-232	1.18E-2	1.16E-2	1.16E-2	1.18E-2	1.17E-2	1.17E-2	1.18E-2	1.18E-2	1.18E-2	1.19E-2	1.19E-2	1.19E-2	1.20E-2	1.19E-2	1.19E-2
	U-234	6.72E-2	6.66E-2	6.66E-2	6.72E-2	6.70E-2	6.70E-2	6.73E-2	6.73E-2	6.73E-2	6.78E-2	6.77E-2	6.77E-2	6.81E-2	6.79E-2	6.79E-2
	U-235	2.92E-3	2.88E-3	2.88E-3	2.93E-3	2.91E-3	2.91E-3	2.93E-3	2.93E-3	2.93E-3	2.97E-3	2.96E-3	2.96E-3	2.99E-3	2.98E-3	2.98E-3
	U-238	7.67E-2	7.25E-2	7.25E-2	7.81E-2	7.29E-2	7.29E-2	8.11E-2	7.85E-2	7.85E-2	1.01E-1	9.49E-2	9.49E-2	1.15E-1	1.08E-1	1.08E-1
II-2	Ra-226	1.17E-2	1.16E-2	1.16E-2	1.18E-2	1.17E-2	1.17E-2	1.20E-2	1.18E-2	1.18E-2	1.26E-2	1.22E-2	1.22E-2	1.29E-2	1.24E-2	1.24E-2
	Th-230	1.35E+1	6.58E+0	6.58E+0	2.25E+1	1.10E+1	1.10E+1	3.55E+1	1.99E+1	1.99E+1	7.80E+1	5.28E+1	5.28E+1	9.97E+1	6.69E+1	6.69E+1
	Ra-228	5.09E-2	5.05E-2	5.05E-2	5.15E-2	5.08E-2	5.08E-2	3.95E-2	5.13E-2	5.13E-2	3.59E+0	1.59E+0	1.59E+0	5.16E+0	2.66E+0	2.66E+0
	Th-232	3.71E-2	3.68E-2	3.68E-2	3.76E-2	3.70E-2	3.70E-2	3.83E-2	3.75E-2	3.75E-2	4.06E-2	3.92E-2	3.92E-2	4.18E-2	4.00E-2	4.00E-2
	U-234	3.93E+0	3.87E+0	3.87E+0	4.02E+0	3.91E+0	3.91E+0	4.14E+0	3.99E+0	3.99E+0	4.58E+0	4.30E+0	4.30E+0	4.82E+0	4.45E+0	4.45E+0
	U-235	2.66E-1	2.62E-1	2.62E-1	2.71E-1	2.65E-1	2.65E-1	2.78E-1	2.70E-1	2.70E-1	3.04E-1	2.88E-1	2.88E-1	3.19E-1	2.97E-1	2.97E-1
	U-238	4.95E+0	4.87E+0	4.87E+0	5.05E+0	4.92E+0	4.92E+0	5.20E+0	5.02E+0	5.02E+0	5.71E+0	5.39E+0	5.39E+0	5.99E+0	5.57E+0	5.57E+0
II-3	Ra-226	1.60E-1	1.40E-1	1.40E-1	2.11E-1	1.90E-1	1.90E-1	2.90E-1	2.68E-1	2.68E-1	4.92E-1	4.73E-1	4.73E-1	5.47E-1	5.28E-1	5.28E-1
	Th-230	3.11E+0	2.77E+0	2.77E+0	4.15E+0	3.69E+0	3.69E+0	6.13E+0	5.53E+0	5.53E+0	1.40E+1	1.29E+1	1.29E+1	1.77E+1	1.63E+1	1.63E+1
	Ra-228	4.76E-2	4.73E-2	4.73E-2	4.83E-2	4.80E-2	4.80E-2	4.94E-2	4.91E-2	4.91E-2	5.14E-2	5.12E-2	5.12E-2	1.05E-1	5.16E-2	5.16E-2
	Th-232	4.32E-2	4.29E-2	4.29E-2	4.39E-2	4.36E-2	4.36E-2	4.49E-2	4.46E-2	4.46E-2	4.49E-1	3.17E-1	3.17E-1	8.82E-1	7.11E-1	7.11E-1
	U-234	6.72E+0	5.89E+0	5.89E+0	9.11E+0	8.04E+0	8.04E+0	1.53E+1	1.33E+1	1.33E+1	4.25E+1	3.93E+1	3.93E+1	5.27E+1	4.90E+1	4.90E+1
	U-235	2.37E+0	2.18E+0	2.18E+0	2.90E+0	2.67E+0	2.67E+0	4.09E+0	3.59E+0	3.59E+0	1.08E+1	1.00E+1	1.00E+1	1.32E+1	1.23E+1	1.23E+1
	U-238	6.14E+0	5.39E+0	5.39E+0	8.37E+0	7.37E+0	7.37E+0	1.40E+1	1.21E+1	1.21E+1	4.04E+1	3.73E+1	3.73E+1	5.06E+1	4.69E+1	4.69E+1
II-4	Ra-226	7.88E-3	6.89E-3	6.89E-3	8.62E-3	7.48E-3	7.48E-3	1.01E-2	8.52E-3	8.52E-3	3.71E-1	1.62E-1	1.62E-1	5.57E-1	3.28E-1	3.28E-1
	Th-230	1.46E+1	8.39E+0	8.39E+0	1.89E+1	1.23E+1	1.23E+1	2.72E+1	1.84E+1	1.84E+1	5.49E+1	4.30E+1	4.30E+1	6.56E+1	5.24E+1	5.24E+1
	Ra-228	1.16E-1	1.71E-2	1.71E-2	1.88E-1	7.58E-2	7.58E-2	3.31E-1	1.79E-1	1.79E-1	1.06E+0	6.95E-1	6.95E-1	1.41E+0	9.80E-1	9.80E-1
	Th-232	2.45E-2	1.55E-2	1.55E-2	1.15E-1	1.70E-2	1.70E-2	3.04E-1	1.03E-1	1.03E-1	1.37E+0	8.15E-1	8.15E-1	1.94E+0	1.25E+0	1.25E+0
	U-234	1.08E+0	4.82E-1	4.82E-1	1.61E+0	8.41E-1	8.41E-1	2.91E+0	1.54E+0	1.54E+0	1.74E+1	8.27E+0	8.27E+0	3.26E+1	1.52E+1	1.52E+1
	U-235	1.06E-3	5.74E-4	5.74E-4	1.39E-3	8.65E-4	8.65E-4	1.35E-3	1.35E-3	1.35E-3	1.72E-1	3.31E-2	3.31E-2	4.15E-1	1.34E-1	1.34E-1
	U-238	4.77E-2	4.33E-2	4.33E-2	5.07E-2	4.60E-2	4.60E-2	5.61E-2	5.04E-2	5.04E-2	3.94E+0	1.09E+0	1.09E+0	9.01E+0	3.17E+0	3.17E+0
II-5	Ra-226	7.89E-1	7.88E-1	7.88E-1	1.24E+0	1.24E+0	1.24E+0	2.16E+0	2.15E+0	2.15E+0	6.50E+0	6.50E+0	6.50E+0	8.59E+0	8.59E+0	8.59E+0
	Th-230	2.60E-2	2.60E-2	2.60E-2	2.64E-2	2.64E-2	2.64E-2	2.71E-2	2.71E-2	2.71E-2	3.08E-2	3.08E-2	3.08E-2	3.25E-2	3.25E-2	3.25E-2
	Ra-228	1.60E-2	1.60E-2	1.60E-2	1.65E-2	1.65E-2	1.65E-2	1.73E-2	1.73E-2	1.73E-2	2.20E-2	2.20E-2	2.20E-2	6.27E-2	6.27E-2	6.27E-2
	Th-232	3.12E-2	3.12E-2	3.12E-2	3.16E-2	3.16E-2	3.16E-2	3.23E-2	3.23E-2	3.23E-2	1.86E-1	1.86E-1	1.86E-1	2.93E-1	2.93E-1	2.93E-1
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	1.61E-3	1.61E-3	1.61E-3	1.65E-3	1.65E-3	1.65E-3	1.71E-3	1.71E-3	1.71E-3	2.02E-3	2.02E-3	2.02E-3	2.16E-3	2.16E-3	2.16E-3
	U-238	3.86E-2	3.86E-2	3.86E-2	3.92E-2	3.92E-2	3.92E-2	4.03E-2	4.03E-2	4.03E-2	4.57E-2	4.57E-2	4.57E-2	4.82E-2	4.82E-2	4.82E-2

09-19-94 1:56p
 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0
XVIA	Co-60	1.05E+0	1.05E+0	1.05E+0	1.54E+0	1.54E+0	1.54E+0	2.54E+0	2.54E+0	2.54E+0	7.74E+0	7.74E+0	7.74E+0	1.03E+1	1.03E+1	1.03E+1
	Cs-137	9.15E-2	9.15E-2	9.15E-2	3.09E-1	3.09E-1	3.09E-1	5.99E-1	5.99E-1	5.99E-1	1.28E+0	1.28E+0	1.28E+0	1.59E+0	1.59E+0	1.59E+0
XVIB	Co-60	1.05E+0	1.05E+0	1.05E+0	1.54E+0	1.54E+0	1.54E+0	2.54E+0	2.54E+0	2.54E+0	7.74E+0	7.74E+0	7.74E+0	1.03E+1	1.03E+1	1.03E+1
	Cs-137	9.15E-2	9.15E-2	9.15E-2	3.09E-1	3.09E-1	3.09E-1	5.99E-1	5.99E-1	5.99E-1	1.28E+0	1.28E+0	1.28E+0	1.59E+0	1.59E+0	1.59E+0
XVIC	Co-60	1.05E+0	1.05E+0	1.05E+0	1.54E+0	1.54E+0	1.54E+0	2.54E+0	2.54E+0	2.54E+0	7.74E+0	7.74E+0	7.74E+0	1.03E+1	1.03E+1	1.03E+1
	Cs-137	9.15E-2	9.15E-2	9.15E-2	3.09E-1	3.09E-1	3.09E-1	5.99E-1	5.99E-1	5.99E-1	1.28E+0	1.28E+0	1.28E+0	1.59E+0	1.59E+0	1.59E+0
XVIII A	Cs-137	4.05E+0	4.05E+0	4.05E+0	6.07E+0	6.07E+0	6.07E+0	1.01E+1	1.01E+1	1.01E+1	3.04E+1	3.04E+1	3.04E+1	4.05E+1	4.05E+1	4.05E+1
	Sr-90	4.05E+0	4.05E+0	4.05E+0	6.07E+0	6.07E+0	6.07E+0	1.01E+1	1.01E+1	1.01E+1	3.04E+1	3.04E+1	3.04E+1	4.05E+1	4.05E+1	4.05E+1
XVIII B	Cs-137	4.05E+0	4.05E+0	4.05E+0	6.07E+0	6.07E+0	6.07E+0	1.01E+1	1.01E+1	1.01E+1	3.04E+1	3.04E+1	3.04E+1	4.05E+1	4.05E+1	4.05E+1
	Sr-90	4.05E+0	4.05E+0	4.05E+0	6.07E+0	6.07E+0	6.07E+0	1.01E+1	1.01E+1	1.01E+1	3.04E+1	3.04E+1	3.04E+1	4.05E+1	4.05E+1	4.05E+1
XVIII C	Cs-137	4.05E+0	4.05E+0	4.05E+0	6.07E+0	6.07E+0	6.07E+0	1.01E+1	1.01E+1	1.01E+1	3.04E+1	3.04E+1	3.04E+1	4.05E+1	4.05E+1	4.05E+1
	Sr-90	4.05E+0	4.05E+0	4.05E+0	6.07E+0	6.07E+0	6.07E+0	1.01E+1	1.01E+1	1.01E+1	3.04E+1	3.04E+1	3.04E+1	4.05E+1	4.05E+1	4.05E+1
XXA	U-234	7.93E+1	7.93E+1	7.93E+1	1.19E+2	1.19E+2	1.19E+2	1.98E+2	1.98E+2	1.98E+2	5.95E+2	5.95E+2	5.95E+2	7.93E+2	7.93E+2	7.93E+2
	U-235	2.67E+0	2.67E+0	2.67E+0	4.01E+0	4.01E+0	4.01E+0	6.68E+0	6.68E+0	6.68E+0	2.00E+1	2.00E+1	2.00E+1	2.67E+1	2.67E+1	2.67E+1
	U-238	1.36E+1	1.36E+1	1.36E+1	2.04E+1	2.04E+1	2.04E+1	3.40E+1	3.40E+1	3.40E+1	1.02E+2	1.02E+2	1.02E+2	1.36E+2	1.36E+2	1.36E+2
XXB	U-234	7.93E+1	7.93E+1	7.93E+1	1.19E+2	1.19E+2	1.19E+2	1.98E+2	1.98E+2	1.98E+2	5.95E+2	5.95E+2	5.95E+2	7.93E+2	7.93E+2	7.93E+2
	U-235	2.67E+0	2.67E+0	2.67E+0	4.01E+0	4.01E+0	4.01E+0	6.68E+0	6.68E+0	6.68E+0	2.00E+1	2.00E+1	2.00E+1	2.67E+1	2.67E+1	2.67E+1
	U-238	1.36E+1	1.36E+1	1.36E+1	2.04E+1	2.04E+1	2.04E+1	3.40E+1	3.40E+1	3.40E+1	1.02E+2	1.02E+2	1.02E+2	1.36E+2	1.36E+2	1.36E+2
XXC	U-234	7.93E+1	7.93E+1	7.93E+1	1.19E+2	1.19E+2	1.19E+2	1.98E+2	1.98E+2	1.98E+2	5.95E+2	5.95E+2	5.95E+2	7.93E+2	7.93E+2	7.93E+2
	U-235	2.67E+0	2.67E+0	2.67E+0	4.01E+0	4.01E+0	4.01E+0	6.68E+0	6.68E+0	6.68E+0	2.00E+1	2.00E+1	2.00E+1	2.67E+1	2.67E+1	2.67E+1
	U-238	1.36E+1	1.36E+1	1.36E+1	2.04E+1	2.04E+1	2.04E+1	3.40E+1	3.40E+1	3.40E+1	1.02E+2	1.02E+2	1.02E+2	1.36E+2	1.36E+2	1.36E+2
XXIA	Th-232	7.28E-1	7.28E-1	7.28E-1	1.09E+0	1.09E+0	1.09E+0	1.82E+0	1.82E+0	1.82E+0	5.46E+0	5.46E+0	5.46E+0	7.28E+0	7.28E+0	7.28E+0
XXIB	Th-232	7.28E-1	7.28E-1	7.28E-1	1.09E+0	1.09E+0	1.09E+0	1.82E+0	1.82E+0	1.82E+0	5.46E+0	5.46E+0	5.46E+0	7.28E+0	7.28E+0	7.28E+0
XXIC	Th-232	7.28E-1	7.28E-1	7.28E-1	1.09E+0	1.09E+0	1.09E+0	1.82E+0	1.82E+0	1.82E+0	5.46E+0	5.46E+0	5.46E+0	7.28E+0	7.28E+0	7.28E+0
XXII	Ra-226	1.12E-1	9.36E-2	9.36E-2	1.67E-1	1.21E-1	1.21E-1	2.27E-1	2.05E-1	2.05E-1	9.59E-1	7.60E-1	7.60E-1	1.06E+0	9.84E-1	9.84E-1
	Th-232	5.62E-1	4.68E-1	4.68E-1	8.36E-1	6.04E-1	6.04E-1	1.48E+0	1.08E+0	1.08E+0	4.21E+0	3.60E+0	3.60E+0	5.86E+0	4.56E+0	4.56E+0
	U-234	7.14E-1	4.08E-1	4.08E-1	1.17E+0	8.94E-1	8.94E-1	1.38E+0	1.30E+0	1.30E+0	4.11E+0	2.72E+0	2.72E+0	4.89E+0	4.28E+0	4.28E+0
	U-235	3.36E-2	1.92E-2	1.92E-2	5.48E-2	4.20E-2	4.20E-2	6.47E-2	6.12E-2	6.12E-2	1.93E-1	1.28E-1	1.28E-1	2.30E-1	2.01E-1	2.01E-1
	U-238	7.14E-1	4.08E-1	4.08E-1	1.17E+0	8.94E-1	8.94E-1	1.38E+0	1.30E+0	1.30E+0	4.11E+0	2.72E+0	2.72E+0	4.89E+0	4.28E+0	4.28E+0

09-19-94 1:56p
 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		.10			.50			1.00			3.00			5.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIIC	U-238	3.11E+0	3.11E+0	3.11E+0	1.56E+1	1.56E+1	1.56E+1	3.11E+1	3.11E+1	3.11E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	5.01E-2	5.01E-2	5.01E-2	2.49E-1	2.49E-1	2.49E-1	5.04E-1	5.04E-1	5.04E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	2.91E-1	2.91E-1	2.91E-1	1.46E+0	1.46E+0	1.46E+0	2.91E+0	2.91E+0	2.91E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0
XVIA	Co-60	2.89E-2	2.89E-2	2.89E-2	1.45E-1	1.45E-1	1.45E-1	2.89E-1	2.89E-1	2.89E-1	8.61E-1	8.61E-1	8.61E-1	1.39E+0	1.39E+0	1.39E+0
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	2.66E-2	2.66E-2	2.66E-2	2.50E-1	2.50E-1	2.50E-1
XVIB	Co-60	2.89E-2	2.89E-2	2.89E-2	1.45E-1	1.45E-1	1.45E-1	2.89E-1	2.89E-1	2.89E-1	8.61E-1	8.61E-1	8.61E-1	1.39E+0	1.39E+0	1.39E+0
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	2.66E-2	2.66E-2	2.66E-2	2.50E-1	2.50E-1	2.50E-1
XVIC	Co-60	2.89E-2	2.89E-2	2.89E-2	1.45E-1	1.45E-1	1.45E-1	2.89E-1	2.89E-1	2.89E-1	8.61E-1	8.61E-1	8.61E-1	1.39E+0	1.39E+0	1.39E+0
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	2.66E-2	2.66E-2	2.66E-2	2.50E-1	2.50E-1	2.50E-1
XVIII A	Cs-137	1.23E-1	1.23E-1	1.23E-1	6.16E-1	6.16E-1	6.16E-1	1.23E+0	1.23E+0	1.23E+0	3.70E+0	3.70E+0	3.70E+0	6.16E+0	6.16E+0	6.16E+0
	Sr-90	1.23E-1	1.23E-1	1.23E-1	6.16E-1	6.16E-1	6.16E-1	1.23E+0	1.23E+0	1.23E+0	3.70E+0	3.70E+0	3.70E+0	6.16E+0	6.16E+0	6.16E+0
XVIII B	Cs-137	1.23E-1	1.23E-1	1.23E-1	6.16E-1	6.16E-1	6.16E-1	1.23E+0	1.23E+0	1.23E+0	3.70E+0	3.70E+0	3.70E+0	6.16E+0	6.16E+0	6.16E+0
	Sr-90	1.23E-1	1.23E-1	1.23E-1	6.16E-1	6.16E-1	6.16E-1	1.23E+0	1.23E+0	1.23E+0	3.70E+0	3.70E+0	3.70E+0	6.16E+0	6.16E+0	6.16E+0
XVIII C	Cs-137	1.23E-1	1.23E-1	1.23E-1	6.16E-1	6.16E-1	6.16E-1	1.23E+0	1.23E+0	1.23E+0	3.70E+0	3.70E+0	3.70E+0	6.16E+0	6.16E+0	6.16E+0
	Sr-90	1.23E-1	1.23E-1	1.23E-1	6.16E-1	6.16E-1	6.16E-1	1.23E+0	1.23E+0	1.23E+0	3.70E+0	3.70E+0	3.70E+0	6.16E+0	6.16E+0	6.16E+0
XXA	U-234	3.09E+0	3.09E+0	3.09E+0	1.54E+1	1.54E+1	1.54E+1	3.09E+1	3.09E+1	3.09E+1	9.26E+1	9.26E+1	9.26E+1	1.54E+2	1.54E+2	1.54E+2
	U-235	1.04E-1	1.04E-1	1.04E-1	5.19E-1	5.19E-1	5.19E-1	1.04E+0	1.04E+0	1.04E+0	3.12E+0	3.12E+0	3.12E+0	5.20E+0	5.20E+0	5.20E+0
	U-238	5.30E-1	5.30E-1	5.30E-1	2.64E+0	2.64E+0	2.64E+0	5.29E+0	5.29E+0	5.29E+0	1.59E+1	1.59E+1	1.59E+1	2.65E+1	2.65E+1	2.65E+1
XXB	U-234	3.09E+0	3.09E+0	3.09E+0	1.54E+1	1.54E+1	1.54E+1	3.09E+1	3.09E+1	3.09E+1	9.26E+1	9.26E+1	9.26E+1	1.54E+2	1.54E+2	1.54E+2
	U-235	1.04E-1	1.04E-1	1.04E-1	5.19E-1	5.19E-1	5.19E-1	1.04E+0	1.04E+0	1.04E+0	3.12E+0	3.12E+0	3.12E+0	5.20E+0	5.20E+0	5.20E+0
	U-238	5.30E-1	5.30E-1	5.30E-1	2.64E+0	2.64E+0	2.64E+0	5.29E+0	5.29E+0	5.29E+0	1.59E+1	1.59E+1	1.59E+1	2.65E+1	2.65E+1	2.65E+1
XXC	U-234	3.09E+0	3.09E+0	3.09E+0	1.54E+1	1.54E+1	1.54E+1	3.09E+1	3.09E+1	3.09E+1	9.26E+1	9.26E+1	9.26E+1	1.54E+2	1.54E+2	1.54E+2
	U-235	1.04E-1	1.04E-1	1.04E-1	5.19E-1	5.19E-1	5.19E-1	1.04E+0	1.04E+0	1.04E+0	3.12E+0	3.12E+0	3.12E+0	5.20E+0	5.20E+0	5.20E+0
	U-238	5.30E-1	5.30E-1	5.30E-1	2.64E+0	2.64E+0	2.64E+0	5.29E+0	5.29E+0	5.29E+0	1.59E+1	1.59E+1	1.59E+1	2.65E+1	2.65E+1	2.65E+1
XXIA	Th-232	2.26E-2	2.26E-2	2.26E-2	1.13E-1	1.13E-1	1.13E-1	2.26E-1	2.26E-1	2.26E-1	6.79E-1	6.79E-1	6.79E-1	1.13E+0	1.13E+0	1.13E+0
XXIB	Th-232	2.26E-2	2.26E-2	2.26E-2	1.13E-1	1.13E-1	1.13E-1	2.26E-1	2.26E-1	2.26E-1	6.79E-1	6.79E-1	6.79E-1	1.13E+0	1.13E+0	1.13E+0
XXIC	Th-232	2.26E-2	2.26E-2	2.26E-2	1.13E-1	1.13E-1	1.13E-1	2.26E-1	2.26E-1	2.26E-1	6.79E-1	6.79E-1	6.79E-1	1.13E+0	1.13E+0	1.13E+0
XXII	Ra-226	4.02E-3	4.02E-3	4.02E-3	1.99E-2	1.97E-2	1.97E-2	3.94E-2	3.74E-2	3.74E-2	1.07E-1	8.64E-2	8.64E-2	1.76E-1	1.16E-1	1.16E-1
	Th-232	1.99E-2	1.99E-2	1.99E-2	9.91E-2	9.77E-2	9.77E-2	1.96E-1	1.86E-1	1.86E-1	5.38E-1	4.32E-1	4.32E-1	8.81E-1	5.82E-1	5.82E-1
	U-234	2.56E-5	2.56E-5	2.56E-5	3.52E-3	3.37E-3	3.37E-3	2.85E-2	2.43E-2	2.43E-2	6.24E-1	3.19E-1	3.19E-1	1.20E+0	7.97E-1	7.97E-1
	U-235	1.20E-6	1.20E-6	1.20E-6	1.65E-4	1.58E-4	1.58E-4	1.34E-3	1.14E-3	1.14E-3	2.93E-2	1.50E-2	1.50E-2	5.64E-2	3.75E-2	3.75E-2
	U-238	2.56E-5	2.56E-5	2.56E-5	3.52E-3	3.37E-3	3.37E-3	2.85E-2	2.43E-2	2.43E-2	6.24E-1	3.19E-1	3.19E-1	1.20E+0	7.97E-1	7.97E-1

09-19-94 1:56p
 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
II-6	Ra-226	1.52E+0	4.46E-1	4.46E-1	3.11E+0	2.02E+0	2.02E+0	6.29E+0	5.12E+0	5.12E+0	2.22E+1	2.07E+1	2.07E+1	3.02E+1	2.86E+1	2.86E+1
	Th-230	1.74E+1	1.71E+1	1.71E+1	1.80E+1	1.76E+1	1.76E+1	1.93E+1	1.88E+1	1.88E+1	2.42E+1	2.38E+1	2.38E+1	2.65E+1	2.60E+1	2.60E+1
	Ra-228	2.87E-1	2.70E-1	2.70E-1	3.24E-1	3.00E-1	3.00E-1	3.94E-1	3.70E-1	3.70E-1	7.56E-1	7.23E-1	7.23E-1	9.24E-1	8.91E-1	8.91E-1
	Th-232	1.89E-2	1.88E-2	1.88E-2	1.91E-2	1.90E-2	1.90E-2	1.95E-2	1.93E-2	1.93E-2	7.13E-2	6.58E-2	6.58E-2	1.00E-1	9.45E-2	9.45E-2
	U-234	4.79E+1	4.73E+1	4.73E+1	4.92E+1	4.83E+1	4.83E+1	5.16E+1	5.07E+1	5.07E+1	6.44E+1	6.32E+1	6.32E+1	7.09E+1	6.96E+1	6.96E+1
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-238	2.51E+0	2.48E+0	2.48E+0	2.57E+0	2.53E+0	2.53E+0	2.68E+0	2.64E+0	2.64E+0	3.35E+0	3.29E+0	3.29E+0	3.71E+0	3.63E+0	3.63E+0
II-7	U-234	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1
	U-235	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1
	U-238	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1
III	Cs-137	2.27E+1	2.27E+1	2.27E+1	3.40E+1	3.40E+1	3.40E+1	5.67E+1	5.67E+1	5.67E+1	1.70E+2	1.70E+2	1.70E+2	2.27E+2	2.27E+2	2.27E+2
IV	U-234	1.92E+2	1.92E+2	1.92E+2	2.87E+2	2.87E+2	2.87E+2	4.79E+2	4.79E+2	4.79E+2	1.44E+3	1.44E+3	1.44E+3	1.92E+3	1.92E+3	1.92E+3
	U-235	9.00E+0	9.00E+0	9.00E+0	1.35E+1	1.35E+1	1.35E+1	2.25E+1	2.25E+1	2.25E+1	6.75E+1	6.75E+1	6.75E+1	9.00E+1	9.00E+1	9.00E+1
	U-238	1.92E+2	1.92E+2	1.92E+2	2.87E+2	2.87E+2	2.87E+2	4.79E+2	4.79E+2	4.79E+2	1.44E+3	1.44E+3	1.44E+3	1.92E+3	1.92E+3	1.92E+3
V	Cs-137	2.27E+1	2.27E+1	2.27E+1	3.40E+1	3.40E+1	3.40E+1	5.67E+1	5.67E+1	5.67E+1	1.70E+2	1.70E+2	1.70E+2	2.27E+2	2.27E+2	2.27E+2
VI	Cs-137	2.04E+1	2.04E+1	2.04E+1	2.99E+1	2.99E+1	2.99E+1	4.80E+1	4.80E+1	4.80E+1	1.35E+2	1.35E+2	1.35E+2	1.82E+2	1.82E+2	1.82E+2
	U-234	3.44E+1	3.44E+1	3.44E+1	6.26E+1	6.26E+1	6.26E+1	1.31E+2	1.31E+2	1.31E+2	5.37E+2	5.37E+2	5.37E+2	6.75E+2	6.75E+2	6.75E+2
	U-235	1.62E+0	1.62E+0	1.62E+0	2.94E+0	2.94E+0	2.94E+0	6.18E+0	6.18E+0	6.18E+0	2.52E+1	2.52E+1	2.52E+1	3.17E+1	3.17E+1	3.17E+1
	U-238	3.44E+1	3.44E+1	3.44E+1	6.26E+1	6.26E+1	6.26E+1	1.31E+2	1.31E+2	1.31E+2	5.37E+2	5.37E+2	5.37E+2	6.75E+2	6.75E+2	6.75E+2
VII	Pu-239	2.05E+2	2.05E+2	2.05E+2	3.08E+2	3.08E+2	3.08E+2	5.19E+2	5.19E+2	5.19E+2	1.50E+3	1.50E+3	1.50E+3	1.50E+3	1.50E+3	1.50E+3
	Am-241	3.38E+1	3.38E+1	3.38E+1	5.13E+1	5.13E+1	5.13E+1	8.68E+1	8.68E+1	8.68E+1	2.49E+2	2.49E+2	2.49E+2	2.50E+2	2.50E+2	2.50E+2
	Cs-137	4.00E+0	4.00E+0	4.00E+0	5.89E+0	5.89E+0	5.89E+0	9.42E+0	9.42E+0	9.42E+0	3.31E+1	3.31E+1	3.31E+1	8.00E+1	8.00E+1	8.00E+1
IX	Pu-239	3.06E+2	3.06E+2	3.06E+2	4.59E+2	4.59E+2	4.59E+2	7.65E+2	7.65E+2	7.65E+2	2.30E+3	2.30E+3	2.30E+3	2.98E+3	2.98E+3	2.98E+3
	Am-241	5.10E+1	5.10E+1	5.10E+1	7.65E+1	7.65E+1	7.65E+1	1.28E+2	1.28E+2	1.28E+2	3.83E+2	3.83E+2	3.83E+2	4.97E+2	4.97E+2	4.97E+2
X	Tc-99	5.56E+1	5.02E+0	5.02E+0	8.47E+1	1.10E+1	1.10E+1	1.43E+2	3.52E+1	3.52E+1	4.36E+2	2.28E+2	2.28E+2	5.83E+2	3.37E+2	3.37E+2
	U-238	1.00E+1	4.20E+0	4.20E+0	1.16E+1	6.03E+0	6.03E+0	1.35E+1	8.74E+0	8.74E+0	2.18E+1	1.67E+1	1.67E+1	2.40E+1	1.97E+1	1.97E+1
	U-234	1.00E+1	4.20E+0	4.20E+0	1.16E+1	6.03E+0	6.03E+0	1.35E+1	8.74E+0	8.74E+0	2.18E+1	1.67E+1	1.67E+1	2.40E+1	1.97E+1	1.97E+1
XII	Pu-239	1.06E+2	1.06E+2	1.06E+2	1.59E+2	1.59E+2	1.59E+2	2.65E+2	2.65E+2	2.65E+2	7.96E+2	7.96E+2	7.96E+2	1.06E+3	1.06E+3	1.06E+3
	Am-241	1.77E+1	1.77E+1	1.77E+1	2.65E+1	2.65E+1	2.65E+1	4.42E+1	4.42E+1	4.42E+1	1.33E+2	1.33E+2	1.33E+2	1.77E+2	1.77E+2	1.77E+2
XIII A	U-238	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0
XIII B	U-238	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0

09-19-94 1:56p
 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIIC	U-238	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0
XVIA	Co-60	2.74E+0	2.74E+0	2.74E+0	4.13E+0	4.13E+0	4.13E+0	6.95E+0	6.95E+0	6.95E+0	2.08E+1	2.08E+1	2.08E+1	2.77E+1	2.77E+1	2.77E+1
	Cs-137	6.52E-1	6.52E-1	6.52E-1	8.68E-1	8.68E-1	8.68E-1	1.19E+0	1.19E+0	1.19E+0	3.68E+0	3.68E+0	3.68E+0	5.12E+0	5.12E+0	5.12E+0
XVIB	Co-60	2.74E+0	2.74E+0	2.74E+0	4.13E+0	4.13E+0	4.13E+0	6.95E+0	6.95E+0	6.95E+0	2.08E+1	2.08E+1	2.08E+1	2.77E+1	2.77E+1	2.77E+1
	Cs-137	6.52E-1	6.52E-1	6.52E-1	8.68E-1	8.68E-1	8.68E-1	1.19E+0	1.19E+0	1.19E+0	3.68E+0	3.68E+0	3.68E+0	5.12E+0	5.12E+0	5.12E+0
XVIC	Co-60	2.74E+0	2.74E+0	2.74E+0	4.13E+0	4.13E+0	4.13E+0	6.95E+0	6.95E+0	6.95E+0	2.08E+1	2.08E+1	2.08E+1	2.77E+1	2.77E+1	2.77E+1
	Cs-137	6.52E-1	6.52E-1	6.52E-1	8.68E-1	8.68E-1	8.68E-1	1.19E+0	1.19E+0	1.19E+0	3.68E+0	3.68E+0	3.68E+0	5.12E+0	5.12E+0	5.12E+0
XVIIIIA	Cs-137	1.23E+1	1.23E+1	1.23E+1	1.85E+1	1.85E+1	1.85E+1	3.08E+1	3.08E+1	3.08E+1	9.24E+1	9.24E+1	9.24E+1	1.23E+2	1.23E+2	1.23E+2
	Sr-90	1.23E+1	1.23E+1	1.23E+1	1.85E+1	1.85E+1	1.85E+1	3.08E+1	3.08E+1	3.08E+1	9.24E+1	9.24E+1	9.24E+1	1.23E+2	1.23E+2	1.23E+2
XVIIIB	Cs-137	1.23E+1	1.23E+1	1.23E+1	1.85E+1	1.85E+1	1.85E+1	3.08E+1	3.08E+1	3.08E+1	9.24E+1	9.24E+1	9.24E+1	1.23E+2	1.23E+2	1.23E+2
	Sr-90	1.23E+1	1.23E+1	1.23E+1	1.85E+1	1.85E+1	1.85E+1	3.08E+1	3.08E+1	3.08E+1	9.24E+1	9.24E+1	9.24E+1	1.23E+2	1.23E+2	1.23E+2
XVIIIC	Cs-137	1.23E+1	1.23E+1	1.23E+1	1.85E+1	1.85E+1	1.85E+1	3.08E+1	3.08E+1	3.08E+1	9.24E+1	9.24E+1	9.24E+1	1.23E+2	1.23E+2	1.23E+2
	Sr-90	1.23E+1	1.23E+1	1.23E+1	1.85E+1	1.85E+1	1.85E+1	3.08E+1	3.08E+1	3.08E+1	9.24E+1	9.24E+1	9.24E+1	1.23E+2	1.23E+2	1.23E+2
XXA	U-234	3.09E+2	3.09E+2	3.09E+2	4.63E+2	4.63E+2	4.63E+2	7.72E+2	7.72E+2	7.72E+2	2.33E+3	2.33E+3	2.33E+3	3.12E+3	3.12E+3	3.12E+3
	U-235	1.04E+1	1.04E+1	1.04E+1	1.56E+1	1.56E+1	1.56E+1	2.60E+1	2.60E+1	2.60E+1	7.58E+1	7.58E+1	7.58E+1	9.86E+1	9.86E+1	9.86E+1
	U-238	5.29E+1	5.29E+1	5.29E+1	7.94E+1	7.94E+1	7.94E+1	1.32E+2	1.32E+2	1.32E+2	3.99E+2	3.99E+2	3.99E+2	5.36E+2	5.36E+2	5.36E+2
XXB	U-234	3.09E+2	3.09E+2	3.09E+2	4.63E+2	4.63E+2	4.63E+2	7.72E+2	7.72E+2	7.72E+2	2.33E+3	2.33E+3	2.33E+3	3.12E+3	3.12E+3	3.12E+3
	U-235	1.04E+1	1.04E+1	1.04E+1	1.56E+1	1.56E+1	1.56E+1	2.60E+1	2.60E+1	2.60E+1	7.58E+1	7.58E+1	7.58E+1	9.86E+1	9.86E+1	9.86E+1
	U-238	5.29E+1	5.29E+1	5.29E+1	7.94E+1	7.94E+1	7.94E+1	1.32E+2	1.32E+2	1.32E+2	3.99E+2	3.99E+2	3.99E+2	5.36E+2	5.36E+2	5.36E+2
XXC	U-234	3.09E+2	3.09E+2	3.09E+2	4.63E+2	4.63E+2	4.63E+2	7.72E+2	7.72E+2	7.72E+2	2.33E+3	2.33E+3	2.33E+3	3.12E+3	3.12E+3	3.12E+3
	U-235	1.04E+1	1.04E+1	1.04E+1	1.56E+1	1.56E+1	1.56E+1	2.60E+1	2.60E+1	2.60E+1	7.58E+1	7.58E+1	7.58E+1	9.86E+1	9.86E+1	9.86E+1
	U-238	5.29E+1	5.29E+1	5.29E+1	7.94E+1	7.94E+1	7.94E+1	1.32E+2	1.32E+2	1.32E+2	3.99E+2	3.99E+2	3.99E+2	5.36E+2	5.36E+2	5.36E+2
XXIA	Th-232	2.26E+0	2.26E+0	2.26E+0	3.39E+0	3.39E+0	3.39E+0	5.66E+0	5.66E+0	5.66E+0	1.70E+1	1.70E+1	1.70E+1	2.26E+1	2.26E+1	2.26E+1
XXIB	Th-232	2.26E+0	2.26E+0	2.26E+0	3.39E+0	3.39E+0	3.39E+0	5.66E+0	5.66E+0	5.66E+0	1.70E+1	1.70E+1	1.70E+1	2.26E+1	2.26E+1	2.26E+1
XXIC	Th-232	2.26E+0	2.26E+0	2.26E+0	3.39E+0	3.39E+0	3.39E+0	5.66E+0	5.66E+0	5.66E+0	1.70E+1	1.70E+1	1.70E+1	2.26E+1	2.26E+1	2.26E+1
XXII	Ra-226	2.47E-1	2.18E-1	2.18E-1	4.81E-1	3.12E-1	3.12E-1	9.82E-1	7.51E-1	7.51E-1	1.40E+0	1.29E+0	1.29E+0	2.38E+0	1.44E+0	1.44E+0
	Th-232	1.93E+0	1.32E+0	1.32E+0	2.87E+0	2.26E+0	2.26E+0	4.52E+0	3.58E+0	3.58E+0	1.51E+1	1.18E+1	1.18E+1	1.91E+1	1.61E+1	1.61E+1
	U-234	1.44E+0	1.35E+0	1.35E+0	1.82E+0	1.57E+0	1.57E+0	4.27E+0	2.66E+0	2.66E+0	8.70E+0	7.30E+0	7.30E+0	1.78E+1	9.47E+0	9.47E+0
	U-235	6.77E-2	6.33E-2	6.33E-2	8.57E-2	7.36E-2	7.36E-2	2.01E-1	1.25E-1	1.25E-1	4.09E-1	3.43E-1	3.43E-1	8.39E-1	4.45E-1	4.45E-1
	U-238	1.44E+0	1.35E+0	1.35E+0	1.82E+0	1.57E+0	1.57E+0	4.27E+0	2.66E+0	2.66E+0	8.70E+0	7.30E+0	7.30E+0	1.78E+1	9.47E+0	9.47E+0

Table M-26. POTENTIAL CANCER DEATHS OF WORKERS--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.24E-3	5.24E-3	5.24E-3	5.05E-3	5.05E-3	5.05E-3	4.79E-3	4.79E-3	4.79E-3	4.08E-3	4.08E-3	4.08E-3	3.90E-3	3.90E-3	3.90E-3
II	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1
III	1.93E-3	1.93E-3	1.93E-3	1.79E-3	1.79E-3	1.79E-3	1.62E-3	1.62E-3	1.62E-3	7.47E-4	7.47E-4	7.47E-4	4.83E-4	4.83E-4	4.83E-4
IV	5.75E-4	5.75E-4	5.75E-4	5.67E-4	5.67E-4	5.67E-4	5.50E-4	5.50E-4	5.50E-4	4.67E-4	4.67E-4	4.67E-4	4.25E-4	4.25E-4	4.25E-4
V	1.50E-1	1.50E-1	1.50E-1	1.49E-1	1.49E-1	1.49E-1	1.46E-1	1.46E-1	1.46E-1	1.31E-1	1.31E-1	1.31E-1	1.24E-1	1.24E-1	1.24E-1
VI	1.96E-2	1.96E-2	1.96E-2	1.95E-2	1.95E-2	1.95E-2	1.94E-2	1.94E-2	1.94E-2	1.90E-2	1.90E-2	1.90E-2	1.87E-2	1.87E-2	1.87E-2
VII	3.97E-2	3.97E-2	3.97E-2	3.65E-2	3.65E-2	3.65E-2	2.84E-2	2.84E-2	2.84E-2	1.18E-2	1.18E-2	1.18E-2	9.32E-3	9.32E-3	9.32E-3
IX	1.13E-4	1.13E-4	1.13E-4	9.53E-5	9.53E-5	9.53E-5	7.78E-5	7.78E-5	7.78E-5	3.65E-5	3.65E-5	3.65E-5	2.56E-5	2.56E-5	2.56E-5
X	7.81E-5	1.17E-4	1.17E-4	7.11E-5	1.11E-4	1.11E-4	6.24E-5	9.83E-5	9.83E-5	4.35E-5	6.09E-5	6.09E-5	3.76E-5	5.28E-5	5.28E-5
XII	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.37E-4	5.37E-4	5.37E-4	5.37E-4	5.37E-4	5.37E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.30E-5	5.30E-5	5.30E-5	5.28E-5	5.28E-5	5.28E-5	5.26E-5	5.26E-5	5.26E-5	5.19E-5	5.19E-5	5.19E-5	5.15E-5	5.15E-5	5.15E-5
XVIB	5.30E-5	5.30E-5	5.30E-5	5.28E-5	5.28E-5	5.28E-5	5.26E-5	5.26E-5	5.26E-5	5.19E-5	5.19E-5	5.19E-5	5.15E-5	5.15E-5	5.15E-5
XVIC	5.30E-5	5.30E-5	5.30E-5	5.28E-5	5.28E-5	5.28E-5	5.26E-5	5.26E-5	5.26E-5	5.19E-5	5.19E-5	5.19E-5	5.15E-5	5.15E-5	5.15E-5
XVIII	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.38E-5	4.38E-5	4.38E-5	4.35E-5	4.35E-5	4.35E-5
XVIII A	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.38E-5	4.38E-5	4.38E-5	4.35E-5	4.35E-5	4.35E-5
XVIII B	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.38E-5	4.38E-5	4.38E-5	4.35E-5	4.35E-5	4.35E-5
XVIII C	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.38E-5	4.38E-5	4.38E-5	4.35E-5	4.35E-5	4.35E-5
XXA	5.99E-6	9.69E-6	9.69E-6	2.47E-6	6.21E-6	6.21E-6	1.61E-6	2.20E-6	2.20E-6	1.28E-6	1.42E-6	1.42E-6	1.19E-6	1.33E-6	1.33E-6
XXB	5.99E-6	5.99E-6	5.99E-6	2.47E-6	2.47E-6	2.47E-6	1.61E-6	1.61E-6	1.61E-6	1.28E-6	1.28E-6	1.28E-6	1.19E-6	1.19E-6	1.19E-6
XXC	5.99E-6	5.99E-6	5.99E-6	2.47E-6	2.47E-6	2.47E-6	1.61E-6	1.61E-6	1.61E-6	1.28E-6	1.28E-6	1.28E-6	1.19E-6	1.19E-6	1.19E-6
XXIA	7.81E-4	7.81E-4	7.81E-4	7.79E-4	7.79E-4	7.79E-4	7.74E-4	7.74E-4	7.74E-4	7.51E-4	7.51E-4	7.51E-4	7.31E-4	7.31E-4	7.31E-4
XXIB	7.81E-4	7.81E-4	7.81E-4	7.79E-4	7.79E-4	7.79E-4	7.74E-4	7.74E-4	7.74E-4	7.51E-4	7.51E-4	7.51E-4	7.31E-4	7.31E-4	7.31E-4
XXIC	7.81E-4	7.81E-4	7.81E-4	7.79E-4	7.79E-4	7.79E-4	7.74E-4	7.74E-4	7.74E-4	7.51E-4	7.51E-4	7.51E-4	7.31E-4	7.31E-4	7.31E-4
XXII	1.98E-2	1.98E-2	1.98E-2	1.98E-2	1.98E-2	1.98E-2	1.97E-2	1.97E-2	1.97E-2	1.93E-2	1.93E-2	1.93E-2	1.90E-2	1.91E-2	1.91E-2
DOE	8.82E-1	8.82E-1	8.82E-1	8.75E-1	8.75E-1	8.75E-1	8.61E-1	8.61E-1	8.61E-1	8.14E-1	8.15E-1	8.15E-1	7.97E-1	7.97E-1	7.97E-1
DOD	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.37E-4	5.37E-4	5.37E-4	5.37E-4	5.37E-4	5.37E-4
NRC	2.67E-2	2.67E-2	2.67E-2	2.66E-2	2.66E-2	2.66E-2	2.64E-2	2.64E-2	2.64E-2	2.58E-2	2.58E-2	2.58E-2	2.53E-2	2.53E-2	2.53E-2
Total	9.09E-1	9.10E-1	9.10E-1	9.02E-1	9.02E-1	9.02E-1	8.88E-1	8.88E-1	8.88E-1	8.40E-1	8.41E-1	8.41E-1	8.23E-1	8.23E-1	8.23E-1

Table M-27. POTENTIAL CANCER DEATHS OF WORKERS--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.85E-3	5.85E-3	5.85E-3	5.70E-3	5.70E-3	5.70E-3	5.60E-3	5.60E-3	5.60E-3	5.31E-3	5.31E-3	5.31E-3	5.09E-3	5.09E-3	5.09E-3
II	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1
III	2.44E-3	2.44E-3	2.44E-3	2.42E-3	2.42E-3	2.42E-3	2.37E-3	2.37E-3	2.37E-3	2.04E-3	2.04E-3	2.04E-3	1.80E-3	1.80E-3	1.80E-3
IV	6.11E-4	6.11E-4	6.11E-4	6.03E-4	6.03E-4	6.03E-4	5.96E-4	5.96E-4	5.96E-4	5.76E-4	5.76E-4	5.76E-4	5.66E-4	5.66E-4	5.66E-4
V	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.53E-1	1.53E-1	1.53E-1	1.51E-1	1.51E-1	1.51E-1	1.49E-1	1.49E-1	1.49E-1
VI	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.96E-2	1.96E-2	1.96E-2	1.95E-2	1.95E-2	1.95E-2
VII	5.27E-2	5.27E-2	5.27E-2	4.85E-2	4.85E-2	4.85E-2	4.56E-2	4.56E-2	4.56E-2	3.97E-2	3.97E-2	3.97E-2	3.51E-2	3.51E-2	3.51E-2
IX	1.86E-4	1.86E-4	1.86E-4	1.64E-4	1.64E-4	1.64E-4	1.48E-4	1.48E-4	1.48E-4	1.13E-4	1.13E-4	1.13E-4	8.91E-5	8.91E-5	8.91E-5
X	1.23E-4	1.24E-4	1.24E-4	1.13E-4	1.24E-4	1.24E-4	1.04E-4	1.24E-4	1.24E-4	8.41E-5	1.21E-4	1.21E-4	7.53E-5	1.16E-4	1.16E-4
XII	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4
XIIIA	2.82E-7	2.82E-7	2.82E-7	1.68E-7	1.68E-7	1.68E-7	3.56E-8	3.56E-8	3.56E-8	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.82E-7	2.82E-7	2.82E-7	1.68E-7	1.68E-7	1.68E-7	3.56E-8	3.56E-8	3.56E-8	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.82E-7	2.82E-7	2.82E-7	1.68E-7	1.68E-7	1.68E-7	3.56E-8	3.56E-8	3.56E-8	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.29E-5	5.29E-5	5.29E-5
XVIB	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.29E-5	5.29E-5	5.29E-5
XVIC	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.29E-5	5.29E-5	5.29E-5
XVIIIA	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5
XVIIIB	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5
XVIIIC	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5
XXA	2.99E-5	3.33E-5	3.33E-5	1.97E-5	2.35E-5	2.35E-5	1.46E-5	1.89E-5	1.89E-5	4.16E-6	9.51E-6	9.51E-6	1.76E-6	4.89E-6	4.89E-6
XXB	2.99E-5	3.23E-5	3.23E-5	1.97E-5	2.24E-5	2.24E-5	1.46E-5	1.78E-5	1.78E-5	4.16E-6	7.95E-6	7.95E-6	1.76E-6	3.29E-6	3.29E-6
XXC	2.99E-5	2.99E-5	2.99E-5	1.97E-5	1.97E-5	1.97E-5	1.46E-5	1.46E-5	1.46E-5	4.16E-6	4.16E-6	4.16E-6	1.76E-6	1.76E-6	1.76E-6
XXIA	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.83E-4	7.83E-4	7.83E-4	7.81E-4	7.81E-4	7.81E-4	7.78E-4	7.78E-4	7.78E-4
XXIB	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.83E-4	7.83E-4	7.83E-4	7.81E-4	7.81E-4	7.81E-4	7.78E-4	7.78E-4	7.78E-4
XXIC	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.83E-4	7.83E-4	7.83E-4	7.81E-4	7.81E-4	7.81E-4	7.78E-4	7.78E-4	7.78E-4
XXII	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.98E-2	1.98E-2	1.98E-2	1.98E-2	1.98E-2	1.98E-2
DOE	9.04E-1	9.04E-1	9.04E-1	8.99E-1	8.99E-1	8.99E-1	8.95E-1	8.95E-1	8.95E-1	8.84E-1	8.84E-1	8.84E-1	8.74E-1	8.74E-1	8.74E-1
DOD	5.41E-4	5.41E-4	5.41E-4	5.40E-4	5.40E-4	5.40E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4
NRC	2.71E-2	2.71E-2	2.71E-2	2.69E-2	2.70E-2	2.70E-2	2.69E-2	2.69E-2	2.69E-2	2.67E-2	2.67E-2	2.67E-2	2.66E-2	2.66E-2	2.66E-2
Total	9.32E-1	9.32E-1	9.32E-1	9.26E-1	9.26E-1	9.26E-1	9.22E-1	9.22E-1	9.22E-1	9.11E-1	9.11E-1	9.11E-1	9.01E-1	9.02E-1	9.02E-1

Table M-28. POTENTIAL CANCER DEATHS OF WORKERS--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.72E-3	4.72E-3	4.72E-3	4.48E-3	4.48E-3	4.48E-3	4.12E-3	4.12E-3	4.12E-3	2.96E-3	2.96E-3	2.96E-3	2.58E-3	2.58E-3	2.58E-3
II	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1
III	1.56E-3	1.56E-3	1.56E-3	1.29E-3	1.29E-3	1.29E-3	8.19E-4	8.19E-4	8.19E-4	2.15E-4	2.15E-4	2.15E-4	1.21E-4	1.21E-4	1.21E-4
IV	5.40E-4	5.40E-4	5.40E-4	5.14E-4	5.14E-4	5.14E-4	4.63E-4	4.63E-4	4.63E-4	2.05E-4	2.05E-4	2.05E-4	7.65E-5	7.65E-5	7.65E-5
V	1.45E-1	1.45E-1	1.45E-1	1.41E-1	1.41E-1	1.41E-1	1.33E-1	1.33E-1	1.33E-1	1.11E-1	1.11E-1	1.11E-1	1.05E-1	1.05E-1	1.05E-1
VI	1.94E-2	1.94E-2	1.94E-2	1.93E-2	1.93E-2	1.93E-2	1.90E-2	1.90E-2	1.90E-2	1.78E-2	1.78E-2	1.78E-2	1.75E-2	1.75E-2	1.75E-2
VII	2.37E-2	2.37E-2	2.37E-2	1.67E-2	1.67E-2	1.67E-2	1.10E-2	1.10E-2	1.10E-2	6.92E-5	6.92E-5	6.92E-5	.00E+0	.00E+0	.00E+0
IX	6.50E-5	6.50E-5	6.50E-5	4.69E-5	4.69E-5	4.69E-5	3.21E-5	3.21E-5	3.21E-5	5.82E-6	5.82E-6	5.82E-6	.00E+0	.00E+0	.00E+0
X	6.39E-5	1.03E-4	1.03E-4	5.69E-5	8.96E-5	8.96E-5	4.89E-5	7.11E-5	7.11E-5	2.86E-5	3.98E-5	3.98E-5	2.45E-5	3.26E-5	3.26E-5
XII	5.38E-4	5.38E-4	5.38E-4	5.37E-4	5.37E-4	5.37E-4	5.36E-4	5.36E-4	5.36E-4	5.32E-4	5.32E-4	5.32E-4	5.31E-4	5.31E-4	5.31E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.25E-5	5.25E-5	5.25E-5	5.23E-5	5.23E-5	5.23E-5	5.20E-5	5.20E-5	5.20E-5	4.90E-5	4.90E-5	4.90E-5	4.73E-5	4.73E-5	4.73E-5
XVIB	5.25E-5	5.25E-5	5.25E-5	5.23E-5	5.23E-5	5.23E-5	5.20E-5	5.20E-5	5.20E-5	4.90E-5	4.90E-5	4.90E-5	4.73E-5	4.73E-5	4.73E-5
XVIC	5.25E-5	5.25E-5	5.25E-5	5.23E-5	5.23E-5	5.23E-5	5.20E-5	5.20E-5	5.20E-5	4.90E-5	4.90E-5	4.90E-5	4.73E-5	4.73E-5	4.73E-5
XVIIIA	4.44E-5	4.44E-5	4.44E-5	4.42E-5	4.42E-5	4.42E-5	4.38E-5	4.38E-5	4.38E-5	4.19E-5	4.19E-5	4.19E-5	4.09E-5	4.09E-5	4.09E-5
XVIIIB	4.44E-5	4.44E-5	4.44E-5	4.42E-5	4.42E-5	4.42E-5	4.38E-5	4.38E-5	4.38E-5	4.19E-5	4.19E-5	4.19E-5	4.09E-5	4.09E-5	4.09E-5
XVIIIC	4.44E-5	4.44E-5	4.44E-5	4.42E-5	4.42E-5	4.42E-5	4.38E-5	4.38E-5	4.38E-5	4.19E-5	4.19E-5	4.19E-5	4.09E-5	4.09E-5	4.09E-5
XXA	1.48E-6	1.64E-6	1.64E-6	1.36E-6	1.53E-6	1.53E-6	1.20E-6	1.38E-6	1.38E-6	8.28E-7	1.02E-6	1.02E-6	7.00E-7	9.25E-7	9.25E-7
XXB	1.48E-6	1.60E-6	1.60E-6	1.36E-6	1.48E-6	1.48E-6	1.20E-6	1.33E-6	1.33E-6	8.28E-7	9.64E-7	9.64E-7	7.00E-7	8.73E-7	8.73E-7
XXC	1.48E-6	1.48E-6	1.48E-6	1.36E-6	1.36E-6	1.36E-6	1.20E-6	1.20E-6	1.20E-6	8.28E-7	8.28E-7	8.28E-7	7.00E-7	7.00E-7	7.00E-7
XXIA	7.71E-4	7.71E-4	7.71E-4	7.64E-4	7.64E-4	7.64E-4	7.50E-4	7.50E-4	7.50E-4	6.30E-4	6.30E-4	6.30E-4	5.86E-4	5.86E-4	5.86E-4
XXIB	7.71E-4	7.71E-4	7.71E-4	7.64E-4	7.64E-4	7.64E-4	7.50E-4	7.50E-4	7.50E-4	6.30E-4	6.30E-4	6.30E-4	5.86E-4	5.86E-4	5.86E-4
XXIC	7.71E-4	7.71E-4	7.71E-4	7.64E-4	7.64E-4	7.64E-4	7.50E-4	7.50E-4	7.50E-4	6.30E-4	6.30E-4	6.30E-4	5.86E-4	5.86E-4	5.86E-4
XXII	1.96E-2	1.97E-2	1.97E-2	1.95E-2	1.96E-2	1.96E-2	1.93E-2	1.94E-2	1.94E-2	1.83E-2	1.84E-2	1.84E-2	1.81E-2	1.82E-2	1.82E-2
DOE	8.54E-1	8.54E-1	8.54E-1	8.38E-1	8.39E-1	8.39E-1	8.16E-1	8.17E-1	8.17E-1	7.48E-1	7.49E-1	7.49E-1	7.31E-1	7.32E-1	7.32E-1
DOD	5.38E-4	5.38E-4	5.38E-4	5.37E-4	5.37E-4	5.37E-4	5.36E-4	5.36E-4	5.36E-4	5.32E-4	5.32E-4	5.32E-4	5.31E-4	5.31E-4	5.31E-4
NRC	2.63E-2	2.63E-2	2.63E-2	2.62E-2	2.62E-2	2.62E-2	2.58E-2	2.58E-2	2.58E-2	2.26E-2	2.26E-2	2.26E-2	2.14E-2	2.14E-2	2.14E-2
Total	8.81E-1	8.81E-1	8.81E-1	8.65E-1	8.66E-1	8.66E-1	8.42E-1	8.43E-1	8.43E-1	7.71E-1	7.72E-1	7.72E-1	7.53E-1	7.54E-1	7.54E-1

Table M-29. DOSE TO MAXIMALLY EXPOSED INDIVIDUAL (mrem/yr)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	9.99E-2	9.99E-2	9.99E-2	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-1	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-2	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	9.99E-1	9.99E-1	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-3	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-4	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-5	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-6	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-7	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0
III	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
IV	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
V	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
VI	9.99E-2	9.99E-2	9.99E-2	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
VII	2.67E-1	2.67E-1	2.67E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
IX	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
X	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XII	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	9.99E-1	9.99E-1	9.99E-1	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XIIIA	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	3.28E+0	3.28E+0	3.28E+0
XIIIB	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	3.28E+0	3.28E+0	3.28E+0
XIIIC	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	3.28E+0	3.28E+0	3.28E+0
XVIA	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XVIB	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XVIC	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XVIIIA	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XVIIIB	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XVIIIC	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXA	1.05E-1	1.62E-1	1.62E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXB	1.05E-1	1.05E-1	1.05E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXC	1.05E-1	1.05E-1	1.05E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXIA	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXIB	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXIC	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXII	9.99E-2	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0

Table M-30. DOSE TO MAXIMALLY EXPOSED INDIVIDUAL (mrem/yr)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.49E+1	7.49E+1	7.49E+1	1.00E+2	1.00E+2	1.00E+2
II-1	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	9.99E+1	1.00E+2	1.00E+2
II-2	9.99E+0	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
II-3	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	9.99E+1	1.00E+2	1.00E+2
II-4	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
II-5	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
II-6	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
II-7	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0
III	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
IV	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
V	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
VI	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
VII	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.51E+1	7.51E+1	7.51E+1	1.00E+2	1.00E+2	1.00E+2
IX	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
X	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.51E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XII	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.51E+1	7.51E+1	7.51E+1	1.00E+2	1.00E+2	1.00E+2
XIIIA	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0
XIIIB	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0
XIIIC	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0
XVIA	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XVIB	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XVIC	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XVIII A	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XVIII B	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XVIII C	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXA	9.99E+0	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXB	9.99E+0	9.99E+0	9.99E+0	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXC	9.99E+0	9.99E+0	9.99E+0	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXIA	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXIB	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXIC	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXII	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2

Table M-31. DOSE TO MAXIMALLY EXPOSED INDIVIDUAL (mrem/yr)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	9.99E-2	9.99E-2	9.99E-2	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-1	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-2	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-3	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-4	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	9.99E-1	9.99E-1	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-5	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-6	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-7	1.00E-1	1.00E-1	1.00E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1
III	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
IV	9.99E-2	9.99E-2	9.99E-2	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
V	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
VI	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	9.99E-1	9.99E-1	9.99E-1	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
VII	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
IX	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
X	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XII	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XIIIA	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0
XIIIB	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0
XIIIC	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0
XVIA	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XVIB	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XVIC	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XVIIIA	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XVIIIB	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XVIIIC	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXA	1.00E-1	9.99E-2	9.99E-2	4.99E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXB	1.00E-1	1.00E-1	1.00E-1	4.99E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXC	1.00E-1	1.00E-1	1.00E-1	4.99E-1	4.99E-1	4.99E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXIA	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXIB	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXIC	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXII	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0

Table M-32. DOSE TO MAXIMALLY EXPOSED INDIVIDUAL (mrem/yr)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
II-1	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.51E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
II-2	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.51E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
II-3	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
II-4	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
II-5	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
II-6	9.99E+0	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
II-7	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1
III	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
IV	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
V	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
VI	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
VII	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	9.87E+1	9.87E+1	9.87E+1
IX	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	9.74E+1	9.74E+1	9.74E+1
X	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XII	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	9.99E+1	9.99E+1	9.99E+1
XIIIA	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0
XIIIB	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0
XIIIC	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0	1.10E+0
XVIA	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	9.99E+1	9.99E+1	9.99E+1
XVIB	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	9.99E+1	9.99E+1	9.99E+1
XVIC	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	9.99E+1	9.99E+1	9.99E+1
XVIII A	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XVIII B	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XVIII C	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXA	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXB	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXC	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXIA	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXIB	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXIC	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXII	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2

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 Table M-33. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.15E+2	2.34E+2	2.34E+2	2.12E+2	2.30E+2	2.30E+2	2.10E+2	2.28E+2	2.28E+2	2.04E+2	2.21E+2	2.21E+2	2.00E+2	2.17E+2	2.17E+2
II	5.02E+3	4.89E+4	3.96E+5	5.02E+3	4.89E+4	3.96E+5	5.02E+3	4.89E+4	3.96E+5	5.02E+3	4.89E+4	3.96E+5	5.02E+3	4.89E+4	3.95E+5
III	9.48E+1	1.05E+2	1.05E+2	9.47E+1	1.05E+2	1.05E+2	9.44E+1	1.05E+2	1.05E+2	9.17E+1	1.02E+2	1.02E+2	8.75E+1	9.69E+1	9.69E+1
IV	2.82E+1	7.34E+1	8.21E+2	2.80E+1	7.28E+1	8.15E+2	2.78E+1	7.24E+1	8.10E+2	2.73E+1	7.12E+1	7.96E+2	2.70E+1	7.03E+1	7.87E+2
V	5.61E+3	6.08E+3	6.08E+3	5.60E+3	6.08E+3	6.08E+3	5.59E+3	6.07E+3	6.07E+3	5.56E+3	6.04E+3	6.04E+3	5.53E+3	6.01E+3	6.01E+3
VI	1.52E+3	9.32E+3	5.70E+4	1.52E+3	9.32E+3	5.70E+4	1.52E+3	9.32E+3	5.70E+4	1.52E+3	9.31E+3	5.70E+4	1.52E+3	9.31E+3	5.70E+4
VII	8.49E+3	7.63E+4	6.20E+5	8.27E+3	7.43E+4	6.03E+5	7.96E+3	7.14E+4	5.80E+5	7.27E+3	6.50E+4	5.28E+5	6.83E+3	6.10E+4	4.95E+5
IX	4.02E+1	3.61E+2	2.30E+3	3.81E+1	3.43E+2	2.18E+3	3.62E+1	3.26E+2	2.07E+3	3.15E+1	2.83E+2	1.80E+3	2.83E+1	2.54E+2	1.62E+3
X	1.39E+3	1.86E+4	2.12E+4	1.39E+3	1.86E+4	2.12E+4	1.39E+3	1.86E+4	2.12E+4	1.38E+3	1.85E+4	2.11E+4	1.37E+3	1.83E+4	2.09E+4
XII	5.11E+0	1.56E+1	1.60E+1	5.11E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1
XIIIA	2.09E-2	6.83E-2	1.82E-1	1.68E-2	5.48E-2	1.46E-1	1.17E-2	3.83E-2	1.02E-1	2.31E-3	7.54E-3	2.01E-2	.00E+0	.00E+0	.00E+0
XIIIB	1.68E-2	3.02E-2	1.05E-1	1.35E-2	2.42E-2	8.39E-2	9.43E-3	1.69E-2	5.86E-2	1.86E-3	3.34E-3	1.15E-2	.00E+0	.00E+0	.00E+0
XIIIC	1.11E-2	1.34E-2	4.07E+1	8.91E-3	1.07E-2	3.27E+1	6.22E-3	7.50E-3	2.28E+1	1.23E-3	1.48E-3	4.50E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E-1	3.84E-1	3.84E-1	3.65E-1	3.84E-1	3.84E-1	3.65E-1	3.84E-1	3.65E-1	3.84E-1	3.65E-1	3.84E-1	3.65E-1	3.84E-1	3.84E-1
XVIB	3.61E-1	3.79E-1	3.79E-1	3.61E-1	3.79E-1	3.79E-1	3.61E-1	3.79E-1	3.61E-1	3.79E-1	3.61E-1	3.79E-1	3.61E-1	3.78E-1	3.78E-1
XVIC	3.52E-1	3.67E-1	3.67E-1	3.52E-1	3.67E-1	3.67E-1	3.52E-1	3.67E-1	3.52E-1	3.67E-1	3.52E-1	3.67E-1	3.52E-1	3.67E-1	3.67E-1
XVIIIA	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0
XVIIIB	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0
XVIIIC	9.79E-1	1.07E+0	1.07E+0	9.79E-1	1.07E+0	1.07E+0	9.79E-1	1.07E+0	1.07E+0	9.79E-1	1.07E+0	1.07E+0	9.79E-1	1.07E+0	1.07E+0
XXA	3.05E-1	1.51E+0	1.63E+2	2.31E-1	1.25E+0	1.35E+2	1.96E-1	1.08E+0	1.16E+2	1.36E-1	7.95E-1	8.57E+1	1.02E-1	6.50E-1	7.00E+1
XXB	2.46E-1	8.93E-1	1.12E+2	1.86E-1	6.76E-1	8.51E+1	1.58E-1	5.73E-1	7.22E+1	1.10E-1	3.98E-1	5.02E+1	8.27E-2	3.00E-1	3.78E+1
XXC	1.62E-1	5.88E-1	7.12E+3	1.23E-1	4.46E-1	5.39E+3	1.04E-1	3.78E-1	4.57E+3	7.25E-2	2.63E-1	3.18E+3	5.46E-2	1.98E-1	2.40E+3
XXIA	2.89E+0	3.00E+1	2.84E+2	2.89E+0	3.00E+1	2.84E+2	2.89E+0	3.00E+1	2.84E+2	2.89E+0	3.00E+1	2.84E+2	2.89E+0	3.00E+1	2.84E+2
XXIB	2.87E+0	2.97E+1	2.57E+2	2.87E+0	2.97E+1	2.57E+2	2.87E+0	2.97E+1	2.57E+2	2.87E+0	2.97E+1	2.57E+2	2.87E+0	2.97E+1	2.57E+2
XXIC	2.83E+0	2.86E+1	2.07E+2	2.83E+0	2.86E+1	2.07E+2	2.83E+0	2.86E+1	2.07E+2	2.83E+0	2.86E+1	2.07E+2	2.83E+0	2.85E+1	2.07E+2
XXII	1.55E+2	5.19E+4	7.92E+4	1.55E+2	5.19E+4	7.92E+4	1.55E+2	5.19E+4	7.92E+4	1.55E+2	5.19E+4	7.92E+4	1.54E+2	5.19E+4	7.91E+4
DOE	5.67E+4	7.22E+5	2.89E+6	5.65E+4	7.20E+5	2.87E+6	5.61E+4	7.17E+5	2.85E+6	5.54E+4	7.11E+5	2.80E+6	5.48E+4	7.06E+5	2.76E+6
DOD	5.24E+0	1.59E+1	1.32E+2	5.22E+0	1.58E+1	1.09E+2	5.18E+0	1.58E+1	8.12E+1	5.12E+0	1.56E+1	2.88E+1	5.10E+0	1.56E+1	1.60E+1
NRC	1.75E+2	7.78E+2	4.01E+4	1.74E+2	7.75E+2	3.18E+4	1.73E+2	7.74E+2	2.78E+4	1.73E+2	7.71E+2	2.11E+4	1.72E+2	7.69E+2	1.73E+4
Total	5.69E+4	7.23E+5	2.93E+6	5.66E+4	7.21E+5	2.90E+6	5.63E+4	7.18E+5	2.88E+6	5.55E+4	7.11E+5	2.82E+6	5.50E+4	7.07E+5	2.78E+6

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 Table M-34. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.91E+2	2.08E+2	2.08E+2	1.84E+2	2.00E+2	2.00E+2	1.75E+2	1.90E+2	1.90E+2	1.49E+2	1.62E+2	1.62E+2	1.42E+2	1.54E+2	1.54E+2
II	5.02E+3	4.89E+4	3.95E+5	5.02E+3	4.89E+4	3.95E+5	5.02E+3	4.88E+4	3.94E+5	5.02E+3	4.88E+4	3.91E+5	5.02E+3	4.87E+4	3.91E+5
III	7.52E+1	8.32E+1	8.32E+1	6.94E+1	7.69E+1	7.69E+1	6.27E+1	6.95E+1	6.95E+1	2.90E+1	3.21E+1	3.21E+1	1.88E+1	2.08E+1	2.08E+1
IV	2.64E+1	6.87E+1	7.68E+2	2.60E+1	6.77E+1	7.57E+2	2.52E+1	6.57E+1	7.35E+2	2.14E+1	5.58E+1	6.24E+2	1.95E+1	5.08E+1	5.68E+2
V	5.46E+3	5.93E+3	5.93E+3	5.40E+3	5.86E+3	5.86E+3	5.29E+3	5.75E+3	5.75E+3	4.77E+3	5.17E+3	5.17E+3	4.50E+3	4.88E+3	4.88E+3
VI	1.52E+3	9.31E+3	5.70E+4	1.52E+3	9.30E+3	5.69E+4	1.51E+3	9.29E+3	5.69E+4	1.49E+3	9.20E+3	5.64E+4	1.47E+3	9.15E+3	5.61E+4
VII	6.15E+3	5.48E+4	4.45E+5	5.64E+3	5.02E+4	4.07E+5	4.38E+3	3.90E+4	3.16E+5	1.85E+3	1.66E+4	1.35E+5	1.47E+3	1.32E+4	1.07E+5
IX	2.36E+1	2.12E+2	1.35E+3	1.99E+1	1.78E+2	1.14E+3	1.62E+1	1.46E+2	9.28E+2	7.60E+0	6.83E+1	4.35E+2	5.33E+0	4.79E+1	3.05E+2
X	1.36E+3	1.76E+4	2.01E+4	1.35E+3	1.67E+4	1.91E+4	1.34E+3	1.50E+4	1.71E+4	1.27E+3	9.76E+3	1.10E+4	1.24E+3	8.61E+3	9.72E+3
XII	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.09E+0	1.56E+1	1.60E+1	5.09E+0	1.55E+1	1.60E+1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.64E-1	3.83E-1	3.83E-1	3.64E-1	3.83E-1	3.83E-1	3.63E-1	3.82E-1	3.82E-1	3.59E-1	3.78E-1	3.78E-1	3.57E-1	3.76E-1	3.76E-1
XVIB	3.60E-1	3.78E-1	3.78E-1	3.60E-1	3.78E-1	3.78E-1	3.58E-1	3.76E-1	3.76E-1	3.55E-1	3.73E-1	3.73E-1	3.53E-1	3.71E-1	3.71E-1
XVIC	3.52E-1	3.67E-1	3.67E-1	3.51E-1	3.66E-1	3.66E-1	3.50E-1	3.65E-1	3.65E-1	3.47E-1	3.62E-1	3.62E-1	3.45E-1	3.60E-1	3.60E-1
XVIII	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.11E+0	1.11E+0
XVIII A	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.11E+0	1.11E+0	9.96E-1	1.10E+0	1.10E+0	9.89E-1	1.09E+0	1.09E+0
XVIII B	9.79E-1	1.07E+0	1.07E+0	9.78E-1	1.07E+0	1.07E+0	9.77E-1	1.07E+0	1.07E+0	9.65E-1	1.05E+0	1.05E+0	9.58E-1	1.04E+0	1.04E+0
XXA	4.86E-2	3.90E-1	4.21E+1	2.01E-2	2.50E-1	2.70E+1	1.30E-2	8.87E-2	9.59E+0	1.04E-2	5.70E-2	6.18E+0	9.61E-3	5.35E-2	5.80E+0
XXB	3.92E-2	1.43E-1	1.80E+1	1.62E-2	5.89E-2	7.44E+0	1.05E-2	3.83E-2	4.84E+0	8.36E-3	3.05E-2	3.87E+0	7.75E-3	2.83E-2	3.59E+0
XXC	2.59E-2	9.40E-2	1.14E+3	1.07E-2	3.89E-2	4.71E+2	6.93E-3	2.53E-2	3.06E+2	5.52E-3	2.02E-2	2.45E+2	5.12E-3	1.87E-2	2.27E+2
XXIA	2.88E+0	2.99E+1	2.83E+2	2.87E+0	2.98E+1	2.83E+2	2.86E+0	2.97E+1	2.81E+2	2.77E+0	2.88E+1	2.73E+2	2.70E+0	2.80E+1	2.65E+2
XXIB	2.86E+0	2.96E+1	2.56E+2	2.85E+0	2.95E+1	2.55E+2	2.84E+0	2.93E+1	2.54E+2	2.75E+0	2.84E+1	2.46E+2	2.68E+0	2.77E+1	2.40E+2
XXIC	2.82E+0	2.85E+1	2.07E+2	2.82E+0	2.84E+1	2.06E+2	2.80E+0	2.82E+1	2.05E+2	2.72E+0	2.74E+1	1.99E+2	2.64E+0	2.66E+1	1.93E+2
XXII	1.54E+2	5.19E+4	7.91E+4	1.54E+2	5.18E+4	7.90E+4	1.53E+2	5.17E+4	7.87E+4	1.50E+2	5.05E+4	7.69E+4	1.48E+2	5.00E+4	7.62E+4
DOE	5.40E+4	6.99E+5	2.71E+6	5.33E+4	6.93E+5	2.67E+6	5.18E+4	6.78E+5	2.57E+6	4.80E+4	6.39E+5	2.36E+6	4.70E+4	6.29E+5	2.31E+6
DOD	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.09E+0	1.56E+1	1.60E+1	5.09E+0	1.55E+1	1.60E+1
NRC	1.72E+2	7.65E+2	1.12E+4	1.71E+2	7.61E+2	7.93E+3	1.70E+2	7.57E+2	7.04E+3	1.67E+2	7.36E+2	6.57E+3	1.65E+2	7.19E+2	6.34E+3
Total	5.42E+4	7.00E+5	2.72E+6	5.35E+4	6.94E+5	2.68E+6	5.20E+4	6.79E+5	2.58E+6	4.82E+4	6.39E+5	2.36E+6	4.72E+4	6.30E+5	2.32E+6

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 Table M-35. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.13E+2	2.32E+2	2.32E+2	2.08E+2	2.26E+2	2.26E+2	2.04E+2	2.22E+2	2.22E+2	1.94E+2	2.11E+2	2.11E+2	1.86E+2	2.02E+2	2.02E+2
II	5.02E+3	4.89E+4	3.96E+5	5.02E+3	4.89E+4	3.96E+5	5.02E+3	4.89E+4	3.96E+5	5.02E+3	4.89E+4	3.95E+5	5.02E+3	4.89E+4	3.95E+5
III	9.48E+1	1.05E+2	1.05E+2	9.40E+1	1.04E+2	1.04E+2	9.20E+1	1.02E+2	1.02E+2	7.92E+1	8.77E+1	8.77E+1	7.00E+1	7.75E+1	7.75E+1
IV	2.80E+1	7.31E+1	8.17E+2	2.76E+1	7.20E+1	8.05E+2	2.73E+1	7.12E+1	7.96E+2	2.64E+1	6.89E+1	7.70E+2	2.60E+1	6.76E+1	7.56E+2
V	5.60E+3	6.08E+3	6.08E+3	5.59E+3	6.06E+3	6.06E+3	5.57E+3	6.04E+3	6.04E+3	5.48E+3	5.95E+3	5.95E+3	5.41E+3	5.87E+3	5.87E+3
VI	1.52E+3	9.32E+3	5.70E+4	1.52E+3	9.32E+3	5.70E+4	1.52E+3	9.31E+3	5.70E+4	1.52E+3	9.31E+3	5.70E+4	1.52E+3	9.30E+3	5.69E+4
VII	8.41E+3	7.55E+4	6.14E+5	7.66E+3	6.86E+4	5.58E+5	7.16E+3	6.40E+4	5.20E+5	6.14E+3	5.47E+4	4.44E+5	5.41E+3	4.82E+4	3.91E+5
IX	3.88E+1	3.49E+2	2.22E+3	3.42E+1	3.07E+2	1.96E+3	3.08E+1	2.77E+2	1.77E+3	2.35E+1	2.11E+2	1.34E+3	1.86E+1	1.67E+2	1.06E+3
X	1.39E+3	1.86E+4	2.12E+4	1.38E+3	1.86E+4	2.12E+4	1.38E+3	1.85E+4	2.11E+4	1.37E+3	1.81E+4	2.07E+4	1.36E+3	1.75E+4	1.99E+4
XII	5.11E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1
XIIIA	1.87E-2	6.10E-2	1.63E-1	1.11E-2	3.63E-2	9.70E-2	2.35E-3	7.69E-3	2.05E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.50E-2	2.70E-2	9.33E-2	8.95E-3	1.61E-2	5.56E-2	1.89E-3	3.40E-3	1.18E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	9.91E-3	1.20E-2	3.64E+1	5.90E-3	7.12E-3	2.17E+1	1.25E-3	1.51E-3	4.59E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E-1	3.84E-1	3.84E-1	3.65E-1	3.84E-1	3.84E-1	3.65E-1	3.84E-1	3.84E-1	3.64E-1	3.84E-1	3.84E-1	3.64E-1	3.83E-1	3.83E-1
XVIB	3.61E-1	3.79E-1	3.79E-1	3.61E-1	3.79E-1	3.79E-1	3.61E-1	3.79E-1	3.79E-1	3.60E-1	3.78E-1	3.78E-1	3.60E-1	3.78E-1	3.78E-1
XVIC	3.52E-1	3.67E-1	3.67E-1	3.52E-1	3.67E-1	3.67E-1	3.52E-1	3.67E-1	3.67E-1	3.52E-1	3.67E-1	3.67E-1	3.51E-1	3.67E-1	3.67E-1
XVIIIA	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0
XVIIIB	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0
XVIIIC	9.79E-1	1.07E+0	1.07E+0	9.79E-1	1.07E+0	1.07E+0	9.79E-1	1.07E+0	1.07E+0	9.79E-1	1.07E+0	1.07E+0	9.78E-1	1.07E+0	1.07E+0
XXA	2.43E-1	1.34E+0	1.45E+2	1.60E-1	9.46E-1	1.02E+2	1.19E-1	7.62E-1	8.21E+1	3.38E-2	3.83E-1	4.13E+1	1.42E-2	1.97E-1	2.13E+1
XXB	1.96E-1	7.70E-1	9.70E+1	1.29E-1	5.33E-1	6.72E+1	9.57E-2	4.23E-1	5.34E+1	2.73E-2	1.89E-1	2.39E+1	1.15E-2	7.84E-2	9.90E+0
XXC	1.30E-1	4.69E-1	5.68E+3	8.54E-2	3.09E-1	3.74E+3	6.32E-2	2.29E-1	2.77E+3	1.80E-2	6.54E-2	7.92E+2	7.57E-3	2.76E-2	3.34E+2
XXIA	2.89E+0	3.00E+1	2.84E+2	2.89E+0	3.00E+1	2.84E+2	2.89E+0	3.00E+1	2.84E+2	2.88E+0	2.99E+1	2.84E+2	2.87E+0	2.98E+1	2.83E+2
XXIB	2.87E+0	2.97E+1	2.57E+2	2.87E+0	2.97E+1	2.57E+2	2.87E+0	2.97E+1	2.57E+2	2.86E+0	2.96E+1	2.56E+2	2.85E+0	2.95E+1	2.55E+2
XXIC	2.83E+0	2.86E+1	2.07E+2	2.83E+0	2.86E+1	2.07E+2	2.83E+0	2.86E+1	2.07E+2	2.83E+0	2.85E+1	2.07E+2	2.81E+0	2.84E+1	2.06E+2
XXII	1.55E+2	5.19E+4	7.92E+4	1.55E+2	5.19E+4	7.92E+4	1.55E+2	5.19E+4	7.92E+4	1.54E+2	5.19E+4	7.91E+4	1.54E+2	5.19E+4	7.90E+4
DOE	5.66E+4	7.21E+5	2.88E+6	5.58E+4	7.14E+5	2.83E+6	5.53E+4	7.10E+5	2.79E+6	5.40E+4	7.00E+5	2.71E+6	5.31E+4	6.92E+5	2.65E+6
DOD	5.23E+0	1.59E+1	1.20E+2	5.18E+0	1.58E+1	7.78E+1	5.12E+0	1.56E+1	2.91E+1	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1
NRC	1.74E+2	7.76E+2	3.32E+4	1.73E+2	7.73E+2	2.39E+4	1.73E+2	7.71E+2	1.92E+4	1.71E+2	7.65E+2	9.59E+3	1.71E+2	7.61E+2	7.28E+3
Total	5.68E+4	7.22E+5	2.92E+6	5.60E+4	7.15E+5	2.85E+6	5.54E+4	7.10E+5	2.81E+6	5.42E+4	7.00E+5	2.72E+6	5.33E+4	6.92E+5	2.66E+6

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 Table M-36. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.72E+2	1.87E+2	1.87E+2	1.63E+2	1.77E+2	1.77E+2	1.51E+2	1.63E+2	1.63E+2	1.08E+2	1.17E+2	1.17E+2	9.40E+1	1.02E+2	1.02E+2
II	5.02E+3	4.88E+4	3.94E+5	5.02E+3	4.88E+4	3.92E+5	5.02E+3	4.88E+4	3.91E+5	5.01E+3	4.86E+4	3.88E+5	5.01E+3	4.85E+4	3.86E+5
III	6.06E+1	6.71E+1	6.71E+1	5.01E+1	5.54E+1	5.54E+1	3.18E+1	3.52E+1	3.52E+1	8.35E+0	9.24E+0	9.24E+0	4.71E+0	5.21E+0	5.21E+0
IV	2.48E+1	6.45E+1	7.22E+2	2.36E+1	6.15E+1	6.87E+2	2.12E+1	5.53E+1	6.18E+2	9.42E+0	2.45E+1	2.74E+2	3.51E+0	9.14E+0	1.02E+2
V	5.26E+3	5.71E+3	5.71E+3	5.12E+3	5.55E+3	5.55E+3	4.82E+3	5.23E+3	5.23E+3	4.02E+3	4.37E+3	4.37E+3	3.83E+3	4.16E+3	4.16E+3
VI	1.51E+3	9.28E+3	5.68E+4	1.50E+3	9.26E+3	5.67E+4	1.49E+3	9.21E+3	5.64E+4	1.42E+3	8.92E+3	5.48E+4	1.40E+3	8.82E+3	5.43E+4
VII	3.65E+3	3.26E+4	2.64E+5	2.60E+3	2.32E+4	1.88E+5	1.72E+3	1.54E+4	1.25E+5	9.55E+0	8.23E+1	6.65E+2	.00E+0	.00E+0	.00E+0
IX	1.35E+1	1.22E+2	7.75E+2	9.77E+0	8.78E+1	5.59E+2	6.68E+0	6.00E+1	3.82E+2	1.21E+0	1.09E+1	6.94E+1	.00E+0	.00E+0	.00E+0
X	1.34E+3	1.56E+4	1.78E+4	1.32E+3	1.38E+4	1.57E+4	1.29E+3	1.12E+4	1.27E+4	1.17E+3	6.75E+3	7.58E+3	1.14E+3	5.71E+3	6.39E+3
XII	5.10E+0	1.56E+1	1.60E+1	5.09E+0	1.56E+1	1.60E+1	5.08E+0	1.55E+1	1.59E+1	5.05E+0	1.54E+1	1.58E+1	5.04E+0	1.54E+1	1.58E+1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.62E-1	3.81E-1	3.81E-1	3.61E-1	3.80E-1	3.80E-1	3.60E-1	3.79E-1	3.79E-1	3.45E-1	3.64E-1	3.64E-1	3.37E-1	3.56E-1	3.56E-1
XVIB	3.58E-1	3.76E-1	3.76E-1	3.57E-1	3.75E-1	3.75E-1	3.56E-1	3.73E-1	3.73E-1	3.41E-1	3.59E-1	3.59E-1	3.33E-1	3.51E-1	3.51E-1
XVIC	3.50E-1	3.65E-1	3.65E-1	3.49E-1	3.64E-1	3.64E-1	3.47E-1	3.62E-1	3.62E-1	3.33E-1	3.48E-1	3.48E-1	3.25E-1	3.40E-1	3.40E-1
XVIIIA	1.03E+0	1.14E+0	1.14E+0	1.02E+0	1.13E+0	1.13E+0	1.01E+0	1.12E+0	1.12E+0	9.68E-1	1.07E+0	1.07E+0	9.45E-1	1.05E+0	1.05E+0
XVIIIB	1.01E+0	1.11E+0	1.11E+0	1.00E+0	1.11E+0	1.11E+0	9.96E-1	1.10E+0	1.10E+0	9.51E-1	1.05E+0	1.05E+0	9.29E-1	1.03E+0	1.03E+0
XVIIIC	9.77E-1	1.06E+0	1.06E+0	9.73E-1	1.06E+0	1.06E+0	9.64E-1	1.05E+0	1.05E+0	9.21E-1	1.00E+0	1.00E+0	9.00E-1	9.81E-1	9.81E-1
XXA	1.20E-2	6.62E-2	7.17E+0	1.10E-2	6.16E-2	6.68E+0	9.68E-3	5.55E-2	6.02E+0	6.67E-3	4.11E-2	4.47E+0	5.63E-3	3.72E-2	4.05E+0
XXB	9.67E-3	3.80E-2	4.82E+0	8.87E-3	3.53E-2	4.47E+0	7.81E-3	3.16E-2	4.01E+0	5.38E-3	2.29E-2	2.91E+0	4.54E-3	2.08E-2	2.64E+0
XXC	6.39E-3	2.33E-2	2.82E+2	5.86E-3	2.14E-2	2.59E+2	5.16E-3	1.89E-2	2.29E+2	3.56E-3	1.30E-2	1.58E+2	3.00E-3	1.10E-2	1.34E+2
XXIA	2.85E+0	2.96E+1	2.80E+2	2.82E+0	2.93E+1	2.77E+2	2.77E+0	2.87E+1	2.72E+2	2.32E+0	2.42E+1	2.29E+2	2.16E+0	2.25E+1	2.13E+2
XXIB	2.83E+0	2.92E+1	2.53E+2	2.80E+0	2.89E+1	2.51E+2	2.75E+0	2.84E+1	2.46E+2	2.31E+0	2.39E+1	2.07E+2	2.15E+0	2.22E+1	1.92E+2
XXIC	2.79E+0	2.81E+1	2.04E+2	2.76E+0	2.79E+1	2.02E+2	2.71E+0	2.73E+1	1.98E+2	2.28E+0	2.30E+1	1.67E+2	2.12E+0	2.14E+1	1.55E+2
XXII	1.53E+2	5.16E+4	7.86E+4	1.51E+2	5.12E+4	7.79E+4	1.50E+2	5.05E+4	7.70E+4	1.42E+2	4.86E+4	7.37E+4	1.40E+2	4.80E+4	7.28E+4
DOE	5.10E+4	6.72E+5	2.52E+6	4.96E+4	6.56E+5	2.43E+6	4.80E+4	6.40E+5	2.35E+6	4.37E+4	5.98E+5	2.15E+6	4.30E+4	5.90E+5	2.13E+6
DOD	5.10E+0	1.56E+1	1.60E+1	5.09E+0	1.56E+1	1.60E+1	5.08E+0	1.55E+1	1.59E+1	5.05E+0	1.54E+1	1.58E+1	5.04E+0	1.54E+1	1.58E+1
NRC	1.70E+2	7.54E+2	6.89E+3	1.69E+2	7.48E+2	6.73E+3	1.67E+2	7.35E+2	6.48E+3	1.53E+2	6.31E+2	5.30E+3	1.47E+2	5.92E+2	4.87E+3
Total	5.12E+4	6.72E+5	2.52E+6	4.98E+4	6.57E+5	2.44E+6	4.82E+4	6.41E+5	2.36E+6	4.39E+4	5.99E+5	2.16E+6	4.31E+4	5.91E+5	2.14E+6

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 Table M-37. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.45E-2	9.18E-2	9.18E-2	8.32E-2	9.05E-2	9.05E-2	8.23E-2	8.95E-2	8.95E-2	8.00E-2	8.70E-2	8.70E-2	7.85E-2	8.53E-2	8.53E-2
II	1.72E+0	1.68E+1	1.31E+2	1.72E+0	1.68E+1	1.31E+2	1.72E+0	1.68E+1	1.31E+2	1.72E+0	1.68E+1	1.31E+2	1.72E+0	1.68E+1	1.31E+2
III	3.71E-2	4.11E-2	4.11E-2	3.70E-2	4.10E-2	4.10E-2	3.69E-2	4.09E-2	4.09E-2	3.59E-2	3.97E-2	3.97E-2	3.42E-2	3.79E-2	3.79E-2
IV	6.05E-3	1.61E-2	2.48E-1	6.01E-3	1.60E-2	2.46E-1	5.97E-3	1.59E-2	2.45E-1	5.88E-3	1.57E-2	2.41E-1	5.80E-3	1.55E-2	2.38E-1
V	2.20E+0	2.39E+0	2.39E+0	2.20E+0	2.38E+0	2.38E+0	2.20E+0	2.38E+0	2.38E+0	2.18E+0	2.37E+0	2.37E+0	2.17E+0	2.36E+0	2.36E+0
VI	3.50E-1	1.87E+0	1.65E+1	3.50E-1	1.87E+0	1.65E+1	3.50E-1	1.87E+0	1.65E+1	3.49E-1	1.87E+0	1.65E+1	3.49E-1	1.86E+0	1.65E+1
VII	5.65E-1	4.38E+0	3.40E+1	5.53E-1	4.27E+0	3.31E+1	5.35E-1	4.11E+0	3.19E+1	4.95E-1	3.75E+0	2.90E+1	4.69E-1	3.52E+0	2.72E+1
IX	2.31E-3	2.03E-2	1.26E-1	2.19E-3	1.93E-2	1.20E-1	2.08E-3	1.83E-2	1.14E-1	1.81E-3	1.59E-2	9.87E-2	1.63E-3	1.43E-2	8.87E-2
X	1.49E+0	5.05E+0	5.59E+0	1.49E+0	5.04E+0	5.59E+0	1.49E+0	5.04E+0	5.59E+0	1.48E+0	5.03E+0	5.57E+0	1.48E+0	4.99E+0	5.53E+0
XII	2.97E-4	9.20E-4	9.46E-4	2.97E-4	9.20E-4	9.46E-4	2.96E-4	9.19E-4	9.46E-4	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.19E-4	9.45E-4
XIIIA	5.08E-6	1.67E-5	5.26E-5	4.08E-6	1.34E-5	4.22E-5	2.85E-6	9.37E-6	2.95E-5	5.62E-7	1.85E-6	5.81E-6	.00E+0	.00E+0	.00E+0
XIIIB	4.10E-6	7.36E-6	3.06E-5	3.29E-6	5.91E-6	2.45E-5	2.30E-6	4.12E-6	1.71E-5	4.53E-7	8.13E-7	3.38E-6	.00E+0	.00E+0	.00E+0
XIIIC	2.70E-6	3.27E-6	9.76E-3	2.17E-6	2.63E-6	7.83E-3	1.51E-6	1.83E-6	5.47E-3	2.99E-7	3.62E-7	1.08E-3	.00E+0	.00E+0	.00E+0
XVIA	1.46E-4	1.53E-4	1.53E-4	1.46E-4	1.53E-4	1.53E-4	1.46E-4	1.53E-4	1.46E-4	1.46E-4	1.53E-4	1.53E-4	1.46E-4	1.53E-4	1.53E-4
XVIB	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.51E-4	1.51E-4
XVIC	1.40E-4	1.47E-4	1.47E-4	1.40E-4	1.47E-4	1.47E-4	1.40E-4	1.47E-4	1.47E-4	1.40E-4	1.47E-4	1.47E-4	1.40E-4	1.46E-4	1.46E-4
XVIIIA	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4
XVIIIB	3.96E-4	4.38E-4	4.38E-4	3.96E-4	4.38E-4	4.38E-4	3.96E-4	4.38E-4	4.38E-4	3.96E-4	4.38E-4	4.38E-4	3.96E-4	4.38E-4	4.38E-4
XVIIIC	3.82E-4	4.17E-4	4.17E-4	3.82E-4	4.17E-4	4.17E-4	3.82E-4	4.17E-4	4.17E-4	3.82E-4	4.17E-4	4.17E-4	3.82E-4	4.17E-4	4.17E-4
XXA	5.33E-5	3.42E-4	5.07E-2	4.04E-5	2.83E-4	4.20E-2	3.42E-5	2.44E-4	3.63E-2	2.38E-5	1.80E-4	2.67E-2	1.79E-5	1.47E-4	2.18E-2
XXB	4.31E-5	2.21E-4	3.49E-2	3.26E-5	1.67E-4	2.64E-2	2.76E-5	1.42E-4	2.24E-2	1.92E-5	9.86E-5	1.56E-2	1.45E-5	7.43E-5	1.17E-2
XXC	2.85E-5	1.57E-4	1.28E+0	2.16E-5	1.19E-4	9.70E-1	1.83E-5	1.01E-4	8.22E-1	1.27E-5	7.02E-5	5.72E-1	9.58E-6	5.29E-5	4.31E-1
XXIA	1.13E-3	1.18E-2	1.11E-1	1.13E-3	1.18E-2	1.11E-1	1.13E-3	1.18E-2	1.11E-1	1.13E-3	1.18E-2	1.11E-1	1.13E-3	1.18E-2	1.11E-1
XXIB	1.12E-3	1.16E-2	1.00E-1	1.12E-3	1.16E-2	1.00E-1	1.12E-3	1.16E-2	1.00E-1	1.12E-3	1.16E-2	1.00E-1	1.12E-3	1.16E-2	1.00E-1
XXIC	1.10E-3	1.12E-2	8.13E-2	1.10E-3	1.12E-2	8.13E-2	1.10E-3	1.12E-2	8.13E-2	1.10E-3	1.12E-2	8.13E-2	1.10E-3	1.12E-2	8.13E-2
XXII	5.51E-2	1.10E+1	1.59E+1	5.51E-2	1.10E+1	1.59E+1	5.51E-2	1.10E+1	1.59E+1	5.50E-2	1.10E+1	1.59E+1	5.49E-2	1.10E+1	1.59E+1
DOE	1.46E+1	1.47E+2	6.57E+2	1.46E+1	1.47E+2	6.56E+2	1.45E+1	1.47E+2	6.55E+2	1.45E+1	1.46E+2	6.52E+2	1.44E+1	1.46E+2	6.50E+2
DOD	3.30E-4	9.97E-4	2.88E-2	3.24E-4	9.82E-4	2.33E-2	3.15E-4	9.63E-4	1.66E-2	3.00E-4	9.28E-4	4.02E-3	2.96E-4	9.19E-4	9.45E-4
NRC	6.79E-2	3.03E-1	8.57E+0	6.77E-2	3.02E-1	7.04E+0	6.77E-2	3.02E-1	6.30E+0	6.75E-2	3.01E-1	5.06E+0	6.74E-2	3.00E-1	4.36E+0
Total	1.47E+1	1.47E+2	6.66E+2	1.46E+1	1.47E+2	6.63E+2	1.46E+1	1.47E+2	6.61E+2	1.45E+1	1.47E+2	6.57E+2	1.45E+1	1.46E+2	6.54E+2

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 Table M-38. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.50E-2	8.16E-2	8.16E-2	7.24E-2	7.87E-2	7.87E-2	6.86E-2	7.46E-2	7.46E-2	5.84E-2	6.35E-2	6.35E-2	5.58E-2	6.07E-2	6.07E-2
II	1.72E+0	1.68E+1	1.31E+2	1.72E+0	1.68E+1	1.31E+2	1.72E+0	1.67E+1	1.30E+2	1.72E+0	1.67E+1	1.29E+2	1.72E+0	1.67E+1	1.29E+2
III	2.94E-2	3.26E-2	3.26E-2	2.72E-2	3.01E-2	3.01E-2	2.45E-2	2.72E-2	2.72E-2	1.14E-2	1.26E-2	1.26E-2	7.33E-3	8.13E-3	8.13E-3
IV	5.67E-3	1.51E-2	2.32E-1	5.59E-3	1.49E-2	2.29E-1	5.42E-3	1.44E-2	2.22E-1	4.60E-3	1.23E-2	1.88E-1	4.19E-3	1.12E-2	1.72E-1
V	2.14E+0	2.32E+0	2.32E+0	2.12E+0	2.30E+0	2.30E+0	2.08E+0	2.25E+0	2.25E+0	1.87E+0	2.03E+0	2.03E+0	1.77E+0	1.91E+0	1.91E+0
VI	3.48E-1	1.86E+0	1.65E+1	3.47E-1	1.86E+0	1.64E+1	3.45E-1	1.86E+0	1.64E+1	3.38E-1	1.84E+0	1.63E+1	3.34E-1	1.83E+0	1.62E+1
VII	4.29E-1	3.17E+0	2.44E+1	3.94E-1	2.90E+0	2.24E+1	3.07E-1	2.26E+0	1.74E+1	1.27E-1	9.55E-1	7.40E+0	9.97E-2	7.58E-1	5.87E+0
IX	1.36E-3	1.19E-2	7.40E-2	1.14E-3	1.00E-2	6.22E-2	9.32E-4	8.19E-3	5.08E-2	4.37E-4	3.84E-3	2.38E-2	3.06E-4	2.69E-3	1.67E-2
X	1.47E+0	4.85E+0	5.36E+0	1.46E+0	4.67E+0	5.15E+0	1.44E+0	4.30E+0	4.73E+0	1.36E+0	3.17E+0	3.44E+0	1.33E+0	2.92E+0	3.15E+0
XII	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.17E-4	9.44E-4	2.95E-4	9.16E-4	9.43E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-4	1.53E-4	1.53E-4	1.45E-4	1.53E-4	1.53E-4	1.45E-4	1.52E-4	1.52E-4	1.43E-4	1.51E-4	1.51E-4	1.43E-4	1.50E-4	1.50E-4
XVIB	1.44E-4	1.51E-4	1.51E-4	1.43E-4	1.50E-4	1.50E-4	1.43E-4	1.50E-4	1.50E-4	1.42E-4	1.49E-4	1.49E-4	1.41E-4	1.48E-4	1.48E-4
XVIC	1.40E-4	1.46E-4	1.46E-4	1.40E-4	1.46E-4	1.46E-4	1.40E-4	1.46E-4	1.46E-4	1.38E-4	1.44E-4	1.44E-4	1.38E-4	1.44E-4	1.44E-4
XVIII	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.02E-4	4.44E-4	4.44E-4	3.97E-4	4.39E-4	4.39E-4	3.94E-4	4.36E-4	4.36E-4
XVIII A	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.02E-4	4.44E-4	4.44E-4	3.97E-4	4.39E-4	4.39E-4	3.94E-4	4.36E-4	4.36E-4
XVIII B	3.96E-4	4.38E-4	4.38E-4	3.95E-4	4.38E-4	4.38E-4	3.95E-4	4.37E-4	4.37E-4	3.90E-4	4.32E-4	4.32E-4	3.87E-4	4.29E-4	4.29E-4
XVIII C	3.82E-4	4.17E-4	4.17E-4	3.81E-4	4.17E-4	4.17E-4	3.81E-4	4.16E-4	4.16E-4	3.76E-4	4.11E-4	4.11E-4	3.73E-4	4.08E-4	4.08E-4
XXA	8.50E-6	8.82E-5	1.31E-2	3.50E-6	5.65E-5	8.41E-3	2.26E-6	2.00E-5	2.99E-3	1.80E-6	1.29E-5	1.93E-3	1.67E-6	1.21E-5	1.81E-3
XXB	6.86E-6	3.53E-5	5.58E-3	2.82E-6	1.46E-5	2.31E-3	1.83E-6	9.47E-6	1.50E-3	1.45E-6	7.55E-6	1.20E-3	1.35E-6	7.01E-6	1.11E-3
XXC	4.54E-6	2.51E-5	2.05E-1	1.87E-6	1.04E-5	8.47E-2	1.21E-6	6.75E-6	5.51E-2	9.63E-7	5.39E-6	4.40E-2	8.93E-7	5.00E-6	4.09E-2
XXIA	1.12E-3	1.17E-2	1.11E-1	1.12E-3	1.17E-2	1.10E-1	1.11E-3	1.16E-2	1.10E-1	1.08E-3	1.13E-2	1.06E-1	1.05E-3	1.10E-2	1.04E-1
XXIB	1.12E-3	1.16E-2	1.00E-1	1.11E-3	1.15E-2	9.97E-2	1.11E-3	1.15E-2	9.92E-2	1.07E-3	1.11E-2	9.62E-2	1.04E-3	1.08E-2	9.36E-2
XXIC	1.10E-3	1.11E-2	8.10E-2	1.10E-3	1.11E-2	8.08E-2	1.09E-3	1.10E-2	8.03E-2	1.06E-3	1.07E-2	7.79E-2	1.03E-3	1.04E-2	7.58E-2
XXII	5.48E-2	1.09E+1	1.59E+1	5.47E-2	1.09E+1	1.59E+1	5.44E-2	1.09E+1	1.58E+1	5.33E-2	1.06E+1	1.54E+1	5.27E-2	1.05E+1	1.53E+1
DOE	1.43E+1	1.46E+2	6.47E+2	1.42E+1	1.45E+2	6.44E+2	1.40E+1	1.44E+2	6.37E+2	1.33E+1	1.38E+2	6.19E+2	1.31E+1	1.37E+2	6.14E+2
DOD	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.17E-4	9.44E-4	2.95E-4	9.16E-4	9.43E-4
NRC	6.73E-2	2.99E-1	3.23E+0	6.71E-2	2.98E-1	2.62E+0	6.68E-2	2.96E-1	2.44E+0	6.56E-2	2.88E-1	2.32E+0	6.47E-2	2.81E-1	2.25E+0
Total	1.44E+1	1.46E+2	6.50E+2	1.43E+1	1.45E+2	6.47E+2	1.41E+1	1.44E+2	6.40E+2	1.34E+1	1.39E+2	6.22E+2	1.31E+1	1.37E+2	6.16E+2

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 Table M-39. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.38E-2	9.11E-2	9.11E-2	8.17E-2	8.89E-2	8.89E-2	8.02E-2	8.72E-2	8.72E-2	7.61E-2	8.27E-2	8.27E-2	7.29E-2	7.92E-2	7.92E-2
II	1.72E+0	1.68E+1	1.31E+2	1.72E+0	1.68E+1	1.31E+2	1.72E+0	1.68E+1	1.31E+2	1.72E+0	1.68E+1	1.31E+2	1.72E+0	1.68E+1	1.31E+2
III	3.71E-2	4.11E-2	4.11E-2	3.68E-2	4.08E-2	4.08E-2	3.60E-2	3.99E-2	3.99E-2	3.10E-2	3.43E-2	3.43E-2	2.74E-2	3.04E-2	3.04E-2
IV	6.03E-3	1.61E-2	2.47E-1	5.94E-3	1.58E-2	2.43E-1	5.87E-3	1.56E-2	2.40E-1	5.68E-3	1.51E-2	2.33E-1	5.58E-3	1.49E-2	2.28E-1
V	2.20E+0	2.38E+0	2.38E+0	2.19E+0	2.38E+0	2.38E+0	2.19E+0	2.37E+0	2.37E+0	2.15E+0	2.33E+0	2.33E+0	2.12E+0	2.30E+0	2.30E+0
VI	3.50E-1	1.87E+0	1.65E+1	3.50E-1	1.87E+0	1.65E+1	3.49E-1	1.87E+0	1.65E+1	3.48E-1	1.86E+0	1.65E+1	3.47E-1	1.86E+0	1.64E+1
VII	5.60E-1	4.34E+0	3.37E+1	5.17E-1	3.95E+0	3.06E+1	4.89E-1	3.69E+0	2.86E+1	4.28E-1	3.16E+0	2.44E+1	3.79E-1	2.79E+0	2.15E+1
IX	2.23E-3	1.96E-2	1.22E-1	1.97E-3	1.73E-2	1.07E-1	1.77E-3	1.56E-2	9.67E-2	1.35E-3	1.19E-2	7.35E-2	1.07E-3	9.38E-3	5.82E-2
X	1.49E+0	5.05E+0	5.59E+0	1.49E+0	5.04E+0	5.59E+0	1.49E+0	5.04E+0	5.58E+0	1.47E+0	4.95E+0	5.49E+0	1.46E+0	4.82E+0	5.33E+0
XII	2.97E-4	9.20E-4	9.46E-4	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.19E-4	9.45E-4
XIIIA	4.54E-6	1.49E-5	4.69E-5	2.70E-6	8.88E-6	2.80E-5	5.72E-7	1.88E-6	5.92E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.66E-6	6.57E-6	2.73E-5	2.18E-6	3.91E-6	1.63E-5	4.61E-7	8.29E-7	3.44E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.41E-6	2.92E-6	8.71E-3	1.44E-6	1.74E-6	5.19E-3	3.04E-7	3.69E-7	1.10E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-4	1.53E-4	1.53E-4	1.46E-4	1.53E-4	1.53E-4	1.46E-4	1.53E-4	1.53E-4	1.46E-4	1.53E-4	1.53E-4	1.45E-4	1.53E-4	1.53E-4
XVIB	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.50E-4	1.50E-4
XVIC	1.40E-4	1.47E-4	1.47E-4	1.40E-4	1.47E-4	1.47E-4	1.40E-4	1.47E-4	1.47E-4	1.40E-4	1.46E-4	1.46E-4	1.40E-4	1.46E-4	1.46E-4
XVIIIA	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4
XVIIIB	3.96E-4	4.38E-4	4.38E-4	3.96E-4	4.38E-4	4.38E-4	3.96E-4	4.38E-4	4.38E-4	3.96E-4	4.38E-4	4.38E-4	3.95E-4	4.38E-4	4.38E-4
XVIIIC	3.82E-4	4.17E-4	4.17E-4	3.82E-4	4.17E-4	4.17E-4	3.82E-4	4.17E-4	4.17E-4	3.82E-4	4.17E-4	4.17E-4	3.81E-4	4.17E-4	4.17E-4
XXA	4.26E-5	3.03E-4	4.51E-2	2.80E-5	2.14E-4	3.18E-2	2.08E-5	1.72E-4	2.56E-2	5.90E-6	8.66E-5	1.29E-2	2.47E-6	4.45E-5	6.62E-3
XXB	3.43E-5	1.91E-4	3.01E-2	2.26E-5	1.32E-4	2.08E-2	1.68E-5	1.05E-4	1.66E-2	4.76E-6	4.68E-5	7.40E-3	2.00E-6	1.94E-5	3.07E-3
XXC	2.27E-5	1.25E-4	1.02E+0	1.50E-5	8.27E-5	6.74E-1	1.11E-5	6.12E-5	4.99E-1	3.15E-6	1.75E-5	1.42E-1	1.32E-6	7.37E-6	6.02E-2
XXIA	1.13E-3	1.18E-2	1.11E-1	1.13E-3	1.18E-2	1.11E-1	1.13E-3	1.18E-2	1.11E-1	1.13E-3	1.17E-2	1.11E-1	1.12E-3	1.17E-2	1.10E-1
XXIB	1.12E-3	1.16E-2	1.00E-1	1.12E-3	1.16E-2	1.00E-1	1.12E-3	1.16E-2	1.00E-1	1.12E-3	1.16E-2	1.00E-1	1.11E-3	1.15E-2	9.97E-2
XXIC	1.10E-3	1.12E-2	8.13E-2	1.10E-3	1.12E-2	8.13E-2	1.10E-3	1.12E-2	8.13E-2	1.10E-3	1.11E-2	8.11E-2	1.09E-3	1.11E-2	8.08E-2
XXII	5.51E-2	1.10E+1	1.59E+1	5.50E-2	1.10E+1	1.59E+1	5.50E-2	1.10E+1	1.59E+1	5.48E-2	1.09E+1	1.59E+1	5.47E-2	1.09E+1	1.59E+1
DOE	1.46E+1	1.47E+2	6.57E+2	1.45E+1	1.47E+2	6.54E+2	1.45E+1	1.46E+2	6.52E+2	1.43E+1	1.46E+2	6.47E+2	1.42E+1	1.45E+2	6.43E+2
DOD	3.27E-4	9.89E-4	2.58E-2	3.14E-4	9.60E-4	1.58E-2	3.00E-4	9.28E-4	4.08E-3	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.19E-4	9.45E-4
NRC	6.77E-2	3.02E-1	7.31E+0	6.76E-2	3.01E-1	5.58E+0	6.75E-2	3.01E-1	4.72E+0	6.72E-2	2.99E-1	2.95E+0	6.71E-2	2.98E-1	2.50E+0
Total	1.46E+1	1.47E+2	6.64E+2	1.46E+1	1.47E+2	6.59E+2	1.45E+1	1.47E+2	6.56E+2	1.44E+1	1.46E+2	6.50E+2	1.43E+1	1.45E+2	6.46E+2

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 Table M-40. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.77E-2	7.36E-2	7.36E-2	6.41E-2	6.97E-2	6.97E-2	5.91E-2	6.43E-2	6.43E-2	4.24E-2	4.61E-2	4.61E-2	3.69E-2	4.01E-2	4.01E-2
II	1.72E+0	1.67E+1	1.30E+2	1.72E+0	1.67E+1	1.29E+2	1.72E+0	1.67E+1	1.29E+2	1.72E+0	1.67E+1	1.28E+2	1.72E+0	1.66E+1	1.28E+2
III	2.37E-2	2.63E-2	2.63E-2	1.96E-2	2.17E-2	2.17E-2	1.24E-2	1.38E-2	1.38E-2	3.26E-3	3.62E-3	3.62E-3	1.84E-3	2.04E-3	2.04E-3
IV	5.32E-3	1.42E-2	2.18E-1	5.07E-3	1.35E-2	2.08E-1	4.56E-3	1.22E-2	1.87E-1	2.02E-3	5.39E-3	8.29E-2	7.54E-4	2.01E-3	3.09E-2
V	2.07E+0	2.24E+0	2.24E+0	2.01E+0	2.18E+0	2.18E+0	1.89E+0	2.05E+0	2.05E+0	1.58E+0	1.71E+0	1.71E+0	1.50E+0	1.63E+0	1.63E+0
VI	3.45E-1	1.86E+0	1.64E+1	3.43E-1	1.85E+0	1.64E+1	3.38E-1	1.84E+0	1.63E+1	3.19E-1	1.78E+0	1.58E+1	3.13E-1	1.76E+0	1.57E+1
VII	2.55E-1	1.88E+0	1.45E+1	1.80E-1	1.34E+0	1.03E+1	1.17E-1	8.87E-1	6.87E+0	7.84E-4	4.89E-3	3.67E-2	.00E+0	.00E+0	.00E+0
IX	7.78E-4	6.84E-3	4.24E-2	5.62E-4	4.94E-3	3.06E-2	3.84E-4	3.37E-3	2.09E-2	6.97E-5	6.12E-4	3.80E-3	.00E+0	.00E+0	.00E+0
X	1.44E+0	4.43E+0	4.88E+0	1.42E+0	4.04E+0	4.44E+0	1.39E+0	3.49E+0	3.80E+0	1.26E+0	2.48E+0	2.66E+0	1.23E+0	2.23E+0	2.37E+0
XII	2.96E-4	9.18E-4	9.45E-4	2.96E-4	9.17E-4	9.44E-4	2.95E-4	9.16E-4	9.42E-4	2.93E-4	9.09E-4	9.35E-4	2.92E-4	9.07E-4	9.33E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.45E-4	1.52E-4	1.52E-4	1.44E-4	1.52E-4	1.52E-4	1.44E-4	1.51E-4	1.51E-4	1.38E-4	1.45E-4	1.45E-4	1.35E-4	1.42E-4	1.42E-4
XVIB	1.43E-4	1.50E-4	1.50E-4	1.42E-4	1.49E-4	1.49E-4	1.42E-4	1.49E-4	1.49E-4	1.36E-4	1.43E-4	1.43E-4	1.33E-4	1.40E-4	1.40E-4
XVIC	1.39E-4	1.46E-4	1.46E-4	1.39E-4	1.45E-4	1.45E-4	1.38E-4	1.44E-4	1.44E-4	1.33E-4	1.39E-4	1.39E-4	1.30E-4	1.35E-4	1.35E-4
XVIIIA	4.02E-4	4.44E-4	4.44E-4	4.00E-4	4.43E-4	4.43E-4	3.97E-4	4.39E-4	4.39E-4	3.79E-4	4.19E-4	4.19E-4	3.70E-4	4.09E-4	4.09E-4
XVIIIB	3.95E-4	4.37E-4	4.37E-4	3.93E-4	4.35E-4	4.35E-4	3.90E-4	4.32E-4	4.32E-4	3.72E-4	4.12E-4	4.12E-4	3.64E-4	4.03E-4	4.03E-4
XVIIIC	3.81E-4	4.16E-4	4.16E-4	3.79E-4	4.14E-4	4.14E-4	3.76E-4	4.11E-4	4.11E-4	3.59E-4	3.92E-4	3.92E-4	3.51E-4	3.83E-4	3.83E-4
XXA	2.09E-6	1.49E-5	2.23E-3	1.91E-6	1.39E-5	2.08E-3	1.68E-6	1.25E-5	1.88E-3	1.16E-6	9.28E-6	1.39E-3	9.75E-7	8.38E-6	1.26E-3
XXB	1.68E-6	9.41E-6	1.49E-3	1.54E-6	8.73E-6	1.39E-3	1.36E-6	7.83E-6	1.24E-3	9.33E-7	5.68E-6	9.04E-4	7.87E-7	5.14E-6	8.19E-4
XXC	1.11E-6	6.23E-6	5.08E-2	1.02E-6	5.72E-6	4.67E-2	9.00E-7	5.04E-6	4.12E-2	6.18E-7	3.49E-6	2.85E-2	5.21E-7	2.94E-6	2.41E-2
XXIA	1.11E-3	1.16E-2	1.09E-1	1.10E-3	1.15E-2	1.08E-1	1.08E-3	1.13E-2	1.06E-1	9.07E-4	9.47E-3	8.93E-2	8.45E-4	8.81E-3	8.31E-2
XXIB	1.10E-3	1.14E-2	9.88E-2	1.09E-3	1.13E-2	9.79E-2	1.07E-3	1.11E-2	9.61E-2	9.00E-4	9.32E-3	8.07E-2	8.38E-4	8.67E-3	7.51E-2
XXIC	1.08E-3	1.10E-2	8.00E-2	1.07E-3	1.09E-2	7.93E-2	1.05E-3	1.07E-2	7.78E-2	8.86E-4	8.98E-3	6.54E-2	8.25E-4	8.36E-3	6.08E-2
XXII	5.43E-2	1.09E+1	1.58E+1	5.39E-2	1.08E+1	1.57E+1	5.33E-2	1.07E+1	1.55E+1	5.06E-2	1.02E+1	1.48E+1	4.98E-2	1.01E+1	1.46E+1
DOE	1.39E+1	1.43E+2	6.34E+2	1.37E+1	1.41E+2	6.27E+2	1.34E+1	1.39E+2	6.20E+2	1.23E+1	1.32E+2	5.95E+2	1.21E+1	1.30E+2	5.89E+2
DOD	2.96E+4	9.18E-4	9.45E-4	2.96E-4	9.17E-4	9.44E-4	2.95E-4	9.16E-4	9.42E-4	2.93E-4	9.09E-4	9.35E-4	2.92E-4	9.07E-4	9.33E-4
NRC	6.67E-2	2.95E-1	2.41E+0	6.64E-2	2.93E-1	2.37E+0	6.56E-2	2.88E-1	2.31E+0	6.00E-2	2.47E-1	1.91E+0	5.77E-2	2.32E-1	1.77E+0
Total	1.40E+1	1.43E+2	6.37E+2	1.38E+1	1.42E+2	6.30E+2	1.35E+1	1.39E+2	6.22E+2	1.24E+1	1.32E+2	5.96E+2	1.21E+1	1.31E+2	5.90E+2

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 Table M-41. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.55E-2	6.05E-2	6.05E-2	5.47E-2	5.96E-2	5.96E-2	5.41E-2	5.89E-2	5.89E-2	5.26E-2	5.73E-2	5.73E-2	5.16E-2	5.62E-2	5.62E-2
II	1.42E+0	1.39E+1	1.14E+2	1.42E+0	1.39E+1	1.14E+2	1.42E+0	1.39E+1	1.14E+2	1.42E+0	1.39E+1	1.14E+2	1.42E+0	1.39E+1	1.14E+2
III	2.45E-2	2.70E-2	2.70E-2	2.44E-2	2.70E-2	2.70E-2	2.44E-2	2.69E-2	2.69E-2	2.37E-2	2.61E-2	2.61E-2	2.26E-2	2.49E-2	2.49E-2
IV	4.48E-3	1.21E-2	2.32E-1	4.45E-3	1.21E-2	2.30E-1	4.42E-3	1.20E-2	2.29E-1	4.35E-3	1.18E-2	2.25E-1	4.30E-3	1.16E-2	2.22E-1
V	1.44E+0	1.57E+0	1.57E+0	1.44E+0	1.57E+0	1.57E+0	1.44E+0	1.57E+0	1.57E+0	1.43E+0	1.56E+0	1.56E+0	1.42E+0	1.55E+0	1.55E+0
VI	2.55E-1	1.41E+0	1.42E+1	2.55E-1	1.41E+0	1.42E+1	2.55E-1	1.41E+0	1.42E+1	2.55E-1	1.41E+0	1.42E+1	2.55E-1	1.41E+0	1.42E+1
VII	4.84E-1	3.92E+0	3.08E+1	4.73E-1	3.82E+0	3.00E+1	4.58E-1	3.67E+0	2.88E+1	4.22E-1	3.35E+0	2.62E+1	3.99E-1	3.14E+0	2.46E+1
IX	2.07E-3	1.83E-2	1.14E-1	1.96E-3	1.73E-2	1.08E-1	1.86E-3	1.65E-2	1.03E-1	1.62E-3	1.43E-2	8.95E-2	1.45E-3	1.29E-2	8.04E-2
X	9.79E-1	3.16E+0	3.50E+0	9.79E-1	3.16E+0	3.50E+0	9.78E-1	3.16E+0	3.50E+0	9.74E-1	3.15E+0	3.48E+0	9.70E-1	3.12E+0	3.46E+0
XII	2.64E-4	8.16E-4	8.39E-4	2.64E-4	8.16E-4	8.39E-4	2.64E-4	8.16E-4	8.39E-4	2.64E-4	8.15E-4	8.39E-4	2.64E-4	8.15E-4	8.38E-4
XIIIA	3.67E-6	1.20E-5	4.51E-5	2.94E-6	9.67E-6	3.62E-5	2.06E-6	6.75E-6	2.53E-5	4.05E-7	1.33E-6	4.98E-6	.00E+0	.00E+0	.00E+0
XIIIB	2.96E-6	5.33E-6	2.72E-5	2.37E-6	4.28E-6	2.18E-5	1.66E-6	2.99E-6	1.52E-5	3.27E-7	5.89E-7	3.00E-6	.00E+0	.00E+0	.00E+0
XIIIC	1.95E-6	2.38E-6	5.96E-3	1.57E-6	1.91E-6	4.78E-3	1.09E-6	1.33E-6	3.34E-3	2.15E-7	2.63E-7	6.58E-4	.00E+0	.00E+0	.00E+0
XVIA	9.57E-5	1.01E-4	1.01E-4	9.57E-5	1.01E-4	1.01E-4	1.01E-4	9.56E-5	1.01E-4	1.01E-4	9.56E-5	1.01E-4	1.01E-4	9.56E-5	1.01E-4
XVIB	9.47E-5	9.93E-5	9.93E-5	9.47E-5	9.93E-5	9.93E-5	9.47E-5	9.93E-5	9.93E-5	9.47E-5	9.93E-5	9.93E-5	9.47E-5	9.93E-5	9.93E-5
XVIC	9.23E-5	9.63E-5	9.63E-5	9.23E-5	9.63E-5	9.63E-5	9.22E-5	9.63E-5	9.63E-5	9.22E-5	9.63E-5	9.63E-5	9.22E-5	9.62E-5	9.62E-5
XVIIIA	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4
XVIIIB	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.88E-4	2.88E-4
XVIIIC	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4
XXA	4.16E-5	2.85E-4	4.78E-2	3.15E-5	2.36E-4	3.95E-2	2.67E-5	2.04E-4	3.42E-2	1.85E-5	1.50E-4	2.51E-2	1.40E-5	1.23E-4	2.05E-2
XXB	3.35E-5	1.92E-4	3.31E-2	2.54E-5	1.46E-4	2.51E-2	2.15E-5	1.23E-4	2.12E-2	1.49E-5	8.59E-5	1.48E-2	1.13E-5	6.47E-5	1.11E-2
XXC	2.22E-5	1.42E-4	8.03E-1	1.68E-5	1.08E-4	6.08E-1	1.42E-5	9.13E-5	5.15E-1	9.89E-6	6.35E-5	3.58E-1	7.45E-6	4.79E-5	2.70E-1
XXIA	7.47E-4	7.80E-3	7.34E-2	7.47E-4	7.80E-3	7.34E-2	7.47E-4	7.80E-3	7.34E-2	7.46E-4	7.79E-3	7.34E-2	7.46E-4	7.79E-3	7.34E-2
XXIB	7.41E-4	7.67E-3	6.64E-2	7.41E-4	7.67E-3	6.64E-2	7.41E-4	7.67E-3	6.64E-2	7.41E-4	7.67E-3	6.64E-2	7.40E-4	7.66E-3	6.64E-2
XXIC	7.30E-4	7.39E-3	5.38E-2	7.30E-4	7.39E-3	5.38E-2	7.30E-4	7.39E-3	5.38E-2	7.29E-4	7.39E-3	5.38E-2	7.29E-4	7.39E-3	5.37E-2
XXII	4.25E-2	6.77E+0	1.04E+1	4.25E-2	6.77E+0	1.04E+1	4.25E-2	6.77E+0	1.04E+1	4.24E-2	6.77E+0	1.04E+1	4.24E-2	6.77E+0	1.04E+1
DOE	1.06E+1	1.02E+2	5.44E+2	1.06E+1	1.02E+2	5.43E+2	1.06E+1	1.02E+2	5.42E+2	1.05E+1	1.01E+2	5.39E+2	1.05E+1	1.01E+2	5.37E+2
DOD	2.88E-4	8.72E-4	1.79E-2	2.83E-4	8.61E-4	1.46E-2	2.77E-4	8.47E-4	1.04E-2	2.66E-4	8.21E-4	2.73E-3	2.64E-4	8.15E-4	8.38E-4
NRC	4.48E-2	2.01E-1	5.57E+0	4.47E-2	2.00E-1	4.59E+0	4.47E-2	2.00E-1	4.11E+0	4.46E-2	1.99E-1	3.31E+0	4.45E-2	1.99E-1	2.86E+0
Total	1.06E+1	1.02E+2	5.49E+2	1.06E+1	1.02E+2	5.48E+2	1.06E+1	1.02E+2	5.46E+2	1.06E+1	1.01E+2	5.42E+2	1.05E+1	1.01E+2	5.40E+2

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 Table M-42. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.93E-2	5.37E-2	5.37E-2	4.76E-2	5.18E-2	5.18E-2	4.51E-2	4.91E-2	4.91E-2	3.84E-2	4.18E-2	4.18E-2	3.67E-2	4.00E-2	4.00E-2
II	1.42E+0	1.39E+1	1.14E+2	1.42E+0	1.39E+1	1.14E+2	1.42E+0	1.39E+1	1.13E+2	1.42E+0	1.39E+1	1.13E+2	1.42E+0	1.39E+1	1.12E+2
III	1.94E-2	2.14E-2	2.14E-2	1.79E-2	1.98E-2	1.98E-2	1.62E-2	1.79E-2	1.79E-2	7.49E-3	8.27E-3	8.27E-3	4.84E-3	5.34E-3	5.34E-3
IV	4.20E-3	1.14E-2	2.17E-1	4.14E-3	1.12E-2	2.14E-1	4.02E-3	1.09E-2	2.08E-1	3.41E-3	9.23E-3	1.76E-1	3.10E-3	8.40E-3	1.61E-1
V	1.40E+0	1.53E+0	1.53E+0	1.39E+0	1.51E+0	1.51E+0	1.36E+0	1.49E+0	1.49E+0	1.23E+0	1.34E+0	1.34E+0	1.16E+0	1.26E+0	1.26E+0
VI	2.54E-1	1.41E+0	1.42E+1	2.53E-1	1.41E+0	1.41E+1	2.52E-1	1.41E+0	1.41E+1	2.47E-1	1.39E+0	1.40E+1	2.44E-1	1.38E+0	1.39E+1
VII	3.63E-1	2.83E+0	2.21E+1	3.34E-1	2.59E+0	2.03E+1	2.60E-1	2.01E+0	1.57E+1	1.08E-1	8.54E-1	6.69E+0	8.50E-2	6.77E-1	5.31E+0
IX	1.21E-3	1.07E-2	6.71E-2	1.02E-3	9.03E-3	5.64E-2	8.33E-4	7.37E-3	4.61E-2	3.91E-4	3.45E-3	2.16E-2	2.74E-4	2.42E-3	1.51E-2
X	9.61E-1	3.04E+0	3.36E+0	9.55E-1	2.93E+0	3.23E+0	9.42E-1	2.70E+0	2.97E+0	8.95E-1	2.01E+0	2.17E+0	8.72E-1	1.85E+0	1.99E+0
XII	2.64E-4	8.15E-4	8.38E-4	2.64E-4	8.15E-4	8.38E-4	2.64E-4	8.15E-4	8.38E-4	2.63E-4	8.14E-4	8.37E-4	2.63E-4	8.13E-4	8.36E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.55E-5	1.00E-4	1.00E-4	9.54E-5	1.00E-4	1.00E-4	9.51E-5	1.00E-4	1.00E-4	9.42E-5	9.90E-5	9.90E-5	9.37E-5	9.86E-5	9.86E-5
XVIB	9.46E-5	9.92E-5	9.92E-5	9.44E-5	9.91E-5	9.91E-5	9.41E-5	9.87E-5	9.87E-5	9.32E-5	9.78E-5	9.78E-5	9.28E-5	9.74E-5	9.74E-5
XVIC	9.21E-5	9.62E-5	9.62E-5	9.20E-5	9.60E-5	9.60E-5	9.17E-5	9.57E-5	9.57E-5	9.08E-5	9.48E-5	9.48E-5	9.04E-5	9.44E-5	9.44E-5
XVIII	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.61E-4	2.89E-4	2.89E-4	2.59E-4	2.87E-4	2.87E-4
XVIII A	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.61E-4	2.89E-4	2.89E-4	2.59E-4	2.87E-4	2.87E-4
XVIII B	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.87E-4	2.87E-4	2.60E-4	2.87E-4	2.87E-4	2.57E-4	2.83E-4	2.83E-4	2.55E-4	2.81E-4	2.81E-4
XVIII C	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.49E-4	2.71E-4	2.71E-4	2.47E-4	2.69E-4	2.69E-4
XXA	6.63E-6	7.36E-5	1.23E-2	2.73E-6	4.72E-5	7.92E-3	1.77E-6	1.67E-5	2.81E-3	1.41E-6	1.08E-5	1.81E-3	1.31E-6	1.01E-5	1.70E-3
XXB	5.34E-6	3.07E-5	5.29E-3	2.20E-6	1.27E-5	2.19E-3	1.43E-6	8.26E-6	1.43E-3	1.13E-6	6.59E-6	1.14E-3	1.05E-6	6.12E-6	1.06E-3
XXC	3.53E-6	2.27E-5	1.28E-1	1.46E-6	9.40E-6	5.31E-2	9.43E-7	6.12E-6	3.45E-2	7.51E-7	4.88E-6	2.76E-2	6.96E-7	4.53E-6	2.56E-2
XXIA	7.44E-4	7.77E-3	7.31E-2	7.42E-4	7.75E-3	7.29E-2	7.37E-4	7.70E-3	7.25E-2	7.16E-4	7.47E-3	7.04E-2	6.96E-4	7.27E-3	6.85E-2
XXIB	7.38E-4	7.64E-3	6.62E-2	7.36E-4	7.62E-3	6.60E-2	7.32E-4	7.57E-3	6.56E-2	7.10E-4	7.35E-3	6.37E-2	6.91E-4	7.15E-3	6.20E-2
XXIC	7.27E-4	7.37E-3	5.36E-2	7.25E-4	7.34E-3	5.34E-2	7.21E-4	7.30E-3	5.31E-2	6.99E-4	7.08E-3	5.15E-2	6.80E-4	6.89E-3	5.02E-2
XXII	4.23E-2	6.77E+0	1.04E+1	4.22E-2	6.76E+0	1.04E+1	4.20E-2	6.74E+0	1.03E+1	4.11E-2	6.58E+0	1.01E+1	4.06E-2	6.52E+0	1.00E+1
DOE	1.04E+1	1.00E+2	5.34E+2	1.03E+1	1.00E+2	5.32E+2	1.02E+1	9.89E+1	5.26E+2	9.68E+0	9.54E+1	5.11E+2	9.49E+0	9.43E+1	5.07E+2
DOD	2.64E-4	8.15E-4	8.38E-4	2.64E-4	8.15E-4	8.38E-4	2.64E-4	8.15E-4	8.38E-4	2.63E-4	8.14E-4	8.37E-4	2.63E-4	8.13E-4	8.36E-4
NRC	4.44E-2	1.98E-1	2.13E+0	4.43E-2	1.97E-1	1.74E+0	4.41E-2	1.96E-1	1.61E+0	4.33E-2	1.91E-1	1.53E+0	4.27E-2	1.86E-1	1.49E+0
Total	1.04E+1	1.01E+2	5.37E+2	1.03E+1	1.00E+2	5.34E+2	1.02E+1	9.91E+1	5.28E+2	9.72E+0	9.56E+1	5.13E+2	9.53E+0	9.45E+1	5.08E+2

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 Table M-43. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.51E-2	6.00E-2	6.00E-2	5.37E-2	5.85E-2	5.85E-2	5.28E-2	5.74E-2	5.74E-2	5.00E-2	5.45E-2	5.45E-2	4.79E-2	5.22E-2	5.22E-2
II	1.42E+0	1.39E+1	1.14E+2	1.42E+0	1.39E+1	1.14E+2	1.42E+0	1.39E+1	1.14E+2	1.42E+0	1.39E+1	1.14E+2	1.42E+0	1.39E+1	1.14E+2
III	2.45E-2	2.70E-2	2.70E-2	2.43E-2	2.68E-2	2.68E-2	2.38E-2	2.62E-2	2.62E-2	2.04E-2	2.26E-2	2.26E-2	1.81E-2	2.00E-2	2.00E-2
IV	4.46E-3	1.21E-2	2.31E-1	4.40E-3	1.19E-2	2.28E-1	4.35E-3	1.18E-2	2.25E-1	4.21E-3	1.14E-2	2.18E-1	4.13E-3	1.12E-2	2.14E-1
V	1.44E+0	1.57E+0	1.57E+0	1.44E+0	1.57E+0	1.57E+0	1.43E+0	1.56E+0	1.56E+0	1.41E+0	1.54E+0	1.54E+0	1.39E+0	1.52E+0	1.52E+0
VI	2.55E-1	1.41E+0	1.42E+1	2.55E-1	1.41E+0	1.42E+1	2.55E-1	1.41E+0	1.42E+1	2.54E-1	1.41E+0	1.42E+1	2.53E-1	1.41E+0	1.41E+1
VII	4.80E-1	3.88E+0	3.05E+1	4.42E-1	3.53E+0	2.77E+1	4.16E-1	3.30E+0	2.59E+1	3.63E-1	2.82E+0	2.21E+1	3.20E-1	2.49E+0	1.94E+1
IX	2.00E-3	1.77E-2	1.10E-1	1.76E-3	1.56E-2	9.73E-2	1.59E-3	1.40E-2	8.76E-2	1.21E-3	1.07E-2	6.67E-2	9.55E-4	8.44E-3	5.28E-2
X	9.79E-1	3.16E+0	3.50E+0	9.77E-1	3.16E+0	3.50E+0	9.75E-1	3.15E+0	3.49E+0	9.66E-1	3.10E+0	3.43E+0	9.59E-1	3.02E+0	3.34E+0
XII	2.64E-4	8.16E-4	8.39E-4	2.64E-4	8.15E-4	8.39E-4	2.64E-4	8.15E-4	8.38E-4	2.64E-4	8.15E-4	8.38E-4	2.64E-4	8.15E-4	8.38E-4
XIIIA	3.27E-6	1.07E-5	4.02E-5	1.95E-6	6.40E-6	2.40E-5	4.13E-7	1.36E-6	5.07E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.64E-6	4.76E-6	2.43E-5	1.57E-6	2.83E-6	1.45E-5	3.33E-7	6.00E-7	3.06E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.74E-6	2.12E-6	5.32E-3	1.04E-6	1.26E-6	3.17E-3	2.20E-7	2.68E-7	6.71E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.57E-5	1.01E-4	1.01E-4	9.56E-5	1.01E-4	1.01E-4	9.56E-5	1.01E-4	1.01E-4	9.56E-5	1.00E-4	1.00E-4	9.54E-5	1.00E-4	1.00E-4
XVIB	9.47E-5	9.93E-5	9.93E-5	9.47E-5	9.93E-5	9.93E-5	9.47E-5	9.93E-5	9.93E-5	9.46E-5	9.92E-5	9.92E-5	9.45E-5	9.91E-5	9.91E-5
XVIC	9.23E-5	9.63E-5	9.63E-5	9.22E-5	9.63E-5	9.63E-5	9.22E-5	9.63E-5	9.63E-5	9.22E-5	9.62E-5	9.62E-5	9.20E-5	9.61E-5	9.61E-5
XVIIIA	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4
XVIIIB	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.87E-4	2.87E-4
XVIIIC	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4
XXA	3.32E-5	2.53E-4	4.24E-2	2.18E-5	1.78E-4	2.99E-2	1.62E-5	1.44E-4	2.41E-2	4.60E-6	7.23E-5	1.21E-2	1.93E-6	3.72E-5	6.24E-3
XXB	2.67E-5	1.66E-4	2.86E-2	1.76E-5	1.15E-4	1.98E-2	1.30E-5	9.13E-5	1.57E-2	3.71E-6	4.08E-5	7.03E-3	1.56E-6	1.69E-5	2.92E-3
XXC	1.77E-5	1.14E-4	6.41E-1	1.17E-5	7.48E-5	4.22E-1	8.63E-6	5.54E-5	3.13E-1	2.45E-6	1.58E-5	8.93E-2	1.03E-6	6.68E-6	3.77E-2
XXIA	7.47E-4	7.80E-3	7.34E-2	7.47E-4	7.80E-3	7.34E-2	7.46E-4	7.79E-3	7.34E-2	7.44E-4	7.77E-3	7.32E-2	7.42E-4	7.74E-3	7.29E-2
XXIB	7.41E-4	7.67E-3	6.64E-2	7.41E-4	7.67E-3	6.64E-2	7.41E-4	7.67E-3	6.64E-2	7.39E-4	7.64E-3	6.62E-2	7.36E-4	7.62E-3	6.60E-2
XXIC	7.30E-4	7.39E-3	5.38E-2	7.30E-4	7.39E-3	5.38E-2	7.29E-4	7.39E-3	5.38E-2	7.27E-4	7.37E-3	5.36E-2	7.25E-4	7.34E-3	5.34E-2
XXII	4.25E-2	6.77E+0	1.04E+1	4.25E-2	6.77E+0	1.04E+1	4.24E-2	6.77E+0	1.04E+1	4.23E-2	6.77E+0	1.04E+1	4.22E-2	6.76E+0	1.04E+1
DOE	1.06E+1	1.02E+2	5.43E+2	1.05E+1	1.01E+2	5.41E+2	1.05E+1	1.01E+2	5.39E+2	1.04E+1	1.01E+2	5.35E+2	1.03E+1	1.00E+2	5.31E+2
DOD	2.86E-4	8.66E-4	1.61E-2	2.77E-4	8.45E-4	9.92E-3	2.66E-4	8.21E-4	2.76E-3	2.64E-4	8.15E-4	8.38E-4	2.64E-4	8.15E-4	8.38E-4
NRC	4.47E-2	2.00E-1	4.77E+0	4.46E-2	2.00E-1	3.65E+0	4.45E-2	1.99E-1	3.09E+0	4.44E-2	1.98E-1	1.95E+0	4.42E-2	1.97E-1	1.66E+0
Total	1.06E+1	1.02E+2	5.48E+2	1.06E+1	1.02E+2	5.44E+2	1.05E+1	1.01E+2	5.42E+2	1.04E+1	1.01E+2	5.37E+2	1.03E+1	1.00E+2	5.33E+2

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 Table M-44. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.45E-2	4.84E-2	4.84E-2	4.22E-2	4.59E-2	4.59E-2	3.89E-2	4.23E-2	4.23E-2	2.79E-2	3.04E-2	3.04E-2	2.43E-2	2.64E-2	2.64E-2
II	1.42E+0	1.39E+1	1.13E+2	1.42E+0	1.39E+1	1.13E+2	1.42E+0	1.39E+1	1.13E+2	1.42E+0	1.38E+1	1.12E+2	1.42E+0	1.38E+1	1.11E+2
III	1.56E-2	1.73E-2	1.73E-2	1.29E-2	1.43E-2	1.43E-2	8.21E-3	9.06E-3	9.06E-3	2.15E-3	2.38E-3	2.38E-3	1.21E-3	1.34E-3	1.34E-3
IV	3.94E-3	1.07E-2	2.04E-1	3.75E-3	1.02E-2	1.94E-1	3.38E-3	9.15E-3	1.75E-1	1.50E-3	4.06E-3	7.76E-2	5.59E-4	1.51E-3	2.89E-2
V	1.35E+0	1.48E+0	1.48E+0	1.32E+0	1.43E+0	1.43E+0	1.24E+0	1.35E+0	1.35E+0	1.04E+0	1.13E+0	1.13E+0	9.86E-1	1.07E+0	1.07E+0
VI	2.52E-1	1.41E+0	1.41E+1	2.50E-1	1.40E+0	1.41E+1	2.47E-1	1.39E+0	1.40E+1	2.34E-1	1.35E+0	1.36E+1	2.30E-1	1.33E+0	1.35E+1
VII	2.16E-1	1.68E+0	1.31E+1	1.52E-1	1.19E+0	9.35E+0	9.99E-2	7.93E-1	6.22E+0	6.37E-4	4.33E-3	3.31E-2	.00E+0	.00E+0	.00E+0
IX	6.96E-4	6.15E-3	3.85E-2	5.02E-4	4.44E-3	2.78E-2	3.43E-4	3.04E-3	1.90E-2	6.23E-5	5.51E-4	3.44E-3	.00E+0	.00E+0	.00E+0
X	9.45E-1	2.78E+0	3.06E+0	9.32E-1	2.54E+0	2.79E+0	9.12E-1	2.20E+0	2.40E+0	8.29E-1	1.58E+0	1.69E+0	8.04E-1	1.42E+0	1.51E+0
XII	2.64E-4	8.15E-4	8.38E-4	2.63E-4	8.14E-4	8.37E-4	2.63E-4	8.12E-4	8.36E-4	2.61E-4	8.07E-4	8.30E-4	2.60E-4	8.05E-4	8.28E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.50E-5	9.99E-5	9.99E-5	9.47E-5	9.96E-5	9.96E-5	9.43E-5	9.92E-5	9.92E-5	9.05E-5	9.53E-5	9.53E-5	8.83E-5	9.31E-5	9.31E-5
XVIB	9.40E-5	9.87E-5	9.87E-5	9.38E-5	9.84E-5	9.84E-5	9.33E-5	9.79E-5	9.79E-5	8.96E-5	9.41E-5	9.41E-5	8.74E-5	9.19E-5	9.19E-5
XVIC	9.16E-5	9.56E-5	9.56E-5	9.13E-5	9.54E-5	9.54E-5	9.09E-5	9.49E-5	9.49E-5	8.72E-5	9.12E-5	9.12E-5	8.51E-5	8.90E-5	8.90E-5
XVIIIA	2.64E-4	2.93E-4	2.93E-4	2.63E-4	2.91E-4	2.91E-4	2.61E-4	2.89E-4	2.89E-4	2.49E-4	2.76E-4	2.76E-4	2.44E-4	2.70E-4	2.70E-4
XVIIIB	2.60E-4	2.87E-4	2.87E-4	2.59E-4	2.86E-4	2.86E-4	2.57E-4	2.83E-4	2.83E-4	2.45E-4	2.71E-4	2.71E-4	2.40E-4	2.64E-4	2.64E-4
XVIIIC	2.52E-4	2.75E-4	2.75E-4	2.51E-4	2.74E-4	2.74E-4	2.49E-4	2.71E-4	2.71E-4	2.37E-4	2.59E-4	2.59E-4	2.32E-4	2.53E-4	2.53E-4
XXA	1.63E-6	1.25E-5	2.10E-3	1.49E-6	1.16E-5	1.96E-3	1.32E-6	1.05E-5	1.77E-3	9.05E-7	7.76E-6	1.31E-3	7.63E-7	7.02E-6	1.19E-3
XXB	1.31E-6	8.21E-6	1.42E-3	1.20E-6	7.62E-6	1.32E-3	1.06E-6	6.83E-6	1.18E-3	7.29E-7	4.96E-6	8.58E-4	6.15E-7	4.49E-6	7.78E-4
XXC	8.69E-7	5.64E-6	3.18E-2	7.97E-7	5.18E-6	2.93E-2	7.02E-7	4.56E-6	2.58E-2	4.83E-7	3.16E-6	1.79E-2	4.07E-7	2.67E-6	1.51E-2
XXIA	7.35E-4	7.67E-3	7.22E-2	7.28E-4	7.60E-3	7.16E-2	7.14E-4	7.46E-3	7.02E-2	6.00E-4	6.27E-3	5.90E-2	5.59E-4	5.83E-3	5.49E-2
XXIB	7.29E-4	7.55E-3	6.54E-2	7.22E-4	7.48E-3	6.48E-2	7.09E-4	7.34E-3	6.36E-2	5.96E-4	6.16E-3	5.34E-2	5.54E-4	5.74E-3	4.97E-2
XXIC	7.18E-4	7.27E-3	5.29E-2	7.11E-4	7.21E-3	5.24E-2	6.98E-4	7.07E-3	5.15E-2	5.87E-4	5.94E-3	4.32E-2	5.46E-4	5.53E-3	4.02E-2
XXII	4.19E-2	6.73E+0	1.03E+1	4.16E-2	6.67E+0	1.02E+1	4.11E-2	6.59E+0	1.01E+1	3.90E-2	6.33E+0	9.68E+0	3.84E-2	6.26E+0	9.55E+0
DOE	1.01E+1	9.86E+1	5.23E+2	9.94E+0	9.73E+1	5.18E+2	9.71E+0	9.57E+1	5.11E+2	8.98E+0	9.11E+1	4.91E+2	8.79E+0	8.99E+1	4.86E+2
DOD	2.64E-4	8.15E-4	8.38E-4	2.63E-4	8.14E-4	8.37E-4	2.63E-4	8.12E-4	8.36E-4	2.61E-4	8.07E-4	8.30E-4	2.60E-4	8.05E-4	8.28E-4
NRC	4.40E-2	1.95E-1	1.59E+0	4.38E-2	1.94E-1	1.57E+0	4.33E-2	1.90E-1	1.52E+0	3.96E-2	1.63E-1	1.26E+0	3.81E-2	1.53E-1	1.17E+0
Total	1.01E+1	9.88E+1	5.25E+2	9.99E+0	9.75E+1	5.19E+2	9.76E+0	9.59E+1	5.13E+2	9.02E+0	9.12E+1	4.92E+2	8.83E+0	9.01E+1	4.87E+2

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 Table M-45. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.72E+2	7.40E+2	7.40E+2	6.62E+2	7.29E+2	7.29E+2	6.55E+2	7.21E+2	7.21E+2	6.37E+2	7.01E+2	7.01E+2	6.25E+2	6.87E+2	6.87E+2
II	2.73E+5	6.28E+6	2.32E+7	2.73E+5	6.28E+6	2.32E+7	2.73E+5	6.28E+6	2.32E+7	2.73E+5	6.28E+6	2.32E+7	2.73E+5	6.28E+6	2.32E+7
III	2.85E+2	3.17E+2	3.17E+2	2.85E+2	3.16E+2	3.16E+2	2.84E+2	3.15E+2	3.15E+2	2.76E+2	3.06E+2	3.06E+2	2.63E+2	2.92E+2	2.92E+2
IV	1.52E+3	1.06E+4	2.33E+4	1.51E+3	1.05E+4	2.31E+4	1.50E+3	1.05E+4	2.30E+4	1.47E+3	1.03E+4	2.26E+4	1.45E+3	1.02E+4	2.24E+4
V	1.76E+4	1.93E+4	1.93E+4	1.75E+4	1.93E+4	1.93E+4	1.75E+4	1.93E+4	1.93E+4	1.74E+4	1.92E+4	1.92E+4	1.73E+4	1.91E+4	1.91E+4
VI	3.24E+4	2.99E+5	3.51E+6	3.24E+4	2.99E+5	3.51E+6	3.24E+4	2.99E+5	3.51E+6	3.24E+4	2.99E+5	3.51E+6	3.24E+4	2.99E+5	3.51E+6
VII	3.34E+4	2.66E+5	1.82E+6	3.26E+4	2.59E+5	1.77E+6	3.13E+4	2.49E+5	1.70E+6	2.86E+4	2.27E+5	1.55E+6	2.68E+4	2.13E+5	1.45E+6
IX	1.40E+2	1.14E+3	7.03E+3	1.33E+2	1.08E+3	6.67E+3	1.27E+2	1.02E+3	6.34E+3	1.10E+2	8.89E+2	5.51E+3	9.89E+1	7.99E+2	4.95E+3
X	1.54E+3	1.88E+4	2.15E+4	1.54E+3	1.88E+4	2.15E+4	1.53E+3	1.88E+4	2.15E+4	1.51E+3	1.87E+4	2.14E+4	1.50E+3	1.85E+4	2.12E+4
XII	2.71E+2	1.69E+3	2.80E+3	2.71E+2	1.69E+3	2.80E+3	2.71E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3
XIIIA	6.91E-1	5.27E+0	1.49E+1	5.55E-1	4.23E+0	1.20E+1	3.87E-1	2.96E+0	8.37E+0	7.63E-2	5.83E-1	1.65E+0	.00E+0	.00E+0	.00E+0
XIIIB	6.59E-1	3.76E+0	6.32E+0	5.29E-1	3.02E+0	5.07E+0	3.70E-1	2.11E+0	3.54E+0	7.28E-2	4.16E-1	6.98E-1	.00E+0	.00E+0	.00E+0
XIIIC	6.00E-1	2.10E+0	4.33E+1	4.82E-1	1.69E+0	3.48E+1	3.36E-1	1.18E+0	2.43E+1	6.63E-2	2.32E-1	4.78E+0	.00E+0	.00E+0	.00E+0
XVIA	9.87E-1	1.07E+0	1.07E+0	9.87E-1	1.07E+0	1.07E+0	9.87E-1	1.07E+0	1.07E+0	9.87E-1	1.07E+0	1.07E+0	9.87E-1	1.07E+0	1.07E+0
XVIB	9.80E-1	1.06E+0	1.06E+0	9.80E-1	1.06E+0	1.06E+0	9.80E-1	1.06E+0	1.06E+0	9.80E-1	1.06E+0	1.06E+0	9.80E-1	1.06E+0	1.06E+0
XVIC	9.69E-1	1.05E+0	1.05E+0	9.69E-1	1.05E+0	1.05E+0	9.69E-1	1.05E+0	1.05E+0	9.69E-1	1.05E+0	1.05E+0	9.68E-1	1.05E+0	1.05E+0
XVIIIA	7.77E+1	8.35E+1	8.35E+1	7.77E+1	8.35E+1	8.35E+1	7.77E+1	8.35E+1	8.35E+1	7.77E+1	8.35E+1	8.35E+1	7.77E+1	8.35E+1	8.35E+1
XVIIIB	7.06E+1	7.46E+1	7.46E+1	7.06E+1	7.46E+1	7.46E+1	7.06E+1	7.46E+1	7.46E+1	7.06E+1	7.46E+1	7.46E+1	7.06E+1	7.46E+1	7.46E+1
XVIIIC	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1
XXA	1.07E+2	8.65E+2	6.86E+3	8.14E+1	7.16E+2	5.68E+3	6.90E+1	6.19E+2	4.91E+3	4.80E+1	4.56E+2	3.61E+3	3.62E+1	3.72E+2	2.95E+3
XXB	1.03E+2	6.22E+2	2.84E+3	7.82E+1	4.71E+2	2.15E+3	6.63E+1	3.99E+2	1.82E+3	4.61E+1	2.78E+2	1.27E+3	3.47E+1	2.09E+2	9.54E+2
XXC	9.49E+1	3.51E+2	8.09E+3	7.18E+1	2.66E+2	6.13E+3	6.09E+1	2.25E+2	5.19E+3	4.23E+1	1.57E+2	3.61E+3	3.19E+1	1.18E+2	2.72E+3
XXIA	1.91E+1	1.92E+2	1.89E+3	1.91E+1	1.92E+2	1.89E+3	1.91E+1	1.92E+2	1.89E+3	1.91E+1	1.92E+2	1.89E+3	1.91E+1	1.92E+2	1.89E+3
XXIB	1.91E+1	1.92E+2	1.84E+3	1.91E+1	1.92E+2	1.84E+3	1.91E+1	1.92E+2	1.84E+3	1.91E+1	1.92E+2	1.84E+3	1.91E+1	1.92E+2	1.83E+3
XXIC	1.90E+1	1.90E+2	1.73E+3	1.90E+1	1.90E+2	1.73E+3	1.90E+1	1.90E+2	1.73E+3	1.90E+1	1.90E+2	1.73E+3	1.90E+1	1.90E+2	1.73E+3
XXII	3.37E+3	8.32E+4	1.37E+5	3.37E+3	8.32E+4	1.37E+5	3.36E+3	8.32E+4	1.37E+5	3.36E+3	8.32E+4	1.37E+5	3.36E+3	8.31E+4	1.37E+5
DOE	1.09E+6	1.40E+7	1.06E+8	1.09E+6	1.40E+7	1.06E+8	1.08E+6	1.39E+7	1.06E+8	1.08E+6	1.39E+7	1.05E+8	1.08E+6	1.39E+7	1.05E+8
DOD	2.76E+2	1.72E+3	2.98E+3	2.75E+2	1.71E+3	2.95E+3	2.74E+2	1.70E+3	2.90E+3	2.71E+2	1.69E+3	2.82E+3	2.70E+2	1.68E+3	2.80E+3
NRC	6.32E+3	1.75E+4	1.28E+5	5.97E+3	1.57E+4	1.10E+5	5.81E+3	1.47E+4	1.00E+5	5.53E+3	1.31E+4	8.44E+4	5.37E+3	1.22E+4	7.57E+4
Total	1.09E+6	1.40E+7	1.06E+8	1.09E+6	1.40E+7	1.06E+8	1.09E+6	1.40E+7	1.06E+8	1.09E+6	1.39E+7	1.06E+8	1.08E+6	1.39E+7	1.05E+8

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 Table M-46. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.97E+2	6.57E+2	6.57E+2	5.76E+2	6.34E+2	6.34E+2	5.46E+2	6.01E+2	6.01E+2	4.65E+2	5.12E+2	5.12E+2	4.44E+2	4.89E+2	4.89E+2
II	2.73E+5	6.27E+6	2.32E+7	2.72E+5	6.27E+6	2.32E+7	2.72E+5	6.27E+6	2.31E+7	2.72E+5	6.27E+6	2.29E+7	2.72E+5	6.27E+6	2.29E+7
III	2.26E+2	2.51E+2	2.51E+2	2.09E+2	2.32E+2	2.32E+2	1.89E+2	2.10E+2	2.10E+2	8.73E+1	9.70E+1	9.70E+1	5.64E+1	6.26E+1	6.26E+1
IV	1.42E+3	9.94E+3	2.18E+4	1.40E+3	9.79E+3	2.15E+4	1.36E+3	9.51E+3	2.09E+4	1.15E+3	8.07E+3	1.77E+4	1.05E+3	7.35E+3	1.61E+4
V	1.71E+4	1.88E+4	1.88E+4	1.69E+4	1.86E+4	1.86E+4	1.66E+4	1.82E+4	1.82E+4	1.49E+4	1.64E+4	1.64E+4	1.41E+4	1.55E+4	1.55E+4
VI	3.24E+4	2.99E+5	3.51E+6	3.23E+4	2.99E+5	3.51E+6	3.23E+4	2.99E+5	3.51E+6	3.20E+4	2.96E+5	3.48E+6	3.18E+4	2.95E+5	3.46E+6
VII	2.41E+4	1.91E+5	1.31E+6	2.21E+4	1.75E+5	1.20E+6	1.72E+4	1.36E+5	9.29E+5	7.28E+3	5.78E+4	3.95E+5	5.77E+3	4.59E+4	3.14E+5
IX	8.26E+1	6.67E+2	4.13E+3	6.94E+1	5.61E+2	3.47E+3	5.67E+1	4.58E+2	2.84E+3	2.66E+1	2.15E+2	1.33E+3	1.86E+1	1.50E+2	9.32E+2
X	1.47E+3	1.78E+4	2.04E+4	1.46E+3	1.70E+4	1.94E+4	1.43E+3	1.52E+4	1.74E+4	1.35E+3	9.89E+3	1.12E+4	1.31E+3	8.73E+3	9.89E+3
XII	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.79E+3	2.70E+2	1.68E+3	2.79E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.87E-1	1.07E+0	1.07E+0	9.86E-1	1.07E+0	1.07E+0	9.84E-1	1.07E+0	1.07E+0	9.78E-1	1.06E+0	1.06E+0	9.75E-1	1.06E+0	1.06E+0
XVIB	9.80E-1	1.06E+0	1.06E+0	9.79E-1	1.06E+0	1.06E+0	9.77E-1	1.06E+0	1.06E+0	9.71E-1	1.05E+0	1.05E+0	9.68E-1	1.05E+0	1.05E+0
XVIC	9.68E-1	1.05E+0	1.05E+0	9.67E-1	1.05E+0	1.05E+0	9.65E-1	1.05E+0	1.05E+0	9.59E-1	1.04E+0	1.04E+0	9.57E-1	1.04E+0	1.04E+0
XVIII	7.76E+1	8.34E+1	8.34E+1	7.76E+1	8.34E+1	8.34E+1	7.75E+1	8.33E+1	8.33E+1	7.65E+1	8.22E+1	8.22E+1	7.60E+1	8.16E+1	8.16E+1
XVIII A	7.76E+1	8.34E+1	8.34E+1	7.76E+1	8.34E+1	8.34E+1	7.75E+1	8.33E+1	8.33E+1	7.65E+1	8.22E+1	8.22E+1	7.60E+1	8.16E+1	8.16E+1
XVIII B	7.05E+1	7.46E+1	7.46E+1	7.05E+1	7.45E+1	7.45E+1	7.04E+1	7.45E+1	7.45E+1	6.95E+1	7.35E+1	7.35E+1	6.90E+1	7.30E+1	7.30E+1
XVIII C	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.87E+1	6.06E+1	6.06E+1	5.80E+1	5.98E+1	5.98E+1	5.76E+1	5.94E+1	5.94E+1
XXA	1.72E+1	2.24E+2	1.77E+3	7.11E+0	1.43E+2	1.14E+3	4.62E+0	5.09E+1	4.04E+2	3.69E+0	3.28E+1	2.61E+2	3.43E+0	3.08E+1	2.45E+2
XXB	1.65E+1	9.94E+1	4.53E+2	6.83E+0	4.11E+1	1.88E+2	4.44E+0	2.67E+1	1.22E+2	3.55E+0	2.14E+1	9.75E+1	3.29E+0	1.98E+1	9.05E+1
XXC	1.52E+1	5.61E+1	1.29E+3	6.27E+0	2.32E+1	5.35E+2	4.08E+0	1.51E+1	3.48E+2	3.26E+0	1.20E+1	2.78E+2	3.02E+0	1.12E+1	2.58E+2
XXIA	1.91E+1	1.91E+2	1.88E+3	1.90E+1	1.91E+2	1.88E+3	1.89E+1	1.90E+2	1.87E+3	1.83E+1	1.84E+2	1.81E+3	1.79E+1	1.79E+2	1.76E+3
XXIB	1.90E+1	1.91E+2	1.83E+3	1.90E+1	1.91E+2	1.82E+3	1.89E+1	1.90E+2	1.81E+3	1.83E+1	1.84E+2	1.76E+3	1.78E+1	1.79E+2	1.71E+3
XXIC	1.90E+1	1.90E+2	1.72E+3	1.89E+1	1.89E+2	1.72E+3	1.88E+1	1.88E+2	1.71E+3	1.82E+1	1.82E+2	1.66E+3	1.77E+1	1.77E+2	1.61E+3
XXII	3.35E+3	8.30E+4	1.36E+5	3.34E+3	8.29E+4	1.36E+5	3.32E+3	8.26E+4	1.36E+5	3.25E+3	8.08E+4	1.33E+5	3.22E+3	8.00E+4	1.31E+5
DOE	1.08E+6	1.39E+7	1.05E+8	1.07E+6	1.39E+7	1.05E+8	1.07E+6	1.38E+7	1.05E+8	1.05E+6	1.36E+7	1.03E+8	1.04E+6	1.36E+7	1.03E+8
DOD	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.79E+3	2.70E+2	1.68E+3	2.79E+3
NRC	5.12E+3	1.07E+4	6.10E+4	4.98E+3	9.88E+3	5.32E+4	4.94E+3	9.31E+3	4.83E+4	4.86E+3	9.00E+3	4.60E+4	4.81E+3	8.84E+3	4.47E+4
Total	1.08E+6	1.39E+7	1.05E+8	1.08E+6	1.39E+7	1.05E+8	1.07E+6	1.38E+7	1.05E+8	1.05E+6	1.37E+7	1.03E+8	1.04E+6	1.36E+7	1.03E+8

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 Table M-47. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.67E+2	7.34E+2	7.34E+2	6.51E+2	7.16E+2	7.16E+2	6.38E+2	7.03E+2	7.03E+2	6.06E+2	6.67E+2	6.67E+2	5.80E+2	6.38E+2	6.38E+2
II	2.73E+5	6.28E+6	2.32E+7	2.73E+5	6.28E+6	2.32E+7	2.73E+5	6.28E+6	2.32E+7	2.73E+5	6.27E+6	2.32E+7	2.72E+5	6.27E+6	2.32E+7
III	2.85E+2	3.17E+2	3.17E+2	2.83E+2	3.14E+2	3.14E+2	2.77E+2	3.08E+2	3.08E+2	2.38E+2	2.65E+2	2.65E+2	2.10E+2	2.34E+2	2.34E+2
IV	1.51E+3	1.06E+4	2.32E+4	1.49E+3	1.04E+4	2.29E+4	1.47E+3	1.03E+4	2.26E+4	1.42E+3	9.96E+3	2.19E+4	1.40E+3	9.78E+3	2.15E+4
V	1.76E+4	1.93E+4	1.93E+4	1.75E+4	1.92E+4	1.92E+4	1.74E+4	1.92E+4	1.92E+4	1.72E+4	1.89E+4	1.89E+4	1.70E+4	1.86E+4	1.86E+4
VI	3.24E+4	2.99E+5	3.51E+6	3.24E+4	2.99E+5	3.51E+6	3.24E+4	2.99E+5	3.51E+6	3.24E+4	2.99E+5	3.51E+6	3.23E+4	2.99E+5	3.51E+6
VII	3.31E+4	2.64E+5	1.80E+6	3.01E+4	2.40E+5	1.64E+6	2.81E+4	2.23E+5	1.53E+6	2.41E+4	1.91E+5	1.30E+6	2.12E+4	1.68E+5	1.15E+6
IX	1.36E+2	1.10E+3	6.79E+3	1.20E+2	9.67E+2	5.99E+3	1.08E+2	8.71E+2	5.40E+3	8.20E+1	6.63E+2	4.10E+3	6.49E+1	5.24E+2	3.25E+3
X	1.54E+3	1.88E+4	2.15E+4	1.53E+3	1.88E+4	2.15E+4	1.52E+3	1.87E+4	2.15E+4	1.49E+3	1.83E+4	2.10E+4	1.47E+3	1.77E+4	2.03E+4
XII	2.71E+2	1.69E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3
XIIIA	6.17E-1	4.71E+0	1.33E+1	3.67E-1	2.80E+0	7.94E+0	7.78E-2	5.94E-1	1.68E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	5.89E-1	3.36E+0	5.64E+0	3.50E-1	2.00E+0	3.36E+0	7.42E-2	4.24E-1	7.11E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	5.36E-1	1.88E+0	3.87E+1	3.19E-1	1.12E+0	2.30E+1	6.76E-2	2.37E-1	4.87E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.87E-1	1.07E+0	1.07E+0	9.87E-1	1.07E+0	1.07E+0	9.87E-1	1.07E+0	1.07E+0	9.87E-1	1.07E+0	1.07E+0	9.86E-1	1.07E+0	1.07E+0
XVIB	9.80E-1	1.06E+0	1.06E+0	9.80E-1	1.06E+0	1.06E+0	9.80E-1	1.06E+0	1.06E+0	9.80E-1	1.06E+0	1.06E+0	9.79E-1	1.06E+0	1.06E+0
XVIC	9.69E-1	1.05E+0	1.05E+0	9.69E-1	1.05E+0	1.05E+0	9.69E-1	1.05E+0	1.05E+0	9.68E-1	1.05E+0	1.05E+0	9.68E-1	1.05E+0	1.05E+0
XVIIIA	7.77E+1	8.35E+1	8.35E+1	7.77E+1	8.35E+1	8.35E+1	7.77E+1	8.35E+1	8.35E+1	7.77E+1	8.35E+1	8.35E+1	7.76E+1	8.34E+1	8.34E+1
XVIIIB	7.06E+1	7.46E+1	7.46E+1	7.06E+1	7.46E+1	7.46E+1	7.06E+1	7.46E+1	7.46E+1	7.06E+1	7.46E+1	7.46E+1	7.05E+1	7.45E+1	7.45E+1
XVIIIC	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1
XXA	8.57E+1	7.69E+2	6.10E+3	5.65E+1	5.42E+2	4.30E+3	4.18E+1	4.37E+2	3.46E+3	1.19E+1	2.20E+2	1.74E+3	5.05E+0	1.13E+2	8.97E+2
XXB	8.24E+1	5.36E+2	2.45E+3	5.43E+1	3.71E+2	1.69E+3	4.02E+1	2.95E+2	1.35E+3	1.15E+1	1.32E+2	6.02E+2	4.85E+0	5.47E+1	2.50E+2
XXC	7.57E+1	2.80E+2	6.46E+3	4.99E+1	1.84E+2	4.25E+3	3.69E+1	1.37E+2	3.15E+3	1.05E+1	3.90E+1	8.99E+2	4.45E+0	1.65E+1	3.80E+2
XXIA	1.91E+1	1.92E+2	1.89E+3	1.91E+1	1.92E+2	1.89E+3	1.91E+1	1.92E+2	1.89E+3	1.91E+1	1.91E+2	1.88E+3	1.90E+1	1.91E+2	1.88E+3
XXIB	1.91E+1	1.92E+2	1.84E+3	1.91E+1	1.92E+2	1.84E+3	1.91E+1	1.92E+2	1.84E+3	1.90E+1	1.91E+2	1.83E+3	1.90E+1	1.91E+2	1.82E+3
XXIC	1.90E+1	1.90E+2	1.73E+3	1.90E+1	1.90E+2	1.73E+3	1.90E+1	1.90E+2	1.73E+3	1.90E+1	1.90E+2	1.73E+3	1.89E+1	1.89E+2	1.72E+3
XXII	3.37E+3	8.32E+4	1.37E+5	3.36E+3	8.32E+4	1.37E+5	3.36E+3	8.32E+4	1.37E+5	3.35E+3	8.30E+4	1.36E+5	3.34E+3	8.29E+4	1.36E+5
DOE	1.09E+6	1.40E+7	1.06E+8	1.08E+6	1.39E+7	1.06E+8	1.08E+6	1.39E+7	1.05E+8	1.08E+6	1.39E+7	1.05E+8	1.07E+6	1.38E+7	1.05E+8
DOD	2.76E+2	1.71E+3	2.96E+3	2.73E+2	1.70E+3	2.90E+3	2.71E+2	1.69E+3	2.82E+3	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3
NRC	6.03E+3	1.63E+4	1.15E+5	5.64E+3	1.41E+4	9.26E+4	5.45E+3	1.30E+4	8.19E+4	5.05E+3	1.07E+4	5.98E+4	4.95E+3	9.77E+3	5.16E+4
Total	1.09E+6	1.40E+7	1.06E+8	1.09E+6	1.39E+7	1.06E+8	1.09E+6	1.39E+7	1.06E+8	1.08E+6	1.39E+7	1.05E+8	1.08E+6	1.39E+7	1.05E+8

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 Table M-48. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.39E+2	5.93E+2	5.93E+2	5.10E+2	5.62E+2	5.62E+2	4.70E+2	5.18E+2	5.18E+2	3.38E+2	3.72E+2	3.72E+2	2.94E+2	3.23E+2	3.23E+2
II	2.72E+5	6.27E+6	2.31E+7	2.72E+5	6.27E+6	2.30E+7	2.72E+5	6.27E+6	2.29E+7	2.72E+5	6.26E+6	2.27E+7	2.72E+5	6.25E+6	2.26E+7
III	1.82E+2	2.02E+2	2.02E+2	1.50E+2	1.67E+2	1.67E+2	9.56E+1	1.06E+2	1.06E+2	2.51E+1	2.79E+1	2.79E+1	1.41E+1	1.57E+1	1.57E+1
IV	1.33E+3	9.34E+3	2.05E+4	1.27E+3	8.89E+3	1.95E+4	1.14E+3	8.00E+3	1.76E+4	5.07E+2	3.55E+3	7.80E+3	1.89E+2	1.32E+3	2.91E+3
V	1.65E+4	1.81E+4	1.81E+4	1.60E+4	1.76E+4	1.76E+4	1.51E+4	1.66E+4	1.66E+4	1.26E+4	1.39E+4	1.39E+4	1.20E+4	1.32E+4	1.32E+4
VI	3.23E+4	2.98E+5	3.50E+6	3.22E+4	2.98E+5	3.50E+6	3.20E+4	2.96E+5	3.48E+6	3.11E+4	2.88E+5	3.38E+6	3.07E+4	2.85E+5	3.35E+6
VII	1.43E+4	1.13E+5	7.76E+5	1.02E+4	8.08E+4	5.52E+5	6.76E+3	5.37E+4	3.67E+5	3.72E+1	2.87E+2	1.95E+3	.00E+0	.00E+0	.00E+0
IX	4.73E+1	3.82E+2	2.37E+3	3.41E+1	2.76E+2	1.71E+3	2.33E+1	1.89E+2	1.17E+3	4.24E+0	3.42E+1	2.12E+2	.00E+0	.00E+0	.00E+0
X	1.44E+3	1.58E+4	1.81E+4	1.41E+3	1.40E+4	1.59E+4	1.38E+3	1.13E+4	1.29E+4	1.24E+3	6.85E+3	7.72E+3	1.20E+3	5.80E+3	6.51E+3
XII	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.79E+3	2.70E+2	1.68E+3	2.79E+3	2.68E+2	1.67E+3	2.77E+3	2.67E+2	1.66E+3	2.76E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.83E-1	1.07E+0	1.07E+0	9.81E-1	1.06E+0	1.06E+0	9.79E-1	1.06E+0	1.06E+0	9.55E-1	1.04E+0	1.04E+0	9.41E-1	1.02E+0	1.02E+0
XVIB	9.76E-1	1.06E+0	1.06E+0	9.74E-1	1.06E+0	1.06E+0	9.71E-1	1.05E+0	1.05E+0	9.48E-1	1.03E+0	1.03E+0	9.34E-1	1.02E+0	1.02E+0
XVIC	9.65E-1	1.05E+0	1.05E+0	9.63E-1	1.04E+0	1.04E+0	9.60E-1	1.04E+0	1.04E+0	9.37E-1	1.02E+0	1.02E+0	9.23E-1	1.00E+0	1.00E+0
XVIIIA	7.75E+1	8.33E+1	8.33E+1	7.72E+1	8.30E+1	8.30E+1	7.65E+1	8.22E+1	8.22E+1	7.31E+1	7.85E+1	7.85E+1	7.14E+1	7.67E+1	7.67E+1
XVIIIB	7.04E+1	7.44E+1	7.44E+1	7.01E+1	7.41E+1	7.41E+1	6.95E+1	7.35E+1	7.35E+1	6.64E+1	7.02E+1	7.02E+1	6.49E+1	6.86E+1	6.86E+1
XVIIIC	5.87E+1	6.06E+1	6.06E+1	5.85E+1	6.03E+1	6.03E+1	5.80E+1	5.98E+1	5.98E+1	5.54E+1	5.71E+1	5.71E+1	5.41E+1	5.58E+1	5.58E+1
XXA	4.26E+0	3.81E+1	3.02E+2	3.91E+0	3.55E+1	2.82E+2	3.45E+0	3.20E+1	2.54E+2	2.39E+0	2.37E+1	1.89E+2	2.02E+0	2.15E+1	1.71E+2
XXB	4.10E+0	2.66E+1	1.21E+2	3.76E+0	2.47E+1	1.13E+2	3.32E+0	2.21E+1	1.01E+2	2.30E+0	1.61E+1	7.34E+1	1.94E+0	1.46E+1	6.66E+1
XXC	3.76E+0	1.39E+1	3.21E+2	3.46E+0	1.28E+1	2.95E+2	3.05E+0	1.13E+1	2.60E+2	2.11E+0	7.80E+0	1.80E+2	1.78E+0	6.59E+0	1.52E+2
XXIA	1.88E+1	1.89E+2	1.86E+3	1.87E+1	1.87E+2	1.84E+3	1.83E+1	1.84E+2	1.81E+3	1.54E+1	1.54E+2	1.52E+3	1.43E+1	1.44E+2	1.41E+3
XXIB	1.88E+1	1.89E+2	1.81E+3	1.86E+1	1.87E+2	1.79E+3	1.83E+1	1.84E+2	1.76E+3	1.54E+1	1.54E+2	1.48E+3	1.43E+1	1.44E+2	1.37E+3
XXIC	1.87E+1	1.87E+2	1.70E+3	1.86E+1	1.85E+2	1.69E+3	1.82E+1	1.82E+2	1.66E+3	1.53E+1	1.53E+2	1.39E+3	1.42E+1	1.42E+2	1.30E+3
XXII	3.32E+3	8.25E+4	1.35E+5	3.29E+3	8.18E+4	1.34E+5	3.25E+3	8.09E+4	1.33E+5	3.08E+3	7.74E+4	1.27E+5	3.04E+3	7.64E+4	1.25E+5
DOE	1.06E+6	1.38E+7	1.04E+8	1.06E+6	1.37E+7	1.04E+8	1.05E+6	1.36E+7	1.03E+8	1.01E+6	1.34E+7	1.00E+8	1.00E+6	1.33E+7	9.96E+7
DOD	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.79E+3	2.70E+2	1.68E+3	2.79E+3	2.68E+2	1.67E+3	2.77E+3	2.67E+2	1.66E+3	2.76E+3
NRC	4.93E+3	9.23E+3	4.76E+4	4.90E+3	9.14E+3	4.69E+4	4.85E+3	8.99E+3	4.58E+4	4.58E+3	8.06E+3	3.87E+4	4.45E+3	7.70E+3	3.61E+4
Total	1.07E+6	1.38E+7	1.04E+8	1.06E+6	1.37E+7	1.04E+8	1.05E+6	1.37E+7	1.03E+8	1.02E+6	1.34E+7	1.00E+8	1.01E+6	1.33E+7	9.96E+7

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 Table M-49. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	3.73E-1	4.12E-1	4.12E-1	3.68E-1	4.06E-1	4.06E-1	3.63E-1	4.01E-1	4.01E-1	3.53E-1	3.90E-1	3.90E-1	3.47E-1	3.83E-1	3.83E-1
II	4.30E+1	4.23E+2	3.63E+3	4.29E+1	4.23E+2	3.63E+3	4.29E+1	4.23E+2	3.63E+3	4.29E+1	4.23E+2	3.63E+3	4.29E+1	4.23E+2	3.63E+3
III	1.58E-1	1.75E-1	1.75E-1	1.58E-1	1.75E-1	1.75E-1	1.57E-1	1.74E-1	1.74E-1	1.53E-1	1.69E-1	1.69E-1	1.46E-1	1.61E-1	1.61E-1
IV	3.15E-1	2.20E+0	4.68E+0	3.13E-1	2.19E+0	4.64E+0	3.11E-1	2.17E+0	4.61E+0	3.06E-1	2.14E+0	4.54E+0	3.02E-1	2.11E+0	4.48E+0
V	9.75E+0	1.07E+1	1.07E+1	9.74E+0	1.07E+1	1.07E+1	9.73E+0	1.07E+1	1.07E+1	9.67E+0	1.07E+1	1.07E+1	9.62E+0	1.06E+1	1.06E+1
VI	7.00E+0	6.21E+1	6.37E+2	7.00E+0	6.21E+1	6.37E+2	7.00E+0	6.21E+1	6.37E+2	7.00E+0	6.21E+1	6.37E+2	7.00E+0	6.21E+1	6.37E+2
VII	2.67E+0	1.86E+1	1.22E+2	2.61E+0	1.82E+1	1.19E+2	2.52E+0	1.75E+1	1.15E+2	2.33E+0	1.60E+1	1.04E+2	2.21E+0	1.50E+1	9.78E+1
IX	9.64E-3	7.73E-2	4.72E-1	9.15E-3	7.33E-2	4.48E-1	8.69E-3	6.97E-2	4.26E-1	7.56E-3	6.06E-2	3.70E-1	6.79E-3	5.44E-2	3.33E-1
X	1.56E+0	5.13E+0	5.69E+0	1.56E+0	5.13E+0	5.69E+0	1.56E+0	5.13E+0	5.69E+0	1.55E+0	5.11E+0	5.67E+0	1.54E+0	5.07E+0	5.63E+0
XII	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1
XIIIA	1.65E-4	1.26E-3	3.31E-3	1.32E-4	1.01E-3	2.66E-3	9.24E-5	7.08E-4	1.85E-3	1.82E-5	1.39E-4	3.65E-4	.00E+0	.00E+0	.00E+0
XIIIB	1.58E-4	8.99E-4	1.41E-3	1.27E-4	7.22E-4	1.13E-3	8.86E-5	5.04E-4	7.89E-4	1.75E-5	9.94E-5	1.56E-4	.00E+0	.00E+0	.00E+0
XIIIC	1.44E-4	5.03E-4	1.03E-2	1.15E-4	4.04E-4	8.28E-3	8.06E-5	2.82E-4	5.78E-3	1.59E-5	5.56E-5	1.14E-3	.00E+0	.00E+0	.00E+0
XVIA	5.39E-4	5.89E-4	5.89E-4	5.39E-4	5.89E-4	5.89E-4	5.39E-4	5.89E-4	5.89E-4	5.39E-4	5.89E-4	5.89E-4	5.39E-4	5.89E-4	5.89E-4
XVIB	5.36E-4	5.85E-4	5.85E-4	5.36E-4	5.85E-4	5.85E-4	5.36E-4	5.85E-4	5.85E-4	5.36E-4	5.85E-4	5.85E-4	5.36E-4	5.85E-4	5.85E-4
XVIC	5.32E-4	5.78E-4	5.78E-4	5.32E-4	5.78E-4	5.78E-4	5.32E-4	5.78E-4	5.78E-4	5.32E-4	5.78E-4	5.78E-4	5.32E-4	5.78E-4	5.78E-4
XVIIIA	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2
XVIIIB	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2
XVIIIC	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2
XXA	1.95E-2	1.56E-1	1.13E+0	1.48E-2	1.29E-1	9.35E-1	1.25E-2	1.12E-1	8.08E-1	8.72E-3	8.24E-2	5.95E-1	6.57E-3	6.73E-2	4.86E-1
XXB	1.88E-2	1.12E-1	4.75E-1	1.42E-2	8.52E-2	3.59E-1	1.21E-2	7.22E-2	3.05E-1	8.39E-3	5.02E-2	2.12E-1	6.33E-3	3.78E-2	1.60E-1
XXC	1.72E-2	6.35E-2	1.44E+0	1.31E-2	4.81E-2	1.09E+0	1.11E-2	4.07E-2	9.24E-1	7.70E-3	2.83E-2	6.43E-1	5.80E-3	2.14E-2	4.85E-1
XXIA	4.17E-3	4.23E-2	4.13E-1	4.17E-3	4.23E-2	4.13E-1	4.17E-3	4.23E-2	4.13E-1	4.17E-3	4.23E-2	4.13E-1	4.17E-3	4.23E-2	4.13E-1
XXIB	4.15E-3	4.19E-2	3.97E-1	4.15E-3	4.19E-2	3.97E-1	4.15E-3	4.19E-2	3.97E-1	4.15E-3	4.19E-2	3.96E-1	4.15E-3	4.19E-2	3.96E-1
XXIC	4.13E-3	4.14E-2	3.67E-1	4.13E-3	4.14E-2	3.67E-1	4.13E-3	4.14E-2	3.67E-1	4.13E-3	4.14E-2	3.67E-1	4.13E-3	4.14E-2	3.67E-1
XXII	5.75E-1	1.44E+1	2.58E+1	5.75E-1	1.44E+1	2.58E+1	5.75E-1	1.44E+1	2.58E+1	5.74E-1	1.44E+1	2.58E+1	5.74E-1	1.44E+1	2.58E+1
DOE	2.21E+2	1.97E+3	1.84E+4	2.21E+2	1.97E+3	1.84E+4	2.21E+2	1.97E+3	1.84E+4	2.20E+2	1.97E+3	1.84E+4	2.20E+2	1.97E+3	1.84E+4
DOD	2.11E-2	1.31E-1	2.47E-1	2.08E-2	1.29E-1	2.38E-1	2.05E-2	1.27E-1	2.28E-1	1.99E-2	1.24E-1	2.09E-1	1.97E-2	1.23E-1	2.04E-1
NRC	2.20E+0	4.43E+0	2.48E+1	2.13E+0	4.10E+0	2.17E+1	2.10E+0	3.93E+0	2.01E+1	2.05E+0	3.63E+0	1.73E+1	2.02E+0	3.47E+0	1.59E+1
Total	2.23E+2	1.98E+3	1.84E+4	2.23E+2	1.97E+3	1.84E+4	2.23E+2	1.97E+3	1.84E+4	2.22E+2	1.97E+3	1.84E+4	2.22E+2	1.97E+3	1.84E+4

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 Table M-50. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	3.31E-1	3.66E-1	3.66E-1	3.20E-1	3.53E-1	3.53E-1	3.03E-1	3.34E-1	3.34E-1	2.58E-1	2.85E-1	2.85E-1	2.47E-1	2.72E-1	2.72E-1
II	4.29E+1	4.23E+2	3.63E+3	4.29E+1	4.23E+2	3.63E+3	4.29E+1	4.22E+2	3.62E+3	4.29E+1	4.22E+2	3.59E+3	4.29E+1	4.21E+2	3.59E+3
III	1.25E-1	1.39E-1	1.39E-1	1.16E-1	1.28E-1	1.28E-1	1.04E-1	1.16E-1	1.16E-1	4.83E-2	5.35E-2	5.35E-2	3.12E-2	3.46E-2	3.46E-2
IV	2.95E-1	2.06E+0	4.38E+0	2.91E-1	2.03E+0	4.32E+0	2.82E-1	1.97E+0	4.19E+0	2.40E-1	1.67E+0	3.55E+0	2.18E-1	1.53E+0	3.24E+0
V	9.50E+0	1.05E+1	1.05E+1	9.39E+0	1.03E+1	1.03E+1	9.21E+0	1.01E+1	1.01E+1	8.29E+0	9.12E+0	9.12E+0	7.83E+0	8.62E+0	8.62E+0
VI	6.99E+0	6.21E+1	6.37E+2	6.99E+0	6.21E+1	6.37E+2	6.97E+0	6.20E+1	6.36E+2	6.90E+0	6.15E+1	6.31E+2	6.85E+0	6.12E+1	6.28E+2
VII	2.01E+0	1.35E+1	8.78E+1	1.85E+0	1.24E+1	8.05E+1	1.44E+0	9.60E+0	6.25E+1	5.96E-1	4.07E+0	2.66E+1	4.69E-1	3.23E+0	2.11E+1
IX	5.67E-3	4.54E-2	2.78E-1	4.76E-3	3.82E-2	2.33E-1	3.89E-3	3.12E-2	1.91E-1	1.82E-3	1.46E-2	8.93E-2	1.28E-3	1.02E-2	6.26E-2
X	1.53E+0	4.93E+0	5.46E+0	1.52E+0	4.75E+0	5.25E+0	1.50E+0	4.38E+0	4.82E+0	1.42E+0	3.24E+0	3.52E+0	1.38E+0	2.98E+0	3.22E+0
XII	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.39E-4	5.88E-4	5.88E-4	5.39E-4	5.88E-4	5.88E-4	5.38E-4	5.87E-4	5.87E-4	5.35E-4	5.84E-4	5.84E-4	5.33E-4	5.82E-4	5.82E-4
XVIB	5.36E-4	5.85E-4	5.85E-4	5.35E-4	5.84E-4	5.84E-4	5.34E-4	5.83E-4	5.83E-4	5.31E-4	5.80E-4	5.80E-4	5.30E-4	5.79E-4	5.79E-4
XVIC	5.32E-4	5.78E-4	5.78E-4	5.31E-4	5.77E-4	5.77E-4	5.30E-4	5.76E-4	5.76E-4	5.27E-4	5.73E-4	5.73E-4	5.26E-4	5.72E-4	5.72E-4
XVIII	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.40E-2	3.40E-2	3.12E-2	3.36E-2	3.36E-2	3.09E-2	3.33E-2	3.33E-2
XVIII A	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.40E-2	3.40E-2	3.12E-2	3.36E-2	3.36E-2	3.09E-2	3.33E-2	3.33E-2
XVIII B	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.05E-2	3.05E-2	2.85E-2	3.01E-2	3.01E-2	2.83E-2	2.99E-2	2.99E-2
XVIII C	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.41E-2	2.49E-2	2.49E-2	2.38E-2	2.46E-2	2.46E-2	2.37E-2	2.44E-2	2.44E-2
XXA	3.12E-3	4.04E-2	2.92E-1	1.29E-3	2.59E-2	1.87E-1	8.41E-4	9.21E-3	6.66E-2	6.71E-4	5.94E-3	4.29E-2	6.23E-4	5.57E-3	4.03E-2
XXB	3.01E-3	1.80E-2	7.59E-2	1.24E-3	7.44E-3	3.14E-2	8.09E-4	4.84E-3	2.04E-2	6.46E-4	3.86E-3	1.63E-2	5.99E-4	3.59E-3	1.52E-2
XXC	2.76E-3	1.01E-2	2.30E-1	1.14E-3	4.20E-3	9.53E-2	7.42E-4	2.73E-3	6.20E-2	5.92E-4	2.18E-3	4.95E-2	5.50E-4	2.02E-3	4.59E-2
XXIA	4.15E-3	4.22E-2	4.12E-1	4.14E-3	4.20E-2	4.10E-1	4.12E-3	4.18E-2	4.08E-1	4.00E-3	4.05E-2	3.96E-1	3.89E-3	3.95E-2	3.85E-1
XXIB	4.14E-3	4.18E-2	3.95E-1	4.12E-3	4.17E-2	3.94E-1	4.10E-3	4.14E-2	3.92E-1	3.98E-3	4.02E-2	3.80E-1	3.87E-3	3.91E-2	3.70E-1
XXIC	4.12E-3	4.12E-2	3.66E-1	4.10E-3	4.11E-2	3.65E-1	4.08E-3	4.09E-2	3.63E-1	3.96E-3	3.97E-2	3.52E-1	3.85E-3	3.86E-2	3.42E-1
XXII	5.72E-1	1.44E+1	2.57E+1	5.71E-1	1.44E+1	2.57E+1	5.68E-1	1.43E+1	2.56E+1	5.56E-1	1.40E+1	2.50E+1	5.50E-1	1.39E+1	2.48E+1
DOE	2.20E+2	1.96E+3	1.84E+4	2.19E+2	1.96E+3	1.84E+4	2.18E+2	1.96E+3	1.83E+4	2.14E+2	1.93E+3	1.81E+4	2.13E+2	1.92E+3	1.80E+4
DOD	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1
NRC	1.98E+0	3.19E+0	1.33E+1	1.95E+0	3.04E+0	1.20E+1	1.94E+0	2.94E+0	1.12E+1	1.92E+0	2.87E+0	1.07E+1	1.90E+0	2.83E+0	1.04E+1
Total	2.22E+2	1.97E+3	1.84E+4	2.21E+2	1.96E+3	1.84E+4	2.20E+2	1.96E+3	1.83E+4	2.16E+2	1.94E+3	1.81E+4	2.14E+2	1.92E+3	1.81E+4

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 Table M-51. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	3.70E-1	4.09E-1	4.09E-1	3.61E-1	3.99E-1	3.99E-1	3.54E-1	3.91E-1	3.91E-1	3.36E-1	3.71E-1	3.71E-1	3.22E-1	3.55E-1	3.55E-1
II	4.29E+1	4.23E+2	3.63E+3	4.29E+1	4.23E+2	3.63E+3	4.29E+1	4.23E+2	3.63E+3	4.29E+1	4.23E+2	3.63E+3	4.29E+1	4.23E+2	3.63E+3
III	1.58E-1	1.75E-1	1.75E-1	1.57E-1	1.73E-1	1.73E-1	1.53E-1	1.70E-1	1.70E-1	1.32E-1	1.46E-1	1.46E-1	1.17E-1	1.29E-1	1.29E-1
IV	3.14E-1	2.19E+0	4.66E+0	3.09E-1	2.16E+0	4.59E+0	3.06E-1	2.14E+0	4.54E+0	2.96E-1	2.07E+0	4.39E+0	2.90E-1	2.03E+0	4.31E+0
V	9.74E+0	1.07E+1	1.07E+1	9.72E+0	1.07E+1	1.07E+1	9.68E+0	1.07E+1	1.07E+1	9.54E+0	1.05E+1	1.05E+1	9.41E+0	1.04E+1	1.04E+1
VI	7.00E+0	6.21E+1	6.37E+2	7.00E+0	6.21E+1	6.37E+2	7.00E+0	6.21E+1	6.37E+2	7.00E+0	6.21E+1	6.37E+2	6.99E+0	6.21E+1	6.37E+2
VII	2.65E+0	1.85E+1	1.21E+2	2.44E+0	1.68E+1	1.10E+2	2.30E+0	1.57E+1	1.03E+2	2.01E+0	1.35E+1	8.78E+1	1.78E+0	1.19E+1	7.72E+1
IX	9.32E-3	7.47E-2	4.56E-1	8.21E-3	6.58E-2	4.02E-1	7.40E-3	5.93E-2	3.63E-1	5.63E-3	4.51E-2	2.76E-1	4.46E-3	3.57E-2	2.18E-1
X	1.56E+0	5.13E+0	5.69E+0	1.56E+0	5.13E+0	5.69E+0	1.55E+0	5.12E+0	5.68E+0	1.54E+0	5.04E+0	5.59E+0	1.52E+0	4.90E+0	5.43E+0
XII	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1
XIIIA	1.47E-4	1.13E-3	2.95E-3	8.76E-5	6.71E-4	1.76E-3	1.85E-5	1.42E-4	3.72E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.41E-4	8.03E-4	1.26E-3	8.40E-5	4.78E-4	7.49E-4	1.78E-5	1.01E-4	1.59E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.28E-4	4.49E-4	9.21E-3	7.64E-5	2.67E-4	5.48E-3	1.62E-5	5.66E-5	1.16E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.39E-4	5.89E-4	5.89E-4	5.39E-4	5.89E-4	5.89E-4	5.39E-4	5.89E-4	5.89E-4	5.39E-4	5.88E-4	5.88E-4	5.39E-4	5.88E-4	5.88E-4
XVIB	5.36E-4	5.85E-4	5.85E-4	5.36E-4	5.85E-4	5.85E-4	5.36E-4	5.85E-4	5.85E-4	5.36E-4	5.85E-4	5.85E-4	5.35E-4	5.84E-4	5.84E-4
XVIC	5.32E-4	5.78E-4	5.78E-4	5.32E-4	5.78E-4	5.78E-4	5.32E-4	5.78E-4	5.78E-4	5.32E-4	5.78E-4	5.78E-4	5.31E-4	5.78E-4	5.78E-4
XVIIIA	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2
XVIIIB	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2
XVIIIC	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2
XXA	1.56E-2	1.39E-1	1.00E+0	1.03E-2	9.80E-2	7.07E-1	7.61E-3	7.90E-2	5.70E-1	2.17E-3	3.97E-2	2.87E-1	9.17E-4	2.04E-2	1.48E-1
XXB	1.50E-2	9.70E-2	4.09E-1	9.89E-3	6.72E-2	2.84E-1	7.32E-3	5.34E-2	2.25E-1	2.09E-3	2.39E-2	1.01E-1	8.83E-4	9.90E-3	4.18E-2
XXC	1.38E-2	5.06E-2	1.15E+0	9.07E-3	3.34E-2	7.58E-1	6.71E-3	2.47E-2	5.61E-1	1.92E-3	7.06E-3	1.60E-1	8.10E-4	2.98E-3	6.77E-2
XXIA	4.17E-3	4.23E-2	4.13E-1	4.17E-3	4.23E-2	4.13E-1	4.17E-3	4.23E-2	4.13E-1	4.16E-3	4.22E-2	4.12E-1	4.14E-3	4.20E-2	4.10E-1
XXIB	4.15E-3	4.19E-2	3.97E-1	4.15E-3	4.19E-2	3.96E-1	4.15E-3	4.19E-2	3.96E-1	4.14E-3	4.18E-2	3.95E-1	4.12E-3	4.17E-2	3.94E-1
XXIC	4.13E-3	4.14E-2	3.67E-1	4.13E-3	4.14E-2	3.67E-1	4.13E-3	4.14E-2	3.67E-1	4.12E-3	4.13E-2	3.66E-1	4.10E-3	4.11E-2	3.65E-1
XXII	5.75E-1	1.44E+1	2.58E+1	5.75E-1	1.44E+1	2.58E+1	5.74E-1	1.44E+1	2.58E+1	5.73E-1	1.44E+1	2.57E+1	5.71E-1	1.44E+1	2.57E+1
DOE	2.21E+2	1.97E+3	1.84E+4	2.21E+2	1.97E+3	1.84E+4	2.20E+2	1.97E+3	1.84E+4	2.20E+2	1.96E+3	1.84E+4	2.19E+2	1.96E+3	1.84E+4
DOD	2.09E-2	1.30E-1	2.42E-1	2.04E-2	1.27E-1	2.27E-1	1.99E-2	1.24E-1	2.09E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1
NRC	2.14E+0	4.22E+0	2.25E+1	2.07E+0	3.80E+0	1.87E+1	2.04E+0	3.61E+0	1.69E+1	1.97E+0	3.20E+0	1.31E+1	1.95E+0	3.02E+0	1.17E+1
Total	2.23E+2	1.97E+3	1.84E+4	2.23E+2	1.97E+3	1.84E+4	2.22E+2	1.97E+3	1.84E+4	2.22E+2	1.97E+3	1.84E+4	2.21E+2	1.96E+3	1.84E+4

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 Table M-52. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.99E-1	3.30E-1	3.30E-1	2.83E-1	3.13E-1	3.13E-1	2.61E-1	2.88E-1	2.88E-1	1.87E-1	2.07E-1	2.07E-1	1.63E-1	1.80E-1	1.80E-1
II	4.29E+1	4.22E+2	3.61E+3	4.29E+1	4.22E+2	3.60E+3	4.29E+1	4.22E+2	3.59E+3	4.28E+1	4.20E+2	3.56E+3	4.28E+1	4.20E+2	3.54E+3
III	1.01E-1	1.12E-1	1.12E-1	8.34E-2	9.23E-2	9.23E-2	5.30E-2	5.86E-2	5.86E-2	1.39E-2	1.54E-2	1.54E-2	7.83E-3	8.68E-3	8.68E-3
IV	2.77E-1	1.94E+0	4.11E+0	2.64E-1	1.85E+0	3.92E+0	2.38E-1	1.66E+0	3.52E+0	1.05E-1	7.36E-1	1.56E+0	3.93E-2	2.75E-1	5.83E-1
V	9.15E+0	1.01E+1	1.01E+1	8.90E+0	9.80E+0	9.80E+0	8.38E+0	9.23E+0	9.23E+0	7.00E+0	7.70E+0	7.70E+0	6.66E+0	7.34E+0	7.34E+0
VI	6.97E+0	6.20E+1	6.36E+2	6.95E+0	6.18E+1	6.35E+2	6.90E+0	6.15E+1	6.31E+2	6.67E+0	5.97E+1	6.14E+2	6.59E+0	5.91E+1	6.08E+2
VII	1.20E+0	8.01E+0	5.22E+1	8.45E-1	5.69E+0	3.71E+1	5.52E-1	3.78E+0	2.47E+1	3.64E-3	2.08E-2	1.32E-1	.00E+0	.00E+0	.00E+0
IX	3.25E-3	2.60E-2	1.59E-1	2.34E-3	1.88E-2	1.15E-1	1.60E-3	1.28E-2	7.85E-2	2.91E-4	2.33E-3	1.42E-2	.00E+0	.00E+0	.00E+0
X	1.50E+0	4.51E+0	4.97E+0	1.48E+0	4.12E+0	4.53E+0	1.45E+0	3.56E+0	3.88E+0	1.31E+0	2.54E+0	2.72E+0	1.27E+0	2.28E+0	2.43E+0
XII	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.03E-1	1.95E-2	1.22E-1	2.02E-1	1.95E-2	1.22E-1	2.01E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.37E-4	5.86E-4	5.86E-4	5.37E-4	5.85E-4	5.85E-4	5.35E-4	5.84E-4	5.84E-4	5.23E-4	5.71E-4	5.71E-4	5.16E-4	5.64E-4	5.64E-4
XVIB	5.34E-4	5.83E-4	5.83E-4	5.33E-4	5.82E-4	5.82E-4	5.32E-4	5.80E-4	5.80E-4	5.20E-4	5.68E-4	5.68E-4	5.13E-4	5.61E-4	5.61E-4
XVIC	5.30E-4	5.76E-4	5.76E-4	5.29E-4	5.75E-4	5.75E-4	5.28E-4	5.74E-4	5.74E-4	5.16E-4	5.61E-4	5.61E-4	5.09E-4	5.54E-4	5.54E-4
XVIIIA	3.15E-2	3.40E-2	3.40E-2	3.14E-2	3.39E-2	3.39E-2	3.11E-2	3.36E-2	3.36E-2	2.98E-2	3.21E-2	3.21E-2	2.91E-2	3.13E-2	3.13E-2
XVIIIB	2.88E-2	3.05E-2	3.05E-2	2.87E-2	3.04E-2	3.04E-2	2.85E-2	3.01E-2	3.01E-2	2.72E-2	2.88E-2	2.88E-2	2.66E-2	2.81E-2	2.81E-2
XVIIIC	2.41E-2	2.49E-2	2.49E-2	2.40E-2	2.48E-2	2.48E-2	2.38E-2	2.46E-2	2.46E-2	2.28E-2	2.35E-2	2.35E-2	2.22E-2	2.30E-2	2.30E-2
XXA	7.75E-4	6.88E-3	4.97E-2	7.12E-4	6.41E-3	4.63E-2	6.28E-4	5.78E-3	4.18E-2	4.34E-4	4.29E-3	3.10E-2	3.67E-4	3.88E-3	2.81E-2
XXB	7.46E-4	4.81E-3	2.03E-2	6.85E-4	4.46E-3	1.89E-2	6.04E-4	4.00E-3	1.69E-2	4.18E-4	2.91E-3	1.23E-2	3.53E-4	2.63E-3	1.11E-2
XXC	6.84E-4	2.52E-3	5.72E-2	6.28E-4	2.31E-3	5.25E-2	5.54E-4	2.04E-3	4.63E-2	3.83E-4	1.41E-3	3.20E-2	3.24E-4	1.19E-3	2.71E-2
XXIA	4.10E-3	4.16E-2	4.06E-1	4.07E-3	4.12E-2	4.03E-1	3.99E-3	4.05E-2	3.95E-1	3.35E-3	3.40E-2	3.32E-1	3.12E-3	3.17E-2	3.09E-1
XXIB	4.09E-3	4.13E-2	3.90E-1	4.05E-3	4.09E-2	3.87E-1	3.97E-3	4.01E-2	3.79E-1	3.34E-3	3.37E-2	3.19E-1	3.11E-3	3.14E-2	2.97E-1
XXIC	4.07E-3	4.07E-2	3.61E-1	4.03E-3	4.04E-2	3.58E-1	3.95E-3	3.96E-2	3.51E-1	3.32E-3	3.33E-2	2.95E-1	3.09E-3	3.10E-2	2.75E-1
XXII	5.67E-1	1.43E+1	2.56E+1	5.62E-1	1.42E+1	2.54E+1	5.56E-1	1.40E+1	2.51E+1	5.27E-1	1.34E+1	2.39E+1	5.19E-1	1.32E+1	2.36E+1
DOE	2.18E+2	1.95E+3	1.83E+4	2.17E+2	1.95E+3	1.82E+4	2.15E+2	1.93E+3	1.81E+4	2.07E+2	1.88E+3	1.77E+4	2.04E+2	1.86E+3	1.75E+4
DOD	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.03E-1	1.95E-2	1.22E-1	2.02E-1	1.95E-2	1.22E-1	2.01E-1
NRC	1.94E+0	2.92E+0	1.10E+1	1.93E+0	2.90E+0	1.09E+1	1.91E+0	2.86E+0	1.07E+1	1.82E+0	2.62E+0	9.13E+0	1.77E+0	2.53E+0	8.57E+0
Total	2.20E+2	1.96E+3	1.83E+4	2.18E+2	1.95E+3	1.82E+4	2.16E+2	1.94E+3	1.82E+4	2.08E+2	1.88E+3	1.77E+4	2.06E+2	1.87E+3	1.75E+4

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 Table M-53. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.48E-1	2.75E-1	2.75E-1	2.44E-1	2.71E-1	2.71E-1	2.42E-1	2.68E-1	2.68E-1	2.35E-1	2.60E-1	2.60E-1	2.30E-1	2.55E-1	2.55E-1
II	3.23E+1	3.18E+2	2.75E+3	3.23E+1	3.18E+2	2.75E+3	3.23E+1	3.18E+2	2.75E+3	3.23E+1	3.17E+2	2.74E+3	3.23E+1	3.17E+2	2.74E+3
III	1.05E-1	1.17E-1	1.17E-1	1.05E-1	1.16E-1	1.16E-1	1.04E-1	1.16E-1	1.16E-1	1.01E-1	1.13E-1	1.13E-1	9.68E-2	1.08E-1	1.08E-1
IV	1.94E-1	1.35E+0	3.04E+0	1.92E-1	1.34E+0	3.02E+0	1.91E-1	1.34E+0	3.00E+0	1.88E-1	1.31E+0	2.95E+0	1.86E-1	1.30E+0	2.92E+0
V	6.50E+0	7.16E+0	7.16E+0	6.49E+0	7.15E+0	7.15E+0	6.48E+0	7.14E+0	7.14E+0	6.45E+0	7.10E+0	7.10E+0	6.41E+0	7.07E+0	7.07E+0
VI	4.35E+0	3.84E+1	4.33E+2	4.34E+0	3.84E+1	4.33E+2	4.34E+0	3.84E+1	4.33E+2	4.34E+0	3.84E+1	4.33E+2	4.34E+0	3.84E+1	4.33E+2
VII	2.18E+0	1.57E+1	1.04E+2	2.13E+0	1.53E+1	1.01E+2	2.06E+0	1.47E+1	9.76E+1	1.90E+0	1.34E+1	8.88E+1	1.80E+0	1.26E+1	8.33E+1
IX	8.19E-3	6.58E-2	4.02E-1	7.77E-3	6.24E-2	3.82E-1	7.38E-3	5.93E-2	3.63E-1	6.42E-3	5.15E-2	3.15E-1	5.77E-3	4.63E-2	2.83E-1
X	1.02E+0	3.21E+0	3.57E+0	1.02E+0	3.21E+0	3.57E+0	1.02E+0	3.21E+0	3.56E+0	1.02E+0	3.20E+0	3.55E+0	1.01E+0	3.18E+0	3.53E+0
XII	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.71E-1
XIIIA	1.01E-4	7.71E-4	2.10E-3	8.15E-5	6.19E-4	1.69E-3	5.69E-5	4.32E-4	1.18E-3	1.12E-5	8.52E-5	2.32E-4	.00E+0	.00E+0	.00E+0
XIIIB	9.66E-5	5.50E-4	8.99E-4	7.75E-5	4.42E-4	7.22E-4	5.41E-5	3.08E-4	5.04E-4	1.07E-5	6.08E-5	9.93E-5	.00E+0	.00E+0	.00E+0
XIIIC	8.80E-5	3.08E-4	6.30E-3	7.06E-5	2.47E-4	5.05E-3	4.93E-5	1.73E-4	3.53E-3	9.72E-6	3.40E-5	6.96E-4	.00E+0	.00E+0	.00E+0
XVIA	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4
XVIB	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4
XVIC	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.87E-4	3.87E-4
XVIIIA	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2
XVIIIB	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2
XVIIIC	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2
XXA	1.20E-2	9.68E-2	8.13E-1	9.09E-3	8.01E-2	6.73E-1	7.70E-3	6.93E-2	5.82E-1	5.36E-3	5.10E-2	4.28E-1	4.04E-3	4.17E-2	3.50E-1
XXB	1.15E-2	6.95E-2	3.44E-1	8.74E-3	5.27E-2	2.60E-1	7.41E-3	4.46E-2	2.21E-1	5.16E-3	3.10E-2	1.54E-1	3.89E-3	2.34E-2	1.16E-1
XXC	1.06E-2	3.93E-2	9.13E-1	8.01E-3	2.98E-2	6.91E-1	6.79E-3	2.52E-2	5.86E-1	4.72E-3	1.76E-2	4.07E-1	3.56E-3	1.32E-2	3.07E-1
XXIA	2.79E-3	2.83E-2	2.75E-1	2.79E-3	2.83E-2	2.75E-1	2.79E-3	2.83E-2	2.75E-1	2.79E-3	2.83E-2	2.75E-1	2.78E-3	2.82E-2	2.75E-1
XXIB	2.77E-3	2.81E-2	2.64E-1	2.77E-3	2.81E-2	2.64E-1	2.77E-3	2.81E-2	2.64E-1	2.77E-3	2.81E-2	2.64E-1	2.77E-3	2.81E-2	2.64E-1
XXIC	2.75E-3	2.75E-2	2.44E-1	2.75E-3	2.75E-2	2.44E-1	2.75E-3	2.75E-2	2.44E-1	2.75E-3	2.75E-2	2.44E-1	2.75E-3	2.75E-2	2.44E-1
XXII	4.20E-1	9.29E+0	1.74E+1	4.20E-1	9.29E+0	1.74E+1	4.20E-1	9.29E+0	1.74E+1	4.20E-1	9.29E+0	1.74E+1	4.19E-1	9.29E+0	1.73E+1
DOE	1.44E+2	1.28E+3	1.28E+4	1.44E+2	1.28E+3	1.28E+4	1.44E+2	1.28E+3	1.28E+4	1.44E+2	1.28E+3	1.28E+4	1.44E+2	1.28E+3	1.28E+4
DOD	1.73E-2	1.08E-1	1.97E-1	1.71E-2	1.07E-1	1.92E-1	1.69E-2	1.06E-1	1.85E-1	1.66E-2	1.03E-1	1.73E-1	1.65E-2	1.03E-1	1.71E-1
NRC	1.65E+0	3.09E+0	1.69E+1	1.61E+0	2.89E+0	1.48E+1	1.69E+0	2.78E+0	1.37E+1	1.56E+0	2.59E+0	1.19E+1	1.54E+0	2.49E+0	1.09E+1
Total	1.46E+2	1.29E+3	1.28E+4	1.46E+2	1.28E+3	1.28E+4	1.46E+2	1.28E+3	1.28E+4	1.45E+2	1.28E+3	1.28E+4	1.45E+2	1.28E+3	1.28E+4

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 Table M-54. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.20E-1	2.44E-1	2.44E-1	2.12E-1	2.35E-1	2.35E-1	2.01E-1	2.23E-1	2.23E-1	1.72E-1	1.90E-1	1.90E-1	1.64E-1	1.82E-1	1.82E-1
II	3.23E+1	3.17E+2	2.74E+3	3.23E+1	3.17E+2	2.74E+3	3.23E+1	3.17E+2	2.73E+3	3.23E+1	3.17E+2	2.71E+3	3.22E+1	3.16E+2	2.71E+3
III	8.31E-2	9.24E-2	9.24E-2	7.68E-2	8.53E-2	8.53E-2	6.94E-2	7.71E-2	7.71E-2	3.21E-2	3.57E-2	3.57E-2	2.07E-2	2.30E-2	2.30E-2
IV	1.81E-1	1.27E+0	2.85E+0	1.79E-1	1.25E+0	2.81E+0	1.73E-1	1.21E+0	2.73E+0	1.47E-1	1.03E+0	2.31E+0	1.34E-1	9.37E-1	2.11E+0
V	6.33E+0	6.97E+0	6.97E+0	6.26E+0	6.89E+0	6.89E+0	6.13E+0	6.76E+0	6.76E+0	5.52E+0	6.08E+0	6.08E+0	5.21E+0	5.74E+0	5.74E+0
VI	4.34E+0	3.84E+1	4.32E+2	4.33E+0	3.84E+1	4.32E+2	4.32E+0	3.83E+1	4.32E+2	4.28E+0	3.80E+1	4.28E+2	4.25E+0	3.78E+1	4.26E+2
VII	1.63E+0	1.13E+1	7.48E+1	1.50E+0	1.04E+1	6.85E+1	1.17E+0	8.07E+0	5.33E+1	4.86E-1	3.42E+0	2.26E+1	3.83E-1	2.71E+0	1.80E+1
IX	4.82E-3	3.87E-2	2.37E-1	4.05E-3	3.25E-2	1.99E-1	3.30E-3	2.65E-2	1.62E-1	1.55E-3	1.24E-2	7.61E-2	1.09E-3	8.72E-3	5.34E-2
X	1.00E+0	3.09E+0	3.42E+0	9.94E-1	2.98E+0	3.29E+0	9.80E-1	2.75E+0	3.03E+0	9.29E-1	2.05E+0	2.22E+0	9.05E-1	1.89E+0	2.04E+0
XII	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.70E-1	1.64E-2	1.03E-1	1.70E-1	1.64E-2	1.03E-1	1.70E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.59E-4	3.93E-4	3.93E-4	3.58E-4	3.93E-4	3.93E-4	3.58E-4	3.92E-4	3.92E-4	3.56E-4	3.90E-4	3.90E-4	3.55E-4	3.89E-4	3.89E-4
XVIB	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.57E-4	3.89E-4	3.89E-4	3.55E-4	3.87E-4	3.87E-4	3.54E-4	3.86E-4	3.86E-4
XVIC	3.55E-4	3.86E-4	3.86E-4	3.54E-4	3.86E-4	3.86E-4	3.54E-4	3.85E-4	3.85E-4	3.52E-4	3.83E-4	3.83E-4	3.51E-4	3.82E-4	3.82E-4
XVIII	2.47E-2	2.66E-2	2.66E-2	2.46E-2	2.66E-2	2.66E-2	2.46E-2	2.65E-2	2.65E-2	2.43E-2	2.62E-2	2.62E-2	2.41E-2	2.60E-2	2.60E-2
XVIII A	2.47E-2	2.66E-2	2.66E-2	2.46E-2	2.66E-2	2.66E-2	2.46E-2	2.65E-2	2.65E-2	2.43E-2	2.62E-2	2.62E-2	2.41E-2	2.60E-2	2.60E-2
XVIII B	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.37E-2	2.37E-2	2.22E-2	2.34E-2	2.34E-2	2.20E-2	2.33E-2	2.33E-2
XVIII C	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.87E-2	1.93E-2	1.93E-2	1.85E-2	1.91E-2	1.91E-2	1.84E-2	1.90E-2	1.90E-2
XXA	1.92E-3	2.50E-2	2.10E-1	7.94E-4	1.60E-2	1.35E-1	5.16E-4	5.70E-3	4.79E-2	4.12E-4	3.67E-3	3.09E-2	3.82E-4	3.45E-3	2.90E-2
XXB	1.85E-3	1.11E-2	5.50E-2	7.64E-4	4.60E-3	2.28E-2	4.97E-4	2.99E-3	1.48E-2	3.97E-4	2.39E-3	1.18E-2	3.68E-4	2.22E-3	1.10E-2
XXC	1.69E-3	6.28E-3	1.46E-1	7.00E-4	2.60E-3	6.04E-2	4.55E-4	1.69E-3	3.93E-2	3.63E-4	1.35E-3	3.13E-2	3.37E-4	1.25E-3	2.91E-2
XXIA	2.78E-3	2.82E-2	2.74E-1	2.77E-3	2.81E-2	2.74E-1	2.75E-3	2.79E-2	2.72E-1	2.67E-3	2.71E-2	2.64E-1	2.60E-3	2.64E-2	2.57E-1
XXIB	2.76E-3	2.80E-2	2.63E-1	2.75E-3	2.79E-2	2.63E-1	2.73E-3	2.77E-2	2.61E-1	2.65E-3	2.69E-2	2.53E-1	2.58E-3	2.62E-2	2.47E-1
XXIC	2.74E-3	2.74E-2	2.43E-1	2.73E-3	2.74E-2	2.43E-1	2.72E-3	2.72E-2	2.41E-1	2.63E-3	2.64E-2	2.34E-1	2.56E-3	2.57E-2	2.28E-1
XXII	4.18E-1	9.28E+0	1.73E+1	4.17E-1	9.26E+0	1.73E+1	4.15E-1	9.23E+0	1.72E+1	4.06E-1	9.03E+0	1.69E+1	4.02E-1	8.94E+0	1.67E+1
DOE	1.43E+2	1.28E+3	1.28E+4	1.43E+2	1.27E+3	1.28E+4	1.42E+2	1.27E+3	1.27E+4	1.40E+2	1.25E+3	1.26E+4	1.38E+2	1.25E+3	1.25E+4
DOD	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.70E-1	1.64E-2	1.03E-1	1.70E-1	1.64E-2	1.03E-1	1.70E-1
NRC	1.52E+0	2.32E+0	9.16E+0	1.50E+0	2.23E+0	8.24E+0	1.49E+0	2.17E+0	7.66E+0	1.47E+0	2.12E+0	7.35E+0	1.46E+0	2.09E+0	7.16E+0
Total	1.45E+2	1.28E+3	1.28E+4	1.44E+2	1.28E+3	1.28E+4	1.44E+2	1.27E+3	1.27E+4	1.41E+2	1.26E+3	1.26E+4	1.40E+2	1.25E+3	1.25E+4

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 Table M-55. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.46E-1	2.72E-1	2.72E-1	2.40E-1	2.66E-1	2.66E-1	2.36E-1	2.61E-1	2.61E-1	2.23E-1	2.47E-1	2.47E-1	2.14E-1	2.37E-1	2.37E-1
II	3.23E+1	3.18E+2	2.75E+3	3.23E+1	3.18E+2	2.75E+3	3.23E+1	3.17E+2	2.74E+3	3.23E+1	3.17E+2	2.74E+3	3.23E+1	3.17E+2	2.74E+3
III	1.05E-1	1.16E-1	1.16E-1	1.04E-1	1.16E-1	1.16E-1	1.02E-1	1.13E-1	1.13E-1	8.76E-2	9.73E-2	9.73E-2	7.75E-2	8.61E-2	8.61E-2
IV	1.93E-1	1.35E+0	3.03E+0	1.90E-1	1.33E+0	2.99E+0	1.88E-1	1.31E+0	2.95E+0	1.82E-1	1.27E+0	2.86E+0	1.78E-1	1.25E+0	2.80E+0
V	6.49E+0	7.15E+0	7.15E+0	6.47E+0	7.13E+0	7.13E+0	6.45E+0	7.11E+0	7.11E+0	6.35E+0	7.00E+0	7.00E+0	6.27E+0	6.91E+0	6.91E+0
VI	4.35E+0	3.84E+1	4.33E+2	4.34E+0	3.84E+1	4.33E+2	4.34E+0	3.84E+1	4.33E+2	4.34E+0	3.84E+1	4.33E+2	4.34E+0	3.84E+1	4.32E+2
VII	2.17E+0	1.56E+1	1.03E+2	1.99E+0	1.42E+1	9.38E+1	1.87E+0	1.32E+1	8.75E+1	1.63E+0	1.13E+1	7.48E+1	1.44E+0	9.96E+0	6.58E+1
IX	7.91E-3	6.36E-2	3.89E-1	6.97E-3	5.60E-2	3.43E-1	6.29E-3	5.05E-2	3.09E-1	4.78E-3	3.84E-2	2.35E-1	3.78E-3	3.04E-2	1.86E-1
X	1.02E+0	3.21E+0	3.57E+0	1.02E+0	3.21E+0	3.56E+0	1.02E+0	3.21E+0	3.56E+0	1.01E+0	3.15E+0	3.50E+0	9.99E-1	3.07E+0	3.40E+0
XII	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.70E-1
XIIIA	9.06E-5	6.88E-4	1.87E-3	5.40E-5	4.10E-4	1.12E-3	1.14E-5	8.68E-5	2.36E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	8.62E-5	4.91E-4	8.02E-4	5.13E-5	2.93E-4	4.78E-4	1.09E-5	6.20E-5	1.01E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	7.85E-5	2.75E-4	5.62E-3	4.68E-5	1.64E-4	3.35E-3	9.90E-6	3.47E-5	7.09E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4	3.58E-4	3.93E-4	3.93E-4
XVIB	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4
XVIC	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.87E-4	3.87E-4
XVIIIA	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2	2.46E-2	2.66E-2	2.66E-2
XVIIIB	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2
XVIIIC	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2
XXA	9.57E-3	8.60E-2	7.23E-1	6.31E-3	6.06E-2	5.09E-1	4.67E-3	4.89E-2	4.10E-1	1.33E-3	2.46E-2	2.06E-1	5.63E-4	1.26E-2	1.06E-1
XXB	9.21E-3	6.00E-2	2.97E-1	6.07E-3	4.15E-2	2.05E-1	4.50E-3	3.30E-2	1.63E-1	1.28E-3	1.48E-2	7.30E-2	5.42E-4	6.12E-3	3.03E-2
XXC	8.44E-3	3.14E-2	7.28E-1	5.56E-3	2.07E-2	4.80E-1	4.12E-3	1.53E-2	3.55E-1	1.18E-3	4.37E-3	1.01E-1	4.97E-4	1.85E-3	4.29E-2
XXIA	2.79E-3	2.83E-2	2.75E-1	2.79E-3	2.83E-2	2.75E-1	2.79E-3	2.83E-2	2.75E-1	2.78E-3	2.82E-2	2.74E-1	2.77E-3	2.81E-2	2.73E-1
XXIB	2.77E-3	2.81E-2	2.64E-1	2.77E-3	2.81E-2	2.64E-1	2.77E-3	2.81E-2	2.64E-1	2.76E-3	2.80E-2	2.64E-1	2.75E-3	2.79E-2	2.63E-1
XXIC	2.75E-3	2.75E-2	2.44E-1	2.75E-3	2.75E-2	2.44E-1	2.75E-3	2.75E-2	2.44E-1	2.74E-3	2.74E-2	2.43E-1	2.73E-3	2.73E-2	2.43E-1
XXII	4.20E-1	9.29E+0	1.74E+1	4.20E-1	9.29E+0	1.74E+1	4.20E-1	9.29E+0	1.74E+1	4.19E-1	9.28E+0	1.73E+1	4.17E-1	9.27E+0	1.73E+1
DOE	1.44E+2	1.28E+3	1.28E+4	1.44E+2	1.28E+3	1.28E+4	1.44E+2	1.28E+3	1.28E+4	1.43E+2	1.28E+3	1.28E+4	1.43E+2	1.27E+3	1.28E+4
DOD	1.72E-2	1.07E-1	1.94E-1	1.69E-2	1.05E-1	1.85E-1	1.66E-2	1.03E-1	1.73E-1	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.70E-1
NRC	1.62E+0	2.96E+0	1.54E+1	1.57E+0	2.70E+0	1.28E+1	1.55E+0	2.58E+0	1.16E+1	1.51E+0	2.33E+0	9.02E+0	1.50E+0	2.22E+0	8.06E+0
Total	1.46E+2	1.28E+3	1.28E+4	1.46E+2	1.28E+3	1.28E+4	1.45E+2	1.28E+3	1.28E+4	1.45E+2	1.28E+3	1.28E+4	1.44E+2	1.28E+3	1.28E+4

Low Population Density With Agriculture - 09-19-94 1:55p
 Table M-56. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.99E-1	2.20E-1	2.20E-1	1.88E-1	2.09E-1	2.09E-1	1.74E-1	1.92E-1	1.92E-1	1.25E-1	1.38E-1	1.38E-1	1.08E-1	1.20E-1	1.20E-1
II	3.23E+1	3.17E+2	2.73E+3	3.23E+1	3.17E+2	2.72E+3	3.23E+1	3.17E+2	2.71E+3	3.22E+1	3.16E+2	2.69E+3	3.22E+1	3.15E+2	2.68E+3
III	6.70E-2	7.45E-2	7.45E-2	5.54E-2	6.15E-2	6.15E-2	3.52E-2	3.91E-2	3.91E-2	9.23E-3	1.03E-2	1.03E-2	5.21E-3	5.78E-3	5.78E-3
IV	1.70E-1	1.19E+0	2.68E+0	1.62E-1	1.13E+0	2.55E+0	1.46E-1	1.02E+0	2.29E+0	6.48E-2	4.53E-1	1.02E+0	2.41E-2	1.69E-1	3.79E-1
V	6.10E+0	6.72E+0	6.72E+0	5.93E+0	6.53E+0	6.53E+0	5.59E+0	6.15E+0	6.15E+0	4.66E+0	5.14E+0	5.14E+0	4.44E+0	4.89E+0	4.89E+0
VI	4.32E+0	3.83E+1	4.32E+2	4.31E+0	3.82E+1	4.31E+2	4.28E+0	3.80E+1	4.29E+2	4.13E+0	3.69E+1	4.17E+2	4.08E+0	3.66E+1	4.12E+2
VII	9.72E-1	6.73E+0	4.45E+1	6.86E-1	4.79E+0	3.16E+1	4.50E-1	3.18E+0	2.10E+1	2.86E-3	1.74E-2	1.12E-1	.00E+0	.00E+0	.00E+0
IX	2.76E-3	2.21E-2	1.36E-1	1.99E-3	1.60E-2	9.78E-2	1.36E-3	1.09E-2	6.69E-2	2.47E-4	1.98E-3	1.21E-2	.00E+0	.00E+0	.00E+0
X	9.83E-1	2.83E+0	3.12E+0	9.69E-1	2.59E+0	2.85E+0	9.48E-1	2.25E+0	2.45E+0	8.60E-1	1.61E+0	1.73E+0	8.34E-1	1.46E+0	1.55E+0
XII	1.65E-2	1.03E-1	1.70E-1	1.64E-2	1.03E-1	1.70E-1	1.64E-2	1.03E-1	1.70E-1	1.63E-2	1.02E-1	1.69E-1	1.63E-2	1.02E-1	1.68E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.57E-4	3.92E-4	3.92E-4	3.57E-4	3.91E-4	3.91E-4	3.56E-4	3.90E-4	3.90E-4	3.48E-4	3.82E-4	3.82E-4	3.43E-4	3.77E-4	3.77E-4
XVIB	3.57E-4	3.89E-4	3.89E-4	3.56E-4	3.88E-4	3.88E-4	3.56E-4	3.87E-4	3.87E-4	3.48E-4	3.79E-4	3.79E-4	3.43E-4	3.74E-4	3.74E-4
XVIC	3.53E-4	3.85E-4	3.85E-4	3.53E-4	3.85E-4	3.85E-4	3.52E-4	3.84E-4	3.84E-4	3.44E-4	3.75E-4	3.75E-4	3.40E-4	3.71E-4	3.71E-4
XVIIIA	2.46E-2	2.65E-2	2.65E-2	2.45E-2	2.64E-2	2.64E-2	2.43E-2	2.62E-2	2.62E-2	2.32E-2	2.50E-2	2.50E-2	2.27E-2	2.44E-2	2.44E-2
XVIIIB	2.25E-2	2.37E-2	2.37E-2	2.24E-2	2.36E-2	2.36E-2	2.22E-2	2.34E-2	2.34E-2	2.12E-2	2.24E-2	2.24E-2	2.07E-2	2.19E-2	2.19E-2
XVIIIC	1.87E-2	1.93E-2	1.93E-2	1.87E-2	1.93E-2	1.93E-2	1.85E-2	1.91E-2	1.91E-2	1.77E-2	1.82E-2	1.82E-2	1.73E-2	1.78E-2	1.78E-2
XXA	4.76E-4	4.26E-3	3.58E-2	4.37E-4	3.97E-3	3.34E-2	3.85E-4	3.58E-3	3.01E-2	2.67E-4	2.66E-3	2.23E-2	2.25E-4	2.40E-3	2.02E-2
XXB	4.58E-4	2.97E-3	1.47E-2	4.21E-4	2.76E-3	1.37E-2	3.71E-4	2.47E-3	1.23E-2	2.57E-4	1.80E-3	8.91E-3	2.17E-4	1.63E-3	8.07E-3
XXC	4.20E-4	1.56E-3	3.62E-2	3.85E-4	1.43E-3	3.32E-2	3.40E-4	1.26E-3	2.93E-2	2.35E-4	8.74E-4	2.03E-2	1.99E-4	7.39E-4	1.72E-2
XXIA	2.74E-3	2.78E-2	2.71E-1	2.72E-3	2.76E-2	2.68E-1	2.67E-3	2.70E-2	2.63E-1	2.24E-3	2.27E-2	2.21E-1	2.09E-3	2.11E-2	2.06E-1
XXIB	2.72E-3	2.76E-2	2.60E-1	2.70E-3	2.74E-2	2.58E-1	2.65E-3	2.69E-2	2.53E-1	2.23E-3	2.26E-2	2.13E-1	2.07E-3	2.10E-2	1.98E-1
XXIC	2.71E-3	2.71E-2	2.40E-1	2.68E-3	2.68E-2	2.38E-1	2.63E-3	2.63E-2	2.34E-1	2.21E-3	2.21E-2	1.96E-1	2.06E-3	2.06E-2	1.83E-1
XXII	4.14E-1	9.22E+0	1.72E+1	4.11E-1	9.15E+0	1.71E+1	4.07E-1	9.04E+0	1.69E+1	3.85E-1	8.65E+0	1.61E+1	3.79E-1	8.54E+0	1.59E+1
DOE	1.42E+2	1.27E+3	1.27E+4	1.41E+2	1.26E+3	1.27E+4	1.40E+2	1.26E+3	1.26E+4	1.35E+2	1.22E+3	1.23E+4	1.33E+2	1.21E+3	1.22E+4
DOD	1.65E-2	1.03E-1	1.70E-1	1.64E-2	1.03E-1	1.70E-1	1.64E-2	1.03E-1	1.70E-1	1.63E-2	1.02E-1	1.69E-1	1.63E-2	1.02E-1	1.68E-1
NRC	1.49E+0	2.16E+0	7.57E+0	1.49E+0	2.14E+0	7.48E+0	1.47E+0	2.11E+0	7.33E+0	1.40E+0	1.95E+0	6.29E+0	1.36E+0	1.88E+0	5.91E+0
Total	1.43E+2	1.27E+3	1.27E+4	1.43E+2	1.27E+3	1.27E+4	1.41E+2	1.26E+3	1.26E+4	1.36E+2	1.22E+3	1.23E+4	1.34E+2	1.21E+3	1.22E+4

Medium Population Density With Agriculture - 09-19-94 1:53p
 Table M-57. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.62E+3	2.85E+3	2.85E+3	2.58E+3	2.81E+3	2.81E+3	2.56E+3	2.78E+3	2.78E+3	2.49E+3	2.70E+3	2.70E+3	2.44E+3	2.65E+3	2.65E+3
II	3.18E+5	6.74E+6	2.67E+7	3.18E+5	6.74E+6	2.67E+7	3.18E+5	6.74E+6	2.67E+7	3.18E+5	6.74E+6	2.67E+7	3.18E+5	6.74E+6	2.67E+7
III	1.13E+3	1.26E+3	1.26E+3	1.13E+3	1.26E+3	1.26E+3	1.13E+3	1.25E+3	1.25E+3	1.10E+3	1.22E+3	1.22E+3	1.05E+3	1.16E+3	1.16E+3
IV	1.77E+3	1.13E+4	3.07E+4	1.76E+3	1.12E+4	3.05E+4	1.75E+3	1.12E+4	3.03E+4	1.72E+3	1.10E+4	2.98E+4	1.70E+3	1.08E+4	2.94E+4
V	6.81E+4	7.41E+4	7.41E+4	6.80E+4	7.40E+4	7.40E+4	6.79E+4	7.39E+4	7.39E+4	6.76E+4	7.35E+4	7.35E+4	6.72E+4	7.31E+4	7.31E+4
VI	4.61E+4	3.84E+5	4.02E+6	4.61E+4	3.84E+5	4.02E+6	4.61E+4	3.84E+5	4.02E+6	4.61E+4	3.84E+5	4.02E+6	4.61E+4	3.84E+5	4.02E+6
VII	1.10E+5	9.53E+5	7.40E+6	1.07E+5	9.28E+5	7.21E+6	1.03E+5	8.93E+5	6.93E+6	9.39E+4	8.12E+5	6.31E+6	8.82E+4	7.62E+5	5.92E+6
IX	5.02E+2	4.38E+3	2.77E+4	4.76E+2	4.16E+3	2.63E+4	4.53E+2	3.95E+3	2.50E+4	3.93E+2	3.44E+3	2.17E+4	3.53E+2	3.09E+3	1.95E+4
X	1.54E+3	1.88E+4	2.19E+4	1.54E+3	1.88E+4	2.19E+4	1.53E+3	1.88E+4	2.19E+4	1.51E+3	1.87E+4	2.18E+4	1.50E+3	1.85E+4	2.15E+4
XII	3.16E+2	1.83E+3	2.95E+3	3.16E+2	1.83E+3	2.95E+3	3.16E+2	1.83E+3	2.95E+3	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3
XIIIA	8.78E-1	5.89E+0	1.65E+1	7.05E-1	4.73E+0	1.33E+1	4.92E-1	3.30E+0	9.26E+0	9.70E-2	6.51E-1	1.83E+0	.00E+0	.00E+0	.00E+0
XIIIB	8.08E-1	4.03E+0	7.25E+0	6.48E-1	3.23E+0	5.82E+0	4.53E-1	2.26E+0	4.06E+0	8.92E-2	4.45E-1	8.01E-1	.00E+0	.00E+0	.00E+0
XIIIC	6.99E-1	2.23E+0	4.38E+1	5.61E-1	1.79E+0	3.52E+1	3.92E-1	1.25E+0	2.45E+1	7.72E-2	2.46E-1	4.84E+0	.00E+0	.00E+0	.00E+0
XVIA	4.27E+0	4.53E+0	4.53E+0	4.27E+0	4.53E+0	4.53E+0	4.27E+0	4.53E+0	4.53E+0	4.27E+0	4.53E+0	4.53E+0	4.27E+0	4.52E+0	4.52E+0
XVIB	4.23E+0	4.47E+0	4.47E+0	4.23E+0	4.47E+0	4.47E+0	4.23E+0	4.47E+0	4.47E+0	4.23E+0	4.47E+0	4.47E+0	4.22E+0	4.47E+0	4.47E+0
XVIC	4.14E+0	4.36E+0	4.36E+0	4.14E+0	4.36E+0	4.36E+0	4.14E+0	4.36E+0	4.36E+0	4.14E+0	4.36E+0	4.36E+0	4.13E+0	4.35E+0	4.35E+0
XVIIIA	8.69E+1	9.37E+1	9.37E+1	8.69E+1	9.37E+1	9.37E+1	8.69E+1	9.37E+1	9.37E+1	8.69E+1	9.37E+1	9.37E+1	8.69E+1	9.37E+1	9.37E+1
XVIIIB	7.97E+1	8.47E+1	8.47E+1	7.97E+1	8.47E+1	8.47E+1	7.97E+1	8.47E+1	8.47E+1	7.97E+1	8.46E+1	8.46E+1	7.97E+1	8.46E+1	8.46E+1
XVIIIC	6.77E+1	7.03E+1	7.03E+1	6.77E+1	7.03E+1	7.03E+1	6.77E+1	7.03E+1	7.03E+1	6.77E+1	7.03E+1	7.03E+1	6.77E+1	7.03E+1	7.03E+1
XXA	1.10E+2	8.79E+2	8.33E+3	8.35E+1	7.27E+2	6.89E+3	7.08E+1	6.28E+2	5.96E+3	4.93E+1	4.63E+2	4.38E+3	3.71E+1	3.78E+2	3.58E+3
XXB	1.06E+2	6.31E+2	3.85E+3	7.99E+1	4.78E+2	2.91E+3	6.77E+1	4.05E+2	2.47E+3	4.71E+1	2.82E+2	1.72E+3	3.55E+1	2.12E+2	1.30E+3
XXC	9.62E+1	3.57E+2	8.64E+3	7.29E+1	2.71E+2	6.54E+3	6.17E+1	2.29E+2	5.54E+3	4.30E+1	1.60E+2	3.86E+3	3.24E+1	1.20E+2	2.91E+3
XXIA	4.53E+1	4.65E+2	4.44E+3	4.53E+1	4.65E+2	4.44E+3	4.53E+1	4.65E+2	4.44E+3	4.53E+1	4.65E+2	4.44E+3	4.53E+1	4.64E+2	4.44E+3
XXIB	4.49E+1	4.59E+2	4.15E+3	4.49E+1	4.59E+2	4.15E+3	4.49E+1	4.59E+2	4.15E+3	4.49E+1	4.59E+2	4.15E+3	4.49E+1	4.59E+2	4.14E+3
XXIC	4.46E+1	4.46E+2	3.60E+3	4.46E+1	4.46E+2	3.60E+3	4.46E+1	4.46E+2	3.60E+3	4.45E+1	4.46E+2	3.60E+3	4.45E+1	4.46E+2	3.60E+3
XXII	4.77E+3	9.42E+4	1.64E+5	4.77E+3	9.42E+4	1.64E+5	4.77E+3	9.42E+4	1.64E+5	4.77E+3	9.41E+4	1.64E+5	4.76E+3	9.41E+4	1.64E+5
DOE	1.58E+6	1.72E+7	1.27E+8	1.58E+6	1.72E+7	1.27E+8	1.58E+6	1.71E+7	1.26E+8	1.57E+6	1.70E+7	1.26E+8	1.56E+6	1.70E+7	1.25E+8
DOD	3.23E+2	1.86E+3	3.14E+3	3.22E+2	1.85E+3	3.10E+3	3.20E+2	1.84E+3	3.05E+3	3.17E+2	1.83E+3	2.97E+3	3.16E+2	1.82E+3	2.94E+3
NRC	7.89E+3	2.45E+4	1.92E+5	7.54E+3	2.27E+4	1.71E+5	7.37E+3	2.17E+4	1.60E+5	7.08E+3	2.00E+4	1.42E+5	6.92E+3	1.91E+4	1.31E+5
Total	1.59E+6	1.72E+7	1.27E+8	1.59E+6	1.72E+7	1.27E+8	1.58E+6	1.71E+7	1.26E+8	1.57E+6	1.71E+7	1.26E+8	1.57E+6	1.70E+7	1.25E+8

Medium Population Density With Agriculture - 09-19-94 1:53p
 Table M-58. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.33E+3	2.53E+3	2.53E+3	2.25E+3	2.44E+3	2.44E+3	2.13E+3	2.31E+3	2.31E+3	1.82E+3	1.97E+3	1.97E+3	1.73E+3	1.88E+3	1.88E+3
II	3.18E+5	6.74E+6	2.67E+7	3.18E+5	6.74E+6	2.67E+7	3.18E+5	6.74E+6	2.66E+7	3.17E+5	6.73E+6	2.64E+7	3.17E+5	6.73E+6	2.64E+7
III	8.99E+2	9.99E+2	9.99E+2	8.30E+2	9.23E+2	9.23E+2	7.50E+2	8.34E+2	8.34E+2	3.47E+2	3.86E+2	3.86E+2	2.24E+2	2.49E+2	2.49E+2
IV	1.66E+3	1.06E+4	2.88E+4	1.64E+3	1.04E+4	2.83E+4	1.59E+3	1.01E+4	2.75E+4	1.35E+3	8.60E+3	2.33E+4	1.23E+3	7.83E+3	2.13E+4
V	6.63E+4	7.21E+4	7.21E+4	6.56E+4	7.13E+4	7.13E+4	6.43E+4	6.99E+4	6.99E+4	5.79E+4	6.30E+4	6.30E+4	5.47E+4	5.95E+4	5.95E+4
VI	4.60E+4	3.84E+5	4.02E+6	4.60E+4	3.84E+5	4.02E+6	4.59E+4	3.84E+5	4.01E+6	4.54E+4	3.80E+5	3.98E+6	4.51E+4	3.78E+5	3.96E+6
VII	7.95E+4	6.84E+5	5.31E+6	7.28E+4	6.27E+5	4.87E+6	5.66E+4	4.87E+5	3.78E+6	2.40E+4	2.07E+5	1.61E+6	1.90E+4	1.64E+5	1.28E+6
IX	2.95E+2	2.58E+3	1.63E+4	2.48E+2	2.17E+3	1.37E+4	2.02E+2	1.77E+3	1.12E+4	9.49E+1	8.29E+2	5.24E+3	6.66E+1	5.81E+2	3.67E+3
X	1.48E+3	1.78E+4	2.07E+4	1.46E+3	1.70E+4	1.97E+4	1.43E+3	1.52E+4	1.76E+4	1.35E+3	9.89E+3	1.14E+4	1.31E+3	8.73E+3	1.00E+4
XII	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.15E+2	1.82E+3	2.94E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	4.27E+0	4.52E+0	4.52E+0	4.26E+0	4.52E+0	4.52E+0	4.25E+0	4.50E+0	4.50E+0	4.21E+0	4.46E+0	4.46E+0	4.19E+0	4.45E+0	4.45E+0
XVIB	4.22E+0	4.47E+0	4.47E+0	4.22E+0	4.46E+0	4.46E+0	4.20E+0	4.45E+0	4.45E+0	4.17E+0	4.41E+0	4.41E+0	4.15E+0	4.39E+0	4.39E+0
XVIC	4.13E+0	4.35E+0	4.35E+0	4.13E+0	4.35E+0	4.35E+0	4.11E+0	4.33E+0	4.33E+0	4.08E+0	4.30E+0	4.30E+0	4.06E+0	4.28E+0	4.28E+0
XVIIIA	8.69E+1	9.37E+1	9.37E+1	8.68E+1	9.36E+1	9.36E+1	8.67E+1	9.35E+1	9.35E+1	8.56E+1	9.23E+1	9.23E+1	8.50E+1	9.17E+1	9.17E+1
XVIIIB	7.97E+1	8.46E+1	8.46E+1	7.96E+1	8.46E+1	8.46E+1	7.95E+1	8.45E+1	8.45E+1	7.85E+1	8.34E+1	8.34E+1	7.79E+1	8.28E+1	8.28E+1
XVIIIC	6.77E+1	7.03E+1	7.03E+1	6.76E+1	7.03E+1	7.03E+1	6.75E+1	7.02E+1	7.02E+1	6.67E+1	6.93E+1	6.93E+1	6.62E+1	6.88E+1	6.88E+1
XXA	1.76E+1	2.27E+2	2.15E+3	7.29E+0	1.46E+2	1.38E+3	4.75E+0	5.17E+1	4.91E+2	3.79E+0	3.33E+1	3.16E+2	3.52E+0	3.13E+1	2.97E+2
XXB	1.69E+1	1.01E+2	6.15E+2	6.98E+0	4.17E+1	2.55E+2	4.54E+0	2.72E+1	1.66E+2	3.62E+0	2.17E+1	1.32E+2	3.36E+0	2.01E+1	1.23E+2
XXC	1.54E+1	5.71E+1	1.38E+3	6.36E+0	2.36E+1	5.71E+2	4.14E+0	1.54E+1	3.72E+2	3.30E+0	1.23E+1	2.97E+2	3.07E+0	1.14E+1	2.76E+2
XXIA	4.51E+1	4.63E+2	4.43E+3	4.50E+1	4.62E+2	4.41E+3	4.47E+1	4.59E+2	4.39E+3	4.34E+1	4.45E+2	4.26E+3	4.23E+1	4.34E+2	4.14E+3
XXIB	4.48E+1	4.58E+2	4.13E+3	4.46E+1	4.56E+2	4.12E+3	4.44E+1	4.54E+2	4.10E+3	4.31E+1	4.40E+2	3.98E+3	4.19E+1	4.28E+2	3.87E+3
XXIC	4.44E+1	4.45E+2	3.59E+3	4.43E+1	4.44E+2	3.57E+3	4.40E+1	4.41E+2	3.55E+3	4.27E+1	4.28E+2	3.45E+3	4.16E+1	4.16E+2	3.36E+3
XXII	4.75E+3	9.40E+4	1.64E+5	4.74E+3	9.38E+4	1.64E+5	4.71E+3	9.35E+4	1.63E+5	4.61E+3	9.14E+4	1.60E+5	4.56E+3	9.05E+4	1.58E+5
DOE	1.55E+6	1.69E+7	1.25E+8	1.54E+6	1.68E+7	1.24E+8	1.52E+6	1.67E+7	1.23E+8	1.47E+6	1.63E+7	1.20E+8	1.45E+6	1.62E+7	1.19E+8
DOD	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.15E+2	1.82E+3	2.94E+3
NRC	6.66E+3	1.76E+4	1.14E+5	6.52E+3	1.67E+4	1.05E+5	6.47E+3	1.61E+4	9.88E+4	6.36E+3	1.56E+4	9.48E+4	6.30E+3	1.53E+4	9.23E+4
Total	1.56E+6	1.69E+7	1.25E+8	1.55E+6	1.69E+7	1.24E+8	1.53E+6	1.67E+7	1.23E+8	1.47E+6	1.63E+7	1.20E+8	1.46E+6	1.62E+7	1.19E+8

Medium Population Density With Agriculture - 09-19-94 1:53p
 Table M-59. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.60E+3	2.83E+3	2.83E+3	2.54E+3	2.76E+3	2.76E+3	2.49E+3	2.71E+3	2.71E+3	2.36E+3	2.57E+3	2.57E+3	2.26E+3	2.46E+3	2.46E+3
II	3.18E+5	6.74E+6	2.67E+7	3.18E+5	6.74E+6	2.67E+7	3.18E+5	6.74E+6	2.67E+7	3.18E+5	6.74E+6	2.67E+7	3.18E+5	6.74E+6	2.67E+7
III	1.13E+3	1.26E+3	1.26E+3	1.12E+3	1.25E+3	1.25E+3	1.10E+3	1.22E+3	1.22E+3	9.47E+2	1.05E+3	1.05E+3	8.37E+2	9.31E+2	9.31E+2
IV	1.76E+3	1.13E+4	3.06E+4	1.74E+3	1.11E+4	3.01E+4	1.72E+3	1.10E+4	2.98E+4	1.66E+3	1.06E+4	2.88E+4	1.63E+3	1.04E+4	2.83E+4
V	6.81E+4	7.40E+4	7.40E+4	6.79E+4	7.38E+4	7.38E+4	6.76E+4	7.35E+4	7.35E+4	6.66E+4	7.25E+4	7.25E+4	6.57E+4	7.15E+4	7.15E+4
VI	4.61E+4	3.84E+5	4.02E+6	4.61E+4	3.84E+5	4.02E+6	4.61E+4	3.84E+5	4.02E+6	4.61E+4	3.84E+5	4.02E+6	4.60E+4	3.84E+5	4.02E+6
VII	1.09E+5	9.44E+5	7.33E+6	9.90E+4	8.58E+5	6.66E+6	9.26E+4	8.00E+5	6.21E+6	7.94E+4	6.84E+5	5.31E+6	6.99E+4	6.01E+5	4.67E+6
IX	4.85E+2	4.24E+3	2.68E+4	4.27E+2	3.73E+3	2.36E+4	3.85E+2	3.37E+3	2.13E+4	2.93E+2	2.56E+3	1.62E+4	2.32E+2	2.03E+3	1.28E+4
X	1.54E+3	1.88E+4	2.19E+4	1.53E+3	1.88E+4	2.19E+4	1.52E+3	1.87E+4	2.18E+4	1.49E+3	1.83E+4	2.13E+4	1.47E+3	1.77E+4	2.06E+4
XII	3.16E+2	1.83E+3	2.95E+3	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3
XIIIA	7.84E-1	5.26E+0	1.48E+1	4.67E-1	3.13E+0	8.79E+0	9.88E-2	6.63E-1	1.86E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	7.21E-1	3.60E+0	6.47E+0	4.29E-1	2.14E+0	3.85E+0	9.09E-2	4.54E-1	8.16E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	6.24E-1	1.99E+0	3.91E+1	3.72E-1	1.18E+0	2.33E+1	7.87E-2	2.51E-1	4.93E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	4.27E+0	4.53E+0	4.53E+0	4.27E+0	4.53E+0	4.53E+0	4.27E+0	4.53E+0	4.53E+0	4.27E+0	4.52E+0	4.52E+0	4.26E+0	4.52E+0	4.52E+0
XVIB	4.23E+0	4.47E+0	4.47E+0	4.23E+0	4.47E+0	4.47E+0	4.23E+0	4.47E+0	4.47E+0	4.22E+0	4.47E+0	4.47E+0	4.22E+0	4.46E+0	4.46E+0
XVIC	4.14E+0	4.36E+0	4.36E+0	4.14E+0	4.36E+0	4.36E+0	4.14E+0	4.36E+0	4.36E+0	4.13E+0	4.35E+0	4.35E+0	4.13E+0	4.35E+0	4.35E+0
XVIIIA	8.69E+1	9.37E+1	9.37E+1	8.69E+1	9.37E+1	9.37E+1	8.69E+1	9.37E+1	9.37E+1	8.69E+1	9.37E+1	9.37E+1	8.68E+1	9.36E+1	9.36E+1
XVIIIB	7.97E+1	8.47E+1	8.47E+1	7.97E+1	8.46E+1	8.46E+1	7.97E+1	8.46E+1	8.46E+1	7.97E+1	8.46E+1	8.46E+1	7.96E+1	8.46E+1	8.46E+1
XVIIIC	6.77E+1	7.03E+1	7.03E+1	6.77E+1	7.03E+1	7.03E+1	6.77E+1	7.03E+1	7.03E+1	6.77E+1	7.03E+1	7.03E+1	6.76E+1	7.03E+1	7.03E+1
XXA	8.80E+1	7.81E+2	7.40E+3	5.80E+1	5.50E+2	5.21E+3	4.30E+1	4.43E+2	4.20E+3	1.23E+1	2.23E+2	2.11E+3	5.18E+0	1.15E+2	1.09E+3
XXB	8.42E+1	5.44E+2	3.32E+3	5.55E+1	3.77E+2	2.30E+3	4.11E+1	3.00E+2	1.83E+3	1.17E+1	1.34E+2	8.17E+2	4.95E+0	5.55E+1	3.39E+2
XXC	7.68E+1	2.85E+2	6.89E+3	5.06E+1	1.88E+2	4.54E+3	3.75E+1	1.39E+2	3.36E+3	1.07E+1	3.97E+1	9.60E+2	4.52E+0	1.68E+1	4.06E+2
XXIA	4.53E+1	4.65E+2	4.44E+3	4.53E+1	4.65E+2	4.44E+3	4.53E+1	4.65E+2	4.44E+3	4.52E+1	4.63E+2	4.43E+3	4.50E+1	4.62E+2	4.41E+3
XXIB	4.49E+1	4.59E+2	4.15E+3	4.49E+1	4.59E+2	4.15E+3	4.49E+1	4.59E+2	4.15E+3	4.48E+1	4.58E+2	4.14E+3	4.46E+1	4.56E+2	4.12E+3
XXIC	4.46E+1	4.46E+2	3.60E+3	4.46E+1	4.46E+2	3.60E+3	4.45E+1	4.46E+2	3.60E+3	4.44E+1	4.45E+2	3.59E+3	4.43E+1	4.43E+2	3.57E+3
XXII	4.77E+3	9.42E+4	1.64E+5	4.77E+3	9.42E+4	1.64E+5	4.77E+3	9.41E+4	1.64E+5	4.75E+3	9.40E+4	1.64E+5	4.74E+3	9.38E+4	1.64E+5
DOE	1.58E+6	1.72E+7	1.27E+8	1.57E+6	1.71E+7	1.26E+8	1.56E+6	1.70E+7	1.26E+8	1.55E+6	1.69E+7	1.25E+8	1.54E+6	1.68E+7	1.24E+8
DOD	3.22E+2	1.86E+3	3.12E+3	3.20E+2	1.84E+3	3.05E+3	3.17E+2	1.83E+3	2.97E+3	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3
NRC	7.60E+3	2.33E+4	1.77E+5	7.20E+3	2.10E+4	1.51E+5	7.00E+3	1.99E+4	1.39E+5	6.59E+3	1.76E+4	1.13E+5	6.49E+3	1.66E+4	1.03E+5
Total	1.59E+6	1.72E+7	1.27E+8	1.58E+6	1.71E+7	1.26E+8	1.57E+6	1.70E+7	1.26E+8	1.56E+6	1.69E+7	1.25E+8	1.54E+6	1.68E+7	1.24E+8

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 Table M-60. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.10E+3	2.28E+3	2.28E+3	1.99E+3	2.16E+3	2.16E+3	1.84E+3	1.99E+3	1.99E+3	1.32E+3	1.43E+3	1.43E+3	1.15E+3	1.24E+3	1.24E+3
II	3.18E+5	6.73E+6	2.66E+7	3.17E+5	6.73E+6	2.65E+7	3.17E+5	6.73E+6	2.64E+7	3.17E+5	6.72E+6	2.62E+7	3.17E+5	6.71E+6	2.61E+7
III	7.25E+2	8.06E+2	8.06E+2	5.99E+2	6.66E+2	6.66E+2	3.80E+2	4.23E+2	4.23E+2	9.98E+1	1.11E+2	1.11E+2	5.63E+1	6.26E+1	6.26E+1
IV	1.56E+3	9.95E+3	2.70E+4	1.48E+3	9.47E+3	2.57E+4	1.34E+3	8.52E+3	2.31E+4	5.92E+2	3.78E+3	1.03E+4	2.21E+2	1.41E+3	3.83E+3
V	6.39E+4	6.95E+4	6.95E+4	6.21E+4	6.76E+4	6.76E+4	5.86E+4	6.37E+4	6.37E+4	4.89E+4	5.32E+4	5.32E+4	4.65E+4	5.06E+4	5.06E+4
VI	4.59E+4	3.83E+5	4.01E+6	4.57E+4	3.83E+5	4.01E+6	4.54E+4	3.81E+5	3.99E+6	4.39E+4	3.70E+5	3.87E+6	4.33E+4	3.66E+5	3.84E+6
VII	4.72E+4	4.07E+5	3.16E+6	3.35E+4	2.89E+5	2.25E+6	2.22E+4	1.92E+5	1.49E+6	1.23E+2	1.03E+3	7.94E+3	.00E+0	.00E+0	.00E+0
IX	1.69E+2	1.48E+3	9.33E+3	1.22E+2	1.07E+3	6.74E+3	8.34E+1	7.29E+2	4.61E+3	1.51E+1	1.32E+2	8.36E+2	.00E+0	.00E+0	.00E+0
X	1.44E+3	1.58E+4	1.84E+4	1.41E+3	1.40E+4	1.62E+4	1.38E+3	1.13E+4	1.31E+4	1.24E+3	6.85E+3	7.83E+3	1.20E+3	5.80E+3	6.60E+3
XII	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.15E+2	1.82E+3	2.93E+3	3.13E+2	1.81E+3	2.91E+3	3.12E+2	1.80E+3	2.91E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	4.24E+0	4.50E+0	4.50E+0	4.23E+0	4.49E+0	4.49E+0	4.21E+0	4.47E+0	4.47E+0	4.06E+0	4.31E+0	4.31E+0	3.97E+0	4.22E+0	4.22E+0
XVIB	4.20E+0	4.44E+0	4.44E+0	4.19E+0	4.43E+0	4.43E+0	4.17E+0	4.42E+0	4.42E+0	4.02E+0	4.26E+0	4.26E+0	3.93E+0	4.17E+0	4.17E+0
XVIC	4.11E+0	4.33E+0	4.33E+0	4.10E+0	4.32E+0	4.32E+0	4.08E+0	4.30E+0	4.30E+0	3.93E+0	4.15E+0	4.15E+0	3.85E+0	4.06E+0	4.06E+0
XVIIIA	8.67E+1	9.35E+1	9.35E+1	8.64E+1	9.31E+1	9.31E+1	8.56E+1	9.23E+1	9.23E+1	8.18E+1	8.82E+1	8.82E+1	7.99E+1	8.61E+1	8.61E+1
XVIIIB	7.95E+1	8.44E+1	8.44E+1	7.92E+1	8.41E+1	8.41E+1	7.85E+1	8.34E+1	8.34E+1	7.50E+1	7.96E+1	7.96E+1	7.32E+1	7.78E+1	7.78E+1
XVIIIC	6.75E+1	7.02E+1	7.02E+1	6.73E+1	6.99E+1	6.99E+1	6.67E+1	6.93E+1	6.93E+1	6.37E+1	6.62E+1	6.62E+1	6.22E+1	6.46E+1	6.46E+1
XXA	4.37E+0	3.86E+1	3.67E+2	4.02E+0	3.60E+1	3.42E+2	3.54E+0	3.25E+1	3.08E+2	2.45E+0	2.41E+1	2.29E+2	2.07E+0	2.18E+1	2.07E+2
XXB	4.18E+0	2.70E+1	1.65E+2	3.84E+0	2.51E+1	1.53E+2	3.39E+0	2.25E+1	1.37E+2	2.35E+0	1.63E+1	9.97E+1	1.98E+0	1.48E+1	9.04E+1
XXC	3.82E+0	1.42E+1	3.43E+2	3.50E+0	1.30E+1	3.15E+2	3.09E+0	1.15E+1	2.78E+2	2.14E+0	7.95E+0	1.92E+2	1.81E+0	6.72E+0	1.62E+2
XXIA	4.46E+1	4.57E+2	4.37E+3	4.42E+1	4.53E+2	4.33E+3	4.33E+1	4.45E+2	4.25E+3	3.64E+1	3.74E+2	3.57E+3	3.39E+1	3.48E+2	3.32E+3
XXIB	4.42E+1	4.52E+2	4.08E+3	4.38E+1	4.48E+2	4.04E+3	4.30E+1	4.39E+2	3.97E+3	3.61E+1	3.69E+2	3.34E+3	3.36E+1	3.44E+2	3.10E+3
XXIC	4.38E+1	4.39E+2	3.54E+3	4.34E+1	4.35E+2	3.51E+3	4.26E+1	4.27E+2	3.44E+3	3.58E+1	3.59E+2	2.89E+3	3.33E+1	3.34E+2	2.69E+3
XXII	4.70E+3	9.34E+4	1.63E+5	4.66E+3	9.26E+4	1.62E+5	4.62E+3	9.16E+4	1.60E+5	4.37E+3	8.75E+4	1.52E+5	4.31E+3	8.64E+4	1.50E+5
DOE	1.51E+6	1.66E+7	1.22E+8	1.49E+6	1.64E+7	1.21E+8	1.47E+6	1.63E+7	1.20E+8	1.40E+6	1.58E+7	1.15E+8	1.38E+6	1.57E+7	1.14E+8
DOD	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.15E+2	1.82E+3	2.93E+3	3.13E+2	1.81E+3	2.91E+3	3.12E+2	1.80E+3	2.91E+3
NRC	6.46E+3	1.60E+4	9.78E+4	6.43E+3	1.59E+4	9.67E+4	6.36E+3	1.56E+4	9.46E+4	5.96E+3	1.38E+4	7.97E+4	5.78E+3	1.30E+4	7.43E+4
Total	1.52E+6	1.66E+7	1.22E+8	1.50E+6	1.65E+7	1.21E+8	1.47E+6	1.63E+7	1.20E+8	1.40E+6	1.58E+7	1.15E+8	1.39E+6	1.57E+7	1.14E+8

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 Table M-61. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.13E+0	1.24E+0	1.24E+0	1.12E+0	1.22E+0	1.22E+0	1.10E+0	1.21E+0	1.21E+0	1.07E+0	1.17E+0	1.17E+0	1.05E+0	1.15E+0	1.15E+0
II	5.83E+1	5.73E+2	4.81E+3	5.83E+1	5.73E+2	4.81E+3	5.83E+1	5.73E+2	4.81E+3	5.83E+1	5.73E+2	4.81E+3	5.83E+1	5.73E+2	4.81E+3
III	4.91E-1	5.44E-1	5.44E-1	4.91E-1	5.44E-1	5.44E-1	4.89E-1	5.42E-1	5.42E-1	4.75E-1	5.26E-1	5.26E-1	4.53E-1	5.02E-1	5.02E-1
IV	3.70E-1	2.35E+0	6.90E+0	3.67E-1	2.33E+0	6.85E+0	3.65E-1	2.32E+0	6.81E+0	3.59E-1	2.28E+0	6.70E+0	3.54E-1	2.25E+0	6.62E+0
V	2.95E+1	3.22E+1	3.22E+1	2.95E+1	3.22E+1	3.22E+1	2.94E+1	3.21E+1	3.21E+1	2.93E+1	3.20E+1	3.20E+1	2.91E+1	3.18E+1	3.18E+1
VI	1.01E+1	7.89E+1	7.86E+2	1.01E+1	7.89E+1	7.86E+2	1.01E+1	7.89E+1	7.86E+2	1.01E+1	7.89E+1	7.86E+2	1.01E+1	7.89E+1	7.86E+2
VII	7.75E+0	5.80E+1	4.28E+2	7.57E+0	5.65E+1	4.17E+2	7.33E+0	5.44E+1	4.01E+2	6.78E+0	4.96E+1	3.65E+2	6.43E+0	4.66E+1	3.42E+2
IX	3.05E-2	2.60E-1	1.60E+0	2.89E-2	2.47E-1	1.52E+0	2.75E-2	2.34E-1	1.45E+0	2.39E-2	2.04E-1	1.26E+0	2.15E-2	1.83E-1	1.13E+0
X	1.56E+0	5.13E+0	5.80E+0	1.56E+0	5.13E+0	5.80E+0	1.56E+0	5.13E+0	5.79E+0	1.55E+0	5.11E+0	5.77E+0	1.54E+0	5.08E+0	5.73E+0
XII	2.24E-2	1.32E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1
XIIIA	2.11E-4	1.41E-3	3.78E-3	1.69E-4	1.14E-3	3.04E-3	1.18E-4	7.93E-4	2.12E-3	2.33E-5	1.56E-4	4.18E-4	.00E+0	.00E+0	.00E+0
XIIIB	1.95E-4	9.64E-4	1.68E-3	1.57E-4	7.74E-4	1.35E-3	1.09E-4	5.40E-4	9.43E-4	2.15E-5	1.06E-4	1.86E-4	.00E+0	.00E+0	.00E+0
XIIIC	1.68E-4	5.33E-4	1.05E-2	1.35E-4	4.28E-4	8.42E-3	9.43E-5	2.99E-4	5.88E-3	1.86E-5	5.89E-5	1.16E-3	.00E+0	.00E+0	.00E+0
XVIA	1.85E-3	1.97E-3	1.97E-3	1.85E-3	1.97E-3	1.97E-3	1.85E-3	1.97E-3	1.97E-3	1.85E-3	1.96E-3	1.96E-3	1.85E-3	1.96E-3	1.96E-3
XVIB	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3
XVIC	1.79E-3	1.90E-3	1.90E-3	1.79E-3	1.90E-3	1.90E-3	1.79E-3	1.90E-3	1.90E-3	1.79E-3	1.89E-3	1.89E-3	1.79E-3	1.89E-3	1.89E-3
XVIIIA	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2
XVIIIB	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2
XVIIIC	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2
XXA	2.00E-2	1.59E-1	1.59E+0	1.52E-2	1.32E-1	1.31E+0	1.28E-2	1.14E-1	1.13E+0	8.94E-3	8.39E-2	8.35E-1	6.73E-3	6.86E-2	6.82E-1
XXB	1.92E-2	1.15E-1	7.90E-1	1.45E-2	8.67E-2	5.99E-1	1.23E-2	7.35E-2	5.07E-1	8.56E-3	5.11E-2	3.53E-1	6.45E-3	3.85E-2	2.66E-1
XXC	1.75E-2	6.48E-2	1.61E+0	1.32E-2	4.91E-2	1.22E+0	1.12E-2	4.16E-2	1.03E+0	7.81E-3	2.89E-2	7.20E-1	5.88E-3	2.18E-2	5.42E-1
XXIA	1.43E-2	1.48E-1	1.41E+0	1.43E-2	1.48E-1	1.41E+0	1.43E-2	1.48E-1	1.41E+0	1.43E-2	1.48E-1	1.41E+0	1.43E-2	1.48E-1	1.41E+0
XXIB	1.42E-2	1.46E-1	1.30E+0	1.42E-2	1.46E-1	1.30E+0	1.42E-2	1.46E-1	1.30E+0	1.42E-2	1.46E-1	1.30E+0	1.42E-2	1.46E-1	1.30E+0
XXIC	1.41E-2	1.42E-1	1.10E+0	1.41E-2	1.42E-1	1.10E+0	1.41E-2	1.42E-1	1.10E+0	1.40E-2	1.42E-1	1.10E+0	1.40E-2	1.42E-1	1.10E+0
XXII	1.07E+0	1.83E+1	3.55E+1	1.07E+0	1.83E+1	3.55E+1	1.07E+0	1.83E+1	3.55E+1	1.07E+0	1.83E+1	3.55E+1	1.07E+0	1.83E+1	3.55E+1
DOE	3.37E+2	2.59E+3	2.34E+4	3.37E+2	2.59E+3	2.34E+4	3.36E+2	2.59E+3	2.33E+4	3.35E+2	2.58E+3	2.33E+4	3.35E+2	2.58E+3	2.33E+4
DOD	2.40E-2	1.40E-1	2.58E-1	2.37E-2	1.38E-1	2.49E-1	2.33E-2	1.36E-1	2.38E-1	2.26E-2	1.32E-1	2.18E-1	2.24E-2	1.31E-1	2.13E-1
NRC	2.81E+0	7.15E+0	4.89E+1	2.74E+0	6.82E+0	4.49E+1	2.71E+0	6.64E+0	4.28E+1	2.66E+0	6.34E+0	3.92E+1	2.63E+0	6.17E+0	3.72E+1
Total	3.40E+2	2.60E+3	2.34E+4	3.40E+2	2.60E+3	2.34E+4	3.39E+2	2.59E+3	2.34E+4	3.38E+2	2.59E+3	2.33E+4	3.37E+2	2.58E+3	2.33E+4

Medium Population Density With Agriculture - 09-19-94 1:53p
 Table M-62. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.01E+0	1.10E+0	1.10E+0	9.71E-1	1.06E+0	1.06E+0	9.20E-1	1.01E+0	1.01E+0	7.84E-1	8.57E-1	8.57E-1	7.49E-1	8.18E-1	8.18E-1
II	5.83E+1	5.73E+2	4.80E+3	5.83E+1	5.73E+2	4.80E+3	5.83E+1	5.72E+2	4.79E+3	5.83E+1	5.71E+2	4.75E+3	5.83E+1	5.71E+2	4.75E+3
III	3.90E-1	4.32E-1	4.32E-1	3.60E-1	3.99E-1	3.99E-1	3.25E-1	3.60E-1	3.60E-1	1.51E-1	1.67E-1	1.67E-1	9.72E-2	1.08E-1	1.08E-1
IV	3.46E-1	2.20E+0	6.46E+0	3.41E-1	2.17E+0	6.37E+0	3.31E-1	2.10E+0	6.18E+0	2.81E-1	1.78E+0	5.25E+0	2.56E-1	1.62E+0	4.78E+0
V	2.87E+1	3.14E+1	3.14E+1	2.84E+1	3.10E+1	3.10E+1	2.79E+1	3.04E+1	3.04E+1	2.51E+1	2.74E+1	2.74E+1	2.37E+1	2.59E+1	2.59E+1
VI	1.01E+1	7.89E+1	7.85E+2	1.01E+1	7.88E+1	7.85E+2	1.01E+1	7.87E+1	7.84E+2	9.93E+0	7.80E+1	7.78E+2	9.85E+0	7.76E+1	7.74E+2
VII	5.87E+0	4.20E+1	3.07E+2	5.40E+0	3.85E+1	2.82E+2	4.20E+0	2.99E+1	2.19E+2	1.73E+0	1.27E+1	9.30E+1	1.37E+0	1.00E+1	7.39E+1
IX	1.79E-2	1.53E-1	9.43E-1	1.51E-2	1.28E-1	7.93E-1	1.23E-2	1.05E-1	6.47E-1	5.76E-3	4.91E-2	3.03E-1	4.04E-3	3.44E-2	2.13E-1
X	1.53E+0	4.93E+0	5.56E+0	1.52E+0	4.75E+0	5.34E+0	1.50E+0	4.38E+0	4.91E+0	1.42E+0	3.24E+0	3.57E+0	1.38E+0	2.98E+0	3.26E+0
XII	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.12E-1	2.23E-2	1.31E-1	2.12E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.85E-3	1.96E-3	1.96E-3	1.85E-3	1.96E-3	1.96E-3	1.84E-3	1.95E-3	1.95E-3	1.82E-3	1.94E-3	1.94E-3	1.82E-3	1.93E-3	1.93E-3
XVIB	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.82E-3	1.93E-3	1.93E-3	1.81E-3	1.92E-3	1.92E-3	1.80E-3	1.91E-3	1.91E-3
XVIC	1.79E-3	1.89E-3	1.89E-3	1.79E-3	1.89E-3	1.89E-3	1.78E-3	1.89E-3	1.89E-3	1.77E-3	1.87E-3	1.87E-3	1.76E-3	1.86E-3	1.86E-3
XVIII	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.80E-2	3.80E-2	3.47E-2	3.75E-2	3.75E-2	3.45E-2	3.73E-2	3.73E-2
XVIII A	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.80E-2	3.80E-2	3.47E-2	3.75E-2	3.75E-2	3.45E-2	3.73E-2	3.73E-2
XVIII B	3.25E-2	3.45E-2	3.45E-2	3.24E-2	3.45E-2	3.45E-2	3.24E-2	3.45E-2	3.45E-2	3.20E-2	3.40E-2	3.40E-2	3.18E-2	3.38E-2	3.38E-2
XVIII C	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.87E-2	2.87E-2	2.76E-2	2.87E-2	2.87E-2	2.72E-2	2.83E-2	2.83E-2	2.70E-2	2.81E-2	2.81E-2
XXA	3.20E-3	4.12E-2	4.10E-1	1.32E-3	2.64E-2	2.63E-1	8.61E-4	9.38E-3	9.34E-2	6.87E-4	6.04E-3	6.02E-2	6.38E-4	5.67E-3	5.65E-2
XXB	3.07E-3	1.83E-2	1.26E-1	1.27E-3	7.57E-3	5.23E-2	8.25E-4	4.93E-3	3.40E-2	6.58E-4	3.93E-3	2.72E-2	6.11E-4	3.65E-3	2.52E-2
XXC	2.79E-3	1.04E-2	2.58E-1	1.16E-3	4.29E-3	1.07E-1	7.52E-4	2.79E-3	6.94E-2	6.00E-4	2.23E-3	5.54E-2	5.57E-4	2.07E-3	5.14E-2
XXIA	1.43E-2	1.48E-1	1.41E+0	1.42E-2	1.47E-1	1.40E+0	1.41E-2	1.46E-1	1.39E+0	1.37E-2	1.42E-1	1.35E+0	1.34E-2	1.38E-1	1.32E+0
XXIB	1.42E-2	1.46E-1	1.29E+0	1.41E-2	1.45E-1	1.29E+0	1.40E-2	1.44E-1	1.28E+0	1.36E-2	1.40E-1	1.25E+0	1.33E-2	1.36E-1	1.21E+0
XXIC	1.40E-2	1.41E-1	1.09E+0	1.40E-2	1.41E-1	1.09E+0	1.39E-2	1.40E-1	1.08E+0	1.35E-2	1.36E-1	1.05E+0	1.31E-2	1.32E-1	1.02E+0
XXII	1.07E+0	1.83E+1	3.54E+1	1.06E+0	1.83E+1	3.54E+1	1.06E+0	1.82E+1	3.52E+1	1.04E+0	1.78E+1	3.45E+1	1.03E+0	1.76E+1	3.41E+1
DOE	3.33E+2	2.57E+3	2.32E+4	3.32E+2	2.57E+3	2.32E+4	3.29E+2	2.55E+3	2.31E+4	3.20E+2	2.51E+3	2.28E+4	3.17E+2	2.50E+3	2.27E+4
DOD	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.12E-1	2.23E-2	1.31E-1	2.12E-1
NRC	2.58E+0	5.88E+0	3.39E+1	2.56E+0	5.73E+0	3.21E+1	2.55E+0	5.61E+0	3.09E+1	2.51E+0	5.46E+0	2.98E+1	2.48E+0	5.36E+0	2.90E+1
Total	3.36E+2	2.58E+3	2.33E+4	3.35E+2	2.57E+3	2.32E+4	3.32E+2	2.56E+3	2.31E+4	3.23E+2	2.52E+3	2.28E+4	3.19E+2	2.50E+3	2.27E+4

Medium Population Density With Agriculture - 09-19-94 1:53p
 Table M-63. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.12E+0	1.23E+0	1.23E+0	1.10E+0	1.20E+0	1.20E+0	1.08E+0	1.18E+0	1.18E+0	1.02E+0	1.12E+0	1.12E+0	9.78E-1	1.07E+0	1.07E+0
II	5.83E+1	5.73E+2	4.81E+3	5.83E+1	5.73E+2	4.81E+3	5.83E+1	5.73E+2	4.81E+3	5.83E+1	5.73E+2	4.81E+3	5.83E+1	5.73E+2	4.80E+3
III	4.91E-1	5.44E-1	5.44E-1	4.87E-1	5.40E-1	5.40E-1	4.77E-1	5.29E-1	5.29E-1	4.10E-1	4.55E-1	4.55E-1	3.63E-1	4.02E-1	4.02E-1
IV	3.68E-1	2.34E+0	6.87E+0	3.63E-1	2.30E+0	6.77E+0	3.59E-1	2.28E+0	6.69E+0	3.47E-1	2.20E+0	6.48E+0	3.41E-1	2.16E+0	6.36E+0
V	2.95E+1	3.22E+1	3.22E+1	2.94E+1	3.21E+1	3.21E+1	2.93E+1	3.20E+1	3.20E+1	2.89E+1	3.15E+1	3.15E+1	2.85E+1	3.11E+1	3.11E+1
VI	1.01E+1	7.89E+1	7.86E+2	1.01E+1	7.89E+1	7.86E+2	1.01E+1	7.89E+1	7.86E+2	1.01E+1	7.89E+1	7.86E+2	1.01E+1	7.88E+1	7.85E+2
VII	7.68E+0	5.75E+1	4.24E+2	7.09E+0	5.23E+1	3.85E+2	6.69E+0	4.89E+1	3.60E+2	5.86E+0	4.19E+1	3.07E+2	5.19E+0	3.69E+1	2.70E+2
IX	2.95E-2	2.51E-1	1.55E+0	2.60E-2	2.21E-1	1.37E+0	2.34E-2	1.99E-1	1.23E+0	1.78E-2	1.52E-1	9.37E-1	1.41E-2	1.20E-1	7.41E-1
X	1.56E+0	5.13E+0	5.80E+0	1.56E+0	5.13E+0	5.79E+0	1.55E+0	5.12E+0	5.78E+0	1.54E+0	5.04E+0	5.69E+0	1.52E+0	4.90E+0	5.53E+0
XII	2.24E-2	1.32E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1
XIIIA	1.88E-4	1.26E-3	3.38E-3	1.12E-4	7.52E-4	2.01E-3	2.37E-5	1.59E-4	4.26E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.74E-4	8.60E-4	1.50E-3	1.04E-4	5.12E-4	8.94E-4	2.20E-5	1.08E-4	1.89E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.50E-4	4.76E-4	9.36E-3	8.95E-5	2.83E-4	5.57E-3	1.89E-5	6.00E-5	1.18E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.85E-3	1.97E-3	1.97E-3	1.85E-3	1.97E-3	1.97E-3	1.85E-3	1.96E-3	1.96E-3	1.85E-3	1.96E-3	1.96E-3	1.85E-3	1.96E-3	1.96E-3
XVIB	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3
XVIC	1.79E-3	1.90E-3	1.90E-3	1.79E-3	1.89E-3	1.89E-3	1.79E-3	1.89E-3	1.89E-3	1.79E-3	1.89E-3	1.89E-3	1.79E-3	1.89E-3	1.89E-3
XVIIIA	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2
XVIIIB	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2
XVIIIC	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2
XXA	1.60E-2	1.42E-1	1.41E+0	1.05E-2	9.98E-2	9.93E-1	7.80E-3	8.04E-2	8.00E-1	2.22E-3	4.05E-2	4.03E-1	9.40E-4	2.08E-2	2.07E-1
XXB	1.53E-2	9.88E-2	6.82E-1	1.01E-2	6.84E-2	4.72E-1	7.47E-3	5.43E-2	3.75E-1	2.13E-3	2.43E-2	1.68E-1	9.00E-4	1.01E-2	6.96E-2
XXC	1.39E-2	5.17E-2	1.29E+0	9.19E-3	3.41E-2	8.48E-1	6.81E-3	2.52E-2	6.28E-1	1.94E-3	7.21E-3	1.79E-1	8.21E-4	3.04E-3	7.57E-2
XXIA	1.43E-2	1.48E-1	1.41E+0	1.43E-2	1.48E-1	1.41E+0	1.43E-2	1.48E-1	1.41E+0	1.43E-2	1.48E-1	1.41E+0	1.42E-2	1.47E-1	1.40E+0
XXIB	1.42E-2	1.46E-1	1.30E+0	1.42E-2	1.46E-1	1.30E+0	1.42E-2	1.46E-1	1.30E+0	1.42E-2	1.46E-1	1.30E+0	1.41E-2	1.45E-1	1.29E+0
XXIC	1.41E-2	1.42E-1	1.10E+0	1.41E-2	1.42E-1	1.10E+0	1.40E-2	1.42E-1	1.10E+0	1.40E-2	1.41E-1	1.09E+0	1.40E-2	1.41E-1	1.09E+0
XXII	1.07E+0	1.83E+1	3.55E+1	1.07E+0	1.83E+1	3.55E+1	1.07E+0	1.83E+1	3.55E+1	1.07E+0	1.83E+1	3.54E+1	1.06E+0	1.83E+1	3.54E+1
DOE	3.37E+2	2.59E+3	2.34E+4	3.36E+2	2.59E+3	2.33E+4	3.35E+2	2.58E+3	2.33E+4	3.34E+2	2.57E+3	2.32E+4	3.32E+2	2.57E+3	2.32E+4
DOD	2.39E-2	1.39E-1	2.53E-1	2.33E-2	1.36E-1	2.37E-1	2.26E-2	1.32E-1	2.18E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1
NRC	2.75E+0	6.93E+0	4.61E+1	2.68E+0	6.52E+0	4.11E+1	2.65E+0	6.32E+0	3.87E+1	2.57E+0	5.90E+0	3.37E+1	2.55E+0	5.71E+0	3.18E+1
Total	3.40E+2	2.60E+3	2.34E+4	3.39E+2	2.59E+3	2.34E+4	3.38E+2	2.59E+3	2.33E+4	3.36E+2	2.58E+3	2.33E+4	3.35E+2	2.57E+3	2.32E+4

Medium Population Density With Agriculture - 09-19-94 1:53p
 Table M-64. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	9.08E-1	9.92E-1	9.92E-1	8.61E-1	9.40E-1	9.40E-1	7.93E-1	8.66E-1	8.66E-1	5.69E-1	6.22E-1	6.22E-1	4.95E-1	5.41E-1	5.41E-1
II	5.83E+1	5.72E+2	4.78E+3	5.83E+1	5.71E+2	4.76E+3	5.83E+1	5.71E+2	4.75E+3	5.82E+1	5.70E+2	4.71E+3	5.81E+1	5.69E+2	4.69E+3
III	3.14E-1	3.48E-1	3.48E-1	2.60E-1	2.88E-1	2.88E-1	1.65E-1	1.83E-1	1.83E-1	4.33E-2	4.79E-2	4.79E-2	2.44E-2	2.70E-2	2.70E-2
IV	3.25E-1	2.06E+0	6.07E+0	3.10E-1	1.97E+0	5.78E+0	2.79E-1	1.77E+0	5.20E+0	1.24E-1	7.85E-1	2.31E+0	4.61E-2	2.92E-1	8.60E-1
V	2.77E+1	3.02E+1	3.02E+1	2.69E+1	2.94E+1	2.94E+1	2.54E+1	2.77E+1	2.77E+1	2.12E+1	2.31E+1	2.31E+1	2.02E+1	2.20E+1	2.20E+1
VI	1.01E+1	7.87E+1	7.84E+2	1.00E+1	7.85E+1	7.82E+2	9.94E+0	7.81E+1	7.78E+2	9.53E+0	7.57E+1	7.56E+2	9.40E+0	7.50E+1	7.49E+2
VII	3.49E+0	2.49E+1	1.83E+2	2.46E+0	1.77E+1	1.30E+2	1.61E+0	1.18E+1	8.64E+1	1.07E-2	6.48E-2	4.62E-1	.00E+0	.00E+0	.00E+0
IX	1.03E-2	8.75E-2	5.40E-1	7.41E-3	6.32E-2	3.90E-1	5.07E-3	4.32E-2	2.67E-1	9.19E-4	7.83E-3	4.84E-2	.00E+0	.00E+0	.00E+0
X	1.50E+0	4.51E+0	5.06E+0	1.48E+0	4.12E+0	4.60E+0	1.45E+0	3.56E+0	3.94E+0	1.31E+0	2.54E+0	2.75E+0	1.27E+0	2.28E+0	2.46E+0
XII	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.12E-1	2.23E-2	1.31E-1	2.12E-1	2.22E-2	1.30E-1	2.11E-1	2.21E-2	1.30E-1	2.10E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.84E-3	1.95E-3	1.95E-3	1.83E-3	1.95E-3	1.95E-3	1.83E-3	1.94E-3	1.94E-3	1.76E-3	1.88E-3	1.88E-3	1.73E-3	1.84E-3	1.84E-3
XVIB	1.82E-3	1.93E-3	1.93E-3	1.82E-3	1.93E-3	1.93E-3	1.81E-3	1.92E-3	1.92E-3	1.75E-3	1.86E-3	1.86E-3	1.71E-3	1.82E-3	1.82E-3
XVIC	1.78E-3	1.88E-3	1.88E-3	1.78E-3	1.88E-3	1.88E-3	1.77E-3	1.87E-3	1.87E-3	1.71E-3	1.81E-3	1.81E-3	1.67E-3	1.77E-3	1.77E-3
XVIIIA	3.51E-2	3.80E-2	3.80E-2	3.50E-2	3.79E-2	3.79E-2	3.47E-2	3.75E-2	3.75E-2	3.32E-2	3.58E-2	3.58E-2	3.24E-2	3.50E-2	3.50E-2
XVIIIB	3.24E-2	3.44E-2	3.44E-2	3.23E-2	3.43E-2	3.43E-2	3.20E-2	3.40E-2	3.40E-2	3.06E-2	3.25E-2	3.25E-2	2.98E-2	3.17E-2	3.17E-2
XVIIIC	2.76E-2	2.87E-2	2.87E-2	2.75E-2	2.86E-2	2.86E-2	2.72E-2	2.83E-2	2.83E-2	2.60E-2	2.71E-2	2.71E-2	2.54E-2	2.64E-2	2.64E-2
XXA	7.94E-4	7.01E-3	6.98E-2	7.29E-4	6.53E-3	6.50E-2	6.43E-4	5.89E-3	5.87E-2	4.45E-4	4.37E-3	4.36E-2	3.76E-4	3.95E-3	3.94E-2
XXB	7.60E-4	4.90E-3	3.38E-2	6.98E-4	4.54E-3	3.14E-2	6.16E-4	4.07E-3	2.82E-2	4.26E-4	2.96E-3	2.05E-2	3.60E-4	2.68E-3	1.86E-2
XXC	6.93E-4	2.57E-3	6.40E-2	6.37E-4	2.36E-3	5.87E-2	5.61E-4	2.08E-3	5.18E-2	3.89E-4	1.44E-3	3.59E-2	3.28E-4	1.22E-3	3.03E-2
XXIA	1.41E-2	1.46E-1	1.39E+0	1.40E-2	1.45E-1	1.38E+0	1.37E-2	1.42E-1	1.35E+0	1.15E-2	1.19E-1	1.13E+0	1.07E-2	1.11E-1	1.06E+0
XXIB	1.40E-2	1.44E-1	1.28E+0	1.39E-2	1.43E-1	1.27E+0	1.36E-2	1.40E-1	1.24E+0	1.14E-2	1.18E-1	1.04E+0	1.06E-2	1.09E-1	9.72E-1
XXIC	1.38E-2	1.40E-1	1.08E+0	1.37E-2	1.38E-1	1.07E+0	1.34E-2	1.36E-1	1.05E+0	1.13E-2	1.14E-1	8.83E-1	1.05E-2	1.06E-1	8.21E-1
XXII	1.06E+0	1.82E+1	3.52E+1	1.05E+0	1.80E+1	3.49E+1	1.04E+0	1.78E+1	3.46E+1	9.84E-1	1.70E+1	3.29E+1	9.69E-1	1.68E+1	3.25E+1
DOE	3.28E+2	2.55E+3	2.30E+4	3.25E+2	2.53E+3	2.29E+4	3.21E+2	2.51E+3	2.28E+4	3.05E+2	2.43E+3	2.21E+4	3.00E+2	2.41E+3	2.19E+4
DOD	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.12E-1	2.23E-2	1.31E-1	2.12E-1	2.22E-2	1.30E-1	2.11E-1	2.21E-2	1.30E-1	2.10E-1
NRC	2.54E+0	5.58E+0	3.06E+1	2.53E+0	5.54E+0	3.03E+1	2.50E+0	5.45E+0	2.97E+1	2.36E+0	4.85E+0	2.52E+1	2.29E+0	4.61E+0	2.35E+1
Total	3.31E+2	2.55E+3	2.31E+4	3.28E+2	2.54E+3	2.30E+4	3.23E+2	2.52E+3	2.28E+4	3.07E+2	2.44E+3	2.22E+4	3.03E+2	2.42E+3	2.20E+4

Medium Population Density With Agriculture - 09-19-94 1:53p
 Table M-65. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.48E-1	8.18E-1	8.18E-1	7.37E-1	8.06E-1	8.06E-1	7.29E-1	7.97E-1	7.97E-1	7.09E-1	7.75E-1	7.75E-1	6.95E-1	7.60E-1	7.60E-1
II	4.51E+1	4.42E+2	3.77E+3	4.51E+1	4.42E+2	3.77E+3	4.51E+1	4.42E+2	3.77E+3	4.51E+1	4.42E+2	3.77E+3	4.51E+1	4.42E+2	3.77E+3
III	3.25E-1	3.60E-1	3.60E-1	3.25E-1	3.60E-1	3.60E-1	3.24E-1	3.59E-1	3.59E-1	3.14E-1	3.48E-1	3.48E-1	3.00E-1	3.32E-1	3.32E-1
IV	2.34E-1	1.46E+0	5.14E+0	2.33E-1	1.45E+0	5.11E+0	2.31E-1	1.44E+0	5.08E+0	2.27E-1	1.42E+0	4.99E+0	2.25E-1	1.40E+0	4.93E+0
V	1.95E+1	2.13E+1	2.13E+1	1.95E+1	2.12E+1	2.12E+1	1.95E+1	2.12E+1	2.12E+1	1.94E+1	2.11E+1	2.11E+1	1.93E+1	2.10E+1	2.10E+1
VI	6.65E+0	5.12E+1	5.60E+2	6.65E+0	5.12E+1	5.60E+2	6.64E+0	5.12E+1	5.60E+2	6.64E+0	5.12E+1	5.60E+2	6.64E+0	5.12E+1	5.60E+2
VII	6.54E+0	5.09E+1	3.82E+2	6.39E+0	4.96E+1	3.72E+2	6.18E+0	4.78E+1	3.58E+2	5.69E+0	4.35E+1	3.26E+2	5.39E+0	4.09E+1	3.05E+2
IX	2.68E-2	2.30E-1	1.43E+0	2.54E-2	2.19E-1	1.36E+0	2.42E-2	2.08E-1	1.29E+0	2.10E-2	1.81E-1	1.12E+0	1.89E-2	1.62E-1	1.01E+0
X	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.20E+0	3.65E+0	1.01E+0	3.18E+0	3.63E+0
XII	1.89E-2	1.10E-1	1.78E-1	1.89E-2	1.10E-1	1.78E-1	1.89E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1
XIIIA	1.34E-4	8.79E-4	2.51E-3	1.08E-4	7.06E-4	2.01E-3	7.52E-5	4.93E-4	1.40E-3	1.48E-5	9.72E-5	2.77E-4	.00E+0	.00E+0	.00E+0
XIIIB	1.24E-4	5.98E-4	1.14E-3	9.92E-5	4.80E-4	9.16E-4	6.93E-5	3.35E-4	6.39E-4	1.37E-5	6.61E-5	1.26E-4	.00E+0	.00E+0	.00E+0
XIIIC	1.06E-4	3.30E-4	6.46E-3	8.47E-5	2.65E-4	5.19E-3	5.92E-5	1.85E-4	3.62E-3	1.17E-5	3.64E-5	7.14E-4	.00E+0	.00E+0	.00E+0
XVIA	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3
XVIB	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3
XVIC	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3
XVIIIA	2.71E-2	2.92E-2	2.92E-2	2.71E-2	2.92E-2	2.92E-2	2.71E-2	2.92E-2	2.92E-2	2.71E-2	2.92E-2	2.92E-2	2.71E-2	2.92E-2	2.92E-2
XVIIIB	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.64E-2	2.64E-2
XVIIIC	2.11E-2	2.19E-2	2.19E-2	2.11E-2	2.19E-2	2.19E-2	2.11E-2	2.19E-2	2.19E-2	2.11E-2	2.19E-2	2.19E-2	2.11E-2	2.19E-2	2.19E-2
XXA	1.24E-2	9.92E-2	1.24E+0	9.38E-3	8.21E-2	1.03E+0	7.95E-3	7.10E-2	8.90E-1	5.53E-3	5.22E-2	6.55E-1	4.17E-3	4.27E-2	5.35E-1
XXB	1.19E-2	7.14E-2	6.42E-1	8.98E-3	5.41E-2	4.86E-1	7.61E-3	4.58E-2	4.12E-1	5.29E-3	3.19E-2	2.87E-1	3.99E-3	2.40E-2	2.16E-1
XXC	1.08E-2	4.06E-2	1.08E+0	8.17E-3	3.07E-2	8.15E-1	6.92E-3	2.61E-2	6.90E-1	4.82E-3	1.81E-2	4.80E-1	3.63E-3	1.37E-2	3.62E-1
XXIA	9.50E-3	9.83E-2	9.36E-1	9.50E-3	9.83E-2	9.36E-1	9.50E-3	9.83E-2	9.36E-1	9.50E-3	9.83E-2	9.36E-1	9.49E-3	9.82E-2	9.35E-1
XXIB	9.44E-3	9.70E-2	8.63E-1	9.44E-3	9.70E-2	8.63E-1	9.44E-3	9.70E-2	8.63E-1	9.44E-3	9.70E-2	8.62E-1	9.44E-3	9.69E-2	8.62E-1
XXIC	9.31E-3	9.41E-2	7.29E-1	9.31E-3	9.41E-2	7.29E-1	9.31E-3	9.41E-2	7.29E-1	9.31E-3	9.41E-2	7.29E-1	9.31E-3	9.40E-2	7.28E-1
XXII	8.01E-1	1.23E+1	2.49E+1	8.01E-1	1.23E+1	2.49E+1	8.01E-1	1.23E+1	2.49E+1	8.00E-1	1.23E+1	2.49E+1	7.99E-1	1.23E+1	2.49E+1
DOE	2.30E+2	1.77E+3	1.71E+4	2.30E+2	1.77E+3	1.70E+4	2.29E+2	1.77E+3	1.70E+4	2.29E+2	1.76E+3	1.70E+4	2.28E+2	1.76E+3	1.70E+4
DOD	1.99E-2	1.15E-1	2.06E-1	1.97E-2	1.14E-1	2.01E-1	1.94E-2	1.13E-1	1.94E-1	1.90E-2	1.11E-1	1.81E-1	1.88E-2	1.10E-1	1.78E-1
NRC	2.05E+0	4.89E+0	3.41E+1	2.01E+0	4.69E+0	3.12E+1	2.00E+0	4.58E+0	2.96E+1	1.96E+0	4.39E+0	2.70E+1	1.95E+0	4.28E+0	2.55E+1
Total	2.32E+2	1.77E+3	1.71E+4	2.32E+2	1.77E+3	1.71E+4	2.32E+2	1.77E+3	1.71E+4	2.31E+2	1.77E+3	1.70E+4	2.30E+2	1.76E+3	1.70E+4

Medium Population Density With Agriculture - 09-19-94 1:53p
 Table M-66. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.65E-1	7.26E-1	7.26E-1	6.41E-1	7.01E-1	7.01E-1	6.07E-1	6.64E-1	6.64E-1	5.18E-1	5.66E-1	5.66E-1	4.94E-1	5.40E-1	5.40E-1
II	4.50E+1	4.42E+2	3.77E+3	4.50E+1	4.42E+2	3.76E+3	4.50E+1	4.42E+2	3.76E+3	4.50E+1	4.41E+2	3.73E+3	4.50E+1	4.41E+2	3.72E+3
III	2.58E-1	2.86E-1	2.86E-1	2.38E-1	2.64E-1	2.64E-1	2.15E-1	2.38E-1	2.38E-1	9.96E-2	1.10E-1	1.10E-1	6.43E-2	7.12E-2	7.12E-2
IV	2.19E-1	1.37E+0	4.82E+0	2.16E-1	1.35E+0	4.75E+0	2.10E-1	1.31E+0	4.61E+0	1.78E-1	1.11E+0	3.91E+0	1.62E-1	1.01E+0	3.56E+0
V	1.90E+1	2.07E+1	2.07E+1	1.88E+1	2.05E+1	2.05E+1	1.84E+1	2.01E+1	2.01E+1	1.66E+1	1.81E+1	1.81E+1	1.57E+1	1.71E+1	1.71E+1
VI	6.63E+0	5.12E+1	5.59E+2	6.61E+0	5.12E+1	5.59E+2	6.60E+0	5.11E+1	5.58E+2	6.50E+0	5.06E+1	5.54E+2	6.45E+0	5.04E+1	5.51E+2
VII	4.90E+0	3.68E+1	2.74E+2	4.50E+0	3.37E+1	2.51E+2	3.50E+0	2.62E+1	1.95E+2	1.46E+0	1.11E+1	8.31E+1	1.15E+0	8.80E+0	6.59E+1
IX	1.58E-2	1.35E-1	8.41E-1	1.32E-2	1.14E-1	7.07E-1	1.08E-2	9.29E-2	5.77E-1	5.06E-3	4.35E-2	2.70E-1	3.55E-3	3.05E-2	1.90E-1
X	1.00E+0	3.09E+0	3.52E+0	9.94E-1	2.98E+0	3.38E+0	9.81E-1	2.75E+0	3.11E+0	9.29E-1	2.05E+0	2.27E+0	9.05E-1	1.89E+0	2.08E+0
XII	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.77E-1	1.88E-2	1.10E-1	1.77E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3	1.21E-3	1.29E-3	1.29E-3	1.20E-3	1.28E-3	1.28E-3	1.20E-3	1.28E-3	1.28E-3
XVIB	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.20E-3	1.27E-3	1.27E-3	1.19E-3	1.26E-3	1.26E-3
XVIC	1.19E-3	1.25E-3	1.25E-3	1.18E-3	1.25E-3	1.25E-3	1.18E-3	1.25E-3	1.25E-3	1.17E-3	1.24E-3	1.24E-3	1.17E-3	1.23E-3	1.23E-3
XVIII	2.71E-2	2.92E-2	2.92E-2	2.70E-2	2.92E-2	2.92E-2	2.70E-2	2.92E-2	2.92E-2	2.67E-2	2.88E-2	2.88E-2	2.65E-2	2.86E-2	2.86E-2
XVIII A	2.71E-2	2.92E-2	2.92E-2	2.70E-2	2.92E-2	2.92E-2	2.70E-2	2.92E-2	2.92E-2	2.67E-2	2.88E-2	2.88E-2	2.65E-2	2.86E-2	2.86E-2
XVIII B	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.63E-2	2.63E-2	2.48E-2	2.63E-2	2.63E-2	2.45E-2	2.60E-2	2.60E-2	2.43E-2	2.58E-2	2.58E-2
XVIII C	2.11E-2	2.19E-2	2.19E-2	2.10E-2	2.19E-2	2.19E-2	2.10E-2	2.18E-2	2.18E-2	2.08E-2	2.16E-2	2.16E-2	2.06E-2	2.14E-2	2.14E-2
XXA	1.98E-3	2.57E-2	3.22E-1	8.19E-4	1.64E-2	2.06E-1	5.33E-4	5.84E-3	7.33E-2	4.25E-4	3.76E-3	4.72E-2	3.95E-4	3.53E-3	4.43E-2
XXB	1.89E-3	1.14E-2	1.03E-1	7.84E-4	4.72E-3	4.25E-2	5.10E-4	3.07E-3	2.76E-2	4.07E-4	2.45E-3	2.21E-2	3.78E-4	2.28E-3	2.05E-2
XXC	1.72E-3	6.49E-3	1.72E-1	7.13E-4	2.69E-3	7.12E-2	4.64E-4	1.75E-3	4.63E-2	3.70E-4	1.39E-3	3.70E-2	3.44E-4	1.29E-3	3.43E-2
XXIA	9.47E-3	9.80E-2	9.33E-1	9.44E-3	9.77E-2	9.30E-1	9.38E-3	9.71E-2	9.24E-1	9.11E-3	9.42E-2	8.97E-1	8.86E-3	9.17E-2	8.73E-1
XXIB	9.41E-3	9.67E-2	8.60E-1	9.38E-3	9.64E-2	8.57E-1	9.33E-3	9.58E-2	8.52E-1	9.05E-3	9.30E-2	8.27E-1	8.81E-3	9.05E-2	8.05E-1
XXIC	9.28E-3	9.37E-2	7.26E-1	9.25E-3	9.35E-2	7.24E-1	9.20E-3	9.29E-2	7.20E-1	8.92E-3	9.02E-2	6.98E-1	8.69E-3	8.77E-2	6.80E-1
XXII	7.97E-1	1.23E+1	2.48E+1	7.95E-1	1.23E+1	2.48E+1	7.91E-1	1.22E+1	2.47E+1	7.74E-1	1.20E+1	2.42E+1	7.66E-1	1.18E+1	2.40E+1
DOE	2.27E+2	1.75E+3	1.69E+4	2.26E+2	1.75E+3	1.69E+4	2.24E+2	1.74E+3	1.68E+4	2.18E+2	1.71E+3	1.66E+4	2.15E+2	1.70E+3	1.65E+4
DOD	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.77E-1	1.88E-2	1.10E-1	1.77E-1
NRC	1.92E+0	4.10E+0	2.30E+1	1.90E+0	4.00E+0	2.17E+1	1.89E+0	3.93E+0	2.08E+1	1.86E+0	3.83E+0	2.00E+1	1.85E+0	3.76E+0	1.95E+1
Total	2.29E+2	1.76E+3	1.70E+4	2.28E+2	1.75E+3	1.69E+4	2.26E+2	1.74E+3	1.68E+4	2.20E+2	1.71E+3	1.66E+4	2.17E+2	1.70E+3	1.65E+4

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 Table M-67. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.42E-1	8.11E-1	8.11E-1	7.24E-1	7.91E-1	7.91E-1	7.10E-1	7.77E-1	7.77E-1	6.74E-1	7.37E-1	7.37E-1	6.45E-1	7.06E-1	7.06E-1
II	4.51E+1	4.42E+2	3.77E+3	4.51E+1	4.42E+2	3.77E+3	4.51E+1	4.42E+2	3.77E+3	4.50E+1	4.42E+2	3.77E+3	4.50E+1	4.42E+2	3.76E+3
III	3.25E-1	3.60E-1	3.60E-1	3.23E-1	3.57E-1	3.57E-1	3.16E-1	3.50E-1	3.50E-1	2.72E-1	3.01E-1	3.01E-1	2.40E-1	2.66E-1	2.66E-1
IV	2.33E-1	1.46E+0	5.12E+0	2.30E-1	1.44E+0	5.05E+0	2.27E-1	1.42E+0	4.99E+0	2.20E-1	1.37E+0	4.83E+0	2.16E-1	1.35E+0	4.74E+0
V	1.95E+1	2.12E+1	2.12E+1	1.95E+1	2.12E+1	2.12E+1	1.94E+1	2.11E+1	2.11E+1	1.91E+1	2.08E+1	2.08E+1	1.88E+1	2.05E+1	2.05E+1
VI	6.65E+0	5.12E+1	5.60E+2	6.64E+0	5.12E+1	5.60E+2	6.64E+0	5.12E+1	5.60E+2	6.63E+0	5.12E+1	5.59E+2	6.62E+0	5.12E+1	5.59E+2
VII	6.49E+0	5.05E+1	3.79E+2	5.97E+0	4.59E+1	3.44E+2	5.62E+0	4.29E+1	3.21E+2	4.90E+0	3.67E+1	2.74E+2	4.33E+0	3.23E+1	2.41E+2
IX	2.59E-2	2.23E-1	1.38E+0	2.28E-2	1.96E-1	1.22E+0	2.06E-2	1.77E-1	1.10E+0	1.56E-2	1.35E-1	8.35E-1	1.24E-2	1.06E-1	6.61E-1
X	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.21E+0	3.66E+0	1.01E+0	3.16E+0	3.60E+0	9.99E-1	3.07E+0	3.50E+0
XII	1.89E-2	1.10E-1	1.78E-1	1.89E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1
XIIIA	1.20E-4	7.85E-4	2.24E-3	7.14E-5	4.68E-4	1.33E-3	1.51E-5	9.90E-5	2.82E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.10E-4	5.34E-4	1.02E-3	6.57E-5	3.18E-4	6.06E-4	1.39E-5	6.74E-5	1.28E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	9.42E-5	2.94E-4	5.77E-3	5.61E-5	1.75E-4	3.44E-3	1.19E-5	3.71E-5	7.28E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3
XVIB	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3
XVIC	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3
XVIIIA	2.71E-2	2.92E-2	2.92E-2	2.71E-2	2.92E-2	2.92E-2	2.71E-2	2.92E-2	2.92E-2	2.71E-2	2.92E-2	2.92E-2	2.70E-2	2.92E-2	2.92E-2
XVIIIB	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.63E-2	2.63E-2
XVIIIC	2.11E-2	2.19E-2	2.19E-2	2.11E-2	2.19E-2	2.19E-2	2.11E-2	2.19E-2	2.19E-2	2.11E-2	2.19E-2	2.19E-2	2.10E-2	2.19E-2	2.19E-2
XXA	9.88E-3	8.82E-2	1.11E+0	6.51E-3	6.21E-2	7.79E-1	4.82E-3	5.01E-2	6.28E-1	1.38E-3	2.52E-2	3.16E-1	5.81E-4	1.30E-2	1.62E-1
XXB	9.46E-3	6.16E-2	5.54E-1	6.23E-3	4.26E-2	3.83E-1	4.62E-3	3.39E-2	3.05E-1	1.32E-3	1.51E-2	1.36E-1	5.56E-4	6.28E-3	5.65E-2
XXC	8.61E-3	3.24E-2	8.58E-1	5.67E-3	2.14E-2	5.66E-1	4.20E-3	1.58E-2	4.19E-1	1.20E-3	4.51E-3	1.20E-1	5.06E-4	1.91E-3	5.05E-2
XXIA	9.50E-3	9.83E-2	9.36E-1	9.50E-3	9.83E-2	9.36E-1	9.50E-3	9.83E-2	9.36E-1	9.47E-3	9.80E-2	9.33E-1	9.44E-3	9.76E-2	9.30E-1
XXIB	9.44E-3	9.70E-2	8.63E-1	9.44E-3	9.70E-2	8.63E-1	9.44E-3	9.70E-2	8.62E-1	9.41E-3	9.67E-2	8.60E-1	9.38E-3	9.64E-2	8.57E-1
XXIC	9.31E-3	9.41E-2	7.29E-1	9.31E-3	9.41E-2	7.29E-1	9.31E-3	9.40E-2	7.29E-1	9.28E-3	9.38E-2	7.26E-1	9.25E-3	9.34E-2	7.24E-1
XXII	8.01E-1	1.23E+1	2.49E+1	8.00E-1	1.23E+1	2.49E+1	8.00E-1	1.23E+1	2.49E+1	7.97E-1	1.23E+1	2.49E+1	7.95E-1	1.23E+1	2.48E+1
DOE	2.30E+2	1.77E+3	1.71E+4	2.29E+2	1.76E+3	1.70E+4	2.29E+2	1.76E+3	1.70E+4	2.27E+2	1.75E+3	1.69E+4	2.26E+2	1.75E+3	1.69E+4
DOD	1.98E-2	1.15E-1	2.03E-1	1.94E-2	1.13E-1	1.93E-1	1.90E-2	1.11E-1	1.81E-1	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1
NRC	2.02E+0	4.76E+0	3.21E+1	1.98E+0	4.50E+0	2.84E+1	1.95E+0	4.37E+0	2.66E+1	1.91E+0	4.11E+0	2.29E+1	1.90E+0	3.99E+0	2.15E+1
Total	2.32E+2	1.77E+3	1.71E+4	2.31E+2	1.77E+3	1.70E+4	2.31E+2	1.76E+3	1.70E+4	2.29E+2	1.76E+3	1.70E+4	2.28E+2	1.75E+3	1.69E+4

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 Table M-68. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.99E-1	6.55E-1	6.55E-1	5.68E-1	6.21E-1	6.21E-1	5.23E-1	5.72E-1	5.72E-1	3.76E-1	4.11E-1	4.11E-1	3.27E-1	3.57E-1	3.57E-1
II	4.50E+1	4.42E+2	3.75E+3	4.50E+1	4.41E+2	3.73E+3	4.50E+1	4.41E+2	3.73E+3	4.50E+1	4.40E+2	3.69E+3	4.49E+1	4.39E+2	3.68E+3
III	2.08E-1	2.30E-1	2.30E-1	1.72E-1	1.90E-1	1.90E-1	1.09E-1	1.21E-1	1.21E-1	2.86E-2	3.17E-2	3.17E-2	1.61E-2	1.79E-2	1.79E-2
IV	2.06E-1	1.29E+0	4.52E+0	1.96E-1	1.23E+0	4.31E+0	1.77E-1	1.10E+0	3.88E+0	7.83E-2	4.89E-1	1.72E+0	2.92E-2	1.82E-1	6.41E-1
V	1.83E+1	2.00E+1	2.00E+1	1.78E+1	1.94E+1	1.94E+1	1.68E+1	1.83E+1	1.83E+1	1.40E+1	1.53E+1	1.53E+1	1.33E+1	1.45E+1	1.45E+1
VI	6.59E+0	5.11E+1	5.58E+2	6.57E+0	5.10E+1	5.57E+2	6.51E+0	5.07E+1	5.54E+2	6.24E+0	4.92E+1	5.39E+2	6.16E+0	4.86E+1	5.33E+2
VII	2.92E+0	2.18E+1	1.63E+2	2.06E+0	1.55E+1	1.16E+2	1.35E+0	1.03E+1	7.72E+1	8.59E-3	5.63E-2	4.11E-1	.00E+0	.00E+0	.00E+0
IX	9.02E-3	7.76E-2	4.82E-1	6.51E-3	5.60E-2	3.48E-1	4.45E-3	3.83E-2	2.38E-1	8.08E-4	6.95E-3	4.31E-2	.00E+0	.00E+0	.00E+0
X	9.83E-1	2.83E+0	3.21E+0	9.69E-1	2.59E+0	2.92E+0	9.48E-1	2.25E+0	2.51E+0	8.60E-1	1.62E+0	1.76E+0	8.34E-1	1.46E+0	1.58E+0
XII	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.77E-1	1.88E-2	1.10E-1	1.77E-1	1.87E-2	1.09E-1	1.76E-1	1.86E-2	1.09E-1	1.75E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.21E-3	1.29E-3	1.29E-3	1.21E-3	1.29E-3	1.29E-3	1.21E-3	1.28E-3	1.28E-3	1.16E-3	1.24E-3	1.24E-3	1.14E-3	1.22E-3	1.22E-3
XVIB	1.20E-3	1.28E-3	1.28E-3	1.20E-3	1.27E-3	1.27E-3	1.20E-3	1.27E-3	1.27E-3	1.15E-3	1.23E-3	1.23E-3	1.13E-3	1.20E-3	1.20E-3
XVIC	1.18E-3	1.25E-3	1.25E-3	1.18E-3	1.24E-3	1.24E-3	1.17E-3	1.24E-3	1.24E-3	1.13E-3	1.20E-3	1.20E-3	1.11E-3	1.17E-3	1.17E-3
XVIII A	2.70E-2	2.92E-2	2.92E-2	2.69E-2	2.90E-2	2.90E-2	2.67E-2	2.88E-2	2.88E-2	2.55E-2	2.75E-2	2.75E-2	2.49E-2	2.69E-2	2.69E-2
XVIII B	2.48E-2	2.63E-2	2.63E-2	2.47E-2	2.62E-2	2.62E-2	2.45E-2	2.60E-2	2.60E-2	2.34E-2	2.48E-2	2.48E-2	2.28E-2	2.42E-2	2.42E-2
XVIII C	2.10E-2	2.18E-2	2.18E-2	2.09E-2	2.17E-2	2.17E-2	2.07E-2	2.15E-2	2.15E-2	1.98E-2	2.06E-2	2.06E-2	1.94E-2	2.01E-2	2.01E-2
XXA	4.91E-4	4.37E-3	5.48E-2	4.51E-4	4.07E-3	5.10E-2	3.98E-4	3.67E-3	4.60E-2	2.75E-4	2.72E-3	3.42E-2	2.33E-4	2.46E-3	3.09E-2
XXB	4.70E-4	3.05E-3	2.75E-2	4.32E-4	2.83E-3	2.55E-2	3.81E-4	2.54E-3	2.29E-2	2.63E-4	1.85E-3	1.66E-2	2.23E-4	1.67E-3	1.51E-2
XXC	4.28E-4	1.61E-3	4.27E-2	3.93E-4	1.48E-3	3.92E-2	3.46E-4	1.30E-3	3.46E-2	2.40E-4	9.03E-4	2.39E-2	2.03E-4	7.63E-4	2.02E-2
XXIA	9.35E-3	9.67E-2	9.21E-1	9.26E-3	9.58E-2	9.13E-1	9.09E-3	9.41E-2	8.96E-1	7.64E-3	7.90E-2	7.53E-1	7.11E-3	7.36E-2	7.00E-1
XXIB	9.29E-3	9.55E-2	8.49E-1	9.21E-3	9.46E-2	8.41E-1	9.04E-3	9.28E-2	8.25E-1	7.59E-3	7.80E-2	6.94E-1	7.07E-3	7.26E-2	6.45E-1
XXIC	9.16E-3	9.26E-2	7.17E-1	9.08E-3	9.17E-2	7.11E-1	8.91E-3	9.00E-2	6.97E-1	7.49E-3	7.56E-2	5.86E-1	6.97E-3	7.04E-2	5.45E-1
XXII	7.89E-1	1.22E+1	2.47E+1	7.83E-1	1.21E+1	2.45E+1	7.75E-1	1.20E+1	2.42E+1	7.34E-1	1.14E+1	2.31E+1	7.23E-1	1.13E+1	2.28E+1
DOE	2.23E+2	1.73E+3	1.68E+4	2.21E+2	1.72E+3	1.67E+4	2.18E+2	1.71E+3	1.66E+4	2.07E+2	1.65E+3	1.61E+4	2.04E+2	1.64E+3	1.60E+4
DOD	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.77E-1	1.88E-2	1.10E-1	1.77E-1	1.87E-2	1.09E-1	1.76E-1	1.86E-2	1.09E-1	1.75E-1
NRC	1.89E+0	3.91E+0	2.06E+1	1.88E+0	3.88E+0	2.04E+1	1.86E+0	3.83E+0	2.00E+1	1.76E+0	3.42E+0	1.69E+1	1.71E+0	3.26E+0	1.58E+1
Total	2.25E+2	1.74E+3	1.68E+4	2.23E+2	1.73E+3	1.67E+4	2.20E+2	1.71E+3	1.66E+4	2.09E+2	1.66E+3	1.61E+4	2.06E+2	1.64E+3	1.60E+4

Medium Population Density Without Agriculture - 09-19-94 1:54p
 Table M-69. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.15E+3	2.34E+3	2.34E+3	2.12E+3	2.30E+3	2.30E+3	2.10E+3	2.28E+3	2.28E+3	2.04E+3	2.21E+3	2.21E+3	2.00E+3	2.17E+3	2.17E+3
II	5.02E+4	4.89E+5	3.96E+6	5.02E+4	4.89E+5	3.96E+6	5.02E+4	4.89E+5	3.96E+6	5.02E+4	4.89E+5	3.96E+6	5.02E+4	4.89E+5	3.95E+6
III	9.48E+2	1.05E+3	1.05E+3	9.47E+2	1.05E+3	1.05E+3	9.44E+2	1.05E+3	1.05E+3	9.17E+2	1.02E+3	1.02E+3	8.75E+2	9.69E+2	9.69E+2
IV	2.82E+2	7.34E+2	8.21E+3	2.80E+2	7.28E+2	8.15E+3	2.78E+2	7.24E+2	8.10E+3	2.73E+2	7.12E+2	7.96E+3	2.70E+2	7.03E+2	7.87E+3
V	5.61E+4	6.08E+4	6.08E+4	5.60E+4	6.08E+4	6.08E+4	5.59E+4	6.07E+4	6.07E+4	5.56E+4	6.04E+4	6.04E+4	5.53E+4	6.01E+4	6.01E+4
VI	1.52E+4	9.32E+4	5.70E+5	1.52E+4	9.32E+4	5.70E+5	1.52E+4	9.32E+4	5.70E+5	1.52E+4	9.31E+4	5.70E+5	1.52E+4	9.31E+4	5.70E+5
VII	8.49E+4	7.63E+5	6.20E+6	8.27E+4	7.43E+5	6.03E+6	7.96E+4	7.14E+5	5.80E+6	7.27E+4	6.50E+5	5.28E+6	6.83E+4	6.10E+5	4.95E+6
IX	4.02E+2	3.61E+3	2.30E+4	3.81E+2	3.43E+3	2.18E+4	3.62E+2	3.26E+3	2.07E+4	3.15E+2	2.83E+3	1.80E+4	2.83E+2	2.54E+3	1.62E+4
X	1.39E+3	1.86E+4	2.15E+4	1.39E+3	1.86E+4	2.15E+4	1.39E+3	1.86E+4	2.15E+4	1.38E+3	1.85E+4	2.14E+4	1.37E+3	1.83E+4	2.12E+4
XII	5.11E+1	1.56E+2	1.60E+2	5.11E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2
XIIIA	2.09E-1	6.83E-1	1.82E+0	1.68E-1	5.48E-1	1.46E+0	1.17E-1	3.83E-1	1.02E+0	2.31E-2	7.54E-2	2.01E-1	.00E+0	.00E+0	.00E+0
XIIIB	1.68E-1	3.02E-1	1.05E+0	1.35E-1	2.42E-1	8.39E-1	9.43E-2	1.69E-1	5.86E-1	1.86E-2	3.34E-2	1.15E-1	.00E+0	.00E+0	.00E+0
XIIIC	1.11E-1	1.34E-1	4.12E+1	8.91E-2	1.07E-1	3.31E+1	6.22E-2	7.50E-2	2.31E+1	1.23E-2	1.48E-2	4.55E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E+0	3.84E+0	3.84E+0	3.65E+0	3.84E+0	3.84E+0	3.65E+0	3.84E+0	3.84E+0	3.65E+0	3.84E+0	3.84E+0	3.65E+0	3.84E+0	3.84E+0
XVIB	3.61E+0	3.79E+0	3.79E+0	3.61E+0	3.79E+0	3.79E+0	3.61E+0	3.79E+0	3.79E+0	3.61E+0	3.79E+0	3.79E+0	3.61E+0	3.78E+0	3.78E+0
XVIC	3.52E+0	3.67E+0	3.67E+0	3.52E+0	3.67E+0	3.67E+0	3.52E+0	3.67E+0	3.67E+0	3.52E+0	3.67E+0	3.67E+0	3.52E+0	3.67E+0	3.67E+0
XVIIIA	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1
XVIIIB	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1
XVIIIC	9.79E+0	1.07E+1	1.07E+1	9.79E+0	1.07E+1	1.07E+1	9.79E+0	1.07E+1	1.07E+1	9.79E+0	1.07E+1	1.07E+1	9.79E+0	1.07E+1	1.07E+1
XXA	3.05E+0	1.51E+1	1.63E+3	2.31E+0	1.25E+1	1.35E+3	1.96E+0	1.08E+1	1.16E+3	1.36E+0	7.95E+0	8.57E+2	1.02E+0	6.50E+0	7.00E+2
XXB	2.46E+0	8.93E+0	1.12E+3	1.86E+0	6.76E+0	8.51E+2	1.58E+0	5.73E+0	7.22E+2	1.10E+0	3.98E+0	5.02E+2	8.27E-1	3.00E+0	3.78E+2
XXC	1.62E+0	5.88E+0	7.67E+3	1.23E+0	4.46E+0	5.81E+3	1.04E+0	3.78E+0	4.92E+3	7.25E-1	2.63E+0	3.42E+3	5.46E-1	1.98E+0	2.58E+3
XXIA	2.89E+1	3.00E+2	2.84E+3	2.89E+1	3.00E+2	2.84E+3	2.89E+1	3.00E+2	2.84E+3	2.89E+1	3.00E+2	2.84E+3	2.89E+1	3.00E+2	2.84E+3
XXIB	2.87E+1	2.97E+2	2.57E+3	2.87E+1	2.97E+2	2.57E+3	2.87E+1	2.97E+2	2.57E+3	2.87E+1	2.97E+2	2.57E+3	2.87E+1	2.96E+2	2.57E+3
XXIC	2.83E+1	2.86E+2	2.07E+3	2.83E+1	2.86E+2	2.07E+3	2.83E+1	2.86E+2	2.07E+3	2.83E+1	2.86E+2	2.07E+3	2.83E+1	2.85E+2	2.07E+3
XXII	1.55E+3	6.29E+4	1.07E+5	1.55E+3	6.29E+4	1.07E+5	1.55E+3	6.29E+4	1.07E+5	1.55E+3	6.29E+4	1.07E+5	1.54E+3	6.29E+4	1.07E+5
DOE	5.53E+5	3.89E+6	2.39E+7	5.51E+5	3.87E+6	2.38E+7	5.48E+5	3.84E+6	2.35E+7	5.40E+5	3.78E+6	2.30E+7	5.35E+5	3.73E+6	2.27E+7
DOD	5.24E+1	1.59E+2	2.85E+2	5.22E+1	1.58E+2	2.60E+2	5.18E+1	1.58E+2	2.30E+2	5.12E+1	1.56E+2	1.74E+2	5.10E+1	1.56E+2	1.60E+2
NRC	1.75E+3	7.78E+3	1.05E+5	1.74E+3	7.75E+3	9.34E+4	1.73E+3	7.74E+3	8.78E+4	1.73E+3	7.71E+3	7.84E+4	1.72E+3	7.69E+3	7.31E+4
Total	5.55E+5	3.90E+6	2.40E+7	5.53E+5	3.88E+6	2.39E+7	5.49E+5	3.85E+6	2.36E+7	5.42E+5	3.78E+6	2.31E+7	5.37E+5	3.74E+6	2.28E+7

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 Table M-70. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.91E+3	2.08E+3	2.08E+3	1.84E+3	2.00E+3	2.00E+3	1.75E+3	1.90E+3	1.90E+3	1.49E+3	1.62E+3	1.62E+3	1.42E+3	1.54E+3	1.54E+3
II	5.02E+4	4.89E+5	3.95E+6	5.02E+4	4.89E+5	3.95E+6	5.02E+4	4.88E+5	3.94E+6	5.02E+4	4.88E+5	3.91E+6	5.02E+4	4.87E+5	3.91E+6
III	7.52E+2	8.32E+2	8.32E+2	6.94E+2	7.69E+2	7.69E+2	6.27E+2	6.95E+2	6.95E+2	2.90E+2	3.21E+2	3.21E+2	1.88E+2	2.08E+2	2.08E+2
IV	2.64E+2	6.87E+2	7.68E+3	2.60E+2	6.77E+2	7.57E+3	2.52E+2	6.57E+2	7.35E+3	2.14E+2	5.58E+2	6.24E+3	1.95E+2	5.08E+2	5.68E+3
V	5.46E+4	5.93E+4	5.93E+4	5.40E+4	5.86E+4	5.86E+4	5.29E+4	5.75E+4	5.75E+4	4.77E+4	5.17E+4	5.17E+4	4.50E+4	4.88E+4	4.88E+4
VI	1.52E+4	9.31E+4	5.70E+5	1.52E+4	9.30E+4	5.69E+5	1.51E+4	9.29E+4	5.69E+5	1.49E+4	9.20E+4	5.64E+5	1.47E+4	9.15E+4	5.61E+5
VII	6.15E+4	5.48E+5	4.45E+6	5.64E+4	5.02E+5	4.07E+6	4.38E+4	3.90E+5	3.16E+6	1.85E+4	1.66E+5	1.35E+6	1.47E+4	1.32E+5	1.07E+6
IX	2.36E+2	2.12E+3	1.35E+4	1.99E+2	1.78E+3	1.14E+4	1.62E+2	1.46E+3	9.28E+3	7.60E+1	6.83E+2	4.35E+3	5.33E+1	4.79E+2	3.05E+3
X	1.36E+3	1.76E+4	2.04E+4	1.35E+3	1.68E+4	1.94E+4	1.34E+3	1.50E+4	1.74E+4	1.27E+3	9.77E+3	1.12E+4	1.24E+3	8.62E+3	9.87E+3
XII	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.09E+1	1.56E+2	1.60E+2	5.09E+1	1.55E+2	1.60E+2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.64E+0	3.83E+0	3.83E+0	3.64E+0	3.83E+0	3.83E+0	3.63E+0	3.82E+0	3.82E+0	3.59E+0	3.78E+0	3.78E+0	3.57E+0	3.76E+0	3.76E+0
XVIB	3.60E+0	3.78E+0	3.78E+0	3.60E+0	3.78E+0	3.78E+0	3.58E+0	3.76E+0	3.76E+0	3.55E+0	3.73E+0	3.73E+0	3.53E+0	3.71E+0	3.71E+0
XVIC	3.52E+0	3.67E+0	3.67E+0	3.51E+0	3.66E+0	3.66E+0	3.50E+0	3.65E+0	3.65E+0	3.47E+0	3.62E+0	3.62E+0	3.45E+0	3.60E+0	3.60E+0
XVIII	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.11E+1	1.11E+1
XVIII A	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.11E+1	1.11E+1	9.96E+0	1.10E+1	1.10E+1	9.89E+0	1.09E+1	1.09E+1
XVIII B	9.79E+0	1.07E+1	1.07E+1	9.78E+0	1.07E+1	1.07E+1	9.77E+0	1.07E+1	1.07E+1	9.65E+0	1.05E+1	1.05E+1	9.58E+0	1.04E+1	1.04E+1
XXA	4.86E-1	3.90E+0	4.21E+2	2.01E-1	2.50E+0	2.70E+2	1.30E-1	8.87E-1	9.59E+1	1.04E-1	5.70E-1	6.18E+1	9.61E-2	5.35E-1	5.80E+1
XXB	3.92E-1	1.43E+0	1.80E+2	1.62E-1	5.89E-1	7.44E+1	1.05E-1	3.83E-1	4.84E+1	8.36E-2	3.05E-1	3.87E+1	7.75E-2	2.83E-1	3.59E+1
XXC	2.59E-1	9.40E-1	1.23E+3	1.07E-1	3.89E-1	5.07E+2	6.93E-2	2.53E-1	3.30E+2	5.52E-2	2.02E-1	2.63E+2	5.12E-2	1.87E-1	2.44E+2
XXIA	2.88E+1	2.99E+2	2.83E+3	2.87E+1	2.98E+2	2.83E+3	2.86E+1	2.97E+2	2.81E+3	2.77E+1	2.88E+2	2.73E+3	2.70E+1	2.80E+2	2.65E+3
XXIB	2.86E+1	2.96E+2	2.56E+3	2.85E+1	2.95E+2	2.55E+3	2.84E+1	2.93E+2	2.54E+3	2.75E+1	2.84E+2	2.46E+3	2.68E+1	2.77E+2	2.40E+3
XXIC	2.82E+1	2.85E+2	2.07E+3	2.82E+1	2.84E+2	2.06E+3	2.80E+1	2.82E+2	2.05E+3	2.72E+1	2.74E+2	1.99E+3	2.64E+1	2.66E+2	1.93E+3
XXII	1.54E+3	6.28E+4	1.06E+5	1.54E+3	6.28E+4	1.06E+5	1.53E+3	6.26E+4	1.06E+5	1.50E+3	6.11E+4	1.04E+5	1.48E+3	6.06E+4	1.03E+5
DOE	5.26E+5	3.67E+6	2.22E+7	5.20E+5	3.62E+6	2.18E+7	5.05E+5	3.50E+6	2.08E+7	4.68E+5	3.23E+6	1.89E+7	4.58E+5	3.17E+6	1.85E+7
DOD	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.09E+1	1.56E+2	1.60E+2	5.09E+1	1.55E+2	1.60E+2
NRC	1.72E+3	7.65E+3	6.44E+4	1.71E+3	7.61E+3	5.97E+4	1.70E+3	7.57E+3	5.76E+4	1.67E+3	7.36E+3	5.55E+4	1.65E+3	7.19E+3	5.39E+4
Total	5.28E+5	3.68E+6	2.22E+7	5.21E+5	3.62E+6	2.18E+7	5.07E+5	3.50E+6	2.09E+7	4.69E+5	3.24E+6	1.89E+7	4.60E+5	3.18E+6	1.85E+7

Medium Population Density Without Agriculture - 09-19-94 1:54p
 Table M-71. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.13E+3	2.32E+3	2.32E+3	2.08E+3	2.26E+3	2.26E+3	2.04E+3	2.22E+3	2.22E+3	1.94E+3	2.11E+3	2.11E+3	1.86E+3	2.02E+3	2.02E+3
II	5.02E+4	4.89E+5	3.96E+6	5.02E+4	4.89E+5	3.96E+6	5.02E+4	4.89E+5	3.96E+6	5.02E+4	4.89E+5	3.95E+6	5.02E+4	4.89E+5	3.95E+6
III	9.48E+2	1.05E+3	1.05E+3	9.40E+2	1.04E+3	1.04E+3	9.20E+2	1.02E+3	1.02E+3	7.92E+2	8.77E+2	8.77E+2	7.00E+2	7.75E+2	7.75E+2
IV	2.80E+2	7.31E+2	8.17E+3	2.76E+2	7.20E+2	8.05E+3	2.73E+2	7.12E+2	7.96E+3	2.64E+2	6.89E+2	7.70E+3	2.60E+2	6.76E+2	7.56E+3
V	5.60E+4	6.08E+4	6.08E+4	5.59E+4	6.06E+4	6.06E+4	5.57E+4	6.04E+4	6.04E+4	5.48E+4	5.95E+4	5.95E+4	5.41E+4	5.87E+4	5.87E+4
VI	1.52E+4	9.32E+4	5.70E+5	1.52E+4	9.32E+4	5.70E+5	1.52E+4	9.31E+4	5.70E+5	1.52E+4	9.31E+4	5.70E+5	1.52E+4	9.30E+4	5.69E+5
VII	8.41E+4	7.55E+5	6.14E+6	7.66E+4	6.86E+5	5.58E+6	7.16E+4	6.40E+5	5.20E+6	6.14E+4	5.47E+5	4.44E+6	5.41E+4	4.82E+5	3.91E+6
IX	3.88E+2	3.49E+3	2.22E+4	3.42E+2	3.07E+3	1.96E+4	3.08E+2	2.77E+3	1.77E+4	2.35E+2	2.11E+3	1.34E+4	1.86E+2	1.67E+3	1.06E+4
X	1.39E+3	1.86E+4	2.15E+4	1.39E+3	1.86E+4	2.15E+4	1.38E+3	1.86E+4	2.15E+4	1.37E+3	1.82E+4	2.10E+4	1.36E+3	1.75E+4	2.03E+4
XII	5.11E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2
XIIIA	1.87E-1	6.10E-1	1.63E+0	1.11E-1	3.63E-1	9.70E-1	2.35E-2	7.69E-2	2.05E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.50E-1	2.70E-1	9.33E-1	8.95E-2	1.61E-1	5.56E-1	1.89E-2	3.40E-2	1.18E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	9.91E-2	1.20E-1	3.68E+1	5.90E-2	7.12E-2	2.19E+1	1.25E-2	1.51E-2	4.64E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E+0	3.84E+0	3.84E+0	3.65E+0	3.84E+0	3.84E+0	3.65E+0	3.84E+0	3.84E+0	3.64E+0	3.84E+0	3.84E+0	3.64E+0	3.83E+0	3.83E+0
XVIB	3.61E+0	3.79E+0	3.79E+0	3.61E+0	3.79E+0	3.79E+0	3.61E+0	3.79E+0	3.79E+0	3.60E+0	3.78E+0	3.78E+0	3.60E+0	3.78E+0	3.78E+0
XVIC	3.52E+0	3.67E+0	3.67E+0	3.52E+0	3.67E+0	3.67E+0	3.52E+0	3.67E+0	3.67E+0	3.52E+0	3.67E+0	3.67E+0	3.51E+0	3.67E+0	3.67E+0
XVIIIA	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1
XVIIIB	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1
XVIIIC	9.79E+0	1.07E+1	1.07E+1	9.79E+0	1.07E+1	1.07E+1	9.79E+0	1.07E+1	9.79E+0	1.07E+1	1.07E+1	9.78E+0	1.07E+1	1.07E+1	1.07E+1
XXA	2.43E+0	1.34E+1	1.45E+3	1.60E+0	9.46E+0	1.02E+3	1.19E+0	7.62E+0	8.21E+2	3.38E-1	3.83E+0	4.13E+2	1.42E-1	1.97E+0	2.13E+2
XXB	1.96E+0	7.70E+0	9.70E+2	1.29E+0	5.33E+0	6.72E+2	9.57E-1	4.23E+0	5.34E+2	2.73E-1	1.89E+0	2.39E+2	1.15E-1	7.84E-1	9.90E+1
XXC	1.30E+0	4.69E+0	6.12E+3	8.54E-1	3.09E+0	4.03E+3	6.32E-1	2.29E+0	2.99E+3	1.80E-1	6.54E-1	8.52E+2	7.57E-2	2.76E-1	3.60E+2
XXIA	2.89E+1	3.00E+2	2.84E+3	2.89E+1	3.00E+2	2.84E+3	2.89E+1	3.00E+2	2.84E+3	2.88E+1	2.99E+2	2.84E+3	2.87E+1	2.98E+2	2.83E+3
XXIB	2.87E+1	2.97E+2	2.57E+3	2.87E+1	2.97E+2	2.57E+3	2.87E+1	2.97E+2	2.57E+3	2.86E+1	2.96E+2	2.56E+3	2.85E+1	2.95E+2	2.55E+3
XXIC	2.83E+1	2.86E+2	2.07E+3	2.83E+1	2.86E+2	2.07E+3	2.83E+1	2.86E+2	2.07E+3	2.83E+1	2.85E+2	2.07E+3	2.81E+1	2.84E+2	2.06E+3
XXII	1.55E+3	6.29E+4	1.07E+5	1.55E+3	6.29E+4	1.07E+5	1.55E+3	6.29E+4	1.07E+5	1.54E+3	6.28E+4	1.06E+5	1.54E+3	6.28E+4	1.06E+5
DOE	5.52E+5	3.88E+6	2.39E+7	5.44E+5	3.81E+6	2.33E+7	5.39E+5	3.77E+6	2.29E+7	5.27E+5	3.67E+6	2.22E+7	5.18E+5	3.60E+6	2.16E+7
DOD	5.23E+1	1.59E+2	2.72E+2	5.18E+1	1.58E+2	2.26E+2	5.12E+1	1.56E+2	1.74E+2	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2
NRC	1.74E+3	7.76E+3	9.59E+4	1.73E+3	7.73E+3	8.28E+4	1.73E+3	7.71E+3	7.63E+4	1.71E+3	7.65E+3	6.29E+4	1.71E+3	7.61E+3	5.88E+4
Total	5.54E+5	3.89E+6	2.40E+7	5.46E+5	3.82E+6	2.34E+7	5.41E+5	3.77E+6	2.30E+7	5.29E+5	3.68E+6	2.22E+7	5.19E+5	3.61E+6	2.17E+7

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 Table M-72. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.72E+3	1.87E+3	1.87E+3	1.63E+3	1.77E+3	1.77E+3	1.51E+3	1.63E+3	1.63E+3	1.08E+3	1.17E+3	1.17E+3	9.40E+2	1.02E+3	1.02E+3
II	5.02E+4	4.88E+5	3.94E+6	5.02E+4	4.88E+5	3.92E+6	5.02E+4	4.88E+5	3.91E+6	5.01E+4	4.86E+5	3.88E+6	5.01E+4	4.85E+5	3.86E+6
III	6.06E+2	6.71E+2	6.71E+2	5.01E+2	5.54E+2	5.54E+2	3.18E+2	3.52E+2	3.52E+2	8.35E+1	9.24E+1	9.24E+1	4.71E+1	5.21E+1	5.21E+1
IV	2.48E+2	6.45E+2	7.22E+3	2.36E+2	6.15E+2	6.87E+3	2.12E+2	5.53E+2	6.18E+3	9.42E+1	2.45E+2	2.74E+3	3.51E+1	9.14E+1	1.02E+3
V	5.26E+4	5.71E+4	5.71E+4	5.12E+4	5.55E+4	5.55E+4	4.82E+4	5.23E+4	5.23E+4	4.02E+4	4.37E+4	4.37E+4	3.83E+4	4.16E+4	4.16E+4
VI	1.51E+4	9.28E+4	5.68E+5	1.50E+4	9.26E+4	5.67E+5	1.49E+4	9.21E+4	5.64E+5	1.42E+4	8.92E+4	5.48E+5	1.40E+4	8.82E+4	5.43E+5
VII	3.65E+4	3.26E+5	2.64E+6	2.60E+4	2.32E+5	1.88E+6	1.72E+4	1.54E+5	1.25E+6	9.55E+1	8.23E+2	6.65E+3	.00E+0	.00E+0	.00E+0
IX	1.35E+2	1.22E+3	7.75E+3	9.77E+1	8.78E+2	5.59E+3	6.68E+1	6.00E+2	3.82E+3	1.21E+1	1.09E+2	6.94E+2	.00E+0	.00E+0	.00E+0
X	1.34E+3	1.56E+4	1.81E+4	1.32E+3	1.38E+4	1.59E+4	1.29E+3	1.12E+4	1.29E+4	1.18E+3	6.76E+3	7.69E+3	1.14E+3	5.72E+3	6.49E+3
XII	5.10E+1	1.56E+2	1.60E+2	5.09E+1	1.56E+2	1.60E+2	5.08E+1	1.55E+2	1.59E+2	5.05E+1	1.54E+2	1.58E+2	5.04E+1	1.54E+2	1.58E+2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.62E+0	3.81E+0	3.81E+0	3.61E+0	3.80E+0	3.80E+0	3.60E+0	3.79E+0	3.79E+0	3.45E+0	3.64E+0	3.64E+0	3.37E+0	3.56E+0	3.56E+0
XVIB	3.58E+0	3.76E+0	3.76E+0	3.57E+0	3.75E+0	3.75E+0	3.56E+0	3.73E+0	3.73E+0	3.41E+0	3.59E+0	3.59E+0	3.33E+0	3.51E+0	3.51E+0
XVIC	3.50E+0	3.65E+0	3.65E+0	3.49E+0	3.64E+0	3.64E+0	3.47E+0	3.62E+0	3.62E+0	3.33E+0	3.48E+0	3.48E+0	3.25E+0	3.40E+0	3.40E+0
XVIIIA	1.03E+1	1.14E+1	1.14E+1	1.02E+1	1.13E+1	1.13E+1	1.01E+1	1.12E+1	1.12E+1	9.68E+0	1.07E+1	1.07E+1	9.45E+0	1.05E+1	1.05E+1
XVIIIB	1.01E+1	1.11E+1	1.11E+1	1.00E+1	1.11E+1	1.11E+1	9.96E+0	1.10E+1	1.10E+1	9.51E+0	1.05E+1	1.05E+1	9.29E+0	1.03E+1	1.03E+1
XVIIIC	9.77E+0	1.06E+1	1.06E+1	9.73E+0	1.06E+1	1.06E+1	9.64E+0	1.05E+1	1.05E+1	9.21E+0	1.00E+1	1.00E+1	9.00E+0	9.81E+0	9.81E+0
XXA	1.20E-1	6.62E-1	7.17E+1	1.10E-1	6.16E-1	6.68E+1	9.68E-2	5.55E-1	6.02E+1	6.67E-2	4.11E-1	4.47E+1	5.63E-2	3.72E-1	4.05E+1
XXB	9.67E-2	3.80E-1	4.82E+1	8.87E-2	3.53E-1	4.47E+1	7.81E-2	3.16E-1	4.01E+1	5.38E-2	2.29E-1	2.91E+1	4.54E-2	2.08E-1	2.64E+1
XXC	6.39E-2	2.33E-1	3.04E+2	5.86E-2	2.14E-1	2.79E+2	5.16E-2	1.89E-1	2.46E+2	3.56E-2	1.30E-1	1.71E+2	3.00E-2	1.10E-1	1.44E+2
XXIA	2.85E+1	2.96E+2	2.80E+3	2.82E+1	2.93E+2	2.77E+3	2.77E+1	2.87E+2	2.72E+3	2.32E+1	2.42E+2	2.29E+3	2.16E+1	2.25E+2	2.13E+3
XXIB	2.83E+1	2.92E+2	2.53E+3	2.80E+1	2.89E+2	2.51E+3	2.75E+1	2.84E+2	2.46E+3	2.31E+1	2.39E+2	2.07E+3	2.15E+1	2.22E+2	1.92E+3
XXIC	2.79E+1	2.81E+2	2.04E+3	2.76E+1	2.79E+2	2.02E+3	2.71E+1	2.73E+2	1.98E+3	2.28E+1	2.30E+2	1.67E+3	2.12E+1	2.14E+2	1.55E+3
XXII	1.53E+3	6.25E+4	1.06E+5	1.51E+3	6.20E+4	1.05E+5	1.50E+3	6.12E+4	1.04E+5	1.42E+3	5.87E+4	9.91E+4	1.40E+3	5.80E+4	9.78E+4
DOE	4.97E+5	3.43E+6	2.03E+7	4.83E+5	3.32E+6	1.95E+7	4.67E+5	3.22E+6	1.88E+7	4.26E+5	2.97E+6	1.71E+7	4.18E+5	2.94E+6	1.69E+7
DOD	5.10E+1	1.56E+2	1.60E+2	5.09E+1	1.56E+2	1.60E+2	5.08E+1	1.55E+2	1.59E+2	5.05E+1	1.54E+2	1.58E+2	5.04E+1	1.54E+2	1.58E+2
NRC	1.70E+3	7.54E+3	5.72E+4	1.69E+3	7.48E+3	5.65E+4	1.67E+3	7.35E+3	5.53E+4	1.53E+3	6.31E+3	4.64E+4	1.47E+3	5.92E+3	4.31E+4
Total	4.99E+5	3.44E+6	2.04E+7	4.85E+5	3.33E+6	1.95E+7	4.69E+5	3.23E+6	1.88E+7	4.27E+5	2.98E+6	1.71E+7	4.20E+5	2.94E+6	1.70E+7

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 Table M-73. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.45E-1	9.18E-1	9.18E-1	8.32E-1	9.05E-1	9.05E-1	8.23E-1	8.95E-1	8.95E-1	8.00E-1	8.70E-1	8.70E-1	7.85E-1	8.53E-1	8.53E-1
II	1.72E+1	1.68E+2	1.31E+3	1.72E+1	1.68E+2	1.31E+3	1.72E+1	1.68E+2	1.31E+3	1.72E+1	1.68E+2	1.31E+3	1.72E+1	1.68E+2	1.31E+3
III	3.71E-1	4.11E-1	4.11E-1	3.70E-1	4.10E-1	4.10E-1	3.69E-1	4.09E-1	4.09E-1	3.59E-1	3.97E-1	3.97E-1	3.42E-1	3.79E-1	3.79E-1
IV	6.05E-2	1.61E-1	2.48E+0	6.01E-2	1.60E-1	2.46E+0	5.97E-2	1.59E-1	2.45E+0	5.88E-2	1.57E-1	2.41E+0	5.80E-2	1.55E-1	2.38E+0
V	2.20E+1	2.39E+1	2.39E+1	2.20E+1	2.38E+1	2.38E+1	2.20E+1	2.38E+1	2.38E+1	2.18E+1	2.37E+1	2.37E+1	2.17E+1	2.36E+1	2.36E+1
VI	3.50E+0	1.87E+1	1.65E+2	3.50E+0	1.87E+1	1.65E+2	3.50E+0	1.87E+1	1.65E+2	3.49E+0	1.87E+1	1.65E+2	3.49E+0	1.87E+1	1.65E+2
VII	5.65E+0	4.38E+1	3.40E+2	5.53E+0	4.27E+1	3.31E+2	5.35E+0	4.11E+1	3.19E+2	4.95E+0	3.75E+1	2.90E+2	4.69E+0	3.52E+1	2.72E+2
IX	2.31E-2	2.03E-1	1.26E+0	2.19E-2	1.93E-1	1.20E+0	2.08E-2	1.83E-1	1.14E+0	1.81E-2	1.59E-1	9.87E-1	1.63E-2	1.43E-1	8.87E-1
X	1.49E+0	5.05E+0	5.70E+0	1.49E+0	5.04E+0	5.70E+0	1.49E+0	5.04E+0	5.70E+0	1.49E+0	5.03E+0	5.68E+0	1.48E+0	4.99E+0	5.63E+0
XII	2.97E-3	9.20E-3	9.46E-3	2.97E-3	9.20E-3	9.46E-3	2.96E-3	9.19E-3	9.46E-3	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.19E-3	9.45E-3
XIIIA	5.08E-5	1.67E-4	5.26E-4	4.08E-5	1.34E-4	4.22E-4	2.85E-5	9.37E-5	2.95E-4	5.62E-6	1.85E-5	5.81E-5	.00E+0	.00E+0	.00E+0
XIIIB	4.10E-5	7.36E-5	3.06E-4	3.29E-5	5.91E-5	2.45E-4	2.30E-5	4.12E-5	1.71E-4	4.53E-6	8.13E-6	3.38E-5	.00E+0	.00E+0	.00E+0
XIIIC	2.70E-5	3.27E-5	9.87E-3	2.17E-5	2.63E-5	7.92E-3	1.51E-5	1.83E-5	5.53E-3	2.99E-6	3.62E-6	1.09E-3	.00E+0	.00E+0	.00E+0
XVIA	1.46E-3	1.53E-3	1.53E-3	1.46E-3	1.53E-3	1.53E-3	1.46E-3	1.53E-3	1.53E-3	1.46E-3	1.53E-3	1.53E-3	1.46E-3	1.53E-3	1.53E-3
XVIB	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.51E-3	1.51E-3
XVIC	1.40E-3	1.47E-3	1.47E-3	1.40E-3	1.47E-3	1.47E-3	1.40E-3	1.47E-3	1.47E-3	1.40E-3	1.47E-3	1.47E-3	1.40E-3	1.46E-3	1.46E-3
XVIIIA	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3
XVIIIB	3.96E-3	4.38E-3	4.38E-3	3.96E-3	4.38E-3	4.38E-3	3.96E-3	4.38E-3	4.38E-3	3.96E-3	4.38E-3	4.38E-3	3.96E-3	4.38E-3	4.38E-3
XVIIIC	3.82E-3	4.17E-3	4.17E-3	3.82E-3	4.17E-3	4.17E-3	3.82E-3	4.17E-3	4.17E-3	3.82E-3	4.17E-3	4.17E-3	3.82E-3	4.17E-3	4.17E-3
XXA	5.33E-4	3.42E-3	5.07E-1	4.04E-4	2.83E-3	4.20E-1	3.42E-4	2.44E-3	3.63E-1	2.38E-4	1.80E-3	2.67E-1	1.79E-4	1.47E-3	2.18E-1
XXB	4.31E-4	2.21E-3	3.49E-1	3.26E-4	1.67E-3	2.64E-1	2.76E-4	1.42E-3	2.24E-1	1.92E-4	9.86E-4	1.56E-1	1.45E-4	7.43E-4	1.17E-1
XXC	2.85E-4	1.57E-3	1.45E+0	2.16E-4	1.19E-3	1.10E+0	1.83E-4	1.01E-3	9.32E-1	1.27E-4	7.02E-4	6.49E-1	9.58E-5	5.29E-4	4.89E-1
XXIA	1.13E-2	1.18E-1	1.11E+0	1.13E-2	1.18E-1	1.11E+0	1.13E-2	1.18E-1	1.11E+0	1.13E-2	1.18E-1	1.11E+0	1.13E-2	1.18E-1	1.11E+0
XXIB	1.12E-2	1.16E-1	1.00E+0	1.12E-2	1.16E-1	1.00E+0	1.12E-2	1.16E-1	1.00E+0	1.12E-2	1.16E-1	1.00E+0	1.12E-2	1.16E-1	1.00E+0
XXIC	1.10E-2	1.12E-1	8.13E-1	1.10E-2	1.12E-1	8.13E-1	1.10E-2	1.12E-1	8.13E-1	1.10E-2	1.12E-1	8.13E-1	1.10E-2	1.12E-1	8.13E-1
XXII	5.51E-1	1.49E+1	2.57E+1	5.51E-1	1.49E+1	2.57E+1	5.51E-1	1.49E+1	2.56E+1	5.50E-1	1.49E+1	2.56E+1	5.49E-1	1.49E+1	2.56E+1
DOE	1.31E+2	7.69E+2	5.60E+3	1.31E+2	7.68E+2	5.59E+3	1.31E+2	7.66E+2	5.57E+3	1.30E+2	7.62E+2	5.55E+3	1.29E+2	7.59E+2	5.53E+3
DOD	3.30E-3	9.97E-3	3.98E-2	3.24E-3	9.82E-3	3.38E-2	3.15E-3	9.63E-3	2.65E-2	3.00E-3	9.28E-3	1.28E-2	2.96E-3	9.19E-3	9.45E-3
NRC	6.79E-1	3.03E+0	3.27E+1	6.77E-1	3.02E+0	3.03E+1	6.77E-1	3.02E+0	2.90E+1	6.75E-1	3.01E+0	2.69E+1	6.74E-1	3.00E+0	2.58E+1
Total	1.32E+2	7.72E+2	5.63E+3	1.32E+2	7.71E+2	5.62E+3	1.31E+2	7.69E+2	5.60E+3	1.31E+2	7.65E+2	5.57E+3	1.30E+2	7.62E+2	5.55E+3

Medium Population Density Without Agriculture - 09-19-94 1:54p
 Table M-74. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.50E-1	8.16E-1	8.16E-1	7.24E-1	7.87E-1	7.87E-1	6.86E-1	7.46E-1	7.46E-1	5.84E-1	6.35E-1	6.35E-1	5.58E-1	6.07E-1	6.07E-1
II	1.72E+1	1.68E+2	1.31E+3	1.72E+1	1.68E+2	1.31E+3	1.72E+1	1.67E+2	1.30E+3	1.72E+1	1.67E+2	1.29E+3	1.72E+1	1.67E+2	1.29E+3
III	2.94E-1	3.26E-1	3.26E-1	2.72E-1	3.01E-1	3.01E-1	2.45E-1	2.72E-1	2.72E-1	1.14E-1	1.26E-1	1.26E-1	7.33E-2	8.13E-2	8.13E-2
IV	5.67E-2	1.51E-1	2.32E+0	5.59E-2	1.49E-1	2.29E+0	5.42E-2	1.44E-1	2.22E+0	4.60E-2	1.23E-1	1.88E+0	4.19E-2	1.12E-1	1.72E+0
V	2.14E+1	2.32E+1	2.32E+1	2.12E+1	2.30E+1	2.30E+1	2.08E+1	2.25E+1	2.25E+1	1.87E+1	2.03E+1	2.03E+1	1.77E+1	1.91E+1	1.91E+1
VI	3.48E+0	1.86E+1	1.65E+2	3.47E+0	1.86E+1	1.64E+2	3.45E+0	1.86E+1	1.64E+2	3.38E+0	1.84E+1	1.63E+2	3.34E+0	1.83E+1	1.62E+2
VII	4.29E+0	3.17E+1	2.44E+2	3.94E+0	2.90E+1	2.24E+2	3.07E+0	2.26E+1	1.74E+2	1.27E+0	9.55E+0	7.40E+1	9.97E-1	7.58E+0	5.87E+1
IX	1.36E-2	1.19E-1	7.40E-1	1.14E-2	1.00E-1	6.22E-1	9.32E-3	8.19E-2	5.08E-1	4.37E-3	3.84E-2	2.38E-1	3.06E-3	2.69E-2	1.67E-1
X	1.47E+0	4.85E+0	5.46E+0	1.46E+0	4.67E+0	5.25E+0	1.44E+0	4.30E+0	4.82E+0	1.36E+0	3.17E+0	3.50E+0	1.33E+0	2.92E+0	3.20E+0
XII	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.17E-3	9.44E-3	2.95E-3	9.16E-3	9.43E-3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-3	1.53E-3	1.53E-3	1.45E-3	1.53E-3	1.53E-3	1.45E-3	1.52E-3	1.52E-3	1.43E-3	1.51E-3	1.51E-3	1.43E-3	1.50E-3	1.50E-3
XVIB	1.44E-3	1.51E-3	1.51E-3	1.43E-3	1.50E-3	1.50E-3	1.43E-3	1.50E-3	1.50E-3	1.42E-3	1.49E-3	1.49E-3	1.41E-3	1.48E-3	1.48E-3
XVIC	1.40E-3	1.46E-3	1.46E-3	1.40E-3	1.46E-3	1.46E-3	1.40E-3	1.46E-3	1.46E-3	1.38E-3	1.44E-3	1.44E-3	1.38E-3	1.44E-3	1.44E-3
XVIII	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.02E-3	4.44E-3	4.44E-3	3.97E-3	4.39E-3	4.39E-3	3.94E-3	4.36E-3	4.36E-3
XVIII A	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.02E-3	4.44E-3	4.44E-3	3.97E-3	4.39E-3	4.39E-3	3.94E-3	4.36E-3	4.36E-3
XVIII B	3.96E-3	4.38E-3	4.38E-3	3.95E-3	4.38E-3	4.38E-3	3.95E-3	4.37E-3	4.37E-3	3.90E-3	4.32E-3	4.32E-3	3.87E-3	4.29E-3	4.29E-3
XVIII C	3.82E-3	4.17E-3	4.17E-3	3.81E-3	4.17E-3	4.17E-3	3.81E-3	4.16E-3	4.16E-3	3.76E-3	4.11E-3	4.11E-3	3.73E-3	4.08E-3	4.08E-3
XXA	8.50E-5	8.82E-4	1.31E-1	3.50E-5	5.65E-4	8.41E-2	2.26E-5	2.00E-4	2.99E-2	1.80E-5	1.29E-4	1.93E-2	1.67E-5	1.21E-4	1.81E-2
XXB	6.86E-5	3.53E-4	5.58E-2	2.82E-5	1.46E-4	2.31E-2	1.83E-5	9.47E-5	1.50E-2	1.45E-5	7.55E-5	1.20E-2	1.35E-5	7.01E-5	1.11E-2
XXC	4.54E-5	2.51E-4	2.32E-1	1.87E-5	1.04E-4	9.61E-2	1.21E-5	6.75E-5	6.25E-2	9.63E-6	5.39E-5	4.99E-2	8.93E-6	5.00E-5	4.63E-2
XXIA	1.12E-2	1.17E-1	1.11E+0	1.12E-2	1.17E-1	1.10E+0	1.11E-2	1.16E-1	1.10E+0	1.08E-2	1.13E-1	1.06E+0	1.05E-2	1.10E-1	1.04E+0
XXIB	1.12E-2	1.16E-1	1.00E+0	1.11E-2	1.15E-1	9.97E-1	1.11E-2	1.15E-1	9.92E-1	1.07E-2	1.11E-1	9.62E-1	1.04E-2	1.08E-1	9.36E-1
XXIC	1.10E-2	1.11E-1	8.10E-1	1.10E-2	1.11E-1	8.08E-1	1.09E-2	1.10E-1	8.03E-1	1.06E-2	1.07E-1	7.79E-1	1.03E-2	1.04E-1	7.58E-1
XXII	5.48E-1	1.48E+1	2.56E+1	5.47E-1	1.48E+1	2.55E+1	5.44E-1	1.48E+1	2.54E+1	5.33E-1	1.44E+1	2.49E+1	5.27E-1	1.43E+1	2.47E+1
DOE	1.28E+2	7.55E+2	5.50E+3	1.28E+2	7.51E+2	5.47E+3	1.26E+2	7.42E+2	5.41E+3	1.20E+2	7.18E+2	5.26E+3	1.17E+2	7.11E+2	5.22E+3
DOD	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.17E-3	9.44E-3	2.95E-3	9.16E-3	9.43E-3
NRC	6.73E-1	2.99E+0	2.38E+1	6.71E-1	2.98E+0	2.27E+1	6.68E-1	2.96E+0	2.22E+1	6.56E-1	2.88E+0	2.14E+1	6.47E-1	2.81E+0	2.08E+1
Total	1.29E+2	7.58E+2	5.52E+3	1.28E+2	7.54E+2	5.49E+3	1.26E+2	7.45E+2	5.43E+3	1.20E+2	7.21E+2	5.29E+3	1.18E+2	7.14E+2	5.24E+3

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 Table M-75. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.38E-1	9.11E-1	9.11E-1	8.17E-1	8.89E-1	8.89E-1	8.02E-1	8.72E-1	8.72E-1	7.61E-1	8.27E-1	8.27E-1	7.29E-1	7.92E-1	7.92E-1
II	1.72E+1	1.68E+2	1.31E+3	1.72E+1	1.68E+2	1.31E+3	1.72E+1	1.68E+2	1.31E+3	1.72E+1	1.68E+2	1.31E+3	1.72E+1	1.68E+2	1.31E+3
III	3.71E-1	4.11E-1	4.11E-1	3.68E-1	4.08E-1	4.08E-1	3.60E-1	3.99E-1	3.99E-1	3.10E-1	3.43E-1	3.43E-1	2.74E-1	3.04E-1	3.04E-1
IV	6.03E-2	1.61E-1	2.47E+0	5.94E-2	1.58E-1	2.43E+0	5.87E-2	1.56E-1	2.40E+0	5.68E-2	1.51E-1	2.33E+0	5.58E-2	1.49E-1	2.28E+0
V	2.20E+1	2.38E+1	2.38E+1	2.19E+1	2.38E+1	2.38E+1	2.19E+1	2.37E+1	2.37E+1	2.15E+1	2.33E+1	2.33E+1	2.12E+1	2.30E+1	2.30E+1
VI	3.50E+0	1.87E+1	1.65E+2	3.50E+0	1.87E+1	1.65E+2	3.49E+0	1.87E+1	1.65E+2	3.48E+0	1.86E+1	1.65E+2	3.47E+0	1.86E+1	1.64E+2
VII	5.60E+0	4.34E+1	3.37E+2	5.17E+0	3.95E+1	3.06E+2	4.89E+0	3.69E+1	2.86E+2	4.28E+0	3.16E+1	2.44E+2	3.79E+0	2.79E+1	2.15E+2
IX	2.23E-2	1.96E-1	1.22E+0	1.97E-2	1.73E-1	1.07E+0	1.77E-2	1.56E-1	9.67E-1	1.35E-2	1.19E-1	7.35E-1	1.07E-2	9.38E-2	5.82E-1
X	1.49E+0	5.05E+0	5.70E+0	1.49E+0	5.04E+0	5.70E+0	1.49E+0	5.04E+0	5.69E+0	1.47E+0	4.95E+0	5.59E+0	1.46E+0	4.82E+0	5.43E+0
XII	2.97E-3	9.20E-3	9.46E-3	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.19E-3	9.45E-3
XIIIA	4.54E-5	1.49E-4	4.69E-4	2.70E-5	8.88E-5	2.80E-4	5.72E-6	1.88E-5	5.92E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.66E-5	6.57E-5	2.73E-4	2.18E-5	3.91E-5	1.63E-4	4.61E-6	8.29E-6	3.44E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.41E-5	2.92E-5	8.81E-3	1.44E-5	1.74E-5	5.25E-3	3.04E-6	3.69E-6	1.11E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-3	1.53E-3	1.53E-3	1.46E-3	1.53E-3	1.53E-3	1.46E-3	1.53E-3	1.53E-3	1.46E-3	1.53E-3	1.53E-3	1.45E-3	1.53E-3	1.53E-3
XVIB	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.50E-3	1.50E-3
XVIC	1.40E-3	1.47E-3	1.47E-3	1.40E-3	1.47E-3	1.47E-3	1.40E-3	1.47E-3	1.47E-3	1.40E-3	1.46E-3	1.46E-3	1.40E-3	1.46E-3	1.46E-3
XVIIIA	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3
XVIIIB	3.96E-3	4.38E-3	4.38E-3	3.96E-3	4.38E-3	4.38E-3	3.96E-3	4.38E-3	4.38E-3	3.96E-3	4.38E-3	4.38E-3	3.95E-3	4.38E-3	4.38E-3
XVIIIC	3.82E-3	4.17E-3	4.17E-3	3.82E-3	4.17E-3	4.17E-3	3.82E-3	4.17E-3	4.17E-3	3.82E-3	4.17E-3	4.17E-3	3.81E-3	4.17E-3	4.17E-3
XXA	4.26E-4	3.03E-3	4.51E-1	2.80E-4	2.14E-3	3.18E-1	2.08E-4	1.72E-3	2.56E-1	5.90E-5	8.66E-4	1.29E-1	2.47E-5	4.45E-4	6.62E-2
XXB	3.43E-4	1.91E-3	3.01E-1	2.26E-4	1.32E-3	2.08E-1	1.68E-4	1.05E-3	1.66E-1	4.76E-5	4.68E-4	7.40E-2	2.00E-5	1.94E-4	3.07E-2
XXC	2.27E-4	1.25E-3	1.16E+0	1.50E-4	8.27E-4	7.64E-1	1.11E-4	6.12E-4	5.66E-1	3.15E-5	1.75E-4	1.62E-1	1.32E-5	7.37E-5	6.82E-2
XXIA	1.13E-2	1.18E-1	1.11E+0	1.13E-2	1.18E-1	1.11E+0	1.13E-2	1.18E-1	1.11E+0	1.13E-2	1.17E-1	1.11E+0	1.12E-2	1.17E-1	1.10E+0
XXIB	1.12E-2	1.16E-1	1.00E+0	1.12E-2	1.16E-1	1.00E+0	1.12E-2	1.16E-1	1.00E+0	1.12E-2	1.16E-1	1.00E+0	1.11E-2	1.15E-1	9.97E-1
XXIC	1.10E-2	1.12E-1	8.13E-1	1.10E-2	1.12E-1	8.13E-1	1.10E-2	1.12E-1	8.13E-1	1.10E-2	1.11E-1	8.11E-1	1.09E-2	1.11E-1	8.08E-1
XXII	5.51E-1	1.49E+1	2.57E+1	5.50E-1	1.49E+1	2.56E+1	5.50E-1	1.49E+1	2.56E+1	5.48E-1	1.49E+1	2.56E+1	5.47E-1	1.48E+1	2.55E+1
DOE	1.31E+2	7.68E+2	5.59E+3	1.30E+2	7.64E+2	5.56E+3	1.30E+2	7.61E+2	5.54E+3	1.29E+2	7.55E+2	5.50E+3	1.27E+2	7.50E+2	5.46E+3
DOD	3.27E-3	9.89E-3	3.65E-2	3.14E-3	9.60E-3	2.56E-2	3.00E-3	9.28E-3	1.29E-2	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.19E-3	9.45E-3
NRC	6.77E-1	3.02E+0	3.08E+1	6.76E-1	3.01E+0	2.79E+1	6.75E-1	3.01E+0	2.65E+1	6.72E-1	2.99E+0	2.36E+1	6.71E-1	2.98E+0	2.26E+1
Total	1.32E+2	7.71E+2	5.62E+3	1.31E+2	7.67E+2	5.59E+3	1.31E+2	7.64E+2	5.57E+3	1.29E+2	7.58E+2	5.52E+3	1.28E+2	7.53E+2	5.49E+3

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 Table M-76. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.77E-1	7.36E-1	7.36E-1	6.41E-1	6.97E-1	6.97E-1	5.91E-1	6.43E-1	6.43E-1	4.24E-1	4.61E-1	4.61E-1	3.69E-1	4.01E-1	4.01E-1
II	1.72E+1	1.67E+2	1.30E+3	1.72E+1	1.67E+2	1.29E+3	1.72E+1	1.67E+2	1.29E+3	1.72E+1	1.67E+2	1.28E+3	1.72E+1	1.66E+2	1.28E+3
III	2.37E-1	2.63E-1	2.63E-1	1.96E-1	2.17E-1	2.17E-1	1.24E-1	1.38E-1	1.38E-1	3.26E-2	3.62E-2	3.62E-2	1.84E-2	2.04E-2	2.04E-2
IV	5.32E-2	1.42E-1	2.18E+0	5.07E-2	1.35E-1	2.08E+0	4.56E-2	1.22E-1	1.87E+0	2.02E-2	5.39E-2	8.29E-1	7.54E-3	2.01E-2	3.09E-1
V	2.07E+1	2.24E+1	2.24E+1	2.01E+1	2.18E+1	2.18E+1	1.89E+1	2.05E+1	2.05E+1	1.58E+1	1.71E+1	1.71E+1	1.50E+1	1.63E+1	1.63E+1
VI	3.45E+0	1.86E+1	1.64E+2	3.43E+0	1.85E+1	1.64E+2	3.38E+0	1.84E+1	1.63E+2	3.19E+0	1.78E+1	1.58E+2	3.13E+0	1.76E+1	1.57E+2
VII	2.55E+0	1.88E+1	1.45E+2	1.80E+0	1.34E+1	1.03E+2	1.17E+0	8.87E+0	6.87E+1	7.84E-3	4.89E-2	3.67E-1	.00E+0	.00E+0	.00E+0
IX	7.78E-3	6.84E-2	4.24E-1	5.62E-3	4.94E-2	3.06E-1	3.84E-3	3.37E-2	2.09E-1	6.97E-4	6.12E-3	3.80E-2	.00E+0	.00E+0	.00E+0
X	1.44E+0	4.43E+0	4.97E+0	1.42E+0	4.04E+0	4.52E+0	1.39E+0	3.49E+0	3.86E+0	1.26E+0	2.48E+0	2.69E+0	1.23E+0	2.23E+0	2.40E+0
XII	2.96E-3	9.18E-3	9.45E-3	2.96E-3	9.17E-3	9.44E-3	2.95E-3	9.16E-3	9.42E-3	2.93E-3	9.09E-3	9.35E-3	2.92E-3	9.07E-3	9.33E-3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.45E-3	1.52E-3	1.52E-3	1.44E-3	1.52E-3	1.52E-3	1.44E-3	1.51E-3	1.51E-3	1.38E-3	1.45E-3	1.45E-3	1.35E-3	1.42E-3	1.42E-3
XVIB	1.43E-3	1.50E-3	1.50E-3	1.42E-3	1.49E-3	1.49E-3	1.42E-3	1.49E-3	1.49E-3	1.36E-3	1.43E-3	1.43E-3	1.33E-3	1.40E-3	1.40E-3
XVIC	1.39E-3	1.46E-3	1.46E-3	1.39E-3	1.45E-3	1.45E-3	1.38E-3	1.44E-3	1.44E-3	1.33E-3	1.39E-3	1.39E-3	1.30E-3	1.35E-3	1.35E-3
XVIIIA	4.02E-3	4.44E-3	4.44E-3	4.00E-3	4.43E-3	4.43E-3	3.97E-3	4.39E-3	4.39E-3	3.79E-3	4.19E-3	4.19E-3	3.70E-3	4.09E-3	4.09E-3
XVIIIB	3.95E-3	4.37E-3	4.37E-3	3.93E-3	4.35E-3	4.35E-3	3.90E-3	4.32E-3	4.32E-3	3.72E-3	4.12E-3	4.12E-3	3.64E-3	4.03E-3	4.03E-3
XVIIIC	3.81E-3	4.16E-3	4.16E-3	3.79E-3	4.14E-3	4.14E-3	3.76E-3	4.11E-3	4.11E-3	3.59E-3	3.92E-3	3.92E-3	3.51E-3	3.83E-3	3.83E-3
XXA	2.09E-5	1.49E-4	2.23E-2	1.91E-5	1.39E-4	2.08E-2	1.68E-5	1.25E-4	1.88E-2	1.16E-5	9.28E-5	1.39E-2	9.75E-6	8.38E-5	1.26E-2
XXB	1.68E-5	9.41E-5	1.49E-2	1.54E-5	8.73E-5	1.39E-2	1.36E-5	7.83E-5	1.24E-2	9.33E-6	5.68E-5	9.04E-3	7.87E-6	5.14E-5	8.19E-3
XXC	1.11E-5	6.23E-5	5.76E-2	1.02E-5	5.72E-5	5.29E-2	9.00E-6	5.04E-5	4.67E-2	6.18E-6	3.49E-5	3.23E-2	5.21E-6	2.94E-5	2.73E-2
XXIA	1.11E-2	1.16E-1	1.09E+0	1.10E-2	1.15E-1	1.08E+0	1.08E-2	1.13E-1	1.06E+0	9.07E-3	9.47E-2	8.93E-1	8.45E-3	8.81E-2	8.31E-1
XXIB	1.10E-2	1.14E-1	9.88E-1	1.09E-2	1.13E-1	9.79E-1	1.07E-2	1.11E-1	9.61E-1	9.00E-3	9.32E-2	8.07E-1	8.38E-3	8.67E-2	7.51E-1
XXIC	1.08E-2	1.10E-1	8.00E-1	1.07E-2	1.09E-1	7.93E-1	1.05E-2	1.07E-1	7.78E-1	8.86E-3	8.98E-2	6.54E-1	8.25E-3	8.36E-2	6.08E-1
XXII	5.43E-1	1.48E+1	2.54E+1	5.39E-1	1.46E+1	2.52E+1	5.33E-1	1.45E+1	2.49E+1	5.06E-1	1.39E+1	2.38E+1	4.98E-1	1.37E+1	2.35E+1
DOE	1.25E+2	7.38E+2	5.38E+3	1.23E+2	7.29E+2	5.32E+3	1.20E+2	7.19E+2	5.26E+3	1.11E+2	6.86E+2	5.06E+3	1.08E+2	6.79E+2	5.02E+3
DOD	2.96E-3	9.18E-3	9.45E-3	2.96E-3	9.17E-3	9.44E-3	2.95E-3	9.16E-3	9.42E-3	2.93E-3	9.09E-3	9.35E-3	2.92E-3	9.07E-3	9.33E-3
NRC	6.67E-1	2.95E+0	2.20E+1	6.64E-1	2.93E+0	2.18E+1	6.56E-1	2.88E+0	2.14E+1	6.90E-1	2.47E+0	1.80E+1	5.77E-1	2.32E+0	1.67E+1
Total	1.26E+2	7.41E+2	5.40E+3	1.24E+2	7.32E+2	5.34E+3	1.21E+2	7.22E+2	5.28E+3	1.11E+2	6.89E+2	5.08E+3	1.09E+2	6.81E+2	5.03E+3

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Table M-77. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.55E-1	6.05E-1	6.05E-1	5.47E-1	5.96E-1	5.96E-1	5.41E-1	5.89E-1	5.89E-1	5.26E-1	5.73E-1	5.73E-1	5.16E-1	5.62E-1	5.62E-1
II	1.42E+1	1.39E+2	1.14E+3	1.42E+1	1.39E+2	1.14E+3	1.42E+1	1.39E+2	1.14E+3	1.42E+1	1.39E+2	1.14E+3	1.42E+1	1.39E+2	1.14E+3
III	2.45E-1	2.70E-1	2.70E-1	2.44E-1	2.70E-1	2.70E-1	2.44E-1	2.69E-1	2.69E-1	2.37E-1	2.61E-1	2.61E-1	2.26E-1	2.49E-1	2.49E-1
IV	4.48E-2	1.21E-1	2.32E+0	4.45E-2	1.21E-1	2.30E+0	4.42E-2	1.20E-1	2.29E+0	4.35E-2	1.18E-1	2.25E+0	4.30E-2	1.16E-1	2.22E+0
V	1.44E+1	1.57E+1	1.57E+1	1.44E+1	1.57E+1	1.57E+1	1.44E+1	1.57E+1	1.57E+1	1.43E+1	1.56E+1	1.56E+1	1.42E+1	1.55E+1	1.55E+1
VI	2.55E+0	1.41E+1	1.42E+2	2.55E+0	1.41E+1	1.42E+2	2.55E+0	1.41E+1	1.42E+2	2.55E+0	1.41E+1	1.42E+2	2.55E+0	1.41E+1	1.42E+2
VII	4.84E+0	3.92E+1	3.08E+2	4.73E+0	3.82E+1	3.00E+2	4.58E+0	3.67E+1	2.88E+2	4.22E+0	3.35E+1	2.62E+2	3.99E+0	3.14E+1	2.46E+2
IX	2.07E-2	1.83E-1	1.14E+0	1.96E-2	1.73E-1	1.08E+0	1.86E-2	1.65E-1	1.03E+0	1.62E-2	1.43E-1	8.95E-1	1.45E-2	1.29E-1	8.04E-1
X	9.79E-1	3.16E+0	3.60E+0	9.79E-1	3.16E+0	3.60E+0	9.78E-1	3.16E+0	3.60E+0	9.74E-1	3.15E+0	3.59E+0	9.70E-1	3.13E+0	3.56E+0
XII	2.64E-3	8.16E-3	8.39E-3	2.64E-3	8.16E-3	8.39E-3	2.64E-3	8.16E-3	8.39E-3	2.64E-3	8.15E-3	8.39E-3	2.64E-3	8.15E-3	8.38E-3
XIIIA	3.67E-5	1.20E-4	4.51E-4	2.94E-5	9.67E-5	3.62E-4	2.06E-5	6.75E-5	2.53E-4	4.05E-6	1.33E-5	4.98E-5	.00E+0	.00E+0	.00E+0
XIIIB	2.96E-5	5.33E-5	2.72E-4	2.37E-5	4.28E-5	2.18E-4	1.66E-5	2.99E-5	1.52E-4	3.27E-6	5.89E-6	3.00E-5	.00E+0	.00E+0	.00E+0
XIIIC	1.95E-5	2.38E-5	6.08E-3	1.57E-5	1.91E-5	4.88E-3	1.09E-5	1.33E-5	3.41E-3	2.15E-6	2.63E-6	6.72E-4	.00E+0	.00E+0	.00E+0
XVIA	9.57E-4	1.01E-3	1.01E-3	9.57E-4	1.01E-3	1.01E-3	9.56E-4	1.01E-3	1.01E-3	9.56E-4	1.01E-3	1.01E-3	9.56E-4	1.01E-3	1.01E-3
XVIB	9.47E-4	9.93E-4	9.93E-4	9.47E-4	9.93E-4	9.93E-4	9.47E-4	9.93E-4	9.93E-4	9.47E-4	9.93E-4	9.93E-4	9.47E-4	9.93E-4	9.93E-4
XVIC	9.23E-4	9.63E-4	9.63E-4	9.23E-4	9.63E-4	9.63E-4	9.22E-4	9.63E-4	9.63E-4	9.22E-4	9.63E-4	9.63E-4	9.22E-4	9.63E-4	9.62E-4
XVIIIA	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3
XVIIIB	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.88E-3	2.88E-3
XVIIIC	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3
XXA	4.16E-4	2.85E-3	4.78E-1	3.15E-4	2.36E-3	3.95E-1	2.67E-4	2.04E-3	3.42E-1	1.85E-4	1.50E-3	2.51E-1	1.40E-4	1.23E-3	2.05E-1
XXB	3.35E-4	1.92E-3	3.31E-1	2.54E-4	1.46E-3	2.51E-1	2.15E-4	1.23E-3	2.12E-1	1.49E-4	8.59E-4	1.48E-1	1.13E-4	6.47E-4	1.11E-1
XXC	2.22E-4	1.42E-3	9.65E-1	1.68E-4	1.08E-3	7.30E-1	1.42E-4	9.13E-4	6.19E-1	9.89E-5	6.35E-4	4.31E-1	7.45E-5	4.79E-4	3.25E-1
XXIA	7.47E-3	7.80E-2	7.34E-1	7.47E-3	7.80E-2	7.34E-1	7.47E-3	7.80E-2	7.34E-1	7.46E-3	7.79E-2	7.34E-1	7.46E-3	7.79E-2	7.34E-1
XXIB	7.41E-3	7.67E-2	6.64E-1	7.41E-3	7.67E-2	6.64E-1	7.41E-3	7.67E-2	6.64E-1	7.41E-3	7.67E-2	6.64E-1	7.40E-3	7.66E-2	6.64E-1
XXIC	7.30E-3	7.39E-2	5.38E-1	7.30E-3	7.39E-2	5.38E-1	7.30E-3	7.39E-2	5.38E-1	7.29E-3	7.39E-2	5.38E-1	7.29E-3	7.39E-2	5.37E-1
XXII	4.25E-1	9.81E+0	1.80E+1	4.25E-1	9.81E+0	1.80E+1	4.25E-1	9.81E+0	1.80E+1	4.24E-1	9.81E+0	1.80E+1	4.24E-1	9.81E+0	1.80E+1
DOE	9.63E+1	5.87E+2	4.81E+3	9.62E+1	5.86E+2	4.80E+3	9.60E+1	5.85E+2	4.79E+3	9.54E+1	5.81E+2	4.76E+3	9.50E+1	5.79E+2	4.75E+3
DOD	2.88E-3	8.72E-3	2.77E-2	2.83E-3	8.61E-3	2.39E-2	2.77E-3	8.47E-3	1.92E-2	2.66E-3	8.21E-3	1.05E-2	2.64E-3	8.15E-3	8.38E-3
NRC	4.48E-1	2.01E+0	2.28E+1	4.47E-1	2.00E+0	2.09E+1	4.47E-1	2.00E+0	2.00E+1	4.46E-1	1.99E+0	1.84E+1	4.45E-1	1.99E+0	1.75E+1
Total	9.68E+1	5.89E+2	4.83E+3	9.66E+1	5.88E+2	4.82E+3	9.64E+1	5.87E+2	4.81E+3	9.59E+1	5.83E+2	4.78E+3	9.55E+1	5.81E+2	4.76E+3

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Table M-78. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.93E-1	5.37E-1	5.37E-1	4.76E-1	5.18E-1	5.18E-1	4.51E-1	4.91E-1	4.91E-1	3.84E-1	4.18E-1	4.18E-1	3.67E-1	4.00E-1	4.00E-1
II	1.42E+1	1.39E+2	1.14E+3	1.42E+1	1.39E+2	1.14E+3	1.42E+1	1.39E+2	1.13E+3	1.42E+1	1.39E+2	1.13E+3	1.42E+1	1.39E+2	1.12E+3
III	1.94E-1	2.14E-1	2.14E-1	1.79E-1	1.98E-1	1.98E-1	1.62E-1	1.79E-1	1.79E-1	7.49E-2	8.27E-2	8.27E-2	4.84E-2	5.34E-2	5.34E-2
IV	4.20E-2	1.14E-1	2.17E+0	4.14E-2	1.12E-1	2.14E+0	4.02E-2	1.09E-1	2.08E+0	3.41E-2	9.23E-2	1.76E+0	3.10E-2	8.40E-2	1.61E+0
V	1.40E+1	1.53E+1	1.53E+1	1.39E+1	1.51E+1	1.51E+1	1.36E+1	1.49E+1	1.49E+1	1.23E+1	1.34E+1	1.34E+1	1.16E+1	1.26E+1	1.26E+1
VI	2.54E+0	1.41E+1	1.42E+2	2.53E+0	1.41E+1	1.41E+2	2.52E+0	1.41E+1	1.41E+2	2.47E+0	1.39E+1	1.40E+2	2.44E+0	1.38E+1	1.39E+2
VII	3.63E+0	2.83E+1	2.21E+2	3.34E+0	2.59E+1	2.03E+2	2.60E+0	2.01E+1	1.57E+2	1.08E+0	8.54E+0	6.69E+1	8.50E-1	6.77E+0	5.31E+1
IX	1.21E-2	1.07E-1	6.71E-1	1.02E-2	9.03E-2	5.64E-1	8.33E-3	7.37E-2	4.61E-1	3.91E-3	3.45E-2	2.16E-1	2.74E-3	2.42E-2	1.51E-1
X	9.61E-1	3.04E+0	3.45E+0	9.55E-1	2.93E+0	3.32E+0	9.42E-1	2.70E+0	3.05E+0	8.95E-1	2.01E+0	2.22E+0	8.72E-1	1.85E+0	2.04E+0
XII	2.64E-3	8.15E-3	8.38E-3	2.64E-3	8.15E-3	8.38E-3	2.64E-3	8.15E-3	8.38E-3	2.63E-3	8.14E-3	8.37E-3	2.63E-3	8.13E-3	8.36E-3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.55E-4	1.00E-3	1.00E-3	9.54E-4	1.00E-3	1.00E-3	9.51E-4	1.00E-3	1.00E-3	9.42E-4	9.90E-4	9.90E-4	9.37E-4	9.86E-4	9.86E-4
XVIB	9.46E-4	9.92E-4	9.92E-4	9.44E-4	9.91E-4	9.91E-4	9.41E-4	9.87E-4	9.87E-4	9.32E-4	9.78E-4	9.78E-4	9.28E-4	9.74E-4	9.74E-4
XVIC	9.21E-4	9.62E-4	9.62E-4	9.20E-4	9.60E-4	9.60E-4	9.17E-4	9.57E-4	9.57E-4	9.08E-4	9.48E-4	9.48E-4	9.04E-4	9.44E-4	9.44E-4
XVIII A	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.61E-3	2.89E-3	2.89E-3	2.59E-3	2.87E-3	2.87E-3
XVIII B	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.87E-3	2.87E-3	2.60E-3	2.87E-3	2.87E-3	2.57E-3	2.83E-3	2.83E-3	2.55E-3	2.81E-3	2.81E-3
XVIII C	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.49E-3	2.71E-3	2.71E-3	2.47E-3	2.69E-3	2.69E-3
XXA	6.63E-5	7.36E-4	1.23E-1	2.73E-5	4.72E-4	7.92E-2	1.77E-5	1.67E-4	2.81E-2	1.41E-5	1.08E-4	1.81E-2	1.31E-5	1.01E-4	1.70E-2
XXB	5.34E-5	3.07E-4	5.29E-2	2.20E-5	1.27E-4	2.19E-2	1.43E-5	8.26E-5	1.43E-2	1.13E-5	6.59E-5	1.14E-2	1.05E-5	6.12E-5	1.06E-2
XXC	3.53E-5	2.27E-4	1.54E-1	1.46E-5	9.40E-5	6.38E-2	9.43E-6	6.12E-5	4.15E-2	7.51E-6	4.88E-5	3.31E-2	6.96E-6	4.53E-5	3.08E-2
XXIA	7.44E-3	7.77E-2	7.31E-1	7.42E-3	7.75E-2	7.29E-1	7.37E-3	7.70E-2	7.25E-1	7.16E-3	7.47E-2	7.04E-1	6.96E-3	7.27E-2	6.85E-1
XXIB	7.38E-3	7.64E-2	6.62E-1	7.36E-3	7.62E-2	6.60E-1	7.32E-3	7.57E-2	6.56E-1	7.10E-3	7.35E-2	6.37E-1	6.91E-3	7.15E-2	6.20E-1
XXIC	7.27E-3	7.37E-2	5.36E-1	7.25E-3	7.34E-2	5.34E-1	7.21E-3	7.30E-2	5.31E-1	6.99E-3	7.08E-2	5.15E-1	6.80E-3	6.89E-2	5.02E-1
XXII	4.23E-1	9.80E+0	1.80E+1	4.22E-1	9.78E+0	1.79E+1	4.20E-1	9.75E+0	1.79E+1	4.11E-1	9.53E+0	1.75E+1	4.06E-1	9.44E+0	1.73E+1
DOE	9.42E+1	5.75E+2	4.72E+3	9.36E+1	5.72E+2	4.70E+3	9.22E+1	5.65E+2	4.64E+3	8.79E+1	5.46E+2	4.51E+3	8.63E+1	5.40E+2	4.48E+3
DOD	2.64E-3	8.15E-3	8.38E-3	2.64E-3	8.15E-3	8.38E-3	2.64E-3	8.15E-3	8.38E-3	2.63E-3	8.14E-3	8.37E-3	2.63E-3	8.13E-3	8.36E-3
NRC	4.44E-1	1.98E+0	1.60E+1	4.43E-1	1.97E+0	1.52E+1	4.41E-1	1.96E+0	1.47E+1	4.33E-1	1.91E+0	1.42E+1	4.27E-1	1.86E+0	1.38E+1
Total	9.47E+1	5.77E+2	4.74E+3	9.40E+1	5.74E+2	4.71E+3	9.27E+1	5.67E+2	4.66E+3	8.83E+1	5.47E+2	4.53E+3	8.67E+1	5.42E+2	4.49E+3

Medium Population Density Without Agriculture - 09-19-94 1:54p
 Table M-79. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.51E-1	6.00E-1	6.00E-1	5.37E-1	5.85E-1	5.85E-1	5.28E-1	5.74E-1	5.74E-1	5.00E-1	5.45E-1	5.45E-1	4.79E-1	5.22E-1	5.22E-1
II	1.42E+1	1.39E+2	1.14E+3	1.42E+1	1.39E+2	1.14E+3	1.42E+1	1.39E+2	1.14E+3	1.42E+1	1.39E+2	1.14E+3	1.42E+1	1.39E+2	1.14E+3
III	2.45E-1	2.70E-1	2.70E-1	2.43E-1	2.68E-1	2.68E-1	2.38E-1	2.62E-1	2.62E-1	2.04E-1	2.26E-1	2.26E-1	1.81E-1	2.00E-1	2.00E-1
IV	4.46E-2	1.21E-1	2.31E+0	4.40E-2	1.19E-1	2.28E+0	4.35E-2	1.18E-1	2.25E+0	4.21E-2	1.14E-1	2.18E+0	4.13E-2	1.12E-1	2.14E+0
V	1.44E+1	1.57E+1	1.57E+1	1.44E+1	1.57E+1	1.57E+1	1.43E+1	1.56E+1	1.56E+1	1.41E+1	1.54E+1	1.54E+1	1.39E+1	1.52E+1	1.52E+1
VI	2.55E+0	1.41E+1	1.42E+2	2.55E+0	1.41E+1	1.42E+2	2.55E+0	1.41E+1	1.42E+2	2.54E+0	1.41E+1	1.42E+2	2.53E+0	1.41E+1	1.41E+2
VII	4.80E+0	3.88E+1	3.05E+2	4.42E+0	3.53E+1	2.77E+2	4.16E+0	3.30E+1	2.59E+2	3.63E+0	2.82E+1	2.21E+2	3.20E+0	2.49E+1	1.94E+2
IX	2.00E-2	1.77E-1	1.10E+0	1.76E-2	1.56E-1	9.73E-1	1.59E-2	1.40E-1	8.76E-1	1.21E-2	1.07E-1	6.67E-1	9.55E-3	8.44E-2	5.28E-1
X	9.79E-1	3.16E+0	3.60E+0	9.77E-1	3.16E+0	3.60E+0	9.75E-1	3.16E+0	3.59E+0	9.66E-1	3.11E+0	3.53E+0	9.59E-1	3.02E+0	3.43E+0
XII	2.64E-3	8.16E-3	8.39E-3	2.64E-3	8.15E-3	8.39E-3	2.64E-3	8.15E-3	8.38E-3	2.64E-3	8.15E-3	8.38E-3	2.64E-3	8.15E-3	8.38E-3
XIIIA	3.27E-5	1.07E-4	4.02E-4	1.95E-5	6.40E-5	2.40E-4	4.13E-6	1.36E-5	5.07E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.64E-5	4.76E-5	2.43E-4	1.57E-5	2.83E-5	1.45E-4	3.33E-6	6.00E-6	3.06E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.74E-5	2.12E-5	5.43E-3	1.04E-5	1.26E-5	3.23E-3	2.20E-6	2.68E-6	6.85E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.57E-4	1.01E-3	1.01E-3	9.56E-4	1.01E-3	1.01E-3	9.56E-4	1.01E-3	1.01E-3	9.56E-4	1.00E-3	1.00E-3	9.54E-4	1.00E-3	1.00E-3
XVIB	9.47E-4	9.93E-4	9.93E-4	9.47E-4	9.93E-4	9.93E-4	9.47E-4	9.93E-4	9.93E-4	9.46E-4	9.92E-4	9.92E-4	9.45E-4	9.91E-4	9.91E-4
XVIC	9.23E-4	9.63E-4	9.63E-4	9.22E-4	9.63E-4	9.63E-4	9.22E-4	9.63E-4	9.63E-4	9.22E-4	9.62E-4	9.62E-4	9.20E-4	9.61E-4	9.61E-4
XVIII A	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3
XVIII B	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.87E-3	2.87E-3
XVIII C	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3
XXA	3.32E-4	2.53E-3	4.24E-1	2.18E-4	1.78E-3	2.99E-1	1.62E-4	1.44E-3	2.41E-1	4.60E-5	7.23E-4	1.21E-1	1.93E-5	3.72E-4	6.24E-2
XXB	2.67E-4	1.66E-3	2.86E-1	1.76E-4	1.15E-3	1.98E-1	1.30E-4	9.13E-4	1.57E-1	3.71E-5	4.08E-4	7.03E-2	1.56E-5	1.69E-4	2.92E-2
XXC	1.77E-4	1.14E-3	7.69E-1	1.17E-4	7.48E-4	5.07E-1	8.63E-5	5.54E-4	3.76E-1	2.45E-5	1.58E-4	1.07E-1	1.03E-5	6.68E-5	4.53E-2
XXIA	7.47E-3	7.80E-2	7.34E-1	7.47E-3	7.80E-2	7.34E-1	7.46E-3	7.79E-2	7.34E-1	7.44E-3	7.77E-2	7.32E-1	7.42E-3	7.74E-2	7.29E-1
XXIB	7.41E-3	7.67E-2	6.64E-1	7.41E-3	7.67E-2	6.64E-1	7.41E-3	7.67E-2	6.64E-1	7.39E-3	7.64E-2	6.62E-1	7.36E-3	7.62E-2	6.60E-1
XXIC	7.30E-3	7.39E-2	5.38E-1	7.30E-3	7.39E-2	5.38E-1	7.29E-3	7.39E-2	5.38E-1	7.27E-3	7.37E-2	5.36E-1	7.25E-3	7.34E-2	5.34E-1
XXII	4.25E-1	9.81E+0	1.80E+1	4.25E-1	9.81E+0	1.80E+1	4.24E-1	9.81E+0	1.80E+1	4.23E-1	9.80E+0	1.80E+1	4.22E-1	9.78E+0	1.79E+1
DOE	9.62E+1	5.87E+2	4.81E+3	9.58E+1	5.83E+2	4.78E+3	9.54E+1	5.81E+2	4.76E+3	9.44E+1	5.75E+2	4.72E+3	9.35E+1	5.71E+2	4.69E+3
DOD	2.86E-3	8.66E-3	2.56E-2	2.77E-3	8.45E-3	1.86E-2	2.66E-3	8.21E-3	1.06E-2	2.64E-3	8.15E-3	8.38E-3	2.64E-3	8.15E-3	8.38E-3
NRC	4.47E-1	2.00E+0	2.14E+1	4.46E-1	2.00E+0	1.92E+1	4.45E-1	1.99E+0	1.81E+1	4.44E-1	1.98E+0	1.59E+1	4.42E-1	1.97E+0	1.50E+1
Total	9.67E+1	5.89E+2	4.83E+3	9.62E+1	5.85E+2	4.80E+3	9.58E+1	5.83E+2	4.78E+3	9.48E+1	5.77E+2	4.74E+3	9.40E+1	5.73E+2	4.70E+3

Medium Population Density Without Agriculture - 09-19-94 1:54p
 Table M-80. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.45E-1	4.84E-1	4.84E-1	4.22E-1	4.59E-1	4.59E-1	3.89E-1	4.23E-1	4.23E-1	2.79E-1	3.04E-1	3.04E-1	2.43E-1	2.64E-1	2.64E-1
II	1.42E+1	1.39E+2	1.13E+3	1.42E+1	1.39E+2	1.13E+3	1.42E+1	1.39E+2	1.13E+3	1.42E+1	1.38E+2	1.12E+3	1.42E+1	1.38E+2	1.11E+3
III	1.56E-1	1.73E-1	1.73E-1	1.29E-1	1.43E-1	1.43E-1	8.21E-2	9.06E-2	9.06E-2	2.15E-2	2.38E-2	2.38E-2	1.21E-2	1.34E-2	1.34E-2
IV	3.94E-2	1.07E-1	2.04E+0	3.75E-2	1.02E-1	1.94E+0	3.38E-2	9.15E-2	1.75E+0	1.50E-2	4.06E-2	7.76E-1	5.59E-3	1.51E-2	2.89E-1
V	1.35E+1	1.48E+1	1.48E+1	1.32E+1	1.43E+1	1.43E+1	1.24E+1	1.35E+1	1.35E+1	1.04E+1	1.13E+1	1.13E+1	9.86E+0	1.07E+1	1.07E+1
VI	2.52E+0	1.41E+1	1.41E+2	2.50E+0	1.40E+1	1.41E+2	2.47E+0	1.39E+1	1.40E+2	2.34E+0	1.35E+1	1.36E+2	2.30E+0	1.33E+1	1.35E+2
VII	2.16E+0	1.68E+1	1.31E+2	1.52E+0	1.19E+1	9.35E+1	9.99E-1	7.93E+0	6.22E+1	6.37E-3	4.33E-2	3.31E-1	.00E+0	.00E+0	.00E+0
IX	6.96E-3	6.15E-2	3.85E-1	5.02E-3	4.44E-2	2.78E-1	3.43E-3	3.04E-2	1.90E-1	6.23E-4	5.51E-3	3.44E-2	.00E+0	.00E+0	.00E+0
X	9.45E-1	2.78E+0	3.15E+0	9.32E-1	2.55E+0	2.86E+0	9.13E-1	2.20E+0	2.46E+0	8.29E-1	1.58E+0	1.72E+0	8.05E-1	1.42E+0	1.54E+0
XII	2.64E-3	8.15E-3	8.38E-3	2.63E-3	8.14E-3	8.37E-3	2.63E-3	8.12E-3	8.36E-3	2.61E-3	8.07E-3	8.30E-3	2.60E-3	8.05E-3	8.28E-3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.50E-4	9.99E-4	9.99E-4	9.47E-4	9.96E-4	9.96E-4	9.43E-4	9.92E-4	9.92E-4	9.05E-4	9.53E-4	9.53E-4	8.83E-4	9.31E-4	9.31E-4
XVIB	9.40E-4	9.87E-4	9.87E-4	9.38E-4	9.84E-4	9.84E-4	9.33E-4	9.79E-4	9.79E-4	8.96E-4	9.41E-4	9.41E-4	8.74E-4	9.19E-4	9.19E-4
XVIC	9.16E-4	9.56E-4	9.56E-4	9.13E-4	9.54E-4	9.54E-4	9.09E-4	9.49E-4	9.49E-4	8.72E-4	9.12E-4	9.12E-4	8.51E-4	8.90E-4	8.90E-4
XVIII A	2.64E-3	2.93E-3	2.93E-3	2.63E-3	2.91E-3	2.91E-3	2.61E-3	2.89E-3	2.89E-3	2.49E-3	2.76E-3	2.76E-3	2.44E-3	2.70E-3	2.70E-3
XVIII B	2.60E-3	2.87E-3	2.87E-3	2.59E-3	2.86E-3	2.86E-3	2.57E-3	2.83E-3	2.83E-3	2.45E-3	2.71E-3	2.71E-3	2.40E-3	2.64E-3	2.64E-3
XVIII C	2.52E-3	2.75E-3	2.75E-3	2.51E-3	2.74E-3	2.74E-3	2.49E-3	2.71E-3	2.71E-3	2.37E-3	2.59E-3	2.59E-3	2.32E-3	2.53E-3	2.53E-3
XXA	1.63E-5	1.25E-4	2.10E-2	1.49E-5	1.16E-4	1.96E-2	1.32E-5	1.05E-4	1.77E-2	9.05E-6	7.76E-5	1.31E-2	7.63E-6	7.02E-5	1.19E-2
XXB	1.31E-5	8.21E-5	1.42E-2	1.20E-5	7.62E-5	1.32E-2	1.06E-5	6.83E-5	1.18E-2	7.29E-6	4.96E-5	8.58E-3	6.15E-6	4.49E-5	7.78E-3
XXC	8.69E-6	5.64E-5	3.83E-2	7.97E-6	5.18E-5	3.51E-2	7.02E-6	4.56E-5	3.10E-2	4.83E-6	3.16E-5	2.15E-2	4.07E-6	2.67E-5	1.81E-2
XXIA	7.35E-3	7.67E-2	7.22E-1	7.28E-3	7.60E-2	7.16E-1	7.14E-3	7.46E-2	7.02E-1	6.00E-3	6.27E-2	5.90E-1	5.59E-3	5.83E-2	5.49E-1
XXIB	7.29E-3	7.55E-2	6.54E-1	7.22E-3	7.48E-2	6.48E-1	7.09E-3	7.34E-2	6.36E-1	5.96E-3	6.16E-2	5.34E-1	5.54E-3	5.74E-2	4.97E-1
XXIC	7.18E-3	7.27E-2	5.29E-1	7.11E-3	7.21E-2	5.24E-1	6.98E-3	7.07E-2	5.15E-1	5.87E-3	5.94E-2	4.32E-1	5.46E-3	5.53E-2	4.02E-1
XXII	4.19E-1	9.74E+0	1.78E+1	4.16E-1	9.66E+0	1.77E+1	4.11E-1	9.55E+0	1.75E+1	3.90E-1	9.14E+0	1.67E+1	3.84E-1	9.02E+0	1.65E+1
DOE	9.16E+1	5.61E+2	4.61E+3	9.02E+1	5.54E+2	4.56E+3	8.81E+1	5.46E+2	4.51E+3	8.16E+1	5.21E+2	4.34E+3	8.00E+1	5.16E+2	4.30E+3
DOD	2.64E-3	8.15E-3	8.38E-3	2.63E-3	8.14E-3	8.37E-3	2.63E-3	8.12E-3	8.36E-3	2.61E-3	8.07E-3	8.30E-3	2.60E-3	8.05E-3	8.28E-3
NRC	4.40E-1	1.95E+0	1.46E+1	4.38E-1	1.94E+0	1.45E+1	4.33E-1	1.90E+0	1.42E+1	3.96E-1	1.63E+0	1.19E+1	3.81E-1	1.53E+0	1.11E+1
Total	9.21E+1	5.63E+2	4.63E+3	9.06E+1	5.56E+2	4.58E+3	8.85E+1	5.48E+2	4.53E+3	8.20E+1	5.23E+2	4.35E+3	8.04E+1	5.17E+2	4.31E+3

Reasonable Occupancy Scenario - 09-19-94 2:01p
 Table M-81. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.62E+3	2.85E+3	2.85E+3	2.58E+3	2.81E+3	2.81E+3	2.56E+3	2.78E+3	2.78E+3	2.49E+3	2.70E+3	2.70E+3	2.44E+3	2.65E+3	2.65E+3
II	5.02E+5	4.89E+6	3.96E+7	5.02E+5	4.89E+6	3.96E+7	5.02E+5	4.89E+6	3.96E+7	5.02E+5	4.89E+6	3.96E+7	5.02E+5	4.89E+6	3.95E+7
III	1.13E+3	1.26E+3	1.26E+3	1.13E+3	1.26E+3	1.26E+3	1.13E+3	1.25E+3	1.25E+3	1.10E+3	1.22E+3	1.22E+3	1.05E+3	1.16E+3	1.16E+3
IV	2.05E+3	1.21E+4	3.89E+4	2.04E+3	1.20E+4	3.86E+4	2.02E+3	1.19E+4	3.84E+4	1.99E+3	1.17E+4	3.78E+4	1.97E+3	1.16E+4	3.73E+4
V	6.81E+4	7.41E+4	7.41E+4	6.80E+4	7.40E+4	7.40E+4	6.79E+4	7.39E+4	7.39E+4	6.76E+4	7.35E+4	7.35E+4	6.72E+4	7.31E+4	7.31E+4
VI	7.65E+4	5.70E+5	5.16E+6	7.65E+4	5.70E+5	5.16E+6	7.65E+4	5.70E+5	5.16E+6	7.64E+4	5.70E+5	5.16E+6	7.64E+4	5.70E+5	5.16E+6
VII	3.34E+4	2.66E+5	1.82E+6	3.26E+4	2.59E+5	1.77E+6	3.13E+4	2.49E+5	1.70E+6	2.86E+4	2.27E+5	1.55E+6	2.68E+4	2.13E+5	1.45E+6
IX	9.04E+2	8.00E+3	5.05E+4	8.58E+2	7.59E+3	4.80E+4	8.15E+2	7.21E+3	4.56E+4	7.08E+2	6.27E+3	3.96E+4	6.37E+2	5.64E+3	3.56E+4
X	1.54E+3	1.88E+4	2.19E+4	1.54E+3	1.88E+4	2.19E+4	1.53E+3	1.88E+4	2.19E+4	1.51E+3	1.87E+4	2.18E+4	1.50E+3	1.85E+4	2.15E+4
XII	5.11E+2	1.56E+3	1.60E+3	5.11E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3
XIIIA	1.08E+0	6.58E+0	1.84E+1	8.71E-1	5.28E+0	1.47E+1	6.08E-1	3.69E+0	1.03E+1	1.20E-1	7.27E-1	2.03E+0	.00E+0	.00E+0	.00E+0
XIIIB	9.81E-1	4.33E+0	8.30E+0	7.88E-1	3.48E+0	6.67E+0	5.50E-1	2.43E+0	4.66E+0	1.08E-1	4.78E-1	9.17E-1	.00E+0	.00E+0	.00E+0
XIIIC	8.09E-1	2.36E+0	4.43E+1	6.50E-1	1.89E+0	3.56E+1	4.54E-1	1.32E+0	2.48E+1	8.94E-2	2.61E-1	4.90E+0	.00E+0	.00E+0	.00E+0
XVIA	7.90E+0	8.36E+0	8.36E+0	7.90E+0	8.36E+0	8.36E+0	7.90E+0	8.36E+0	8.36E+0	7.90E+0	8.36E+0	8.36E+0	7.89E+0	8.36E+0	8.36E+0
XVIB	7.84E+0	8.27E+0	8.27E+0	7.84E+0	8.27E+0	8.27E+0	7.84E+0	8.27E+0	8.27E+0	7.84E+0	8.27E+0	8.27E+0	7.84E+0	8.27E+0	8.27E+0
XVIC	7.65E+0	8.03E+0	8.03E+0	7.65E+0	8.03E+0	8.03E+0	7.65E+0	8.03E+0	8.03E+0	7.65E+0	8.03E+0	8.03E+0	7.65E+0	8.02E+0	8.02E+0
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2
XVIIIC	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2
XXA	1.13E+2	8.94E+2	9.97E+3	8.58E+1	7.40E+2	8.25E+3	7.27E+1	6.40E+2	7.13E+3	5.06E+1	4.71E+2	5.25E+3	3.81E+1	3.85E+2	4.29E+3
XXB	1.08E+2	6.39E+2	4.98E+3	8.18E+1	4.84E+2	3.77E+3	6.93E+1	4.10E+2	3.19E+3	4.82E+1	2.85E+2	2.22E+3	3.64E+1	2.15E+2	1.68E+3
XXC	9.79E+1	3.62E+2	9.26E+3	7.41E+1	2.74E+2	7.01E+3	6.28E+1	2.32E+2	5.94E+3	4.37E+1	1.62E+2	4.14E+3	3.29E+1	1.22E+2	3.12E+3
XXIA	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4
XXIB	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.96E+3	2.57E+4
XXIC	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.85E+3	2.07E+4
XXII	2.17E+4	2.22E+5	5.05E+5	2.17E+4	2.22E+5	5.05E+5	2.17E+4	2.22E+5	5.05E+5	2.17E+4	2.22E+5	5.05E+5	2.16E+4	2.22E+5	5.04E+5
DOE	2.50E+6	1.97E+7	1.62E+8	2.50E+6	1.97E+7	1.62E+8	2.50E+6	1.97E+7	1.62E+8	2.49E+6	1.97E+7	1.62E+8	2.49E+6	1.97E+7	1.62E+8
DOD	5.19E+2	1.60E+3	1.80E+3	5.17E+2	1.59E+3	1.76E+3	5.15E+2	1.58E+3	1.71E+3	5.11E+2	1.56E+3	1.62E+3	5.10E+2	1.56E+3	1.60E+3
NRC	1.51E+4	8.16E+4	6.70E+5	1.47E+4	7.97E+4	6.46E+5	1.46E+4	7.87E+4	6.33E+5	1.43E+4	7.70E+4	6.11E+5	1.41E+4	7.61E+4	5.99E+5
Total	2.51E+6	1.98E+7	1.63E+8	2.51E+6	1.98E+7	1.63E+8	2.51E+6	1.98E+7	1.63E+8	2.51E+6	1.98E+7	1.63E+8	2.50E+6	1.98E+7	1.62E+8

Reasonable Occupancy Scenario - 09-19-94 2:01p
 Table M-82. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.33E+3	2.53E+3	2.53E+3	2.25E+3	2.44E+3	2.44E+3	2.13E+3	2.31E+3	2.31E+3	1.82E+3	1.97E+3	1.97E+3	1.73E+3	1.88E+3	1.88E+3
II	5.02E+5	4.89E+6	3.95E+7	5.02E+5	4.89E+6	3.95E+7	5.02E+5	4.88E+6	3.94E+7	5.02E+5	4.88E+6	3.91E+7	5.02E+5	4.87E+6	3.91E+7
III	8.99E+2	9.99E+2	9.99E+2	8.30E+2	9.23E+2	9.23E+2	7.50E+2	8.34E+2	8.34E+2	3.47E+2	3.86E+2	3.86E+2	2.24E+2	2.49E+2	2.49E+2
IV	1.92E+3	1.13E+4	3.64E+4	1.89E+3	1.11E+4	3.59E+4	1.84E+3	1.08E+4	3.48E+4	1.56E+3	9.16E+3	2.96E+4	1.42E+3	8.34E+3	2.69E+4
V	6.63E+4	7.21E+4	7.21E+4	6.56E+4	7.13E+4	7.13E+4	6.43E+4	6.99E+4	6.99E+4	5.79E+4	6.30E+4	6.30E+4	5.47E+4	5.95E+4	5.95E+4
VI	7.63E+4	5.69E+5	5.16E+6	7.62E+4	5.69E+5	5.16E+6	7.60E+4	5.68E+5	5.15E+6	7.50E+4	5.63E+5	5.11E+6	7.45E+4	5.60E+5	5.08E+6
VII	2.41E+4	1.91E+5	1.31E+6	2.21E+4	1.75E+5	1.20E+6	1.72E+4	1.36E+5	9.29E+5	7.28E+3	5.78E+4	3.95E+5	5.77E+3	4.59E+4	3.14E+5
IX	5.32E+2	4.71E+3	2.97E+4	4.47E+2	3.95E+3	2.50E+4	3.65E+2	3.23E+3	2.04E+4	1.71E+2	1.51E+3	9.55E+3	1.20E+2	1.06E+3	6.70E+3
X	1.48E+3	1.78E+4	2.07E+4	1.46E+3	1.70E+4	1.97E+4	1.43E+3	1.52E+4	1.76E+4	1.35E+3	9.89E+3	1.14E+4	1.31E+3	8.73E+3	1.00E+4
XII	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.09E+2	1.56E+3	1.60E+3	5.09E+2	1.55E+3	1.60E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	7.89E+0	8.35E+0	8.35E+0	7.88E+0	8.34E+0	8.34E+0	7.85E+0	8.31E+0	8.31E+0	7.78E+0	8.24E+0	8.24E+0	7.75E+0	8.21E+0	8.21E+0
XVIB	7.83E+0	8.26E+0	8.26E+0	7.82E+0	8.25E+0	8.25E+0	7.79E+0	8.23E+0	8.23E+0	7.72E+0	8.15E+0	8.15E+0	7.69E+0	8.12E+0	8.12E+0
XVIC	7.64E+0	8.02E+0	8.02E+0	7.63E+0	8.01E+0	8.01E+0	7.61E+0	7.98E+0	7.98E+0	7.54E+0	7.91E+0	7.91E+0	7.50E+0	7.88E+0	7.88E+0
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.11E+2	1.11E+2
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.11E+2	1.11E+2	9.96E+1	1.10E+2	1.10E+2	9.89E+1	1.09E+2	1.09E+2
XVIIIC	9.79E+1	1.07E+2	1.07E+2	9.78E+1	1.07E+2	1.07E+2	9.77E+1	1.07E+2	1.07E+2	9.65E+1	1.05E+2	1.05E+2	9.58E+1	1.04E+2	1.04E+2
XXA	1.81E+1	2.31E+2	2.58E+3	7.49E+0	1.48E+2	1.65E+3	4.87E+0	5.27E+1	5.87E+2	3.89E+0	3.39E+1	3.79E+2	3.61E+0	3.18E+1	3.55E+2
XXB	1.73E+1	1.02E+2	7.96E+2	7.14E+0	4.22E+1	3.30E+2	4.65E+0	2.75E+1	2.14E+2	3.71E+0	2.19E+1	1.71E+2	3.44E+0	2.04E+1	1.59E+2
XXC	1.56E+1	5.79E+1	1.48E+3	6.47E+0	2.39E+1	6.13E+2	4.21E+0	1.56E+1	3.99E+2	3.36E+0	1.24E+1	3.18E+2	3.12E+0	1.15E+1	2.95E+2
XXIA	2.88E+2	2.99E+3	2.83E+4	2.87E+2	2.98E+3	2.83E+4	2.86E+2	2.97E+3	2.81E+4	2.77E+2	2.88E+3	2.73E+4	2.70E+2	2.80E+3	2.65E+4
XXIB	2.86E+2	2.96E+3	2.56E+4	2.85E+2	2.95E+3	2.55E+4	2.84E+2	2.93E+3	2.54E+4	2.75E+2	2.84E+3	2.46E+4	2.68E+2	2.77E+3	2.40E+4
XXIC	2.82E+2	2.85E+3	2.07E+4	2.82E+2	2.84E+3	2.06E+4	2.80E+2	2.82E+3	2.05E+4	2.72E+2	2.74E+3	1.99E+4	2.64E+2	2.66E+3	1.93E+4
XXII	2.16E+4	2.21E+5	5.03E+5	2.15E+4	2.21E+5	5.02E+5	2.14E+4	2.20E+5	5.00E+5	2.10E+4	2.16E+5	4.90E+5	2.07E+4	2.13E+5	4.85E+5
DOE	2.48E+6	1.96E+7	1.62E+8	2.47E+6	1.96E+7	1.61E+8	2.46E+6	1.95E+7	1.61E+8	2.42E+6	1.93E+7	1.59E+8	2.40E+6	1.92E+7	1.58E+8
DOD	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.09E+2	1.56E+3	1.60E+3	5.09E+2	1.55E+3	1.60E+3
NRC	1.38E+4	7.43E+4	5.78E+5	1.37E+4	7.33E+4	5.66E+5	1.36E+4	7.24E+4	5.56E+5	1.33E+4	7.02E+4	5.38E+5	1.31E+4	6.85E+4	5.24E+5
Total	2.50E+6	1.97E+7	1.62E+8	2.49E+6	1.97E+7	1.62E+8	2.48E+6	1.96E+7	1.61E+8	2.43E+6	1.94E+7	1.60E+8	2.41E+6	1.93E+7	1.59E+8

Reasonable Occupancy Scenario - 09-19-94 2:01p
 Table M-83. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.60E+3	2.83E+3	2.83E+3	2.54E+3	2.76E+3	2.76E+3	2.49E+3	2.71E+3	2.71E+3	2.36E+3	2.57E+3	2.57E+3	2.26E+3	2.46E+3	2.46E+3
II	5.02E+5	4.89E+6	3.96E+7	5.02E+5	4.89E+6	3.96E+7	5.02E+5	4.89E+6	3.96E+7	5.02E+5	4.89E+6	3.95E+7	5.02E+5	4.89E+6	3.95E+7
III	1.13E+3	1.26E+3	1.26E+3	1.12E+3	1.25E+3	1.25E+3	1.10E+3	1.22E+3	1.22E+3	9.47E+2	1.05E+3	1.05E+3	8.37E+2	9.31E+2	9.31E+2
IV	2.04E+3	1.20E+4	3.87E+4	2.01E+3	1.18E+4	3.82E+4	1.99E+3	1.17E+4	3.77E+4	1.93E+3	1.13E+4	3.65E+4	1.89E+3	1.11E+4	3.58E+4
V	6.81E+4	7.40E+4	7.40E+4	6.79E+4	7.38E+4	7.38E+4	6.76E+4	7.35E+4	7.35E+4	6.66E+4	7.25E+4	7.25E+4	6.57E+4	7.15E+4	7.15E+4
VI	7.65E+4	5.70E+5	5.16E+6	7.65E+4	5.70E+5	5.16E+6	7.64E+4	5.70E+5	5.16E+6	7.63E+4	5.69E+5	5.16E+6	7.62E+4	5.69E+5	5.16E+6
VII	3.31E+4	2.64E+5	1.80E+6	3.01E+4	2.40E+5	1.64E+6	2.81E+4	2.23E+5	1.53E+6	2.41E+4	1.91E+5	1.30E+6	2.12E+4	1.68E+5	1.15E+6
IX	8.74E+2	7.73E+3	4.88E+4	7.70E+2	6.81E+3	4.30E+4	6.94E+2	6.14E+3	3.88E+4	5.28E+2	4.67E+3	2.95E+4	4.18E+2	3.70E+3	2.33E+4
X	1.54E+3	1.88E+4	2.19E+4	1.53E+3	1.88E+4	2.19E+4	1.52E+3	1.87E+4	2.18E+4	1.49E+3	1.83E+4	2.13E+4	1.47E+3	1.77E+4	2.06E+4
XII	5.11E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3
XIIIA	9.68E-1	5.88E+0	1.64E+1	5.77E-1	3.50E+0	9.77E+0	1.22E-1	7.41E-1	2.07E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	8.76E-1	3.87E+0	7.41E+0	5.22E-1	2.30E+0	4.42E+0	1.10E-1	4.88E-1	9.35E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	7.22E-1	2.11E+0	3.96E+1	4.30E-1	1.25E+0	2.36E+1	9.11E-2	2.66E-1	4.99E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	7.90E+0	8.36E+0	8.36E+0	7.90E+0	8.36E+0	8.36E+0	7.90E+0	8.36E+0	8.36E+0	7.89E+0	8.35E+0	8.35E+0	7.88E+0	8.34E+0	8.34E+0
XVIB	7.84E+0	8.27E+0	8.27E+0	7.84E+0	8.27E+0	8.27E+0	7.84E+0	8.27E+0	8.27E+0	7.83E+0	8.27E+0	8.27E+0	7.82E+0	8.26E+0	8.26E+0
XVIC	7.65E+0	8.03E+0	8.03E+0	7.65E+0	8.03E+0	8.03E+0	7.65E+0	8.03E+0	8.03E+0	7.65E+0	8.02E+0	8.02E+0	7.64E+0	8.01E+0	8.01E+0
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2
XVIIIC	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.78E+1	1.07E+2	1.07E+2
XXA	9.04E+1	7.95E+2	8.85E+3	5.96E+1	5.60E+2	6.24E+3	4.41E+1	4.51E+2	5.03E+3	1.26E+1	2.27E+2	2.53E+3	5.32E+0	1.17E+2	1.30E+3
XXB	8.62E+1	5.51E+2	4.29E+3	5.68E+1	3.82E+2	2.97E+3	4.21E+1	3.03E+2	2.36E+3	1.20E+1	1.36E+2	1.06E+3	5.07E+0	5.62E+1	4.38E+2
XXC	7.81E+1	2.89E+2	7.39E+3	5.15E+1	1.90E+2	4.87E+3	3.81E+1	1.41E+2	3.61E+3	1.09E+1	4.02E+1	1.03E+3	4.59E+0	1.70E+1	4.35E+2
XXIA	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.88E+2	2.99E+3	2.84E+4	2.87E+2	2.98E+3	2.83E+4
XXIB	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.86E+2	2.96E+3	2.56E+4	2.85E+2	2.95E+3	2.55E+4
XXIC	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.85E+3	2.07E+4	2.81E+2	2.84E+3	2.06E+4
XXII	2.17E+4	2.22E+5	5.05E+5	2.17E+4	2.22E+5	5.05E+5	2.17E+4	2.22E+5	5.05E+5	2.16E+4	2.21E+5	5.03E+5	2.15E+4	2.21E+5	5.02E+5
DOE	2.50E+6	1.97E+7	1.62E+8	2.49E+6	1.97E+7	1.62E+8	2.49E+6	1.97E+7	1.62E+8	2.48E+6	1.96E+7	1.62E+8	2.47E+6	1.96E+7	1.61E+8
DOD	5.18E+2	1.59E+3	1.78E+3	5.15E+2	1.58E+3	1.71E+3	5.11E+2	1.56E+3	1.62E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3
NRC	1.48E+4	8.04E+4	6.53E+5	1.44E+4	7.80E+4	6.23E+5	1.42E+4	7.69E+4	6.08E+5	1.38E+4	7.44E+4	5.77E+5	1.36E+4	7.32E+4	5.64E+5
Total	2.51E+6	1.98E+7	1.63E+8	2.51E+6	1.98E+7	1.63E+8	2.51E+6	1.98E+7	1.63E+8	2.50E+6	1.97E+7	1.62E+8	2.49E+6	1.97E+7	1.62E+8

Reasonable Occupancy Scenario - 09-19-94 2:01p
Table M-84. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.10E+3	2.28E+3	2.28E+3	1.99E+3	2.16E+3	2.16E+3	1.84E+3	1.99E+3	1.99E+3	1.32E+3	1.43E+3	1.43E+3	1.15E+3	1.24E+3	1.24E+3
II	5.02E+5	4.88E+6	3.94E+7	5.02E+5	4.88E+6	3.92E+7	5.02E+5	4.88E+6	3.91E+7	5.01E+5	4.86E+6	3.88E+7	5.01E+5	4.85E+6	3.86E+7
III	7.25E+2	8.06E+2	8.06E+2	5.99E+2	6.66E+2	6.66E+2	3.80E+2	4.23E+2	4.23E+2	9.98E+1	1.11E+2	1.11E+2	5.63E+1	6.26E+1	6.26E+1
IV	1.80E+3	1.06E+4	3.42E+4	1.72E+3	1.01E+4	3.26E+4	1.55E+3	9.08E+3	2.93E+4	6.86E+2	4.03E+3	1.30E+4	2.56E+2	1.50E+3	4.85E+3
V	6.39E+4	6.95E+4	6.95E+4	6.21E+4	6.76E+4	6.76E+4	5.86E+4	6.37E+4	6.37E+4	4.89E+4	5.32E+4	5.32E+4	4.65E+4	5.06E+4	5.06E+4
VI	7.60E+4	5.68E+5	5.15E+6	7.57E+4	5.67E+5	5.14E+6	7.51E+4	5.64E+5	5.11E+6	7.22E+4	5.47E+5	4.97E+6	7.12E+4	5.41E+5	4.92E+6
VII	1.43E+4	1.13E+5	7.76E+5	1.02E+4	8.08E+4	5.52E+5	6.76E+3	5.37E+4	3.67E+5	3.72E+1	2.87E+2	1.95E+3	.00E+0	.00E+0	.00E+0
IX	3.04E+2	2.69E+3	1.70E+4	2.20E+2	1.95E+3	1.23E+4	1.50E+2	1.33E+3	8.40E+3	2.73E+1	2.41E+2	1.52E+3	.00E+0	.00E+0	.00E+0
X	1.44E+3	1.58E+4	1.84E+4	1.41E+3	1.40E+4	1.62E+4	1.38E+3	1.13E+4	1.31E+4	1.24E+3	6.85E+3	7.83E+3	1.20E+3	5.80E+3	6.60E+3
XII	5.10E+2	1.56E+3	1.60E+3	5.09E+2	1.56E+3	1.60E+3	5.08E+2	1.55E+3	1.59E+3	5.05E+2	1.54E+3	1.58E+3	5.04E+2	1.54E+3	1.58E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	7.85E+0	8.31E+0	8.31E+0	7.82E+0	8.29E+0	8.29E+0	7.79E+0	8.25E+0	8.25E+0	7.49E+0	7.95E+0	7.95E+0	7.33E+0	7.78E+0	7.78E+0
XVIB	7.79E+0	8.22E+0	8.22E+0	7.77E+0	8.20E+0	8.20E+0	7.73E+0	8.16E+0	8.16E+0	7.44E+0	7.86E+0	7.86E+0	7.27E+0	7.69E+0	7.69E+0
XVIC	7.60E+0	7.98E+0	7.98E+0	7.58E+0	7.95E+0	7.95E+0	7.55E+0	7.92E+0	7.92E+0	7.26E+0	7.63E+0	7.63E+0	7.09E+0	7.46E+0	7.46E+0
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.02E+2	1.13E+2	1.13E+2	1.01E+2	1.12E+2	1.12E+2	9.68E+1	1.07E+2	1.07E+2	9.45E+1	1.05E+2	1.05E+2
XVIIIB	1.01E+2	1.11E+2	1.11E+2	1.00E+2	1.11E+2	1.11E+2	9.96E+1	1.10E+2	1.10E+2	9.51E+1	1.05E+2	1.05E+2	9.29E+1	1.03E+2	1.03E+2
XVIIIC	9.77E+1	1.06E+2	1.06E+2	9.73E+1	1.06E+2	1.06E+2	9.64E+1	1.05E+2	1.05E+2	9.21E+1	1.00E+2	1.00E+2	9.00E+1	9.81E+1	9.81E+1
XXA	4.49E+0	3.93E+1	4.39E+2	4.13E+0	3.66E+1	4.09E+2	3.64E+0	3.30E+1	3.69E+2	2.52E+0	2.45E+1	2.74E+2	2.13E+0	2.22E+1	2.48E+2
XXB	4.28E+0	2.73E+1	2.13E+2	3.93E+0	2.54E+1	1.98E+2	3.47E+0	2.27E+1	1.77E+2	2.40E+0	1.65E+1	1.29E+2	2.03E+0	1.50E+1	1.17E+2
XXC	3.88E+0	1.44E+1	3.68E+2	3.56E+0	1.32E+1	3.38E+2	3.14E+0	1.16E+1	2.98E+2	2.17E+0	8.05E+0	2.06E+2	1.84E+0	6.80E+0	1.74E+2
XXIA	2.85E+2	2.96E+3	2.80E+4	2.82E+2	2.93E+3	2.77E+4	2.77E+2	2.87E+3	2.72E+4	2.32E+2	2.42E+3	2.29E+4	2.16E+2	2.25E+3	2.13E+4
XXIB	2.83E+2	2.92E+3	2.53E+4	2.80E+2	2.89E+3	2.51E+4	2.75E+2	2.84E+3	2.46E+4	2.31E+2	2.39E+3	2.07E+4	2.15E+2	2.22E+3	1.92E+4
XXIC	2.79E+2	2.81E+3	2.04E+4	2.76E+2	2.79E+3	2.02E+4	2.71E+2	2.73E+3	1.98E+4	2.28E+2	2.30E+3	1.67E+4	2.12E+2	2.14E+3	1.55E+4
XXII	2.14E+4	2.20E+5	5.00E+5	2.12E+4	2.18E+5	4.96E+5	2.10E+4	2.16E+5	4.91E+5	1.99E+4	2.06E+5	4.67E+5	1.96E+4	2.03E+5	4.61E+5
DOE	2.46E+6	1.95E+7	1.61E+8	2.44E+6	1.94E+7	1.60E+8	2.42E+6	1.93E+7	1.59E+8	2.33E+6	1.88E+7	1.55E+8	2.30E+6	1.86E+7	1.54E+8
DOD	5.10E+2	1.56E+3	1.60E+3	5.09E+2	1.56E+3	1.60E+3	5.08E+2	1.55E+3	1.59E+3	5.05E+2	1.54E+3	1.58E+3	5.04E+2	1.54E+3	1.58E+3
NRC	1.36E+4	7.21E+4	5.53E+5	1.35E+4	7.14E+4	5.48E+5	1.33E+4	7.01E+4	5.37E+5	1.20E+4	5.98E+4	4.52E+5	1.15E+4	5.60E+4	4.21E+5
Total	2.47E+6	1.96E+7	1.61E+8	2.46E+6	1.95E+7	1.61E+8	2.44E+6	1.94E+7	1.60E+8	2.34E+6	1.88E+7	1.55E+8	2.31E+6	1.87E+7	1.54E+8

Reasonable Occupancy Scenario - 09-19-94 2:01p
 Table M-85. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.13E+0	1.24E+0	1.24E+0	1.12E+0	1.22E+0	1.22E+0	1.10E+0	1.21E+0	1.21E+0	1.07E+0	1.17E+0	1.17E+0	1.05E+0	1.15E+0	1.15E+0
II	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4
III	4.91E-1	5.44E-1	5.44E-1	4.91E-1	5.44E-1	5.44E-1	4.89E-1	5.42E-1	5.42E-1	4.75E-1	5.26E-1	5.26E-1	4.53E-1	5.02E-1	5.02E-1
IV	4.31E-1	2.51E+0	9.40E+0	4.27E-1	2.49E+0	9.33E+0	4.25E-1	2.47E+0	9.27E+0	4.18E-1	2.43E+0	9.12E+0	4.13E-1	2.40E+0	9.01E+0
V	2.95E+1	3.22E+1	3.22E+1	2.95E+1	3.22E+1	3.22E+1	2.94E+1	3.21E+1	3.21E+1	2.93E+1	3.20E+1	3.20E+1	2.91E+1	3.18E+1	3.18E+1
VI	1.71E+1	1.16E+2	1.12E+3	1.71E+1	1.16E+2	1.12E+3	1.71E+1	1.16E+2	1.12E+3	1.71E+1	1.16E+2	1.12E+3	1.71E+1	1.16E+2	1.12E+3
VII	2.67E+0	1.86E+1	1.22E+2	2.61E+0	1.82E+1	1.19E+2	2.52E+0	1.75E+1	1.15E+2	2.33E+0	1.60E+1	1.04E+2	2.21E+0	1.50E+1	9.78E+1
IX	5.37E-2	4.63E-1	2.87E+0	5.10E-2	4.40E-1	2.72E+0	4.84E-2	4.18E-1	2.58E+0	4.21E-2	3.63E-1	2.25E+0	3.78E-2	3.26E-1	2.02E+0
X	1.56E+0	5.13E+0	5.80E+0	1.56E+0	5.13E+0	5.80E+0	1.56E+0	5.13E+0	5.79E+0	1.55E+0	5.11E+0	5.77E+0	1.54E+0	5.08E+0	5.73E+0
XII	2.97E-2	9.20E-2	9.46E-2	2.97E-2	9.20E-2	9.46E-2	2.96E-2	9.19E-2	9.46E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2
XIIIA	2.62E-4	1.58E-3	4.30E-3	2.10E-4	1.27E-3	3.46E-3	1.47E-4	8.86E-4	2.41E-3	2.89E-5	1.75E-4	4.75E-4	.00E+0	.00E+0	.00E+0
XIIIB	2.36E-4	1.04E-3	1.99E-3	1.89E-4	8.35E-4	1.60E-3	1.32E-4	5.83E-4	1.11E-3	2.61E-5	1.15E-4	2.20E-4	.00E+0	.00E+0	.00E+0
XIIIC	1.95E-4	5.66E-4	1.06E-2	1.57E-4	4.54E-4	8.52E-3	1.09E-4	3.17E-4	5.95E-3	2.16E-5	6.25E-5	1.17E-3	.00E+0	.00E+0	.00E+0
XVIA	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.50E-3	3.50E-3
XVIB	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.45E-3	3.45E-3	3.27E-3	3.45E-3	3.45E-3
XVIC	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2
XVIIIC	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2
XXA	2.06E-2	1.63E-1	2.10E+0	1.56E-2	1.35E-1	1.74E+0	1.32E-2	1.16E-1	1.50E+0	9.18E-3	8.57E-2	1.10E+0	6.92E-3	7.00E-2	9.03E-1
XXB	1.96E-2	1.17E-1	1.14E+0	1.48E-2	8.82E-2	8.63E-1	1.26E-2	7.48E-2	7.31E-1	8.75E-3	5.20E-2	5.09E-1	6.59E-3	3.92E-2	3.83E-1
XXC	1.78E-2	6.64E-2	1.80E+0	1.35E-2	5.03E-2	1.36E+0	1.14E-2	4.26E-2	1.16E+0	7.94E-3	2.97E-2	8.04E-1	5.99E-3	2.23E-2	6.06E-1
XXIA	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1
XXIB	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1
XXIC	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0
XXII	7.72E+0	7.14E+1	1.66E+2	7.72E+0	7.14E+1	1.66E+2	7.72E+0	7.14E+1	1.66E+2	7.71E+0	7.13E+1	1.66E+2	7.70E+0	7.12E+1	1.66E+2
DOE	6.51E+2	4.87E+3	3.97E+4	6.51E+2	4.87E+3	3.97E+4	6.50E+2	4.87E+3	3.97E+4	6.49E+2	4.86E+3	3.97E+4	6.49E+2	4.86E+3	3.97E+4
DOD	3.16E-2	1.01E-1	1.43E-1	3.12E-2	9.92E-2	1.33E-1	3.07E-2	9.70E-2	1.21E-1	2.98E-2	9.29E-2	9.98E-2	2.96E-2	9.19E-2	9.45E-2
NRC	5.61E+0	3.01E+1	2.41E+2	5.55E+0	2.98E+1	2.36E+2	5.52E+0	2.96E+1	2.34E+2	5.46E+0	2.93E+1	2.29E+2	5.43E+0	2.91E+1	2.26E+2
Total	6.56E+2	4.90E+3	3.99E+4	6.56E+2	4.90E+3	3.99E+4	6.56E+2	4.90E+3	3.99E+4	6.55E+2	4.89E+3	3.99E+4	6.54E+2	4.89E+3	3.99E+4

Reasonable Occupancy Scenario - 09-19-94 2:01p
Table M-86. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.01E+0	1.10E+0	1.10E+0	9.71E-1	1.06E+0	1.06E+0	9.20E-1	1.01E+0	1.01E+0	7.84E-1	8.57E-1	8.57E-1	7.49E-1	8.18E-1	8.18E-1
II	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.67E+3	1.30E+4	1.72E+2	1.67E+3	1.29E+4	1.72E+2	1.67E+3	1.29E+4
III	3.90E-1	4.32E-1	4.32E-1	3.60E-1	3.99E-1	3.99E-1	3.25E-1	3.60E-1	3.60E-1	1.51E-1	1.67E-1	1.67E-1	9.72E-2	1.08E-1	1.08E-1
IV	4.03E-1	2.35E+0	8.80E+0	3.97E-1	2.31E+0	8.67E+0	3.86E-1	2.25E+0	8.42E+0	3.27E-1	1.91E+0	7.14E+0	2.98E-1	1.74E+0	6.51E+0
V	2.87E+1	3.14E+1	3.14E+1	2.84E+1	3.10E+1	3.10E+1	2.79E+1	3.04E+1	3.04E+1	2.51E+1	2.74E+1	2.74E+1	2.37E+1	2.59E+1	2.59E+1
VI	1.71E+1	1.16E+2	1.11E+3	1.70E+1	1.16E+2	1.11E+3	1.70E+1	1.16E+2	1.11E+3	1.67E+1	1.15E+2	1.10E+3	1.65E+1	1.14E+2	1.10E+3
VII	2.01E+0	1.35E+1	8.78E+1	1.85E+0	1.24E+1	8.05E+1	1.44E+0	9.60E+0	6.25E+1	5.96E-1	4.07E+0	2.66E+1	4.69E-1	3.23E+0	2.11E+1
IX	3.16E-2	2.72E-1	1.69E+0	2.65E-2	2.29E-1	1.42E+0	2.17E-2	1.87E-1	1.16E+0	1.02E-2	8.76E-2	5.42E-1	7.12E-3	6.14E-2	3.80E-1
X	1.53E+0	4.93E+0	5.56E+0	1.52E+0	4.75E+0	5.34E+0	1.50E+0	4.38E+0	4.91E+0	1.42E+0	3.24E+0	3.57E+0	1.38E+0	2.98E+0	3.26E+0
XII	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.17E-2	9.44E-2	2.95E-2	9.16E-2	9.43E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.30E-3	3.49E-3	3.49E-3	3.30E-3	3.49E-3	3.49E-3	3.29E-3	3.48E-3	3.48E-3	3.26E-3	3.45E-3	3.45E-3	3.24E-3	3.43E-3	3.43E-3
XVIB	3.27E-3	3.45E-3	3.45E-3	3.27E-3	3.45E-3	3.45E-3	3.25E-3	3.44E-3	3.44E-3	3.23E-3	3.41E-3	3.41E-3	3.21E-3	3.39E-3	3.39E-3
XVIC	3.20E-3	3.36E-3	3.36E-3	3.19E-3	3.35E-3	3.35E-3	3.18E-3	3.34E-3	3.34E-3	3.15E-3	3.31E-3	3.31E-3	3.14E-3	3.30E-3	3.30E-3
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.02E-2	4.44E-2	4.44E-2	3.97E-2	4.39E-2	4.39E-2	3.94E-2	4.36E-2	4.36E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.95E-2	4.38E-2	4.38E-2	3.95E-2	4.37E-2	4.37E-2	3.90E-2	4.32E-2	4.32E-2	3.87E-2	4.29E-2	4.29E-2
XVIIIC	3.82E-2	4.17E-2	4.17E-2	3.81E-2	4.17E-2	4.17E-2	3.81E-2	4.16E-2	4.16E-2	3.76E-2	4.11E-2	4.11E-2	3.73E-2	4.08E-2	4.08E-2
XXA	3.29E-3	4.21E-2	5.42E-1	1.36E-3	2.70E-2	3.48E-1	8.84E-4	9.59E-3	1.24E-1	7.06E-4	6.18E-3	7.97E-2	6.55E-4	5.79E-3	7.48E-2
XXB	3.13E-3	1.86E-2	1.82E-1	1.29E-3	7.71E-2	7.54E-2	8.42E-4	5.01E-3	4.91E-2	6.72E-4	4.00E-3	3.92E-2	6.24E-4	3.71E-3	3.64E-2
XXC	2.84E-3	1.06E-2	2.88E-1	1.18E-3	4.39E-2	1.19E-1	7.65E-4	2.86E-3	7.75E-2	6.11E-4	2.28E-3	6.19E-2	5.67E-4	2.12E-3	5.75E-2
XXIA	1.12E-1	1.17E+0	1.11E+1	1.12E-1	1.17E+0	1.10E+1	1.11E-1	1.16E+0	1.10E+1	1.08E-1	1.13E+0	1.06E+1	1.05E-1	1.10E+0	1.04E+1
XXIB	1.12E-1	1.16E+0	1.00E+1	1.11E-1	1.15E+0	9.97E+0	1.11E-1	1.15E+0	9.92E+0	1.07E-1	1.11E+0	9.62E+0	1.04E-1	1.08E+0	9.36E+0
XXIC	1.10E-1	1.11E+0	8.10E+0	1.10E-1	1.11E+0	8.08E+0	1.09E-1	1.10E+0	8.03E+0	1.06E-1	1.07E+0	7.79E+0	1.03E-1	1.04E+0	7.58E+0
XXII	7.68E+0	7.11E+1	1.66E+2	7.66E+0	7.09E+1	1.65E+2	7.63E+0	7.07E+1	1.65E+2	7.47E+0	6.93E+1	1.61E+2	7.38E+0	6.85E+1	1.60E+2
DOE	6.47E+2	4.86E+3	3.96E+4	6.45E+2	4.85E+3	3.96E+4	6.43E+2	4.84E+3	3.95E+4	6.31E+2	4.79E+3	3.92E+4	6.25E+2	4.77E+3	3.90E+4
DOD	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.17E-2	9.44E-2	2.95E-2	9.16E-2	9.43E-2
NRC	5.38E+0	2.87E+1	2.22E+2	5.34E+0	2.85E+1	2.19E+2	5.32E+0	2.83E+1	2.16E+2	5.21E+0	2.74E+1	2.10E+2	5.12E+0	2.68E+1	2.04E+2
Total	6.52E+2	4.88E+3	3.99E+4	6.51E+2	4.88E+3	3.98E+4	6.48E+2	4.87E+3	3.97E+4	6.36E+2	4.82E+3	3.94E+4	6.30E+2	4.80E+3	3.92E+4

Reasonable Occupancy Scenario - 09-19-94 2:01p
 Table M-87. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.12E+0	1.23E+0	1.23E+0	1.10E+0	1.20E+0	1.20E+0	1.08E+0	1.18E+0	1.18E+0	1.02E+0	1.12E+0	1.12E+0	9.78E-1	1.07E+0	1.07E+0
II	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4	1.72E+2	1.68E+3	1.31E+4
III	4.91E-1	5.44E-1	5.44E-1	4.87E-1	5.40E-1	5.40E-1	4.77E-1	5.29E-1	5.29E-1	4.10E-1	4.55E-1	4.55E-1	3.63E-1	4.02E-1	4.02E-1
IV	4.29E-1	2.50E+0	9.36E+0	4.23E-1	2.46E+0	9.22E+0	4.18E-1	2.43E+0	9.11E+0	4.04E-1	2.35E+0	8.82E+0	3.97E-1	2.31E+0	8.66E+0
V	2.95E+1	3.22E+1	3.22E+1	2.94E+1	3.21E+1	3.21E+1	2.93E+1	3.20E+1	3.20E+1	2.89E+1	3.15E+1	3.15E+1	2.85E+1	3.11E+1	3.11E+1
VI	1.71E+1	1.16E+2	1.12E+3	1.71E+1	1.16E+2	1.12E+3	1.71E+1	1.16E+2	1.12E+3	1.71E+1	1.16E+2	1.12E+3	1.71E+1	1.16E+2	1.12E+3
VII	2.65E+0	1.85E+1	1.21E+2	2.44E+0	1.68E+1	1.10E+2	2.30E+0	1.57E+1	1.03E+2	2.01E+0	1.35E+1	8.78E+1	1.78E+0	1.19E+1	7.72E+1
IX	5.19E-2	4.48E-1	2.77E+0	4.57E-2	3.95E-1	2.44E+0	4.12E-2	3.56E-1	2.20E+0	3.14E-2	2.71E-1	1.67E+0	2.48E-2	2.14E-1	1.32E+0
X	1.56E+0	5.13E+0	5.80E+0	1.56E+0	5.13E+0	5.79E+0	1.55E+0	5.12E+0	5.78E+0	1.54E+0	5.04E+0	5.69E+0	1.52E+0	4.90E+0	5.53E+0
XII	2.97E-2	9.20E-2	9.46E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2
XIIIA	2.33E-4	1.41E-3	3.84E-3	1.39E-4	8.40E-4	2.29E-3	2.94E-5	1.78E-4	4.85E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.11E-4	9.29E-4	1.78E-3	1.25E-4	5.53E-4	1.06E-3	2.66E-5	1.17E-4	2.24E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.74E-4	5.05E-4	9.47E-4	1.04E-4	3.01E-4	5.64E-4	2.20E-5	6.37E-5	1.19E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.49E-3	3.49E-3
XVIB	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.45E-3	3.45E-3	3.27E-3	3.45E-3	3.45E-3	3.27E-3	3.45E-3	3.45E-3
XVIC	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.19E-3	3.35E-3	3.35E-3
XVIII	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2
XVIII	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.95E-2	4.38E-2	4.38E-2
XVIII	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.81E-2	4.17E-2	4.17E-2
XXA	1.64E-2	1.45E-1	1.86E+0	1.08E-2	1.02E-1	1.31E+0	8.01E-3	8.22E-2	1.06E+0	2.29E-3	4.13E-2	5.33E-1	9.65E-4	2.13E-2	2.74E-1
XXB	1.56E-2	1.01E-1	9.83E-1	1.03E-2	6.96E-2	6.80E-1	7.63E-3	5.53E-2	5.41E-1	2.18E-3	2.47E-2	2.42E-1	9.19E-4	1.03E-2	1.00E-1
XXC	1.42E-2	5.30E-2	1.44E+0	9.36E-3	3.49E-2	9.47E-1	6.93E-3	2.59E-2	7.01E-1	1.98E-3	7.38E-3	2.00E-1	8.35E-4	3.12E-3	8.46E-2
XXIA	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.17E+0	1.11E+1	1.12E-1	1.17E+0	1.10E+1
XXIB	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.11E-1	1.15E+0	9.97E+0
XXIC	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.11E+0	8.11E+0	1.09E-1	1.11E+0	8.08E+0
XXII	7.72E+0	7.14E+1	1.66E+2	7.72E+0	7.13E+1	1.66E+2	7.71E+0	7.13E+1	1.66E+2	7.69E+0	7.11E+1	1.66E+2	7.66E+0	7.09E+1	1.65E+2
DOE	6.51E+2	4.87E+3	3.97E+4	6.50E+2	4.87E+3	3.97E+4	6.49E+2	4.86E+3	3.97E+4	6.47E+2	4.86E+3	3.96E+4	6.46E+2	4.85E+3	3.96E+4
DOD	3.14E-2	1.00E-1	1.37E-1	3.07E-2	9.67E-2	1.20E-1	2.98E-2	9.29E-2	9.99E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2
NRC	5.56E+0	2.99E+1	2.38E+2	5.49E+0	2.95E+1	2.32E+2	5.45E+0	2.92E+1	2.29E+2	5.36E+0	2.88E+1	2.22E+2	5.34E+0	2.85E+1	2.19E+2
Total	6.56E+2	4.90E+3	3.99E+4	6.56E+2	4.89E+3	3.99E+4	6.55E+2	4.89E+3	3.99E+4	6.53E+2	4.89E+3	3.99E+4	6.51E+2	4.88E+3	3.98E+4

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Table M-88. POTENTIAL CANCERS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	9.08E-1	9.92E-1	9.92E-1	8.61E-1	9.40E-1	9.40E-1	7.93E-1	8.66E-1	8.66E-1	5.69E-1	6.22E-1	6.22E-1	4.95E-1	5.41E-1	5.41E-1
II	1.72E+2	1.67E+3	1.30E+4	1.72E+2	1.67E+3	1.29E+4	1.72E+2	1.67E+3	1.29E+4	1.72E+2	1.67E+3	1.28E+4	1.72E+2	1.66E+3	1.28E+4
III	3.14E-1	3.48E-1	3.48E-1	2.60E-1	2.88E-1	2.88E-1	1.65E-1	1.83E-1	1.83E-1	4.33E-2	4.79E-2	4.79E-2	2.44E-2	2.70E-2	2.70E-2
IV	3.79E-1	2.21E+0	8.27E+0	3.61E-1	2.10E+0	7.87E+0	3.25E-1	1.89E+0	7.08E+0	1.44E-1	8.38E-1	3.14E+0	5.37E-2	3.12E-1	1.17E+0
V	2.77E+1	3.02E+1	3.02E+1	2.69E+1	2.94E+1	2.94E+1	2.54E+1	2.77E+1	2.77E+1	2.12E+1	2.31E+1	2.31E+1	2.02E+1	2.20E+1	2.20E+1
VI	1.70E+1	1.16E+2	1.11E+3	1.69E+1	1.16E+2	1.11E+3	1.67E+1	1.15E+2	1.10E+3	1.59E+1	1.11E+2	1.07E+3	1.57E+1	1.10E+2	1.06E+3
VII	1.20E+0	8.01E+0	5.22E+1	8.45E-1	5.69E+0	3.71E+1	5.52E-1	3.78E+0	2.47E+1	3.64E-3	2.08E-2	1.32E-1	.00E+0	.00E+0	.00E+0
IX	1.81E-2	1.56E-1	9.66E-1	1.31E-2	1.13E-1	6.97E-1	8.92E-3	7.70E-2	4.76E-1	1.62E-3	1.40E-2	8.65E-2	.00E+0	.00E+0	.00E+0
X	1.50E+0	4.51E+0	5.06E+0	1.48E+0	4.12E+0	4.60E+0	1.45E+0	3.56E+0	3.94E+0	1.31E+0	2.54E+0	2.75E+0	1.27E+0	2.28E+0	2.46E+0
XII	2.96E-2	9.18E-2	9.45E-2	2.96E-2	9.17E-2	9.44E-2	2.95E-2	9.16E-2	9.42E-2	2.93E-2	9.09E-2	9.35E-2	2.92E-2	9.07E-2	9.33E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.28E-3	3.48E-3	3.48E-3	3.27E-3	3.47E-3	3.47E-3	3.26E-3	3.45E-3	3.45E-3	3.14E-3	3.33E-3	3.33E-3	3.07E-3	3.26E-3	3.26E-3
XVIB	3.25E-3	3.43E-3	3.43E-3	3.24E-3	3.42E-3	3.42E-3	3.23E-3	3.41E-3	3.41E-3	3.11E-3	3.29E-3	3.29E-3	3.04E-3	3.22E-3	3.22E-3
XVIC	3.18E-3	3.34E-3	3.34E-3	3.17E-3	3.33E-3	3.33E-3	3.16E-3	3.32E-3	3.32E-3	3.04E-3	3.20E-3	3.20E-3	2.97E-3	3.13E-3	3.13E-3
XVIIIA	4.02E-2	4.44E-2	4.44E-2	4.00E-2	4.43E-2	4.43E-2	3.97E-2	4.39E-2	4.39E-2	3.79E-2	4.19E-2	4.19E-2	3.70E-2	4.09E-2	4.09E-2
XVIIIB	3.95E-2	4.37E-2	4.37E-2	3.93E-2	4.35E-2	4.35E-2	3.90E-2	4.32E-2	4.32E-2	3.72E-2	4.12E-2	4.12E-2	3.64E-2	4.03E-2	4.03E-2
XVIIIC	3.81E-2	4.16E-2	4.16E-2	3.79E-2	4.14E-2	4.14E-2	3.76E-2	4.11E-2	4.11E-2	3.59E-2	3.92E-2	3.92E-2	3.51E-2	3.83E-2	3.83E-2
XXA	8.15E-4	7.16E-3	9.24E-2	7.48E-4	6.67E-3	8.61E-2	6.60E-4	6.01E-3	7.76E-2	4.57E-4	4.46E-3	5.76E-2	3.86E-4	4.04E-3	5.22E-2
XXB	7.76E-4	4.98E-3	4.88E-2	7.13E-4	4.62E-3	4.53E-2	6.29E-4	4.15E-3	4.06E-2	4.35E-4	3.01E-3	2.95E-2	3.68E-4	2.73E-3	2.67E-2
XXC	7.05E-4	2.63E-3	7.15E-2	6.48E-4	2.42E-3	6.56E-2	5.71E-4	2.13E-3	5.79E-2	3.95E-4	1.48E-3	4.01E-2	3.34E-4	1.25E-3	3.39E-2
XXIA	1.11E-1	1.16E+0	1.09E+1	1.10E-1	1.15E+0	1.08E+1	1.08E-1	1.13E+0	1.06E+1	9.07E-2	9.47E-1	8.93E+0	8.45E-2	8.81E-1	8.31E+0
XXIB	1.10E-1	1.14E+0	9.88E+0	1.09E-1	1.13E+0	9.79E+0	1.07E-1	1.11E+0	9.61E+0	9.00E-2	9.32E-1	8.07E+0	8.38E-2	8.67E-1	7.51E+0
XXIC	1.08E-1	1.10E+0	8.00E+0	1.07E-1	1.09E+0	7.93E+0	1.05E-1	1.07E+0	7.78E+0	8.86E-2	8.98E-1	6.54E+0	8.25E-2	8.36E-1	6.08E+0
XXII	7.61E+0	7.06E+1	1.64E+2	7.55E+0	7.01E+1	1.63E+2	7.47E+0	6.94E+1	1.62E+2	7.09E+0	6.60E+1	1.54E+2	6.98E+0	6.51E+1	1.52E+2
DOE	6.42E+2	4.84E+3	3.95E+4	6.38E+2	4.82E+3	3.94E+4	6.32E+2	4.80E+3	3.92E+4	6.06E+2	4.68E+3	3.83E+4	5.97E+2	4.64E+3	3.80E+4
DOD	2.96E-2	9.18E-2	9.45E-2	2.96E-2	9.17E-2	9.44E-2	2.95E-2	9.16E-2	9.42E-2	2.93E-2	9.09E-2	9.35E-2	2.92E-2	9.07E-2	9.33E-2
NRC	5.31E+0	2.81E+1	2.15E+2	5.27E+0	2.79E+1	2.13E+2	5.20E+0	2.74E+1	2.09E+2	4.70E+0	2.34E+1	1.76E+2	4.50E+0	2.19E+1	1.64E+2
Total	6.47E+2	4.86E+3	3.97E+4	6.44E+2	4.85E+3	3.96E+4	6.37E+2	4.82E+3	3.94E+4	6.10E+2	4.70E+3	3.84E+4	6.02E+2	4.66E+3	3.81E+4

Reasonable Occupancy Scenario - 09-19-94 2:01p
 Table M-89. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.48E-1	8.18E-1	8.18E-1	7.37E-1	8.06E-1	8.06E-1	7.29E-1	7.97E-1	7.97E-1	7.09E-1	7.75E-1	7.75E-1	6.95E-1	7.60E-1	7.60E-1
II	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4
III	3.25E-1	3.60E-1	3.60E-1	3.25E-1	3.60E-1	3.60E-1	3.24E-1	3.59E-1	3.59E-1	3.14E-1	3.48E-1	3.48E-1	3.00E-1	3.32E-1	3.32E-1
IV	2.79E-1	1.59E+0	7.47E+0	2.77E-1	1.57E+0	7.41E+0	2.75E-1	1.56E+0	7.37E+0	2.71E-1	1.54E+0	7.25E+0	2.67E-1	1.52E+0	7.16E+0
V	1.95E+1	2.13E+1	2.13E+1	1.95E+1	2.12E+1	2.12E+1	1.95E+1	2.12E+1	2.12E+1	1.94E+1	2.11E+1	2.11E+1	1.93E+1	2.10E+1	2.10E+1
VI	1.17E+1	7.96E+1	8.42E+2	1.17E+1	7.96E+1	8.42E+2	1.17E+1	7.96E+1	8.42E+2	1.17E+1	7.96E+1	8.42E+2	1.17E+1	7.96E+1	8.42E+2
VII	2.18E+0	1.57E+1	1.04E+2	2.13E+0	1.53E+1	1.01E+2	2.06E+0	1.47E+1	9.76E+1	1.90E+0	1.34E+1	8.88E+1	1.80E+0	1.26E+1	8.33E+1
IX	4.75E-2	4.13E-1	2.57E+0	4.51E-2	3.92E-1	2.44E+0	4.28E-2	3.72E-1	2.32E+0	3.72E-2	3.24E-1	2.02E+0	3.34E-2	2.91E-1	1.81E+0
X	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.20E+0	3.65E+0	1.01E+0	3.18E+0	3.63E+0
XII	2.64E-2	8.16E-2	8.39E-2	2.64E-2	8.16E-2	8.39E-2	2.64E-2	8.16E-2	8.39E-2	2.64E-2	8.15E-2	8.39E-2	2.64E-2	8.15E-2	8.38E-2
XIIIA	1.71E-4	1.00E-3	2.96E-3	1.37E-4	8.03E-4	2.37E-3	9.57E-5	5.61E-4	1.66E-3	1.89E-5	1.11E-4	3.27E-4	.00E+0	.00E+0	.00E+0
XIIIB	1.53E-4	6.52E-4	1.41E-3	1.23E-4	5.23E-4	1.13E-3	8.58E-5	3.65E-4	7.92E-4	1.69E-5	7.20E-5	1.56E-4	.00E+0	.00E+0	.00E+0
XIIIC	1.25E-4	3.53E-4	6.58E-3	1.00E-4	2.83E-4	5.28E-3	7.01E-5	1.98E-4	3.69E-3	1.38E-5	3.90E-5	7.27E-4	.00E+0	.00E+0	.00E+0
XVIA	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.30E-3	2.30E-3	2.18E-3	2.30E-3	2.30E-3
XVIB	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3
XVIC	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2
XVIIIB	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2
XXA	1.28E-2	1.02E-1	1.72E+0	9.69E-3	8.45E-2	1.42E+0	8.21E-3	7.31E-2	1.23E+0	5.71E-3	5.38E-2	9.05E-1	4.30E-3	4.39E-2	7.40E-1
XXB	1.22E-2	7.33E-2	9.73E-1	9.22E-3	5.55E-2	7.37E-1	7.81E-3	4.70E-2	6.24E-1	5.43E-3	3.27E-2	4.34E-1	4.10E-3	2.47E-2	3.27E-1
XXC	1.10E-2	4.21E-2	1.26E+0	8.34E-3	3.19E-2	9.52E-1	7.06E-3	2.70E-2	8.07E-1	4.91E-3	1.88E-2	5.61E-1	3.70E-3	1.42E-2	4.23E-1
XXIA	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.46E-2	7.79E-1	7.34E+0	7.46E-2	7.79E-1	7.34E+0
XXIB	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.40E-2	7.66E-1	6.64E+0
XXIC	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.29E-2	7.39E-1	5.38E+0	7.29E-2	7.39E-1	5.37E+0
XXII	5.95E+0	5.36E+1	1.28E+2	5.95E+0	5.36E+1	1.28E+2	5.95E+0	5.35E+1	1.28E+2	5.94E+0	5.35E+1	1.27E+2	5.94E+0	5.34E+1	1.27E+2
DOE	4.74E+2	3.61E+3	3.15E+4	4.74E+2	3.61E+3	3.15E+4	4.74E+2	3.61E+3	3.15E+4	4.73E+2	3.61E+3	3.15E+4	4.73E+2	3.61E+3	3.15E+4
DOD	2.77E-2	8.73E-2	1.15E-1	2.74E-2	8.61E-2	1.09E-1	2.71E-2	8.47E-2	1.01E-1	2.65E-2	8.22E-2	8.73E-2	2.64E-2	8.15E-2	8.38E-2
NRC	3.70E+0	1.99E+1	1.63E+2	3.66E+0	1.96E+1	1.59E+2	3.64E+0	1.95E+1	1.56E+2	3.60E+0	1.93E+1	1.53E+2	3.58E+0	1.92E+1	1.51E+2
Total	4.78E+2	3.63E+3	3.17E+4	4.78E+2	3.63E+3	3.17E+4	4.78E+2	3.63E+3	3.17E+4	4.77E+2	3.63E+3	3.17E+4	4.76E+2	3.62E+3	3.17E+4

Reasonable Occupancy Scenario - 09-19-94 2:01p
 Table M-90. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.65E-1	7.26E-1	7.26E-1	6.41E-1	7.01E-1	7.01E-1	6.07E-1	6.64E-1	6.64E-1	5.18E-1	5.66E-1	5.66E-1	4.94E-1	5.40E-1	5.40E-1
II	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.39E+3	1.12E+4
III	2.58E-1	2.86E-1	2.86E-1	2.38E-1	2.64E-1	2.64E-1	2.15E-1	2.38E-1	2.38E-1	9.96E-2	1.10E-1	1.10E-1	6.43E-2	7.12E-2	7.12E-2
IV	2.61E-1	1.48E+0	6.99E+0	2.57E-1	1.46E+0	6.89E+0	2.50E-1	1.42E+0	6.69E+0	2.12E-1	1.21E+0	5.68E+0	1.93E-1	1.10E+0	5.17E+0
V	1.90E+1	2.07E+1	2.07E+1	1.88E+1	2.05E+1	2.05E+1	1.84E+1	2.01E+1	2.01E+1	1.66E+1	1.81E+1	1.81E+1	1.57E+1	1.71E+1	1.71E+1
VI	1.17E+1	7.95E+1	8.42E+2	1.17E+1	7.94E+1	8.41E+2	1.16E+1	7.93E+1	8.41E+2	1.14E+1	7.86E+1	8.34E+2	1.13E+1	7.81E+1	8.30E+2
VII	1.63E+0	1.13E+1	7.48E+1	1.50E+0	1.04E+1	6.85E+1	1.17E+0	8.07E+0	5.33E+1	4.86E-1	3.42E+0	2.26E+1	3.83E-1	2.71E+0	1.80E+1
IX	2.79E-2	2.43E-1	1.51E+0	2.35E-2	2.04E-1	1.27E+0	1.92E-2	1.67E-1	1.04E+0	8.98E-3	7.81E-2	4.86E-1	6.29E-3	5.48E-2	3.41E-1
X	1.00E+0	3.09E+0	3.52E+0	9.94E-1	2.98E+0	3.38E+0	9.81E-1	2.75E+0	3.11E+0	9.29E-1	2.05E+0	2.27E+0	9.05E-1	1.89E+0	2.08E+0
XII	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2	2.63E-2	8.14E-2	8.37E-2	2.63E-2	8.13E-2	8.36E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	2.18E-3	2.30E-3	2.30E-3	2.17E-3	2.30E-3	2.30E-3	2.17E-3	2.29E-3	2.29E-3	2.15E-3	2.27E-3	2.27E-3	2.14E-3	2.26E-3	2.26E-3
XVIB	2.15E-3	2.28E-3	2.28E-3	2.15E-3	2.27E-3	2.27E-3	2.14E-3	2.26E-3	2.26E-3	2.13E-3	2.25E-3	2.25E-3	2.12E-3	2.24E-3	2.24E-3
XVIC	2.11E-3	2.21E-3	2.21E-3	2.11E-3	2.21E-3	2.21E-3	2.10E-3	2.20E-3	2.20E-3	2.08E-3	2.19E-3	2.19E-3	2.07E-3	2.18E-3	2.18E-3
XVIII	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.61E-2	2.89E-2	2.89E-2	2.59E-2	2.87E-2	2.87E-2
XVIII A	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.87E-2	2.87E-2	2.60E-2	2.87E-2	2.87E-2	2.57E-2	2.83E-2	2.83E-2	2.55E-2	2.81E-2	2.81E-2
XVIII B	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.49E-2	2.71E-2	2.71E-2	2.47E-2	2.69E-2	2.69E-2
XVIII C	2.04E-3	2.64E-2	4.44E-1	8.46E-4	1.69E-2	2.85E-1	5.50E-4	6.01E-3	1.01E-1	4.39E-4	3.87E-3	6.53E-2	4.07E-4	3.63E-3	6.13E-2
XXA	1.95E-3	1.17E-2	1.56E-1	8.05E-4	4.85E-3	6.44E-2	5.23E-4	3.15E-3	4.19E-2	4.18E-4	2.52E-3	3.35E-2	3.88E-4	2.34E-3	3.11E-2
XXB	1.76E-3	6.73E-3	2.01E-1	7.28E-4	2.79E-3	8.32E-2	4.73E-4	1.81E-3	5.41E-2	3.78E-4	1.45E-3	4.32E-2	3.51E-4	1.34E-3	4.01E-2
XXC	7.44E-2	7.77E-1	7.31E+0	7.42E-2	7.75E-1	7.29E+0	7.37E-2	7.70E-1	7.25E+0	7.16E-2	7.47E-1	7.04E+0	6.96E-2	7.27E-1	6.85E+0
XXIA	7.38E-2	7.64E-1	6.62E+0	7.36E-2	7.62E-1	6.60E+0	7.32E-2	7.57E-1	6.56E+0	7.10E-2	7.35E-1	6.37E+0	6.91E-2	7.15E-1	6.20E+0
XXIB	7.38E-2	7.64E-1	6.62E+0	7.36E-2	7.62E-1	6.60E+0	7.32E-2	7.57E-1	6.56E+0	7.10E-2	7.35E-1	6.37E+0	6.91E-2	7.15E-1	6.20E+0
XXIC	7.27E-2	7.37E-1	5.36E+0	7.25E-2	7.34E-1	5.34E+0	7.21E-2	7.30E-1	5.31E+0	6.99E-2	7.08E-1	5.15E+0	6.80E-2	6.89E-1	5.02E+0
XXII	5.92E+0	5.33E+1	1.27E+2	5.91E+0	5.32E+1	1.27E+2	5.88E+0	5.30E+1	1.26E+2	5.76E+0	5.20E+1	1.24E+2	5.69E+0	5.14E+1	1.23E+2
DOE	4.72E+2	3.60E+3	3.15E+4	4.71E+2	3.60E+3	3.14E+4	4.69E+2	3.59E+3	3.14E+4	4.60E+2	3.55E+3	3.11E+4	4.56E+2	3.54E+3	3.10E+4
DOD	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2	2.63E-2	8.14E-2	8.37E-2	2.63E-2	8.13E-2	8.36E-2
NRC	3.55E+0	1.90E+1	1.47E+2	3.53E+0	1.88E+1	1.45E+2	3.51E+0	1.87E+1	1.43E+2	3.44E+0	1.81E+1	1.39E+2	3.38E+0	1.77E+1	1.35E+2
Total	4.75E+2	3.62E+3	3.16E+4	4.74E+2	3.62E+3	3.16E+4	4.72E+2	3.61E+3	3.15E+4	4.64E+2	3.57E+3	3.12E+4	4.60E+2	3.56E+3	3.11E+4

Reasonable Occupancy Scenario - 09-19-94 2:01p
 Table M-91. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.42E-1	8.11E-1	8.11E-1	7.24E-1	7.91E-1	7.91E-1	7.10E-1	7.77E-1	7.77E-1	6.74E-1	7.37E-1	7.37E-1	6.45E-1	7.06E-1	7.06E-1
II	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4	1.42E+2	1.39E+3	1.14E+4
III	3.25E-1	3.60E-1	3.60E-1	3.23E-1	3.57E-1	3.57E-1	3.16E-1	3.50E-1	3.50E-1	2.72E-1	3.01E-1	3.01E-1	2.40E-1	2.66E-1	2.66E-1
IV	2.78E-1	1.58E+0	7.43E+0	2.74E-1	1.56E+0	7.33E+0	2.70E-1	1.54E+0	7.24E+0	2.62E-1	1.49E+0	7.01E+0	2.57E-1	1.46E+0	6.88E+0
V	1.95E+1	2.12E+1	2.12E+1	1.95E+1	2.12E+1	2.12E+1	1.94E+1	2.11E+1	2.11E+1	1.91E+1	2.08E+1	2.08E+1	1.88E+1	2.05E+1	2.05E+1
VI	1.17E+1	7.96E+1	8.42E+2	1.17E+1	7.96E+1	8.42E+2	1.17E+1	7.96E+1	8.42E+2	1.17E+1	7.95E+1	8.42E+2	1.17E+1	7.94E+1	8.42E+2
VII	2.17E+0	1.56E+1	1.03E+2	1.99E+0	1.42E+1	9.38E+1	1.87E+0	1.32E+1	8.75E+1	1.63E+0	1.13E+1	7.48E+1	1.44E+0	9.96E+0	6.58E+1
IX	4.59E-2	3.99E-1	2.49E+0	4.04E-2	3.52E-1	2.19E+0	3.64E-2	3.17E-1	1.97E+0	2.77E-2	2.41E-1	1.50E+0	2.19E-2	1.91E-1	1.19E+0
X	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.21E+0	3.67E+0	1.02E+0	3.21E+0	3.66E+0	1.01E+0	3.16E+0	3.60E+0	9.99E-1	3.07E+0	3.50E+0
XII	2.64E-2	8.16E-2	8.39E-2	2.64E-2	8.15E-2	8.39E-2	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2
XIIIA	1.52E-4	8.93E-4	2.64E-3	9.07E-5	5.32E-4	1.57E-3	1.92E-5	1.13E-4	3.33E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.37E-4	5.82E-4	1.26E-3	8.14E-5	3.47E-4	7.51E-4	1.72E-5	7.34E-5	1.59E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.12E-4	3.15E-4	5.88E-3	6.65E-5	1.88E-4	3.50E-3	1.41E-5	3.97E-5	7.41E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.30E-3	2.30E-3	2.18E-3	2.30E-3	2.30E-3	2.17E-3	2.30E-3	2.30E-3
XVIB	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.15E-3	2.28E-3	2.28E-3	2.15E-3	2.27E-3	2.27E-3
XVIC	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.21E-3	2.21E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2
XVIIIB	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.87E-2	2.87E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2
XXA	1.02E-2	9.08E-2	1.53E+0	6.73E-3	6.40E-2	1.08E+0	4.98E-3	5.15E-2	8.68E-1	1.42E-3	2.59E-2	4.36E-1	6.00E-4	1.33E-2	2.25E-1
XXB	9.71E-3	6.32E-2	8.39E-1	6.40E-3	4.38E-2	5.81E-1	4.74E-3	3.48E-2	4.62E-1	1.35E-3	1.56E-2	2.07E-1	5.71E-4	6.45E-3	8.57E-2
XXC	8.78E-3	3.36E-2	1.00E+0	5.79E-3	2.22E-2	6.61E-1	4.29E-3	1.64E-2	4.90E-1	1.22E-3	4.68E-3	1.40E-1	5.17E-4	1.98E-3	5.91E-2
XXIA	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.46E-2	7.79E-1	7.34E+0	7.44E-2	7.77E-1	7.32E+0	7.42E-2	7.74E-1	7.29E+0
XXIB	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.39E-2	7.64E-1	6.62E+0	7.36E-2	7.62E-1	6.60E+0
XXIC	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.29E-2	7.39E-1	5.38E+0	7.27E-2	7.37E-1	5.36E+0	7.25E-2	7.34E-1	5.34E+0
XXII	5.95E+0	5.36E+1	1.28E+2	5.95E+0	5.35E+1	1.28E+2	5.94E+0	5.35E+1	1.27E+2	5.93E+0	5.34E+1	1.27E+2	5.91E+0	5.32E+1	1.27E+2
DOE	4.74E+2	3.61E+3	3.15E+4	4.74E+2	3.61E+3	3.15E+4	4.73E+2	3.61E+3	3.15E+4	4.72E+2	3.60E+3	3.15E+4	4.71E+2	3.60E+3	3.14E+4
DOD	2.75E-2	8.66E-2	1.12E-1	2.70E-2	8.46E-2	1.00E-1	2.65E-2	8.21E-2	8.73E-2	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2
NRC	3.66E+0	1.97E+1	1.60E+2	3.62E+0	1.94E+1	1.55E+2	3.59E+0	1.93E+1	1.53E+2	3.54E+0	1.90E+1	1.47E+2	3.52E+0	1.88E+1	1.45E+2
Total	4.78E+2	3.63E+3	3.17E+4	4.77E+2	3.63E+3	3.17E+4	4.77E+2	3.63E+3	3.17E+4	4.76E+2	3.62E+3	3.16E+4	4.74E+2	3.62E+3	3.16E+4

Reasonable Occupancy Scenario - 09-19-94 2:01p
 Table M-92. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway included

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.99E-1	6.55E-1	6.55E-1	5.68E-1	6.21E-1	6.21E-1	5.23E-1	5.72E-1	5.72E-1	3.76E-1	4.11E-1	4.11E-1	3.27E-1	3.57E-1	3.57E-1
II	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.39E+3	1.13E+4	1.42E+2	1.38E+3	1.12E+4	1.42E+2	1.38E+3	1.11E+4
III	2.08E-1	2.30E-1	2.30E-1	1.72E-1	1.90E-1	1.90E-1	1.09E-1	1.21E-1	1.21E-1	2.86E-2	3.17E-2	3.17E-2	1.61E-2	1.79E-2	1.79E-2
IV	2.45E-1	1.39E+0	6.57E+0	2.34E-1	1.33E+0	6.25E+0	2.10E-1	1.20E+0	5.63E+0	9.32E-2	5.30E-1	2.50E+0	3.47E-2	1.98E-1	9.31E-1
V	1.83E+1	2.00E+1	2.00E+1	1.78E+1	1.94E+1	1.94E+1	1.68E+1	1.83E+1	1.83E+1	1.40E+1	1.53E+1	1.53E+1	1.33E+1	1.45E+1	1.45E+1
VI	1.16E+1	7.93E+1	8.40E+1	1.16E+1	7.91E+1	8.39E+1	1.15E+1	7.86E+1	8.34E+1	1.09E+1	7.62E+1	8.11E+1	1.07E+1	7.54E+1	8.03E+1
VII	9.72E-1	6.73E+0	4.45E+1	6.86E-1	4.79E+0	3.16E+1	4.50E-1	3.18E+0	2.10E+1	2.86E-3	1.74E-2	1.12E-1	.00E+0	.00E+0	.00E+0
IX	1.60E-2	1.39E-1	8.66E-1	1.15E-2	1.00E-1	6.25E-1	7.89E-3	6.86E-2	4.28E-1	1.43E-3	1.25E-2	7.76E-2	.00E+0	.00E+0	.00E+0
X	9.83E-1	2.83E+0	3.21E+0	9.69E-1	2.59E+0	2.92E+0	9.48E-1	2.25E+0	2.51E+0	8.60E-1	1.62E+0	1.76E+0	8.34E-1	1.46E+0	1.58E+0
XII	2.64E-2	8.15E-2	8.38E-2	2.63E-2	8.14E-2	8.37E-2	2.63E-2	8.12E-2	8.36E-2	2.61E-2	8.07E-2	8.30E-2	2.60E-2	8.05E-2	8.28E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	2.16E-3	2.29E-3	2.29E-3	2.16E-3	2.28E-3	2.28E-3	2.15E-3	2.28E-3	2.28E-3	2.07E-3	2.19E-3	2.19E-3	2.02E-3	2.15E-3	2.15E-3
XVIB	2.14E-3	2.26E-3	2.26E-3	2.14E-3	2.26E-3	2.26E-3	2.13E-3	2.25E-3	2.25E-3	2.05E-3	2.17E-3	2.17E-3	2.00E-3	2.12E-3	2.12E-3
XVIC	2.10E-3	2.20E-3	2.20E-3	2.09E-3	2.20E-3	2.20E-3	2.08E-3	2.19E-3	2.19E-3	2.01E-3	2.11E-3	2.11E-3	1.96E-3	2.06E-3	2.06E-3
XVIII	2.64E-2	2.93E-2	2.93E-2	2.63E-2	2.91E-2	2.91E-2	2.61E-2	2.89E-2	2.89E-2	2.49E-2	2.76E-2	2.76E-2	2.44E-2	2.70E-2	2.70E-2
XVIII A	2.64E-2	2.93E-2	2.93E-2	2.63E-2	2.91E-2	2.91E-2	2.61E-2	2.89E-2	2.89E-2	2.49E-2	2.76E-2	2.76E-2	2.44E-2	2.70E-2	2.70E-2
XVIII B	2.60E-2	2.87E-2	2.87E-2	2.59E-2	2.86E-2	2.86E-2	2.57E-2	2.83E-2	2.83E-2	2.45E-2	2.71E-2	2.71E-2	2.40E-2	2.64E-2	2.64E-2
XVIII C	2.52E-2	2.75E-2	2.75E-2	2.51E-2	2.74E-2	2.74E-2	2.49E-2	2.71E-2	2.71E-2	2.37E-2	2.59E-2	2.59E-2	2.32E-2	2.53E-2	2.53E-2
XXA	5.07E-4	4.49E-3	7.57E-2	4.66E-4	4.18E-3	7.05E-2	4.10E-4	3.77E-3	6.36E-2	2.84E-4	2.80E-3	4.72E-2	2.40E-4	2.53E-3	4.27E-2
XXB	4.82E-4	3.13E-3	4.17E-2	4.43E-4	2.91E-3	3.87E-2	3.91E-4	2.61E-3	3.47E-2	2.70E-4	1.89E-3	2.52E-2	2.28E-4	1.72E-3	2.28E-2
XXC	4.36E-4	1.67E-3	4.99E-2	4.01E-4	1.53E-3	4.58E-2	3.53E-4	1.35E-3	4.04E-2	2.45E-4	9.37E-4	2.80E-2	2.07E-4	7.92E-4	2.37E-2
XXIA	7.35E-2	7.67E-1	7.22E+0	7.28E-2	7.60E-1	7.16E+0	7.14E-2	7.46E-1	7.02E+0	6.00E-2	6.27E-1	5.90E+0	5.59E-2	5.83E-1	5.49E+0
XXIB	7.29E-2	7.55E-1	6.54E+0	7.22E-2	7.48E-1	6.48E+0	7.09E-2	7.34E-1	6.36E+0	5.96E-2	6.16E-1	5.34E+0	5.54E-2	5.74E-1	4.97E+0
XXIC	7.18E-2	7.27E-1	5.29E+0	7.11E-2	7.21E-1	5.24E+0	6.98E-2	7.07E-1	5.15E+0	5.87E-2	5.94E-1	4.32E+0	5.46E-2	5.53E-1	4.02E+0
XXII	5.87E+0	5.29E+1	1.26E+2	5.82E+0	5.26E+1	1.25E+2	5.76E+0	5.21E+1	1.24E+2	5.46E+0	4.95E+1	1.18E+2	5.38E+0	4.88E+1	1.16E+2
DOE	4.68E+2	3.59E+3	3.13E+4	4.66E+2	3.57E+3	3.12E+4	4.61E+2	3.56E+3	3.11E+4	4.43E+2	3.47E+3	3.04E+4	4.38E+2	3.45E+3	3.02E+4
DOD	2.64E-2	8.15E-2	8.38E-2	2.63E-2	8.14E-2	8.37E-2	2.63E-2	8.12E-2	8.36E-2	2.61E-2	8.07E-2	8.30E-2	2.60E-2	8.05E-2	8.28E-2
NRC	3.50E+0	1.86E+1	1.43E+2	3.48E+0	1.84E+1	1.41E+2	3.44E+0	1.81E+1	1.39E+2	3.10E+0	1.55E+1	1.17E+2	2.97E+0	1.45E+1	1.09E+2
Total	4.72E+2	3.60E+3	3.15E+4	4.69E+2	3.59E+3	3.14E+4	4.65E+2	3.58E+3	3.12E+4	4.46E+2	3.49E+3	3.05E+4	4.41E+2	3.46E+3	3.03E+4

Table M-93. ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		.10			.50			1.00			3.00			5.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	3.71E+1	3.71E+1	3.71E+1	3.66E+1	3.66E+1	3.66E+1	3.61E+1	3.61E+1	3.61E+1	3.51E+1	3.51E+1	3.51E+1	3.45E+1	3.45E+1	3.45E+1
II	Ra-226	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2
	Th-230	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2
	Ra-228	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0
	Th-232	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0
	U-234	2.26E+2	2.26E+2	2.26E+2	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.24E+2	2.24E+2	2.24E+2
	U-235	3.67E+0	3.67E+0	3.67E+0	3.64E+0	3.64E+0	3.64E+0	3.63E+0	3.63E+0	3.63E+0	3.62E+0	3.62E+0	3.62E+0	3.62E+0	3.62E+0	3.62E+0
	U-238	9.95E+1	9.95E+1	9.95E+1	9.88E+1	9.88E+1	9.88E+1	9.87E+1	9.87E+1	9.87E+1	9.84E+1	9.85E+1	9.85E+1	9.84E+1	9.84E+1	9.84E+1
	III	Cs-137	1.54E+1	1.54E+1	1.54E+1	1.53E+1	1.53E+1	1.53E+1	1.53E+1	1.53E+1	1.53E+1	1.49E+1	1.49E+1	1.49E+1	1.42E+1	1.42E+1
IV	U-234	3.50E+1	3.50E+1	3.50E+1	3.48E+1	3.48E+1	3.48E+1	3.46E+1	3.46E+1	3.46E+1	3.40E+1	3.40E+1	3.40E+1	3.36E+1	3.36E+1	3.36E+1
	U-235	1.65E+0	1.65E+0	1.65E+0	1.63E+0	1.63E+0	1.63E+0	1.62E+0	1.62E+0	1.62E+0	1.60E+0	1.60E+0	1.60E+0	1.58E+0	1.58E+0	1.58E+0
	U-238	3.50E+1	3.50E+1	3.50E+1	3.48E+1	3.48E+1	3.48E+1	3.46E+1	3.46E+1	3.46E+1	3.40E+1	3.40E+1	3.40E+1	3.36E+1	3.36E+1	3.36E+1
V	Cs-137	9.72E+2	9.72E+2	9.72E+2	9.71E+2	9.71E+2	9.71E+2	9.69E+2	9.69E+2	9.69E+2	9.64E+2	9.64E+2	9.64E+2	9.59E+2	9.59E+2	9.59E+2
VI	Cs-137	4.87E+1	4.87E+1	4.87E+1	4.87E+1	4.87E+1	4.87E+1	4.87E+1	4.87E+1	4.87E+1	4.85E+1	4.85E+1	4.85E+1	4.83E+1	4.83E+1	4.83E+1
	U-234	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2
	U-235	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1
	U-238	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2
VII	Pu-239	3.13E+3	3.13E+3	3.13E+3	3.05E+3	3.05E+3	3.05E+3	2.93E+3	2.93E+3	2.93E+3	2.66E+3	2.66E+3	2.66E+3	2.50E+3	2.50E+3	2.50E+3
	Am-241	5.24E+2	5.24E+2	5.24E+2	5.10E+2	5.10E+2	5.10E+2	4.90E+2	4.90E+2	4.90E+2	4.46E+2	4.46E+2	4.46E+2	4.18E+2	4.18E+2	4.18E+2
	Cs-137	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1
IX	Pu-239	1.29E+1	1.29E+1	1.29E+1	1.22E+1	1.22E+1	1.22E+1	1.16E+1	1.16E+1	1.16E+1	1.01E+1	1.01E+1	1.01E+1	9.05E+0	9.05E+0	9.05E+0
	Am-241	2.14E+0	2.14E+0	2.14E+0	2.03E+0	2.03E+0	2.03E+0	1.93E+0	1.93E+0	1.93E+0	1.68E+0	1.68E+0	1.68E+0	1.51E+0	1.51E+0	1.51E+0
X	Tc-99	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.12E+2	2.13E+2	2.13E+2	2.11E+2	2.13E+2	2.13E+2
	U-238	7.57E+0	7.57E+0	7.57E+0	7.39E+0	7.57E+0	7.57E+0	7.09E+0	7.57E+0	7.57E+0	6.19E+0	7.53E+0	7.53E+0	5.57E+0	7.46E+0	7.46E+0
	U-234	7.57E+0	7.57E+0	7.57E+0	7.39E+0	7.57E+0	7.57E+0	7.09E+0	7.57E+0	7.57E+0	6.19E+0	7.53E+0	7.53E+0	5.57E+0	7.46E+0	7.46E+0
XII	Pu-239	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1
	Am-241	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0
XIIIA	U-238	2.90E-2	2.90E-2	2.90E-2	2.33E-2	2.33E-2	2.33E-2	1.63E-2	1.63E-2	1.63E-2	3.21E-3	3.21E-3	3.21E-3	.00E+0	.00E+0	.00E+0
	U-235	4.71E-4	4.71E-4	4.71E-4	3.78E-4	3.78E-4	3.78E-4	2.63E-4	2.63E-4	2.63E-4	5.20E-5	5.20E-5	5.20E-5	.00E+0	.00E+0	.00E+0
	U-234	2.72E-3	2.72E-3	2.72E-3	2.18E-3	2.18E-3	2.18E-3	1.52E-3	1.52E-3	1.52E-3	3.00E-4	3.00E-4	3.00E-4	.00E+0	.00E+0	.00E+0
XIIIB	U-238	2.90E-2	2.90E-2	2.90E-2	2.33E-2	2.33E-2	2.33E-2	1.63E-2	1.63E-2	1.63E-2	3.21E-3	3.21E-3	3.21E-3	.00E+0	.00E+0	.00E+0
	U-235	4.71E-4	4.71E-4	4.71E-4	3.78E-4	3.78E-4	3.78E-4	2.63E-4	2.63E-4	2.63E-4	5.20E-5	5.20E-5	5.20E-5	.00E+0	.00E+0	.00E+0
	U-234	2.72E-3	2.72E-3	2.72E-3	2.18E-3	2.18E-3	2.18E-3	1.52E-3	1.52E-3	1.52E-3	3.00E-4	3.00E-4	3.00E-4	.00E+0	.00E+0	.00E+0

09-19-94 1:52p
ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		.10			.50			1.00			3.00			5.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIIC	U-238	2.90E-2	2.90E-2	2.90E-2	2.33E-2	2.33E-2	2.33E-2	1.63E-2	1.63E-2	1.63E-2	3.21E-3	3.21E-3	3.21E-3	.00E+0	.00E+0	.00E+0
	U-235	4.71E-4	4.71E-4	4.71E-4	3.78E-4	3.78E-4	3.78E-4	2.63E-4	2.63E-4	2.63E-4	5.20E-5	5.20E-5	5.20E-5	.00E+0	.00E+0	.00E+0
	U-234	2.72E-3	2.72E-3	2.72E-3	2.18E-3	2.18E-3	2.18E-3	1.52E-3	1.52E-3	1.52E-3	3.00E-4	3.00E-4	3.00E-4	.00E+0	.00E+0	.00E+0
XVIA	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.09E-2	6.09E-2	6.09E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2
XVIB	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.09E-2	6.09E-2	6.09E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2
XVIC	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.09E-2	6.09E-2	6.09E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2
XVIIIIA	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
XVIIIB	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
XVIIIC	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
XXA	U-234	4.16E+0	4.16E+0	4.16E+0	3.15E+0	3.45E+0	3.45E+0	2.67E+0	2.98E+0	2.98E+0	1.86E+0	2.19E+0	2.19E+0	1.40E+0	1.79E+0	1.79E+0
	U-235	1.40E-1	1.40E-1	1.40E-1	1.06E-1	1.16E-1	1.16E-1	8.96E-2	1.00E-1	1.00E-1	6.23E-2	7.35E-2	7.35E-2	4.68E-2	6.00E-2	6.00E-2
	U-238	7.14E-1	7.14E-1	7.14E-1	5.41E-1	5.91E-1	5.91E-1	4.58E-1	5.11E-1	5.11E-1	3.19E-1	3.76E-1	3.76E-1	2.40E-1	3.07E-1	3.07E-1
XXB	U-234	4.16E+0	4.16E+0	4.16E+0	3.15E+0	3.15E+0	3.15E+0	2.67E+0	2.67E+0	2.67E+0	1.86E+0	1.86E+0	1.86E+0	1.40E+0	1.40E+0	1.40E+0
	U-235	1.40E-1	1.40E-1	1.40E-1	1.06E-1	1.06E-1	1.06E-1	8.96E-2	8.96E-2	8.96E-2	6.23E-2	6.23E-2	6.23E-2	4.68E-2	4.68E-2	4.68E-2
	U-238	7.14E-1	7.14E-1	7.14E-1	5.41E-1	5.41E-1	5.41E-1	4.58E-1	4.58E-1	4.58E-1	3.19E-1	3.19E-1	3.19E-1	2.40E-1	2.40E-1	2.40E-1
XXC	U-234	4.16E+0	4.16E+0	4.16E+0	3.15E+0	3.15E+0	3.15E+0	2.67E+0	2.67E+0	2.67E+0	1.86E+0	1.86E+0	1.86E+0	1.40E+0	1.40E+0	1.40E+0
	U-235	1.40E-1	1.40E-1	1.40E-1	1.06E-1	1.06E-1	1.06E-1	8.96E-2	8.96E-2	8.96E-2	6.23E-2	6.23E-2	6.23E-2	4.68E-2	4.68E-2	4.68E-2
	U-238	7.14E-1	7.14E-1	7.14E-1	5.41E-1	5.41E-1	5.41E-1	4.58E-1	4.58E-1	4.58E-1	3.19E-1	3.19E-1	3.19E-1	2.40E-1	2.40E-1	2.40E-1
XXIA	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0
XXIB	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0
XXIC	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0

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 ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		.10			.50			1.00			3.00			5.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XXII	Ra-226	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.75E+0	3.75E+0	3.75E+0
	Th-232	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.27E+1	2.27E+1	2.27E+1	2.27E+1
	U-234	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1
	U-235	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1
	U-238	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1

09-19-94 1:52p
Table M-94. ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	3.30E+1	3.30E+1	3.30E+1	3.18E+1	3.18E+1	3.18E+1	3.01E+1	3.01E+1	3.01E+1	2.57E+1	2.57E+1	2.57E+1	2.45E+1	2.45E+1	2.45E+1
II	Ra-226	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2
	Th-230	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.70E+2	1.71E+2	1.71E+2	1.69E+2	1.69E+2	1.69E+2	1.68E+2	1.69E+2	1.69E+2
	Ra-228	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.52E+0	8.53E+0	8.53E+0	8.51E+0	8.51E+0	8.51E+0	8.50E+0	8.51E+0	8.51E+0
	Th-232	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.05E+0	3.05E+0	3.05E+0	3.04E+0	3.05E+0	3.05E+0	3.04E+0	3.05E+0	3.05E+0
	U-234	2.23E+2	2.24E+2	2.24E+2	2.22E+2	2.23E+2	2.23E+2	2.19E+2	2.22E+2	2.22E+2	2.17E+2	2.18E+2	2.18E+2	2.17E+2	2.17E+2	2.17E+2
	U-235	3.62E+0	3.62E+0	3.62E+0	3.62E+0	3.62E+0	3.62E+0	3.61E+0	3.61E+0	3.61E+0	3.59E+0	3.60E+0	3.60E+0	3.59E+0	3.59E+0	3.59E+0
	U-238	9.83E+1	9.84E+1	9.84E+1	9.82E+1	9.83E+1	9.83E+1	9.81E+1	9.82E+1	9.82E+1	9.79E+1	9.79E+1	9.79E+1	9.79E+1	9.79E+1	9.79E+1
III	Cs-137	1.22E+1	1.22E+1	1.22E+1	1.12E+1	1.12E+1	1.12E+1	1.02E+1	1.02E+1	1.02E+1	4.70E+0	4.70E+0	4.70E+0	3.04E+0	3.04E+0	3.04E+0
IV	U-234	3.28E+1	3.28E+1	3.28E+1	3.23E+1	3.23E+1	3.23E+1	3.14E+1	3.14E+1	3.14E+1	2.66E+1	2.66E+1	2.66E+1	2.42E+1	2.42E+1	2.42E+1
	U-235	1.54E+0	1.54E+0	1.54E+0	1.52E+0	1.52E+0	1.52E+0	1.47E+0	1.47E+0	1.47E+0	1.25E+0	1.25E+0	1.25E+0	1.14E+0	1.14E+0	1.14E+0
	U-238	3.28E+1	3.28E+1	3.28E+1	3.23E+1	3.23E+1	3.23E+1	3.14E+1	3.14E+1	3.14E+1	2.66E+1	2.66E+1	2.66E+1	2.42E+1	2.42E+1	2.42E+1
V	Cs-137	9.46E+2	9.46E+2	9.46E+2	9.36E+2	9.36E+2	9.36E+2	9.18E+2	9.18E+2	9.18E+2	8.26E+2	8.26E+2	8.26E+2	7.80E+2	7.80E+2	7.80E+2
VI	Cs-137	4.79E+1	4.79E+1	4.79E+1	4.75E+1	4.75E+1	4.75E+1	4.70E+1	4.70E+1	4.70E+1	4.46E+1	4.46E+1	4.46E+1	4.34E+1	4.34E+1	4.34E+1
	U-234	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.83E+2	6.83E+2	6.83E+2	6.77E+2	6.77E+2	6.77E+2	6.74E+2	6.74E+2	6.74E+2
	U-235	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.18E+1	3.18E+1	3.18E+1	3.17E+1	3.17E+1	3.17E+1
	U-238	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.83E+2	6.83E+2	6.83E+2	6.77E+2	6.77E+2	6.77E+2	6.74E+2	6.74E+2	6.74E+2
VII	Pu-239	2.24E+3	2.24E+3	2.24E+3	2.06E+3	2.06E+3	2.06E+3	1.60E+3	1.60E+3	1.60E+3	6.79E+2	6.79E+2	6.79E+2	5.39E+2	5.39E+2	5.39E+2
	Am-241	3.75E+2	3.75E+2	3.75E+2	3.43E+2	3.43E+2	3.43E+2	2.66E+2	2.66E+2	2.66E+2	1.13E+2	1.13E+2	1.13E+2	9.00E+1	9.00E+1	9.00E+1
	Cs-137	3.81E+1	3.81E+1	3.81E+1	3.58E+1	3.58E+1	3.58E+1	2.80E+1	2.80E+1	2.80E+1	1.02E+1	1.02E+1	1.02E+1	7.72E+0	7.72E+0	7.72E+0
IX	Pu-239	7.56E+0	7.56E+0	7.56E+0	6.35E+0	6.35E+0	6.35E+0	5.19E+0	5.19E+0	5.19E+0	2.43E+0	2.43E+0	2.43E+0	1.70E+0	1.70E+0	1.70E+0
	Am-241	1.26E+0	1.26E+0	1.26E+0	1.06E+0	1.06E+0	1.06E+0	8.64E-1	8.64E-1	8.64E-1	4.05E-1	4.05E-1	4.05E-1	2.84E-1	2.84E-1	2.84E-1
X	Tc-99	2.09E+2	2.13E+2	2.13E+2	2.08E+2	2.12E+2	2.12E+2	2.05E+2	2.12E+2	2.12E+2	1.95E+2	2.04E+2	2.04E+2	1.90E+2	2.01E+2	2.01E+2
	U-238	4.77E+0	7.15E+0	7.15E+0	4.34E+0	6.77E+0	6.77E+0	3.81E+0	6.01E+0	6.01E+0	2.65E+0	3.71E+0	3.71E+0	2.29E+0	3.22E+0	3.22E+0
	U-234	4.77E+0	7.15E+0	7.15E+0	4.34E+0	6.77E+0	6.77E+0	3.81E+0	6.01E+0	6.01E+0	2.65E+0	3.71E+0	3.71E+0	2.29E+0	3.22E+0	3.22E+0
XII	Pu-239	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.58E+1	3.58E+1	3.58E+1	3.58E+1	3.58E+1	3.58E+1
	Am-241	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.97E+0	5.97E+0	5.97E+0	5.96E+0	5.96E+0	5.96E+0
XIII A	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIII B	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0

ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	Co-60	6.08E-2	6.08E-2	6.08E-2	6.07E-2	6.07E-2	6.07E-2	6.04E-2	6.04E-2	6.04E-2	5.95E-2	5.95E-2	5.95E-2	5.90E-2	5.90E-2	5.90E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.84E-2	4.84E-2	4.84E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2
XVIB	Co-60	6.08E-2	6.08E-2	6.08E-2	6.07E-2	6.07E-2	6.07E-2	6.04E-2	6.04E-2	6.04E-2	5.95E-2	5.95E-2	5.95E-2	5.90E-2	5.90E-2	5.90E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.84E-2	4.84E-2	4.84E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2
XVIC	Co-60	6.08E-2	6.08E-2	6.08E-2	6.07E-2	6.07E-2	6.07E-2	6.04E-2	6.04E-2	6.04E-2	5.95E-2	5.95E-2	5.95E-2	5.90E-2	5.90E-2	5.90E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.84E-2	4.84E-2	4.84E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2
XVIII A	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.76E-1	2.76E-1	2.76E-1	2.74E-1	2.74E-1	2.74E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.76E-1	2.76E-1	2.76E-1	2.74E-1	2.74E-1	2.74E-1
XVIII B	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.76E-1	2.76E-1	2.76E-1	2.74E-1	2.74E-1	2.74E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.76E-1	2.76E-1	2.76E-1	2.74E-1	2.74E-1	2.74E-1
XVIII C	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.76E-1	2.76E-1	2.76E-1	2.74E-1	2.74E-1	2.74E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.76E-1	2.76E-1	2.76E-1	2.74E-1	2.74E-1	2.74E-1
XXA	U-234	6.66E-1	1.08E+0	1.08E+0	2.76E-1	6.90E-1	6.90E-1	1.79E-1	2.45E-1	2.45E-1	1.43E-1	1.58E-1	1.58E-1	1.33E-1	1.48E-1	1.48E-1
	U-235	2.21E-2	3.59E-2	3.59E-2	8.96E-3	2.29E-2	2.29E-2	5.72E-3	7.94E-3	7.94E-3	4.50E-3	5.01E-3	5.01E-3	4.16E-3	4.68E-3	4.68E-3
	U-238	1.14E-1	1.85E-1	1.85E-1	4.72E-2	1.18E-1	1.18E-1	3.07E-2	4.21E-2	4.21E-2	2.46E-2	2.71E-2	2.71E-2	2.28E-2	2.55E-2	2.55E-2
XXB	U-234	6.66E-1	6.66E-1	6.66E-1	2.76E-1	2.76E-1	2.76E-1	1.79E-1	1.79E-1	1.79E-1	1.43E-1	1.43E-1	1.43E-1	1.33E-1	1.33E-1	1.33E-1
	U-235	2.21E-2	2.21E-2	2.21E-2	8.96E-3	8.96E-3	8.96E-3	5.72E-3	5.72E-3	5.72E-3	4.50E-3	4.50E-3	4.50E-3	4.16E-3	4.16E-3	4.16E-3
	U-238	1.14E-1	1.14E-1	1.14E-1	4.72E-2	4.72E-2	4.72E-2	3.07E-2	3.07E-2	3.07E-2	2.46E-2	2.46E-2	2.46E-2	2.28E-2	2.28E-2	2.28E-2
XXC	U-234	6.66E-1	6.66E-1	6.66E-1	2.76E-1	2.76E-1	2.76E-1	1.79E-1	1.79E-1	1.79E-1	1.43E-1	1.43E-1	1.43E-1	1.33E-1	1.33E-1	1.33E-1
	U-235	2.21E-2	2.21E-2	2.21E-2	8.96E-3	8.96E-3	8.96E-3	5.72E-3	5.72E-3	5.72E-3	4.50E-3	4.50E-3	4.50E-3	4.16E-3	4.16E-3	4.16E-3
	U-238	1.14E-1	1.14E-1	1.14E-1	4.72E-2	4.72E-2	4.72E-2	3.07E-2	3.07E-2	3.07E-2	2.46E-2	2.46E-2	2.46E-2	2.28E-2	2.28E-2	2.28E-2
XXIA	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.00E+0	1.00E+0	1.00E+0	9.70E-1	9.70E-1	9.70E-1	9.44E-1	9.44E-1	9.44E-1
XXIB	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.00E+0	1.00E+0	1.00E+0	9.70E-1	9.70E-1	9.70E-1	9.44E-1	9.44E-1	9.44E-1
XXIC	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.00E+0	1.00E+0	1.00E+0	9.70E-1	9.70E-1	9.70E-1	9.44E-1	9.44E-1	9.44E-1

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 ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XXII	Ra-226	3.74E+0	3.74E+0	3.74E+0	3.73E+0	3.73E+0	3.73E+0	3.71E+0	3.72E+0	3.72E+0	3.63E+0	3.64E+0	3.64E+0	3.59E+0	3.61E+0	3.61E+0
	Th-232	2.27E+1	2.27E+1	2.27E+1	2.26E+1	2.26E+1	2.26E+1	2.25E+1	2.25E+1	2.25E+1	2.20E+1	2.21E+1	2.21E+1	2.18E+1	2.19E+1	2.19E+1
	U-234	2.02E+1	2.02E+1	2.02E+1	2.01E+1	2.01E+1	2.01E+1	2.00E+1	2.01E+1	2.01E+1	1.95E+1	1.96E+1	1.96E+1	1.94E+1	1.94E+1	1.94E+1
	U-235	9.47E-1	9.47E-1	9.47E-1	9.47E-1	9.47E-1	9.47E-1	9.42E-1	9.44E-1	9.44E-1	9.19E-1	9.21E-1	9.21E-1	9.11E-1	9.13E-1	9.13E-1
	U-238	2.02E+1	2.02E+1	2.02E+1	2.01E+1	2.01E+1	2.01E+1	2.00E+1	2.01E+1	2.01E+1	1.95E+1	1.96E+1	1.96E+1	1.94E+1	1.94E+1	1.94E+1

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 Table M-95. ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		.10			.50			1.00			3.00			5.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	3.68E+1	3.68E+1	3.68E+1	3.59E+1	3.59E+1	3.59E+1	3.52E+1	3.52E+1	3.52E+1	3.34E+1	3.34E+1	3.34E+1	3.20E+1	3.20E+1	3.20E+1
II	Ra-226	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2
	Th-230	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2
	Ra-228	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0
	Th-232	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0
	U-234	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.24E+2	2.24E+2	2.24E+2	2.22E+2	2.23E+2	2.23E+2
	U-235	3.65E+0	3.65E+0	3.65E+0	3.63E+0	3.63E+0	3.63E+0	3.63E+0	3.63E+0	3.63E+0	3.62E+0	3.62E+0	3.62E+0	3.62E+0	3.62E+0	3.62E+0
	U-238	9.90E+1	9.90E+1	9.90E+1	9.87E+1	9.87E+1	9.87E+1	9.84E+1	9.84E+1	9.84E+1	9.83E+1	9.84E+1	9.84E+1	9.82E+1	9.83E+1	9.83E+1
III	Cs-137	1.54E+1	1.54E+1	1.54E+1	1.52E+1	1.52E+1	1.52E+1	1.49E+1	1.49E+1	1.49E+1	1.28E+1	1.28E+1	1.28E+1	1.13E+1	1.13E+1	1.13E+1
IV	U-234	3.49E+1	3.49E+1	3.49E+1	3.44E+1	3.44E+1	3.44E+1	3.40E+1	3.40E+1	3.40E+1	3.29E+1	3.29E+1	3.29E+1	3.23E+1	3.23E+1	3.23E+1
	U-235	1.64E+0	1.64E+0	1.64E+0	1.62E+0	1.62E+0	1.62E+0	1.60E+0	1.60E+0	1.60E+0	1.54E+0	1.54E+0	1.54E+0	1.52E+0	1.52E+0	1.52E+0
	U-238	3.49E+1	3.49E+1	3.49E+1	3.44E+1	3.44E+1	3.44E+1	3.40E+1	3.40E+1	3.40E+1	3.29E+1	3.29E+1	3.29E+1	3.23E+1	3.23E+1	3.23E+1
V	Cs-137	9.71E+2	9.71E+2	9.71E+2	9.68E+2	9.68E+2	9.68E+2	9.65E+2	9.65E+2	9.65E+2	9.51E+2	9.51E+2	9.51E+2	9.38E+2	9.38E+2	9.38E+2
VI	Cs-137	4.87E+1	4.87E+1	4.87E+1	4.86E+1	4.86E+1	4.86E+1	4.85E+1	4.85E+1	4.85E+1	4.80E+1	4.80E+1	4.80E+1	4.76E+1	4.76E+1	4.76E+1
	U-234	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2
	U-235	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1
	U-238	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2
VII	Pu-239	3.10E+3	3.10E+3	3.10E+3	2.81E+3	2.81E+3	2.81E+3	2.62E+3	2.62E+3	2.62E+3	2.24E+3	2.24E+3	2.24E+3	1.97E+3	1.97E+3	1.97E+3
	Am-241	5.19E+2	5.19E+2	5.19E+2	4.71E+2	4.71E+2	4.71E+2	4.39E+2	4.39E+2	4.39E+2	3.75E+2	3.75E+2	3.75E+2	3.29E+2	3.29E+2	3.29E+2
	Cs-137	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.81E+1	3.81E+1	3.81E+1	3.46E+1	3.46E+1	3.46E+1
IX	Pu-239	1.24E+1	1.24E+1	1.24E+1	1.09E+1	1.09E+1	1.09E+1	9.87E+0	9.87E+0	9.87E+0	7.51E+0	7.51E+0	7.51E+0	5.94E+0	5.94E+0	5.94E+0
	Am-241	2.07E+0	2.07E+0	2.07E+0	1.82E+0	1.82E+0	1.82E+0	1.64E+0	1.64E+0	1.64E+0	1.25E+0	1.25E+0	1.25E+0	9.90E-1	9.90E-1	9.90E-1
X	Tc-99	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.12E+2	2.13E+2	2.13E+2	2.10E+2	2.13E+2	2.13E+2	2.09E+2	2.13E+2	2.13E+2
	U-238	7.52E+0	7.57E+0	7.57E+0	6.93E+0	7.57E+0	7.57E+0	6.38E+0	7.55E+0	7.55E+0	5.14E+0	7.38E+0	7.38E+0	4.60E+0	7.10E+0	7.10E+0
	U-234	7.52E+0	7.57E+0	7.57E+0	6.93E+0	7.57E+0	7.57E+0	6.38E+0	7.55E+0	7.55E+0	5.14E+0	7.38E+0	7.38E+0	4.60E+0	7.10E+0	7.10E+0
XII	Pu-239	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1
	Am-241	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0
XIIIA	U-238	2.59E-2	2.59E-2	2.59E-2	1.54E-2	1.54E-2	1.54E-2	3.27E-3	3.27E-3	3.27E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	4.21E-4	4.21E-4	4.21E-4	2.50E-4	2.50E-4	2.50E-4	5.30E-5	5.30E-5	5.30E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	2.43E-3	2.43E-3	2.43E-3	1.45E-3	1.45E-3	1.45E-3	3.06E-4	3.06E-4	3.06E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	U-238	2.59E-2	2.59E-2	2.59E-2	1.54E-2	1.54E-2	1.54E-2	3.27E-3	3.27E-3	3.27E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	4.21E-4	4.21E-4	4.21E-4	2.50E-4	2.50E-4	2.50E-4	5.30E-5	5.30E-5	5.30E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	2.43E-3	2.43E-3	2.43E-3	1.45E-3	1.45E-3	1.45E-3	3.06E-4	3.06E-4	3.06E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0

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ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		.10			.50			1.00			3.00			5.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	2.59E-2	2.59E-2	2.59E-2	1.54E-2	1.54E-2	1.54E-2	3.27E-3	3.27E-3	3.27E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	4.21E-4	4.21E-4	4.21E-4	2.50E-4	2.50E-4	2.50E-4	5.30E-5	5.30E-5	5.30E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	2.43E-3	2.43E-3	2.43E-3	1.45E-3	1.45E-3	1.45E-3	3.06E-4	3.06E-4	3.06E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.09E-2	6.09E-2	6.09E-2	6.07E-2	6.07E-2	6.07E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2
XVIB	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.09E-2	6.09E-2	6.09E-2	6.07E-2	6.07E-2	6.07E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2
XVIC	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.09E-2	6.09E-2	6.09E-2	6.07E-2	6.07E-2	6.07E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2
XVIII A	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
XVIII B	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
XVIII C	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
XXA	U-234	3.32E+0	3.70E+0	3.70E+0	2.19E+0	2.61E+0	2.61E+0	1.62E+0	2.10E+0	2.10E+0	4.63E-1	1.06E+0	1.06E+0	1.96E-1	5.44E-1	5.44E-1
	U-235	1.12E-1	1.24E-1	1.24E-1	7.34E-2	8.75E-2	8.75E-2	5.43E-2	7.04E-2	7.04E-2	1.53E-2	3.53E-2	3.53E-2	6.27E-3	1.80E-2	1.80E-2
	U-238	5.70E-1	6.35E-1	6.35E-1	3.76E-1	4.47E-1	4.47E-1	2.78E-1	3.60E-1	3.60E-1	7.94E-2	1.81E-1	1.81E-1	3.36E-2	9.33E-2	9.33E-2
XXB	U-234	3.32E+0	3.59E+0	3.59E+0	2.19E+0	2.49E+0	2.49E+0	1.62E+0	1.98E+0	1.98E+0	4.63E-1	8.84E-1	8.84E-1	1.96E-1	3.67E-1	3.67E-1
	U-235	1.12E-1	1.21E-1	1.21E-1	7.34E-2	8.34E-2	8.34E-2	5.43E-2	6.62E-2	6.62E-2	1.53E-2	2.94E-2	2.94E-2	6.27E-3	1.20E-2	1.20E-2
	U-238	5.70E-1	6.16E-1	6.16E-1	3.76E-1	4.27E-1	4.27E-1	2.78E-1	3.39E-1	3.39E-1	7.94E-2	1.52E-1	1.52E-1	3.36E-2	6.29E-2	6.29E-2
XXC	U-234	3.32E+0	3.32E+0	3.32E+0	2.19E+0	2.19E+0	2.19E+0	1.62E+0	1.62E+0	1.62E+0	4.63E-1	4.63E-1	4.63E-1	1.96E-1	1.96E-1	1.96E-1
	U-235	1.12E-1	1.12E-1	1.12E-1	7.34E-2	7.34E-2	7.34E-2	5.43E-2	5.43E-2	5.43E-2	1.53E-2	1.53E-2	1.53E-2	6.27E-3	6.27E-3	6.27E-3
	U-238	5.70E-1	5.70E-1	5.70E-1	3.76E-1	3.76E-1	3.76E-1	2.78E-1	2.78E-1	2.78E-1	7.94E-2	7.94E-2	7.94E-2	3.36E-2	3.36E-2	3.36E-2
XXIA	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0
XXIB	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0
XXIC	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0

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 ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)																
		.10			.50			1.00			3.00			5.00				
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000		
XXII	Ra-226	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0		
	Th-232	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.27E+1	2.27E+1	2.27E+1	2.27E+1	2.27E+1	2.27E+1	2.26E+1	2.26E+1	2.26E+1
	U-234	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1
	U-235	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1
	U-238	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1

Table M-96. ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	2.97E+1	2.97E+1	2.97E+1	2.82E+1	2.82E+1	2.82E+1	2.60E+1	2.60E+1	2.60E+1	1.86E+1	1.86E+1	1.86E+1	1.62E+1	1.62E+1	1.62E+1
II	Ra-226	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2
	Th-230	1.69E+2	1.70E+2	1.70E+2	1.69E+2	1.69E+2	1.69E+2	1.69E+2	1.69E+2	1.69E+2	1.66E+2	1.67E+2	1.67E+2	1.65E+2	1.66E+2	1.66E+2
	Ra-228	8.52E+0	8.53E+0	8.53E+0	8.52E+0	8.52E+0	8.52E+0	8.51E+0	8.51E+0	8.51E+0	8.45E+0	8.47E+0	8.47E+0	8.42E+0	8.45E+0	8.45E+0
	Th-232	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.05E+0	3.00E+0	3.02E+0	3.02E+0	2.98E+0	3.00E+0	3.00E+0
	U-234	2.18E+2	2.21E+2	2.21E+2	2.18E+2	2.18E+2	2.18E+2	2.17E+2	2.18E+2	2.18E+2	2.15E+2	2.16E+2	2.16E+2	2.14E+2	2.15E+2	2.15E+2
	U-235	3.61E+0	3.61E+0	3.61E+0	3.60E+0	3.61E+0	3.61E+0	3.59E+0	3.60E+0	3.60E+0	3.55E+0	3.56E+0	3.56E+0	3.53E+0	3.54E+0	3.54E+0
	U-238	9.80E+1	9.81E+1	9.81E+1	9.80E+1	9.80E+1	9.80E+1	9.79E+1	9.79E+1	9.79E+1	9.75E+1	9.76E+1	9.76E+1	9.72E+1	9.74E+1	9.74E+1
III	Cs-137	9.82E+0	9.82E+0	9.82E+0	8.11E+0	8.11E+0	8.11E+0	5.15E+0	5.15E+0	5.15E+0	1.35E+0	1.35E+0	1.35E+0	7.62E-1	7.62E-1	7.62E-1
IV	U-234	3.08E+1	3.08E+1	3.08E+1	2.93E+1	2.93E+1	2.93E+1	2.64E+1	2.64E+1	2.64E+1	1.17E+1	1.17E+1	1.17E+1	4.36E+0	4.36E+0	4.36E+0
	U-235	1.45E+0	1.45E+0	1.45E+0	1.38E+0	1.38E+0	1.38E+0	1.24E+0	1.24E+0	1.24E+0	5.50E-1	5.50E-1	5.50E-1	2.05E-1	2.05E-1	2.05E-1
	U-238	3.08E+1	3.08E+1	3.08E+1	2.93E+1	2.93E+1	2.93E+1	2.64E+1	2.64E+1	2.64E+1	1.17E+1	1.17E+1	1.17E+1	4.36E+0	4.36E+0	4.36E+0
V	Cs-137	9.12E+2	9.12E+2	9.12E+2	8.87E+2	8.87E+2	8.87E+2	8.36E+2	8.36E+2	8.36E+2	6.97E+2	6.97E+2	6.97E+2	6.64E+2	6.64E+2	6.64E+2
VI	Cs-137	4.68E+1	4.68E+1	4.68E+1	4.61E+1	4.61E+1	4.61E+1	4.48E+1	4.48E+1	4.48E+1	3.95E+1	3.95E+1	3.95E+1	3.78E+1	3.78E+1	3.78E+1
	U-234	6.83E+2	6.83E+2	6.83E+2	6.81E+2	6.81E+2	6.81E+2	6.78E+2	6.78E+2	6.78E+2	6.59E+2	6.59E+2	6.59E+2	6.52E+2	6.52E+2	6.52E+2
	U-235	3.21E+1	3.21E+1	3.21E+1	3.20E+1	3.20E+1	3.20E+1	3.19E+1	3.19E+1	3.19E+1	3.10E+1	3.10E+1	3.10E+1	3.07E+1	3.07E+1	3.07E+1
	U-238	6.83E+2	6.83E+2	6.83E+2	6.81E+2	6.81E+2	6.81E+2	6.78E+2	6.78E+2	6.78E+2	6.59E+2	6.59E+2	6.59E+2	6.52E+2	6.52E+2	6.52E+2
VII	Pu-239	1.33E+3	1.33E+3	1.33E+3	9.49E+2	9.49E+2	9.49E+2	6.31E+2	6.31E+2	6.31E+2	3.35E+0	3.35E+0	3.35E+0	.00E+0	.00E+0	.00E+0
	Am-241	2.22E+2	2.22E+2	2.22E+2	1.58E+2	1.58E+2	1.58E+2	1.05E+2	1.05E+2	1.05E+2	5.59E-1	5.59E-1	5.59E-1	.00E+0	.00E+0	.00E+0
	Cs-137	2.30E+1	2.30E+1	2.30E+1	1.54E+1	1.54E+1	1.54E+1	9.32E+0	9.32E+0	9.32E+0	1.19E-1	1.19E-1	1.19E-1	.00E+0	.00E+0	.00E+0
IX	Pu-239	4.33E+0	4.33E+0	4.33E+0	3.13E+0	3.13E+0	3.13E+0	2.14E+0	2.14E+0	2.14E+0	3.88E-1	3.88E-1	3.88E-1	.00E+0	.00E+0	.00E+0
	Am-241	7.22E-1	7.22E-1	7.22E-1	5.21E-1	5.21E-1	5.21E-1	3.56E-1	3.56E-1	3.56E-1	6.46E-2	6.46E-2	6.46E-2	.00E+0	.00E+0	.00E+0
X	Tc-99	2.06E+2	2.12E+2	2.12E+2	2.03E+2	2.11E+2	2.11E+2	1.98E+2	2.08E+2	2.08E+2	1.80E+2	1.92E+2	1.92E+2	1.75E+2	1.85E+2	1.85E+2
	U-238	3.90E+0	6.27E+0	6.27E+0	3.47E+0	5.47E+0	5.47E+0	2.98E+0	4.34E+0	4.34E+0	1.74E+0	2.42E+0	2.42E+0	1.49E+0	1.99E+0	1.99E+0
	U-234	3.90E+0	6.27E+0	6.27E+0	3.47E+0	5.47E+0	5.47E+0	2.98E+0	4.34E+0	4.34E+0	1.74E+0	2.42E+0	2.42E+0	1.49E+0	1.99E+0	1.99E+0
XII	Pu-239	3.58E+1	3.58E+1	3.58E+1	3.58E+1	3.58E+1	3.58E+1	3.57E+1	3.57E+1	3.57E+1	3.55E+1	3.55E+1	3.55E+1	3.54E+1	3.54E+1	3.54E+1
	Am-241	5.97E+0	5.97E+0	5.97E+0	5.97E+0	5.97E+0	5.97E+0	5.96E+0	5.96E+0	5.96E+0	5.91E+0	5.91E+0	5.91E+0	5.90E+0	5.90E+0	5.90E+0
XIIIA	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0

09-19-94 1:52p
 ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	Co-60	6.03E-2	6.03E-2	6.03E-2	6.00E-2	6.00E-2	6.00E-2	5.96E-2	5.96E-2	5.96E-2	5.57E-2	5.57E-2	5.57E-2	5.35E-2	5.35E-2	5.35E-2
	Cs-137	4.84E-2	4.84E-2	4.84E-2	4.83E-2	4.83E-2	4.83E-2	4.83E-2	4.83E-2	4.83E-2	4.76E-2	4.76E-2	4.76E-2	4.72E-2	4.72E-2	4.72E-2
XVIB	Co-60	6.03E-2	6.03E-2	6.03E-2	6.00E-2	6.00E-2	6.00E-2	5.96E-2	5.96E-2	5.96E-2	5.57E-2	5.57E-2	5.57E-2	5.35E-2	5.35E-2	5.35E-2
	Cs-137	4.84E-2	4.84E-2	4.84E-2	4.83E-2	4.83E-2	4.83E-2	4.83E-2	4.83E-2	4.83E-2	4.76E-2	4.76E-2	4.76E-2	4.72E-2	4.72E-2	4.72E-2
XVIC	Co-60	6.03E-2	6.03E-2	6.03E-2	6.00E-2	6.00E-2	6.00E-2	5.96E-2	5.96E-2	5.96E-2	5.57E-2	5.57E-2	5.57E-2	5.35E-2	5.35E-2	5.35E-2
	Cs-137	4.84E-2	4.84E-2	4.84E-2	4.83E-2	4.83E-2	4.83E-2	4.83E-2	4.83E-2	4.83E-2	4.76E-2	4.76E-2	4.76E-2	4.72E-2	4.72E-2	4.72E-2
XVIII A	Cs-137	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.76E-1	2.76E-1	2.76E-1	2.63E-1	2.63E-1	2.63E-1	2.57E-1	2.57E-1	2.57E-1
	Sr-90	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.76E-1	2.76E-1	2.76E-1	2.63E-1	2.63E-1	2.63E-1	2.57E-1	2.57E-1	2.57E-1
XVIII B	Cs-137	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.76E-1	2.76E-1	2.76E-1	2.63E-1	2.63E-1	2.63E-1	2.57E-1	2.57E-1	2.57E-1
	Sr-90	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.76E-1	2.76E-1	2.76E-1	2.63E-1	2.63E-1	2.63E-1	2.57E-1	2.57E-1	2.57E-1
XVIII C	Cs-137	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.76E-1	2.76E-1	2.76E-1	2.63E-1	2.63E-1	2.63E-1	2.57E-1	2.57E-1	2.57E-1
	Sr-90	2.79E-1	2.79E-1	2.79E-1	2.78E-1	2.78E-1	2.78E-1	2.76E-1	2.76E-1	2.76E-1	2.63E-1	2.63E-1	2.63E-1	2.57E-1	2.57E-1	2.57E-1
XXA	U-234	1.65E-1	1.83E-1	1.83E-1	1.52E-1	1.71E-1	1.71E-1	1.34E-1	1.54E-1	1.54E-1	9.28E-2	1.14E-1	1.14E-1	7.85E-2	1.04E-1	1.04E-1
	U-235	5.25E-3	5.86E-3	5.86E-3	4.79E-3	5.43E-3	5.43E-3	4.19E-3	4.87E-3	4.87E-3	2.81E-3	3.53E-3	3.53E-3	2.35E-3	3.17E-3	3.17E-3
	U-238	2.84E-2	3.14E-2	3.14E-2	2.60E-2	2.93E-2	2.93E-2	2.30E-2	2.64E-2	2.64E-2	1.59E-2	1.96E-2	1.96E-2	1.35E-2	1.78E-2	1.78E-2
XXB	U-234	1.65E-1	1.78E-1	1.78E-1	1.52E-1	1.66E-1	1.66E-1	1.34E-1	1.48E-1	1.48E-1	9.28E-2	1.08E-1	1.08E-1	7.85E-2	9.78E-2	9.78E-2
	U-235	5.25E-3	5.68E-3	5.68E-3	4.79E-3	5.25E-3	5.25E-3	4.19E-3	4.68E-3	4.68E-3	2.81E-3	3.31E-3	3.31E-3	2.35E-3	2.98E-3	2.98E-3
	U-238	2.84E-2	3.06E-2	3.06E-2	2.60E-2	2.84E-2	2.84E-2	2.30E-2	2.54E-2	2.54E-2	1.59E-2	1.85E-2	1.85E-2	1.35E-2	1.68E-2	1.68E-2
XXC	U-234	1.65E-1	1.65E-1	1.65E-1	1.52E-1	1.52E-1	1.52E-1	1.34E-1	1.34E-1	1.34E-1	9.28E-2	9.28E-2	9.28E-2	7.85E-2	7.85E-2	7.85E-2
	U-235	5.25E-3	5.25E-3	5.25E-3	4.79E-3	4.79E-3	4.79E-3	4.19E-3	4.19E-3	4.19E-3	2.81E-3	2.81E-3	2.81E-3	2.35E-3	2.35E-3	2.35E-3
	U-238	2.84E-2	2.84E-2	2.84E-2	2.60E-2	2.60E-2	2.60E-2	2.30E-2	2.30E-2	2.30E-2	1.59E-2	1.59E-2	1.59E-2	1.35E-2	1.35E-2	1.35E-2
XXIA	Th-232	9.96E-1	9.96E-1	9.96E-1	9.87E-1	9.87E-1	9.87E-1	9.69E-1	9.69E-1	9.69E-1	8.14E-1	8.14E-1	8.14E-1	7.58E-1	7.58E-1	7.58E-1
XXIB	Th-232	9.96E-1	9.96E-1	9.96E-1	9.87E-1	9.87E-1	9.87E-1	9.69E-1	9.69E-1	9.69E-1	8.14E-1	8.14E-1	8.14E-1	7.58E-1	7.58E-1	7.58E-1
XXIC	Th-232	9.96E-1	9.96E-1	9.96E-1	9.87E-1	9.87E-1	9.87E-1	9.69E-1	9.69E-1	9.69E-1	8.14E-1	8.14E-1	8.14E-1	7.58E-1	7.58E-1	7.58E-1

09-19-94 1:52p
 ACTIVITIES REMOVED (Ci)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XXII	Ra-226	3.70E+0	3.71E+0	3.71E+0	3.67E+0	3.69E+0	3.69E+0	3.64E+0	3.65E+0	3.65E+0	3.44E+0	3.46E+0	3.46E+0	3.38E+0	3.41E+0	3.41E+0
	Th-232	2.25E+1	2.25E+1	2.25E+1	2.23E+1	2.24E+1	2.24E+1	2.21E+1	2.22E+1	2.22E+1	2.10E+1	2.11E+1	2.11E+1	2.07E+1	2.08E+1	2.08E+1
	U-234	2.00E+1	2.01E+1	2.01E+1	1.98E+1	1.99E+1	1.99E+1	1.96E+1	1.96E+1	1.96E+1	1.88E+1	1.89E+1	1.89E+1	1.85E+1	1.86E+1	1.86E+1
	U-235	9.39E-1	9.43E-1	9.43E-1	9.29E-1	9.34E-1	9.34E-1	9.19E-1	9.23E-1	9.23E-1	8.83E-1	8.87E-1	8.87E-1	8.71E-1	8.76E-1	8.76E-1
	U-238	2.00E+1	2.01E+1	2.01E+1	1.98E+1	1.99E+1	1.99E+1	1.96E+1	1.96E+1	1.96E+1	1.88E+1	1.89E+1	1.89E+1	1.85E+1	1.86E+1	1.86E+1

09-19-94 1:52p
 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		.10			.50			1.00			3.00			5.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
II-6	Ra-226	.00E+0	.00E+0	.00E+0	1.12E-2	1.07E-2	1.07E-2	2.53E-2	2.45E-2	2.45E-2	6.46E-2	6.43E-2	6.43E-2	6.83E-2	6.74E-2	6.74E-2
	Th-230	1.61E-2	1.48E-2	1.48E-2	2.47E-2	2.43E-2	2.43E-2	3.40E-2	3.35E-2	3.35E-2	6.03E-2	6.01E-2	6.01E-2	1.36E+0	8.47E-1	8.47E-1
	Ra-228	.00E+0	.00E+0	.00E+0	2.73E-3	2.52E-3	2.52E-3	7.93E-3	7.65E-3	7.65E-3	2.26E-2	2.24E-2	2.24E-2	2.39E-2	2.36E-2	2.36E-2
	Th-232	2.01E-3	1.66E-3	1.66E-3	4.26E-3	4.16E-3	4.16E-3	6.72E-3	6.59E-3	6.59E-3	1.36E-2	1.36E-2	1.36E-2	1.43E-2	1.41E-2	1.41E-2
	U-234	1.98E-2	1.83E-2	1.83E-2	3.01E-2	2.97E-2	2.97E-2	4.13E-2	4.07E-2	4.07E-2	6.23E+0	5.71E+0	5.71E+0	1.20E+1	1.06E+1	1.06E+1
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-238	3.02E-2	2.80E-2	2.80E-2	4.39E-2	4.33E-2	4.33E-2	5.76E-2	5.69E-2	5.69E-2	1.08E+0	1.07E+0	1.07E+0	1.24E+0	1.20E+0	1.20E+0
II-7	U-234	1.14E+0	1.14E+0	1.14E+0	5.70E+0	5.70E+0	5.70E+0	1.14E+1	1.14E+1	1.14E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1
	U-235	5.36E-2	5.36E-2	5.36E-2	2.68E-1	2.68E-1	2.68E-1	5.36E-1	5.36E-1	5.36E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1
	U-238	1.14E+0	1.14E+0	1.14E+0	5.70E+0	5.70E+0	5.70E+0	1.14E+1	1.14E+1	1.14E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1
III	Cs-137	8.14E-2	8.14E-2	8.14E-2	4.07E-1	4.07E-1	4.07E-1	8.13E-1	8.13E-1	8.13E-1	2.44E+0	2.44E+0	2.44E+0	4.07E+0	4.07E+0	4.07E+0
IV	U-234	6.20E-1	6.20E-1	6.20E-1	3.09E+0	3.09E+0	3.09E+0	6.19E+0	6.19E+0	6.19E+0	1.86E+1	1.86E+1	1.86E+1	3.10E+1	3.10E+1	3.10E+1
	U-235	2.91E-2	2.91E-2	2.91E-2	1.45E-1	1.45E-1	1.45E-1	2.91E-1	2.91E-1	2.91E-1	8.73E-1	8.73E-1	8.73E-1	1.45E+0	1.45E+0	1.45E+0
	U-238	6.20E-1	6.20E-1	6.20E-1	3.09E+0	3.09E+0	3.09E+0	6.19E+0	6.19E+0	6.19E+0	1.86E+1	1.86E+1	1.86E+1	3.10E+1	3.10E+1	3.10E+1
V	Cs-137	8.13E-2	8.13E-2	8.13E-2	4.07E-1	4.07E-1	4.07E-1	8.13E-1	8.13E-1	8.13E-1	2.44E+0	2.44E+0	2.44E+0	4.07E+0	4.07E+0	4.07E+0
VI	Cs-137	8.12E-2	8.12E-2	8.12E-2	4.06E-1	4.06E-1	4.06E-1	8.11E-1	8.11E-1	8.11E-1	2.41E+0	2.41E+0	2.41E+0	3.98E+0	3.98E+0	3.98E+0
	U-234	1.09E-4	1.09E-4	1.09E-4	4.93E-3	4.93E-3	4.93E-3	2.54E-2	2.54E-2	2.54E-2	3.37E-1	3.37E-1	3.37E-1	1.10E+0	1.10E+0	1.10E+0
	U-235	5.11E-6	5.11E-6	5.11E-6	2.32E-4	2.32E-4	2.32E-4	1.19E-3	1.19E-3	1.19E-3	1.58E-2	1.58E-2	1.58E-2	5.19E-2	5.19E-2	5.19E-2
	U-238	1.09E-4	1.09E-4	1.09E-4	4.93E-3	4.93E-3	4.93E-3	2.54E-2	2.54E-2	2.54E-2	3.37E-1	3.37E-1	3.37E-1	1.10E+0	1.10E+0	1.10E+0
VII	Pu-239	2.00E+0	2.00E+0	2.00E+0	3.73E+0	3.73E+0	3.73E+0	7.46E+0	7.46E+0	7.46E+0	2.24E+1	2.24E+1	2.24E+1	3.73E+1	3.73E+1	3.73E+1
	Am-241	3.30E-1	3.30E-1	3.30E-1	6.23E-1	6.23E-1	6.23E-1	1.26E+0	1.26E+0	1.26E+0	3.77E+0	3.77E+0	3.77E+0	6.25E+0	6.25E+0	6.25E+0
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
IX	Pu-239	8.99E-1	8.99E-1	8.99E-1	4.49E+0	4.49E+0	4.49E+0	8.99E+0	8.99E+0	8.99E+0	2.70E+1	2.70E+1	2.70E+1	4.50E+1	4.50E+1	4.50E+1
	Am-241	1.50E-1	1.50E-1	1.50E-1	7.49E-1	7.49E-1	7.49E-1	1.50E+0	1.50E+0	1.50E+0	4.50E+0	4.50E+0	4.50E+0	7.49E+0	7.49E+0	7.49E+0
X	Tc-99	1.33E-1	7.39E-2	7.39E-2	6.09E-1	9.22E-2	9.22E-2	1.42E+0	1.22E-1	1.22E-1	5.50E+0	3.32E-1	3.32E-1	1.00E+1	4.85E-1	4.85E-1
	U-238	2.37E-1	1.54E-2	1.54E-2	1.28E+0	9.94E-2	9.94E-2	2.21E+0	2.04E-1	2.04E-1	4.41E+0	6.14E-1	6.14E-1	5.81E+0	1.03E+0	1.03E+0
	U-234	2.37E-1	1.54E-2	1.54E-2	1.28E+0	9.94E-2	9.94E-2	2.21E+0	2.04E-1	2.04E-1	4.41E+0	6.14E-1	6.14E-1	5.81E+0	1.03E+0	1.03E+0
XII	Pu-239	2.25E-1	2.25E-1	2.25E-1	1.13E+0	1.13E+0	1.13E+0	2.25E+0	2.25E+0	2.25E+0	6.75E+0	6.75E+0	6.75E+0	1.12E+1	1.12E+1	1.12E+1
	Am-241	3.75E-2	3.75E-2	3.75E-2	1.88E-1	1.88E-1	1.88E-1	3.75E-1	3.75E-1	3.75E-1	1.12E+0	1.12E+0	1.12E+0	1.87E+0	1.87E+0	1.87E+0
XIII A	U-238	1.20E+0	1.20E+0	1.20E+0	6.00E+0	6.00E+0	6.00E+0	1.20E+1	1.20E+1	1.20E+1	3.60E+1	3.60E+1	3.60E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	1.92E-2	1.92E-2	1.92E-2	9.70E-2	9.70E-2	9.70E-2	1.98E-1	1.98E-1	1.98E-1	5.84E-1	5.84E-1	5.84E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	1.13E-1	1.13E-1	1.13E-1	5.62E-1	5.62E-1	5.62E-1	1.12E+0	1.12E+0	1.12E+0	3.37E+0	3.37E+0	3.37E+0	3.69E+0	3.69E+0	3.69E+0
XIII B	U-238	1.20E+0	1.20E+0	1.20E+0	6.00E+0	6.00E+0	6.00E+0	1.20E+1	1.20E+1	1.20E+1	3.60E+1	3.60E+1	3.60E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	1.92E-2	1.92E-2	1.92E-2	9.70E-2	9.70E-2	9.70E-2	1.98E-1	1.98E-1	1.98E-1	5.84E-1	5.84E-1	5.84E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	1.13E-1	1.13E-1	1.13E-1	5.62E-1	5.62E-1	5.62E-1	1.12E+0	1.12E+0	1.12E+0	3.37E+0	3.37E+0	3.37E+0	3.69E+0	3.69E+0	3.69E+0

MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		.10			.50			1.00			3.00			5.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIIC	U-238	1.20E+0	1.20E+0	1.20E+0	6.00E+0	6.00E+0	6.00E+0	1.20E+1	1.20E+1	1.20E+1	3.60E+1	3.60E+1	3.60E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	1.92E-2	1.92E-2	1.92E-2	9.70E-2	9.70E-2	9.70E-2	1.98E-1	1.98E-1	1.98E-1	5.84E-1	5.84E-1	5.84E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	1.13E-1	1.13E-1	1.13E-1	5.62E-1	5.62E-1	5.62E-1	1.12E+0	1.12E+0	1.12E+0	3.37E+0	3.37E+0	3.37E+0	3.69E+0	3.69E+0	3.69E+0
XVIA	Co-60	1.07E-2	1.07E-2	1.07E-2	5.36E-2	5.36E-2	5.36E-2	1.07E-1	1.07E-1	1.07E-1	3.22E-1	3.22E-1	3.22E-1	5.36E-1	5.36E-1	5.36E-1
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIB	Co-60	1.07E-2	1.07E-2	1.07E-2	5.36E-2	5.36E-2	5.36E-2	1.07E-1	1.07E-1	1.07E-1	3.22E-1	3.22E-1	3.22E-1	5.36E-1	5.36E-1	5.36E-1
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIC	Co-60	1.07E-2	1.07E-2	1.07E-2	5.36E-2	5.36E-2	5.36E-2	1.07E-1	1.07E-1	1.07E-1	3.22E-1	3.22E-1	3.22E-1	5.36E-1	5.36E-1	5.36E-1
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIII A	Cs-137	4.05E-2	4.05E-2	4.05E-2	2.02E-1	2.02E-1	2.02E-1	4.05E-1	4.05E-1	4.05E-1	1.21E+0	1.21E+0	1.21E+0	2.02E+0	2.02E+0	2.02E+0
	Sr-90	4.05E-2	4.05E-2	4.05E-2	2.02E-1	2.02E-1	2.02E-1	4.05E-1	4.05E-1	4.05E-1	1.21E+0	1.21E+0	1.21E+0	2.02E+0	2.02E+0	2.02E+0
XVIII B	Cs-137	4.05E-2	4.05E-2	4.05E-2	2.02E-1	2.02E-1	2.02E-1	4.05E-1	4.05E-1	4.05E-1	1.21E+0	1.21E+0	1.21E+0	2.02E+0	2.02E+0	2.02E+0
	Sr-90	4.05E-2	4.05E-2	4.05E-2	2.02E-1	2.02E-1	2.02E-1	4.05E-1	4.05E-1	4.05E-1	1.21E+0	1.21E+0	1.21E+0	2.02E+0	2.02E+0	2.02E+0
XVIII C	Cs-137	4.05E-2	4.05E-2	4.05E-2	2.02E-1	2.02E-1	2.02E-1	4.05E-1	4.05E-1	4.05E-1	1.21E+0	1.21E+0	1.21E+0	2.02E+0	2.02E+0	2.02E+0
	Sr-90	4.05E-2	4.05E-2	4.05E-2	2.02E-1	2.02E-1	2.02E-1	4.05E-1	4.05E-1	4.05E-1	1.21E+0	1.21E+0	1.21E+0	2.02E+0	2.02E+0	2.02E+0
XXA	U-234	8.30E-1	8.30E-1	8.30E-1	3.97E+0	2.56E+0	2.56E+0	7.93E+0	5.12E+0	5.12E+0	2.38E+1	1.54E+1	1.54E+1	3.97E+1	2.56E+1	2.56E+1
	U-235	2.79E-2	2.79E-2	2.79E-2	1.34E-1	8.62E-2	8.62E-2	2.67E-1	1.72E-1	1.72E-1	8.01E-1	5.17E-1	5.17E-1	1.34E+0	8.62E-1	8.62E-1
	U-238	1.42E-1	1.42E-1	1.42E-1	6.80E-1	4.39E-1	4.39E-1	1.36E+0	8.78E-1	8.78E-1	4.08E+0	2.64E+0	2.64E+0	6.80E+0	4.39E+0	4.39E+0
XXB	U-234	8.30E-1	8.30E-1	8.30E-1	3.97E+0	3.97E+0	3.97E+0	7.93E+0	7.93E+0	7.93E+0	2.38E+1	2.38E+1	2.38E+1	3.97E+1	3.97E+1	3.97E+1
	U-235	2.79E-2	2.79E-2	2.79E-2	1.34E-1	1.34E-1	1.34E-1	2.67E-1	2.67E-1	2.67E-1	8.01E-1	8.01E-1	8.01E-1	1.34E+0	1.34E+0	1.34E+0
	U-238	1.42E-1	1.42E-1	1.42E-1	6.80E-1	6.80E-1	6.80E-1	1.36E+0	1.36E+0	1.36E+0	4.08E+0	4.08E+0	4.08E+0	6.80E+0	6.80E+0	6.80E+0
XXC	U-234	8.30E-1	8.30E-1	8.30E-1	3.97E+0	3.97E+0	3.97E+0	7.93E+0	7.93E+0	7.93E+0	2.38E+1	2.38E+1	2.38E+1	3.97E+1	3.97E+1	3.97E+1
	U-235	2.79E-2	2.79E-2	2.79E-2	1.34E-1	1.34E-1	1.34E-1	2.67E-1	2.67E-1	2.67E-1	8.01E-1	8.01E-1	8.01E-1	1.34E+0	1.34E+0	1.34E+0
	U-238	1.42E-1	1.42E-1	1.42E-1	6.80E-1	6.80E-1	6.80E-1	1.36E+0	1.36E+0	1.36E+0	4.08E+0	4.08E+0	4.08E+0	6.80E+0	6.80E+0	6.80E+0
XXIA	Th-232	7.28E-3	7.28E-3	7.28E-3	3.64E-2	3.64E-2	3.64E-2	7.28E-2	7.28E-2	7.28E-2	2.18E-1	2.18E-1	2.18E-1	3.64E-1	3.64E-1	3.64E-1
XXIB	Th-232	7.28E-3	7.28E-3	7.28E-3	3.64E-2	3.64E-2	3.64E-2	7.28E-2	7.28E-2	7.28E-2	2.18E-1	2.18E-1	2.18E-1	3.64E-1	3.64E-1	3.64E-1
XXIC	Th-232	7.28E-3	7.28E-3	7.28E-3	3.64E-2	3.64E-2	3.64E-2	7.28E-2	7.28E-2	7.28E-2	2.18E-1	2.18E-1	2.18E-1	3.64E-1	3.64E-1	3.64E-1
XXII	Ra-226	4.85E-4	4.86E-4	4.86E-4	2.42E-3	2.42E-3	2.42E-3	4.84E-3	4.84E-3	4.84E-3	1.45E-2	1.45E-2	1.45E-2	2.41E-2	2.40E-2	2.40E-2
	Th-232	2.38E-3	2.38E-3	2.38E-3	1.20E-2	1.20E-2	1.20E-2	2.40E-2	2.40E-2	2.40E-2	7.20E-2	7.19E-2	7.19E-2	1.20E-1	1.19E-1	1.19E-1
	U-234	3.87E-8	3.88E-8	3.88E-8	5.42E-6	5.42E-6	5.42E-6	4.55E-5	4.55E-5	4.55E-5	1.32E-3	1.32E-3	1.32E-3	6.23E-3	6.23E-3	6.23E-3
	U-235	1.82E-9	1.82E-9	1.82E-9	2.55E-7	2.55E-7	2.55E-7	2.14E-6	2.14E-6	2.14E-6	6.23E-5	6.19E-5	6.19E-5	2.98E-4	2.93E-4	2.93E-4
	U-238	3.87E-8	3.88E-8	3.88E-8	5.42E-6	5.42E-6	5.42E-6	4.55E-5	4.55E-5	4.55E-5	1.32E-3	1.32E-3	1.32E-3	6.33E-3	6.23E-3	6.23E-3

MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
II-6	Ra-226	7.40E-2	7.08E-2	7.08E-2	7.97E-2	7.46E-2	7.46E-2	9.04E-2	8.19E-2	8.19E-2	1.80E+0	1.27E+0	1.27E+0	2.72E+0	2.18E+0	2.18E+0
	Th-230	5.09E+0	3.16E+0	3.16E+0	8.51E+0	5.43E+0	5.43E+0	1.49E+1	9.81E+0	9.81E+0	1.75E+1	1.73E+1	1.73E+1	1.79E+1	1.77E+1	1.77E+1
	Ra-228	2.60E-2	2.49E-2	2.49E-2	2.82E-2	2.63E-2	2.63E-2	1.48E-1	2.90E-2	2.90E-2	2.94E-1	2.81E-1	2.81E-1	3.15E-1	3.03E-1	3.03E-1
	Th-232	1.53E-2	1.47E-2	1.47E-2	1.63E-2	1.54E-2	1.54E-2	1.82E-2	1.67E-2	1.67E-2	1.89E-2	1.89E-2	1.89E-2	1.91E-2	1.90E-2	1.90E-2
	U-234	2.11E+1	1.61E+1	1.61E+1	3.02E+1	2.21E+1	2.21E+1	4.30E+1	3.31E+1	3.31E+1	4.81E+1	4.77E+1	4.77E+1	4.89E+1	4.84E+1	4.84E+1
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
U-238	1.49E+0	1.36E+0	1.36E+0	1.74E+0	1.52E+0	1.52E+0	2.29E+0	1.85E+0	1.85E+0	2.52E+0	2.50E+0	2.50E+0	2.55E+0	2.53E+0	2.53E+0	
II-7	U-234	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1
	U-235	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1
	U-238	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1
III	Cs-137	8.13E+0	8.13E+0	8.13E+0	1.22E+1	1.22E+1	1.22E+1	2.03E+1	2.03E+1	2.03E+1	6.10E+1	6.10E+1	6.10E+1	8.13E+1	8.13E+1	8.13E+1
IV	U-234	6.19E+1	6.19E+1	6.19E+1	9.29E+1	9.29E+1	9.29E+1	1.55E+2	1.55E+2	1.55E+2	4.64E+2	4.64E+2	4.64E+2	6.19E+2	6.19E+2	6.19E+2
	U-235	2.91E+0	2.91E+0	2.91E+0	4.36E+0	4.36E+0	4.36E+0	7.27E+0	7.27E+0	7.27E+0	2.18E+1	2.18E+1	2.18E+1	2.91E+1	2.91E+1	2.91E+1
	U-238	6.19E+1	6.19E+1	6.19E+1	9.29E+1	9.29E+1	9.29E+1	1.55E+2	1.55E+2	1.55E+2	4.64E+2	4.64E+2	4.64E+2	6.19E+2	6.19E+2	6.19E+2
V	Cs-137	8.13E+0	8.13E+0	8.13E+0	1.22E+1	1.22E+1	1.22E+1	2.03E+1	2.03E+1	2.03E+1	6.10E+1	6.10E+1	6.10E+1	8.13E+1	8.13E+1	8.13E+1
VI	Cs-137	7.75E+0	7.75E+0	7.75E+0	1.13E+1	1.13E+1	1.13E+1	1.83E+1	1.83E+1	1.83E+1	5.08E+1	5.08E+1	5.08E+1	6.59E+1	6.59E+1	6.59E+1
	U-234	5.34E+0	5.34E+0	5.34E+0	1.30E+1	1.30E+1	1.30E+1	2.89E+1	2.89E+1	2.89E+1	1.43E+2	1.43E+2	1.43E+2	2.16E+2	2.16E+2	2.16E+2
	U-235	2.51E-1	2.51E-1	2.51E-1	6.11E-1	6.11E-1	6.11E-1	1.36E+0	1.36E+0	1.36E+0	6.74E+0	6.74E+0	6.74E+0	1.01E+1	1.01E+1	1.01E+1
	U-238	5.34E+0	5.34E+0	5.34E+0	1.30E+1	1.30E+1	1.30E+1	2.89E+1	2.89E+1	2.89E+1	1.43E+2	1.43E+2	1.43E+2	2.16E+2	2.16E+2	2.16E+2
VII	Pu-239	6.75E+1	6.75E+1	6.75E+1	9.77E+1	9.77E+1	9.77E+1	1.56E+2	1.56E+2	1.56E+2	4.68E+2	4.68E+2	4.68E+2	6.36E+2	6.36E+2	6.36E+2
	Am-241	1.14E+1	1.14E+1	1.14E+1	1.66E+1	1.66E+1	1.66E+1	2.59E+1	2.59E+1	2.59E+1	7.84E+1	7.84E+1	7.84E+1	1.06E+2	1.06E+2	1.06E+2
	Cs-137	6.80E-1	6.80E-1	6.80E-1	1.34E+0	1.34E+0	1.34E+0	2.95E+0	2.95E+0	2.95E+0	8.81E+0	8.81E+0	8.81E+0	1.06E+1	1.06E+1	1.06E+1
IX	Pu-239	8.99E+1	8.99E+1	8.99E+1	1.35E+2	1.35E+2	1.35E+2	2.25E+2	2.25E+2	2.25E+2	6.74E+2	6.74E+2	6.74E+2	8.99E+2	8.99E+2	8.99E+2
	Am-241	1.50E+1	1.50E+1	1.50E+1	2.25E+1	2.25E+1	2.25E+1	3.75E+1	3.75E+1	3.75E+1	1.12E+2	1.12E+2	1.12E+2	1.50E+2	1.50E+2	1.50E+2
X	Tc-99	2.23E+1	1.22E+0	1.22E+0	3.50E+1	2.86E+0	2.86E+0	6.07E+1	6.55E+0	6.55E+0	1.91E+2	6.64E+1	6.64E+1	2.56E+2	1.10E+2	1.10E+2
	U-238	7.67E+0	2.04E+0	2.04E+0	8.73E+0	2.98E+0	2.98E+0	1.04E+1	4.82E+0	4.82E+0	1.53E+1	1.07E+1	1.07E+1	1.76E+1	1.26E+1	1.26E+1
	U-234	7.67E+0	2.04E+0	2.04E+0	8.73E+0	2.98E+0	2.98E+0	1.04E+1	4.82E+0	4.82E+0	1.53E+1	1.07E+1	1.07E+1	1.76E+1	1.26E+1	1.26E+1
XII	Pu-239	2.25E+1	2.25E+1	2.25E+1	3.37E+1	3.37E+1	3.37E+1	5.62E+1	5.62E+1	5.62E+1	1.69E+2	1.69E+2	1.69E+2	2.25E+2	2.25E+2	2.25E+2
	Am-241	3.75E+0	3.75E+0	3.75E+0	5.62E+0	5.62E+0	5.62E+0	9.37E+0	9.37E+0	9.37E+0	2.81E+1	2.81E+1	2.81E+1	3.75E+1	3.75E+1	3.75E+1
XIII A	U-238	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0
XIII B	U-238	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0

09-19-94 1:52p
MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0
XVIA	Co-60	1.05E+0	1.05E+0	1.05E+0	1.54E+0	1.54E+0	1.54E+0	2.54E+0	2.54E+0	2.54E+0	7.74E+0	7.74E+0	7.74E+0	1.03E+1	1.03E+1	1.03E+1
	Cs-137	9.15E-2	9.15E-2	9.15E-2	3.09E-1	3.09E-1	3.09E-1	5.99E-1	5.99E-1	5.99E-1	1.28E+0	1.28E+0	1.28E+0	1.59E+0	1.59E+0	1.59E+0
XVIB	Co-60	1.05E+0	1.05E+0	1.05E+0	1.54E+0	1.54E+0	1.54E+0	2.54E+0	2.54E+0	2.54E+0	7.74E+0	7.74E+0	7.74E+0	1.03E+1	1.03E+1	1.03E+1
	Cs-137	9.15E-2	9.15E-2	9.15E-2	3.09E-1	3.09E-1	3.09E-1	5.99E-1	5.99E-1	5.99E-1	1.28E+0	1.28E+0	1.28E+0	1.59E+0	1.59E+0	1.59E+0
XVIC	Co-60	1.05E+0	1.05E+0	1.05E+0	1.54E+0	1.54E+0	1.54E+0	2.54E+0	2.54E+0	2.54E+0	7.74E+0	7.74E+0	7.74E+0	1.03E+1	1.03E+1	1.03E+1
	Cs-137	9.15E-2	9.15E-2	9.15E-2	3.09E-1	3.09E-1	3.09E-1	5.99E-1	5.99E-1	5.99E-1	1.28E+0	1.28E+0	1.28E+0	1.59E+0	1.59E+0	1.59E+0
XVIII A	Cs-137	4.05E+0	4.05E+0	4.05E+0	6.07E+0	6.07E+0	6.07E+0	1.01E+1	1.01E+1	1.01E+1	3.04E+1	3.04E+1	3.04E+1	4.05E+1	4.05E+1	4.05E+1
	Sr-90	4.05E+0	4.05E+0	4.05E+0	6.07E+0	6.07E+0	6.07E+0	1.01E+1	1.01E+1	1.01E+1	3.04E+1	3.04E+1	3.04E+1	4.05E+1	4.05E+1	4.05E+1
XVIII B	Cs-137	4.05E+0	4.05E+0	4.05E+0	6.07E+0	6.07E+0	6.07E+0	1.01E+1	1.01E+1	1.01E+1	3.04E+1	3.04E+1	3.04E+1	4.05E+1	4.05E+1	4.05E+1
	Sr-90	4.05E+0	4.05E+0	4.05E+0	6.07E+0	6.07E+0	6.07E+0	1.01E+1	1.01E+1	1.01E+1	3.04E+1	3.04E+1	3.04E+1	4.05E+1	4.05E+1	4.05E+1
XVIII C	Cs-137	4.05E+0	4.05E+0	4.05E+0	6.07E+0	6.07E+0	6.07E+0	1.01E+1	1.01E+1	1.01E+1	3.04E+1	3.04E+1	3.04E+1	4.05E+1	4.05E+1	4.05E+1
	Sr-90	4.05E+0	4.05E+0	4.05E+0	6.07E+0	6.07E+0	6.07E+0	1.01E+1	1.01E+1	1.01E+1	3.04E+1	3.04E+1	3.04E+1	4.05E+1	4.05E+1	4.05E+1
XXA	U-234	7.93E+1	5.12E+1	5.12E+1	1.19E+2	7.68E+1	7.68E+1	1.98E+2	1.28E+2	1.28E+2	5.95E+2	3.84E+2	3.84E+2	7.93E+2	5.12E+2	5.12E+2
	U-235	2.67E+0	1.72E+0	1.72E+0	4.01E+0	2.59E+0	2.59E+0	6.68E+0	4.31E+0	4.31E+0	2.00E+1	1.29E+1	1.29E+1	2.67E+1	1.72E+1	1.72E+1
	U-238	1.36E+1	8.78E+0	8.78E+0	2.04E+1	1.32E+1	1.32E+1	3.40E+1	2.20E+1	2.20E+1	1.02E+2	6.58E+1	6.58E+1	1.36E+2	8.78E+1	8.78E+1
XXB	U-234	7.93E+1	7.93E+1	7.93E+1	1.19E+2	1.19E+2	1.19E+2	1.98E+2	1.98E+2	1.98E+2	5.95E+2	5.95E+2	5.95E+2	7.93E+2	7.93E+2	7.93E+2
	U-235	2.67E+0	2.67E+0	2.67E+0	4.01E+0	4.01E+0	4.01E+0	6.68E+0	6.68E+0	6.68E+0	2.00E+1	2.00E+1	2.00E+1	2.67E+1	2.67E+1	2.67E+1
	U-238	1.36E+1	1.36E+1	1.36E+1	2.04E+1	2.04E+1	2.04E+1	3.40E+1	3.40E+1	3.40E+1	1.02E+2	1.02E+2	1.02E+2	1.36E+2	1.36E+2	1.36E+2
XXC	U-234	7.93E+1	7.93E+1	7.93E+1	1.19E+2	1.19E+2	1.19E+2	1.98E+2	1.98E+2	1.98E+2	5.95E+2	5.95E+2	5.95E+2	7.93E+2	7.93E+2	7.93E+2
	U-235	2.67E+0	2.67E+0	2.67E+0	4.01E+0	4.01E+0	4.01E+0	6.68E+0	6.68E+0	6.68E+0	2.00E+1	2.00E+1	2.00E+1	2.67E+1	2.67E+1	2.67E+1
	U-238	1.36E+1	1.36E+1	1.36E+1	2.04E+1	2.04E+1	2.04E+1	3.40E+1	3.40E+1	3.40E+1	1.02E+2	1.02E+2	1.02E+2	1.36E+2	1.36E+2	1.36E+2
XXIA	Th-232	7.28E-1	7.28E-1	7.28E-1	1.09E+0	1.09E+0	1.09E+0	1.82E+0	1.82E+0	1.82E+0	5.46E+0	5.46E+0	5.46E+0	7.28E+0	7.28E+0	7.28E+0
XXIB	Th-232	7.28E-1	7.28E-1	7.28E-1	1.09E+0	1.09E+0	1.09E+0	1.82E+0	1.82E+0	1.82E+0	5.46E+0	5.46E+0	5.46E+0	7.28E+0	7.28E+0	7.28E+0
XXIC	Th-232	7.28E-1	7.28E-1	7.28E-1	1.09E+0	1.09E+0	1.09E+0	1.82E+0	1.82E+0	1.82E+0	5.46E+0	5.46E+0	5.46E+0	7.28E+0	7.28E+0	7.28E+0
XXII	Ra-226	4.80E-2	4.70E-2	4.70E-2	7.15E-2	6.82E-2	6.82E-2	1.16E-1	1.05E-1	1.05E-1	3.06E-1	2.71E-1	2.71E-1	4.37E-1	3.96E-1	3.96E-1
	Th-232	2.39E-1	2.34E-1	2.34E-1	3.57E-1	3.40E-1	3.40E-1	5.82E-1	5.24E-1	5.24E-1	2.24E+0	2.09E+0	2.09E+0	2.72E+0	2.57E+0	2.57E+0
	U-234	5.25E-2	4.90E-2	4.90E-2	1.78E-1	1.54E-1	1.54E-1	7.95E-1	5.77E-1	5.77E-1	1.56E+0	1.49E+0	1.49E+0	1.76E+0	1.70E+0	1.70E+0
	U-235	2.47E-3	2.30E-3	2.30E-3	8.37E-3	7.24E-3	7.24E-3	3.74E-2	2.71E-2	2.71E-2	7.32E-2	7.01E-2	7.01E-2	8.29E-2	8.01E-2	8.01E-2
	U-238	5.25E-2	4.90E-2	4.90E-2	1.78E-1	1.54E-1	1.54E-1	7.95E-1	5.77E-1	5.77E-1	1.56E+0	1.49E+0	1.49E+0	1.76E+0	1.70E+0	1.70E+0

MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		.10			.50			1.00			3.00			5.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	3.60E+0	3.60E+0	3.60E+0	1.80E+1	1.80E+1	1.80E+1	3.59E+1	3.59E+1	3.59E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	5.80E-2	5.80E-2	5.80E-2	2.89E-1	2.89E-1	2.89E-1	5.83E-1	5.83E-1	5.83E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	3.37E-1	3.37E-1	3.37E-1	1.69E+0	1.69E+0	1.69E+0	3.36E+0	3.36E+0	3.36E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0
XVIA	Co-60	2.89E-2	2.89E-2	2.89E-2	1.45E-1	1.45E-1	1.45E-1	2.89E-1	2.89E-1	2.89E-1	8.61E-1	8.61E-1	8.61E-1	1.39E+0	1.39E+0	1.39E+0
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	2.66E-2	2.66E-2	2.66E-2	2.50E-1	2.50E-1	2.50E-1
XVIB	Co-60	2.89E-2	2.89E-2	2.89E-2	1.45E-1	1.45E-1	1.45E-1	2.89E-1	2.89E-1	2.89E-1	8.61E-1	8.61E-1	8.61E-1	1.39E+0	1.39E+0	1.39E+0
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	2.66E-2	2.66E-2	2.66E-2	2.50E-1	2.50E-1	2.50E-1
XVIC	Co-60	2.89E-2	2.89E-2	2.89E-2	1.45E-1	1.45E-1	1.45E-1	2.89E-1	2.89E-1	2.89E-1	8.61E-1	8.61E-1	8.61E-1	1.39E+0	1.39E+0	1.39E+0
	Cs-137	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	2.66E-2	2.66E-2	2.66E-2	2.50E-1	2.50E-1	2.50E-1
XVIII A	Cs-137	1.23E-1	1.23E-1	1.23E-1	6.16E-1	6.16E-1	6.16E-1	1.23E+0	1.23E+0	1.23E+0	3.70E+0	3.70E+0	3.70E+0	6.16E+0	6.16E+0	6.16E+0
	Sr-90	1.23E-1	1.23E-1	1.23E-1	6.16E-1	6.16E-1	6.16E-1	1.23E+0	1.23E+0	1.23E+0	3.70E+0	3.70E+0	3.70E+0	6.16E+0	6.16E+0	6.16E+0
XVIII B	Cs-137	1.23E-1	1.23E-1	1.23E-1	6.16E-1	6.16E-1	6.16E-1	1.23E+0	1.23E+0	1.23E+0	3.70E+0	3.70E+0	3.70E+0	6.16E+0	6.16E+0	6.16E+0
	Sr-90	1.23E-1	1.23E-1	1.23E-1	6.16E-1	6.16E-1	6.16E-1	1.23E+0	1.23E+0	1.23E+0	3.70E+0	3.70E+0	3.70E+0	6.16E+0	6.16E+0	6.16E+0
XVIII C	Cs-137	1.23E-1	1.23E-1	1.23E-1	6.16E-1	6.16E-1	6.16E-1	1.23E+0	1.23E+0	1.23E+0	3.70E+0	3.70E+0	3.70E+0	6.16E+0	6.16E+0	6.16E+0
	Sr-90	1.23E-1	1.23E-1	1.23E-1	6.16E-1	6.16E-1	6.16E-1	1.23E+0	1.23E+0	1.23E+0	3.70E+0	3.70E+0	3.70E+0	6.16E+0	6.16E+0	6.16E+0
XXA	U-234	3.09E+0	1.74E+0	1.74E+0	1.54E+1	8.68E+0	8.68E+0	3.09E+1	1.74E+1	1.74E+1	9.26E+1	5.21E+1	5.21E+1	1.54E+2	8.68E+1	8.68E+1
	U-235	1.04E-1	5.84E-2	5.84E-2	5.19E-1	2.92E-1	2.92E-1	1.04E+0	5.85E-1	5.85E-1	3.12E+0	1.75E+0	1.75E+0	5.20E+0	2.92E+0	2.92E+0
	U-238	5.30E-1	2.98E-1	2.98E-1	2.64E+0	1.49E+0	1.49E+0	5.29E+0	2.98E+0	2.98E+0	1.59E+1	8.93E+0	8.93E+0	2.65E+1	1.49E+1	1.49E+1
XXB	U-234	3.09E+0	2.05E+0	2.05E+0	1.54E+1	1.03E+1	1.03E+1	3.09E+1	2.05E+1	2.05E+1	9.26E+1	6.16E+1	6.16E+1	1.54E+2	1.03E+2	1.03E+2
	U-235	1.04E-1	6.91E-2	6.91E-2	5.19E-1	3.46E-1	3.46E-1	1.04E+0	6.91E-1	6.91E-1	3.12E+0	2.07E+0	2.07E+0	5.20E+0	3.45E+0	3.45E+0
	U-238	5.30E-1	3.52E-1	3.52E-1	2.64E+0	1.76E+0	1.76E+0	5.29E+0	3.52E+0	3.52E+0	1.59E+1	1.06E+1	1.06E+1	2.65E+1	1.76E+1	1.76E+1
XXC	U-234	3.09E+0	3.09E+0	3.09E+0	1.54E+1	1.54E+1	1.54E+1	3.09E+1	3.09E+1	3.09E+1	9.26E+1	9.26E+1	9.26E+1	1.54E+2	1.54E+2	1.54E+2
	U-235	1.04E-1	1.04E-1	1.04E-1	5.19E-1	5.19E-1	5.19E-1	1.04E+0	1.04E+0	1.04E+0	3.12E+0	3.12E+0	3.12E+0	5.20E+0	5.20E+0	5.20E+0
	U-238	5.30E-1	5.30E-1	5.30E-1	2.64E+0	2.64E+0	2.64E+0	5.29E+0	5.29E+0	5.29E+0	1.59E+1	1.59E+1	1.59E+1	2.65E+1	2.65E+1	2.65E+1
XXIA	Th-232	2.26E-2	2.26E-2	2.26E-2	1.13E-1	1.13E-1	1.13E-1	2.26E-1	2.26E-1	2.26E-1	6.79E-1	6.79E-1	6.79E-1	1.13E+0	1.13E+0	1.13E+0
XXIB	Th-232	2.26E-2	2.26E-2	2.26E-2	1.13E-1	1.13E-1	1.13E-1	2.26E-1	2.26E-1	2.26E-1	6.79E-1	6.79E-1	6.79E-1	1.13E+0	1.13E+0	1.13E+0
XXIC	Th-232	2.26E-2	2.26E-2	2.26E-2	1.13E-1	1.13E-1	1.13E-1	2.26E-1	2.26E-1	2.26E-1	6.79E-1	6.79E-1	6.79E-1	1.13E+0	1.13E+0	1.13E+0
XXII	Ra-226	1.41E-3	1.41E-3	1.41E-3	7.05E-3	7.04E-3	7.04E-3	1.41E-2	1.40E-2	1.40E-2	4.20E-2	4.10E-2	4.10E-2	6.92E-2	6.54E-2	6.54E-2
	Th-232	6.96E-3	6.96E-3	6.96E-3	3.49E-2	3.49E-2	3.49E-2	6.99E-2	6.97E-2	6.97E-2	2.09E-1	2.05E-1	2.05E-1	3.46E-1	3.26E-1	3.26E-1
	U-234	1.03E-6	1.03E-6	1.03E-6	1.44E-4	1.44E-4	1.44E-4	1.21E-3	1.20E-3	1.20E-3	3.47E-2	3.24E-2	3.24E-2	1.61E-1	1.35E-1	1.35E-1
	U-235	4.85E-8	4.85E-8	4.85E-8	6.77E-6	6.77E-6	6.77E-6	5.68E-5	5.64E-5	5.64E-5	1.63E-3	1.52E-3	1.52E-3	7.59E-3	6.36E-3	6.36E-3
	U-238	1.03E-6	1.03E-6	1.03E-6	1.44E-4	1.44E-4	1.44E-4	1.21E-3	1.20E-3	1.20E-3	3.47E-2	3.24E-2	3.24E-2	1.61E-1	1.35E-1	1.35E-1

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 Table M-100. MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	2.27E+1	2.27E+1	2.27E+1	3.40E+1	3.40E+1	3.40E+1	5.67E+1	5.67E+1	5.67E+1	1.70E+2	1.70E+2	1.70E+2	2.27E+2	2.27E+2	2.27E+2
II-1	Ra-226	5.07E-1	9.27E-2	9.27E-2	1.05E+0	6.08E-1	6.08E-1	2.14E+0	1.67E+0	1.67E+0	7.55E+0	6.89E+0	6.89E+0	1.03E+1	9.51E+0	9.51E+0
	Th-230	1.44E+1	1.38E+1	1.38E+1	1.49E+1	1.45E+1	1.45E+1	1.60E+1	1.55E+1	1.55E+1	2.25E+1	2.15E+1	2.15E+1	2.52E+1	2.45E+1	2.45E+1
	Ra-228	1.50E-2	1.50E-2	1.50E-2	1.50E-2	1.50E-2	1.50E-2	1.50E-2	1.50E-2	1.50E-2	1.52E-2	1.52E-2	1.52E-2	1.53E-2	1.53E-2	1.53E-2
	Th-232	1.18E-2	1.17E-2	1.17E-2	1.18E-2	1.18E-2	1.18E-2	1.18E-2	1.18E-2	1.18E-2	1.20E-2	1.19E-2	1.19E-2	1.20E-2	1.20E-2	1.20E-2
	U-234	6.72E-2	6.72E-2	6.72E-2	6.73E-2	6.72E-2	6.72E-2	6.74E-2	6.73E-2	6.73E-2	6.80E-2	6.79E-2	6.79E-2	6.83E-2	6.82E-2	6.82E-2
	U-235	2.93E-3	2.92E-3	2.92E-3	2.93E-3	2.93E-3	2.93E-3	2.94E-3	2.93E-3	2.93E-3	2.98E-3	2.97E-3	2.97E-3	3.00E-3	3.00E-3	3.00E-3
	U-238	7.77E-2	7.56E-2	7.56E-2	7.94E-2	7.80E-2	7.80E-2	8.35E-2	8.16E-2	8.16E-2	1.11E-1	1.07E-1	1.07E-1	1.26E-1	1.22E-1	1.22E-1
II-2	Ra-226	1.18E-2	1.17E-2	1.17E-2	1.20E-2	1.18E-2	1.18E-2	1.22E-2	1.20E-2	1.20E-2	1.35E-2	1.28E-2	1.28E-2	1.40E-2	1.33E-2	1.33E-2
	Th-230	2.41E+1	1.38E+1	1.38E+1	3.50E+1	2.14E+1	2.14E+1	5.26E+1	3.52E+1	3.52E+1	1.35E+2	9.29E+1	9.29E+1	1.69E+2	1.22E+2	1.22E+2
	Ra-228	5.16E-2	5.10E-2	5.10E-2	3.73E-1	5.14E-2	5.14E-2	1.57E+0	3.83E-1	3.83E-1	7.72E+0	4.67E+0	4.67E+0	1.02E+1	6.76E+0	6.76E+0
	Th-232	3.77E-2	3.72E-2	3.72E-2	3.82E-2	3.76E-2	3.76E-2	3.92E-2	3.83E-2	3.83E-2	4.01E-1	4.14E-2	4.14E-2	1.45E+0	7.09E-2	7.09E-2
	U-234	4.03E+0	3.94E+0	3.94E+0	4.13E+0	4.01E+0	4.01E+0	4.30E+0	4.13E+0	4.13E+0	5.24E+0	4.75E+0	4.75E+0	5.63E+0	5.08E+0	5.08E+0
	U-235	2.72E-1	2.66E-1	2.66E-1	2.78E-1	2.70E-1	2.70E-1	2.88E-1	2.78E-1	2.78E-1	3.44E-1	3.14E-1	3.14E-1	3.68E-1	3.34E-1	3.34E-1
	U-238	5.07E+0	4.95E+0	4.95E+0	5.19E+0	5.04E+0	5.04E+0	5.39E+0	5.20E+0	5.20E+0	6.47E+0	5.90E+0	5.90E+0	6.95E+0	6.28E+0	6.28E+0
II-3	Ra-226	2.66E-1	2.41E-1	2.41E-1	3.42E-1	3.14E-1	3.14E-1	4.47E-1	4.24E-1	4.24E-1	6.84E-1	6.59E-1	6.59E-1	7.52E-1	7.30E-1	7.30E-1
	Th-230	5.49E+0	4.85E+0	4.85E+0	7.70E+0	6.86E+0	6.86E+0	1.14E+1	1.05E+1	1.05E+1	2.83E+1	2.62E+1	2.62E+1	3.42E+1	3.23E+1	3.23E+1
	Ra-228	4.91E-2	4.87E-2	4.87E-2	4.99E-2	4.96E-2	4.96E-2	5.10E-2	5.08E-2	5.08E-2	1.08E+0	8.50E-1	8.50E-1	1.83E+0	1.56E+0	1.56E+0
	Th-232	4.46E-2	4.43E-2	4.43E-2	4.54E-2	4.52E-2	4.52E-2	1.83E-1	6.09E-2	6.09E-2	2.40E+0	2.05E+0	2.05E+0	3.58E+0	3.16E+0	3.16E+0
	U-234	1.32E+1	1.12E+1	1.12E+1	2.07E+1	1.78E+1	1.78E+1	3.50E+1	3.15E+1	3.15E+1	9.87E+1	8.57E+1	8.57E+1	1.38E+2	1.25E+2	1.25E+2
	U-235	3.56E+0	3.23E+0	3.23E+0	5.45E+0	4.71E+0	4.71E+0	8.98E+0	8.12E+0	8.12E+0	2.01E+1	1.87E+1	1.87E+1	2.37E+1	2.25E+1	2.25E+1
	U-238	1.20E+1	1.01E+1	1.01E+1	1.91E+1	1.63E+1	1.63E+1	3.30E+1	2.96E+1	2.96E+1	9.17E+1	7.92E+1	7.92E+1	1.31E+2	1.17E+2	1.17E+2
II-4	Ra-226	8.98E-3	7.81E-3	7.81E-3	1.04E-2	8.80E-3	8.80E-3	1.40E-1	1.08E-2	1.08E-2	9.29E-1	6.42E-1	6.42E-1	1.24E+0	9.35E-1	9.35E-1
	Th-230	2.10E+1	1.42E+1	1.42E+1	2.92E+1	2.00E+1	2.00E+1	4.18E+1	3.12E+1	3.12E+1	8.71E+1	7.05E+1	7.05E+1	1.05E+2	8.75E+1	8.75E+1
	Ra-228	2.23E-1	1.09E-1	1.09E-1	3.66E-1	2.06E-1	2.06E-1	6.58E-1	4.00E-1	4.00E-1	2.16E+0	1.57E+0	1.57E+0	2.83E+0	2.17E+0	2.17E+0
	Th-232	1.61E-1	1.78E-2	1.78E-2	3.50E-1	1.38E-1	1.38E-1	7.59E-1	3.96E-1	3.96E-1	3.21E+0	2.22E+0	2.22E+0	4.52E+0	3.24E+0	3.24E+0
	U-234	1.90E+0	1.04E+0	1.04E+0	3.29E+0	1.76E+0	1.76E+0	7.56E+0	3.68E+0	3.68E+0	8.14E+1	4.20E+1	4.20E+1	1.83E+2	8.22E+1	8.22E+1
	U-235	1.55E-3	1.02E-3	1.02E-3	2.12E-3	1.47E-3	1.47E-3	2.28E-2	2.25E-3	2.25E-3	1.56E+0	5.77E-1	5.77E-1	3.37E+0	1.58E+0	1.58E+0
	U-238	5.21E-2	4.74E-2	4.74E-2	5.73E-2	5.15E-2	5.15E-2	9.07E-1	5.85E-2	5.85E-2	3.21E+1	1.23E+1	1.23E+1	7.26E+1	3.27E+1	3.27E+1
II-5	Ra-226	1.06E+0	1.06E+0	1.06E+0	1.62E+0	1.62E+0	1.62E+0	2.73E+0	2.73E+0	2.73E+0	8.16E+0	8.16E+0	8.16E+0	1.08E+1	1.08E+1	1.08E+1
	Th-230	2.63E-2	2.63E-2	2.63E-2	2.67E-2	2.67E-2	2.67E-2	2.76E-2	2.76E-2	2.76E-2	3.22E-2	3.22E-2	3.22E-2	3.43E-2	3.43E-2	3.43E-2
	Ra-228	1.63E-2	1.63E-2	1.63E-2	1.68E-2	1.68E-2	1.68E-2	1.79E-2	1.79E-2	1.79E-2	4.37E-2	4.37E-2	4.37E-2	1.75E-1	1.75E-1	1.75E-1
	Th-232	3.15E-2	3.15E-2	3.15E-2	3.19E-2	3.19E-2	3.19E-2	3.28E-2	3.28E-2	3.28E-2	2.68E-1	2.68E-1	2.68E-1	4.41E-1	4.41E-1	4.41E-1
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	1.64E-3	1.64E-3	1.64E-3	1.67E-3	1.67E-3	1.67E-3	1.75E-3	1.75E-3	1.75E-3	2.13E-3	2.13E-3	2.13E-3	2.30E-3	2.30E-3	2.30E-3
	U-238	3.90E-2	3.90E-2	3.90E-2	3.96E-2	3.96E-2	3.96E-2	4.10E-2	4.10E-2	4.10E-2	4.77E-2	4.77E-2	4.77E-2	5.08E-2	5.08E-2	5.08E-2

09-19-94 1:52p
 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
II-6	Ra-226	1.41E-1	8.57E-2	8.57E-2	6.98E-1	1.68E-1	1.68E-1	1.80E+0	1.27E+0	1.27E+0	7.33E+0	6.72E+0	6.72E+0	1.01E+1	9.44E+0	9.44E+0
	Th-230	1.69E+1	1.21E+1	1.21E+1	1.71E+1	1.70E+1	1.70E+1	1.75E+1	1.73E+1	1.73E+1	1.97E+1	1.94E+1	1.94E+1	2.08E+1	2.05E+1	2.05E+1
	Ra-228	2.63E-1	3.04E-2	3.04E-2	2.73E-1	2.64E-1	2.64E-1	2.94E-1	2.81E-1	2.81E-1	4.16E-1	4.03E-1	4.03E-1	4.80E-1	4.66E-1	4.66E-1
	Th-232	1.88E-2	1.73E-2	1.73E-2	1.88E-2	1.88E-2	1.88E-2	1.89E-2	1.89E-2	1.89E-2	1.96E-2	1.95E-2	1.95E-2	2.71E-2	2.48E-2	2.48E-2
	U-234	4.71E+1	3.75E+1	3.75E+1	4.74E+1	4.71E+1	4.71E+1	4.81E+1	4.77E+1	4.77E+1	5.24E+1	5.19E+1	5.19E+1	5.46E+1	5.41E+1	5.41E+1
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-238	2.47E+0	2.04E+0	2.04E+0	2.48E+0	2.47E+0	2.47E+0	2.52E+0	2.50E+0	2.50E+0	2.72E+0	2.70E+0	2.70E+0	2.83E+0	2.81E+0	2.81E+0
II-7	U-234	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1
	U-235	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	5.78E-1	
	U-238	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	1.23E+1	
III	Cs-137	2.27E+1	2.27E+1	2.27E+1	3.40E+1	3.40E+1	3.40E+1	5.67E+1	5.67E+1	5.67E+1	1.70E+2	1.70E+2	1.70E+2	2.27E+2	2.27E+2	2.27E+2
IV	U-234	1.92E+2	1.92E+2	1.92E+2	2.87E+2	2.87E+2	2.87E+2	4.79E+2	4.79E+2	4.79E+2	1.44E+3	1.44E+3	1.44E+3	1.92E+3	1.92E+3	1.92E+3
	U-235	9.00E+0	9.00E+0	9.00E+0	1.35E+1	1.35E+1	1.35E+1	2.25E+1	2.25E+1	2.25E+1	6.75E+1	6.75E+1	6.75E+1	9.00E+1	9.00E+1	9.00E+1
	U-238	1.92E+2	1.92E+2	1.92E+2	2.87E+2	2.87E+2	2.87E+2	4.79E+2	4.79E+2	4.79E+2	1.44E+3	1.44E+3	1.44E+3	1.92E+3	1.92E+3	1.92E+3
V	Cs-137	2.27E+1	2.27E+1	2.27E+1	3.40E+1	3.40E+1	3.40E+1	5.67E+1	5.67E+1	5.67E+1	1.70E+2	1.70E+2	1.70E+2	2.27E+2	2.27E+2	2.27E+2
VI	Cs-137	2.04E+1	2.04E+1	2.04E+1	2.99E+1	2.99E+1	2.99E+1	4.80E+1	4.80E+1	4.80E+1	1.35E+2	1.35E+2	1.35E+2	1.82E+2	1.82E+2	1.82E+2
	U-234	3.44E+1	3.44E+1	3.44E+1	6.26E+1	6.26E+1	6.26E+1	1.31E+2	1.31E+2	1.31E+2	5.37E+2	5.37E+2	5.37E+2	6.75E+2	6.75E+2	6.75E+2
	U-235	1.62E+0	1.62E+0	1.62E+0	2.94E+0	2.94E+0	2.94E+0	6.18E+0	6.18E+0	6.18E+0	2.52E+1	2.52E+1	2.52E+1	3.17E+1	3.17E+1	3.17E+1
	U-238	3.44E+1	3.44E+1	3.44E+1	6.26E+1	6.26E+1	6.26E+1	1.31E+2	1.31E+2	1.31E+2	5.37E+2	5.37E+2	5.37E+2	6.75E+2	6.75E+2	6.75E+2
VII	Pu-239	2.05E+2	2.05E+2	2.05E+2	3.08E+2	3.08E+2	3.08E+2	5.19E+2	5.19E+2	5.19E+2	1.50E+3	1.50E+3	1.50E+3	1.50E+3	1.50E+3	1.50E+3
	Am-241	3.38E+1	3.38E+1	3.38E+1	5.13E+1	5.13E+1	5.13E+1	8.68E+1	8.68E+1	8.68E+1	2.49E+2	2.49E+2	2.49E+2	2.50E+2	2.50E+2	2.50E+2
	Cs-137	4.00E+0	4.00E+0	4.00E+0	5.89E+0	5.89E+0	5.89E+0	9.42E+0	9.42E+0	9.42E+0	3.31E+1	3.31E+1	3.31E+1	8.00E+1	8.00E+1	8.00E+1
IX	Pu-239	3.06E+2	3.06E+2	3.06E+2	4.59E+2	4.59E+2	4.59E+2	7.65E+2	7.65E+2	7.65E+2	2.30E+3	2.30E+3	2.30E+3	2.98E+3	2.98E+3	2.98E+3
	Am-241	5.10E+1	5.10E+1	5.10E+1	7.65E+1	7.65E+1	7.65E+1	1.28E+2	1.28E+2	1.28E+2	3.83E+2	3.83E+2	3.83E+2	4.97E+2	4.97E+2	4.97E+2
X	Tc-99	5.56E+1	5.02E+0	5.02E+0	8.47E+1	1.10E+1	1.10E+1	1.43E+2	3.52E+1	3.52E+1	4.36E+2	2.28E+2	2.28E+2	5.83E+2	3.37E+2	3.37E+2
	U-238	1.00E+1	4.20E+0	4.20E+0	1.16E+1	6.03E+0	6.03E+0	1.35E+1	8.74E+0	8.74E+0	2.18E+1	1.67E+1	1.67E+1	2.40E+1	1.97E+1	1.97E+1
	U-234	1.00E+1	4.20E+0	4.20E+0	1.16E+1	6.03E+0	6.03E+0	1.35E+1	8.74E+0	8.74E+0	2.18E+1	1.67E+1	1.67E+1	2.40E+1	1.97E+1	1.97E+1
XII	Pu-239	1.06E+2	1.06E+2	1.06E+2	1.59E+2	1.59E+2	1.59E+2	2.65E+2	2.65E+2	2.65E+2	7.96E+2	7.96E+2	7.96E+2	1.06E+3	1.06E+3	1.06E+3
	Am-241	1.77E+1	1.77E+1	1.77E+1	2.65E+1	2.65E+1	2.65E+1	4.42E+1	4.42E+1	4.42E+1	1.33E+2	1.33E+2	1.33E+2	1.77E+2	1.77E+2	1.77E+2
XIIIA	U-238	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	
	U-234	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	
XIIIB	U-238	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	
	U-234	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	

09-19-94 1:52p
 MAXIMUM RESIDUAL CONCENTRATION (pCi/g)--Indoor radon pathway included

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1	3.94E+1
	U-235	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1	6.40E-1
	U-234	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0	3.69E+0
XVIA	Co-60	2.74E+0	2.74E+0	2.74E+0	4.13E+0	4.13E+0	4.13E+0	6.95E+0	6.95E+0	6.95E+0	2.08E+1	2.08E+1	2.08E+1	2.77E+1	2.77E+1	2.77E+1
	Cs-137	6.52E-1	6.52E-1	6.52E-1	8.68E-1	8.68E-1	8.68E-1	1.19E+0	1.19E+0	1.19E+0	3.68E+0	3.68E+0	3.68E+0	5.12E+0	5.12E+0	5.12E+0
XVIB	Co-60	2.74E+0	2.74E+0	2.74E+0	4.13E+0	4.13E+0	4.13E+0	6.95E+0	6.95E+0	6.95E+0	2.08E+1	2.08E+1	2.08E+1	2.77E+1	2.77E+1	2.77E+1
	Cs-137	6.52E-1	6.52E-1	6.52E-1	8.68E-1	8.68E-1	8.68E-1	1.19E+0	1.19E+0	1.19E+0	3.68E+0	3.68E+0	3.68E+0	5.12E+0	5.12E+0	5.12E+0
XVIC	Co-60	2.74E+0	2.74E+0	2.74E+0	4.13E+0	4.13E+0	4.13E+0	6.95E+0	6.95E+0	6.95E+0	2.08E+1	2.08E+1	2.08E+1	2.77E+1	2.77E+1	2.77E+1
	Cs-137	6.52E-1	6.52E-1	6.52E-1	8.68E-1	8.68E-1	8.68E-1	1.19E+0	1.19E+0	1.19E+0	3.68E+0	3.68E+0	3.68E+0	5.12E+0	5.12E+0	5.12E+0
XVIII A	Cs-137	1.23E+1	1.23E+1	1.23E+1	1.85E+1	1.85E+1	1.85E+1	3.08E+1	3.08E+1	3.08E+1	9.24E+1	9.24E+1	9.24E+1	1.23E+2	1.23E+2	1.23E+2
	Sr-90	1.23E+1	1.23E+1	1.23E+1	1.85E+1	1.85E+1	1.85E+1	3.08E+1	3.08E+1	3.08E+1	9.24E+1	9.24E+1	9.24E+1	1.23E+2	1.23E+2	1.23E+2
XVIII B	Cs-137	1.23E+1	1.23E+1	1.23E+1	1.85E+1	1.85E+1	1.85E+1	3.08E+1	3.08E+1	3.08E+1	9.24E+1	9.24E+1	9.24E+1	1.23E+2	1.23E+2	1.23E+2
	Sr-90	1.23E+1	1.23E+1	1.23E+1	1.85E+1	1.85E+1	1.85E+1	3.08E+1	3.08E+1	3.08E+1	9.24E+1	9.24E+1	9.24E+1	1.23E+2	1.23E+2	1.23E+2
XVIII C	Cs-137	1.23E+1	1.23E+1	1.23E+1	1.85E+1	1.85E+1	1.85E+1	3.08E+1	3.08E+1	3.08E+1	9.24E+1	9.24E+1	9.24E+1	1.23E+2	1.23E+2	1.23E+2
	Sr-90	1.23E+1	1.23E+1	1.23E+1	1.85E+1	1.85E+1	1.85E+1	3.08E+1	3.08E+1	3.08E+1	9.24E+1	9.24E+1	9.24E+1	1.23E+2	1.23E+2	1.23E+2
XXA	U-234	3.09E+2	1.74E+2	1.74E+2	4.63E+2	2.60E+2	2.60E+2	7.72E+2	4.34E+2	4.34E+2	2.33E+3	1.30E+3	1.30E+3	3.12E+3	1.74E+3	1.74E+3
	U-235	1.04E+1	5.85E+0	5.85E+0	1.56E+1	8.76E+0	8.76E+0	2.60E+1	1.46E+1	1.46E+1	7.58E+1	4.38E+1	4.38E+1	9.86E+1	5.82E+1	5.82E+1
	U-238	5.29E+1	2.98E+1	2.98E+1	7.94E+1	4.46E+1	4.46E+1	1.32E+2	7.44E+1	7.44E+1	3.99E+2	2.23E+2	2.23E+2	5.36E+2	2.98E+2	2.98E+2
XXB	U-234	3.09E+2	2.05E+2	2.05E+2	4.63E+2	3.08E+2	3.08E+2	7.72E+2	5.13E+2	5.13E+2	2.33E+3	1.54E+3	1.54E+3	3.12E+3	2.06E+3	2.06E+3
	U-235	1.04E+1	6.91E+0	6.91E+0	1.56E+1	1.04E+1	1.04E+1	2.60E+1	1.73E+1	1.73E+1	7.58E+1	5.18E+1	5.18E+1	9.86E+1	6.77E+1	6.77E+1
	U-238	5.29E+1	3.52E+1	3.52E+1	7.94E+1	5.28E+1	5.28E+1	1.32E+2	8.79E+1	8.79E+1	3.99E+2	2.64E+2	2.64E+2	5.36E+2	3.52E+2	3.52E+2
XXC	U-234	3.09E+2	3.09E+2	3.09E+2	4.63E+2	4.63E+2	4.63E+2	7.72E+2	7.72E+2	7.72E+2	2.33E+3	2.33E+3	2.33E+3	3.12E+3	3.12E+3	3.12E+3
	U-235	1.04E+1	1.04E+1	1.04E+1	1.56E+1	1.56E+1	1.56E+1	2.60E+1	2.60E+1	2.60E+1	7.58E+1	7.58E+1	7.58E+1	9.86E+1	9.86E+1	9.86E+1
	U-238	5.29E+1	5.29E+1	5.29E+1	7.94E+1	7.94E+1	7.94E+1	1.32E+2	1.32E+2	1.32E+2	3.99E+2	3.99E+2	3.99E+2	5.36E+2	5.36E+2	5.36E+2
XXIA	Th-232	2.26E+0	2.26E+0	2.26E+0	3.39E+0	3.39E+0	3.39E+0	5.66E+0	5.66E+0	5.66E+0	1.70E+1	1.70E+1	1.70E+1	2.26E+1	2.26E+1	2.26E+1
XXIB	Th-232	2.26E+0	2.26E+0	2.26E+0	3.39E+0	3.39E+0	3.39E+0	5.66E+0	5.66E+0	5.66E+0	1.70E+1	1.70E+1	1.70E+1	2.26E+1	2.26E+1	2.26E+1
XXIC	Th-232	2.26E+0	2.26E+0	2.26E+0	3.39E+0	3.39E+0	3.39E+0	5.66E+0	5.66E+0	5.66E+0	1.70E+1	1.70E+1	1.70E+1	2.26E+1	2.26E+1	2.26E+1
XXII	Ra-226	1.34E-1	1.13E-1	1.13E-1	2.01E-1	1.68E-1	1.68E-1	2.97E-1	2.51E-1	2.51E-1	1.02E+0	9.48E-1	9.48E-1	1.18E+0	1.11E+0	1.11E+0
	Th-232	6.68E-1	5.68E-1	5.68E-1	1.02E+0	8.40E-1	8.40E-1	2.20E+0	2.01E+0	2.01E+0	5.15E+0	4.07E+0	4.07E+0	8.82E+0	7.09E+0	7.09E+0
	U-234	1.03E+0	7.37E-1	7.37E-1	1.29E+0	1.17E+0	1.17E+0	1.54E+0	1.45E+0	1.45E+0	4.57E+0	4.04E+0	4.04E+0	6.12E+0	5.41E+0	5.41E+0
	U-235	4.86E-2	3.47E-2	3.47E-2	6.06E-2	5.50E-2	5.50E-2	7.24E-2	6.83E-2	6.83E-2	2.15E-1	1.90E-1	1.90E-1	2.88E-1	2.54E-1	2.54E-1
	U-238	1.03E+0	7.37E-1	7.37E-1	1.29E+0	1.17E+0	1.17E+0	1.54E+0	1.45E+0	1.45E+0	4.57E+0	4.04E+0	4.04E+0	6.12E+0	5.41E+0	5.41E+0

Table M-101. CLEANUP VOLUMES (m**3)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	3.36E+6	3.36E+6	3.36E+6	1.47E+6	1.47E+6	1.47E+6	1.03E+6	1.03E+6	1.03E+6	5.83E+5	5.83E+5	5.83E+5	4.48E+5	4.48E+5	4.48E+5
II	1.75E+6	1.76E+6	1.76E+6	1.31E+6	1.32E+6	1.32E+6	1.11E+6	1.12E+6	1.12E+6	9.44E+5	9.51E+5	9.51E+5	9.19E+5	9.35E+5	9.35E+5
III	8.38E+5	8.38E+5	8.38E+5	7.95E+5	7.95E+5	7.95E+5	7.45E+5	7.45E+5	7.45E+5	5.73E+5	5.73E+5	5.73E+5	4.40E+5	4.40E+5	4.40E+5
IV	2.34E+5	2.34E+5	2.34E+5	1.19E+5	1.19E+5	1.19E+5	8.91E+4	8.91E+4	8.91E+4	5.63E+4	5.63E+4	5.63E+4	4.54E+4	4.54E+4	4.54E+4
V	1.35E+7	1.35E+7	1.35E+7	1.04E+7	1.04E+7	1.04E+7	9.03E+6	9.03E+6	9.03E+6	6.87E+6	6.87E+6	6.87E+6	5.86E+6	5.86E+6	5.86E+6
VI	5.03E+5	5.03E+5	5.03E+5	3.90E+5	3.90E+5	3.90E+5	3.42E+5	3.42E+5	3.42E+5	2.66E+5	2.66E+5	2.66E+5	2.31E+5	2.31E+5	2.31E+5
VII	5.90E+7	5.90E+7	5.90E+7	4.02E+7	4.02E+7	4.02E+7	2.63E+7	2.63E+7	2.63E+7	1.34E+7	1.34E+7	1.34E+7	9.81E+6	9.81E+6	9.81E+6
IX	3.66E+5	3.66E+5	3.66E+5	1.73E+5	1.73E+5	1.73E+5	1.12E+5	1.12E+5	1.12E+5	5.07E+4	5.07E+4	5.07E+4	3.26E+4	3.26E+4	3.26E+4
X	7.69E+5	8.00E+5	8.00E+5	6.26E+5	7.88E+5	7.88E+5	5.16E+5	7.74E+5	7.74E+5	3.38E+5	7.19E+5	7.19E+5	2.63E+5	6.59E+5	6.59E+5
XII	1.34E+4	1.34E+4	1.34E+4	7.43E+3	7.43E+3	7.43E+3	4.67E+3	4.67E+3	4.67E+3	2.24E+3	2.24E+3	2.24E+3	1.71E+3	1.71E+3	1.71E+3
XIIIA	2.15E+3	2.15E+3	2.15E+3	8.80E+2	8.80E+2	8.80E+2	3.72E+2	3.72E+2	3.72E+2	5.32E+1	5.32E+1	5.32E+1	.00E+0	.00E+0	.00E+0
XIIIB	2.15E+3	2.15E+3	2.15E+3	8.80E+2	8.80E+2	8.80E+2	3.72E+2	3.72E+2	3.72E+2	5.32E+1	5.32E+1	5.32E+1	.00E+0	.00E+0	.00E+0
XIIIC	2.15E+3	2.15E+3	2.15E+3	8.80E+2	8.80E+2	8.80E+2	3.72E+2	3.72E+2	3.72E+2	5.32E+1	5.32E+1	5.32E+1	.00E+0	.00E+0	.00E+0
XVIA	1.21E+3	1.21E+3	1.21E+3	1.10E+3	1.10E+3	1.10E+3	1.06E+3	1.06E+3	1.06E+3	9.78E+2	9.78E+2	9.78E+2	9.34E+2	9.34E+2	9.34E+2
XVIB	1.21E+3	1.21E+3	1.21E+3	1.10E+3	1.10E+3	1.10E+3	1.06E+3	1.06E+3	1.06E+3	9.78E+2	9.78E+2	9.78E+2	9.34E+2	9.34E+2	9.34E+2
XVIC	1.21E+3	1.21E+3	1.21E+3	1.10E+3	1.10E+3	1.10E+3	1.06E+3	1.06E+3	1.06E+3	9.78E+2	9.78E+2	9.78E+2	9.34E+2	9.34E+2	9.34E+2
XVIIIA	5.92E+2	5.92E+2	5.92E+2	5.88E+2	5.88E+2	5.88E+2	5.86E+2	5.86E+2	5.86E+2	5.82E+2	5.82E+2	5.82E+2	5.80E+2	5.80E+2	5.80E+2
XVIIIB	5.92E+2	5.92E+2	5.92E+2	5.88E+2	5.88E+2	5.88E+2	5.86E+2	5.86E+2	5.86E+2	5.82E+2	5.82E+2	5.82E+2	5.80E+2	5.80E+2	5.80E+2
XVIIIC	5.92E+2	5.92E+2	5.92E+2	5.88E+2	5.88E+2	5.88E+2	5.86E+2	5.86E+2	5.86E+2	5.82E+2	5.82E+2	5.82E+2	5.80E+2	5.80E+2	5.80E+2
XXA	4.94E+5	4.94E+5	4.94E+5	1.14E+5	1.14E+5	1.14E+5	5.98E+4	5.98E+4	5.98E+4	2.13E+4	2.13E+4	2.13E+4	1.18E+4	1.18E+4	1.18E+4
XXB	4.94E+5	4.94E+5	4.94E+5	1.14E+5	1.14E+5	1.14E+5	5.98E+4	5.98E+4	5.98E+4	2.13E+4	2.13E+4	2.13E+4	1.18E+4	1.18E+4	1.18E+4
XXC	4.94E+5	4.94E+5	4.94E+5	1.14E+5	1.14E+5	1.14E+5	5.98E+4	5.98E+4	5.98E+4	2.13E+4	2.13E+4	2.13E+4	1.18E+4	1.18E+4	1.18E+4
XXIA	3.44E+4	3.44E+4	3.44E+4	3.42E+4	3.42E+4	3.42E+4	3.40E+4	3.40E+4	3.40E+4	3.29E+4	3.29E+4	3.29E+4	3.18E+4	3.18E+4	3.18E+4
XXIB	3.44E+4	3.44E+4	3.44E+4	3.42E+4	3.42E+4	3.42E+4	3.40E+4	3.40E+4	3.40E+4	3.29E+4	3.29E+4	3.29E+4	3.18E+4	3.18E+4	3.18E+4
XXIC	3.44E+4	3.44E+4	3.44E+4	3.42E+4	3.42E+4	3.42E+4	3.40E+4	3.40E+4	3.40E+4	3.29E+4	3.29E+4	3.29E+4	3.18E+4	3.18E+4	3.18E+4
XXII	2.29E+6	2.29E+6	2.29E+6	1.84E+6	1.84E+6	1.84E+6	1.64E+6	1.64E+6	1.64E+6	1.33E+6	1.34E+6	1.34E+6	1.19E+6	1.21E+6	1.21E+6
DOE	1.07E+8	1.07E+8	1.07E+8	7.67E+7	7.69E+7	7.69E+7	5.81E+7	5.84E+7	5.84E+7	3.81E+7	3.86E+7	3.86E+7	3.13E+7	3.19E+7	3.19E+7
DOD	3.16E+4	3.16E+4	3.16E+4	1.49E+4	1.49E+4	1.49E+4	7.84E+3	7.84E+3	7.84E+3	2.69E+3	2.69E+3	2.69E+3	1.71E+3	1.71E+3	1.71E+3
NRC	7.87E+6	7.87E+6	7.87E+6	2.53E+6	2.53E+6	2.53E+6	1.75E+6	1.75E+6	1.75E+6	1.18E+6	1.18E+6	1.18E+6	1.02E+6	1.02E+6	1.02E+6
Total	1.15E+8	1.15E+8	1.15E+8	7.92E+7	7.94E+7	7.94E+7	5.99E+7	6.02E+7	6.02E+7	3.93E+7	3.98E+7	3.98E+7	3.23E+7	3.29E+7	3.29E+7

Table M-102. CLEANUP VOLUMES (m**3)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.87E+5	2.87E+5	2.87E+5	2.13E+5	2.13E+5	2.13E+5	1.47E+5	1.47E+5	1.47E+5	6.55E+4	6.55E+4	6.55E+4	5.53E+4	5.53E+4	5.53E+4
II	8.63E+5	9.00E+5	9.00E+5	8.19E+5	8.67E+5	8.67E+5	7.94E+5	8.12E+5	8.12E+5	7.63E+5	7.73E+5	7.73E+5	7.51E+5	7.60E+5	7.60E+5
III	2.28E+5	2.28E+5	2.28E+5	1.66E+5	1.66E+5	1.66E+5	1.24E+5	1.24E+5	1.24E+5	2.87E+4	2.87E+4	2.87E+4	1.38E+4	1.38E+4	1.38E+4
IV	3.42E+4	3.42E+4	3.42E+4	3.03E+4	3.03E+4	3.03E+4	2.54E+4	2.54E+4	2.54E+4	1.49E+4	1.49E+4	1.49E+4	1.22E+4	1.22E+4	1.22E+4
V	4.50E+6	4.50E+6	4.50E+6	3.84E+6	3.84E+6	3.84E+6	3.12E+6	3.12E+6	3.12E+6	1.57E+6	1.57E+6	1.57E+6	1.17E+6	1.17E+6	1.17E+6
VI	1.85E+5	1.85E+5	1.85E+5	1.59E+5	1.59E+5	1.59E+5	1.35E+5	1.35E+5	1.35E+5	8.82E+4	8.82E+4	8.82E+4	7.62E+4	7.62E+4	7.62E+4
VII	6.63E+6	6.63E+6	6.63E+6	5.18E+6	5.18E+6	5.18E+6	2.84E+6	2.84E+6	2.84E+6	4.88E+5	4.88E+5	4.88E+5	3.26E+5	3.26E+5	3.26E+5
IX	1.74E+4	1.74E+4	1.74E+4	1.06E+4	1.06E+4	1.06E+4	6.22E+3	6.22E+3	6.22E+3	1.34E+3	1.34E+3	1.34E+3	7.55E+2	7.55E+2	7.55E+2
X	1.88E+5	5.33E+5	5.33E+5	1.55E+5	4.39E+5	4.39E+5	1.20E+5	3.14E+5	3.14E+5	6.18E+4	1.14E+5	1.14E+5	4.81E+4	8.77E+4	8.77E+4
XII	1.65E+3	1.65E+3	1.65E+3	1.61E+3	1.61E+3	1.61E+3	1.57E+3	1.57E+3	1.57E+3	1.28E+3	1.28E+3	1.28E+3	1.17E+3	1.17E+3	1.17E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	8.70E+2	8.70E+2	8.70E+2	7.94E+2	7.94E+2	7.94E+2	6.92E+2	6.92E+2	6.92E+2	5.65E+2	5.65E+2	5.65E+2	5.34E+2	5.34E+2	5.34E+2
XVIB	8.70E+2	8.70E+2	8.70E+2	7.94E+2	7.94E+2	7.94E+2	6.92E+2	6.92E+2	6.92E+2	5.65E+2	5.65E+2	5.65E+2	5.34E+2	5.34E+2	5.34E+2
XVIC	8.70E+2	8.70E+2	8.70E+2	7.94E+2	7.94E+2	7.94E+2	6.92E+2	6.92E+2	6.92E+2	5.65E+2	5.65E+2	5.65E+2	5.34E+2	5.34E+2	5.34E+2
XVIIIA	5.55E+2	5.55E+2	5.55E+2	5.36E+2	5.36E+2	5.36E+2	5.13E+2	5.13E+2	5.13E+2	4.00E+2	4.00E+2	4.00E+2	3.65E+2	3.65E+2	3.65E+2
XVIIIB	5.55E+2	5.55E+2	5.55E+2	5.36E+2	5.36E+2	5.36E+2	5.13E+2	5.13E+2	5.13E+2	4.00E+2	4.00E+2	4.00E+2	3.65E+2	3.65E+2	3.65E+2
XVIIIC	5.55E+2	5.55E+2	5.55E+2	5.36E+2	5.36E+2	5.36E+2	5.13E+2	5.13E+2	5.13E+2	4.00E+2	4.00E+2	4.00E+2	3.65E+2	3.65E+2	3.65E+2
XXA	3.17E+3	3.17E+3	3.17E+3	5.48E+2	5.48E+2	5.48E+2	1.10E+2	1.10E+2	1.10E+2	4.19E+1	4.19E+1	4.19E+1	3.25E+1	3.25E+1	3.25E+1
XXB	3.17E+3	3.17E+3	3.17E+3	5.48E+2	5.48E+2	5.48E+2	1.10E+2	1.10E+2	1.10E+2	4.19E+1	4.19E+1	4.19E+1	3.25E+1	3.25E+1	3.25E+1
XXC	3.17E+3	3.17E+3	3.17E+3	5.48E+2	5.48E+2	5.48E+2	1.10E+2	1.10E+2	1.10E+2	4.19E+1	4.19E+1	4.19E+1	3.25E+1	3.25E+1	3.25E+1
XXIA	2.85E+4	2.85E+4	2.85E+4	2.64E+4	2.64E+4	2.64E+4	2.38E+4	2.38E+4	2.38E+4	1.82E+4	1.82E+4	1.82E+4	1.57E+4	1.57E+4	1.57E+4
XXIB	2.85E+4	2.85E+4	2.85E+4	2.64E+4	2.64E+4	2.64E+4	2.38E+4	2.38E+4	2.38E+4	1.82E+4	1.82E+4	1.82E+4	1.57E+4	1.57E+4	1.57E+4
XXIC	2.85E+4	2.85E+4	2.85E+4	2.64E+4	2.64E+4	2.64E+4	2.38E+4	2.38E+4	2.38E+4	1.82E+4	1.82E+4	1.82E+4	1.57E+4	1.57E+4	1.57E+4
XXII	1.01E+6	1.06E+6	1.06E+6	8.99E+5	9.90E+5	9.90E+5	8.11E+5	8.41E+5	8.41E+5	5.47E+5	5.86E+5	5.86E+5	5.29E+5	5.43E+5	5.43E+5
DOE	2.39E+7	2.47E+7	2.47E+7	2.02E+7	2.12E+7	2.12E+7	1.59E+7	1.63E+7	1.63E+7	8.78E+6	9.11E+6	9.11E+6	7.76E+6	7.91E+6	7.91E+6
DOD	1.65E+3	1.65E+3	1.65E+3	1.61E+3	1.61E+3	1.61E+3	1.57E+3	1.57E+3	1.57E+3	1.28E+3	1.28E+3	1.28E+3	1.17E+3	1.17E+3	1.17E+3
NRC	8.15E+5	8.15E+5	8.15E+5	7.22E+5	7.22E+5	7.22E+5	6.44E+5	6.44E+5	6.44E+5	4.97E+5	4.97E+5	4.97E+5	4.35E+5	4.35E+5	4.35E+5
Total	2.48E+7	2.55E+7	2.55E+7	2.10E+7	2.20E+7	2.20E+7	1.65E+7	1.69E+7	1.69E+7	9.28E+6	9.61E+6	9.61E+6	8.20E+6	8.34E+6	8.34E+6

Table M-103. CLEANUP VOLUMES (m**3)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.98E+6	1.98E+6	1.98E+6	8.65E+5	8.65E+5	8.65E+5	6.05E+5	6.05E+5	6.05E+5	3.26E+5	3.26E+5	3.26E+5	2.25E+5	2.25E+5	2.25E+5
II	1.45E+6	1.46E+6	1.46E+6	9.87E+5	9.90E+5	9.90E+5	9.40E+5	9.48E+5	9.48E+5	8.65E+5	9.03E+5	9.03E+5	8.11E+5	8.62E+5	8.62E+5
III	8.19E+5	8.19E+5	8.19E+5	7.07E+5	7.07E+5	7.07E+5	5.89E+5	5.89E+5	5.89E+5	2.83E+5	2.83E+5	2.83E+5	1.71E+5	1.71E+5	1.71E+5
IV	1.46E+5	1.46E+5	1.46E+5	7.42E+4	7.42E+4	7.42E+4	5.55E+4	5.55E+4	5.55E+4	3.51E+4	3.51E+4	3.51E+4	3.00E+4	3.00E+4	3.00E+4
V	1.15E+7	1.15E+7	1.15E+7	8.37E+6	8.37E+6	8.37E+6	7.01E+6	7.01E+6	7.01E+6	4.85E+6	4.85E+6	4.85E+6	3.95E+6	3.95E+6	3.95E+6
VI	4.31E+5	4.31E+5	4.31E+5	3.19E+5	3.19E+5	3.19E+5	2.71E+5	2.71E+5	2.71E+5	1.97E+5	1.97E+5	1.97E+5	1.63E+5	1.63E+5	1.63E+5
VII	5.07E+7	5.07E+7	5.07E+7	1.89E+7	1.89E+7	1.89E+7	1.24E+7	1.24E+7	1.24E+7	6.61E+6	6.61E+6	6.61E+6	4.67E+6	4.67E+6	4.67E+6
IX	2.10E+5	2.10E+5	2.10E+5	7.84E+4	7.84E+4	7.84E+4	4.62E+4	4.62E+4	4.62E+4	1.70E+4	1.70E+4	1.70E+4	1.70E+4	8.75E+3	8.75E+3
X	7.10E+5	7.96E+5	7.96E+5	4.75E+5	7.72E+5	7.72E+5	3.68E+5	7.42E+5	7.42E+5	2.20E+5	6.20E+5	6.20E+5	1.74E+5	5.18E+5	5.18E+5
XII	7.73E+3	7.73E+3	7.73E+3	2.63E+3	2.63E+3	2.63E+3	1.71E+3	1.71E+3	1.71E+3	1.62E+3	1.62E+3	1.62E+3	1.57E+3	1.57E+3	1.57E+3
XIIIA	1.33E+3	1.33E+3	1.33E+3	3.30E+2	3.30E+2	3.30E+2	1.34E+2	1.34E+2	1.34E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.33E+3	1.33E+3	1.33E+3	3.30E+2	3.30E+2	3.30E+2	1.34E+2	1.34E+2	1.34E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.33E+3	1.33E+3	1.33E+3	3.30E+2	3.30E+2	3.30E+2	1.34E+2	1.34E+2	1.34E+2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.15E+3	1.15E+3	1.15E+3	1.03E+3	1.03E+3	1.03E+3	9.87E+2	9.87E+2	9.87E+2	8.93E+2	8.93E+2	8.93E+2	8.14E+2	8.14E+2	8.14E+2
XVIB	1.15E+3	1.15E+3	1.15E+3	1.03E+3	1.03E+3	1.03E+3	9.87E+2	9.87E+2	9.87E+2	8.93E+2	8.93E+2	8.93E+2	8.14E+2	8.14E+2	8.14E+2
XVIC	1.15E+3	1.15E+3	1.15E+3	1.03E+3	1.03E+3	1.03E+3	9.87E+2	9.87E+2	9.87E+2	8.93E+2	8.93E+2	8.93E+2	8.14E+2	8.14E+2	8.14E+2
XVIIIA	5.90E+2	5.90E+2	5.90E+2	5.84E+2	5.84E+2	5.84E+2	5.81E+2	5.81E+2	5.81E+2	5.59E+2	5.59E+2	5.59E+2	5.36E+2	5.36E+2	5.36E+2
XVIIIB	5.90E+2	5.90E+2	5.90E+2	5.84E+2	5.84E+2	5.84E+2	5.81E+2	5.81E+2	5.81E+2	5.59E+2	5.59E+2	5.59E+2	5.36E+2	5.36E+2	5.36E+2
XVIIIC	5.90E+2	5.90E+2	5.90E+2	5.84E+2	5.84E+2	5.84E+2	5.81E+2	5.81E+2	5.81E+2	5.59E+2	5.59E+2	5.59E+2	5.36E+2	5.36E+2	5.36E+2
XXA	1.45E+5	1.45E+5	1.45E+5	3.21E+4	3.21E+4	3.21E+4	1.58E+4	1.58E+4	1.58E+4	1.69E+3	1.69E+3	1.69E+3	1.72E+2	1.72E+2	1.72E+2
XXB	1.45E+5	1.45E+5	1.45E+5	3.21E+4	3.21E+4	3.21E+4	1.58E+4	1.58E+4	1.58E+4	1.69E+3	1.69E+3	1.69E+3	1.72E+2	1.72E+2	1.72E+2
XXC	1.45E+5	1.45E+5	1.45E+5	3.21E+4	3.21E+4	3.21E+4	1.58E+4	1.58E+4	1.58E+4	1.69E+3	1.69E+3	1.69E+3	1.72E+2	1.72E+2	1.72E+2
XXIA	3.43E+4	3.43E+4	3.43E+4	3.37E+4	3.37E+4	3.37E+4	3.28E+4	3.28E+4	3.28E+4	2.88E+4	2.88E+4	2.88E+4	2.62E+4	2.62E+4	2.62E+4
XXIB	3.43E+4	3.43E+4	3.43E+4	3.37E+4	3.37E+4	3.37E+4	3.28E+4	3.28E+4	3.28E+4	2.88E+4	2.88E+4	2.88E+4	2.62E+4	2.62E+4	2.62E+4
XXIC	3.43E+4	3.43E+4	3.43E+4	3.37E+4	3.37E+4	3.37E+4	3.28E+4	3.28E+4	3.28E+4	2.88E+4	2.88E+4	2.88E+4	2.62E+4	2.62E+4	2.62E+4
XXII	1.96E+6	1.96E+6	1.96E+6	1.50E+6	1.51E+6	1.51E+6	1.31E+6	1.32E+6	1.32E+6	1.02E+6	1.09E+6	1.09E+6	8.84E+5	1.00E+6	1.00E+6
DOE	9.09E+7	9.10E+7	9.10E+7	4.82E+7	4.85E+7	4.85E+7	3.72E+7	3.77E+7	3.77E+7	2.48E+7	2.57E+7	2.57E+7	1.99E+7	2.11E+7	2.11E+7
DOD	1.90E+4	1.90E+4	1.90E+4	5.44E+3	5.44E+3	5.44E+3	2.85E+3	2.85E+3	2.85E+3	1.62E+3	1.62E+3	1.62E+3	1.57E+3	1.57E+3	1.57E+3
NRC	2.96E+6	2.96E+6	2.96E+6	1.36E+6	1.36E+6	1.36E+6	1.10E+6	1.10E+6	1.10E+6	8.05E+5	8.05E+5	8.05E+5	7.15E+5	7.15E+5	7.15E+5
Total	9.39E+7	9.40E+7	9.40E+7	4.95E+7	4.99E+7	4.99E+7	3.83E+7	3.88E+7	3.88E+7	2.56E+7	2.65E+7	2.65E+7	2.06E+7	2.18E+7	2.18E+7

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 Table M-104. CLEANUP VOLUMES (m**3)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.35E+5	1.35E+5	1.35E+5	1.00E+5	1.00E+5	1.00E+5	6.86E+4	6.86E+4	6.86E+4	2.48E+4	2.48E+4	2.48E+4	1.71E+4	1.71E+4	1.71E+4
II	7.89E+5	7.97E+5	7.97E+5	7.78E+5	7.88E+5	7.88E+5	7.60E+5	7.70E+5	7.70E+5	6.94E+5	7.02E+5	7.02E+5	6.67E+5	6.75E+5	6.75E+5
III	1.14E+5	1.14E+5	1.14E+5	7.57E+4	7.57E+4	7.57E+4	3.35E+4	3.35E+4	3.35E+4	3.69E+3	3.69E+3	3.69E+3	1.82E+3	1.82E+3	1.82E+3
IV	2.34E+4	2.34E+4	2.34E+4	1.95E+4	1.95E+4	1.95E+4	1.46E+4	1.46E+4	1.46E+4	4.09E+3	4.09E+3	4.09E+3	1.33E+3	1.33E+3	1.33E+3
V	2.97E+6	2.97E+6	2.97E+6	2.40E+6	2.40E+6	2.40E+6	1.68E+6	1.68E+6	1.68E+6	6.84E+5	6.84E+5	6.84E+5	5.79E+5	5.79E+5	5.79E+5
VI	1.30E+5	1.30E+5	1.30E+5	1.13E+5	1.13E+5	1.13E+5	9.07E+4	9.07E+4	9.07E+4	4.94E+4	4.94E+4	4.94E+4	4.26E+4	4.26E+4	4.26E+4
VII	1.92E+6	1.92E+6	1.92E+6	9.44E+5	9.44E+5	9.44E+5	4.27E+5	4.27E+5	4.27E+5	1.40E+3	1.40E+3	1.40E+3	.00E+0	.00E+0	.00E+0
IX	4.19E+3	4.19E+3	4.19E+3	2.11E+3	2.11E+3	2.11E+3	1.08E+3	1.08E+3	1.08E+3	9.24E+1	9.24E+1	9.24E+1	.00E+0	.00E+0	.00E+0
X	1.26E+5	3.51E+5	3.51E+5	1.01E+5	2.53E+5	2.53E+5	7.63E+4	1.55E+5	1.55E+5	3.04E+4	5.31E+4	5.31E+4	2.37E+4	3.80E+4	3.80E+4
XII	1.49E+3	1.49E+3	1.49E+3	1.31E+3	1.31E+3	1.31E+3	1.11E+3	1.11E+3	1.11E+3	7.75E+2	7.75E+2	7.75E+2	7.15E+2	7.15E+2	7.15E+2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	6.77E+2	6.77E+2	6.77E+2	6.27E+2	6.27E+2	6.27E+2	5.76E+2	5.76E+2	5.76E+2	3.95E+2	3.95E+2	3.95E+2	3.38E+2	3.38E+2	3.38E+2
XVIB	6.77E+2	6.77E+2	6.77E+2	6.27E+2	6.27E+2	6.27E+2	5.76E+2	5.76E+2	5.76E+2	3.95E+2	3.95E+2	3.95E+2	3.38E+2	3.38E+2	3.38E+2
XVIC	6.77E+2	6.77E+2	6.77E+2	6.27E+2	6.27E+2	6.27E+2	5.76E+2	5.76E+2	5.76E+2	3.95E+2	3.95E+2	3.95E+2	3.38E+2	3.38E+2	3.38E+2
XVIIIA	5.04E+2	5.04E+2	5.04E+2	4.62E+2	4.62E+2	4.62E+2	3.99E+2	3.99E+2	3.99E+2	2.61E+2	2.61E+2	2.61E+2	2.25E+2	2.25E+2	2.25E+2
XVIIIB	5.04E+2	5.04E+2	5.04E+2	4.62E+2	4.62E+2	4.62E+2	3.99E+2	3.99E+2	3.99E+2	2.61E+2	2.61E+2	2.61E+2	2.25E+2	2.25E+2	2.25E+2
XVIIIC	5.04E+2	5.04E+2	5.04E+2	4.62E+2	4.62E+2	4.62E+2	3.99E+2	3.99E+2	3.99E+2	2.61E+2	2.61E+2	2.61E+2	2.25E+2	2.25E+2	2.25E+2
XXA	7.46E+1	7.46E+1	7.46E+1	5.22E+1	5.22E+1	5.22E+1	3.33E+1	3.33E+1	3.33E+1	1.32E+1	1.32E+1	1.32E+1	9.84E+0	9.84E+0	9.84E+0
XXB	7.46E+1	7.46E+1	7.46E+1	5.22E+1	5.22E+1	5.22E+1	3.33E+1	3.33E+1	3.33E+1	1.32E+1	1.32E+1	1.32E+1	9.84E+0	9.84E+0	9.84E+0
XXC	7.46E+1	7.46E+1	7.46E+1	5.22E+1	5.22E+1	5.22E+1	3.33E+1	3.33E+1	3.33E+1	1.32E+1	1.32E+1	1.32E+1	9.84E+0	9.84E+0	9.84E+0
XXIA	2.27E+4	2.27E+4	2.27E+4	2.06E+4	2.06E+4	2.06E+4	1.80E+4	1.80E+4	1.80E+4	8.32E+3	8.32E+3	8.32E+3	6.50E+3	6.50E+3	6.50E+3
XXIB	2.27E+4	2.27E+4	2.27E+4	2.06E+4	2.06E+4	2.06E+4	1.80E+4	1.80E+4	1.80E+4	8.32E+3	8.32E+3	8.32E+3	6.50E+3	6.50E+3	6.50E+3
XXIC	2.27E+4	2.27E+4	2.27E+4	2.06E+4	2.06E+4	2.06E+4	1.80E+4	1.80E+4	1.80E+4	8.32E+3	8.32E+3	8.32E+3	6.50E+3	6.50E+3	6.50E+3
XXII	7.87E+5	8.22E+5	8.22E+5	6.63E+5	7.43E+5	7.43E+5	5.43E+5	5.88E+5	5.88E+5	4.72E+5	4.88E+5	4.88E+5	3.68E+5	4.66E+5	4.66E+5
DOE	1.45E+7	1.50E+7	1.50E+7	1.16E+7	1.23E+7	1.23E+7	8.87E+6	9.28E+6	9.28E+6	5.83E+6	5.96E+6	5.96E+6	4.80E+6	5.50E+6	5.50E+6
DOD	1.49E+3	1.49E+3	1.49E+3	1.31E+3	1.31E+3	1.31E+3	1.11E+3	1.11E+3	1.11E+3	7.75E+2	7.75E+2	7.75E+2	7.15E+2	7.15E+2	7.15E+2
NRC	6.17E+5	6.17E+5	6.17E+5	5.62E+5	5.62E+5	5.62E+5	4.95E+5	4.95E+5	4.95E+5	2.49E+5	2.49E+5	2.49E+5	2.00E+5	2.00E+5	2.00E+5
Total	1.51E+7	1.56E+7	1.56E+7	1.21E+7	1.28E+7	1.28E+7	9.37E+6	9.77E+6	9.77E+6	6.08E+6	6.21E+6	6.21E+6	5.00E+6	5.70E+6	5.70E+6

High Population Density Without Agriculture - 09-19-94 1:56p
 Table M-105. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.15E+4	2.34E+4	2.34E+4	2.12E+4	2.30E+4	2.30E+4	2.10E+4	2.28E+4	2.28E+4	2.04E+4	2.21E+4	2.21E+4	2.00E+4	2.17E+4	2.17E+4
II	1.84E+5	1.71E+6	8.37E+6	1.84E+5	1.71E+6	8.37E+6	1.84E+5	1.71E+6	8.37E+6	1.84E+5	1.71E+6	8.37E+6	1.84E+5	1.71E+6	8.36E+6
III	9.48E+3	1.05E+4	1.05E+4	9.47E+3	1.05E+4	1.05E+4	9.44E+3	1.05E+4	1.05E+4	9.17E+3	1.02E+4	1.02E+4	8.75E+3	9.69E+3	9.69E+3
IV	2.82E+3	7.00E+3	7.07E+3	2.80E+3	6.95E+3	7.02E+3	2.78E+3	6.91E+3	6.97E+3	2.73E+3	6.79E+3	6.86E+3	2.70E+3	6.71E+3	6.78E+3
V	5.61E+5	6.08E+5	6.08E+5	5.60E+5	6.08E+5	6.08E+5	5.59E+5	6.07E+5	6.07E+5	5.56E+5	6.04E+5	6.04E+5	5.53E+5	6.01E+5	6.01E+5
VI	1.52E+5	9.24E+5	2.46E+6	1.52E+5	9.24E+5	2.46E+6	1.52E+5	9.24E+5	2.46E+6	1.52E+5	9.24E+5	2.46E+6	1.52E+5	9.24E+5	2.46E+6
VII	8.49E+5	7.63E+6	6.20E+7	8.27E+5	7.43E+6	6.03E+7	7.96E+5	7.14E+6	5.80E+7	7.27E+5	6.50E+6	5.28E+7	6.83E+5	6.10E+6	4.95E+7
IX	4.02E+3	3.61E+4	2.30E+5	3.81E+3	3.43E+4	2.18E+5	3.62E+3	3.26E+4	2.07E+5	3.15E+3	2.83E+4	1.80E+5	2.83E+3	2.54E+4	1.62E+5
X	1.39E+3	1.86E+4	2.12E+4	1.39E+3	1.86E+4	2.12E+4	1.39E+3	1.86E+4	2.12E+4	1.39E+3	1.85E+4	2.11E+4	1.38E+3	1.83E+4	2.09E+4
XII	5.11E+2	1.56E+3	1.60E+3	5.11E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3
XIIIA	2.09E+0	6.80E+0	7.86E+0	1.68E+0	5.46E+0	6.31E+0	1.17E+0	3.81E+0	4.40E+0	2.31E-1	7.51E-1	8.68E-1	.00E+0	.00E+0	.00E+0
XIIIB	1.68E+0	2.99E+0	3.19E+0	1.35E+0	2.40E+0	2.56E+0	9.43E-1	1.68E+0	1.79E+0	1.86E-1	3.31E-1	3.53E-1	.00E+0	.00E+0	.00E+0
XIIIC	1.11E+0	1.31E+0	4.20E+1	8.91E-1	1.05E+0	3.37E+1	6.22E-1	7.36E-1	2.36E+1	1.23E-1	1.45E-1	4.64E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E+1	3.84E+1	3.84E+1	3.65E+1	3.84E+1	3.84E+1	3.65E+1	3.84E+1	3.84E+1	3.65E+1	3.84E+1	3.84E+1	3.65E+1	3.84E+1	3.84E+1
XVIB	3.61E+1	3.79E+1	3.79E+1	3.61E+1	3.79E+1	3.79E+1	3.61E+1	3.79E+1	3.79E+1	3.61E+1	3.79E+1	3.79E+1	3.61E+1	3.78E+1	3.78E+1
XVIC	3.52E+1	3.67E+1	3.67E+1	3.52E+1	3.67E+1	3.67E+1	3.52E+1	3.67E+1	3.67E+1	3.52E+1	3.67E+1	3.67E+1	3.52E+1	3.67E+1	3.67E+1
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2
XVIIIC	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2
XXA	3.04E+1	1.07E+2	3.72E+2	2.30E+1	8.13E+1	2.81E+2	1.95E+1	6.89E+1	2.39E+2	1.36E+1	4.79E+1	1.66E+2	1.02E+1	3.61E+1	1.25E+2
XXB	2.45E+1	4.72E+1	1.08E+2	1.86E+1	3.58E+1	8.14E+1	1.57E+1	3.03E+1	6.90E+1	1.09E+1	2.11E+1	4.80E+1	8.25E+0	1.59E+1	3.62E+1
XXC	1.62E+1	2.04E+1	7.09E+3	1.23E+1	1.54E+1	5.37E+3	1.04E+1	1.31E+1	4.55E+3	7.23E+0	9.09E+0	3.16E+3	5.45E+0	6.85E+0	2.38E+3
XXIA	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4
XXIB	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.96E+3	2.57E+4
XXIC	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.85E+3	2.07E+4
XXII	8.67E+3	1.19E+5	2.38E+5	8.66E+3	1.19E+5	2.38E+5	8.66E+3	1.19E+5	2.38E+5	8.63E+3	1.18E+5	2.38E+5	8.61E+3	1.18E+5	2.37E+5
DOE	5.15E+6	3.18E+7	1.29E+8	5.13E+6	3.16E+7	1.27E+8	5.10E+6	3.14E+7	1.25E+8	5.02E+6	3.07E+7	1.20E+8	4.97E+6	3.03E+7	1.16E+8
DOD	5.24E+2	1.59E+3	1.75E+3	5.22E+2	1.58E+3	1.72E+3	5.18E+2	1.58E+3	1.68E+3	5.12E+2	1.56E+3	1.62E+3	5.10E+2	1.56E+3	1.60E+3
NRC	1.75E+4	7.72E+4	5.96E+5	1.74E+4	7.70E+4	5.88E+5	1.73E+4	7.69E+4	5.83E+5	1.73E+4	7.68E+4	5.76E+5	1.72E+4	7.66E+4	5.72E+5
Total	5.17E+6	3.19E+7	1.29E+8	5.15E+6	3.17E+7	1.28E+8	5.11E+6	3.14E+7	1.25E+8	5.04E+6	3.08E+7	1.20E+8	4.99E+6	3.04E+7	1.17E+8

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Table M-106. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.91E+4	2.08E+4	2.08E+4	1.84E+4	2.00E+4	2.00E+4	1.75E+4	1.90E+4	1.90E+4	1.49E+4	1.62E+4	1.62E+4	1.42E+4	1.54E+4	1.54E+4
II	1.84E+5	1.71E+6	8.36E+6	1.83E+5	1.71E+6	8.34E+6	1.83E+5	1.70E+6	8.31E+6	1.83E+5	1.70E+6	8.27E+6	1.83E+5	1.70E+6	8.25E+6
III	7.52E+3	8.32E+3	8.32E+3	6.94E+3	7.69E+3	7.69E+3	6.27E+3	6.95E+3	6.95E+3	2.90E+3	3.21E+3	3.21E+3	1.88E+3	2.08E+3	2.08E+3
IV	2.64E+3	6.55E+3	6.62E+3	2.60E+3	6.46E+3	6.52E+3	2.52E+3	6.27E+3	6.33E+3	2.14E+3	5.32E+3	5.37E+3	1.95E+3	4.85E+3	4.89E+3
V	5.46E+5	5.93E+5	5.93E+5	5.40E+5	5.86E+5	5.86E+5	5.29E+5	5.75E+5	5.75E+5	4.77E+5	5.17E+5	5.17E+5	4.50E+5	4.88E+5	4.88E+5
VI	1.52E+5	9.23E+5	2.46E+6	1.52E+5	9.23E+5	2.46E+6	1.51E+5	9.21E+5	2.45E+6	1.49E+5	9.13E+5	2.43E+6	1.47E+5	9.07E+5	2.42E+6
VII	6.15E+5	5.48E+6	4.45E+7	5.64E+5	5.02E+6	4.07E+7	4.38E+5	3.90E+6	3.16E+7	1.85E+5	1.66E+6	1.35E+7	1.47E+5	1.32E+6	1.07E+7
IX	2.36E+3	2.12E+4	1.35E+5	1.99E+3	1.78E+4	1.14E+5	1.62E+3	1.46E+4	9.28E+4	7.60E+2	6.83E+3	4.35E+4	5.33E+2	4.79E+3	3.05E+4
X	1.37E+3	1.76E+4	2.01E+4	1.36E+3	1.68E+4	1.91E+4	1.34E+3	1.50E+4	1.71E+4	1.27E+3	9.76E+3	1.10E+4	1.24E+3	8.62E+3	9.72E+3
XII	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.09E+2	1.56E+3	1.60E+3	5.09E+2	1.55E+3	1.60E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.64E+1	3.83E+1	3.83E+1	3.64E+1	3.83E+1	3.83E+1	3.63E+1	3.82E+1	3.82E+1	3.59E+1	3.78E+1	3.78E+1	3.57E+1	3.76E+1	3.76E+1
XVIB	3.60E+1	3.78E+1	3.78E+1	3.60E+1	3.78E+1	3.78E+1	3.58E+1	3.76E+1	3.76E+1	3.55E+1	3.73E+1	3.73E+1	3.53E+1	3.71E+1	3.71E+1
XVIC	3.52E+1	3.67E+1	3.67E+1	3.51E+1	3.66E+1	3.66E+1	3.50E+1	3.65E+1	3.65E+1	3.47E+1	3.62E+1	3.62E+1	3.45E+1	3.60E+1	3.60E+1
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.11E+2	1.11E+2
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.11E+2	1.11E+2	9.96E+1	1.10E+2	1.10E+2	9.89E+1	1.09E+2	1.09E+2
XVIIIC	9.79E+1	1.07E+2	1.07E+2	9.78E+1	1.07E+2	1.07E+2	9.77E+1	1.07E+2	1.07E+2	9.65E+1	1.05E+2	1.05E+2	9.58E+1	1.04E+2	1.04E+2
XXA	4.85E+0	1.71E+1	5.94E+1	2.00E+0	7.06E+0	2.46E+1	1.30E+0	4.58E+0	1.60E+1	1.03E+0	3.65E+0	1.27E+1	9.59E-1	3.39E+0	1.18E+1
XXB	3.91E+0	7.53E+0	1.72E+1	1.61E+0	3.11E+0	7.10E+0	1.05E+0	2.02E+0	4.61E+0	8.34E-1	1.61E+0	3.68E+0	7.73E-1	1.49E+0	3.42E+0
XXC	2.59E+0	3.25E+0	1.13E+3	1.07E+0	1.34E+0	4.69E+2	6.91E-1	8.70E-1	3.05E+2	5.51E-1	6.93E-1	2.43E+2	5.11E-1	6.43E-1	2.26E+2
XXIA	2.88E+2	2.99E+3	2.83E+4	2.87E+2	2.98E+3	2.83E+4	2.86E+2	2.97E+3	2.81E+4	2.77E+2	2.88E+3	2.73E+4	2.70E+2	2.80E+3	2.65E+4
XXIB	2.86E+2	2.96E+3	2.56E+4	2.85E+2	2.95E+3	2.55E+4	2.84E+2	2.93E+3	2.54E+4	2.75E+2	2.84E+3	2.46E+4	2.68E+2	2.77E+3	2.40E+4
XXIC	2.82E+2	2.85E+3	2.07E+4	2.82E+2	2.84E+3	2.06E+4	2.80E+2	2.82E+3	2.05E+4	2.72E+2	2.74E+3	1.99E+4	2.64E+2	2.66E+3	1.93E+4
XXII	8.57E+3	1.18E+5	2.37E+5	8.52E+3	1.17E+5	2.36E+5	8.46E+3	1.16E+5	2.34E+5	8.01E+3	1.11E+5	2.24E+5	7.96E+3	1.10E+5	2.21E+5
DOE	4.88E+6	2.96E+7	1.11E+8	4.82E+6	2.91E+7	1.07E+8	4.67E+6	2.80E+7	9.80E+7	4.30E+6	2.54E+7	7.91E+7	4.20E+6	2.49E+7	7.60E+7
DOD	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.09E+2	1.56E+3	1.60E+3	5.09E+2	1.55E+3	1.60E+3
NRC	1.72E+4	7.63E+4	5.64E+5	1.71E+4	7.60E+4	5.60E+5	1.70E+4	7.56E+4	5.55E+5	1.67E+4	7.36E+4	5.39E+5	1.65E+4	7.18E+4	5.25E+5
Total	4.90E+6	2.97E+7	1.12E+8	4.84E+6	2.92E+7	1.08E+8	4.69E+6	2.80E+7	9.86E+7	4.31E+6	2.55E+7	7.97E+7	4.22E+6	2.50E+7	7.65E+7

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 Table M-107. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.13E+4	2.32E+4	2.32E+4	2.08E+4	2.26E+4	2.26E+4	2.04E+4	2.22E+4	2.22E+4	1.94E+4	2.11E+4	2.11E+4	1.86E+4	2.02E+4	2.02E+4
II	1.84E+5	1.71E+6	8.37E+6	1.84E+5	1.71E+6	8.37E+6	1.84E+5	1.71E+6	8.37E+6	1.84E+5	1.71E+6	8.37E+6	1.84E+5	1.71E+6	8.37E+6
III	9.48E+3	1.05E+4	1.05E+4	9.40E+3	1.04E+4	1.04E+4	9.20E+3	1.02E+4	1.02E+4	7.92E+3	8.77E+3	8.77E+3	7.00E+3	7.75E+3	7.75E+3
IV	2.80E+3	6.97E+3	7.04E+3	2.76E+3	6.87E+3	6.94E+3	2.73E+3	6.79E+3	6.86E+3	2.64E+3	6.57E+3	6.63E+3	2.60E+3	6.45E+3	6.51E+3
V	5.60E+5	6.08E+5	6.08E+5	5.59E+5	6.06E+5	6.06E+5	5.57E+5	6.04E+5	6.04E+5	5.48E+5	5.95E+5	5.95E+5	5.41E+5	5.87E+5	5.87E+5
VI	1.52E+5	9.24E+5	2.46E+6	1.52E+5	9.24E+5	2.46E+6	1.52E+5	9.24E+5	2.46E+6	1.52E+5	9.24E+5	2.46E+6	1.52E+5	9.24E+5	2.46E+6
VII	8.41E+5	7.55E+6	6.14E+7	7.66E+5	6.86E+6	5.58E+7	7.16E+5	6.40E+6	5.20E+7	6.14E+5	5.47E+6	4.44E+7	5.41E+5	4.82E+6	3.91E+7
IX	3.88E+3	3.49E+4	2.22E+5	3.42E+3	3.07E+4	1.96E+5	3.08E+3	2.77E+4	1.77E+5	2.35E+3	2.11E+4	1.34E+5	1.86E+3	1.67E+4	1.06E+5
X	1.39E+3	1.86E+4	2.12E+4	1.39E+3	1.86E+4	2.12E+4	1.39E+3	1.86E+4	2.12E+4	1.37E+3	1.82E+4	2.07E+4	1.36E+3	1.75E+4	1.99E+4
XII	5.11E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3
XIIIA	1.90E+0	6.20E+0	7.16E+0	1.11E+0	3.62E+0	4.18E+0	5.44E-1	1.77E+0	2.05E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.53E+0	2.73E+0	2.91E+0	8.95E-1	1.59E+0	1.70E+0	4.38E-1	7.79E-1	8.32E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.01E+0	1.20E+0	3.83E+1	5.90E-1	6.98E-1	2.23E+1	2.89E-1	3.42E-1	1.09E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E+1	3.84E+1	3.84E+1	3.65E+1	3.84E+1	3.84E+1	3.65E+1	3.84E+1	3.84E+1	3.64E+1	3.84E+1	3.84E+1	3.64E+1	3.83E+1	3.83E+1
XVIB	3.61E+1	3.79E+1	3.79E+1	3.61E+1	3.79E+1	3.79E+1	3.61E+1	3.79E+1	3.79E+1	3.60E+1	3.78E+1	3.78E+1	3.60E+1	3.78E+1	3.78E+1
XVIC	3.52E+1	3.67E+1	3.67E+1	3.52E+1	3.67E+1	3.67E+1	3.52E+1	3.67E+1	3.67E+1	3.52E+1	3.67E+1	3.67E+1	3.51E+1	3.67E+1	3.67E+1
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2
XVIIIC	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.78E+1	1.07E+2	1.07E+2
XXA	2.43E+1	8.56E+1	2.97E+2	1.60E+1	5.64E+1	1.95E+2	1.18E+1	4.18E+1	1.45E+2	3.37E+0	1.19E+1	4.13E+1	1.42E+0	5.01E+0	1.74E+1
XXB	1.96E+1	3.77E+1	8.58E+1	1.29E+1	2.48E+1	5.65E+1	9.55E+0	1.84E+1	4.19E+1	2.72E+0	5.23E+0	1.19E+1	1.14E+0	2.20E+0	5.04E+0
XXC	1.29E+1	1.63E+1	5.66E+3	8.52E+0	1.07E+1	3.73E+3	6.31E+0	7.93E+0	2.76E+3	1.80E+0	2.26E+0	7.88E+2	7.55E-1	9.50E-1	3.33E+2
XXIA	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.88E+2	2.99E+3	2.84E+4	2.87E+2	2.98E+3	2.83E+4
XXIB	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.86E+2	2.96E+3	2.56E+4	2.85E+2	2.95E+3	2.55E+4
XXIC	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.85E+3	2.07E+4	2.81E+2	2.84E+3	2.06E+4
XXII	8.66E+3	1.19E+5	2.38E+5	8.65E+3	1.18E+5	2.38E+5	8.63E+3	1.18E+5	2.38E+5	8.57E+3	1.18E+5	2.37E+5	8.51E+3	1.18E+5	2.36E+5
DOE	5.14E+6	3.18E+7	1.28E+8	5.06E+6	3.11E+7	1.22E+8	5.01E+6	3.06E+7	1.19E+8	4.89E+6	2.96E+7	1.11E+8	4.80E+6	2.89E+7	1.06E+8
DOD	5.23E+2	1.59E+3	1.74E+3	5.18E+2	1.58E+3	1.68E+3	5.14E+2	1.57E+3	1.64E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3
NRC	1.74E+4	7.71E+4	5.89E+5	1.73E+4	7.68E+4	5.79E+5	1.73E+4	7.67E+4	5.74E+5	1.71E+4	7.63E+4	5.63E+5	1.71E+4	7.60E+4	5.59E+5
Total	5.16E+6	3.18E+7	1.29E+8	5.08E+6	3.11E+7	1.23E+8	5.03E+6	3.07E+7	1.19E+8	4.91E+6	2.97E+7	1.12E+8	4.82E+6	2.90E+7	1.06E+8

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 Table M-108. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.72E+4	1.87E+4	1.87E+4	1.63E+4	1.77E+4	1.77E+4	1.51E+4	1.63E+4	1.63E+4	1.08E+4	1.17E+4	1.17E+4	9.40E+3	1.02E+4	1.02E+4
II	1.83E+5	1.70E+6	8.30E+6	1.83E+5	1.70E+6	8.29E+6	1.83E+5	1.70E+6	8.27E+6	1.82E+5	1.69E+6	8.14E+6	1.81E+5	1.67E+6	8.07E+6
III	6.06E+3	6.71E+3	6.71E+3	5.01E+3	5.54E+3	5.54E+3	3.18E+3	3.52E+3	3.52E+3	8.35E+2	9.24E+2	9.24E+2	4.71E+2	5.21E+2	5.21E+2
IV	2.48E+3	6.16E+3	6.22E+3	2.36E+3	5.86E+3	5.92E+3	2.12E+3	5.28E+3	5.33E+3	9.42E+2	2.34E+3	2.36E+3	3.51E+2	8.72E+2	8.81E+2
V	5.26E+5	5.71E+5	5.71E+5	5.12E+5	5.55E+5	5.55E+5	4.82E+5	5.23E+5	5.23E+5	4.02E+5	4.37E+5	4.37E+5	3.83E+5	4.16E+5	4.16E+5
VI	1.51E+5	9.21E+5	2.45E+6	1.50E+5	9.19E+5	2.45E+6	1.49E+5	9.14E+5	2.44E+6	1.42E+5	8.85E+5	2.37E+6	1.40E+5	8.76E+5	2.34E+6
VII	3.65E+5	3.26E+6	2.64E+7	2.60E+5	2.32E+6	1.88E+7	1.72E+5	1.54E+6	1.25E+7	9.55E+2	8.23E+3	6.65E+4	.00E+0	.00E+0	.00E+0
IX	1.35E+3	1.22E+4	7.75E+4	9.77E+2	8.78E+3	5.59E+4	6.68E+2	6.00E+3	3.82E+4	1.21E+2	1.09E+3	6.94E+3	.00E+0	.00E+0	.00E+0
X	1.34E+3	1.56E+4	1.78E+4	1.32E+3	1.38E+4	1.57E+4	1.30E+3	1.12E+4	1.27E+4	1.18E+3	6.76E+3	7.58E+3	1.14E+3	5.72E+3	6.39E+3
XII	5.10E+2	1.56E+3	1.60E+3	5.09E+2	1.56E+3	1.60E+3	5.08E+2	1.55E+3	1.59E+3	5.05E+2	1.54E+3	1.58E+3	5.04E+2	1.54E+3	1.58E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.62E+1	3.81E+1	3.81E+1	3.61E+1	3.80E+1	3.80E+1	3.60E+1	3.79E+1	3.79E+1	3.45E+1	3.64E+1	3.64E+1	3.37E+1	3.56E+1	3.56E+1
XVIB	3.58E+1	3.76E+1	3.76E+1	3.57E+1	3.75E+1	3.75E+1	3.56E+1	3.73E+1	3.73E+1	3.41E+1	3.59E+1	3.59E+1	3.33E+1	3.51E+1	3.51E+1
XVIC	3.50E+1	3.65E+1	3.65E+1	3.49E+1	3.64E+1	3.64E+1	3.47E+1	3.62E+1	3.62E+1	3.33E+1	3.48E+1	3.48E+1	3.25E+1	3.40E+1	3.40E+1
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.02E+2	1.13E+2	1.13E+2	1.01E+2	1.12E+2	1.12E+2	9.68E+1	1.07E+2	1.07E+2	9.45E+1	1.05E+2	1.05E+2
XVIIIB	1.01E+2	1.11E+2	1.11E+2	1.00E+2	1.11E+2	1.11E+2	9.96E+1	1.10E+2	1.10E+2	9.51E+1	1.05E+2	1.05E+2	9.29E+1	1.03E+2	1.03E+2
XVIIIC	9.77E+1	1.06E+2	1.06E+2	9.73E+1	1.06E+2	1.06E+2	9.64E+1	1.05E+2	1.05E+2	9.21E+1	1.00E+2	1.00E+2	9.00E+1	9.81E+1	9.81E+1
XXA	1.20E+0	4.22E+0	1.47E+1	1.10E+0	3.88E+0	1.35E+1	9.66E-1	3.41E+0	1.19E+1	6.66E-1	2.35E+0	8.25E+0	5.62E-1	1.99E+0	6.97E+0
XXB	9.64E-1	1.86E+0	4.25E+0	8.85E-1	1.70E+0	3.91E+0	7.79E-1	1.50E+0	3.44E+0	5.37E-1	1.04E+0	2.38E+0	4.53E-1	8.74E-1	2.01E+0
XXC	6.37E-1	8.02E-1	2.81E+2	5.85E-1	7.36E-1	2.58E+2	5.15E-1	6.48E-1	2.28E+2	3.55E-1	4.47E-1	1.58E+2	2.99E-1	3.77E-1	1.33E+2
XXIA	2.85E+2	2.96E+3	2.80E+4	2.82E+2	2.93E+3	2.77E+4	2.77E+2	2.87E+3	2.72E+4	2.32E+2	2.42E+3	2.29E+4	2.16E+2	2.25E+3	2.13E+4
XXIB	2.83E+2	2.92E+3	2.53E+4	2.80E+2	2.89E+3	2.51E+4	2.75E+2	2.84E+3	2.46E+4	2.31E+2	2.39E+3	2.07E+4	2.15E+2	2.22E+3	1.92E+4
XXIC	2.79E+2	2.81E+3	2.04E+4	2.76E+2	2.79E+3	2.02E+4	2.71E+2	2.73E+3	1.98E+4	2.28E+2	2.30E+3	1.67E+4	2.12E+2	2.14E+3	1.55E+4
XXII	8.44E+3	1.16E+5	2.33E+5	8.26E+3	1.15E+5	2.31E+5	8.00E+3	1.12E+5	2.24E+5	7.63E+3	1.07E+5	2.14E+5	6.56E+3	1.05E+5	2.10E+5
DOE	4.59E+6	2.73E+7	9.27E+7	4.45E+6	2.63E+7	8.49E+7	4.30E+6	2.53E+7	7.82E+7	3.88E+6	2.30E+7	6.38E+7	3.80E+6	2.27E+7	6.31E+7
DOD	5.10E+2	1.56E+3	1.60E+3	5.09E+2	1.56E+3	1.60E+3	5.08E+2	1.55E+3	1.59E+3	5.05E+2	1.54E+3	1.58E+3	5.04E+2	1.54E+3	1.58E+3
NRC	1.70E+4	7.54E+4	5.53E+5	1.69E+4	7.47E+4	5.48E+5	1.67E+4	7.35E+4	5.38E+5	1.53E+4	6.31E+4	4.53E+5	1.47E+4	5.92E+4	4.22E+5
Total	4.61E+6	2.74E+7	9.33E+7	4.47E+6	2.63E+7	8.55E+7	4.31E+6	2.54E+7	7.88E+7	3.90E+6	2.30E+7	6.43E+7	3.82E+6	2.28E+7	6.35E+7

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 Table M-109. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.45E+0	9.18E+0	9.18E+0	8.32E+0	9.05E+0	9.05E+0	8.23E+0	8.95E+0	8.95E+0	8.00E+0	8.70E+0	8.70E+0	7.85E+0	8.53E+0	8.53E+0
II	7.34E+1	6.83E+2	3.37E+3	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.83E+2	3.37E+3
III	3.71E+0	4.11E+0	4.11E+0	3.70E+0	4.10E+0	4.10E+0	3.69E+0	4.09E+0	4.09E+0	3.59E+0	3.97E+0	3.97E+0	3.42E+0	3.79E+0	3.79E+0
IV	6.05E-1	1.51E+0	1.53E+0	6.01E-1	1.50E+0	1.52E+0	5.97E-1	1.49E+0	1.51E+0	5.88E-1	1.46E+0	1.48E+0	5.80E-1	1.45E+0	1.46E+0
V	2.20E+2	2.39E+2	2.39E+2	2.20E+2	2.38E+2	2.38E+2	2.20E+2	2.38E+2	2.38E+2	2.18E+2	2.37E+2	2.37E+2	2.17E+2	2.36E+2	2.36E+2
VI	3.50E+1	1.84E+2	6.43E+2	3.50E+1	1.84E+2	6.43E+2	3.50E+1	1.84E+2	6.43E+2	3.49E+1	1.84E+2	6.43E+2	3.49E+1	1.84E+2	6.43E+2
VII	5.65E+1	4.38E+2	3.40E+3	5.53E+1	4.27E+2	3.31E+3	5.35E+1	4.11E+2	3.19E+3	4.95E+1	3.75E+2	2.90E+3	4.69E+1	3.52E+2	2.72E+3
IX	2.31E-1	2.03E+0	1.26E+1	2.19E-1	1.93E+0	1.20E+1	2.08E-1	1.83E+0	1.14E+1	1.81E-1	1.59E+0	9.87E+0	1.63E-1	1.43E+0	8.87E+0
X	1.49E+0	5.05E+0	5.58E+0	1.49E+0	5.05E+0	5.58E+0	1.49E+0	5.05E+0	5.58E+0	1.49E+0	5.03E+0	5.56E+0	1.48E+0	4.99E+0	5.52E+0
XII	2.97E-2	9.20E-2	9.46E-2	2.97E-2	9.20E-2	9.46E-2	2.96E-2	9.19E-2	9.46E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2
XIIIA	5.08E-4	1.66E-3	2.04E-3	4.08E-4	1.33E-3	1.63E-3	2.85E-4	9.32E-4	1.14E-3	5.62E-5	1.84E-4	2.25E-4	.00E+0	.00E+0	.00E+0
XIIIB	4.10E-4	7.27E-4	8.02E-4	3.29E-4	5.84E-4	6.44E-4	2.30E-4	4.08E-4	4.49E-4	4.53E-5	8.04E-5	8.86E-5	.00E+0	.00E+0	.00E+0
XIIIC	2.70E-4	3.20E-4	1.01E-2	2.17E-4	2.56E-4	8.09E-3	1.51E-4	1.79E-4	5.65E-3	2.98E-5	3.53E-5	1.11E-3	.00E+0	.00E+0	.00E+0
XVIA	1.46E-2	1.53E-2	1.53E-2	1.46E-2	1.53E-2	1.53E-2	1.46E-2	1.53E-2	1.46E-2	1.46E-2	1.53E-2	1.53E-2	1.46E-2	1.53E-2	1.53E-2
XVIB	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.51E-2	1.51E-2
XVIC	1.40E-2	1.47E-2	1.47E-2	1.40E-2	1.47E-2	1.47E-2	1.40E-2	1.47E-2	1.47E-2	1.40E-2	1.47E-2	1.47E-2	1.40E-2	1.46E-2	1.46E-2
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2
XVIIIC	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2
XXA	5.32E-3	2.05E-2	1.24E-1	4.03E-3	1.55E-2	9.42E-2	3.41E-3	1.31E-2	7.98E-2	2.37E-3	9.13E-3	5.55E-2	1.79E-3	6.87E-3	4.18E-2
XXB	4.29E-3	9.03E-3	3.23E-2	3.25E-3	6.84E-3	2.44E-2	2.75E-3	5.79E-3	2.07E-2	1.91E-3	4.03E-3	1.44E-2	1.44E-3	3.04E-3	1.09E-2
XXC	2.84E-3	3.81E-3	1.27E+0	2.15E-3	2.88E-3	9.62E-1	1.82E-3	2.44E-3	8.15E-1	1.27E-3	1.70E-3	5.67E-1	9.53E-4	1.28E-3	4.27E-1
XXIA	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1
XXIB	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1
XXIC	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0
XXII	3.38E+0	3.72E+1	7.84E+1	3.38E+0	3.72E+1	7.83E+1	3.38E+0	3.71E+1	7.83E+1	3.37E+0	3.71E+1	7.81E+1	3.36E+0	3.70E+1	7.80E+1
DOE	1.18E+3	5.82E+3	2.22E+4	1.18E+3	5.81E+3	2.21E+4	1.18E+3	5.79E+3	2.20E+4	1.17E+3	5.75E+3	2.17E+4	1.17E+3	5.73E+3	2.15E+4
DOD	3.30E-2	9.97E-2	1.31E-1	3.24E-2	9.81E-2	1.24E-1	3.15E-2	9.62E-2	1.15E-1	3.00E-2	9.28E-2	9.86E-2	2.96E-2	9.19E-2	9.45E-2
NRC	6.79E+0	3.01E+1	2.26E+2	6.77E+0	3.01E+1	2.24E+2	6.77E+0	3.00E+1	2.24E+2	6.75E+0	3.00E+1	2.22E+2	6.74E+0	3.00E+1	2.21E+2
Total	1.19E+3	5.85E+3	2.24E+4	1.19E+3	5.84E+3	2.23E+4	1.18E+3	5.82E+3	2.22E+4	1.18E+3	5.78E+3	2.19E+4	1.17E+3	5.76E+3	2.17E+4

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 Table M-110. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.50E+0	8.16E+0	8.16E+0	7.24E+0	7.87E+0	7.87E+0	6.86E+0	7.46E+0	7.46E+0	5.84E+0	6.35E+0	6.35E+0	5.58E+0	6.07E+0	6.07E+0
II	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.82E+2	3.36E+3	7.33E+1	6.81E+2	3.35E+3	7.32E+1	6.80E+2	3.33E+3	7.32E+1	6.80E+2	3.33E+3
III	2.94E+0	3.26E+0	3.26E+0	2.72E+0	3.01E+0	3.01E+0	2.45E+0	2.72E+0	2.72E+0	1.14E+0	1.26E+0	1.26E+0	7.33E-1	8.13E-1	8.13E-1
IV	5.67E-1	1.41E+0	1.43E+0	5.59E-1	1.39E+0	1.41E+0	5.42E-1	1.35E+0	1.37E+0	4.60E-1	1.15E+0	1.16E+0	4.19E-1	1.04E+0	1.06E+0
V	2.14E+2	2.32E+2	2.32E+2	2.12E+2	2.30E+2	2.30E+2	2.08E+2	2.25E+2	2.25E+2	1.87E+2	2.03E+2	2.03E+2	1.77E+2	1.91E+2	1.91E+2
VI	3.48E+1	1.84E+2	6.43E+2	3.47E+1	1.84E+2	6.42E+2	3.45E+1	1.83E+2	6.42E+2	3.37E+1	1.81E+2	6.36E+2	3.34E+1	1.80E+2	6.33E+2
VII	4.29E+1	3.17E+2	2.44E+3	3.94E+1	2.90E+2	2.24E+3	3.07E+1	2.26E+2	1.74E+3	1.27E+1	9.55E+1	7.40E+2	9.97E+0	7.58E+1	5.87E+2
IX	1.36E-1	1.19E+0	7.40E+0	1.14E-1	1.00E+0	6.22E+0	9.32E-2	8.19E-1	5.08E+0	4.37E-2	3.84E-1	2.38E+0	3.06E-2	2.69E-1	1.67E+0
X	1.47E+0	4.85E+0	5.35E+0	1.46E+0	4.67E+0	5.14E+0	1.44E+0	4.30E+0	4.72E+0	1.36E+0	3.18E+0	3.44E+0	1.33E+0	2.92E+0	3.14E+0
XII	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.17E-2	9.44E-2	2.95E-2	9.16E-2	9.43E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-2	1.53E-2	1.53E-2	1.45E-2	1.53E-2	1.53E-2	1.45E-2	1.52E-2	1.52E-2	1.43E-2	1.51E-2	1.51E-2	1.43E-2	1.50E-2	1.50E-2
XVIB	1.44E-2	1.51E-2	1.51E-2	1.43E-2	1.50E-2	1.50E-2	1.43E-2	1.50E-2	1.50E-2	1.42E-2	1.49E-2	1.49E-2	1.41E-2	1.48E-2	1.48E-2
XVIC	1.40E-2	1.46E-2	1.46E-2	1.40E-2	1.46E-2	1.46E-2	1.40E-2	1.46E-2	1.46E-2	1.38E-2	1.44E-2	1.44E-2	1.38E-2	1.44E-2	1.44E-2
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.02E-2	4.44E-2	4.44E-2	3.97E-2	4.39E-2	4.39E-2	3.94E-2	4.36E-2	4.36E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.95E-2	4.38E-2	4.38E-2	3.95E-2	4.37E-2	4.37E-2	3.90E-2	4.32E-2	4.32E-2	3.87E-2	4.29E-2	4.29E-2
XVIIIC	3.82E-2	4.17E-2	4.17E-2	3.81E-2	4.17E-2	4.17E-2	3.81E-2	4.16E-2	4.16E-2	3.76E-2	4.11E-2	4.11E-2	3.73E-2	4.08E-2	4.08E-2
XXA	8.47E-4	3.26E-3	1.99E-2	3.49E-4	1.34E-3	8.22E-3	2.26E-4	8.70E-4	5.35E-3	1.80E-4	6.93E-4	4.27E-3	1.67E-4	6.42E-4	3.96E-3
XXB	6.84E-4	1.44E-3	5.15E-3	2.81E-4	5.93E-4	2.13E-3	1.82E-4	3.84E-4	1.39E-3	1.45E-4	3.06E-4	1.11E-3	1.34E-4	2.84E-4	1.03E-3
XXC	4.52E-4	6.07E-4	2.03E-1	1.86E-4	2.50E-4	8.40E-2	1.20E-4	1.62E-4	5.46E-2	9.58E-5	1.29E-4	4.36E-2	8.88E-5	1.19E-4	4.05E-2
XXIA	1.12E-1	1.17E+0	1.11E+1	1.12E-1	1.17E+0	1.10E+1	1.11E-1	1.16E+0	1.10E+1	1.08E-1	1.13E+0	1.06E+1	1.05E-1	1.10E+0	1.04E+1
XXIB	1.12E-1	1.16E+0	1.00E+1	1.11E-1	1.15E+0	9.97E+0	1.11E-1	1.15E+0	9.92E+0	1.07E-1	1.11E+0	9.62E+0	1.04E-1	1.08E+0	9.36E+0
XXIC	1.10E-1	1.11E+0	8.10E+0	1.10E-1	1.11E+0	8.08E+0	1.09E-1	1.10E+0	8.03E+0	1.06E-1	1.07E+0	7.79E+0	1.03E-1	1.04E+0	7.58E+0
XXII	3.35E+0	3.69E+1	7.77E+1	3.33E+0	3.68E+1	7.75E+1	3.31E+0	3.64E+1	7.68E+1	3.13E+0	3.49E+1	7.34E+1	3.11E+0	3.44E+1	7.25E+1
DOE	1.16E+3	5.68E+3	2.12E+4	1.15E+3	5.65E+3	2.10E+4	1.13E+3	5.57E+3	2.04E+4	1.07E+3	5.35E+3	1.92E+4	1.05E+3	5.29E+3	1.90E+4
DOD	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.17E-2	9.44E-2	2.95E-2	9.16E-2	9.43E-2
NRC	6.73E+0	2.99E+1	2.20E+2	6.71E+0	2.98E+1	2.18E+2	6.68E+0	2.96E+1	2.17E+2	6.56E+0	2.88E+1	2.11E+2	6.47E+0	2.81E+1	2.05E+2
Total	1.16E+3	5.71E+3	2.14E+4	1.15E+3	5.68E+3	2.12E+4	1.14E+3	5.60E+3	2.06E+4	1.08E+3	5.38E+3	1.94E+4	1.05E+3	5.32E+3	1.92E+4

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 Table M-111. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.38E+0	9.11E+0	9.11E+0	8.17E+0	8.89E+0	8.89E+0	8.02E+0	8.72E+0	8.72E+0	7.61E+0	8.27E+0	8.27E+0	7.29E+0	7.92E+0	7.92E+0
II	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.82E+2	3.36E+3
III	3.71E+0	4.11E+0	4.11E+0	3.68E+0	4.08E+0	4.08E+0	3.60E+0	3.99E+0	3.99E+0	3.10E+0	3.43E+0	3.43E+0	2.74E+0	3.04E+0	3.04E+0
IV	6.03E-1	1.50E+0	1.52E+0	5.94E-1	1.48E+0	1.50E+0	5.87E-1	1.46E+0	1.48E+0	5.68E-1	1.41E+0	1.43E+0	5.58E-1	1.39E+0	1.41E+0
V	2.20E+2	2.38E+2	2.38E+2	2.19E+2	2.38E+2	2.38E+2	2.19E+2	2.37E+2	2.37E+2	2.15E+2	2.33E+2	2.33E+2	2.12E+2	2.30E+2	2.30E+2
VI	3.50E+1	1.84E+2	6.43E+2	3.50E+1	1.84E+2	6.43E+2	3.49E+1	1.84E+2	6.43E+2	3.48E+1	1.84E+2	6.43E+2	3.47E+1	1.84E+2	6.43E+2
VII	5.60E+1	4.34E+2	3.37E+3	5.17E+1	3.95E+2	3.06E+3	4.89E+1	3.69E+2	2.86E+3	4.28E+1	3.16E+2	2.44E+3	3.79E+1	2.79E+2	2.15E+3
IX	2.23E-1	1.96E+0	1.22E+1	1.97E-1	1.73E+0	1.07E+1	1.77E-1	1.56E+0	9.67E+0	1.35E-1	1.19E+0	7.35E+0	1.07E-1	9.38E-1	5.82E+0
X	1.49E+0	5.05E+0	5.58E+0	1.49E+0	5.05E+0	5.58E+0	1.49E+0	5.04E+0	5.57E+0	1.47E+0	4.96E+0	5.48E+0	1.46E+0	4.82E+0	5.32E+0
XII	2.97E-2	9.20E-2	9.46E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2
XIIIA	4.63E-4	1.51E-3	1.86E-3	2.70E-4	8.84E-4	1.08E-3	1.32E-4	4.33E-4	5.30E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.73E-4	6.63E-4	7.30E-4	2.18E-4	3.87E-4	4.26E-4	1.07E-4	1.89E-4	2.09E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.46E-4	2.91E-4	9.18E-3	1.44E-4	1.70E-4	5.36E-3	7.03E-5	8.32E-5	2.62E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-2	1.53E-2	1.53E-2	1.46E-2	1.53E-2	1.53E-2	1.46E-2	1.53E-2	1.53E-2	1.46E-2	1.53E-2	1.53E-2	1.45E-2	1.53E-2	1.53E-2
XVIB	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.51E-2	1.51E-2	1.44E-2	1.50E-2	1.50E-2
XVIC	1.40E-2	1.47E-2	1.47E-2	1.40E-2	1.47E-2	1.47E-2	1.40E-2	1.47E-2	1.47E-2	1.40E-2	1.46E-2	1.46E-2	1.40E-2	1.46E-2	1.46E-2
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.95E-2	4.38E-2	4.38E-2
XVIIIC	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.81E-2	4.17E-2	4.17E-2
XXA	4.24E-3	1.63E-2	9.92E-2	2.80E-3	1.08E-2	6.54E-2	2.07E-3	7.96E-3	4.84E-2	5.88E-4	2.26E-3	1.38E-2	2.47E-4	9.51E-4	5.84E-3
XXB	3.42E-3	7.21E-3	2.57E-2	2.26E-3	4.75E-3	1.70E-2	1.67E-3	3.51E-3	1.26E-2	4.75E-4	1.00E-3	3.58E-3	1.99E-4	4.20E-4	1.51E-3
XXC	2.26E-3	3.04E-3	1.01E+0	1.49E-3	2.00E-3	6.68E-1	1.10E-3	1.48E-3	4.94E-1	3.14E-4	4.21E-4	1.41E-1	1.32E-4	1.77E-4	5.96E-2
XXIA	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.17E+0	1.11E+1	1.12E-1	1.17E+0	1.10E+1
XXIB	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.11E-1	1.15E+0	9.97E+0
XXIC	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.11E+0	8.11E+0	1.09E-1	1.11E+0	8.08E+0
XXII	3.38E+0	3.72E+1	7.84E+1	3.38E+0	3.71E+1	7.83E+1	3.37E+0	3.71E+1	7.81E+1	3.35E+0	3.69E+1	7.78E+1	3.32E+0	3.68E+1	7.75E+1
DOE	1.18E+3	5.82E+3	2.22E+4	1.18E+3	5.78E+3	2.18E+4	1.17E+3	5.75E+3	2.16E+4	1.16E+3	5.69E+3	2.12E+4	1.15E+3	5.64E+3	2.09E+4
DOD	3.27E-2	9.90E-2	1.28E-1	3.14E-2	9.60E-2	1.14E-1	3.05E-2	9.39E-2	1.04E-1	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2
NRC	6.77E+0	3.01E+1	2.25E+2	6.76E+0	3.00E+1	2.23E+2	6.75E+0	3.00E+1	2.22E+2	6.72E+0	2.99E+1	2.19E+2	6.71E+0	2.98E+1	2.18E+2
Total	1.19E+3	5.85E+3	2.24E+4	1.18E+3	5.81E+3	2.21E+4	1.18E+3	5.78E+3	2.19E+4	1.16E+3	5.72E+3	2.14E+4	1.15E+3	5.67E+3	2.11E+4

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 Table M-112. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.77E+0	7.36E+0	7.36E+0	6.41E+0	6.97E+0	6.97E+0	5.91E+0	6.43E+0	6.43E+0	4.24E+0	4.61E+0	4.61E+0	3.69E+0	4.01E+0	4.01E+0
II	7.33E+1	6.81E+2	3.35E+3	7.33E+1	6.81E+2	3.34E+3	7.32E+1	6.80E+2	3.33E+3	7.27E+1	6.74E+2	3.28E+3	7.22E+1	6.70E+2	3.25E+3
III	2.37E+0	2.63E+0	2.63E+0	1.96E+0	2.17E+0	2.17E+0	1.24E+0	1.38E+0	1.38E+0	3.26E-1	3.62E-1	3.62E-1	1.84E-1	2.04E-1	2.04E-1
IV	5.32E-1	1.33E+0	1.34E+0	5.07E-1	1.26E+0	1.28E+0	4.56E-1	1.14E+0	1.15E+0	2.02E-1	5.04E-1	5.11E-1	7.54E-2	1.88E-1	1.90E-1
V	2.07E+2	2.24E+2	2.24E+2	2.01E+2	2.18E+2	2.18E+2	1.89E+2	2.05E+2	2.05E+2	1.58E+2	1.71E+2	1.71E+2	1.50E+2	1.63E+2	1.63E+2
VI	3.45E+1	1.83E+2	6.41E+2	3.42E+1	1.83E+2	6.40E+2	3.38E+1	1.82E+2	6.37E+2	3.19E+1	1.76E+2	6.18E+2	3.13E+1	1.73E+2	6.11E+2
VII	2.55E+1	1.88E+2	1.45E+3	1.80E+1	1.34E+2	1.03E+3	1.17E+1	8.87E+1	6.87E+2	7.84E-2	4.89E-1	3.67E+0	.00E+0	.00E+0	.00E+0
IX	7.78E-2	6.84E-1	4.24E+0	5.62E-2	4.94E-1	3.06E+0	3.84E-2	3.37E-1	2.09E+0	6.97E-3	6.12E-2	3.80E-1	.00E+0	.00E+0	.00E+0
X	1.44E+0	4.43E+0	4.87E+0	1.42E+0	4.05E+0	4.43E+0	1.39E+0	3.49E+0	3.80E+0	1.27E+0	2.48E+0	2.65E+0	1.23E+0	2.23E+0	2.37E+0
XII	2.96E-2	9.18E-2	9.45E-2	2.96E-2	9.17E-2	9.44E-2	2.95E-2	9.16E-2	9.42E-2	2.93E-2	9.09E-2	9.35E-2	2.92E-2	9.07E-2	9.33E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.45E-2	1.52E-2	1.52E-2	1.44E-2	1.52E-2	1.52E-2	1.44E-2	1.51E-2	1.51E-2	1.38E-2	1.45E-2	1.45E-2	1.35E-2	1.42E-2	1.42E-2
XVIB	1.43E-2	1.50E-2	1.50E-2	1.42E-2	1.49E-2	1.49E-2	1.42E-2	1.49E-2	1.49E-2	1.36E-2	1.43E-2	1.43E-2	1.33E-2	1.40E-2	1.40E-2
XVIC	1.39E-2	1.46E-2	1.46E-2	1.39E-2	1.45E-2	1.45E-2	1.38E-2	1.44E-2	1.44E-2	1.33E-2	1.39E-2	1.39E-2	1.30E-2	1.35E-2	1.35E-2
XVIIIA	4.02E-2	4.44E-2	4.44E-2	4.00E-2	4.43E-2	4.43E-2	3.97E-2	4.39E-2	4.39E-2	3.79E-2	4.19E-2	4.19E-2	3.70E-2	4.09E-2	4.09E-2
XVIIIB	3.95E-2	4.37E-2	4.37E-2	3.93E-2	4.35E-2	4.35E-2	3.90E-2	4.32E-2	4.32E-2	3.72E-2	4.12E-2	4.12E-2	3.64E-2	4.03E-2	4.03E-2
XVIIIC	3.81E-2	4.16E-2	4.16E-2	3.79E-2	4.14E-2	4.14E-2	3.76E-2	4.11E-2	4.11E-2	3.59E-2	3.92E-2	3.92E-2	3.51E-2	3.83E-2	3.83E-2
XXA	2.08E-4	8.02E-4	4.93E-3	1.91E-4	7.35E-4	4.53E-3	1.68E-4	6.47E-4	3.99E-3	1.15E-4	4.45E-4	2.76E-3	9.72E-5	3.76E-4	2.33E-3
XXB	1.68E-4	3.54E-4	1.28E-3	1.54E-4	3.25E-4	1.17E-3	1.35E-4	2.86E-4	1.03E-3	9.30E-5	1.97E-4	7.15E-4	7.84E-5	1.66E-4	6.04E-4
XXC	1.11E-4	1.49E-4	5.04E-4	1.02E-4	1.37E-4	4.63E-4	8.95E-5	1.20E-4	4.08E-2	6.15E-5	8.28E-5	2.82E-2	5.18E-5	6.98E-5	2.39E-2
XXIA	1.11E-1	1.16E+0	1.09E+1	1.10E-1	1.15E+0	1.08E+1	1.08E-1	1.13E+0	1.06E+1	9.07E-2	9.47E-1	8.93E+0	8.45E-2	8.81E-1	8.31E+0
XXIB	1.10E-1	1.14E+0	9.88E+0	1.09E-1	1.13E+0	9.79E+0	1.07E-1	1.11E+0	9.61E+0	9.00E-2	9.32E-1	8.07E+0	8.38E-2	8.67E-1	7.51E+0
XXIC	1.08E-1	1.10E+0	8.00E+0	1.07E-1	1.09E+0	7.93E+0	1.05E-1	1.07E+0	7.78E+0	8.86E-2	8.98E-1	6.54E+0	8.25E-2	8.36E-1	6.08E+0
XXII	3.30E+0	3.64E+1	7.66E+1	3.23E+0	3.60E+1	7.58E+1	3.13E+0	3.49E+1	7.35E+1	2.98E+0	3.34E+1	7.02E+1	2.56E+0	3.27E+1	6.87E+1
DOE	1.12E+3	5.52E+3	2.01E+4	1.10E+3	5.45E+3	1.97E+4	1.07E+3	5.35E+3	1.92E+4	9.82E+2	5.07E+3	1.80E+4	9.56E+2	5.00E+3	1.78E+4
DOD	2.96E-2	9.18E-2	9.45E-2	2.96E-2	9.17E-2	9.44E-2	2.95E-2	9.16E-2	9.42E-2	2.93E-2	9.09E-2	9.35E-2	2.92E-2	9.07E-2	9.33E-2
NRC	6.67E+0	2.95E+1	2.16E+2	6.64E+0	2.93E+1	2.14E+2	6.56E+0	2.88E+1	2.10E+2	6.00E+0	2.47E+1	1.77E+2	5.77E+0	2.32E+1	1.65E+2
Total	1.13E+3	5.55E+3	2.03E+4	1.11E+3	5.48E+3	1.99E+4	1.08E+3	5.38E+3	1.94E+4	9.88E+2	5.09E+3	1.81E+4	9.61E+2	5.03E+3	1.79E+4

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 Table M-113. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.55E+0	6.05E+0	6.05E+0	5.47E+0	5.96E+0	5.96E+0	5.41E+0	5.89E+0	5.89E+0	5.26E+0	5.73E+0	5.73E+0	5.16E+0	5.62E+0	5.62E+0
II	4.83E+1	4.51E+2	2.22E+3	4.82E+1	4.51E+2	2.22E+3	4.82E+1	4.51E+2	2.22E+3	4.82E+1	4.50E+2	2.22E+3	4.82E+1	4.50E+2	2.22E+3
III	2.45E+0	2.70E+0	2.70E+0	2.44E+0	2.70E+0	2.70E+0	2.44E+0	2.69E+0	2.69E+0	2.37E+0	2.61E+0	2.61E+0	2.26E+0	2.49E+0	2.49E+0
IV	4.48E-1	1.11E+0	1.13E+0	4.45E-1	1.11E+0	1.12E+0	4.42E-1	1.10E+0	1.11E+0	4.35E-1	1.08E+0	1.10E+0	4.30E-1	1.07E+0	1.08E+0
V	1.44E+2	1.57E+2	1.57E+2	1.44E+2	1.57E+2	1.57E+2	1.44E+2	1.57E+2	1.57E+2	1.43E+2	1.56E+2	1.56E+2	1.42E+2	1.55E+2	1.55E+2
VI	2.55E+1	1.39E+2	4.56E+2	2.55E+1	1.39E+2	4.56E+2	2.55E+1	1.39E+2	4.56E+2	2.55E+1	1.39E+2	4.56E+2	2.55E+1	1.39E+2	4.56E+2
VII	4.84E+1	3.92E+2	3.08E+3	4.73E+1	3.82E+2	3.00E+3	4.58E+1	3.67E+2	2.88E+3	4.22E+1	3.35E+2	2.62E+3	3.99E+1	3.14E+2	2.46E+3
IX	2.07E-1	1.83E+0	1.14E+1	1.96E-1	1.73E+0	1.08E+1	1.86E-1	1.65E+0	1.03E+1	1.62E-1	1.43E+0	8.95E+0	1.45E-1	1.29E+0	8.04E+0
X	9.80E-1	3.16E+0	3.49E+0	9.80E-1	3.16E+0	3.49E+0	9.79E-1	3.16E+0	3.49E+0	9.75E-1	3.15E+0	3.48E+0	9.71E-1	3.13E+0	3.45E+0
XII	2.64E-2	8.16E-2	8.39E-2	2.64E-2	8.16E-2	8.39E-2	2.64E-2	8.16E-2	8.39E-2	2.64E-2	8.15E-2	8.39E-2	2.64E-2	8.15E-2	8.38E-2
XIIIA	3.67E-4	1.20E-3	1.45E-3	2.94E-4	9.60E-4	1.16E-3	2.06E-4	6.70E-4	8.13E-4	4.05E-5	1.32E-4	1.60E-4	.00E+0	.00E+0	.00E+0
XIIIB	2.96E-4	5.25E-4	5.74E-4	2.37E-4	4.22E-4	4.61E-4	1.66E-4	2.94E-4	3.22E-4	3.27E-5	5.80E-5	6.34E-5	.00E+0	.00E+0	.00E+0
XIIIC	1.95E-4	2.31E-4	6.18E-3	1.57E-4	1.85E-4	4.96E-3	1.09E-4	1.29E-4	3.47E-3	2.15E-5	2.55E-5	6.83E-4	.00E+0	.00E+0	.00E+0
XVIA	9.57E-3	1.01E-2	1.01E-2	9.57E-3	1.01E-2	1.01E-2	9.56E-3	1.01E-2	1.01E-2	9.56E-3	1.01E-2	1.01E-2	9.56E-3	1.01E-2	1.01E-2
XVIB	9.47E-3	9.93E-3	9.93E-3	9.47E-3	9.93E-3	9.93E-3	9.47E-3	9.93E-3	9.93E-3	9.47E-3	9.93E-3	9.93E-3	9.47E-3	9.93E-3	9.93E-3
XVIC	9.23E-3	9.63E-3	9.63E-3	9.23E-3	9.63E-3	9.63E-3	9.22E-3	9.63E-3	9.63E-3	9.22E-3	9.63E-3	9.63E-3	9.22E-3	9.63E-3	9.62E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2
XVIIIB	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2
XXA	4.14E-3	1.55E-2	8.40E-2	3.13E-3	1.18E-2	6.36E-2	2.66E-3	9.96E-3	5.39E-2	1.85E-3	6.93E-3	3.75E-2	1.39E-3	5.22E-3	2.83E-2
XXB	3.34E-3	6.85E-3	2.21E-2	2.53E-3	5.19E-3	1.68E-2	2.14E-3	4.39E-3	1.42E-2	1.49E-3	3.06E-3	9.89E-3	1.12E-3	2.30E-3	7.45E-3
XXC	2.20E-3	2.90E-3	7.91E-1	1.67E-3	2.20E-3	5.99E-1	1.41E-3	1.86E-3	5.08E-1	9.83E-4	1.30E-3	3.53E-1	7.41E-4	9.76E-4	2.66E-1
XXIA	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.46E-2	7.79E-1	7.34E+0	7.46E-2	7.79E-1	7.34E+0
XXIB	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.40E-2	7.66E-1	6.64E+0
XXIC	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.29E-2	7.39E-1	5.38E+0	7.29E-2	7.39E-1	5.37E+0
XXII	2.24E+0	2.40E+1	5.16E+1	2.24E+0	2.40E+1	5.16E+1	2.23E+0	2.40E+1	5.16E+1	2.23E+0	2.39E+1	5.15E+1	2.22E+0	2.39E+1	5.14E+1
DOE	8.45E+2	4.34E+3	1.62E+4	8.44E+2	4.33E+3	1.61E+4	8.42E+2	4.32E+3	1.60E+4	8.37E+2	4.28E+3	1.57E+4	8.33E+2	4.26E+3	1.56E+4
DOD	2.88E-2	8.71E-2	1.07E-1	2.83E-2	8.60E-2	1.03E-1	2.77E-2	8.47E-2	9.69E-2	2.66E-2	8.21E-2	8.64E-2	2.64E-2	8.15E-2	8.38E-2
NRC	4.48E+0	1.99E+1	1.49E+2	4.47E+0	1.99E+1	1.48E+2	4.47E+0	1.99E+1	1.48E+2	4.46E+0	1.98E+1	1.47E+2	4.45E+0	1.98E+1	1.46E+2
Total	8.50E+2	4.36E+3	1.63E+4	8.48E+2	4.35E+3	1.63E+4	8.46E+2	4.34E+3	1.61E+4	8.41E+2	4.30E+3	1.59E+4	8.37E+2	4.28E+3	1.57E+4

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 Table M-114. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.93E+0	5.37E+0	5.37E+0	4.76E+0	5.18E+0	5.18E+0	4.51E+0	4.91E+0	4.91E+0	3.84E+0	4.18E+0	4.18E+0	3.67E+0	4.00E+0	4.00E+0
II	4.82E+1	4.50E+2	2.21E+3	4.82E+1	4.50E+2	2.21E+3	4.82E+1	4.50E+2	2.20E+3	4.82E+1	4.49E+2	2.19E+3	4.81E+1	4.48E+2	2.19E+3
III	1.94E+0	2.14E+0	2.14E+0	1.79E+0	1.98E+0	1.98E+0	1.62E+0	1.79E+0	1.79E+0	7.49E-1	8.27E-1	8.27E-1	4.84E-1	5.34E-1	5.34E-1
IV	4.20E-1	1.04E+0	1.06E+0	4.14E-1	1.03E+0	1.04E+0	4.02E-1	9.98E-1	1.01E+0	3.41E-1	8.47E-1	8.58E-1	3.10E-1	7.72E-1	7.82E-1
V	1.40E+2	1.53E+2	1.53E+2	1.39E+2	1.51E+2	1.51E+2	1.36E+2	1.49E+2	1.49E+2	1.23E+2	1.34E+2	1.34E+2	1.16E+2	1.26E+2	1.26E+2
VI	2.54E+1	1.39E+2	4.56E+2	2.53E+1	1.39E+2	4.55E+2	2.52E+1	1.39E+2	4.55E+2	2.47E+1	1.37E+2	4.51E+2	2.44E+1	1.36E+2	4.48E+2
VII	3.63E+1	2.83E+2	2.21E+3	3.34E+1	2.59E+2	2.03E+3	2.60E+1	2.01E+2	1.57E+3	1.08E+1	8.54E+1	6.69E+2	8.50E+0	6.77E+1	5.31E+2
IX	1.21E-1	1.07E+0	6.71E+0	1.02E-1	9.03E-1	5.64E+0	8.33E-2	7.37E-1	4.61E+0	3.91E-2	3.45E-1	2.16E+0	2.74E-2	2.42E-1	1.51E+0
X	9.62E-1	3.04E+0	3.35E+0	9.55E-1	2.93E+0	3.22E+0	9.43E-1	2.70E+0	2.96E+0	8.95E-1	2.01E+0	2.17E+0	8.73E-1	1.85E+0	1.99E+0
XII	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2	2.63E-2	8.14E-2	8.37E-2	2.63E-2	8.13E-2	8.36E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.55E-3	1.00E-2	1.00E-2	9.54E-3	1.00E-2	1.00E-2	9.51E-3	1.00E-2	1.00E-2	9.42E-3	9.90E-3	9.90E-3	9.37E-3	9.86E-3	9.86E-3
XVIB	9.46E-3	9.92E-3	9.92E-3	9.44E-3	9.91E-3	9.91E-3	9.41E-3	9.87E-3	9.87E-3	9.32E-3	9.78E-3	9.78E-3	9.28E-3	9.74E-3	9.74E-3
XVIC	9.21E-3	9.62E-3	9.62E-3	9.20E-3	9.60E-3	9.60E-3	9.17E-3	9.57E-3	9.57E-3	9.08E-3	9.48E-3	9.48E-3	9.04E-3	9.44E-3	9.44E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.61E-2	2.89E-2	2.89E-2	2.59E-2	2.87E-2	2.87E-2
XVIIIB	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.87E-2	2.87E-2	2.60E-2	2.87E-2	2.87E-2	2.57E-2	2.83E-2	2.83E-2	2.55E-2	2.81E-2	2.81E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.49E-2	2.71E-2	2.71E-2	2.47E-2	2.69E-2	2.69E-2
XXA	6.60E-4	2.48E-3	1.34E-2	2.72E-4	1.02E-3	5.55E-3	1.76E-4	6.62E-4	3.61E-3	1.40E-4	5.27E-4	2.88E-3	1.30E-4	4.89E-4	2.68E-3
XXB	5.32E-4	1.09E-3	3.54E-3	2.19E-4	4.50E-4	1.46E-3	1.42E-4	2.92E-4	9.51E-4	1.13E-4	2.33E-4	7.59E-4	1.05E-4	2.16E-4	7.04E-4
XXC	3.51E-4	4.63E-4	1.26E-1	1.45E-4	1.91E-4	5.23E-2	9.38E-5	1.24E-4	3.40E-2	7.46E-5	9.85E-5	2.72E-2	6.92E-5	9.14E-5	2.52E-2
XXIA	7.44E-2	7.77E-1	7.31E+0	7.42E-2	7.75E-1	7.29E+0	7.37E-2	7.70E-1	7.25E+0	7.16E-2	7.47E-1	7.04E+0	6.96E-2	7.27E-1	6.85E+0
XXIB	7.38E-2	7.64E-1	6.62E+0	7.36E-2	7.62E-1	6.60E+0	7.32E-2	7.57E-1	6.56E+0	7.10E-2	7.35E-1	6.37E+0	6.91E-2	7.15E-1	6.20E+0
XXIC	7.27E-2	7.37E-1	5.36E+0	7.25E-2	7.34E-1	5.34E+0	7.21E-2	7.30E-1	5.31E+0	6.99E-2	7.08E-1	5.15E+0	6.80E-2	6.89E-1	5.02E+0
XXII	2.21E+0	2.38E+1	5.12E+1	2.20E+0	2.37E+1	5.11E+1	2.18E+0	2.35E+1	5.06E+1	2.07E+0	2.25E+1	4.84E+1	2.05E+0	2.22E+1	4.78E+1
DOE	8.25E+2	4.22E+3	1.53E+4	8.18E+2	4.19E+3	1.51E+4	8.05E+2	4.12E+3	1.46E+4	7.62E+2	3.95E+3	1.36E+4	7.46E+2	3.90E+3	1.34E+4
DOD	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2	2.63E-2	8.14E-2	8.37E-2	2.63E-2	8.13E-2	8.36E-2
NRC	4.44E+0	1.97E+1	1.45E+2	4.43E+0	1.97E+1	1.44E+2	4.41E+0	1.96E+1	1.43E+2	4.33E+0	1.91E+1	1.39E+2	4.27E+0	1.86E+1	1.36E+2
Total	8.29E+2	4.24E+3	1.54E+4	8.23E+2	4.21E+3	1.52E+4	8.10E+2	4.14E+3	1.48E+4	7.66E+2	3.97E+3	1.37E+4	7.51E+2	3.92E+3	1.35E+4

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 Table M-115. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.51E+0	6.00E+0	6.00E+0	5.37E+0	5.85E+0	5.85E+0	5.28E+0	5.74E+0	5.74E+0	5.00E+0	5.45E+0	5.45E+0	4.79E+0	5.22E+0	5.22E+0
II	4.82E+1	4.51E+2	2.22E+3	4.82E+1	4.51E+2	2.22E+3	4.82E+1	4.50E+2	2.22E+3	4.82E+1	4.50E+2	2.21E+3	4.82E+1	4.50E+2	2.21E+3
III	2.45E+0	2.70E+0	2.70E+0	2.43E+0	2.68E+0	2.68E+0	2.38E+0	2.62E+0	2.62E+0	2.04E+0	2.26E+0	2.26E+0	1.81E+0	2.00E+0	2.00E+0
IV	4.46E-1	1.11E+0	1.12E+0	4.40E-1	1.09E+0	1.11E+0	4.35E-1	1.08E+0	1.10E+0	4.21E-1	1.05E+0	1.06E+0	4.13E-1	1.03E+0	1.04E+0
V	1.44E+2	1.57E+2	1.57E+2	1.44E+2	1.57E+2	1.57E+2	1.43E+2	1.56E+2	1.56E+2	1.41E+2	1.54E+2	1.54E+2	1.39E+2	1.52E+2	1.52E+2
VI	2.55E+1	1.39E+2	4.56E+2	2.55E+1	1.39E+2	4.56E+2	2.55E+1	1.39E+2	4.56E+2	2.54E+1	1.39E+2	4.56E+2	2.53E+1	1.39E+2	4.55E+2
VII	4.80E+1	3.88E+2	3.05E+3	4.42E+1	3.53E+2	2.77E+3	4.16E+1	3.30E+2	2.59E+3	3.63E+1	2.82E+2	2.21E+3	3.20E+1	2.49E+2	1.94E+3
IX	2.00E-1	1.77E+0	1.10E+1	1.76E-1	1.56E+0	9.73E+0	1.59E-1	1.40E+0	8.76E+0	1.21E-1	1.07E+0	6.67E+0	9.55E-2	8.44E-1	5.28E+0
X	9.80E-1	3.16E+0	3.49E+0	9.78E-1	3.16E+0	3.49E+0	9.76E-1	3.16E+0	3.48E+0	9.67E-1	3.11E+0	3.42E+0	9.60E-1	3.02E+0	3.33E+0
XII	2.64E-2	8.16E-2	8.39E-2	2.64E-2	8.15E-2	8.39E-2	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2
XIIIA	3.34E-4	1.09E-3	1.32E-3	1.95E-4	6.36E-4	7.71E-4	9.55E-5	3.11E-4	3.78E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.69E-4	4.78E-4	5.23E-4	1.57E-4	2.79E-4	3.05E-4	7.70E-5	1.37E-4	1.50E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.78E-4	2.10E-4	5.63E-3	1.04E-4	1.23E-4	3.29E-3	5.08E-5	6.00E-5	1.61E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.57E-3	1.01E-2	1.01E-2	9.56E-3	1.01E-2	1.01E-2	9.56E-3	1.01E-2	1.01E-2	9.56E-3	1.00E-2	1.00E-2	9.54E-3	1.00E-2	1.00E-2
XVIB	9.47E-3	9.93E-3	9.93E-3	9.47E-3	9.93E-3	9.93E-3	9.47E-3	9.93E-3	9.93E-3	9.46E-3	9.92E-3	9.92E-3	9.45E-3	9.91E-3	9.91E-3
XVIC	9.23E-3	9.63E-3	9.63E-3	9.22E-3	9.63E-3	9.63E-3	9.22E-3	9.63E-3	9.63E-3	9.22E-3	9.62E-3	9.62E-3	9.20E-3	9.61E-3	9.61E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2
XVIIIB	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.87E-2	2.87E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2
XXA	3.30E-3	1.24E-2	6.70E-2	2.18E-3	8.16E-3	4.42E-2	1.61E-3	6.04E-3	3.27E-2	4.58E-4	1.72E-3	9.33E-3	1.92E-4	7.23E-4	3.94E-3
XXB	2.66E-3	5.47E-3	1.77E-2	1.75E-3	3.60E-3	1.16E-2	1.30E-3	2.67E-3	8.62E-3	3.69E-4	7.59E-4	2.46E-3	1.55E-4	3.19E-4	1.04E-3
XXC	1.76E-3	2.32E-3	6.31E-1	1.16E-3	1.53E-3	4.16E-1	8.57E-4	1.13E-3	3.08E-1	2.44E-4	3.22E-4	8.79E-2	1.02E-4	1.35E-4	3.71E-2
XXIA	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.46E-2	7.79E-1	7.34E+0	7.44E-2	7.77E-1	7.32E+0	7.42E-2	7.74E-1	7.29E+0
XXIB	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.39E-2	7.64E-1	6.62E+0	7.36E-2	7.62E-1	6.60E+0
XXIC	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.29E-2	7.39E-1	5.38E+0	7.27E-2	7.37E-1	5.36E+0	7.25E-2	7.34E-1	5.34E+0
XXII	2.24E+0	2.40E+1	5.16E+1	2.23E+0	2.40E+1	5.16E+1	2.23E+0	2.39E+1	5.15E+1	2.21E+0	2.38E+1	5.12E+1	2.20E+0	2.38E+1	5.11E+1
DOE	8.45E+2	4.34E+3	1.62E+4	8.40E+2	4.30E+3	1.59E+4	8.36E+2	4.28E+3	1.57E+4	8.26E+2	4.22E+3	1.53E+4	8.18E+2	4.18E+3	1.50E+4
DOD	2.86E-2	8.66E-2	1.05E-1	2.77E-2	8.45E-2	9.62E-2	2.70E-2	8.29E-2	8.99E-2	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2
NRC	4.47E+0	1.99E+1	1.48E+2	4.46E+0	1.99E+1	1.47E+2	4.45E+0	1.98E+1	1.47E+2	4.44E+0	1.98E+1	1.45E+2	4.42E+0	1.97E+1	1.44E+2
Total	8.49E+2	4.36E+3	1.63E+4	8.44E+2	4.32E+3	1.60E+4	8.41E+2	4.30E+3	1.58E+4	8.31E+2	4.24E+3	1.54E+4	8.22E+2	4.20E+3	1.52E+4

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 Table M-116. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.45E+0	4.84E+0	4.84E+0	4.22E+0	4.59E+0	4.59E+0	3.89E+0	4.23E+0	4.23E+0	2.79E+0	3.04E+0	3.04E+0	2.43E+0	2.64E+0	2.64E+0
II	4.82E+1	4.49E+2	2.20E+3	4.82E+1	4.49E+2	2.20E+3	4.82E+1	4.49E+2	2.19E+3	4.78E+1	4.45E+2	2.16E+3	4.75E+1	4.42E+2	2.14E+3
III	1.56E+0	1.73E+0	1.73E+0	1.29E+0	1.43E+0	1.43E+0	8.21E-1	9.06E-1	9.06E-1	2.15E-1	2.38E-1	2.38E-1	1.21E-1	1.34E-1	1.34E-1
IV	3.94E-1	9.80E-1	9.93E-1	3.75E-1	9.34E-1	9.46E-1	3.38E-1	8.40E-1	8.51E-1	1.50E-1	3.73E-1	3.78E-1	5.59E-2	1.39E-1	1.41E-1
V	1.35E+2	1.48E+2	1.48E+2	1.32E+2	1.43E+2	1.43E+2	1.24E+2	1.35E+2	1.35E+2	1.04E+2	1.13E+2	1.13E+2	9.86E+1	1.07E+2	1.07E+2
VI	2.52E+1	1.39E+2	4.55E+2	2.50E+1	1.38E+2	4.54E+2	2.47E+1	1.37E+2	4.51E+2	2.34E+1	1.33E+2	4.38E+2	2.30E+1	1.31E+2	4.33E+2
VII	2.16E+1	1.68E+2	1.31E+3	1.52E+1	1.19E+2	9.35E+2	9.99E+0	7.93E+1	6.22E+2	6.37E-2	4.33E-1	3.31E+0	.00E+0	.00E+0	.00E+0
IX	6.96E-2	6.15E-1	3.85E+0	5.02E-2	4.44E-1	2.78E+0	3.43E-2	3.04E-1	1.90E+0	6.23E-3	5.51E-2	3.44E-1	.00E+0	.00E+0	.00E+0
X	9.46E-1	2.78E+0	3.05E+0	9.33E-1	2.55E+0	2.78E+0	9.13E-1	2.20E+0	2.39E+0	8.30E-1	1.58E+0	1.68E+0	8.05E-1	1.42E+0	1.51E+0
XII	2.64E-2	8.15E-2	8.38E-2	2.63E-2	8.14E-2	8.37E-2	2.63E-2	8.12E-2	8.36E-2	2.61E-2	8.07E-2	8.30E-2	2.60E-2	8.05E-2	8.28E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.50E-3	9.99E-3	9.99E-3	9.47E-3	9.96E-3	9.96E-3	9.43E-3	9.92E-3	9.92E-3	9.05E-3	9.53E-3	9.53E-3	8.83E-3	9.31E-3	9.31E-3
XVIB	9.40E-3	9.87E-3	9.87E-3	9.38E-3	9.84E-3	9.84E-3	9.33E-3	9.79E-3	9.79E-3	8.96E-3	9.41E-3	9.41E-3	8.74E-3	9.19E-3	9.19E-3
XVIC	9.16E-3	9.56E-3	9.56E-3	9.13E-3	9.54E-3	9.54E-3	9.09E-3	9.49E-3	9.49E-3	8.72E-3	9.12E-3	9.12E-3	8.51E-3	8.90E-3	8.90E-3
XVIIIA	2.64E-2	2.93E-2	2.93E-2	2.63E-2	2.91E-2	2.91E-2	2.61E-2	2.89E-2	2.89E-2	2.49E-2	2.76E-2	2.76E-2	2.44E-2	2.70E-2	2.70E-2
XVIIIB	2.60E-2	2.87E-2	2.87E-2	2.59E-2	2.86E-2	2.86E-2	2.57E-2	2.83E-2	2.83E-2	2.45E-2	2.71E-2	2.71E-2	2.40E-2	2.64E-2	2.64E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.51E-2	2.74E-2	2.74E-2	2.49E-2	2.71E-2	2.71E-2	2.37E-2	2.59E-2	2.59E-2	2.32E-2	2.53E-2	2.53E-2
XXA	1.62E-4	6.10E-4	3.33E-3	1.49E-4	5.59E-4	3.06E-3	1.31E-4	4.93E-4	2.70E-3	9.01E-5	3.39E-4	1.87E-3	7.60E-5	2.86E-4	1.58E-3
XXB	1.31E-4	2.69E-4	8.77E-4	1.20E-4	2.47E-4	8.05E-4	1.06E-4	2.17E-4	7.09E-4	7.26E-5	1.50E-4	4.91E-4	6.13E-5	1.26E-4	4.15E-4
XXC	8.64E-5	1.14E-4	3.14E-2	7.92E-5	1.05E-4	2.88E-2	6.97E-5	9.21E-5	2.54E-2	4.80E-5	6.34E-5	1.76E-2	4.05E-5	5.35E-5	1.49E-2
XXIA	7.35E-2	7.67E-1	7.22E+0	7.28E-2	7.60E-1	7.16E+0	7.14E-2	7.46E-1	7.02E+0	6.00E-2	6.27E-1	5.90E+0	5.59E-2	5.83E-1	5.49E+0
XXIB	7.29E-2	7.55E-1	6.54E+0	7.22E-2	7.48E-1	6.48E+0	7.09E-2	7.34E-1	6.36E+0	5.96E-2	6.16E-1	5.34E+0	5.54E-2	5.74E-1	4.97E+0
XXIC	7.18E-2	7.27E-1	5.29E+0	7.11E-2	7.21E-1	5.24E+0	6.98E-2	7.07E-1	5.15E+0	5.87E-2	5.94E-1	4.32E+0	5.46E-2	5.53E-1	4.02E+0
XXII	2.18E+0	2.35E+1	5.05E+1	2.13E+0	2.32E+1	5.00E+1	2.07E+0	2.25E+1	4.84E+1	1.97E+0	2.16E+1	4.63E+1	1.69E+0	2.11E+1	4.53E+1
DOE	7.99E+2	4.09E+3	1.43E+4	7.85E+2	4.02E+3	1.39E+4	7.64E+2	3.95E+3	1.35E+4	7.00E+2	3.73E+3	1.25E+4	6.83E+2	3.68E+3	1.24E+4
DOD	2.64E-2	8.15E-2	8.38E-2	2.63E-2	8.14E-2	8.37E-2	2.63E-2	8.12E-2	8.36E-2	2.61E-2	8.07E-2	8.30E-2	2.60E-2	8.05E-2	8.28E-2
NRC	4.40E+0	1.95E+1	1.43E+2	4.38E+0	1.94E+1	1.42E+2	4.33E+0	1.90E+1	1.39E+2	3.96E+0	1.63E+1	1.17E+2	3.81E+0	1.53E+1	1.09E+2
Total	8.04E+2	4.11E+3	1.45E+4	7.89E+2	4.04E+3	1.41E+4	7.68E+2	3.97E+3	1.37E+4	7.04E+2	3.74E+3	1.27E+4	6.86E+2	3.70E+3	1.25E+4

Table M-117. DOSE TO WORKERS (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.30E+1	1.30E+1	1.30E+1	1.28E+1	1.28E+1	1.28E+1	1.26E+1	1.26E+1	1.26E+1	1.23E+1	1.23E+1	1.23E+1	1.20E+1	1.20E+1	1.20E+1
II	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2
III	5.36E+0	5.36E+0	5.36E+0	5.36E+0	5.36E+0	5.36E+0	5.34E+0	5.34E+0	5.34E+0	5.19E+0	5.19E+0	5.19E+0	4.95E+0	4.95E+0	4.95E+0
IV	5.00E+0	5.00E+0	5.00E+0	4.96E+0	4.96E+0	4.96E+0	4.93E+0	4.93E+0	4.93E+0	4.85E+0	4.85E+0	4.85E+0	4.79E+0	4.79E+0	4.79E+0
V	3.39E+2	3.39E+2	3.39E+2	3.39E+2	3.39E+2	3.39E+2	3.38E+2	3.38E+2	3.38E+2	3.37E+2	3.37E+2	3.37E+2	3.35E+2	3.35E+2	3.35E+2
VI	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.14E+2	1.14E+2	1.14E+2
VII	7.82E+2	7.82E+2	7.82E+2	7.62E+2	7.62E+2	7.62E+2	7.33E+2	7.33E+2	7.33E+2	6.68E+2	6.68E+2	6.68E+2	6.27E+2	6.27E+2	6.27E+2
IX	3.16E+0	3.16E+0	3.16E+0	2.99E+0	2.99E+0	2.99E+0	2.84E+0	2.84E+0	2.84E+0	2.47E+0	2.47E+0	2.47E+0	2.22E+0	2.22E+0	2.22E+0
X	1.03E+0	1.03E+0	1.03E+0	1.01E+0	1.03E+0	1.03E+0	9.66E-1	1.03E+0	1.03E+0	8.43E-1	1.03E+0	1.03E+0	7.60E-1	1.02E+0	1.02E+0
XII	8.81E+0	8.81E+0	8.81E+0	8.81E+0	8.81E+0	8.81E+0	8.81E+0	8.81E+0	8.81E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0
XIIIA	2.31E-3	2.31E-3	2.31E-3	1.86E-3	1.86E-3	1.86E-3	1.30E-3	1.30E-3	1.30E-3	2.56E-4	2.56E-4	2.56E-4	.00E+0	.00E+0	.00E+0
XIIIB	2.31E-3	2.31E-3	2.31E-3	1.86E-3	1.86E-3	1.86E-3	1.30E-3	1.30E-3	1.30E-3	2.56E-4	2.56E-4	2.56E-4	.00E+0	.00E+0	.00E+0
XIIIC	2.31E-3	2.31E-3	2.31E-3	1.86E-3	1.86E-3	1.86E-3	1.30E-3	1.30E-3	1.30E-3	2.56E-4	2.56E-4	2.56E-4	.00E+0	.00E+0	.00E+0
XVIA	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1
XVIB	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1
XVIC	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1
XVIIIA	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2
XVIIIB	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2
XVIIIC	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2
XXA	3.40E-1	3.40E-1	3.40E-1	2.57E-1	2.57E-1	2.57E-1	2.18E-1	2.18E-1	2.18E-1	1.52E-1	1.52E-1	1.52E-1	1.14E-1	1.14E-1	1.14E-1
XXB	3.40E-1	3.40E-1	3.40E-1	2.57E-1	2.57E-1	2.57E-1	2.18E-1	2.18E-1	2.18E-1	1.52E-1	1.52E-1	1.52E-1	1.14E-1	1.14E-1	1.14E-1
XXC	3.40E-1	3.40E-1	3.40E-1	2.57E-1	2.57E-1	2.57E-1	2.18E-1	2.18E-1	2.18E-1	1.52E-1	1.52E-1	1.52E-1	1.14E-1	1.14E-1	1.14E-1
XXIA	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0
XXIB	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0
XXIC	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0
XXII	6.43E+1	6.43E+1	6.43E+1	6.42E+1	6.42E+1	6.42E+1	6.42E+1	6.42E+1	6.42E+1	6.40E+1	6.41E+1	6.41E+1	6.39E+1	6.39E+1	6.39E+1
DOE	4.46E+3	4.46E+3	4.46E+3	4.44E+3	4.44E+3	4.44E+3	4.41E+3	4.41E+3	4.41E+3	4.34E+3	4.34E+3	4.34E+3	4.29E+3	4.29E+3	4.29E+3
DOD	8.83E+0	8.83E+0	8.83E+0	8.82E+0	8.82E+0	8.82E+0	8.82E+0	8.82E+0	8.82E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0
NRC	8.10E+1	8.10E+1	8.10E+1	7.99E+1	7.99E+1	7.99E+1	7.93E+1	7.93E+1	7.93E+1	7.84E+1	7.84E+1	7.84E+1	7.78E+1	7.78E+1	7.78E+1
Total	4.55E+3	4.55E+3	4.55E+3	4.53E+3	4.53E+3	4.53E+3	4.49E+3	4.50E+3	4.50E+3	4.42E+3	4.42E+3	4.42E+3	4.38E+3	4.38E+3	4.38E+3

Table M-118. DOSE TO WORKERS (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.15E+1	1.15E+1	1.15E+1	1.11E+1	1.11E+1	1.11E+1	1.05E+1	1.05E+1	1.05E+1	8.96E+0	8.96E+0	8.96E+0	8.56E+0	8.56E+0	8.56E+0
II	2.64E+2	2.64E+2	2.64E+2	2.63E+2	2.64E+2	2.64E+2	2.63E+2	2.63E+2	2.63E+2	2.62E+2	2.63E+2	2.63E+2	2.62E+2	2.62E+2	2.62E+2
III	4.25E+0	4.25E+0	4.25E+0	3.93E+0	3.93E+0	3.93E+0	3.55E+0	3.55E+0	3.55E+0	1.64E+0	1.64E+0	1.64E+0	1.06E+0	1.06E+0	1.06E+0
IV	4.68E+0	4.68E+0	4.68E+0	4.61E+0	4.61E+0	4.61E+0	4.48E+0	4.48E+0	4.48E+0	3.80E+0	3.80E+0	3.80E+0	3.46E+0	3.46E+0	3.46E+0
V	3.30E+2	3.30E+2	3.30E+2	3.27E+2	3.27E+2	3.27E+2	3.20E+2	3.20E+2	3.20E+2	2.88E+2	2.88E+2	2.88E+2	2.72E+2	2.72E+2	2.72E+2
VI	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.12E+2	1.12E+2	1.12E+2	1.11E+2	1.11E+2	1.11E+2
VII	5.64E+2	5.64E+2	5.64E+2	5.17E+2	5.17E+2	5.17E+2	4.02E+2	4.02E+2	4.02E+2	1.70E+2	1.70E+2	1.70E+2	1.35E+2	1.35E+2	1.35E+2
IX	1.86E+0	1.86E+0	1.86E+0	1.56E+0	1.56E+0	1.56E+0	1.27E+0	1.27E+0	1.27E+0	5.97E-1	5.97E-1	5.97E-1	4.18E-1	4.18E-1	4.18E-1
X	6.51E-1	9.74E-1	9.74E-1	5.93E-1	9.22E-1	9.22E-1	5.20E-1	8.18E-1	8.18E-1	3.62E-1	5.07E-1	5.07E-1	3.13E-1	4.40E-1	4.40E-1
XII	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.79E+0	8.79E+0	8.79E+0	8.78E+0	8.78E+0	8.78E+0
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	1.10E-1	1.10E-1	1.10E-1	1.09E-1	1.09E-1	1.09E-1
XVIB	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	1.10E-1	1.10E-1	1.10E-1	1.09E-1	1.09E-1	1.09E-1
XVIC	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.11E-1	1.11E-1	1.11E-1	1.10E-1	1.10E-1	1.10E-1	1.09E-1	1.09E-1	1.09E-1
XVIIIA	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2	9.85E-2	9.85E-2	9.85E-2	9.73E-2	9.73E-2	9.73E-2	9.65E-2	9.65E-2	9.65E-2
XVIIIB	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2	9.85E-2	9.85E-2	9.85E-2	9.73E-2	9.73E-2	9.73E-2	9.65E-2	9.65E-2	9.65E-2
XVIIIC	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2	9.85E-2	9.85E-2	9.85E-2	9.73E-2	9.73E-2	9.73E-2	9.65E-2	9.65E-2	9.65E-2
XXA	5.43E-2	5.43E-2	5.43E-2	2.25E-2	2.25E-2	2.25E-2	1.46E-2	1.46E-2	1.46E-2	1.17E-2	1.17E-2	1.17E-2	1.08E-2	1.08E-2	1.08E-2
XXB	5.43E-2	5.43E-2	5.43E-2	2.25E-2	2.25E-2	2.25E-2	1.46E-2	1.46E-2	1.46E-2	1.17E-2	1.17E-2	1.17E-2	1.08E-2	1.08E-2	1.08E-2
XXC	5.43E-2	5.43E-2	5.43E-2	2.25E-2	2.25E-2	2.25E-2	1.46E-2	1.46E-2	1.46E-2	1.17E-2	1.17E-2	1.17E-2	1.08E-2	1.08E-2	1.08E-2
XXIA	2.54E+0	2.54E+0	2.54E+0	2.53E+0	2.53E+0	2.53E+0	2.51E+0	2.51E+0	2.51E+0	2.44E+0	2.44E+0	2.44E+0	2.37E+0	2.37E+0	2.37E+0
XXIB	2.54E+0	2.54E+0	2.54E+0	2.53E+0	2.53E+0	2.53E+0	2.51E+0	2.51E+0	2.51E+0	2.44E+0	2.44E+0	2.44E+0	2.37E+0	2.37E+0	2.37E+0
XXIC	2.54E+0	2.54E+0	2.54E+0	2.53E+0	2.53E+0	2.53E+0	2.51E+0	2.51E+0	2.51E+0	2.44E+0	2.44E+0	2.44E+0	2.37E+0	2.37E+0	2.37E+0
XXII	6.36E+1	6.37E+1	6.37E+1	6.32E+1	6.35E+1	6.35E+1	6.28E+1	6.29E+1	6.29E+1	5.95E+1	6.02E+1	6.02E+1	5.91E+1	5.94E+1	5.94E+1
DOE	4.21E+3	4.22E+3	4.22E+3	4.16E+3	4.16E+3	4.16E+3	4.02E+3	4.02E+3	4.02E+3	3.69E+3	3.70E+3	3.70E+3	3.62E+3	3.62E+3	3.62E+3
DOD	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.79E+0	8.79E+0	8.79E+0	8.78E+0	8.78E+0	8.78E+0
NRC	7.68E+1	7.68E+1	7.68E+1	7.61E+1	7.61E+1	7.61E+1	7.56E+1	7.56E+1	7.56E+1	7.37E+1	7.37E+1	7.37E+1	7.21E+1	7.21E+1	7.21E+1
Total	4.30E+3	4.30E+3	4.30E+3	4.24E+3	4.24E+3	4.24E+3	4.11E+3	4.11E+3	4.11E+3	3.78E+3	3.78E+3	3.78E+3	3.70E+3	3.70E+3	3.70E+3

Table M-119. DOSE TO WORKERS (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.28E+1	1.28E+1	1.28E+1	1.25E+1	1.25E+1	1.25E+1	1.23E+1	1.23E+1	1.23E+1	1.17E+1	1.17E+1	1.17E+1	1.12E+1	1.12E+1	1.12E+1
II	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.64E+2	2.63E+2	2.64E+2	2.64E+2
III	5.36E+0	5.36E+0	5.36E+0	5.32E+0	5.32E+0	5.32E+0	5.21E+0	5.21E+0	5.21E+0	4.48E+0	4.48E+0	4.48E+0	3.96E+0	3.96E+0	3.96E+0
IV	4.98E+0	4.98E+0	4.98E+0	4.90E+0	4.90E+0	4.90E+0	4.85E+0	4.85E+0	4.85E+0	4.69E+0	4.69E+0	4.69E+0	4.61E+0	4.61E+0	4.61E+0
V	3.39E+2	3.39E+2	3.39E+2	3.38E+2	3.38E+2	3.38E+2	3.37E+2	3.37E+2	3.37E+2	3.32E+2	3.32E+2	3.32E+2	3.27E+2	3.27E+2	3.27E+2
VI	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.15E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2	1.14E+2
VII	7.74E+2	7.74E+2	7.74E+2	7.05E+2	7.05E+2	7.05E+2	6.58E+2	6.58E+2	6.58E+2	5.64E+2	5.64E+2	5.64E+2	4.96E+2	4.96E+2	4.96E+2
IX	3.05E+0	3.05E+0	3.05E+0	2.69E+0	2.69E+0	2.69E+0	2.42E+0	2.42E+0	2.42E+0	1.84E+0	1.84E+0	1.84E+0	1.46E+0	1.46E+0	1.46E+0
X	1.02E+0	1.03E+0	1.03E+0	9.44E-1	1.03E+0	1.03E+0	8.69E-1	1.03E+0	1.03E+0	7.01E-1	1.01E+0	1.01E+0	6.27E-1	9.67E-1	9.67E-1
XII	8.81E+0	8.81E+0	8.81E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0
XIIIA	2.11E-3	2.11E-3	2.11E-3	1.23E-3	1.23E-3	1.23E-3	6.02E-4	6.02E-4	6.02E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.11E-3	2.11E-3	2.11E-3	1.23E-3	1.23E-3	1.23E-3	6.02E-4	6.02E-4	6.02E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.11E-3	2.11E-3	2.11E-3	1.23E-3	1.23E-3	1.23E-3	6.02E-4	6.02E-4	6.02E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1
XVIB	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1
XVIC	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1	1.12E-1
XVIIIA	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2
XVIIIB	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2
XVIIIC	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.87E-2	9.86E-2	9.86E-2	9.86E-2
XXA	2.71E-1	2.71E-1	2.71E-1	1.79E-1	1.79E-1	1.79E-1	1.32E-1	1.32E-1	1.32E-1	3.78E-2	3.78E-2	3.78E-2	1.59E-2	1.59E-2	1.59E-2
XXB	2.71E-1	2.71E-1	2.71E-1	1.79E-1	1.79E-1	1.79E-1	1.32E-1	1.32E-1	1.32E-1	3.78E-2	3.78E-2	3.78E-2	1.59E-2	1.59E-2	1.59E-2
XXC	2.71E-1	2.71E-1	2.71E-1	1.79E-1	1.79E-1	1.79E-1	1.32E-1	1.32E-1	1.32E-1	3.78E-2	3.78E-2	3.78E-2	1.59E-2	1.59E-2	1.59E-2
XXIA	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.53E+0	2.53E+0	2.53E+0
XXIB	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.53E+0	2.53E+0	2.53E+0
XXIC	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.54E+0	2.53E+0	2.53E+0	2.53E+0
XXII	6.42E+1	6.42E+1	6.42E+1	6.41E+1	6.41E+1	6.41E+1	6.40E+1	6.40E+1	6.40E+1	6.36E+1	6.37E+1	6.37E+1	6.31E+1	6.35E+1	6.35E+1
DOE	4.45E+3	4.45E+3	4.45E+3	4.38E+3	4.38E+3	4.38E+3	4.33E+3	4.33E+3	4.33E+3	4.22E+3	4.22E+3	4.22E+3	4.14E+3	4.14E+3	4.14E+3
DOD	8.83E+0	8.83E+0	8.83E+0	8.81E+0	8.81E+0	8.81E+0	8.81E+0	8.81E+0	8.81E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0	8.80E+0
NRC	8.00E+1	8.00E+1	8.00E+1	7.87E+1	7.87E+1	7.87E+1	7.81E+1	7.81E+1	7.81E+1	7.66E+1	7.66E+1	7.66E+1	7.60E+1	7.60E+1	7.60E+1
Total	4.54E+3	4.54E+3	4.54E+3	4.46E+3	4.46E+3	4.46E+3	4.41E+3	4.41E+3	4.41E+3	4.30E+3	4.30E+3	4.30E+3	4.22E+3	4.22E+3	4.22E+3

Table M-120. DOSE TO WORKERS (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.04E+1	1.04E+1	1.04E+1	9.84E+0	9.84E+0	9.84E+0	9.06E+0	9.06E+0	9.06E+0	6.51E+0	6.51E+0	6.51E+0	5.66E+0	5.66E+0	5.66E+0
II	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.63E+2	2.62E+2	2.63E+2	2.63E+2	2.60E+2	2.60E+2	2.60E+2	2.58E+2	2.59E+2	2.59E+2
III	3.43E+0	3.43E+0	3.43E+0	2.83E+0	2.83E+0	2.83E+0	1.80E+0	1.80E+0	1.80E+0	4.72E-1	4.72E-1	4.72E-1	2.66E-1	2.66E-1	2.66E-1
IV	4.40E+0	4.40E+0	4.40E+0	4.19E+0	4.19E+0	4.19E+0	3.77E+0	3.77E+0	3.77E+0	1.67E+0	1.67E+0	1.67E+0	6.23E-1	6.23E-1	6.23E-1
V	3.19E+2	3.19E+2	3.19E+2	3.10E+2	3.10E+2	3.10E+2	2.92E+2	2.92E+2	2.92E+2	2.43E+2	2.43E+2	2.43E+2	2.32E+2	2.32E+2	2.32E+2
VI	1.14E+2	1.14E+2	1.14E+2	1.13E+2	1.13E+2	1.13E+2	1.12E+2	1.12E+2	1.12E+2	1.08E+2	1.08E+2	1.08E+2	1.06E+2	1.06E+2	1.06E+2
VII	3.35E+2	3.35E+2	3.35E+2	2.38E+2	2.38E+2	2.38E+2	1.58E+2	1.58E+2	1.58E+2	8.64E-1	8.64E-1	8.64E-1	.00E+0	.00E+0	.00E+0
IX	1.06E+0	1.06E+0	1.06E+0	7.67E-1	7.67E-1	7.67E-1	5.24E-1	5.24E-1	5.24E-1	9.51E-2	9.51E-2	9.51E-2	.00E+0	.00E+0	.00E+0
X	5.33E-1	8.55E-1	8.55E-1	4.74E-1	7.46E-1	7.46E-1	4.08E-1	5.92E-1	5.92E-1	2.38E-1	3.32E-1	3.32E-1	2.05E-1	2.72E-1	2.72E-1
XII	8.80E+0	8.80E+0	8.80E+0	8.79E+0	8.79E+0	8.79E+0	8.77E+0	8.77E+0	8.77E+0	8.71E+0	8.71E+0	8.71E+0	8.69E+0	8.69E+0	8.69E+0
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.10E-1	1.10E-1	1.10E-1	1.04E-1	1.04E-1	1.04E-1	1.00E-1	1.00E-1	1.00E-1
XVIB	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.10E-1	1.10E-1	1.10E-1	1.04E-1	1.04E-1	1.04E-1	1.00E-1	1.00E-1	1.00E-1
XVIC	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.11E-1	1.10E-1	1.10E-1	1.10E-1	1.04E-1	1.04E-1	1.04E-1	1.00E-1	1.00E-1	1.00E-1
XVIIIA	9.85E-2	9.85E-2	9.85E-2	9.81E-2	9.81E-2	9.81E-2	9.72E-2	9.72E-2	9.72E-2	9.29E-2	9.29E-2	9.29E-2	9.07E-2	9.07E-2	9.07E-2
XVIIIB	9.85E-2	9.85E-2	9.85E-2	9.81E-2	9.81E-2	9.81E-2	9.72E-2	9.72E-2	9.72E-2	9.29E-2	9.29E-2	9.29E-2	9.07E-2	9.07E-2	9.07E-2
XVIIIC	9.85E-2	9.85E-2	9.85E-2	9.81E-2	9.81E-2	9.81E-2	9.72E-2	9.72E-2	9.72E-2	9.29E-2	9.29E-2	9.29E-2	9.07E-2	9.07E-2	9.07E-2
XXA	1.35E-2	1.35E-2	1.35E-2	1.24E-2	1.24E-2	1.24E-2	1.09E-2	1.09E-2	1.09E-2	7.54E-3	7.54E-3	7.54E-3	6.37E-3	6.37E-3	6.37E-3
XXB	1.35E-2	1.35E-2	1.35E-2	1.24E-2	1.24E-2	1.24E-2	1.09E-2	1.09E-2	1.09E-2	7.54E-3	7.54E-3	7.54E-3	6.37E-3	6.37E-3	6.37E-3
XXC	1.35E-2	1.35E-2	1.35E-2	1.24E-2	1.24E-2	1.24E-2	1.09E-2	1.09E-2	1.09E-2	7.54E-3	7.54E-3	7.54E-3	6.37E-3	6.37E-3	6.37E-3
XXIA	2.50E+0	2.50E+0	2.50E+0	2.48E+0	2.48E+0	2.48E+0	2.43E+0	2.43E+0	2.43E+0	2.05E+0	2.05E+0	2.05E+0	1.90E+0	1.90E+0	1.90E+0
XXIB	2.50E+0	2.50E+0	2.50E+0	2.48E+0	2.48E+0	2.48E+0	2.43E+0	2.43E+0	2.43E+0	2.05E+0	2.05E+0	2.05E+0	1.90E+0	1.90E+0	1.90E+0
XXIC	2.50E+0	2.50E+0	2.50E+0	2.48E+0	2.48E+0	2.48E+0	2.43E+0	2.43E+0	2.43E+0	2.05E+0	2.05E+0	2.05E+0	1.90E+0	1.90E+0	1.90E+0
XXII	6.26E+1	6.28E+1	6.28E+1	6.13E+1	6.22E+1	6.22E+1	5.94E+1	6.02E+1	6.02E+1	5.66E+1	5.75E+1	5.75E+1	4.86E+1	5.62E+1	5.62E+1
DOE	3.95E+3	3.95E+3	3.95E+3	3.82E+3	3.83E+3	3.83E+3	3.69E+3	3.69E+3	3.69E+3	3.35E+3	3.36E+3	3.36E+3	3.25E+3	3.30E+3	3.30E+3
DOD	8.80E+0	8.80E+0	8.80E+0	8.79E+0	8.79E+0	8.79E+0	8.77E+0	8.77E+0	8.77E+0	8.71E+0	8.71E+0	8.71E+0	8.69E+0	8.69E+0	8.69E+0
NRC	7.54E+1	7.54E+1	7.54E+1	7.48E+1	7.48E+1	7.48E+1	7.36E+1	7.36E+1	7.36E+1	6.39E+1	6.39E+1	6.39E+1	6.02E+1	6.02E+1	6.02E+1
Total	4.03E+3	4.04E+3	4.04E+3	3.91E+3	3.91E+3	3.91E+3	3.77E+3	3.78E+3	3.78E+3	3.42E+3	3.43E+3	3.43E+3	3.31E+3	3.37E+3	3.37E+3

Table M-121. POTENTIAL CANCERS AMONG WORKERS--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.95E-3	8.95E-3	8.95E-3	8.82E-3	8.82E-3	8.82E-3	8.72E-3	8.72E-3	8.72E-3	8.48E-3	8.48E-3	8.48E-3	8.32E-3	8.32E-3	8.32E-3
II	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1
III	3.71E-3	3.71E-3	3.71E-3	3.70E-3	3.70E-3	3.70E-3	3.69E-3	3.69E-3	3.69E-3	3.58E-3	3.58E-3	3.58E-3	3.42E-3	3.42E-3	3.42E-3
IV	7.32E-4	7.32E-4	7.32E-4	7.27E-4	7.27E-4	7.27E-4	7.22E-4	7.22E-4	7.22E-4	7.11E-4	7.11E-4	7.11E-4	7.02E-4	7.02E-4	7.02E-4
V	2.35E-1	2.35E-1	2.35E-1	2.34E-1	2.34E-1	2.34E-1	2.34E-1	2.34E-1	2.34E-1	2.33E-1	2.33E-1	2.33E-1	2.32E-1	2.32E-1	2.32E-1
VI	2.61E-2	2.61E-2	2.61E-2	2.61E-2	2.61E-2	2.61E-2	2.60E-2	2.60E-2	2.60E-2	2.60E-2	2.60E-2	2.60E-2	2.60E-2	2.60E-2	2.60E-2
VII	6.17E-2	6.17E-2	6.17E-2	6.04E-2	6.04E-2	6.04E-2	5.84E-2	5.84E-2	5.84E-2	5.40E-2	5.40E-2	5.40E-2	5.12E-2	5.12E-2	5.12E-2
IX	2.15E-4	2.15E-4	2.15E-4	2.04E-4	2.04E-4	2.04E-4	1.94E-4	1.94E-4	1.94E-4	1.68E-4	1.68E-4	1.68E-4	1.51E-4	1.51E-4	1.51E-4
X	1.45E-4	1.45E-4	1.45E-4	1.42E-4	1.45E-4	1.45E-4	1.36E-4	1.45E-4	1.45E-4	1.19E-4	1.45E-4	1.45E-4	1.07E-4	1.43E-4	1.43E-4
XII	6.00E-4	6.00E-4	6.00E-4	6.00E-4	6.00E-4	6.00E-4	6.00E-4	6.00E-4	6.00E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4
XIIIA	3.95E-7	3.95E-7	3.95E-7	3.17E-7	3.17E-7	3.17E-7	2.21E-7	2.21E-7	2.21E-7	4.36E-8	4.36E-8	4.36E-8	.00E+0	.00E+0	.00E+0
XIIIB	3.95E-7	3.95E-7	3.95E-7	3.17E-7	3.17E-7	3.17E-7	2.21E-7	2.21E-7	2.21E-7	4.36E-8	4.36E-8	4.36E-8	.00E+0	.00E+0	.00E+0
XIIIC	3.95E-7	3.95E-7	3.95E-7	3.17E-7	3.17E-7	3.17E-7	2.21E-7	2.21E-7	2.21E-7	4.36E-8	4.36E-8	4.36E-8	.00E+0	.00E+0	.00E+0
XVIA	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.04E-5	8.04E-5	8.04E-5
XVIB	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.04E-5	8.04E-5	8.04E-5
XVIC	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.04E-5	8.04E-5	8.04E-5
XVIIIA	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5
XVIIIB	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5
XVIIIC	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5
XXA	4.23E-5	4.23E-5	4.23E-5	3.20E-5	3.20E-5	3.20E-5	2.71E-5	2.71E-5	2.71E-5	1.89E-5	1.89E-5	1.89E-5	1.42E-5	1.42E-5	1.42E-5
XXB	4.23E-5	4.23E-5	4.23E-5	3.20E-5	3.20E-5	3.20E-5	2.71E-5	2.71E-5	2.71E-5	1.89E-5	1.89E-5	1.89E-5	1.42E-5	1.42E-5	1.42E-5
XXC	4.23E-5	4.23E-5	4.23E-5	3.20E-5	3.20E-5	3.20E-5	2.71E-5	2.71E-5	2.71E-5	1.89E-5	1.89E-5	1.89E-5	1.42E-5	1.42E-5	1.42E-5
XXIA	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3
XXIB	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3
XXIC	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3
XXII	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.96E-2	2.95E-2	2.95E-2	2.95E-2	2.94E-2	2.94E-2	2.94E-2
DOE	1.26E+0	1.26E+0	1.26E+0	1.26E+0	1.26E+0	1.26E+0	1.26E+0	1.26E+0	1.26E+0	1.25E+0	1.25E+0	1.25E+0	1.24E+0	1.24E+0	1.24E+0
DOD	6.03E-4	6.03E-4	6.03E-4	6.02E-4	6.02E-4	6.02E-4	6.01E-4	6.01E-4	6.01E-4	6.00E-4	6.00E-4	6.00E-4	5.99E-4	5.99E-4	5.99E-4
NRC	4.06E-2	4.06E-2	4.06E-2	4.04E-2	4.04E-2	4.04E-2	4.03E-2	4.03E-2	4.03E-2	4.02E-2	4.02E-2	4.02E-2	4.01E-2	4.01E-2	4.01E-2
Total	1.30E+0	1.30E+0	1.30E+0	1.30E+0	1.30E+0	1.30E+0	1.30E+0	1.30E+0	1.30E+0	1.29E+0	1.29E+0	1.29E+0	1.28E+0	1.28E+0	1.28E+0

Table M-122. POTENTIAL CANCERS AMONG WORKERS--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.95E-3	7.95E-3	7.95E-3	7.67E-3	7.67E-3	7.67E-3	7.27E-3	7.27E-3	7.27E-3	6.20E-3	6.20E-3	6.20E-3	5.92E-3	5.92E-3	5.92E-3
II	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1
III	2.94E-3	2.94E-3	2.94E-3	2.71E-3	2.71E-3	2.71E-3	2.45E-3	2.45E-3	2.45E-3	1.14E-3	1.14E-3	1.14E-3	7.33E-4	7.33E-4	7.33E-4
IV	6.86E-4	6.86E-4	6.86E-4	6.76E-4	6.76E-4	6.76E-4	6.56E-4	6.56E-4	6.56E-4	5.56E-4	5.56E-4	5.56E-4	5.07E-4	5.07E-4	5.07E-4
V	2.28E-1	2.28E-1	2.28E-1	2.26E-1	2.26E-1	2.26E-1	2.21E-1	2.21E-1	2.21E-1	1.99E-1	1.99E-1	1.99E-1	1.88E-1	1.88E-1	1.88E-1
VI	2.59E-2	2.59E-2	2.59E-2	2.58E-2	2.58E-2	2.58E-2	2.56E-2	2.56E-2	2.56E-2	2.49E-2	2.49E-2	2.49E-2	2.46E-2	2.46E-2	2.46E-2
VII	4.67E-2	4.67E-2	4.67E-2	4.30E-2	4.30E-2	4.30E-2	3.35E-2	3.35E-2	3.35E-2	1.38E-2	1.38E-2	1.38E-2	1.09E-2	1.09E-2	1.09E-2
IX	1.26E-4	1.26E-4	1.26E-4	1.06E-4	1.06E-4	1.06E-4	8.67E-5	8.67E-5	8.67E-5	4.06E-5	4.06E-5	4.06E-5	2.85E-5	2.85E-5	2.85E-5
X	9.17E-5	1.37E-4	1.37E-4	8.35E-5	1.30E-4	1.30E-4	7.33E-5	1.15E-4	1.15E-4	5.10E-5	7.14E-5	7.14E-5	4.41E-5	6.20E-5	6.20E-5
XII	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.98E-4	5.98E-4	5.98E-4	5.98E-4	5.98E-4	5.98E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	8.04E-5	8.04E-5	8.04E-5	8.02E-5	8.02E-5	8.02E-5	7.98E-5	7.98E-5	7.98E-5	7.87E-5	7.87E-5	7.87E-5	7.82E-5	7.82E-5	7.82E-5
XVIB	8.04E-5	8.04E-5	8.04E-5	8.02E-5	8.02E-5	8.02E-5	7.98E-5	7.98E-5	7.98E-5	7.87E-5	7.87E-5	7.87E-5	7.82E-5	7.82E-5	7.82E-5
XVIC	8.04E-5	8.04E-5	8.04E-5	8.02E-5	8.02E-5	8.02E-5	7.98E-5	7.98E-5	7.98E-5	7.87E-5	7.87E-5	7.87E-5	7.82E-5	7.82E-5	7.82E-5
XVIIIA	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.74E-5	6.74E-5	6.74E-5	6.66E-5	6.66E-5	6.66E-5	6.61E-5	6.61E-5	6.61E-5
XVIIIB	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.74E-5	6.74E-5	6.74E-5	6.66E-5	6.66E-5	6.66E-5	6.61E-5	6.61E-5	6.61E-5
XVIIIC	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.74E-5	6.74E-5	6.74E-5	6.66E-5	6.66E-5	6.66E-5	6.61E-5	6.61E-5	6.61E-5
XXA	6.75E-6	6.75E-6	6.75E-6	2.79E-6	2.79E-6	2.79E-6	1.81E-6	1.81E-6	1.81E-6	1.44E-6	1.44E-6	1.44E-6	1.34E-6	1.34E-6	1.34E-6
XXB	6.75E-6	6.75E-6	6.75E-6	2.79E-6	2.79E-6	2.79E-6	1.81E-6	1.81E-6	1.81E-6	1.44E-6	1.44E-6	1.44E-6	1.34E-6	1.34E-6	1.34E-6
XXC	6.75E-6	6.75E-6	6.75E-6	2.79E-6	2.79E-6	2.79E-6	1.81E-6	1.81E-6	1.81E-6	1.44E-6	1.44E-6	1.44E-6	1.34E-6	1.34E-6	1.34E-6
XXIA	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.15E-3	1.15E-3	1.15E-3	1.12E-3	1.12E-3	1.12E-3	1.09E-3	1.09E-3	1.09E-3
XXIB	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.15E-3	1.15E-3	1.15E-3	1.12E-3	1.12E-3	1.12E-3	1.09E-3	1.09E-3	1.09E-3
XXIC	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.15E-3	1.15E-3	1.15E-3	1.12E-3	1.12E-3	1.12E-3	1.09E-3	1.09E-3	1.09E-3
XXII	2.93E-2	2.93E-2	2.93E-2	2.91E-2	2.92E-2	2.92E-2	2.89E-2	2.90E-2	2.90E-2	2.74E-2	2.77E-2	2.77E-2	2.72E-2	2.73E-2	2.73E-2
DOE	1.23E+0	1.23E+0	1.23E+0	1.22E+0	1.22E+0	1.22E+0	1.20E+0	1.20E+0	1.20E+0	1.13E+0	1.13E+0	1.13E+0	1.11E+0	1.11E+0	1.11E+0
DOD	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.98E-4	5.98E-4	5.98E-4	5.98E-4	5.98E-4	5.98E-4
NRC	3.99E-2	3.99E-2	3.99E-2	3.98E-2	3.98E-2	3.98E-2	3.96E-2	3.96E-2	3.96E-2	3.86E-2	3.86E-2	3.86E-2	3.79E-2	3.79E-2	3.79E-2
Total	1.27E+0	1.27E+0	1.27E+0	1.26E+0	1.26E+0	1.26E+0	1.24E+0	1.24E+0	1.24E+0	1.17E+0	1.17E+0	1.17E+0	1.14E+0	1.15E+0	1.15E+0

Table M-123. POTENTIAL CANCERS AMONG WORKERS--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.88E-3	8.88E-3	8.88E-3	8.66E-3	8.66E-3	8.66E-3	8.50E-3	8.50E-3	8.50E-3	8.07E-3	8.07E-3	8.07E-3	7.73E-3	7.73E-3	7.73E-3
II	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1
III	3.71E-3	3.71E-3	3.71E-3	3.68E-3	3.68E-3	3.68E-3	3.60E-3	3.60E-3	3.60E-3	3.10E-3	3.10E-3	3.10E-3	2.74E-3	2.74E-3	2.74E-3
IV	7.29E-4	7.29E-4	7.29E-4	7.19E-4	7.19E-4	7.19E-4	7.10E-4	7.10E-4	7.10E-4	6.87E-4	6.87E-4	6.87E-4	6.75E-4	6.75E-4	6.75E-4
V	2.34E-1	2.34E-1	2.34E-1	2.34E-1	2.34E-1	2.34E-1	2.33E-1	2.33E-1	2.33E-1	2.29E-1	2.29E-1	2.29E-1	2.26E-1	2.26E-1	2.26E-1
VI	2.61E-2	2.61E-2	2.61E-2	2.60E-2	2.60E-2	2.60E-2	2.60E-2	2.60E-2	2.60E-2	2.59E-2	2.59E-2	2.59E-2	2.58E-2	2.58E-2	2.58E-2
VII	6.12E-2	6.12E-2	6.12E-2	5.65E-2	5.65E-2	5.65E-2	5.33E-2	5.33E-2	5.33E-2	4.67E-2	4.67E-2	4.67E-2	4.13E-2	4.13E-2	4.13E-2
IX	2.08E-4	2.08E-4	2.08E-4	1.83E-4	1.83E-4	1.83E-4	1.65E-4	1.65E-4	1.65E-4	1.25E-4	1.25E-4	1.25E-4	9.93E-5	9.93E-5	9.93E-5
X	1.45E-4	1.45E-4	1.45E-4	1.33E-4	1.45E-4	1.45E-4	1.23E-4	1.45E-4	1.45E-4	9.88E-5	1.42E-4	1.42E-4	8.84E-5	1.36E-4	1.36E-4
XII	6.00E-4	6.00E-4	6.00E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4
XIIIA	3.60E-7	3.60E-7	3.60E-7	2.10E-7	2.10E-7	2.10E-7	1.03E-7	1.03E-7	1.03E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.60E-7	3.60E-7	3.60E-7	2.10E-7	2.10E-7	2.10E-7	1.03E-7	1.03E-7	1.03E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	3.60E-7	3.60E-7	3.60E-7	2.10E-7	2.10E-7	2.10E-7	1.03E-7	1.03E-7	1.03E-7	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.04E-5	8.04E-5	8.04E-5	8.02E-5	8.02E-5	8.02E-5
XVIB	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.04E-5	8.04E-5	8.04E-5	8.02E-5	8.02E-5	8.02E-5
XVIC	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.05E-5	8.04E-5	8.04E-5	8.04E-5	8.02E-5	8.02E-5	8.02E-5
XVIIIA	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5
XVIIIB	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5
XVIIIC	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.76E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5	6.75E-5
XXA	3.37E-5	3.37E-5	3.37E-5	2.22E-5	2.22E-5	2.22E-5	1.65E-5	1.65E-5	1.65E-5	4.69E-6	4.69E-6	4.69E-6	1.98E-6	1.98E-6	1.98E-6
XXB	3.37E-5	3.37E-5	3.37E-5	2.22E-5	2.22E-5	2.22E-5	1.65E-5	1.65E-5	1.65E-5	4.69E-6	4.69E-6	4.69E-6	1.98E-6	1.98E-6	1.98E-6
XXC	3.37E-5	3.37E-5	3.37E-5	2.22E-5	2.22E-5	2.22E-5	1.65E-5	1.65E-5	1.65E-5	4.69E-6	4.69E-6	4.69E-6	1.98E-6	1.98E-6	1.98E-6
XXIA	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3
XXIB	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3
XXIC	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.17E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3	1.16E-3
XXII	2.96E-2	2.96E-2	2.96E-2	2.95E-2	2.95E-2	2.95E-2	2.95E-2	2.95E-2	2.95E-2	2.93E-2	2.93E-2	2.93E-2	2.91E-2	2.92E-2	2.92E-2
DOE	1.26E+0	1.26E+0	1.26E+0	1.25E+0	1.25E+0	1.25E+0	1.25E+0	1.25E+0	1.25E+0	1.23E+0	1.23E+0	1.23E+0	1.22E+0	1.22E+0	1.22E+0
DOD	6.03E-4	6.03E-4	6.03E-4	6.01E-4	6.01E-4	6.01E-4	6.00E-4	6.00E-4	6.00E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4	5.99E-4
NRC	4.04E-2	4.04E-2	4.04E-2	4.03E-2	4.03E-2	4.03E-2	4.02E-2	4.02E-2	4.02E-2	3.99E-2	3.99E-2	3.99E-2	3.98E-2	3.98E-2	3.98E-2
Total	1.30E+0	1.30E+0	1.30E+0	1.29E+0	1.29E+0	1.29E+0	1.29E+0	1.29E+0	1.29E+0	1.27E+0	1.27E+0	1.27E+0	1.26E+0	1.26E+0	1.26E+0

Table M-124. POTENTIAL CANCERS AMONG WORKERS--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.17E-3	7.17E-3	7.17E-3	6.80E-3	6.80E-3	6.80E-3	6.27E-3	6.27E-3	6.27E-3	4.50E-3	4.50E-3	4.50E-3	3.91E-3	3.91E-3	3.91E-3
II	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.53E-1	1.53E-1	1.53E-1	1.52E-1	1.52E-1	1.52E-1
III	2.37E-3	2.37E-3	2.37E-3	1.96E-3	1.96E-3	1.96E-3	1.24E-3	1.24E-3	1.24E-3	3.26E-4	3.26E-4	3.26E-4	1.84E-4	1.84E-4	1.84E-4
IV	6.44E-4	6.44E-4	6.44E-4	6.13E-4	6.13E-4	6.13E-4	5.52E-4	5.52E-4	5.52E-4	2.45E-4	2.45E-4	2.45E-4	9.12E-5	9.12E-5	9.12E-5
V	2.20E-1	2.20E-1	2.20E-1	2.14E-1	2.14E-1	2.14E-1	2.02E-1	2.02E-1	2.02E-1	1.68E-1	1.68E-1	1.68E-1	1.60E-1	1.60E-1	1.60E-1
VI	2.56E-2	2.56E-2	2.56E-2	2.54E-2	2.54E-2	2.54E-2	2.50E-2	2.50E-2	2.50E-2	2.33E-2	2.33E-2	2.33E-2	2.28E-2	2.28E-2	2.28E-2
VII	2.78E-2	2.78E-2	2.78E-2	1.96E-2	1.96E-2	1.96E-2	1.28E-2	1.28E-2	1.28E-2	8.47E-5	8.47E-5	8.47E-5	.00E+0	.00E+0	.00E+0
IX	7.23E-5	7.23E-5	7.23E-5	5.22E-5	5.22E-5	5.22E-5	3.57E-5	3.57E-5	3.57E-5	6.48E-6	6.48E-6	6.48E-6	.00E+0	.00E+0	.00E+0
X	7.51E-5	1.21E-4	1.21E-4	6.68E-5	1.05E-4	1.05E-4	5.74E-5	8.34E-5	8.34E-5	3.35E-5	4.67E-5	4.67E-5	2.88E-5	3.83E-5	3.83E-5
XII	5.99E-4	5.99E-4	5.99E-4	5.98E-4	5.98E-4	5.98E-4	5.97E-4	5.97E-4	5.97E-4	5.93E-4	5.93E-4	5.93E-4	5.92E-4	5.92E-4	5.92E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	7.97E-5	7.97E-5	7.97E-5	7.94E-5	7.94E-5	7.94E-5	7.89E-5	7.89E-5	7.89E-5	7.43E-5	7.43E-5	7.43E-5	7.17E-5	7.17E-5	7.17E-5
XVIB	7.97E-5	7.97E-5	7.97E-5	7.94E-5	7.94E-5	7.94E-5	7.89E-5	7.89E-5	7.89E-5	7.43E-5	7.43E-5	7.43E-5	7.17E-5	7.17E-5	7.17E-5
XVIC	7.97E-5	7.97E-5	7.97E-5	7.94E-5	7.94E-5	7.94E-5	7.89E-5	7.89E-5	7.89E-5	7.43E-5	7.43E-5	7.43E-5	7.17E-5	7.17E-5	7.17E-5
XVIIIA	6.74E-5	6.74E-5	6.74E-5	6.71E-5	6.71E-5	6.71E-5	6.65E-5	6.65E-5	6.65E-5	6.36E-5	6.36E-5	6.36E-5	6.21E-5	6.21E-5	6.21E-5
XVIIIB	6.74E-5	6.74E-5	6.74E-5	6.71E-5	6.71E-5	6.71E-5	6.65E-5	6.65E-5	6.65E-5	6.36E-5	6.36E-5	6.36E-5	6.21E-5	6.21E-5	6.21E-5
XVIIIC	6.74E-5	6.74E-5	6.74E-5	6.71E-5	6.71E-5	6.71E-5	6.65E-5	6.65E-5	6.65E-5	6.36E-5	6.36E-5	6.36E-5	6.21E-5	6.21E-5	6.21E-5
XXA	1.67E-6	1.67E-6	1.67E-6	1.53E-6	1.53E-6	1.53E-6	1.35E-6	1.35E-6	1.35E-6	9.31E-7	9.31E-7	9.31E-7	7.86E-7	7.86E-7	7.86E-7
XXB	1.67E-6	1.67E-6	1.67E-6	1.53E-6	1.53E-6	1.53E-6	1.35E-6	1.35E-6	1.35E-6	9.31E-7	9.31E-7	9.31E-7	7.86E-7	7.86E-7	7.86E-7
XXC	1.67E-6	1.67E-6	1.67E-6	1.53E-6	1.53E-6	1.53E-6	1.35E-6	1.35E-6	1.35E-6	9.31E-7	9.31E-7	9.31E-7	7.86E-7	7.86E-7	7.86E-7
XXIA	1.15E-3	1.15E-3	1.15E-3	1.14E-3	1.14E-3	1.14E-3	1.12E-3	1.12E-3	1.12E-3	9.37E-4	9.37E-4	9.37E-4	8.72E-4	8.72E-4	8.72E-4
XXIB	1.15E-3	1.15E-3	1.15E-3	1.14E-3	1.14E-3	1.14E-3	1.12E-3	1.12E-3	1.12E-3	9.37E-4	9.37E-4	9.37E-4	8.72E-4	8.72E-4	8.72E-4
XXIC	1.15E-3	1.15E-3	1.15E-3	1.14E-3	1.14E-3	1.14E-3	1.12E-3	1.12E-3	1.12E-3	9.37E-4	9.37E-4	9.37E-4	8.72E-4	8.72E-4	8.72E-4
XXII	2.88E-2	2.89E-2	2.89E-2	2.82E-2	2.86E-2	2.86E-2	2.73E-2	2.77E-2	2.77E-2	2.60E-2	2.65E-2	2.65E-2	2.24E-2	2.59E-2	2.59E-2
DOE	1.19E+0	1.19E+0	1.19E+0	1.17E+0	1.17E+0	1.17E+0	1.13E+0	1.13E+0	1.13E+0	1.04E+0	1.04E+0	1.04E+0	9.88E-1	1.01E+0	1.01E+0
DOD	5.99E-4	5.99E-4	5.99E-4	5.98E-4	5.98E-4	5.98E-4	5.97E-4	5.97E-4	5.97E-4	5.93E-4	5.93E-4	5.93E-4	5.92E-4	5.92E-4	5.92E-4
NRC	3.95E-2	3.95E-2	3.95E-2	3.92E-2	3.92E-2	3.92E-2	3.86E-2	3.86E-2	3.86E-2	3.39E-2	3.39E-2	3.39E-2	3.21E-2	3.21E-2	3.21E-2
Total	1.23E+0	1.23E+0	1.23E+0	1.21E+0	1.21E+0	1.21E+0	1.17E+0	1.17E+0	1.17E+0	1.07E+0	1.07E+0	1.07E+0	1.02E+0	1.04E+0	1.04E+0

Table M-125. POTENTIAL CANCER DEATHS OF WORKERS--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.89E-3	5.89E-3	5.89E-3	5.81E-3	5.81E-3	5.81E-3	5.74E-3	5.74E-3	5.74E-3	5.58E-3	5.58E-3	5.58E-3	5.48E-3	5.48E-3	5.48E-3
II	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.02E-1	1.02E-1	1.02E-1
III	2.44E-3	2.44E-3	2.44E-3	2.44E-3	2.44E-3	2.44E-3	2.43E-3	2.43E-3	2.43E-3	2.36E-3	2.36E-3	2.36E-3	2.25E-3	2.25E-3	2.25E-3
IV	6.14E-4	6.14E-4	6.14E-4	6.10E-4	6.10E-4	6.10E-4	6.06E-4	6.06E-4	6.06E-4	5.96E-4	5.96E-4	5.96E-4	5.89E-4	5.89E-4	5.89E-4
V	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.53E-1	1.53E-1	1.53E-1	1.52E-1	1.52E-1	1.52E-1
VI	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2
VII	5.32E-2	5.32E-2	5.32E-2	5.19E-2	5.19E-2	5.19E-2	5.02E-2	5.02E-2	5.02E-2	4.62E-2	4.62E-2	4.62E-2	4.37E-2	4.37E-2	4.37E-2
IX	1.93E-4	1.93E-4	1.93E-4	1.83E-4	1.83E-4	1.83E-4	1.74E-4	1.74E-4	1.74E-4	1.51E-4	1.51E-4	1.51E-4	1.36E-4	1.36E-4	1.36E-4
X	1.24E-4	1.24E-4	1.24E-4	1.21E-4	1.24E-4	1.24E-4	1.16E-4	1.24E-4	1.24E-4	1.01E-4	1.23E-4	1.23E-4	9.12E-5	1.22E-4	1.22E-4
XII	5.39E-4	5.39E-4	5.39E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4
XIIIA	3.16E-7	3.16E-7	3.16E-7	2.54E-7	2.54E-7	2.54E-7	1.77E-7	1.77E-7	1.77E-7	3.49E-8	3.49E-8	3.49E-8	.00E+0	.00E+0	.00E+0
XIIIB	3.16E-7	3.16E-7	3.16E-7	2.54E-7	2.54E-7	2.54E-7	1.77E-7	1.77E-7	1.77E-7	3.49E-8	3.49E-8	3.49E-8	.00E+0	.00E+0	.00E+0
XIIIC	3.16E-7	3.16E-7	3.16E-7	2.54E-7	2.54E-7	2.54E-7	1.77E-7	1.77E-7	1.77E-7	3.49E-8	3.49E-8	3.49E-8	.00E+0	.00E+0	.00E+0
XVIA	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5
XVIB	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5
XVIC	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5
XVIIIA	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5
XVIIIB	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5
XVIIIC	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5
XXA	3.75E-5	3.75E-5	3.75E-5	2.84E-5	2.84E-5	2.84E-5	2.41E-5	2.41E-5	2.41E-5	1.67E-5	1.67E-5	1.67E-5	1.26E-5	1.26E-5	1.26E-5
XXB	3.75E-5	3.75E-5	3.75E-5	2.84E-5	2.84E-5	2.84E-5	2.41E-5	2.41E-5	2.41E-5	1.67E-5	1.67E-5	1.67E-5	1.26E-5	1.26E-5	1.26E-5
XXC	3.75E-5	3.75E-5	3.75E-5	2.84E-5	2.84E-5	2.84E-5	2.41E-5	2.41E-5	2.41E-5	1.67E-5	1.67E-5	1.67E-5	1.26E-5	1.26E-5	1.26E-5
XXIA	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.83E-4	7.83E-4	7.83E-4	7.83E-4	7.83E-4	7.83E-4
XXIB	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.83E-4	7.83E-4	7.83E-4	7.83E-4	7.83E-4	7.83E-4
XXIC	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.83E-4	7.83E-4	7.83E-4	7.83E-4	7.83E-4	7.83E-4
XXII	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.98E-2	1.98E-2	1.98E-2	1.98E-2	1.98E-2	1.98E-2
DOE	9.05E-1	9.05E-1	9.05E-1	9.03E-1	9.03E-1	9.03E-1	9.01E-1	9.01E-1	9.01E-1	8.95E-1	8.95E-1	8.95E-1	8.90E-1	8.90E-1	8.90E-1
DOD	5.41E-4	5.41E-4	5.41E-4	5.41E-4	5.41E-4	5.41E-4	5.40E-4	5.40E-4	5.40E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4
NRC	2.72E-2	2.72E-2	2.72E-2	2.71E-2	2.71E-2	2.71E-2	2.70E-2	2.70E-2	2.70E-2	2.69E-2	2.69E-2	2.69E-2	2.68E-2	2.68E-2	2.68E-2
Total	9.33E-1	9.33E-1	9.33E-1	9.31E-1	9.31E-1	9.31E-1	9.28E-1	9.28E-1	9.28E-1	9.22E-1	9.22E-1	9.22E-1	9.18E-1	9.18E-1	9.18E-1

Table M-126. POTENTIAL CANCER DEATHS OF WORKERS--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.24E-3	5.24E-3	5.24E-3	5.05E-3	5.05E-3	5.05E-3	4.79E-3	4.79E-3	4.79E-3	4.08E-3	4.08E-3	4.08E-3	3.90E-3	3.90E-3	3.90E-3
II	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1
III	1.93E-3	1.93E-3	1.93E-3	1.79E-3	1.79E-3	1.79E-3	1.62E-3	1.62E-3	1.62E-3	7.47E-4	7.47E-4	7.47E-4	4.83E-4	4.83E-4	4.83E-4
IV	5.75E-4	5.75E-4	5.75E-4	5.67E-4	5.67E-4	5.67E-4	5.50E-4	5.50E-4	5.50E-4	4.67E-4	4.67E-4	4.67E-4	4.25E-4	4.25E-4	4.25E-4
V	1.50E-1	1.50E-1	1.50E-1	1.49E-1	1.49E-1	1.49E-1	1.46E-1	1.46E-1	1.46E-1	1.31E-1	1.31E-1	1.31E-1	1.24E-1	1.24E-1	1.24E-1
VI	1.96E-2	1.96E-2	1.96E-2	1.95E-2	1.95E-2	1.95E-2	1.94E-2	1.94E-2	1.94E-2	1.90E-2	1.90E-2	1.90E-2	1.87E-2	1.87E-2	1.87E-2
VII	3.97E-2	3.97E-2	3.97E-2	3.65E-2	3.65E-2	3.65E-2	2.84E-2	2.84E-2	2.84E-2	1.18E-2	1.18E-2	1.18E-2	9.32E-3	9.32E-3	9.32E-3
IX	1.13E-4	1.13E-4	1.13E-4	9.53E-5	9.53E-5	9.53E-5	7.78E-5	7.78E-5	7.78E-5	3.65E-5	3.65E-5	3.65E-5	2.56E-5	2.56E-5	2.56E-5
X	7.81E-5	1.17E-4	1.17E-4	7.11E-5	1.11E-4	1.11E-4	6.24E-5	9.83E-5	9.83E-5	4.35E-5	6.08E-5	6.08E-5	3.76E-5	5.28E-5	5.28E-5
XII	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.37E-4	5.37E-4	5.37E-4	5.37E-4	5.37E-4	5.37E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.30E-5	5.30E-5	5.30E-5	5.28E-5	5.28E-5	5.28E-5	5.26E-5	5.26E-5	5.26E-5	5.19E-5	5.19E-5	5.19E-5	5.15E-5	5.15E-5	5.15E-5
XVIB	5.30E-5	5.30E-5	5.30E-5	5.28E-5	5.28E-5	5.28E-5	5.26E-5	5.26E-5	5.26E-5	5.19E-5	5.19E-5	5.19E-5	5.15E-5	5.15E-5	5.15E-5
XVIC	5.30E-5	5.30E-5	5.30E-5	5.28E-5	5.28E-5	5.28E-5	5.26E-5	5.26E-5	5.26E-5	5.19E-5	5.19E-5	5.19E-5	5.15E-5	5.15E-5	5.15E-5
XVIIIA	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.38E-5	4.38E-5	4.38E-5	4.35E-5	4.35E-5	4.35E-5
XVIIIB	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.38E-5	4.38E-5	4.38E-5	4.35E-5	4.35E-5	4.35E-5
XVIIIC	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.44E-5	4.38E-5	4.38E-5	4.38E-5	4.35E-5	4.35E-5	4.35E-5
XXA	5.99E-6	5.99E-6	5.99E-6	2.47E-6	2.47E-6	2.47E-6	1.61E-6	1.61E-6	1.61E-6	1.28E-6	1.28E-6	1.28E-6	1.19E-6	1.19E-6	1.19E-6
XXB	5.99E-6	5.99E-6	5.99E-6	2.47E-6	2.47E-6	2.47E-6	1.61E-6	1.61E-6	1.61E-6	1.28E-6	1.28E-6	1.28E-6	1.19E-6	1.19E-6	1.19E-6
XXC	5.99E-6	5.99E-6	5.99E-6	2.47E-6	2.47E-6	2.47E-6	1.61E-6	1.61E-6	1.61E-6	1.28E-6	1.28E-6	1.28E-6	1.19E-6	1.19E-6	1.19E-6
XXIA	7.81E-4	7.81E-4	7.81E-4	7.79E-4	7.79E-4	7.79E-4	7.74E-4	7.74E-4	7.74E-4	7.51E-4	7.51E-4	7.51E-4	7.31E-4	7.31E-4	7.31E-4
XXIB	7.81E-4	7.81E-4	7.81E-4	7.79E-4	7.79E-4	7.79E-4	7.74E-4	7.74E-4	7.74E-4	7.51E-4	7.51E-4	7.51E-4	7.31E-4	7.31E-4	7.31E-4
XXIC	7.81E-4	7.81E-4	7.81E-4	7.79E-4	7.79E-4	7.79E-4	7.74E-4	7.74E-4	7.74E-4	7.51E-4	7.51E-4	7.51E-4	7.31E-4	7.31E-4	7.31E-4
XXII	1.97E-2	1.97E-2	1.97E-2	1.96E-2	1.97E-2	1.97E-2	1.94E-2	1.95E-2	1.95E-2	1.84E-2	1.86E-2	1.86E-2	1.83E-2	1.84E-2	1.84E-2
DOE	8.81E-1	8.82E-1	8.82E-1	8.74E-1	8.74E-1	8.74E-1	8.59E-1	8.59E-1	8.59E-1	8.08E-1	8.10E-1	8.10E-1	7.91E-1	7.92E-1	7.92E-1
DOD	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.37E-4	5.37E-4	5.37E-4	5.37E-4	5.37E-4	5.37E-4
NRC	2.67E-2	2.67E-2	2.67E-2	2.66E-2	2.66E-2	2.66E-2	2.64E-2	2.64E-2	2.64E-2	2.58E-2	2.58E-2	2.58E-2	2.53E-2	2.53E-2	2.53E-2
Total	9.09E-1	9.09E-1	9.09E-1	9.01E-1	9.02E-1	9.02E-1	8.86E-1	8.86E-1	8.86E-1	8.34E-1	8.36E-1	8.36E-1	8.17E-1	8.18E-1	8.18E-1

Table M-127. POTENTIAL CANCER DEATHS OF WORKERS--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.85E-3	5.85E-3	5.85E-3	5.70E-3	5.70E-3	5.70E-3	5.60E-3	5.60E-3	5.60E-3	5.31E-3	5.31E-3	5.31E-3	5.09E-3	5.09E-3	5.09E-3
II	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.03E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1
III	2.44E-3	2.44E-3	2.44E-3	2.42E-3	2.42E-3	2.42E-3	2.42E-3	2.37E-3	2.37E-3	2.37E-3	2.04E-3	2.04E-3	2.04E-3	1.80E-3	1.80E-3
IV	6.11E-4	6.11E-4	6.11E-4	6.03E-4	6.03E-4	6.03E-4	5.96E-4	5.96E-4	5.96E-4	5.76E-4	5.76E-4	5.76E-4	5.66E-4	5.66E-4	5.66E-4
V	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.54E-1	1.53E-1	1.53E-1	1.53E-1	1.51E-1	1.51E-1	1.51E-1	1.49E-1	1.49E-1	1.49E-1
VI	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.97E-2	1.96E-2	1.96E-2	1.96E-2	1.95E-2	1.95E-2	1.95E-2
VII	5.27E-2	5.27E-2	5.27E-2	4.85E-2	4.85E-2	4.85E-2	4.56E-2	4.56E-2	4.56E-2	3.97E-2	3.97E-2	3.97E-2	3.51E-2	3.51E-2	3.51E-2
IX	1.86E-4	1.86E-4	1.86E-4	1.64E-4	1.64E-4	1.64E-4	1.48E-4	1.48E-4	1.48E-4	1.13E-4	1.13E-4	1.13E-4	8.91E-5	8.91E-5	8.91E-5
X	1.23E-4	1.24E-4	1.24E-4	1.13E-4	1.24E-4	1.24E-4	1.04E-4	1.24E-4	1.24E-4	8.41E-5	1.21E-4	1.21E-4	7.53E-5	1.16E-4	1.16E-4
XII	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4
XIIIA	2.88E-7	2.88E-7	2.88E-7	1.68E-7	1.68E-7	1.68E-7	8.23E-8	8.23E-8	8.23E-8	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.88E-7	2.88E-7	2.88E-7	1.68E-7	1.68E-7	1.68E-7	8.23E-8	8.23E-8	8.23E-8	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.88E-7	2.88E-7	2.88E-7	1.68E-7	1.68E-7	1.68E-7	8.23E-8	8.23E-8	8.23E-8	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.29E-5	5.29E-5	5.29E-5
XVIB	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.29E-5	5.29E-5	5.29E-5
XVIC	5.31E-5	5.31E-5	5.31E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.30E-5	5.29E-5	5.29E-5	5.29E-5
XVIIIA	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5
XVIIIB	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5
XVIIIC	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.45E-5	4.44E-5	4.44E-5	4.44E-5
XXA	2.99E-5	2.99E-5	2.99E-5	1.97E-5	1.97E-5	1.97E-5	1.46E-5	1.46E-5	1.46E-5	4.16E-6	4.16E-6	4.16E-6	1.76E-6	1.76E-6	1.76E-6
XXB	2.99E-5	2.99E-5	2.99E-5	1.97E-5	1.97E-5	1.97E-5	1.46E-5	1.46E-5	1.46E-5	4.16E-6	4.16E-6	4.16E-6	1.76E-6	1.76E-6	1.76E-6
XXC	2.99E-5	2.99E-5	2.99E-5	1.97E-5	1.97E-5	1.97E-5	1.46E-5	1.46E-5	1.46E-5	4.16E-6	4.16E-6	4.16E-6	1.76E-6	1.76E-6	1.76E-6
XXIA	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.83E-4	7.83E-4	7.83E-4	7.81E-4	7.81E-4	7.81E-4	7.78E-4	7.78E-4	7.78E-4
XXIB	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.83E-4	7.83E-4	7.83E-4	7.81E-4	7.81E-4	7.81E-4	7.78E-4	7.78E-4	7.78E-4
XXIC	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.84E-4	7.83E-4	7.83E-4	7.83E-4	7.81E-4	7.81E-4	7.81E-4	7.78E-4	7.78E-4	7.78E-4
XXII	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.99E-2	1.98E-2	1.98E-2	1.98E-2	1.97E-2	1.97E-2	1.97E-2	1.96E-2	1.97E-2	1.97E-2
DOE	9.04E-1	9.04E-1	9.04E-1	8.99E-1	8.99E-1	8.99E-1	8.94E-1	8.94E-1	8.94E-1	8.83E-1	8.83E-1	8.83E-1	8.73E-1	8.74E-1	8.74E-1
DOD	5.41E-4	5.41E-4	5.41E-4	5.40E-4	5.40E-4	5.40E-4	5.39E-4	5.39E-4	5.39E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4	5.38E-4
NRC	2.71E-2	2.71E-2	2.71E-2	2.69E-2	2.69E-2	2.69E-2	2.69E-2	2.69E-2	2.69E-2	2.67E-2	2.67E-2	2.67E-2	2.66E-2	2.66E-2	2.66E-2
Total	9.32E-1	9.32E-1	9.32E-1	9.26E-1	9.26E-1	9.26E-1	9.22E-1	9.22E-1	9.22E-1	9.10E-1	9.10E-1	9.10E-1	9.00E-1	9.01E-1	9.01E-1

Table M-128. POTENTIAL CANCER DEATHS OF WORKERS--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.72E-3	4.72E-3	4.72E-3	4.48E-3	4.48E-3	4.48E-3	4.12E-3	4.12E-3	4.12E-3	2.96E-3	2.96E-3	2.96E-3	2.58E-3	2.58E-3	2.58E-3
II	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.02E-1	1.01E-1	1.02E-1	1.02E-1	1.01E-1	1.01E-1	1.01E-1
III	1.56E-3	1.56E-3	1.56E-3	1.29E-3	1.29E-3	1.29E-3	8.19E-4	8.19E-4	8.19E-4	2.15E-4	2.15E-4	2.15E-4	1.21E-4	1.21E-4	1.21E-4
IV	5.40E-4	5.40E-4	5.40E-4	5.14E-4	5.14E-4	5.14E-4	4.63E-4	4.63E-4	4.63E-4	2.05E-4	2.05E-4	2.05E-4	7.65E-5	7.65E-5	7.65E-5
V	1.45E-1	1.45E-1	1.45E-1	1.41E-1	1.41E-1	1.41E-1	1.33E-1	1.33E-1	1.33E-1	1.11E-1	1.11E-1	1.11E-1	1.05E-1	1.05E-1	1.05E-1
VI	1.94E-2	1.94E-2	1.94E-2	1.93E-2	1.93E-2	1.93E-2	1.90E-2	1.90E-2	1.90E-2	1.78E-2	1.78E-2	1.78E-2	1.75E-2	1.75E-2	1.75E-2
VII	2.37E-2	2.37E-2	2.37E-2	1.67E-2	1.67E-2	1.67E-2	1.10E-2	1.10E-2	1.10E-2	6.92E-5	6.92E-5	6.92E-5	.00E+0	.00E+0	.00E+0
IX	6.50E-5	6.50E-5	6.50E-5	4.69E-5	4.69E-5	4.69E-5	3.21E-5	3.21E-5	3.21E-5	5.82E-6	5.82E-6	5.82E-6	.00E+0	.00E+0	.00E+0
X	6.39E-5	1.03E-4	1.03E-4	5.69E-5	8.96E-5	8.96E-5	4.89E-5	7.11E-5	7.11E-5	2.86E-5	3.98E-5	3.98E-5	2.45E-5	3.26E-5	3.26E-5
XII	5.38E-4	5.38E-4	5.38E-4	5.37E-4	5.37E-4	5.37E-4	5.36E-4	5.36E-4	5.36E-4	5.32E-4	5.32E-4	5.32E-4	5.31E-4	5.31E-4	5.31E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.25E-5	5.25E-5	5.25E-5	5.23E-5	5.23E-5	5.23E-5	5.20E-5	5.20E-5	5.20E-5	4.90E-5	4.90E-5	4.90E-5	4.73E-5	4.73E-5	4.73E-5
XVIB	5.25E-5	5.25E-5	5.25E-5	5.23E-5	5.23E-5	5.23E-5	5.20E-5	5.20E-5	5.20E-5	4.90E-5	4.90E-5	4.90E-5	4.73E-5	4.73E-5	4.73E-5
XVIC	5.25E-5	5.25E-5	5.25E-5	5.23E-5	5.23E-5	5.23E-5	5.20E-5	5.20E-5	5.20E-5	4.90E-5	4.90E-5	4.90E-5	4.73E-5	4.73E-5	4.73E-5
XVIIIA	4.44E-5	4.44E-5	4.44E-5	4.42E-5	4.42E-5	4.42E-5	4.38E-5	4.38E-5	4.38E-5	4.19E-5	4.19E-5	4.19E-5	4.09E-5	4.09E-5	4.09E-5
XVIIIB	4.44E-5	4.44E-5	4.44E-5	4.42E-5	4.42E-5	4.42E-5	4.38E-5	4.38E-5	4.38E-5	4.19E-5	4.19E-5	4.19E-5	4.09E-5	4.09E-5	4.09E-5
XVIIIC	4.44E-5	4.44E-5	4.44E-5	4.42E-5	4.42E-5	4.42E-5	4.38E-5	4.38E-5	4.38E-5	4.19E-5	4.19E-5	4.19E-5	4.09E-5	4.09E-5	4.09E-5
XXA	1.48E-6	1.48E-6	1.48E-6	1.36E-6	1.36E-6	1.36E-6	1.20E-6	1.20E-6	1.20E-6	8.28E-7	8.28E-7	8.28E-7	7.00E-7	7.00E-7	7.00E-7
XXB	1.48E-6	1.48E-6	1.48E-6	1.36E-6	1.36E-6	1.36E-6	1.20E-6	1.20E-6	1.20E-6	8.28E-7	8.28E-7	8.28E-7	7.00E-7	7.00E-7	7.00E-7
XXC	1.48E-6	1.48E-6	1.48E-6	1.36E-6	1.36E-6	1.36E-6	1.20E-6	1.20E-6	1.20E-6	8.28E-7	8.28E-7	8.28E-7	7.00E-7	7.00E-7	7.00E-7
XXIA	7.71E-4	7.71E-4	7.71E-4	7.64E-4	7.64E-4	7.64E-4	7.50E-4	7.50E-4	7.50E-4	6.30E-4	6.30E-4	6.30E-4	5.86E-4	5.86E-4	5.86E-4
XXIB	7.71E-4	7.71E-4	7.71E-4	7.64E-4	7.64E-4	7.64E-4	7.50E-4	7.50E-4	7.50E-4	6.30E-4	6.30E-4	6.30E-4	5.86E-4	5.86E-4	5.86E-4
XXIC	7.71E-4	7.71E-4	7.71E-4	7.64E-4	7.64E-4	7.64E-4	7.50E-4	7.50E-4	7.50E-4	6.30E-4	6.30E-4	6.30E-4	5.86E-4	5.86E-4	5.86E-4
XXII	1.94E-2	1.95E-2	1.95E-2	1.90E-2	1.93E-2	1.93E-2	1.84E-2	1.86E-2	1.86E-2	1.75E-2	1.78E-2	1.78E-2	1.51E-2	1.74E-2	1.74E-2
DOE	8.52E-1	8.53E-1	8.53E-1	8.35E-1	8.37E-1	8.37E-1	8.10E-1	8.11E-1	8.11E-1	7.42E-1	7.44E-1	7.44E-1	7.09E-1	7.26E-1	7.26E-1
DOD	5.38E-4	5.38E-4	5.38E-4	5.37E-4	5.37E-4	5.37E-4	5.36E-4	5.36E-4	5.36E-4	5.32E-4	5.32E-4	5.32E-4	5.31E-4	5.31E-4	5.31E-4
NRC	2.63E-2	2.63E-2	2.63E-2	2.62E-2	2.62E-2	2.62E-2	2.58E-2	2.58E-2	2.58E-2	2.26E-2	2.26E-2	2.26E-2	2.14E-2	2.14E-2	2.14E-2
Total	8.79E-1	8.80E-1	8.80E-1	8.61E-1	8.63E-1	8.63E-1	8.36E-1	8.38E-1	8.38E-1	7.65E-1	7.67E-1	7.67E-1	7.31E-1	7.48E-1	7.48E-1

Table M-129. DOSE TO MAXIMALLY EXPOSED INDIVIDUAL (mrem/yr)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	9.99E-2	9.99E-2	9.99E-2	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-1	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-2	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-3	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	9.99E-1	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-4	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-5	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-6	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-7	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0
III	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
IV	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
V	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
VI	9.99E-2	9.99E-2	9.99E-2	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
VII	2.67E-1	2.67E-1	2.67E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
IX	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
X	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XII	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	9.99E-1	9.99E-1	9.99E-1	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XIIIA	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	3.28E+0	3.28E+0	3.28E+0
XIIIB	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	3.28E+0	3.28E+0	3.28E+0
XIIIC	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	3.28E+0	3.28E+0	3.28E+0
XVIA	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XVIB	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XVIC	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XVIIIA	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XVIIIB	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XVIIIC	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXA	1.05E-1	1.05E-1	1.05E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXB	1.05E-1	1.05E-1	1.05E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXC	1.05E-1	1.05E-1	1.05E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXIA	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXIB	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXIC	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXII	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0

Table M-130. DOSE TO MAXIMALLY EXPOSED INDIVIDUAL (mrem/yr)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.49E+1	7.49E+1	7.49E+1	1.00E+2	1.00E+2	1.00E+2
II-1	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
II-2	1.00E+1	9.99E+0	9.99E+0	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
II-3	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	9.99E+1	9.99E+1
II-4	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
II-5	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.51E+1	7.51E+1	7.51E+1	1.00E+2	1.00E+2	1.00E+2
II-6	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.49E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
II-7	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0	1.08E+0
III	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
IV	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
V	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
VI	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
VII	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.51E+1	7.51E+1	7.51E+1	1.00E+2	1.00E+2	1.00E+2
IX	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
X	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.51E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XII	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.51E+1	7.51E+1	7.51E+1	1.00E+2	1.00E+2	1.00E+2
XIIIA	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0
XIIIB	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0
XIIIC	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0	3.28E+0
XVIA	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XVIB	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XVIC	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XVIII A	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XVIII B	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XVIII C	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXA	9.99E+0	9.99E+0	9.99E+0	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXB	9.99E+0	9.99E+0	9.99E+0	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXC	9.99E+0	9.99E+0	9.99E+0	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXIA	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXIB	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXIC	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXII	1.00E+1	9.99E+0	9.99E+0	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2

Table M-131. DOSE TO MAXIMALLY EXPOSED INDIVIDUAL (mrem/yr)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	9.99E-2	9.99E-2	9.99E-2	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-1	9.99E-2	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-2	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-3	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-4	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-5	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-6	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
II-7	1.00E-1	1.00E-1	1.00E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1
III	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
IV	9.99E-2	9.99E-2	9.99E-2	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
V	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
VI	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	9.99E-1	9.99E-1	9.99E-1	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
VII	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
IX	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
X	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XII	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XIIIA	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0
XIIIB	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0
XIIIC	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0
XVIA	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XVIB	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XVIC	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XVIIIA	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XVIIIB	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XVIIIC	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXA	1.00E-1	1.00E-1	1.00E-1	4.99E-1	4.99E-1	4.99E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXB	1.00E-1	1.00E-1	1.00E-1	4.99E-1	4.99E-1	4.99E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXC	1.00E-1	1.00E-1	1.00E-1	4.99E-1	4.99E-1	4.99E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXIA	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXIB	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXIC	1.00E-1	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0
XXII	9.99E-2	1.00E-1	1.00E-1	5.00E-1	5.00E-1	5.00E-1	1.00E+0	1.00E+0	1.00E+0	3.00E+0	3.00E+0	3.00E+0	5.00E+0	5.00E+0	5.00E+0

Table M-132. DOSE TO MAXIMALLY EXPOSED INDIVIDUAL (mrem/yr)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
II-1	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	9.99E+1	9.99E+1
II-2	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
II-3	9.99E+0	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
II-4	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
II-5	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
II-6	9.99E+0	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
II-7	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1	3.57E-1
III	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
IV	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
V	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
VI	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
VII	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	9.87E+1	9.87E+1	9.87E+1
IX	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	9.74E+1	9.74E+1	9.74E+1
X	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XII	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	9.99E+1	9.99E+1	9.99E+1
XIIIA	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0
XIIIB	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0
XIIIC	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0	1.27E+0
XVIA	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	9.99E+1	9.99E+1	9.99E+1
XVIB	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	9.99E+1	9.99E+1	9.99E+1
XVIC	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	9.99E+1	9.99E+1	9.99E+1
XVIIIA	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XVIIIB	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XVIIIC	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXA	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXB	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXC	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXIA	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXIB	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXIC	1.00E+1	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2
XXII	9.99E+0	1.00E+1	1.00E+1	1.50E+1	1.50E+1	1.50E+1	2.50E+1	2.50E+1	2.50E+1	7.50E+1	7.50E+1	7.50E+1	1.00E+2	1.00E+2	1.00E+2

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 Table M-133. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.15E+2	2.34E+2	2.34E+2	2.12E+2	2.30E+2	2.30E+2	2.10E+2	2.28E+2	2.28E+2	2.04E+2	2.21E+2	2.21E+2	2.00E+2	2.17E+2	2.17E+2
II	1.84E+3	1.71E+4	8.37E+4	1.84E+3	1.71E+4	8.37E+4	1.84E+3	1.71E+4	8.37E+4	1.84E+3	1.71E+4	8.37E+4	1.84E+3	1.71E+4	8.36E+4
III	9.48E+1	1.05E+2	1.05E+2	9.47E+1	1.05E+2	1.05E+2	9.44E+1	1.05E+2	1.05E+2	9.17E+1	1.02E+2	1.02E+2	8.75E+1	9.69E+1	9.69E+1
IV	2.82E+1	7.00E+1	7.07E+1	2.80E+1	6.95E+1	7.02E+1	2.78E+1	6.91E+1	6.97E+1	2.73E+1	6.79E+1	6.86E+1	2.70E+1	6.71E+1	6.78E+1
V	5.61E+3	6.08E+3	6.08E+3	5.60E+3	6.08E+3	6.08E+3	5.59E+3	6.07E+3	6.07E+3	5.56E+3	6.04E+3	6.04E+3	5.53E+3	6.01E+3	6.01E+3
VI	1.52E+3	9.24E+3	2.46E+4	1.52E+3	9.24E+3	2.46E+4	1.52E+3	9.24E+3	2.46E+4	1.52E+3	9.24E+3	2.46E+4	1.52E+3	9.24E+3	2.46E+4
VII	8.49E+3	7.63E+4	6.20E+5	8.27E+3	7.43E+4	6.03E+5	7.96E+3	7.14E+4	5.80E+5	7.27E+3	6.50E+4	5.28E+5	6.83E+3	6.10E+4	4.95E+5
IX	4.02E+1	3.61E+2	2.30E+3	3.81E+1	3.43E+2	2.18E+3	3.62E+1	3.26E+2	2.07E+3	3.15E+1	2.83E+2	1.80E+3	2.83E+1	2.54E+2	1.62E+3
X	1.39E+3	1.86E+4	2.12E+4	1.39E+3	1.86E+4	2.11E+4	1.39E+3	1.86E+4	2.11E+4	1.38E+3	1.85E+4	2.10E+4	1.37E+3	1.83E+4	2.08E+4
XII	5.11E+0	1.56E+1	1.60E+1	5.11E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1
XIIIA	2.09E-2	6.80E-2	7.86E-2	1.68E-2	5.46E-2	6.31E-2	1.17E-2	3.81E-2	4.40E-2	2.31E-3	7.51E-3	8.68E-3	.00E+0	.00E+0	.00E+0
XIIIB	1.68E-2	2.99E-2	3.19E-2	1.35E-2	2.40E-2	2.56E-2	9.43E-3	1.68E-2	1.79E-2	1.86E-3	3.31E-3	3.53E-3	.00E+0	.00E+0	.00E+0
XIIIC	1.11E-2	1.31E-2	4.07E+1	8.91E-3	1.05E-2	3.27E+1	6.22E-3	7.36E-3	2.28E+1	1.23E-3	1.45E-3	4.50E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E-1	3.84E-1	3.84E-1	3.65E-1	3.84E-1	3.84E-1	3.65E-1	3.84E-1	3.84E-1	3.65E-1	3.84E-1	3.84E-1	3.65E-1	3.84E-1	3.84E-1
XVIB	3.61E-1	3.79E-1	3.79E-1	3.61E-1	3.79E-1	3.79E-1	3.61E-1	3.79E-1	3.79E-1	3.61E-1	3.79E-1	3.79E-1	3.61E-1	3.78E-1	3.78E-1
XVIC	3.52E-1	3.67E-1	3.67E-1	3.52E-1	3.67E-1	3.67E-1	3.52E-1	3.67E-1	3.67E-1	3.52E-1	3.67E-1	3.67E-1	3.52E-1	3.67E-1	3.67E-1
XVIIIA	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0
XVIIIB	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0
XVIIIC	9.79E-1	1.07E+0	1.07E+0	9.79E-1	1.07E+0	1.07E+0	9.79E-1	1.07E+0	1.07E+0	9.79E-1	1.07E+0	1.07E+0	9.79E-1	1.07E+0	1.07E+0
XXA	3.04E-1	1.07E+0	3.72E+0	2.30E-1	8.13E-1	2.81E+0	1.95E-1	6.89E-1	2.39E+0	1.36E-1	4.79E-1	1.66E+0	1.02E-1	3.61E-1	1.25E+0
XXB	2.45E-1	4.72E-1	1.08E+0	1.86E-1	3.58E-1	8.14E-1	1.57E-1	3.03E-1	6.90E-1	1.09E-1	2.11E-1	4.80E-1	8.25E-2	1.59E-1	3.62E-1
XXC	1.62E-1	2.04E-1	7.06E+3	1.23E-1	1.54E-1	5.35E+3	1.04E-1	1.31E-1	4.53E+3	7.23E-2	9.09E-2	3.15E+3	5.45E-2	6.85E-2	2.38E+3
XXIA	2.89E+0	3.00E+1	2.84E+2	2.89E+0	3.00E+1	2.84E+2	2.89E+0	3.00E+1	2.84E+2	2.89E+0	3.00E+1	2.84E+2	2.89E+0	3.00E+1	2.84E+2
XXIB	2.87E+0	2.97E+1	2.57E+2	2.87E+0	2.97E+1	2.57E+2	2.87E+0	2.97E+1	2.57E+2	2.87E+0	2.97E+1	2.57E+2	2.87E+0	2.97E+1	2.57E+2
XXIC	2.83E+0	2.86E+1	2.07E+2	2.83E+0	2.86E+1	2.07E+2	2.83E+0	2.86E+1	2.07E+2	2.83E+0	2.86E+1	2.07E+2	2.83E+0	2.85E+1	2.07E+2
XXII	8.67E+1	5.14E+4	7.77E+4	8.66E+1	5.14E+4	7.77E+4	8.66E+1	5.14E+4	7.77E+4	8.63E+1	5.14E+4	7.76E+4	8.61E+1	5.13E+4	7.75E+4
DOE	5.30E+4	6.85E+5	1.83E+6	5.28E+4	6.83E+5	1.81E+6	5.25E+4	6.80E+5	1.79E+6	5.17E+4	6.73E+5	1.74E+6	5.12E+4	6.69E+5	1.70E+6
DOD	5.24E+0	1.59E+1	1.32E+2	5.22E+0	1.58E+1	1.09E+2	5.18E+0	1.58E+1	8.08E+1	5.12E+0	1.56E+1	2.88E+1	5.10E+0	1.56E+1	1.60E+1
NRC	1.75E+2	7.72E+2	3.86E+4	1.74E+2	7.70E+2	3.06E+4	1.73E+2	7.69E+2	2.68E+4	1.73E+2	7.68E+2	2.03E+4	1.72E+2	7.66E+2	1.67E+4
Total	5.32E+4	6.86E+5	1.87E+6	5.30E+4	6.84E+5	1.84E+6	5.27E+4	6.81E+5	1.82E+6	5.19E+4	6.74E+5	1.76E+6	5.14E+4	6.70E+5	1.72E+6

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 Table M-134. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.91E+2	2.08E+2	2.08E+2	1.84E+2	2.00E+2	2.00E+2	1.75E+2	1.90E+2	1.90E+2	1.49E+2	1.62E+2	1.62E+2	1.42E+2	1.54E+2	1.54E+2
II	1.84E+3	1.71E+4	8.36E+4	1.83E+3	1.71E+4	8.34E+4	1.83E+3	1.70E+4	8.31E+4	1.83E+3	1.70E+4	8.27E+4	1.83E+3	1.70E+4	8.25E+4
III	7.52E+1	8.32E+1	8.32E+1	6.94E+1	7.69E+1	7.69E+1	6.27E+1	6.95E+1	6.95E+1	2.90E+1	3.21E+1	3.21E+1	1.88E+1	2.08E+1	2.08E+1
IV	2.64E+1	6.55E+1	6.62E+1	2.60E+1	6.46E+1	6.52E+1	2.52E+1	6.27E+1	6.33E+1	2.14E+1	5.32E+1	5.37E+1	1.95E+1	4.85E+1	4.89E+1
V	5.46E+3	5.93E+3	5.93E+3	5.40E+3	5.86E+3	5.86E+3	5.29E+3	5.75E+3	5.75E+3	4.77E+3	5.17E+3	5.17E+3	4.50E+3	4.88E+3	4.88E+3
VI	1.52E+3	9.23E+3	2.46E+4	1.52E+3	9.23E+3	2.46E+4	1.51E+3	9.21E+3	2.45E+4	1.49E+3	9.13E+3	2.43E+4	1.47E+3	9.07E+3	2.42E+4
VII	6.15E+3	5.48E+4	4.45E+5	5.64E+3	5.02E+4	4.07E+5	4.38E+3	3.90E+4	3.16E+5	1.85E+3	1.66E+4	1.35E+5	1.47E+3	1.32E+4	1.07E+5
IX	2.36E+1	2.12E+2	1.35E+3	1.99E+1	1.78E+2	1.14E+3	1.62E+1	1.46E+2	9.28E+2	7.60E+0	6.83E+1	4.35E+2	5.33E+0	4.79E+1	3.05E+2
X	1.36E+3	1.76E+4	2.00E+4	1.35E+3	1.67E+4	1.91E+4	1.34E+3	1.50E+4	1.70E+4	1.27E+3	9.75E+3	1.10E+4	1.24E+3	8.61E+3	9.70E+3
XII	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.09E+0	1.56E+1	1.60E+1	5.09E+0	1.55E+1	1.60E+1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.64E-1	3.83E-1	3.83E-1	3.64E-1	3.83E-1	3.83E-1	3.63E-1	3.82E-1	3.82E-1	3.59E-1	3.78E-1	3.78E-1	3.57E-1	3.76E-1	3.76E-1
XVIB	3.60E-1	3.78E-1	3.78E-1	3.60E-1	3.78E-1	3.78E-1	3.58E-1	3.76E-1	3.76E-1	3.55E-1	3.73E-1	3.73E-1	3.53E-1	3.71E-1	3.71E-1
XVIC	3.52E-1	3.67E-1	3.67E-1	3.51E-1	3.66E-1	3.66E-1	3.50E-1	3.65E-1	3.65E-1	3.47E-1	3.62E-1	3.62E-1	3.45E-1	3.60E-1	3.60E-1
XVIIIA	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.11E+0	1.11E+0
XVIIIB	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.11E+0	1.11E+0	9.96E-1	1.10E+0	1.10E+0	9.89E-1	1.09E+0	1.09E+0
XVIIIC	9.79E-1	1.07E+0	1.07E+0	9.78E-1	1.07E+0	1.07E+0	9.77E-1	1.07E+0	1.07E+0	9.65E-1	1.05E+0	1.05E+0	9.58E-1	1.04E+0	1.04E+0
XXA	4.85E-2	1.71E-1	5.94E-1	2.00E-2	7.06E-2	2.46E-1	1.30E-2	4.58E-2	1.60E-1	1.03E-2	3.65E-2	1.27E-1	9.59E-3	3.39E-2	1.18E-1
XXB	3.91E-2	7.53E-2	1.72E-1	1.61E-2	3.11E-2	7.10E-2	1.05E-2	2.02E-2	4.61E-2	8.34E-3	1.61E-2	3.68E-2	7.73E-3	1.49E-2	3.42E-2
XXC	2.59E-2	3.25E-2	1.13E+3	1.07E-2	1.34E-2	4.67E+2	6.91E-3	8.70E-3	3.04E+2	5.51E-3	6.93E-3	2.43E+2	5.11E-3	6.43E-3	2.25E+2
XXIA	2.88E+0	2.99E+1	2.83E+2	2.87E+0	2.98E+1	2.83E+2	2.86E+0	2.97E+1	2.81E+2	2.77E+0	2.88E+1	2.73E+2	2.70E+0	2.80E+1	2.65E+2
XXIB	2.86E+0	2.96E+1	2.56E+2	2.85E+0	2.95E+1	2.55E+2	2.84E+0	2.93E+1	2.54E+2	2.75E+0	2.84E+1	2.46E+2	2.68E+0	2.77E+1	2.40E+2
XXIC	2.82E+0	2.85E+1	2.07E+2	2.82E+0	2.84E+1	2.06E+2	2.80E+0	2.82E+1	2.05E+2	2.72E+0	2.74E+1	1.99E+2	2.64E+0	2.66E+1	1.93E+2
XXII	8.57E+1	5.12E+4	7.73E+4	8.52E+1	5.10E+4	7.70E+4	8.46E+1	5.03E+4	7.61E+4	8.01E+1	4.86E+4	7.32E+4	7.96E+1	4.80E+4	7.22E+4
DOE	5.03E+4	6.61E+5	1.65E+6	4.97E+4	6.54E+5	1.61E+6	4.81E+4	6.35E+5	1.51E+6	4.44E+4	5.92E+5	1.29E+6	4.34E+4	5.82E+5	1.25E+6
DOD	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.09E+0	1.56E+1	1.60E+1	5.09E+0	1.55E+1	1.60E+1
NRC	1.72E+2	7.63E+2	1.09E+4	1.71E+2	7.60E+2	7.75E+3	1.70E+2	7.56E+2	6.96E+3	1.67E+2	7.36E+2	6.51E+3	1.65E+2	7.18E+2	6.29E+3
Total	5.05E+4	6.61E+5	1.66E+6	4.98E+4	6.54E+5	1.62E+6	4.83E+4	6.36E+5	1.51E+6	4.45E+4	5.93E+5	1.30E+6	4.35E+4	5.82E+5	1.26E+6

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 Table M-135. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.13E+2	2.32E+2	2.32E+2	2.08E+2	2.26E+2	2.26E+2	2.04E+2	2.22E+2	2.22E+2	1.94E+2	2.11E+2	2.11E+2	1.86E+2	2.02E+2	2.02E+2
II	1.84E+3	1.71E+4	8.37E+4	1.84E+3	1.71E+4	8.37E+4	1.84E+3	1.71E+4	8.37E+4	1.84E+3	1.71E+4	8.36E+4	1.83E+3	1.71E+4	8.34E+4
III	9.48E+1	1.05E+2	1.05E+2	9.40E+1	1.04E+2	1.04E+2	9.20E+1	1.02E+2	1.02E+2	7.92E+1	8.77E+1	8.77E+1	7.00E+1	7.75E+1	7.75E+1
IV	2.80E+1	6.97E+1	7.04E+1	2.76E+1	6.87E+1	6.94E+1	2.73E+1	6.79E+1	6.86E+1	2.64E+1	6.57E+1	6.63E+1	2.60E+1	6.45E+1	6.51E+1
V	5.60E+3	6.08E+3	6.08E+3	5.59E+3	6.06E+3	6.06E+3	5.57E+3	6.04E+3	6.04E+3	5.48E+3	5.95E+3	5.95E+3	5.41E+3	5.87E+3	5.87E+3
VI	1.52E+3	9.24E+3	2.46E+4	1.52E+3	9.24E+3	2.46E+4	1.52E+3	9.24E+3	2.46E+4	1.52E+3	9.24E+3	2.46E+4	1.52E+3	9.23E+3	2.46E+4
VII	8.41E+3	7.55E+4	6.14E+5	7.66E+3	6.86E+4	5.58E+5	7.16E+3	6.40E+4	5.20E+5	6.14E+3	5.47E+4	4.44E+5	5.41E+3	4.82E+4	3.91E+5
IX	3.88E+1	3.49E+2	2.22E+3	3.42E+1	3.07E+2	1.96E+3	3.08E+1	2.77E+2	1.77E+3	2.35E+1	2.11E+2	1.34E+3	1.86E+1	1.67E+2	1.06E+3
X	1.39E+3	1.86E+4	2.12E+4	1.38E+3	1.86E+4	2.11E+4	1.38E+3	1.85E+4	2.11E+4	1.37E+3	1.81E+4	2.06E+4	1.36E+3	1.75E+4	1.99E+4
XII	5.11E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1
XIIIA	1.90E-2	6.20E-2	7.16E-2	1.11E-2	3.62E-2	4.18E-2	5.44E-3	1.77E-2	2.05E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.53E-2	2.73E-2	2.91E-2	8.95E-3	1.59E-2	1.70E-2	4.38E-3	7.79E-3	8.32E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.01E-2	1.20E-2	3.71E+1	5.90E-3	6.98E-3	2.16E+1	2.89E-3	3.42E-3	1.06E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E-1	3.84E-1	3.84E-1	3.65E-1	3.84E-1	3.84E-1	3.65E-1	3.84E-1	3.84E-1	3.64E-1	3.84E-1	3.84E-1	3.64E-1	3.83E-1	3.83E-1
XVIB	3.61E-1	3.79E-1	3.79E-1	3.61E-1	3.79E-1	3.79E-1	3.61E-1	3.79E-1	3.79E-1	3.60E-1	3.78E-1	3.78E-1	3.60E-1	3.78E-1	3.78E-1
XVIC	3.52E-1	3.67E-1	3.67E-1	3.52E-1	3.67E-1	3.67E-1	3.52E-1	3.67E-1	3.67E-1	3.52E-1	3.67E-1	3.67E-1	3.51E-1	3.67E-1	3.67E-1
XVIIIA	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0	1.03E+0	1.14E+0	1.14E+0
XVIIIB	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0	1.01E+0	1.12E+0	1.12E+0
XVIIIC	9.79E-1	1.07E+0	1.07E+0	9.79E-1	1.07E+0	1.07E+0	9.79E-1	1.07E+0	1.07E+0	9.79E-1	1.07E+0	1.07E+0	9.78E-1	1.07E+0	1.07E+0
XXA	2.43E-1	8.56E-1	2.97E+0	1.60E-1	5.64E-1	1.95E+0	1.18E-1	4.18E-1	1.45E+0	3.37E-2	1.19E-1	4.13E-1	1.42E-2	5.01E-2	1.74E-1
XXB	1.96E-1	3.77E-1	8.58E-1	1.29E-1	2.48E-1	5.65E-1	9.55E-2	1.84E-1	4.19E-1	2.72E-2	5.23E-2	1.19E-1	1.14E-2	2.20E-2	5.04E-2
XXC	1.29E-1	1.63E-1	5.63E+3	8.52E-2	1.07E-1	3.71E+3	6.31E-2	7.93E-2	2.75E+3	1.80E-2	2.26E-2	7.85E+2	7.55E-3	9.50E-3	3.32E+2
XXIA	2.89E+0	3.00E+1	2.84E+2	2.89E+0	3.00E+1	2.84E+2	2.89E+0	3.00E+1	2.84E+2	2.88E+0	2.99E+1	2.84E+2	2.87E+0	2.98E+1	2.83E+2
XXIB	2.87E+0	2.97E+1	2.57E+2	2.87E+0	2.97E+1	2.57E+2	2.87E+0	2.97E+1	2.57E+2	2.86E+0	2.96E+1	2.56E+2	2.85E+0	2.95E+1	2.55E+2
XXIC	2.83E+0	2.86E+1	2.07E+2	2.83E+0	2.86E+1	2.07E+2	2.83E+0	2.86E+1	2.07E+2	2.83E+0	2.85E+1	2.07E+2	2.81E+0	2.84E+1	2.06E+2
XXII	8.66E+1	5.14E+4	7.77E+4	8.65E+1	5.14E+4	7.77E+4	8.63E+1	5.14E+4	7.76E+4	8.57E+1	5.12E+4	7.74E+4	8.51E+1	5.11E+4	7.71E+4
DOE	5.30E+4	6.84E+5	1.82E+6	5.22E+4	6.77E+5	1.77E+6	5.16E+4	6.72E+5	1.73E+6	5.04E+4	6.62E+5	1.65E+6	4.95E+4	6.53E+5	1.59E+6
DOD	5.23E+0	1.59E+1	1.21E+2	5.18E+0	1.58E+1	1.75E+1	5.14E+0	1.57E+1	4.61E+1	5.10E+0	1.56E+1	1.60E+1	5.10E+0	1.56E+1	1.60E+1
NRC	1.74E+2	7.71E+2	3.19E+4	1.73E+2	7.68E+2	2.30E+4	1.73E+2	7.67E+2	1.84E+4	1.71E+2	7.63E+2	9.26E+3	1.71E+2	7.60E+2	7.12E+3
Total	5.31E+4	6.85E+5	1.86E+6	5.23E+4	6.78E+5	1.79E+6	5.18E+4	6.73E+5	1.75E+6	5.06E+4	6.62E+5	1.66E+6	4.96E+4	6.53E+5	1.60E+6

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 Table M-136. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.72E+2	1.87E+2	1.87E+2	1.63E+2	1.77E+2	1.77E+2	1.51E+2	1.63E+2	1.63E+2	1.08E+2	1.17E+2	1.17E+2	9.40E+1	1.02E+2	1.02E+2
II	1.83E+3	1.70E+4	8.30E+4	1.83E+3	1.70E+4	8.29E+4	1.83E+3	1.70E+4	8.27E+4	1.82E+3	1.69E+4	8.14E+4	1.81E+3	1.67E+4	8.07E+4
III	6.06E+1	6.71E+1	6.71E+1	5.01E+1	5.54E+1	5.54E+1	3.18E+1	3.52E+1	3.52E+1	8.35E+0	9.24E+0	9.24E+0	4.71E+0	5.21E+0	5.21E+0
IV	2.48E+1	6.16E+1	6.22E+1	2.36E+1	5.86E+1	5.92E+1	2.12E+1	5.28E+1	5.33E+1	9.42E+0	2.34E+1	2.36E+1	3.51E+0	8.72E+0	8.81E+0
V	5.26E+3	5.71E+3	5.71E+3	5.12E+3	5.55E+3	5.55E+3	4.82E+3	5.23E+3	5.23E+3	4.02E+3	4.37E+3	4.37E+3	3.83E+3	4.16E+3	4.16E+3
VI	1.51E+3	9.21E+3	2.45E+4	1.50E+3	9.19E+3	2.45E+4	1.49E+3	9.14E+3	2.44E+4	1.42E+3	8.85E+3	2.37E+4	1.40E+3	8.76E+3	2.34E+4
VII	3.65E+3	3.26E+4	2.64E+5	2.60E+3	2.32E+4	1.88E+5	1.72E+3	1.54E+4	1.25E+5	9.55E+0	8.23E+1	6.65E+2	.00E+0	.00E+0	.00E+0
IX	1.35E+1	1.22E+2	7.75E+2	9.77E+0	8.78E+1	5.59E+2	6.68E+0	6.00E+1	3.82E+2	1.21E+0	1.09E+1	6.94E+1	.00E+0	.00E+0	.00E+0
X	1.34E+3	1.56E+4	1.78E+4	1.32E+3	1.38E+4	1.57E+4	1.29E+3	1.12E+4	1.27E+4	1.17E+3	6.75E+3	7.57E+3	1.14E+3	5.71E+3	6.39E+3
XII	5.10E+0	1.56E+1	1.60E+1	5.09E+0	1.56E+1	1.60E+1	5.08E+0	1.55E+1	1.59E+1	5.05E+0	1.54E+1	1.58E+1	5.04E+0	1.54E+1	1.58E+1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.62E-1	3.81E-1	3.81E-1	3.61E-1	3.80E-1	3.80E-1	3.60E-1	3.79E-1	3.79E-1	3.45E-1	3.64E-1	3.64E-1	3.37E-1	3.56E-1	3.56E-1
XVIB	3.58E-1	3.76E-1	3.76E-1	3.57E-1	3.75E-1	3.75E-1	3.56E-1	3.73E-1	3.73E-1	3.41E-1	3.59E-1	3.59E-1	3.33E-1	3.51E-1	3.51E-1
XVIC	3.50E-1	3.65E-1	3.65E-1	3.49E-1	3.64E-1	3.64E-1	3.47E-1	3.62E-1	3.62E-1	3.33E-1	3.48E-1	3.48E-1	3.25E-1	3.40E-1	3.40E-1
XVIIIA	1.03E+0	1.14E+0	1.14E+0	1.02E+0	1.13E+0	1.13E+0	1.01E+0	1.12E+0	1.12E+0	9.68E-1	1.07E+0	1.07E+0	9.45E-1	1.05E+0	1.05E+0
XVIIIB	1.01E+0	1.11E+0	1.11E+0	1.00E+0	1.11E+0	1.11E+0	9.96E-1	1.10E+0	1.10E+0	9.51E-1	1.05E+0	1.05E+0	9.29E-1	1.03E+0	1.03E+0
XVIIIC	9.77E-1	1.06E+0	1.06E+0	9.73E-1	1.06E+0	1.06E+0	9.64E-1	1.05E+0	1.05E+0	9.21E-1	1.00E+0	1.00E+0	9.00E-1	9.81E-1	9.81E-1
XXA	1.20E-2	4.22E-2	1.47E-1	1.10E-2	3.88E-2	1.35E-1	9.66E-3	3.41E-2	1.19E-1	6.66E-3	2.35E-2	8.25E-2	5.62E-3	1.99E-2	6.97E-2
XXB	9.64E-3	1.86E-2	4.25E-2	8.85E-3	1.70E-2	3.91E-2	7.79E-3	1.50E-2	3.44E-2	5.37E-3	1.04E-2	2.38E-2	4.53E-3	8.74E-3	2.01E-2
XXC	6.37E-3	8.02E-3	2.80E+2	5.85E-3	7.36E-3	2.57E+2	5.15E-3	6.48E-3	2.27E+2	3.55E-3	4.47E-3	1.57E+2	2.99E-3	3.77E-3	1.33E+2
XXIA	2.85E+0	2.96E+1	2.80E+2	2.82E+0	2.93E+1	2.77E+2	2.77E+0	2.87E+1	2.72E+2	2.32E+0	2.42E+1	2.29E+2	2.16E+0	2.25E+1	2.13E+2
XXIB	2.83E+0	2.92E+1	2.53E+2	2.80E+0	2.89E+1	2.51E+2	2.75E+0	2.84E+1	2.46E+2	2.31E+0	2.39E+1	2.07E+2	2.15E+0	2.22E+1	1.92E+2
XXIC	2.79E+0	2.81E+1	2.04E+2	2.76E+0	2.79E+1	2.02E+2	2.71E+0	2.73E+1	1.98E+2	2.28E+0	2.30E+1	1.67E+2	2.12E+0	2.14E+1	1.55E+2
XXII	8.44E+1	5.02E+4	7.59E+4	8.26E+1	4.98E+4	7.52E+4	8.00E+1	4.86E+4	7.32E+4	7.63E+1	4.67E+4	7.02E+4	6.56E+1	4.60E+4	6.91E+4
DOE	4.73E+4	6.29E+5	1.45E+6	4.59E+4	6.13E+5	1.37E+6	4.44E+4	5.93E+5	1.29E+6	4.01E+4	5.52E+5	1.12E+6	3.92E+4	5.43E+5	1.10E+6
DOD	5.10E+0	1.56E+1	1.60E+1	5.09E+0	1.56E+1	1.60E+1	5.08E+0	1.55E+1	1.59E+1	5.05E+0	1.54E+1	1.58E+1	5.04E+0	1.54E+1	1.58E+1
NRC	1.70E+2	7.54E+2	6.83E+3	1.69E+2	7.47E+2	6.67E+3	1.67E+2	7.35E+2	6.43E+3	1.53E+2	6.31E+2	5.26E+3	1.47E+2	5.92E+2	4.84E+3
Total	4.75E+4	6.29E+5	1.46E+6	4.61E+4	6.14E+5	1.38E+6	4.45E+4	5.94E+5	1.29E+6	4.03E+4	5.53E+5	1.12E+6	3.94E+4	5.44E+5	1.11E+6

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 Table M-137. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.45E-2	9.18E-2	9.18E-2	8.32E-2	9.05E-2	9.05E-2	8.23E-2	8.95E-2	8.95E-2	8.00E-2	8.70E-2	8.70E-2	7.85E-2	8.53E-2	8.53E-2
II	7.34E-1	6.83E+0	3.37E+1	7.33E-1	6.83E+0	3.37E+1	7.33E-1	6.83E+0	3.37E+1	7.33E-1	6.83E+0	3.37E+1	7.33E-1	6.83E+0	3.37E+1
III	3.71E-2	4.11E-2	4.11E-2	3.70E-2	4.10E-2	4.10E-2	3.69E-2	4.09E-2	4.09E-2	3.59E-2	3.97E-2	3.97E-2	3.42E-2	3.79E-2	3.79E-2
IV	6.05E-3	1.51E-2	1.53E-2	6.01E-3	1.50E-2	1.52E-2	5.97E-3	1.49E-2	1.51E-2	5.88E-3	1.46E-2	1.48E-2	5.80E-3	1.45E-2	1.46E-2
V	2.20E+0	2.39E+0	2.39E+0	2.20E+0	2.38E+0	2.38E+0	2.20E+0	2.38E+0	2.38E+0	2.18E+0	2.37E+0	2.37E+0	2.17E+0	2.36E+0	2.36E+0
VI	3.50E-1	1.84E+0	6.43E+0	3.50E-1	1.84E+0	6.43E+0	3.50E-1	1.84E+0	6.43E+0	3.49E-1	1.84E+0	6.43E+0	3.49E-1	1.84E+0	6.43E+0
VII	5.65E-1	4.38E+0	3.40E+1	5.53E-1	4.27E+0	3.31E+1	5.35E-1	4.11E+0	3.19E+1	4.95E-1	3.75E+0	2.90E+1	4.69E-1	3.52E+0	2.72E+1
IX	2.31E-3	2.03E-2	1.26E-1	2.19E-3	1.93E-2	1.20E-1	2.08E-3	1.83E-2	1.14E-1	1.81E-3	1.59E-2	9.87E-2	1.63E-3	1.43E-2	8.87E-2
X	1.49E+0	5.05E+0	5.58E+0	1.49E+0	5.04E+0	5.58E+0	1.49E+0	5.04E+0	5.58E+0	1.48E+0	5.03E+0	5.56E+0	1.48E+0	4.99E+0	5.51E+0
XII	2.97E-4	9.20E-4	9.46E-4	2.97E-4	9.20E-4	9.46E-4	2.96E-4	9.19E-4	9.46E-4	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.19E-4	9.45E-4
XIIIA	5.08E-6	1.66E-5	2.04E-5	4.08E-6	1.33E-5	1.63E-5	2.85E-6	9.32E-6	1.14E-5	5.62E-7	1.84E-6	2.25E-6	.00E+0	.00E+0	.00E+0
XIIIB	4.10E-6	7.27E-6	8.02E-6	3.29E-6	5.84E-6	6.44E-6	2.30E-6	4.08E-6	4.49E-6	4.53E-7	8.04E-7	8.86E-7	.00E+0	.00E+0	.00E+0
XIIIC	2.70E-6	3.20E-6	9.74E-3	2.17E-6	2.56E-6	7.82E-3	1.51E-6	1.79E-6	5.46E-3	2.98E-7	3.53E-7	1.08E-3	.00E+0	.00E+0	.00E+0
XVIA	1.46E-4	1.53E-4	1.53E-4	1.46E-4	1.53E-4	1.53E-4	1.46E-4	1.53E-4	1.46E-4	1.46E-4	1.53E-4	1.53E-4	1.46E-4	1.53E-4	1.53E-4
XVIB	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.51E-4	1.51E-4
XVIC	1.40E-4	1.47E-4	1.47E-4	1.40E-4	1.47E-4	1.47E-4	1.40E-4	1.47E-4	1.47E-4	1.40E-4	1.47E-4	1.47E-4	1.40E-4	1.47E-4	1.47E-4
XVIIIA	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4
XVIIIB	3.96E-4	4.38E-4	4.38E-4	3.96E-4	4.38E-4	4.38E-4	3.96E-4	4.38E-4	4.38E-4	3.96E-4	4.38E-4	4.38E-4	3.96E-4	4.38E-4	4.38E-4
XVIIIC	3.82E-4	4.17E-4	4.17E-4	3.82E-4	4.17E-4	4.17E-4	3.82E-4	4.17E-4	4.17E-4	3.82E-4	4.17E-4	4.17E-4	3.82E-4	4.17E-4	4.17E-4
XXA	5.32E-5	2.05E-4	1.24E-3	4.03E-5	1.55E-4	9.42E-4	3.41E-5	1.31E-4	7.98E-4	2.37E-5	9.13E-5	5.55E-4	1.79E-5	6.87E-5	4.18E-4
XXB	4.29E-5	9.03E-5	3.23E-4	3.25E-5	6.84E-5	2.44E-4	2.75E-5	5.79E-5	2.07E-4	1.91E-5	4.03E-5	1.44E-4	1.44E-5	3.04E-5	1.09E-4
XXC	2.84E-5	3.81E-5	1.26E+0	2.15E-5	2.88E-5	9.56E-1	1.82E-5	2.44E-5	8.10E-1	1.27E-5	1.70E-5	5.63E-1	9.53E-6	1.28E-5	4.25E-1
XXIA	1.13E-3	1.18E-2	1.11E-1	1.13E-3	1.18E-2	1.11E-1	1.13E-3	1.18E-2	1.11E-1	1.13E-3	1.18E-2	1.11E-1	1.13E-3	1.18E-2	1.11E-1
XXIB	1.12E-3	1.16E-2	1.00E-1	1.12E-3	1.16E-2	1.00E-1	1.12E-3	1.16E-2	1.00E-1	1.12E-3	1.16E-2	1.00E-1	1.12E-3	1.16E-2	1.00E-1
XXIC	1.10E-3	1.12E-2	8.13E-2	1.10E-3	1.12E-2	8.13E-2	1.10E-3	1.12E-2	8.13E-2	1.10E-3	1.12E-2	8.13E-2	1.10E-3	1.12E-2	8.13E-2
XXII	3.38E-2	1.08E+1	1.55E+1	3.38E-2	1.08E+1	1.55E+1	3.38E-2	1.08E+1	1.55E+1	3.37E-2	1.08E+1	1.55E+1	3.36E-2	1.08E+1	1.55E+1
DOE	1.34E+1	1.36E+2	3.30E+2	1.34E+1	1.35E+2	3.29E+2	1.34E+1	1.35E+2	3.27E+2	1.33E+1	1.35E+2	3.24E+2	1.33E+1	1.35E+2	3.22E+2
DOD	3.30E-4	9.97E-4	2.86E-2	3.24E-4	9.81E-4	2.32E-2	3.15E-4	9.62E-4	1.65E-2	3.00E-4	9.28E-4	4.00E-3	2.96E-4	9.19E-4	9.45E-4
NRC	6.79E-2	3.01E-1	8.09E+0	6.77E-2	3.01E-1	6.66E+0	6.77E-2	3.00E-1	5.98E+0	6.75E-2	3.00E-1	4.82E+0	6.74E-2	3.00E-1	4.18E+0
Total	1.35E+1	1.36E+2	3.38E+2	1.35E+1	1.36E+2	3.35E+2	1.35E+1	1.36E+2	3.33E+2	1.34E+1	1.35E+2	3.29E+2	1.33E+1	1.35E+2	3.26E+2

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 Table M-138. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.50E-2	8.16E-2	8.16E-2	7.24E-2	7.87E-2	7.87E-2	6.86E-2	7.46E-2	7.46E-2	5.84E-2	6.35E-2	6.35E-2	5.58E-2	6.07E-2	6.07E-2
II	7.33E-1	6.83E+0	3.37E+1	7.33E-1	6.82E+0	3.36E+1	7.33E-1	6.81E+0	3.35E+1	7.32E-1	6.80E+0	3.33E+1	7.32E-1	6.80E+0	3.33E+1
III	2.94E-2	3.26E-2	3.26E-2	2.72E-2	3.01E-2	3.01E-2	2.45E-2	2.72E-2	2.72E-2	1.14E-2	1.26E-2	1.26E-2	7.33E-3	8.13E-3	8.13E-3
IV	5.67E-3	1.41E-2	1.43E-2	5.59E-3	1.39E-2	1.41E-2	5.42E-3	1.35E-2	1.37E-2	4.60E-3	1.15E-2	1.16E-2	4.19E-3	1.04E-2	1.06E-2
V	2.14E+0	2.32E+0	2.32E+0	2.12E+0	2.30E+0	2.30E+0	2.08E+0	2.25E+0	2.25E+0	1.87E+0	2.03E+0	2.03E+0	1.77E+0	1.91E+0	1.91E+0
VI	3.48E-1	1.84E+0	6.43E+0	3.47E-1	1.84E+0	6.42E+0	3.45E-1	1.83E+0	6.42E+0	3.37E-1	1.81E+0	6.36E+0	3.34E-1	1.80E+0	6.33E+0
VII	4.29E-1	3.17E+0	2.44E+1	3.94E-1	2.90E+0	2.24E+1	3.07E-1	2.26E+0	1.74E+1	1.27E-1	9.55E-1	7.40E+0	9.97E-2	7.58E-1	5.87E+0
IX	1.36E-3	1.19E-2	7.40E-2	1.14E-3	1.00E-2	6.22E-2	9.32E-4	8.19E-3	5.08E-2	4.37E-4	3.84E-3	2.38E-2	3.06E-4	2.69E-3	1.67E-2
X	1.47E+0	4.84E+0	5.35E+0	1.46E+0	4.66E+0	5.14E+0	1.44E+0	4.30E+0	4.72E+0	1.36E+0	3.17E+0	3.44E+0	1.33E+0	2.92E+0	3.14E+0
XII	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.17E-4	9.44E-4	2.95E-4	9.16E-4	9.43E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-4	1.53E-4	1.53E-4	1.45E-4	1.53E-4	1.53E-4	1.45E-4	1.52E-4	1.52E-4	1.43E-4	1.51E-4	1.51E-4	1.43E-4	1.50E-4	1.50E-4
XVIB	1.44E-4	1.51E-4	1.51E-4	1.43E-4	1.50E-4	1.50E-4	1.43E-4	1.50E-4	1.50E-4	1.42E-4	1.49E-4	1.49E-4	1.41E-4	1.48E-4	1.48E-4
XVIC	1.40E-4	1.46E-4	1.46E-4	1.40E-4	1.46E-4	1.46E-4	1.40E-4	1.46E-4	1.46E-4	1.38E-4	1.44E-4	1.44E-4	1.38E-4	1.44E-4	1.44E-4
XVIIIA	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.02E-4	4.44E-4	4.44E-4	3.97E-4	4.39E-4	4.39E-4	3.94E-4	4.36E-4	4.36E-4
XVIIIB	3.96E-4	4.38E-4	4.38E-4	3.95E-4	4.38E-4	4.38E-4	3.95E-4	4.37E-4	4.37E-4	3.90E-4	4.32E-4	4.32E-4	3.87E-4	4.29E-4	4.29E-4
XVIIIC	3.82E-4	4.17E-4	4.17E-4	3.81E-4	4.17E-4	4.17E-4	3.81E-4	4.16E-4	4.16E-4	3.76E-4	4.11E-4	4.11E-4	3.73E-4	4.08E-4	4.08E-4
XXA	8.47E-6	3.26E-5	1.99E-4	3.49E-6	1.34E-5	8.22E-5	2.26E-6	8.70E-6	5.35E-5	1.80E-6	6.93E-6	4.27E-5	1.67E-6	6.42E-6	3.96E-5
XXB	6.84E-6	1.44E-5	5.15E-5	2.81E-6	5.93E-6	2.13E-5	1.82E-6	3.84E-6	1.39E-5	1.45E-6	3.06E-6	1.11E-5	1.34E-6	2.84E-6	1.03E-5
XXC	4.52E-6	6.07E-6	2.02E-1	1.86E-6	2.50E-6	8.35E-2	1.20E-6	1.62E-6	5.43E-2	9.58E-7	1.29E-6	4.33E-2	8.88E-7	1.19E-6	4.02E-2
XXIA	1.12E-3	1.17E-2	1.11E-1	1.12E-3	1.17E-2	1.10E-1	1.11E-3	1.16E-2	1.10E-1	1.08E-3	1.13E-2	1.06E-1	1.05E-3	1.10E-2	1.04E-1
XXIB	1.12E-3	1.16E-2	1.00E-1	1.11E-3	1.15E-2	9.97E-2	1.11E-3	1.15E-2	9.92E-2	1.07E-3	1.11E-2	9.62E-2	1.04E-3	1.08E-2	9.36E-2
XXIC	1.10E-3	1.11E-2	8.10E-2	1.10E-3	1.11E-2	8.08E-2	1.09E-3	1.10E-2	8.03E-2	1.06E-3	1.07E-2	7.79E-2	1.03E-3	1.04E-2	7.58E-2
XXII	3.35E-2	1.08E+1	1.54E+1	3.33E-2	1.07E+1	1.54E+1	3.31E-2	1.06E+1	1.52E+1	3.13E-2	1.02E+1	1.46E+1	3.11E-2	1.01E+1	1.44E+1
DOE	1.32E+1	1.34E+2	3.19E+2	1.31E+1	1.33E+2	3.16E+2	1.29E+1	1.31E+2	3.09E+2	1.22E+1	1.25E+2	2.92E+2	1.19E+1	1.23E+2	2.88E+2
DOD	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.17E-4	9.44E-4	2.95E-4	9.16E-4	9.43E-4
NRC	6.73E-2	2.99E-1	3.13E+0	6.71E-2	2.98E-1	2.57E+0	6.68E-2	2.96E-1	2.42E+0	6.56E-2	2.88E-1	2.31E+0	6.47E-2	2.81E-1	2.24E+0
Total	1.32E+1	1.34E+2	3.22E+2	1.31E+1	1.33E+2	3.19E+2	1.29E+1	1.31E+2	3.11E+2	1.22E+1	1.25E+2	2.94E+2	1.20E+1	1.23E+2	2.90E+2

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 Table M-139. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.38E-2	9.11E-2	9.11E-2	8.17E-2	8.89E-2	8.89E-2	8.02E-2	8.72E-2	8.72E-2	7.61E-2	8.27E-2	8.27E-2	7.29E-2	7.92E-2	7.92E-2
II	7.33E-1	6.83E+0	3.37E+1	7.33E-1	6.83E+0	3.37E+1	7.33E-1	6.83E+0	3.37E+1	7.33E-1	6.83E+0	3.37E+1	7.33E-1	6.82E+0	3.36E+1
III	3.71E-2	4.11E-2	4.11E-2	3.68E-2	4.08E-2	4.08E-2	3.60E-2	3.99E-2	3.99E-2	3.10E-2	3.43E-2	3.43E-2	2.74E-2	3.04E-2	3.04E-2
IV	6.03E-3	1.50E-2	1.52E-2	5.94E-3	1.48E-2	1.50E-2	5.87E-3	1.46E-2	1.48E-2	5.68E-3	1.41E-2	1.43E-2	5.58E-3	1.39E-2	1.41E-2
V	2.20E+0	2.38E+0	2.38E+0	2.19E+0	2.38E+0	2.38E+0	2.19E+0	2.37E+0	2.37E+0	2.15E+0	2.33E+0	2.33E+0	2.12E+0	2.30E+0	2.30E+0
VI	3.50E-1	1.84E+0	6.43E+0	3.50E-1	1.84E+0	6.43E+0	3.49E-1	1.84E+0	6.43E+0	3.48E-1	1.84E+0	6.43E+0	3.47E-1	1.84E+0	6.43E+0
VII	5.60E-1	4.34E+0	3.37E+1	5.17E-1	3.95E+0	3.06E+1	4.89E-1	3.69E+0	2.86E+1	4.28E-1	3.16E+0	2.44E+1	3.79E-1	2.79E+0	2.15E+1
IX	2.23E-3	1.96E-2	1.22E-1	1.97E-3	1.73E-2	1.07E-1	1.77E-3	1.56E-2	9.67E-2	1.35E-3	1.19E-2	7.35E-2	1.07E-3	9.38E-3	5.82E-2
X	1.49E+0	5.05E+0	5.58E+0	1.49E+0	5.04E+0	5.58E+0	1.49E+0	5.04E+0	5.57E+0	1.47E+0	4.95E+0	5.47E+0	1.46E+0	4.82E+0	5.32E+0
XII	2.97E-4	9.20E-4	9.46E-4	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.19E-4	9.45E-4
XIIIA	4.63E-6	1.51E-5	1.86E-5	2.70E-6	8.84E-6	1.08E-5	1.32E-6	4.33E-6	5.30E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.73E-6	6.63E-6	7.30E-6	2.18E-6	3.87E-6	4.26E-6	1.07E-6	1.89E-6	2.09E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.46E-6	2.91E-6	8.88E-3	1.44E-6	1.70E-6	5.18E-3	7.03E-7	8.32E-7	2.54E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-4	1.53E-4	1.53E-4	1.46E-4	1.53E-4	1.53E-4	1.46E-4	1.53E-4	1.53E-4	1.46E-4	1.53E-4	1.53E-4	1.45E-4	1.53E-4	1.53E-4
XVIB	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.51E-4	1.51E-4	1.44E-4	1.50E-4	1.50E-4
XVIC	1.40E-4	1.47E-4	1.47E-4	1.40E-4	1.47E-4	1.47E-4	1.40E-4	1.47E-4	1.47E-4	1.40E-4	1.46E-4	1.46E-4	1.40E-4	1.46E-4	1.46E-4
XVIIIA	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4	4.03E-4	4.45E-4	4.45E-4
XVIIIB	3.96E-4	4.38E-4	4.38E-4	3.96E-4	4.38E-4	4.38E-4	3.96E-4	4.38E-4	4.38E-4	3.96E-4	4.38E-4	4.38E-4	3.95E-4	4.38E-4	4.38E-4
XVIIIC	3.82E-4	4.17E-4	4.17E-4	3.82E-4	4.17E-4	4.17E-4	3.82E-4	4.17E-4	4.17E-4	3.82E-4	4.17E-4	4.17E-4	3.81E-4	4.17E-4	4.17E-4
XXA	4.24E-5	1.63E-4	9.92E-4	2.80E-5	1.08E-4	6.54E-4	2.07E-5	7.96E-5	4.84E-4	5.88E-6	2.26E-5	1.38E-4	2.47E-6	9.51E-6	5.84E-5
XXB	3.42E-5	7.21E-5	2.57E-4	2.26E-5	4.75E-5	1.70E-4	1.67E-5	3.51E-5	1.26E-4	4.75E-6	1.00E-5	3.58E-5	1.99E-6	4.20E-6	1.51E-5
XXC	2.26E-5	3.04E-5	1.01E+0	1.49E-5	2.00E-5	6.64E-1	1.10E-5	1.48E-5	4.91E-1	3.14E-6	4.21E-6	1.40E-1	1.32E-6	1.77E-6	5.93E-2
XXIA	1.13E-3	1.18E-2	1.11E-1	1.13E-3	1.18E-2	1.11E-1	1.13E-3	1.18E-2	1.11E-1	1.13E-3	1.17E-2	1.11E-1	1.12E-3	1.17E-2	1.10E-1
XXIB	1.12E-3	1.16E-2	1.00E-1	1.12E-3	1.16E-2	1.00E-1	1.12E-3	1.16E-2	1.00E-1	1.12E-3	1.16E-2	1.00E-1	1.11E-3	1.15E-2	9.97E-2
XXIC	1.10E-3	1.12E-2	8.13E-2	1.10E-3	1.12E-2	8.13E-2	1.10E-3	1.12E-2	8.13E-2	1.10E-3	1.11E-2	8.11E-2	1.09E-3	1.11E-2	8.08E-2
XXII	3.38E-2	1.08E+1	1.55E+1	3.38E-2	1.08E+1	1.55E+1	3.37E-2	1.08E+1	1.55E+1	3.35E-2	1.08E+1	1.54E+1	3.32E-2	1.07E+1	1.54E+1
DOE	1.34E+1	1.36E+2	3.29E+2	1.34E+1	1.35E+2	3.26E+2	1.33E+1	1.35E+2	3.24E+2	1.32E+1	1.34E+2	3.19E+2	1.31E+1	1.33E+2	3.15E+2
DOD	3.27E-4	9.90E-4	2.62E-2	3.14E-4	9.60E-4	1.57E-2	3.05E-4	9.39E-4	8.15E-3	2.96E-4	9.19E-4	9.45E-4	2.96E-4	9.19E-4	9.45E-4
NRC	6.77E-2	3.01E-1	6.90E+0	6.76E-2	3.00E-1	5.29E+0	6.75E-2	3.00E-1	4.49E+0	6.72E-2	2.99E-1	2.84E+0	6.71E-2	2.98E-1	2.45E+0
Total	1.35E+1	1.36E+2	3.36E+2	1.34E+1	1.35E+2	3.31E+2	1.34E+1	1.35E+2	3.28E+2	1.32E+1	1.34E+2	3.22E+2	1.31E+1	1.33E+2	3.18E+2

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 Table M-140. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.77E-2	7.36E-2	7.36E-2	6.41E-2	6.97E-2	6.97E-2	5.91E-2	6.43E-2	6.43E-2	4.24E-2	4.61E-2	4.61E-2	3.69E-2	4.01E-2	4.01E-2
II	7.33E-1	6.81E+0	3.35E+1	7.33E-1	6.81E+0	3.34E+1	7.32E-1	6.80E+0	3.33E+1	7.27E-1	6.74E+0	3.28E+1	7.22E-1	6.70E+0	3.25E+1
III	2.37E-2	2.63E-2	2.63E-2	1.96E-2	2.17E-2	2.17E-2	1.24E-2	1.38E-2	1.38E-2	3.26E-3	3.62E-3	3.62E-3	1.84E-3	2.04E-3	2.04E-3
IV	5.32E-3	1.33E-2	1.34E-2	5.07E-3	1.26E-2	1.28E-2	4.56E-3	1.14E-2	1.15E-2	2.02E-3	5.04E-3	5.11E-3	7.54E-4	1.88E-3	1.90E-3
V	2.07E+0	2.24E+0	2.24E+0	2.01E+0	2.18E+0	2.18E+0	1.89E+0	2.05E+0	2.05E+0	1.58E+0	1.71E+0	1.71E+0	1.50E+0	1.63E+0	1.63E+0
VI	3.45E-1	1.83E+0	6.41E+0	3.42E-1	1.83E+0	6.40E+0	3.38E-1	1.82E+0	6.37E+0	3.19E-1	1.76E+0	6.18E+0	3.13E-1	1.73E+0	6.11E+0
VII	2.55E-1	1.88E+0	1.45E+1	1.80E-1	1.34E+0	1.03E+1	1.17E-1	8.87E-1	6.87E+0	7.84E-4	4.89E-3	3.67E-2	.00E+0	.00E+0	.00E+0
IX	7.78E-4	6.84E-3	4.24E-2	5.62E-4	4.94E-3	3.06E-2	3.84E-4	3.37E-3	2.09E-2	6.97E-5	6.12E-4	3.80E-3	.00E+0	.00E+0	.00E+0
X	1.44E+0	4.43E+0	4.87E+0	1.42E+0	4.04E+0	4.43E+0	1.39E+0	3.49E+0	3.80E+0	1.26E+0	2.48E+0	2.65E+0	1.23E+0	2.23E+0	2.37E+0
XII	2.96E-4	9.18E-4	9.45E-4	2.96E-4	9.17E-4	9.44E-4	2.95E-4	9.16E-4	9.42E-4	2.93E-4	9.09E-4	9.35E-4	2.92E-4	9.07E-4	9.33E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.45E-4	1.52E-4	1.52E-4	1.44E-4	1.52E-4	1.52E-4	1.44E-4	1.51E-4	1.51E-4	1.38E-4	1.45E-4	1.45E-4	1.35E-4	1.42E-4	1.42E-4
XVIB	1.43E-4	1.50E-4	1.50E-4	1.42E-4	1.49E-4	1.49E-4	1.42E-4	1.49E-4	1.49E-4	1.36E-4	1.43E-4	1.43E-4	1.33E-4	1.40E-4	1.40E-4
XVIC	1.39E-4	1.46E-4	1.46E-4	1.39E-4	1.45E-4	1.45E-4	1.38E-4	1.44E-4	1.44E-4	1.33E-4	1.39E-4	1.39E-4	1.30E-4	1.35E-4	1.35E-4
XVIIIA	4.02E-4	4.44E-4	4.44E-4	4.00E-4	4.43E-4	4.43E-4	3.97E-4	4.39E-4	4.39E-4	3.79E-4	4.19E-4	4.19E-4	3.70E-4	4.09E-4	4.09E-4
XVIIIB	3.95E-4	4.37E-4	4.37E-4	3.93E-4	4.35E-4	4.35E-4	3.90E-4	4.32E-4	4.32E-4	3.72E-4	4.12E-4	4.12E-4	3.64E-4	4.03E-4	4.03E-4
XVIIIC	3.81E-4	4.16E-4	4.16E-4	3.79E-4	4.14E-4	4.14E-4	3.76E-4	4.11E-4	4.11E-4	3.59E-4	3.92E-4	3.92E-4	3.51E-4	3.83E-4	3.83E-4
XXA	2.08E-6	8.02E-6	4.93E-5	1.91E-6	7.35E-6	4.53E-5	1.68E-6	6.47E-6	3.99E-5	1.15E-6	4.45E-6	2.76E-5	9.72E-7	3.76E-6	2.33E-5
XXB	1.68E-6	3.54E-6	1.28E-5	1.54E-6	3.25E-6	1.17E-5	1.35E-6	2.86E-6	1.03E-5	9.30E-7	1.97E-6	7.15E-6	7.84E-7	1.66E-6	6.04E-6
XXC	1.11E-6	1.49E-6	5.01E-2	1.02E-6	1.37E-6	4.60E-2	8.95E-7	1.20E-6	4.05E-2	6.15E-7	8.28E-7	2.81E-2	5.18E-7	6.98E-7	2.37E-2
XXIA	1.11E-3	1.16E-2	1.09E-1	1.10E-3	1.15E-2	1.08E-1	1.08E-3	1.13E-2	1.06E-1	9.07E-4	9.47E-3	8.93E-2	8.45E-4	8.81E-3	8.31E-2
XXIB	1.10E-3	1.14E-2	9.88E-2	1.09E-3	1.13E-2	9.79E-2	1.07E-3	1.11E-2	9.61E-2	9.00E-4	9.32E-3	8.07E-2	8.38E-4	8.67E-3	7.51E-2
XXIC	1.08E-3	1.10E-2	8.00E-2	1.07E-3	1.09E-2	7.93E-2	1.05E-3	1.07E-2	7.78E-2	8.86E-4	8.98E-3	6.54E-2	8.25E-4	8.36E-3	6.08E-2
XXII	3.30E-2	1.05E+1	1.51E+1	3.23E-2	1.04E+1	1.50E+1	3.13E-2	1.02E+1	1.46E+1	2.98E-2	9.80E+0	1.40E+1	2.56E-2	9.65E+0	1.38E+1
DOE	1.28E+1	1.30E+2	3.06E+2	1.26E+1	1.28E+2	3.00E+2	1.22E+1	1.25E+2	2.92E+2	1.12E+1	1.19E+2	2.74E+2	1.09E+1	1.17E+2	2.71E+2
DOD	2.96E-4	9.18E-4	9.45E-4	2.96E-4	9.17E-4	9.44E-4	2.95E-4	9.16E-4	9.42E-4	2.93E-4	9.09E-4	9.35E-4	2.92E-4	9.07E-4	9.33E-4
NRC	6.67E-2	2.95E-1	2.39E+0	6.64E-2	2.93E-1	2.35E+0	6.56E-2	2.88E-1	2.29E+0	6.90E-2	2.47E-1	1.90E+0	5.77E-2	2.32E-1	1.76E+0
Total	1.29E+1	1.31E+2	3.08E+2	1.26E+1	1.29E+2	3.02E+2	1.23E+1	1.26E+2	2.94E+2	1.13E+1	1.19E+2	2.76E+2	1.09E+1	1.17E+2	2.72E+2

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 Table M-141. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.55E-2	6.05E-2	6.05E-2	5.47E-2	5.96E-2	5.96E-2	5.41E-2	5.89E-2	5.89E-2	5.26E-2	5.73E-2	5.73E-2	5.16E-2	5.62E-2	5.62E-2
II	4.83E-1	4.51E+0	2.22E+1	4.82E-1	4.51E+0	2.22E+1	4.82E-1	4.51E+0	2.22E+1	4.82E-1	4.50E+0	2.22E+1	4.82E-1	4.50E+0	2.22E+1
III	2.45E-2	2.70E-2	2.70E-2	2.44E-2	2.70E-2	2.70E-2	2.44E-2	2.69E-2	2.69E-2	2.37E-2	2.61E-2	2.61E-2	2.26E-2	2.49E-2	2.49E-2
IV	4.48E-3	1.11E-2	1.13E-2	4.45E-3	1.11E-2	1.12E-2	4.42E-3	1.10E-2	1.11E-2	4.35E-3	1.08E-2	1.10E-2	4.30E-3	1.07E-2	1.08E-2
V	1.44E+0	1.57E+0	1.57E+0	1.44E+0	1.57E+0	1.57E+0	1.44E+0	1.57E+0	1.57E+0	1.43E+0	1.56E+0	1.56E+0	1.42E+0	1.55E+0	1.55E+0
VI	2.55E-1	1.39E+0	4.56E+0	2.55E-1	1.39E+0	4.56E+0	2.55E-1	1.39E+0	4.56E+0	2.55E-1	1.39E+0	4.56E+0	2.55E-1	1.39E+0	4.56E+0
VII	4.84E-1	3.92E+0	3.08E+1	4.73E-1	3.82E+0	3.00E+1	4.58E-1	3.67E+0	2.88E+1	4.22E-1	3.35E+0	2.62E+1	3.99E-1	3.14E+0	2.46E+1
IX	2.07E-3	1.83E-2	1.14E-1	1.96E-3	1.73E-2	1.08E-1	1.86E-3	1.65E-2	1.03E-1	1.62E-3	1.43E-2	8.95E-2	1.45E-3	1.29E-2	8.04E-2
X	9.79E-1	3.16E+0	3.49E+0	9.79E-1	3.16E+0	3.49E+0	9.78E-1	3.16E+0	3.49E+0	9.74E-1	3.15E+0	3.47E+0	9.70E-1	3.12E+0	3.45E+0
XII	2.64E-4	8.16E-4	8.39E-4	2.64E-4	8.16E-4	8.39E-4	2.64E-4	8.16E-4	8.39E-4	2.64E-4	8.15E-4	8.39E-4	2.64E-4	8.15E-4	8.38E-4
XIIIA	3.67E-6	1.20E-5	1.45E-5	2.94E-6	9.60E-6	1.16E-5	2.06E-6	6.70E-6	8.13E-6	4.05E-7	1.32E-6	1.60E-6	.00E+0	.00E+0	.00E+0
XIIIB	2.96E-6	5.25E-6	5.74E-6	2.37E-6	4.22E-6	4.61E-6	1.66E-6	2.94E-6	3.22E-6	3.27E-7	5.80E-7	6.34E-7	.00E+0	.00E+0	.00E+0
XIIIC	1.95E-6	2.31E-6	5.95E-3	1.57E-6	1.85E-6	4.77E-3	1.09E-6	1.29E-6	3.33E-3	2.15E-7	2.55E-7	6.57E-4	.00E+0	.00E+0	.00E+0
XVIA	9.57E-5	1.01E-4	1.01E-4	9.57E-5	1.01E-4	1.01E-4	1.01E-4	9.56E-5	1.01E-4	1.01E-4	9.56E-5	1.01E-4	1.01E-4	9.56E-5	1.01E-4
XVIB	9.47E-5	9.93E-5	9.93E-5	9.47E-5	9.93E-5	9.93E-5	9.47E-5	9.93E-5	9.93E-5	9.47E-5	9.93E-5	9.93E-5	9.47E-5	9.93E-5	9.93E-5
XVIC	9.23E-5	9.63E-5	9.63E-5	9.23E-5	9.63E-5	9.63E-5	9.22E-5	9.63E-5	9.63E-5	9.22E-5	9.63E-5	9.63E-5	9.22E-5	9.62E-5	9.62E-5
XVIIIA	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4
XVIIIB	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.88E-4	2.88E-4
XVIIIC	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4
XXA	4.14E-5	1.55E-4	8.40E-4	3.13E-5	1.18E-4	6.36E-4	2.66E-5	9.96E-5	5.39E-4	1.85E-5	6.93E-5	3.75E-4	1.39E-5	5.22E-5	2.83E-4
XXB	3.34E-5	6.85E-5	2.21E-4	2.53E-5	5.19E-5	1.68E-4	2.14E-5	4.39E-5	1.42E-4	1.49E-5	3.06E-5	9.89E-5	1.12E-5	2.30E-5	7.45E-5
XXC	2.20E-5	2.90E-5	7.85E-1	1.67E-5	2.20E-5	5.95E-1	1.41E-5	1.86E-5	5.04E-1	9.83E-6	1.30E-5	3.51E-1	7.41E-6	9.76E-6	2.64E-1
XXIA	7.47E-4	7.80E-3	7.34E-2	7.47E-4	7.80E-3	7.34E-2	7.47E-4	7.80E-3	7.34E-2	7.46E-4	7.79E-3	7.34E-2	7.46E-4	7.79E-3	7.34E-2
XXIB	7.41E-4	7.67E-3	6.64E-2	7.41E-4	7.67E-3	6.64E-2	7.41E-4	7.67E-3	6.64E-2	7.41E-4	7.67E-3	6.64E-2	7.40E-4	7.66E-3	6.64E-2
XXIC	7.30E-4	7.39E-3	5.38E-2	7.30E-4	7.39E-3	5.38E-2	7.30E-4	7.39E-3	5.38E-2	7.29E-4	7.39E-3	5.38E-2	7.29E-4	7.39E-3	5.37E-2
XXII	2.24E-2	6.61E+0	9.97E+0	2.24E-2	6.61E+0	9.97E+0	2.23E-2	6.61E+0	9.97E+0	2.23E-2	6.61E+0	9.96E+0	2.22E-2	6.61E+0	9.95E+0
DOE	9.52E+0	9.08E+1	2.31E+2	9.50E+0	9.07E+1	2.30E+2	9.48E+0	9.06E+1	2.29E+2	9.43E+0	9.02E+1	2.26E+2	9.38E+0	8.99E+1	2.24E+2
DOD	2.88E-4	8.71E-4	1.77E-2	2.83E-4	8.60E-4	1.44E-2	2.77E-4	8.47E-4	1.03E-2	2.66E-4	8.21E-4	2.71E-3	2.64E-4	8.15E-4	8.38E-4
NRC	4.48E-2	1.99E-1	5.12E+0	4.47E-2	1.99E-1	4.23E+0	4.47E-2	1.99E-1	3.81E+0	4.46E-2	1.98E-1	3.09E+0	4.45E-2	1.98E-1	2.68E+0
Total	9.57E+0	9.10E+1	2.36E+2	9.55E+0	9.09E+1	2.34E+2	9.53E+0	9.08E+1	2.33E+2	9.47E+0	9.04E+1	2.29E+2	9.43E+0	9.01E+1	2.27E+2

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 Table M-142. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.93E-2	5.37E-2	5.37E-2	4.76E-2	5.18E-2	5.18E-2	4.51E-2	4.91E-2	4.91E-2	3.84E-2	4.18E-2	4.18E-2	3.67E-2	4.00E-2	4.00E-2
II	4.82E-1	4.50E+0	2.21E+1	4.82E-1	4.50E+0	2.21E+1	4.82E-1	4.50E+0	2.20E+1	4.82E-1	4.49E+0	2.19E+1	4.81E-1	4.48E+0	2.19E+1
III	1.94E-2	2.14E-2	2.14E-2	1.79E-2	1.98E-2	1.98E-2	1.62E-2	1.79E-2	1.79E-2	7.49E-3	8.27E-3	8.27E-3	4.84E-3	5.34E-3	5.34E-3
IV	4.20E-3	1.04E-2	1.06E-2	4.14E-3	1.03E-2	1.04E-2	4.02E-3	9.98E-3	1.01E-2	3.41E-3	8.47E-3	8.58E-3	3.10E-3	7.72E-3	7.82E-3
V	1.40E+0	1.53E+0	1.53E+0	1.39E+0	1.51E+0	1.51E+0	1.36E+0	1.49E+0	1.49E+0	1.23E+0	1.34E+0	1.34E+0	1.16E+0	1.26E+0	1.26E+0
VI	2.54E-1	1.39E+0	4.56E+0	2.53E-1	1.39E+0	4.55E+0	2.52E-1	1.39E+0	4.55E+0	2.47E-1	1.37E+0	4.51E+0	2.44E-1	1.36E+0	4.48E+0
VII	3.63E-1	2.83E+0	2.21E+1	3.34E-1	2.59E+0	2.03E+1	2.60E-1	2.01E+0	1.57E+1	1.08E-1	8.54E-1	6.69E+0	8.50E-2	6.77E-1	5.31E+0
IX	1.21E-3	1.07E-2	6.71E-2	1.02E-3	9.03E-3	5.64E-2	8.33E-4	7.37E-3	4.61E-2	3.91E-4	3.45E-3	2.16E-2	2.74E-4	2.42E-3	1.51E-2
X	9.61E-1	3.04E+0	3.34E+0	9.55E-1	2.92E+0	3.22E+0	9.42E-1	2.70E+0	2.96E+0	8.95E-1	2.01E+0	2.17E+0	8.72E-1	1.85E+0	1.99E+0
XII	2.64E-4	8.15E-4	8.38E-4	2.64E-4	8.15E-4	8.38E-4	2.64E-4	8.15E-4	8.38E-4	2.63E-4	8.14E-4	8.37E-4	2.63E-4	8.13E-4	8.36E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.55E-5	1.00E-4	1.00E-4	9.54E-5	1.00E-4	1.00E-4	9.51E-5	1.00E-4	1.00E-4	9.42E-5	9.90E-5	9.90E-5	9.37E-5	9.86E-5	9.86E-5
XVIB	9.46E-5	9.92E-5	9.92E-5	9.44E-5	9.91E-5	9.91E-5	9.41E-5	9.87E-5	9.87E-5	9.32E-5	9.78E-5	9.78E-5	9.28E-5	9.74E-5	9.74E-5
XVIC	9.21E-5	9.62E-5	9.62E-5	9.20E-5	9.60E-5	9.60E-5	9.17E-5	9.57E-5	9.57E-5	9.08E-5	9.48E-5	9.48E-5	9.04E-5	9.44E-5	9.44E-5
XVIIIA	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.61E-4	2.89E-4	2.89E-4	2.59E-4	2.87E-4	2.87E-4
XVIIIB	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.87E-4	2.87E-4	2.60E-4	2.87E-4	2.87E-4	2.57E-4	2.83E-4	2.83E-4	2.55E-4	2.81E-4	2.81E-4
XVIIIC	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.49E-4	2.71E-4	2.71E-4	2.47E-4	2.69E-4	2.69E-4
XXA	6.60E-6	2.48E-5	1.34E-4	2.72E-6	1.02E-5	5.55E-5	1.76E-6	6.62E-6	3.61E-5	1.40E-6	5.27E-6	2.88E-5	1.30E-6	4.89E-6	2.68E-5
XXB	5.32E-6	1.09E-5	3.54E-5	2.19E-6	4.50E-6	1.46E-5	1.42E-6	2.92E-6	9.51E-6	1.13E-6	2.33E-6	7.59E-6	1.05E-6	2.16E-6	7.04E-6
XXC	3.51E-6	4.63E-6	1.26E-1	1.45E-6	1.91E-6	5.19E-2	9.38E-7	1.24E-6	3.38E-2	7.46E-7	9.85E-7	2.70E-2	6.92E-7	9.14E-7	2.50E-2
XXIA	7.44E-4	7.77E-3	7.31E-2	7.42E-4	7.75E-3	7.29E-2	7.37E-4	7.70E-3	7.25E-2	7.16E-4	7.47E-3	7.04E-2	6.96E-4	7.27E-3	6.85E-2
XXIB	7.38E-4	7.64E-3	6.62E-2	7.36E-4	7.62E-3	6.60E-2	7.32E-4	7.57E-3	6.56E-2	7.10E-4	7.35E-3	6.37E-2	6.91E-4	7.15E-3	6.20E-2
XXIC	7.27E-4	7.37E-3	5.36E-2	7.25E-4	7.34E-3	5.34E-2	7.21E-4	7.30E-3	5.31E-2	6.99E-4	7.08E-3	5.15E-2	6.80E-4	6.89E-3	5.02E-2
XXII	2.21E-2	6.59E+0	9.92E+0	2.20E-2	6.57E+0	9.88E+0	2.18E-2	6.48E+0	9.76E+0	2.07E-2	6.25E+0	9.39E+0	2.05E-2	6.17E+0	9.26E+0
DOE	9.30E+0	8.94E+1	2.21E+2	9.22E+0	8.88E+1	2.19E+2	9.08E+0	8.73E+1	2.13E+2	8.60E+0	8.32E+1	1.99E+2	8.41E+0	8.21E+1	1.96E+2
DOD	2.64E-4	8.15E-4	8.38E-4	2.64E-4	8.15E-4	8.38E-4	2.64E-4	8.15E-4	8.38E-4	2.63E-4	8.14E-4	8.37E-4	2.63E-4	8.13E-4	8.36E-4
NRC	4.44E-2	1.97E-1	2.03E+0	4.43E-2	1.97E-1	1.68E+0	4.41E-2	1.96E-1	1.59E+0	4.33E-2	1.91E-1	1.52E+0	4.27E-2	1.86E-1	1.47E+0
Total	9.34E+0	8.96E+1	2.23E+2	9.27E+0	8.90E+1	2.21E+2	9.12E+0	8.75E+1	2.15E+2	8.64E+0	8.34E+1	2.01E+2	8.46E+0	8.23E+1	1.98E+2

Low Population Density Without Agriculture - 09-19-94 1:59p
 Table M-143. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.51E-2	6.00E-2	6.00E-2	5.37E-2	5.85E-2	5.85E-2	5.28E-2	5.74E-2	5.74E-2	5.00E-2	5.45E-2	5.45E-2	4.79E-2	5.22E-2	5.22E-2
II	4.82E-1	4.51E+0	2.22E+1	4.82E-1	4.51E+0	2.22E+1	4.82E-1	4.50E+0	2.22E+1	4.82E-1	4.50E+0	2.21E+1	4.82E-1	4.50E+0	2.21E+1
III	2.45E-2	2.70E-2	2.70E-2	2.43E-2	2.68E-2	2.68E-2	2.38E-2	2.62E-2	2.62E-2	2.04E-2	2.26E-2	2.26E-2	1.81E-2	2.00E-2	2.00E-2
IV	4.46E-3	1.11E-2	1.12E-2	4.40E-3	1.09E-2	1.11E-2	4.35E-3	1.08E-2	1.10E-2	4.21E-3	1.05E-2	1.06E-2	4.13E-3	1.03E-2	1.04E-2
V	1.44E+0	1.57E+0	1.57E+0	1.44E+0	1.57E+0	1.57E+0	1.43E+0	1.56E+0	1.56E+0	1.41E+0	1.54E+0	1.54E+0	1.39E+0	1.52E+0	1.52E+0
VI	2.55E-1	1.39E+0	4.56E+0	2.55E-1	1.39E+0	4.56E+0	2.55E-1	1.39E+0	4.56E+0	2.54E-1	1.39E+0	4.56E+0	2.53E-1	1.39E+0	4.55E+0
VII	4.80E-1	3.88E+0	3.05E+1	4.42E-1	3.53E+0	2.77E+1	4.16E-1	3.30E+0	2.59E+1	3.63E-1	2.82E+0	2.21E+1	3.20E-1	2.49E+0	1.94E+1
IX	2.00E-3	1.77E-2	1.10E-1	1.76E-3	1.56E-2	9.73E-2	1.59E-3	1.40E-2	8.76E-2	1.21E-3	1.07E-2	6.67E-2	9.55E-4	8.44E-3	5.28E-2
X	9.79E-1	3.16E+0	3.49E+0	9.77E-1	3.16E+0	3.48E+0	9.75E-1	3.15E+0	3.48E+0	9.66E-1	3.10E+0	3.42E+0	9.59E-1	3.02E+0	3.33E+0
XII	2.64E-4	8.16E-4	8.39E-4	2.64E-4	8.15E-4	8.39E-4	2.64E-4	8.15E-4	8.38E-4	2.64E-4	8.15E-4	8.38E-4	2.64E-4	8.15E-4	8.38E-4
XIIIA	3.34E-6	1.09E-5	1.32E-5	1.95E-6	6.36E-6	7.71E-6	9.55E-7	3.11E-6	3.78E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.69E-6	4.78E-6	5.23E-6	1.57E-6	2.79E-6	3.05E-6	7.70E-7	1.37E-6	1.50E-6	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.78E-6	2.10E-6	5.42E-3	1.04E-6	1.23E-6	3.16E-3	5.08E-7	6.00E-7	1.55E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.57E-5	1.01E-4	1.01E-4	9.56E-5	1.01E-4	1.01E-4	9.56E-5	1.01E-4	1.01E-4	9.56E-5	1.00E-4	1.00E-4	9.54E-5	1.00E-4	1.00E-4
XVIB	9.47E-5	9.93E-5	9.93E-5	9.47E-5	9.93E-5	9.93E-5	9.47E-5	9.93E-5	9.93E-5	9.46E-5	9.92E-5	9.92E-5	9.45E-5	9.91E-5	9.91E-5
XVIC	9.23E-5	9.63E-5	9.63E-5	9.22E-5	9.63E-5	9.63E-5	9.22E-5	9.63E-5	9.63E-5	9.22E-5	9.62E-5	9.62E-5	9.20E-5	9.61E-5	9.61E-5
XVIIIA	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4	2.65E-4	2.93E-4	2.93E-4
XVIIIB	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.88E-4	2.88E-4	2.61E-4	2.87E-4	2.87E-4
XVIIIC	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4	2.52E-4	2.75E-4	2.75E-4
XXA	3.30E-5	1.24E-4	6.70E-4	2.18E-5	8.16E-5	4.42E-4	1.61E-5	6.04E-5	3.27E-4	4.58E-6	1.72E-5	9.33E-5	1.92E-6	7.23E-6	3.94E-5
XXB	2.66E-5	5.47E-5	1.77E-4	1.75E-5	3.60E-5	1.16E-4	1.30E-5	2.67E-5	8.62E-5	3.69E-6	7.59E-6	2.46E-5	1.55E-6	3.19E-6	1.04E-5
XXC	1.76E-5	2.32E-5	6.27E-1	1.16E-5	1.53E-5	4.13E-1	8.57E-6	1.13E-5	3.06E-1	2.44E-6	3.22E-6	8.73E-2	1.02E-6	1.35E-6	3.69E-2
XXIA	7.47E-4	7.80E-3	7.34E-2	7.47E-4	7.80E-3	7.34E-2	7.46E-4	7.79E-3	7.34E-2	7.44E-4	7.77E-3	7.32E-2	7.42E-4	7.74E-3	7.29E-2
XXIB	7.41E-4	7.67E-3	6.64E-2	7.41E-4	7.67E-3	6.64E-2	7.41E-4	7.67E-3	6.64E-2	7.39E-4	7.64E-3	6.62E-2	7.36E-4	7.62E-3	6.60E-2
XXIC	7.30E-4	7.39E-3	5.38E-2	7.30E-4	7.39E-3	5.38E-2	7.29E-4	7.39E-3	5.38E-2	7.27E-4	7.37E-3	5.36E-2	7.25E-4	7.34E-3	5.34E-2
XXII	2.24E-2	6.61E+0	9.97E+0	2.23E-2	6.61E+0	9.96E+0	2.23E-2	6.61E+0	9.96E+0	2.21E-2	6.60E+0	9.92E+0	2.20E-2	6.57E+0	9.89E+0
DOE	9.51E+0	9.08E+1	2.31E+2	9.46E+0	9.04E+1	2.28E+2	9.42E+0	9.02E+1	2.26E+2	9.31E+0	8.95E+1	2.22E+2	9.22E+0	8.88E+1	2.18E+2
DOD	2.86E-4	8.66E-4	1.62E-2	2.77E-4	8.45E-4	9.83E-3	2.70E-4	8.29E-4	5.24E-3	2.64E-4	8.15E-4	8.38E-4	2.64E-4	8.15E-4	8.38E-4
NRC	4.47E-2	1.99E-1	4.38E+0	4.46E-2	1.99E-1	3.38E+0	4.45E-2	1.98E-1	2.88E+0	4.44E-2	1.98E-1	1.85E+0	4.42E-2	1.97E-1	1.61E+0
Total	9.56E+0	9.10E+1	2.35E+2	9.51E+0	9.06E+1	2.31E+2	9.47E+0	9.04E+1	2.29E+2	9.36E+0	8.97E+1	2.23E+2	9.26E+0	8.90E+1	2.20E+2

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 Table M-144. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.45E-2	4.84E-2	4.84E-2	4.22E-2	4.59E-2	4.59E-2	3.89E-2	4.23E-2	4.23E-2	2.79E-2	3.04E-2	3.04E-2	2.43E-2	2.64E-2	2.64E-2
II	4.82E-1	4.49E+0	2.20E+1	4.82E-1	4.49E+0	2.20E+1	4.82E-1	4.49E+0	2.19E+1	4.78E-1	4.45E+0	2.16E+1	4.75E-1	4.42E+0	2.14E+1
III	1.56E-2	1.73E-2	1.73E-2	1.29E-2	1.43E-2	1.43E-2	8.21E-3	9.06E-3	9.06E-3	2.15E-3	2.38E-3	2.38E-3	1.21E-3	1.34E-3	1.34E-3
IV	3.94E-3	9.80E-3	9.93E-3	3.75E-3	9.34E-3	9.46E-3	3.38E-3	8.40E-3	8.51E-3	1.50E-3	3.73E-3	3.78E-3	5.59E-4	1.39E-3	1.41E-3
V	1.35E+0	1.48E+0	1.48E+0	1.32E+0	1.43E+0	1.43E+0	1.24E+0	1.35E+0	1.35E+0	1.04E+0	1.13E+0	1.13E+0	9.86E-1	1.07E+0	1.07E+0
VI	2.52E-1	1.39E+0	4.55E+0	2.50E-1	1.38E+0	4.54E+0	2.47E-1	1.37E+0	4.51E+0	2.34E-1	1.33E+0	4.38E+0	2.30E-1	1.31E+0	4.33E+0
VII	2.16E-1	1.68E+0	1.31E+1	1.52E-1	1.19E+0	9.35E+0	9.99E-2	7.93E-1	6.22E+0	6.37E-4	4.33E-3	3.31E-2	.00E+0	.00E+0	.00E+0
IX	6.96E-4	6.15E-3	3.85E-2	5.02E-4	4.44E-3	2.78E-2	3.43E-4	3.04E-3	1.90E-2	6.23E-5	5.51E-4	3.44E-3	.00E+0	.00E+0	.00E+0
X	9.45E-1	2.78E+0	3.05E+0	9.32E-1	2.54E+0	2.78E+0	9.12E-1	2.20E+0	2.39E+0	8.29E-1	1.58E+0	1.68E+0	8.04E-1	1.42E+0	1.51E+0
XII	2.64E-4	8.15E-4	8.38E-4	2.63E-4	8.14E-4	8.37E-4	2.63E-4	8.12E-4	8.36E-4	2.61E-4	8.07E-4	8.30E-4	2.60E-4	8.05E-4	8.28E-4
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.50E-5	9.99E-5	9.99E-5	9.47E-5	9.96E-5	9.96E-5	9.43E-5	9.92E-5	9.92E-5	9.05E-5	9.53E-5	9.53E-5	8.83E-5	9.31E-5	9.31E-5
XVIB	9.40E-5	9.87E-5	9.87E-5	9.38E-5	9.84E-5	9.84E-5	9.33E-5	9.79E-5	9.79E-5	8.96E-5	9.41E-5	9.41E-5	8.74E-5	9.19E-5	9.19E-5
XVIC	9.16E-5	9.56E-5	9.56E-5	9.13E-5	9.54E-5	9.54E-5	9.09E-5	9.49E-5	9.49E-5	8.72E-5	9.12E-5	9.12E-5	8.51E-5	8.90E-5	8.90E-5
XVIIIA	2.64E-4	2.93E-4	2.93E-4	2.63E-4	2.91E-4	2.91E-4	2.61E-4	2.89E-4	2.89E-4	2.49E-4	2.76E-4	2.76E-4	2.44E-4	2.70E-4	2.70E-4
XVIIIB	2.60E-4	2.87E-4	2.87E-4	2.59E-4	2.86E-4	2.86E-4	2.57E-4	2.83E-4	2.83E-4	2.45E-4	2.71E-4	2.71E-4	2.40E-4	2.64E-4	2.64E-4
XVIIIC	2.52E-4	2.75E-4	2.75E-4	2.51E-4	2.74E-4	2.74E-4	2.49E-4	2.71E-4	2.71E-4	2.37E-4	2.59E-4	2.59E-4	2.32E-4	2.53E-4	2.53E-4
XXA	1.62E-6	6.10E-6	3.33E-5	1.49E-6	5.59E-6	3.06E-5	1.31E-6	4.93E-6	2.70E-5	9.01E-7	3.39E-6	1.87E-5	7.60E-7	2.86E-6	1.58E-5
XXB	1.31E-6	2.69E-6	8.77E-6	1.20E-6	2.47E-6	8.05E-6	1.06E-6	2.17E-6	7.09E-6	7.26E-7	1.50E-6	4.91E-6	6.13E-7	1.26E-6	4.15E-6
XXC	8.64E-7	1.14E-6	3.12E-2	7.92E-7	1.05E-6	2.86E-2	6.97E-7	9.21E-7	2.52E-2	4.80E-7	6.34E-7	1.75E-2	4.05E-7	5.35E-7	1.48E-2
XXIA	7.35E-4	7.67E-3	7.22E-2	7.28E-4	7.60E-3	7.16E-2	7.14E-4	7.46E-3	7.02E-2	6.00E-4	6.27E-3	5.90E-2	5.59E-4	5.83E-3	5.49E-2
XXIB	7.29E-4	7.55E-3	6.54E-2	7.22E-4	7.48E-3	6.48E-2	7.09E-4	7.34E-3	6.36E-2	5.96E-4	6.16E-3	5.34E-2	5.54E-4	5.74E-3	4.97E-2
XXIC	7.18E-4	7.27E-3	5.29E-2	7.11E-4	7.21E-3	5.24E-2	6.98E-4	7.07E-3	5.15E-2	5.87E-4	5.94E-3	4.32E-2	5.46E-4	5.53E-3	4.02E-2
XXII	2.18E-2	6.47E+0	9.74E+0	2.13E-2	6.41E+0	9.65E+0	2.07E-2	6.25E+0	9.39E+0	1.97E-2	6.01E+0	9.00E+0	1.69E-2	5.92E+0	8.87E+0
DOE	9.02E+0	8.69E+1	2.10E+2	8.86E+0	8.56E+1	2.05E+2	8.63E+0	8.35E+1	1.99E+2	7.91E+0	7.90E+1	1.86E+2	7.70E+0	7.77E+1	1.84E+2
DOD	2.64E-4	8.15E-4	8.38E-4	2.63E-4	8.14E-4	8.37E-4	2.63E-4	8.12E-4	8.36E-4	2.61E-4	8.07E-4	8.30E-4	2.60E-4	8.05E-4	8.28E-4
NRC	4.40E-2	1.95E-1	1.57E+0	4.38E-2	1.94E-1	1.55E+0	4.33E-2	1.90E-1	1.51E+0	3.96E-2	1.63E-1	1.25E+0	3.81E-2	1.53E-1	1.16E+0
Total	9.06E+0	8.71E+1	2.12E+2	8.91E+0	8.58E+1	2.07E+2	8.68E+0	8.37E+1	2.01E+2	7.95E+0	7.91E+1	1.87E+2	7.74E+0	7.79E+1	1.85E+2

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 Table M-145. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.72E+2	7.40E+2	7.40E+2	6.62E+2	7.29E+2	7.29E+2	6.55E+2	7.21E+2	7.21E+2	6.37E+2	7.01E+2	7.01E+2	6.25E+2	6.87E+2	6.87E+2
II	2.69E+5	6.27E+6	2.29E+7	2.69E+5	6.27E+6	2.29E+7	2.69E+5	6.27E+6	2.29E+7	2.69E+5	6.27E+6	2.29E+7	2.69E+5	6.27E+6	2.29E+7
III	2.85E+2	3.17E+2	3.17E+2	2.85E+2	3.16E+2	3.16E+2	2.84E+2	3.15E+2	3.15E+2	2.76E+2	3.06E+2	3.06E+2	2.63E+2	2.92E+2	2.92E+2
IV	1.52E+3	1.06E+4	2.26E+4	1.51E+3	1.05E+4	2.24E+4	1.50E+3	1.05E+4	2.23E+4	1.47E+3	1.03E+4	2.19E+4	1.45E+3	1.02E+4	2.16E+4
V	1.76E+4	1.93E+4	1.93E+4	1.75E+4	1.93E+4	1.93E+4	1.75E+4	1.93E+4	1.93E+4	1.74E+4	1.92E+4	1.92E+4	1.73E+4	1.91E+4	1.91E+4
VI	3.24E+4	2.99E+5	3.48E+6	3.24E+4	2.99E+5	3.48E+6	3.24E+4	2.99E+5	3.48E+6	3.24E+4	2.99E+5	3.48E+6	3.24E+4	2.99E+5	3.48E+6
VII	3.34E+4	2.66E+5	1.82E+6	3.26E+4	2.59E+5	1.77E+6	3.13E+4	2.49E+5	1.70E+6	2.86E+4	2.27E+5	1.55E+6	2.68E+4	2.13E+5	1.45E+6
IX	1.40E+2	1.14E+3	7.03E+3	1.33E+2	1.08E+3	6.67E+3	1.27E+2	1.02E+3	6.34E+3	1.10E+2	8.89E+2	5.51E+3	9.89E+1	7.99E+2	4.95E+3
X	1.54E+3	1.88E+4	2.15E+4	1.54E+3	1.88E+4	2.15E+4	1.53E+3	1.88E+4	2.15E+4	1.51E+3	1.87E+4	2.14E+4	1.50E+3	1.85E+4	2.12E+4
XII	2.71E+2	1.69E+3	2.80E+3	2.71E+2	1.69E+3	2.80E+3	2.71E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3
XIIIA	6.91E-1	5.27E+0	1.48E+1	5.55E-1	4.23E+0	1.19E+1	3.87E-1	2.96E+0	8.31E+0	7.63E-2	5.83E-1	1.64E+0	.00E+0	.00E+0	.00E+0
XIIIB	6.59E-1	3.76E+0	6.24E+0	5.29E-1	3.02E+0	5.01E+0	3.70E-1	2.11E+0	3.50E+0	7.28E-2	4.15E-1	6.89E-1	.00E+0	.00E+0	.00E+0
XIIIC	6.00E-1	2.10E+0	4.33E+1	4.82E-1	1.69E+0	3.47E+1	3.36E-1	1.18E+0	2.43E+1	6.63E-2	2.32E-1	4.78E+0	.00E+0	.00E+0	.00E+0
XVIA	9.87E-1	1.07E+0	1.07E+0	9.87E-1	1.07E+0	1.07E+0	9.87E-1	1.07E+0	1.07E+0	9.87E-1	1.07E+0	1.07E+0	9.87E-1	1.07E+0	1.07E+0
XVIB	9.80E-1	1.06E+0	1.06E+0	9.80E-1	1.06E+0	1.06E+0	9.80E-1	1.06E+0	1.06E+0	9.80E-1	1.06E+0	1.06E+0	9.80E-1	1.06E+0	1.06E+0
XVIC	9.69E-1	1.05E+0	1.05E+0	9.69E-1	1.05E+0	1.05E+0	9.69E-1	1.05E+0	1.05E+0	9.69E-1	1.05E+0	1.05E+0	9.68E-1	1.05E+0	1.05E+0
XVIIIA	7.77E+1	8.35E+1	8.35E+1	7.77E+1	8.35E+1	8.35E+1	7.77E+1	8.35E+1	8.35E+1	7.77E+1	8.35E+1	8.35E+1	7.77E+1	8.35E+1	8.35E+1
XVIIIB	7.06E+1	7.46E+1	7.46E+1	7.06E+1	7.46E+1	7.46E+1	7.06E+1	7.46E+1	7.46E+1	7.06E+1	7.46E+1	7.46E+1	7.06E+1	7.46E+1	7.46E+1
XVIIIC	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1
XXA	1.07E+2	8.65E+2	6.71E+3	8.14E+1	6.55E+2	5.08E+3	6.90E+1	5.55E+2	4.30E+3	4.80E+1	3.86E+2	3.00E+3	3.62E+1	2.91E+2	2.26E+3
XXB	1.03E+2	6.22E+2	2.74E+3	7.82E+1	4.71E+2	2.07E+3	6.63E+1	3.99E+2	1.76E+3	4.61E+1	2.78E+2	1.22E+3	3.47E+1	2.09E+2	9.21E+2
XXC	9.49E+1	3.51E+2	8.03E+3	7.18E+1	2.66E+2	6.08E+3	6.09E+1	2.25E+2	5.15E+3	4.23E+1	1.57E+2	3.59E+3	3.19E+1	1.18E+2	2.70E+3
XXIA	1.91E+1	1.92E+2	1.89E+3	1.91E+1	1.92E+2	1.89E+3	1.91E+1	1.92E+2	1.89E+3	1.91E+1	1.92E+2	1.89E+3	1.91E+1	1.92E+2	1.89E+3
XXIB	1.91E+1	1.92E+2	1.84E+3	1.91E+1	1.92E+2	1.84E+3	1.91E+1	1.92E+2	1.84E+3	1.91E+1	1.92E+2	1.84E+3	1.91E+1	1.92E+2	1.83E+3
XXIC	1.90E+1	1.90E+2	1.73E+3	1.90E+1	1.90E+2	1.73E+3	1.90E+1	1.90E+2	1.73E+3	1.90E+1	1.90E+2	1.73E+3	1.90E+1	1.90E+2	1.73E+3
XXII	3.30E+3	8.27E+4	1.35E+5	3.29E+3	8.27E+4	1.35E+5	3.29E+3	8.26E+4	1.35E+5	3.28E+3	8.25E+4	1.35E+5	3.27E+3	8.24E+4	1.35E+5
DOE	1.08E+6	1.40E+7	1.05E+8	1.08E+6	1.39E+7	1.05E+8	1.08E+6	1.39E+7	1.05E+8	1.08E+6	1.39E+7	1.04E+8	1.08E+6	1.39E+7	1.04E+8
DOD	2.76E+2	1.72E+3	2.98E+3	2.75E+2	1.71E+3	2.95E+3	2.74E+2	1.70E+3	2.90E+3	2.71E+2	1.69E+3	2.82E+3	2.70E+2	1.68E+3	2.80E+3
NRC	6.32E+3	1.75E+4	1.26E+5	5.97E+3	1.54E+4	1.07E+5	5.81E+3	1.44E+4	9.71E+4	5.53E+3	1.28E+4	8.12E+4	5.37E+3	1.18E+4	7.22E+4
Total	1.09E+6	1.40E+7	1.05E+8	1.09E+6	1.40E+7	1.05E+8	1.09E+6	1.39E+7	1.05E+8	1.08E+6	1.39E+7	1.04E+8	1.08E+6	1.39E+7	1.04E+8

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 Table M-146. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.97E+2	6.57E+2	6.57E+2	5.76E+2	6.34E+2	6.34E+2	5.46E+2	6.01E+2	6.01E+2	4.65E+2	5.12E+2	5.12E+2	4.44E+2	4.89E+2	4.89E+2
II	2.69E+5	6.27E+6	2.29E+7	2.69E+5	6.27E+6	2.28E+7	2.69E+5	6.26E+6	2.27E+7	2.69E+5	6.26E+6	2.26E+7	2.69E+5	6.25E+6	2.25E+7
III	2.26E+2	2.51E+2	2.51E+2	2.09E+2	2.32E+2	2.32E+2	1.89E+2	2.10E+2	2.10E+2	8.73E+1	9.70E+1	9.70E+1	5.64E+1	6.26E+1	6.26E+1
IV	1.42E+3	9.94E+3	2.11E+4	1.40E+3	9.79E+3	2.08E+4	1.36E+3	9.51E+3	2.02E+4	1.15E+3	8.07E+3	1.72E+4	1.05E+3	7.35E+3	1.56E+4
V	1.71E+4	1.88E+4	1.88E+4	1.69E+4	1.86E+4	1.86E+4	1.66E+4	1.82E+4	1.82E+4	1.49E+4	1.64E+4	1.64E+4	1.41E+4	1.55E+4	1.55E+4
VI	3.24E+4	2.99E+5	3.47E+6	3.23E+4	2.99E+5	3.47E+6	3.23E+4	2.99E+5	3.47E+6	3.20E+4	2.96E+5	3.44E+6	3.18E+4	2.95E+5	3.42E+6
VII	2.41E+4	1.91E+5	1.31E+6	2.21E+4	1.75E+5	1.20E+6	1.72E+4	1.36E+5	9.29E+5	7.28E+3	5.78E+4	3.95E+5	5.77E+3	4.59E+4	3.14E+5
IX	8.26E+1	6.67E+2	4.13E+3	6.94E+1	5.61E+2	3.47E+3	5.67E+1	4.58E+2	2.84E+3	2.66E+1	2.15E+2	1.33E+3	1.86E+1	1.50E+2	9.32E+2
X	1.47E+3	1.78E+4	2.04E+4	1.46E+3	1.69E+4	1.94E+4	1.43E+3	1.52E+4	1.73E+4	1.35E+3	9.88E+3	1.12E+4	1.31E+3	8.73E+3	9.87E+3
XII	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.79E+3	2.70E+2	1.68E+3	2.79E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.87E-1	1.07E+0	1.07E+0	9.86E-1	1.07E+0	1.07E+0	9.84E-1	1.07E+0	1.07E+0	9.78E-1	1.06E+0	1.06E+0	9.75E-1	1.06E+0	1.06E+0
XVIB	9.80E-1	1.06E+0	1.06E+0	9.79E-1	1.06E+0	1.06E+0	9.77E-1	1.06E+0	1.06E+0	9.71E-1	1.05E+0	1.05E+0	9.68E-1	1.05E+0	1.05E+0
XVIC	9.68E-1	1.05E+0	1.05E+0	9.67E-1	1.05E+0	1.05E+0	9.65E-1	1.05E+0	1.05E+0	9.59E-1	1.04E+0	1.04E+0	9.57E-1	1.04E+0	1.04E+0
XVIIIA	7.76E+1	8.34E+1	8.34E+1	7.76E+1	8.34E+1	8.34E+1	7.75E+1	8.33E+1	8.33E+1	7.65E+1	8.22E+1	8.22E+1	7.60E+1	8.16E+1	8.16E+1
XVIIIB	7.05E+1	7.46E+1	7.46E+1	7.05E+1	7.45E+1	7.45E+1	7.04E+1	7.45E+1	7.45E+1	6.95E+1	7.35E+1	7.35E+1	6.90E+1	7.30E+1	7.30E+1
XVIIIC	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.87E+1	6.06E+1	6.06E+1	5.80E+1	5.98E+1	5.98E+1	5.76E+1	5.94E+1	5.94E+1
XXA	1.72E+1	1.38E+2	1.07E+3	7.11E+0	5.72E+1	4.44E+2	4.62E+0	3.72E+1	2.89E+2	3.69E+0	2.97E+1	2.31E+2	3.43E+0	2.76E+1	2.14E+2
XXB	1.65E+1	9.94E+1	4.38E+2	6.83E+0	4.11E+1	1.81E+2	4.44E+0	2.67E+1	1.18E+2	3.55E+0	2.14E+1	9.42E+1	3.29E+0	1.98E+1	8.74E+1
XXC	1.52E+1	5.61E+1	1.28E+3	6.27E+0	2.32E+1	5.31E+2	4.08E+0	1.51E+1	3.46E+2	3.26E+0	1.20E+1	2.76E+2	3.02E+0	1.12E+1	2.56E+2
XXIA	1.91E+1	1.91E+2	1.88E+3	1.90E+1	1.91E+2	1.88E+3	1.89E+1	1.90E+2	1.87E+3	1.83E+1	1.84E+2	1.81E+3	1.79E+1	1.79E+2	1.76E+3
XXIB	1.90E+1	1.91E+2	1.83E+3	1.90E+1	1.91E+2	1.82E+3	1.89E+1	1.90E+2	1.81E+3	1.83E+1	1.84E+2	1.76E+3	1.78E+1	1.79E+2	1.71E+3
XXIC	1.90E+1	1.90E+2	1.72E+3	1.89E+1	1.89E+2	1.72E+3	1.88E+1	1.88E+2	1.71E+3	1.82E+1	1.82E+2	1.66E+3	1.77E+1	1.77E+2	1.61E+3
XXII	3.25E+3	8.22E+4	1.34E+5	3.23E+3	8.19E+4	1.34E+5	3.21E+3	8.09E+4	1.32E+5	3.03E+3	7.78E+4	1.27E+5	3.01E+3	7.67E+4	1.25E+5
DOE	1.07E+6	1.39E+7	1.04E+8	1.07E+6	1.38E+7	1.04E+8	1.06E+6	1.38E+7	1.03E+8	1.04E+6	1.36E+7	1.02E+8	1.03E+6	1.36E+7	1.01E+8
DOD	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.79E+3	2.70E+2	1.68E+3	2.79E+3
NRC	5.12E+3	1.03E+4	5.76E+4	4.98E+3	9.47E+3	4.99E+4	4.94E+3	9.25E+3	4.78E+4	4.86E+3	8.99E+3	4.58E+4	4.81E+3	8.83E+3	4.46E+4
Total	1.08E+6	1.39E+7	1.04E+8	1.07E+6	1.39E+7	1.04E+8	1.07E+6	1.38E+7	1.03E+8	1.05E+6	1.36E+7	1.02E+8	1.04E+6	1.36E+7	1.02E+8

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 Table M-147. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.67E+2	7.34E+2	7.34E+2	6.51E+2	7.16E+2	7.16E+2	6.38E+2	7.03E+2	7.03E+2	6.06E+2	6.67E+2	6.67E+2	5.80E+2	6.38E+2	6.38E+2
II	2.69E+5	6.27E+6	2.29E+7	2.69E+5	6.27E+6	2.29E+7	2.69E+5	6.27E+6	2.29E+7	2.69E+5	6.27E+6	2.29E+7	2.69E+5	6.27E+6	2.28E+7
III	2.85E+2	3.17E+2	3.17E+2	2.83E+2	3.14E+2	3.14E+2	2.77E+2	3.08E+2	3.08E+2	2.38E+2	2.65E+2	2.65E+2	2.10E+2	2.34E+2	2.34E+2
IV	1.51E+3	1.06E+4	2.25E+4	1.49E+3	1.04E+4	2.21E+4	1.47E+3	1.03E+4	2.19E+4	1.42E+3	9.96E+3	2.12E+4	1.40E+3	9.78E+3	2.08E+4
V	1.76E+4	1.93E+4	1.93E+4	1.75E+4	1.92E+4	1.92E+4	1.74E+4	1.92E+4	1.92E+4	1.72E+4	1.89E+4	1.89E+4	1.70E+4	1.86E+4	1.86E+4
VI	3.24E+4	2.99E+5	3.48E+6	3.24E+4	2.99E+5	3.48E+6	3.24E+4	2.99E+5	3.48E+6	3.24E+4	2.99E+5	3.48E+6	3.23E+4	2.99E+5	3.47E+6
VII	3.31E+4	2.64E+5	1.80E+6	3.01E+4	2.40E+5	1.64E+6	2.81E+4	2.23E+5	1.53E+6	2.41E+4	1.91E+5	1.30E+6	2.12E+4	1.68E+5	1.15E+6
IX	1.36E+2	1.10E+3	6.79E+3	1.20E+2	9.67E+2	5.99E+3	1.08E+2	8.71E+2	5.40E+3	8.20E+1	6.63E+2	4.10E+3	6.49E+1	5.24E+2	3.25E+3
X	1.54E+3	1.88E+4	2.15E+4	1.53E+3	1.88E+4	2.15E+4	1.52E+3	1.87E+4	2.14E+4	1.49E+3	1.83E+4	2.10E+4	1.47E+3	1.77E+4	2.02E+4
XII	2.71E+2	1.69E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3
XIIIA	6.29E-1	4.80E+0	1.35E+1	3.67E-1	2.80E+0	7.89E+0	1.80E-1	1.37E+0	3.86E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	6.00E-1	3.43E+0	5.68E+0	3.50E-1	2.00E+0	3.32E+0	1.72E-1	9.79E-1	1.62E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	5.47E-1	1.91E+0	3.94E+1	3.19E-1	1.12E+0	2.30E+1	1.56E-1	5.47E-1	1.13E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.87E-1	1.07E+0	1.07E+0	9.87E-1	1.07E+0	1.07E+0	9.87E-1	1.07E+0	1.07E+0	9.87E-1	1.07E+0	1.07E+0	9.86E-1	1.07E+0	1.07E+0
XVIB	9.80E-1	1.06E+0	1.06E+0	9.80E-1	1.06E+0	1.06E+0	9.80E-1	1.06E+0	1.06E+0	9.80E-1	1.06E+0	1.06E+0	9.79E-1	1.06E+0	1.06E+0
XVIC	9.69E-1	1.05E+0	1.05E+0	9.69E-1	1.05E+0	1.05E+0	9.69E-1	1.05E+0	1.05E+0	9.68E-1	1.05E+0	1.05E+0	9.68E-1	1.05E+0	1.05E+0
XVIIIA	7.77E+1	8.35E+1	8.35E+1	7.77E+1	8.35E+1	8.35E+1	7.77E+1	8.35E+1	8.35E+1	7.77E+1	8.35E+1	8.35E+1	7.76E+1	8.34E+1	8.34E+1
XVIIIB	7.06E+1	7.46E+1	7.46E+1	7.06E+1	7.46E+1	7.46E+1	7.06E+1	7.46E+1	7.46E+1	7.06E+1	7.46E+1	7.46E+1	7.05E+1	7.45E+1	7.45E+1
XVIIIC	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1	5.88E+1	6.07E+1	6.07E+1
XXA	8.57E+1	6.90E+2	5.35E+3	5.65E+1	4.55E+2	3.53E+3	4.18E+1	3.37E+2	2.61E+3	1.19E+1	9.62E+1	7.46E+2	5.05E+0	4.06E+1	3.15E+2
XXB	8.24E+1	4.96E+2	2.18E+3	5.43E+1	3.27E+2	1.44E+3	4.02E+1	2.42E+2	1.07E+3	1.15E+1	6.91E+1	3.04E+2	4.85E+0	2.92E+1	1.29E+2
XXC	7.57E+1	2.80E+2	6.41E+3	4.99E+1	1.84E+2	4.22E+3	3.69E+1	1.37E+2	3.13E+3	1.05E+1	3.90E+1	8.93E+2	4.45E+0	1.65E+1	3.77E+2
XXIA	1.91E+1	1.92E+2	1.89E+3	1.91E+1	1.92E+2	1.89E+3	1.91E+1	1.92E+2	1.89E+3	1.91E+1	1.91E+2	1.88E+3	1.90E+1	1.91E+2	1.88E+3
XXIB	1.91E+1	1.92E+2	1.84E+3	1.91E+1	1.92E+2	1.84E+3	1.91E+1	1.92E+2	1.84E+3	1.90E+1	1.91E+2	1.83E+3	1.90E+1	1.91E+2	1.82E+3
XXIC	1.90E+1	1.90E+2	1.73E+3	1.90E+1	1.90E+2	1.73E+3	1.90E+1	1.90E+2	1.73E+3	1.90E+1	1.90E+2	1.73E+3	1.89E+1	1.89E+2	1.72E+3
XXII	3.29E+3	8.27E+4	1.35E+5	3.29E+3	8.26E+4	1.35E+5	3.28E+3	8.25E+4	1.35E+5	3.26E+3	8.22E+4	1.34E+5	3.23E+3	8.19E+4	1.34E+5
DOE	1.08E+6	1.39E+7	1.05E+8	1.08E+6	1.39E+7	1.04E+8	1.08E+6	1.39E+7	1.04E+8	1.07E+6	1.39E+7	1.04E+8	1.07E+6	1.38E+7	1.04E+8
DOD	2.76E+2	1.71E+3	2.97E+3	2.73E+2	1.70E+3	2.90E+3	2.72E+2	1.69E+3	2.84E+3	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.80E+3
NRC	6.03E+3	1.58E+4	1.10E+5	5.64E+3	1.34E+4	8.76E+4	5.45E+3	1.23E+4	7.65E+4	5.05E+3	9.88E+3	5.37E+4	4.95E+3	9.31E+3	4.83E+4
Total	1.09E+6	1.40E+7	1.05E+8	1.08E+6	1.39E+7	1.05E+8	1.08E+6	1.39E+7	1.04E+8	1.08E+6	1.39E+7	1.04E+8	1.07E+6	1.38E+7	1.04E+8

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 Table M-148. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.39E+2	5.93E+2	5.93E+2	5.10E+2	5.62E+2	5.62E+2	4.70E+2	5.18E+2	5.18E+2	3.38E+2	3.72E+2	3.72E+2	2.94E+2	3.23E+2	3.23E+2
II	2.69E+5	6.26E+6	2.27E+7	2.69E+5	6.26E+6	2.27E+7	2.69E+5	6.26E+6	2.26E+7	2.67E+5	6.21E+6	2.22E+7	2.65E+5	6.18E+6	2.20E+7
III	1.82E+2	2.02E+2	2.02E+2	1.50E+2	1.67E+2	1.67E+2	9.56E+1	1.06E+2	1.06E+2	2.51E+1	2.79E+1	2.79E+1	1.41E+1	1.57E+1	1.57E+1
IV	1.33E+3	9.34E+3	1.98E+4	1.27E+3	8.89E+3	1.89E+4	1.14E+3	8.00E+3	1.70E+4	5.07E+2	3.55E+3	7.54E+3	1.89E+2	1.32E+3	2.81E+3
V	1.65E+4	1.81E+4	1.81E+4	1.60E+4	1.76E+4	1.76E+4	1.51E+4	1.66E+4	1.66E+4	1.26E+4	1.39E+4	1.39E+4	1.20E+4	1.32E+4	1.32E+4
VI	3.23E+4	2.98E+5	3.47E+6	3.22E+4	2.98E+5	3.46E+6	3.20E+4	2.96E+5	3.44E+6	3.11E+4	2.88E+5	3.35E+6	3.07E+4	2.85E+5	3.31E+6
VII	1.43E+4	1.13E+5	7.76E+5	1.02E+4	8.08E+4	5.52E+5	6.76E+3	5.37E+4	3.67E+5	3.72E+1	2.87E+2	1.95E+3	.00E+0	.00E+0	.00E+0
IX	4.73E+1	3.82E+2	2.37E+3	3.41E+1	2.76E+2	1.71E+3	2.33E+1	1.89E+2	1.17E+3	4.24E+0	3.42E+1	2.12E+2	.00E+0	.00E+0	.00E+0
X	1.44E+3	1.58E+4	1.80E+4	1.41E+3	1.40E+4	1.59E+4	1.38E+3	1.13E+4	1.29E+4	1.24E+3	6.85E+3	7.71E+3	1.20E+3	5.80E+3	6.51E+3
XII	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.79E+3	2.70E+2	1.68E+3	2.79E+3	2.68E+2	1.67E+3	2.77E+3	2.67E+2	1.66E+3	2.76E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.83E-1	1.07E+0	1.07E+0	9.81E-1	1.06E+0	1.06E+0	9.79E-1	1.06E+0	1.06E+0	9.55E-1	1.04E+0	1.04E+0	9.41E-1	1.02E+0	1.02E+0
XVIB	9.76E-1	1.06E+0	1.06E+0	9.74E-1	1.06E+0	1.06E+0	9.71E-1	1.05E+0	1.05E+0	9.48E-1	1.03E+0	1.03E+0	9.34E-1	1.02E+0	1.02E+0
XVIC	9.65E-1	1.05E+0	1.05E+0	9.63E-1	1.04E+0	1.04E+0	9.60E-1	1.04E+0	1.04E+0	9.37E-1	1.02E+0	1.02E+0	9.23E-1	1.00E+0	1.00E+0
XVIIIA	7.75E+1	8.33E+1	8.33E+1	7.72E+1	8.30E+1	8.30E+1	7.65E+1	8.22E+1	8.22E+1	7.31E+1	7.85E+1	7.85E+1	7.14E+1	7.67E+1	7.67E+1
XVIIIB	7.04E+1	7.44E+1	7.44E+1	7.01E+1	7.41E+1	7.41E+1	6.95E+1	7.35E+1	7.35E+1	6.64E+1	7.02E+1	7.02E+1	6.49E+1	6.86E+1	6.86E+1
XVIIIC	5.87E+1	6.06E+1	6.06E+1	5.85E+1	6.03E+1	6.03E+1	5.80E+1	5.98E+1	5.98E+1	5.54E+1	5.71E+1	5.71E+1	5.41E+1	5.58E+1	5.58E+1
XXA	4.26E+0	3.43E+1	2.66E+2	3.91E+0	3.15E+1	2.45E+2	3.45E+0	2.78E+1	2.16E+2	2.39E+0	1.92E+1	1.49E+2	2.02E+0	1.63E+1	1.26E+2
XXB	4.10E+0	2.47E+1	1.09E+2	3.76E+0	2.26E+1	9.99E+1	3.32E+0	2.00E+1	8.81E+1	2.30E+0	1.38E+1	6.10E+1	1.94E+0	1.17E+1	5.16E+1
XXC	3.76E+0	1.39E+1	3.19E+2	3.46E+0	1.28E+1	2.93E+2	3.05E+0	1.13E+1	2.58E+2	2.11E+0	7.80E+0	1.79E+2	1.78E+0	6.59E+0	1.51E+2
XXIA	1.88E+1	1.89E+2	1.86E+3	1.87E+1	1.87E+2	1.84E+3	1.83E+1	1.84E+2	1.81E+3	1.54E+1	1.54E+2	1.52E+3	1.43E+1	1.44E+2	1.41E+3
XXIB	1.88E+1	1.89E+2	1.81E+3	1.86E+1	1.87E+2	1.79E+3	1.83E+1	1.84E+2	1.76E+3	1.54E+1	1.54E+2	1.48E+3	1.43E+1	1.44E+2	1.37E+3
XXIC	1.87E+1	1.87E+2	1.70E+3	1.86E+1	1.85E+2	1.69E+3	1.82E+1	1.82E+2	1.66E+3	1.53E+1	1.53E+2	1.39E+3	1.42E+1	1.42E+2	1.30E+3
XXII	3.20E+3	8.07E+4	1.32E+5	3.14E+3	8.00E+4	1.31E+5	3.03E+3	7.78E+4	1.27E+5	2.91E+3	7.46E+4	1.22E+5	2.60E+3	7.34E+4	1.20E+5
DOE	1.06E+6	1.38E+7	1.03E+8	1.05E+6	1.37E+7	1.03E+8	1.04E+6	1.36E+7	1.02E+8	1.01E+6	1.33E+7	9.90E+7	9.94E+5	1.32E+7	9.81E+7
DOD	2.70E+2	1.68E+3	2.80E+3	2.70E+2	1.68E+3	2.79E+3	2.70E+2	1.68E+3	2.79E+3	2.68E+2	1.67E+3	2.77E+3	2.67E+2	1.66E+3	2.76E+3
NRC	4.93E+3	9.20E+3	4.73E+4	4.90E+3	9.12E+3	4.67E+4	4.85E+3	8.96E+3	4.56E+4	4.58E+3	8.03E+3	3.84E+4	4.45E+3	7.66E+3	3.58E+4
Total	1.06E+6	1.38E+7	1.03E+8	1.06E+6	1.37E+7	1.03E+8	1.05E+6	1.36E+7	1.02E+8	1.01E+6	1.33E+7	9.91E+7	9.99E+5	1.32E+7	9.81E+7

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 Table M-149. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	3.73E-1	4.12E-1	4.12E-1	3.68E-1	4.06E-1	4.06E-1	3.63E-1	4.01E-1	4.01E-1	3.53E-1	3.90E-1	3.90E-1	3.47E-1	3.83E-1	3.83E-1
II	4.20E+1	4.13E+2	3.54E+3	4.19E+1	4.13E+2	3.54E+3	4.19E+1	4.13E+2	3.54E+3	4.19E+1	4.13E+2	3.54E+3	4.19E+1	4.12E+2	3.54E+3
III	1.58E-1	1.75E-1	1.75E-1	1.58E-1	1.75E-1	1.75E-1	1.57E-1	1.74E-1	1.74E-1	1.53E-1	1.69E-1	1.69E-1	1.46E-1	1.61E-1	1.61E-1
IV	3.15E-1	2.20E+0	4.44E+0	3.13E-1	2.19E+0	4.41E+0	3.11E-1	2.17E+0	4.38E+0	3.06E-1	2.14E+0	4.31E+0	3.02E-1	2.11E+0	4.26E+0
V	9.75E+0	1.07E+1	1.07E+1	9.74E+0	1.07E+1	1.07E+1	9.73E+0	1.07E+1	1.07E+1	9.67E+0	1.07E+1	1.07E+1	9.62E+0	1.06E+1	1.06E+1
VI	7.00E+0	6.21E+1	6.26E+2	7.00E+0	6.21E+1	6.26E+2	7.00E+0	6.21E+1	6.26E+2	7.00E+0	6.21E+1	6.26E+2	7.00E+0	6.21E+1	6.26E+2
VII	2.67E+0	1.86E+1	1.22E+2	2.61E+0	1.82E+1	1.19E+2	2.52E+0	1.75E+1	1.15E+2	2.33E+0	1.60E+1	1.04E+2	2.21E+0	1.50E+1	9.78E+1
IX	9.64E-3	7.73E-2	4.72E-1	9.15E-3	7.33E-2	4.48E-1	8.69E-3	6.97E-2	4.26E-1	7.56E-3	6.06E-2	3.70E-1	6.79E-3	5.44E-2	3.33E-1
X	1.56E+0	5.13E+0	5.68E+0	1.56E+0	5.13E+0	5.68E+0	1.56E+0	5.13E+0	5.68E+0	1.55E+0	5.11E+0	5.66E+0	1.54E+0	5.07E+0	5.61E+0
XII	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1
XIIIA	1.65E-4	1.26E-3	3.28E-3	1.32E-4	1.01E-3	2.63E-3	9.24E-5	7.08E-4	1.84E-3	1.82E-5	1.39E-4	3.62E-4	.00E+0	.00E+0	.00E+0
XIIIB	1.58E-4	8.99E-4	1.39E-3	1.27E-4	7.22E-4	1.11E-3	8.86E-5	5.04E-4	7.77E-4	1.75E-5	9.94E-5	1.53E-4	.00E+0	.00E+0	.00E+0
XIIIC	1.44E-4	5.03E-4	1.03E-2	1.15E-4	4.04E-4	8.26E-3	8.06E-5	2.82E-4	5.77E-3	1.59E-5	5.56E-5	1.14E-3	.00E+0	.00E+0	.00E+0
XVIA	5.39E-4	5.89E-4	5.89E-4	5.39E-4	5.89E-4	5.89E-4	5.39E-4	5.89E-4	5.89E-4	5.39E-4	5.89E-4	5.89E-4	5.39E-4	5.89E-4	5.89E-4
XVIB	5.36E-4	5.85E-4	5.85E-4	5.36E-4	5.85E-4	5.85E-4	5.36E-4	5.85E-4	5.85E-4	5.36E-4	5.85E-4	5.85E-4	5.36E-4	5.85E-4	5.85E-4
XVIC	5.32E-4	5.78E-4	5.78E-4	5.32E-4	5.78E-4	5.78E-4	5.32E-4	5.78E-4	5.78E-4	5.32E-4	5.78E-4	5.78E-4	5.32E-4	5.78E-4	5.78E-4
XVIIIA	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2
XVIIIB	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2
XVIIIC	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2
XXA	1.95E-2	1.56E-1	1.08E+0	1.48E-2	1.18E-1	8.18E-1	1.25E-2	1.00E-1	6.93E-1	8.72E-3	6.98E-2	4.83E-1	6.57E-3	5.26E-2	3.64E-1
XXB	1.88E-2	1.12E-1	4.42E-1	1.42E-2	8.50E-2	3.34E-1	1.21E-2	7.20E-2	2.83E-1	8.39E-3	5.01E-2	1.97E-1	6.33E-3	3.78E-2	1.49E-1
XXC	1.72E-2	6.33E-2	1.42E+0	1.31E-2	4.79E-2	1.08E+0	1.11E-2	4.06E-2	9.12E-1	7.70E-3	2.83E-2	6.35E-1	5.80E-3	2.13E-2	4.78E-1
XXIA	4.17E-3	4.23E-2	4.13E-1	4.17E-3	4.23E-2	4.13E-1	4.17E-3	4.23E-2	4.13E-1	4.17E-3	4.23E-2	4.13E-1	4.17E-3	4.23E-2	4.13E-1
XXIB	4.15E-3	4.19E-2	3.97E-1	4.15E-3	4.19E-2	3.97E-1	4.15E-3	4.19E-2	3.97E-1	4.15E-3	4.19E-2	3.96E-1	4.15E-3	4.19E-2	3.96E-1
XXIC	4.13E-3	4.14E-2	3.67E-1	4.13E-3	4.14E-2	3.67E-1	4.13E-3	4.14E-2	3.67E-1	4.13E-3	4.14E-2	3.67E-1	4.13E-3	4.14E-2	3.67E-1
XXII	5.56E-1	1.42E+1	2.53E+1	5.56E-1	1.42E+1	2.53E+1	5.55E-1	1.42E+1	2.53E+1	5.54E-1	1.42E+1	2.53E+1	5.53E-1	1.42E+1	2.53E+1
DOE	2.20E+2	1.96E+3	1.81E+4	2.20E+2	1.96E+3	1.81E+4	2.20E+2	1.96E+3	1.81E+4	2.19E+2	1.96E+3	1.81E+4	2.19E+2	1.95E+3	1.80E+4
DOD	2.11E-2	1.31E-1	2.47E-1	2.08E-2	1.29E-1	2.38E-1	2.05E-2	1.27E-1	2.28E-1	1.99E-2	1.24E-1	2.09E-1	1.97E-2	1.23E-1	2.04E-1
NRC	2.20E+0	4.43E+0	2.43E+1	2.13E+0	4.05E+0	2.10E+1	2.10E+0	3.87E+0	1.94E+1	2.05E+0	3.57E+0	1.67E+1	2.02E+0	3.40E+0	1.52E+1
Total	2.22E+2	1.96E+3	1.81E+4	2.22E+2	1.96E+3	1.81E+4	2.22E+2	1.96E+3	1.81E+4	2.21E+2	1.96E+3	1.81E+4	2.21E+2	1.96E+3	1.81E+4

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 Table M-150. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	3.31E-1	3.66E-1	3.66E-1	3.20E-1	3.53E-1	3.53E-1	3.03E-1	3.34E-1	3.34E-1	2.58E-1	2.85E-1	2.85E-1	2.47E-1	2.72E-1	2.72E-1
II	4.19E+1	4.12E+2	3.53E+3	4.19E+1	4.12E+2	3.52E+3	4.19E+1	4.12E+2	3.51E+3	4.19E+1	4.11E+2	3.49E+3	4.18E+1	4.10E+2	3.48E+3
III	1.25E-1	1.39E-1	1.39E-1	1.16E-1	1.28E-1	1.28E-1	1.04E-1	1.16E-1	1.16E-1	4.83E-2	5.35E-2	5.35E-2	3.12E-2	3.46E-2	3.46E-2
IV	2.95E-1	2.06E+0	4.16E+0	2.91E-1	2.03E+0	4.10E+0	2.82E-1	1.97E+0	3.98E+0	2.40E-1	1.67E+0	3.38E+0	2.18E-1	1.53E+0	3.08E+0
V	9.50E+0	1.05E+1	1.05E+1	9.39E+0	1.03E+1	1.03E+1	9.21E+0	1.01E+1	1.01E+1	8.29E+0	9.12E+0	9.12E+0	7.83E+0	8.62E+0	8.62E+0
VI	6.99E+0	6.21E+1	6.26E+2	6.99E+0	6.21E+1	6.26E+2	6.97E+0	6.20E+1	6.25E+2	6.90E+0	6.15E+1	6.20E+2	6.85E+0	6.12E+1	6.17E+2
VII	2.01E+0	1.35E+1	8.78E+1	1.85E+0	1.24E+1	8.05E+1	1.44E+0	9.60E+0	6.25E+1	5.96E-1	4.07E+0	2.66E+1	4.69E-1	3.23E+0	2.11E+1
IX	5.67E-3	4.54E-2	2.78E-1	4.76E-3	3.82E-2	2.33E-1	3.89E-3	3.12E-2	1.91E-1	1.82E-3	1.46E-2	8.93E-2	1.28E-3	1.02E-2	6.26E-2
X	1.53E+0	4.93E+0	5.45E+0	1.52E+0	4.74E+0	5.24E+0	1.50E+0	4.38E+0	4.81E+0	1.42E+0	3.24E+0	3.51E+0	1.38E+0	2.98E+0	3.21E+0
XII	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.39E-4	5.88E-4	5.88E-4	5.39E-4	5.88E-4	5.88E-4	5.38E-4	5.87E-4	5.87E-4	5.35E-4	5.84E-4	5.84E-4	5.33E-4	5.82E-4	5.82E-4
XVIB	5.36E-4	5.85E-4	5.85E-4	5.35E-4	5.84E-4	5.84E-4	5.34E-4	5.83E-4	5.83E-4	5.31E-4	5.80E-4	5.80E-4	5.30E-4	5.79E-4	5.79E-4
XVIC	5.32E-4	5.78E-4	5.78E-4	5.31E-4	5.77E-4	5.77E-4	5.30E-4	5.76E-4	5.76E-4	5.27E-4	5.73E-4	5.73E-4	5.26E-4	5.72E-4	5.72E-4
XVIIIA	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.40E-2	3.40E-2	3.12E-2	3.36E-2	3.36E-2	3.09E-2	3.33E-2	3.33E-2
XVIIIB	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.05E-2	3.05E-2	2.85E-2	3.01E-2	3.01E-2	2.83E-2	2.99E-2	2.99E-2
XVIIIC	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.41E-2	2.49E-2	2.49E-2	2.38E-2	2.46E-2	2.46E-2	2.37E-2	2.44E-2	2.44E-2
XXA	3.12E-3	2.50E-2	1.73E-1	1.29E-3	1.03E-2	7.15E-2	8.41E-4	6.72E-3	4.65E-2	6.71E-4	5.37E-3	3.72E-2	6.23E-4	4.98E-3	3.45E-2
XXB	3.01E-3	1.79E-2	7.06E-2	1.24E-3	7.42E-3	2.92E-2	8.09E-4	4.83E-3	1.90E-2	6.46E-4	3.86E-3	1.52E-2	5.99E-4	3.58E-3	1.41E-2
XXC	2.76E-3	1.01E-2	2.27E-1	1.14E-3	4.18E-3	9.40E-2	7.42E-4	2.72E-3	6.12E-2	5.92E-4	2.17E-3	4.88E-2	5.50E-4	2.02E-3	4.53E-2
XXIA	4.15E-3	4.22E-2	4.12E-1	4.14E-3	4.20E-2	4.10E-1	4.12E-3	4.18E-2	4.08E-1	4.00E-3	4.05E-2	3.96E-1	3.89E-3	3.95E-2	3.85E-1
XXIB	4.14E-3	4.18E-2	3.95E-1	4.12E-3	4.17E-2	3.94E-1	4.10E-3	4.14E-2	3.92E-1	3.98E-3	4.02E-2	3.80E-1	3.87E-3	3.91E-2	3.70E-1
XXIC	4.12E-3	4.12E-2	3.66E-1	4.10E-3	4.11E-2	3.65E-1	4.08E-3	4.09E-2	3.63E-1	3.96E-3	3.97E-2	3.52E-1	3.85E-3	3.86E-2	3.42E-1
XXII	5.49E-1	1.42E+1	2.52E+1	5.46E-1	1.41E+1	2.51E+1	5.42E-1	1.39E+1	2.48E+1	5.12E-1	1.34E+1	2.38E+1	5.08E-1	1.32E+1	2.35E+1
DOE	2.18E+2	1.95E+3	1.80E+4	2.18E+2	1.95E+3	1.80E+4	2.17E+2	1.94E+3	1.79E+4	2.13E+2	1.92E+3	1.78E+4	2.11E+2	1.91E+3	1.77E+4
DOD	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1
NRC	1.98E+0	3.12E+0	1.27E+1	1.95E+0	2.97E+0	1.14E+1	1.94E+0	2.93E+0	1.11E+1	1.92E+0	2.86E+0	1.07E+1	1.90E+0	2.82E+0	1.04E+1
Total	2.20E+2	1.95E+3	1.80E+4	2.20E+2	1.95E+3	1.80E+4	2.19E+2	1.94E+3	1.80E+4	2.15E+2	1.92E+3	1.78E+4	2.13E+2	1.91E+3	1.77E+4

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 Table M-151. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	3.70E-1	4.09E-1	4.09E-1	3.61E-1	3.99E-1	3.99E-1	3.54E-1	3.91E-1	3.91E-1	3.36E-1	3.71E-1	3.71E-1	3.22E-1	3.55E-1	3.55E-1
II	4.20E+1	4.13E+2	3.54E+3	4.19E+1	4.13E+2	3.54E+3	4.19E+1	4.13E+2	3.54E+3	4.19E+1	4.12E+2	3.53E+3	4.19E+1	4.12E+2	3.52E+3
III	1.58E-1	1.75E-1	1.75E-1	1.57E-1	1.73E-1	1.73E-1	1.53E-1	1.70E-1	1.70E-1	1.32E-1	1.46E-1	1.46E-1	1.17E-1	1.29E-1	1.29E-1
IV	3.14E-1	2.19E+0	4.42E+0	3.09E-1	2.16E+0	4.36E+0	3.06E-1	2.14E+0	4.31E+0	2.96E-1	2.07E+0	4.17E+0	2.90E-1	2.03E+0	4.09E+0
V	9.74E+0	1.07E+1	1.07E+1	9.72E+0	1.07E+1	1.07E+1	9.68E+0	1.07E+1	1.07E+1	9.54E+0	1.05E+1	1.05E+1	9.41E+0	1.04E+1	1.04E+1
VI	7.00E+0	6.21E+1	6.26E+2	7.00E+0	6.21E+1	6.26E+2	7.00E+0	6.21E+1	6.26E+2	7.00E+0	6.21E+1	6.26E+2	6.99E+0	6.21E+1	6.26E+2
VII	2.65E+0	1.85E+1	1.21E+2	2.44E+0	1.68E+1	1.10E+2	2.30E+0	1.57E+1	1.03E+2	2.01E+0	1.35E+1	8.78E+1	1.78E+0	1.19E+1	7.72E+1
IX	9.32E-3	7.47E-2	4.56E-1	8.21E-3	6.58E-2	4.02E-1	7.40E-3	5.93E-2	3.63E-1	5.63E-3	4.51E-2	2.76E-1	4.46E-3	3.57E-2	2.18E-1
X	1.56E+0	5.13E+0	5.68E+0	1.56E+0	5.13E+0	5.68E+0	1.55E+0	5.12E+0	5.67E+0	1.54E+0	5.04E+0	5.57E+0	1.52E+0	4.90E+0	5.42E+0
XII	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1
XIIIA	1.50E-4	1.15E-3	2.98E-3	8.76E-5	6.71E-4	1.74E-3	4.29E-5	3.29E-4	8.53E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.44E-4	8.19E-4	1.26E-3	8.40E-5	4.78E-4	7.37E-4	4.11E-5	2.34E-4	3.61E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.31E-4	4.58E-4	9.38E-3	7.64E-5	2.67E-4	5.47E-3	3.74E-5	1.31E-4	2.68E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.39E-4	5.89E-4	5.89E-4	5.39E-4	5.89E-4	5.89E-4	5.39E-4	5.89E-4	5.89E-4	5.39E-4	5.88E-4	5.88E-4	5.39E-4	5.88E-4	5.88E-4
XVIB	5.36E-4	5.85E-4	5.85E-4	5.36E-4	5.85E-4	5.85E-4	5.36E-4	5.85E-4	5.85E-4	5.36E-4	5.85E-4	5.85E-4	5.35E-4	5.84E-4	5.84E-4
XVIC	5.32E-4	5.78E-4	5.78E-4	5.32E-4	5.78E-4	5.78E-4	5.32E-4	5.78E-4	5.78E-4	5.32E-4	5.78E-4	5.78E-4	5.31E-4	5.78E-4	5.78E-4
XVIIIA	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2	3.16E-2	3.41E-2	3.41E-2
XVIIIB	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2	2.89E-2	3.06E-2	3.06E-2
XVIIIC	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2	2.42E-2	2.50E-2	2.50E-2
XXA	1.56E-2	1.25E-1	8.62E-1	1.03E-2	8.22E-2	5.68E-1	7.61E-3	6.08E-2	4.21E-1	2.17E-3	1.74E-2	1.20E-1	9.17E-4	7.34E-3	5.08E-2
XXB	1.50E-2	8.96E-2	3.52E-1	9.89E-3	5.90E-2	2.32E-1	7.32E-3	4.37E-2	1.72E-1	2.09E-3	1.25E-2	4.91E-2	8.83E-4	5.27E-3	2.08E-2
XXC	1.38E-2	5.05E-2	1.13E+0	9.07E-3	3.33E-2	7.47E-1	6.71E-3	2.46E-2	5.54E-1	1.92E-3	7.03E-3	1.58E-1	8.10E-4	2.97E-3	6.67E-2
XXIA	4.17E-3	4.23E-2	4.13E-1	4.17E-3	4.23E-2	4.13E-1	4.17E-3	4.23E-2	4.13E-1	4.16E-3	4.22E-2	4.12E-1	4.14E-3	4.20E-2	4.10E-1
XXIB	4.15E-3	4.19E-2	3.97E-1	4.15E-3	4.19E-2	3.96E-1	4.15E-3	4.19E-2	3.96E-1	4.14E-3	4.18E-2	3.95E-1	4.12E-3	4.17E-2	3.94E-1
XXIC	4.13E-3	4.14E-2	3.67E-1	4.13E-3	4.14E-2	3.67E-1	4.13E-3	4.14E-2	3.67E-1	4.12E-3	4.13E-2	3.66E-1	4.10E-3	4.11E-2	3.65E-1
XXII	5.56E-1	1.42E+1	2.53E+1	5.55E-1	1.42E+1	2.53E+1	5.54E-1	1.42E+1	2.53E+1	5.50E-1	1.42E+1	2.52E+1	5.45E-1	1.41E+1	2.51E+1
DOE	2.20E+2	1.96E+3	1.81E+4	2.19E+2	1.96E+3	1.81E+4	2.19E+2	1.96E+3	1.81E+4	2.19E+2	1.95E+3	1.80E+4	2.18E+2	1.95E+3	1.80E+4
DOD	2.09E-2	1.30E-1	2.43E-1	2.04E-2	1.27E-1	2.27E-1	2.01E-2	1.25E-1	2.15E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1
NRC	2.14E+0	4.11E+0	2.15E+1	2.07E+0	3.69E+0	1.78E+1	2.04E+0	3.48E+0	1.59E+1	1.97E+0	3.05E+0	1.21E+1	1.95E+0	2.94E+0	1.12E+1
Total	2.22E+2	1.96E+3	1.81E+4	2.22E+2	1.96E+3	1.81E+4	2.21E+2	1.96E+3	1.81E+4	2.21E+2	1.96E+3	1.80E+4	2.20E+2	1.95E+3	1.80E+4

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 Table M-152. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.99E-1	3.30E-1	3.30E-1	2.83E-1	3.13E-1	3.13E-1	2.61E-1	2.88E-1	2.88E-1	1.87E-1	2.07E-1	2.07E-1	1.63E-1	1.80E-1	1.80E-1
II	4.19E+1	4.11E+2	3.50E+3	4.19E+1	4.11E+2	3.50E+3	4.19E+1	4.11E+2	3.48E+3	4.16E+1	4.07E+2	3.42E+3	4.13E+1	4.04E+2	3.39E+3
III	1.01E-1	1.12E-1	1.12E-1	8.34E-2	9.23E-2	9.23E-2	5.30E-2	5.86E-2	5.86E-2	1.39E-2	1.54E-2	1.54E-2	7.83E-3	8.68E-3	8.68E-3
IV	2.77E-1	1.94E+0	3.91E+0	2.64E-1	1.85E+0	3.72E+0	2.38E-1	1.66E+0	3.35E+0	1.05E-1	7.36E-1	1.49E+0	3.93E-2	2.75E-1	5.54E-1
V	9.15E+0	1.01E+1	1.01E+1	8.90E+0	9.80E+0	9.80E+0	8.38E+0	9.23E+0	9.23E+0	7.00E+0	7.70E+0	7.70E+0	6.66E+0	7.34E+0	7.34E+0
VI	6.97E+0	6.20E+1	6.25E+2	6.95E+0	6.18E+1	6.24E+2	6.90E+0	6.15E+1	6.21E+2	6.67E+0	5.97E+1	6.03E+2	6.59E+0	5.91E+1	5.97E+2
VII	1.20E+0	8.01E+0	5.22E+1	8.45E-1	5.69E+0	3.71E+1	5.52E-1	3.78E+0	2.47E+1	3.64E-3	2.08E-2	1.32E-1	.00E+0	.00E+0	.00E+0
IX	3.25E-3	2.60E-2	1.59E-1	2.34E-3	1.88E-2	1.15E-1	1.60E-3	1.28E-2	7.85E-2	2.91E-4	2.33E-3	1.42E-2	.00E+0	.00E+0	.00E+0
X	1.50E+0	4.51E+0	4.96E+0	1.48E+0	4.12E+0	4.52E+0	1.45E+0	3.56E+0	3.87E+0	1.31E+0	2.54E+0	2.71E+0	1.27E+0	2.28E+0	2.42E+0
XII	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.03E-1	1.95E-2	1.22E-1	2.02E-1	1.95E-2	1.22E-1	2.01E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	5.37E-4	5.86E-4	5.86E-4	5.37E-4	5.85E-4	5.85E-4	5.35E-4	5.84E-4	5.84E-4	5.23E-4	5.71E-4	5.71E-4	5.16E-4	5.64E-4	5.64E-4
XVIB	5.34E-4	5.83E-4	5.83E-4	5.33E-4	5.82E-4	5.82E-4	5.32E-4	5.80E-4	5.80E-4	5.20E-4	5.68E-4	5.68E-4	5.13E-4	5.61E-4	5.61E-4
XVIC	5.30E-4	5.76E-4	5.76E-4	5.29E-4	5.75E-4	5.75E-4	5.28E-4	5.74E-4	5.74E-4	5.16E-4	5.61E-4	5.61E-4	5.09E-4	5.54E-4	5.54E-4
XVIIIA	3.15E-2	3.40E-2	3.40E-2	3.14E-2	3.39E-2	3.39E-2	3.11E-2	3.36E-2	3.36E-2	2.98E-2	3.21E-2	3.21E-2	2.91E-2	3.13E-2	3.13E-2
XVIIIB	2.88E-2	3.05E-2	3.05E-2	2.87E-2	3.04E-2	3.04E-2	2.85E-2	3.01E-2	3.01E-2	2.72E-2	2.88E-2	2.88E-2	2.66E-2	2.81E-2	2.81E-2
XVIIIC	2.41E-2	2.49E-2	2.49E-2	2.40E-2	2.48E-2	2.48E-2	2.38E-2	2.46E-2	2.46E-2	2.28E-2	2.35E-2	2.35E-2	2.22E-2	2.30E-2	2.30E-2
XXA	7.75E-4	6.20E-3	4.29E-2	7.12E-4	5.69E-3	3.94E-2	6.28E-4	5.02E-3	3.48E-2	4.34E-4	3.47E-3	2.41E-2	3.67E-4	2.94E-3	2.04E-2
XXB	7.46E-4	4.45E-3	1.75E-2	6.85E-4	4.09E-3	1.61E-2	6.04E-4	3.61E-3	1.42E-2	4.18E-4	2.50E-3	9.84E-3	3.53E-4	2.11E-3	8.32E-3
XXC	6.84E-4	2.51E-3	5.64E-2	6.28E-4	2.31E-3	5.18E-2	5.54E-4	2.03E-3	4.57E-2	3.83E-4	1.41E-3	3.16E-2	3.24E-4	1.19E-3	2.67E-2
XXIA	4.10E-3	4.16E-2	4.06E-1	4.07E-3	4.12E-2	4.03E-1	3.99E-3	4.05E-2	3.95E-1	3.35E-3	3.40E-2	3.32E-1	3.12E-3	3.17E-2	3.09E-1
XXIB	4.09E-3	4.13E-2	3.90E-1	4.05E-3	4.09E-2	3.87E-1	3.97E-3	4.01E-2	3.79E-1	3.34E-3	3.37E-2	3.19E-1	3.11E-3	3.14E-2	2.97E-1
XXIC	4.07E-3	4.07E-2	3.61E-1	4.03E-3	4.04E-2	3.58E-1	3.95E-3	3.96E-2	3.51E-1	3.32E-3	3.33E-2	2.95E-1	3.09E-3	3.10E-2	2.75E-1
XXII	5.40E-1	1.39E+1	2.48E+1	5.30E-1	1.38E+1	2.45E+1	5.11E-1	1.34E+1	2.38E+1	4.91E-1	1.29E+1	2.28E+1	4.38E-1	1.27E+1	2.24E+1
DOE	2.17E+2	1.94E+3	1.79E+4	2.15E+2	1.93E+3	1.79E+4	2.13E+2	1.92E+3	1.78E+4	2.05E+2	1.86E+3	1.73E+4	2.02E+2	1.84E+3	1.71E+4
DOD	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.04E-1	1.97E-2	1.23E-1	2.03E-1	1.95E-2	1.22E-1	2.02E-1	1.95E-2	1.22E-1	2.01E-1
NRC	1.94E+0	2.92E+0	1.10E+1	1.93E+0	2.90E+0	1.09E+1	1.91E+0	2.86E+0	1.06E+1	1.82E+0	2.62E+0	9.09E+0	1.77E+0	2.52E+0	8.52E+0
Total	2.18E+2	1.94E+3	1.79E+4	2.17E+2	1.94E+3	1.79E+4	2.15E+2	1.92E+3	1.78E+4	2.07E+2	1.87E+3	1.73E+4	2.04E+2	1.85E+3	1.71E+4

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 Table M-153. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.48E-1	2.75E-1	2.75E-1	2.44E-1	2.71E-1	2.71E-1	2.42E-1	2.68E-1	2.68E-1	2.35E-1	2.60E-1	2.60E-1	2.30E-1	2.55E-1	2.55E-1
II	3.14E+1	3.08E+2	2.65E+3	3.13E+1	3.08E+2	2.65E+3	3.13E+1	3.08E+2	2.65E+3	3.13E+1	3.08E+2	2.65E+3	3.13E+1	3.08E+2	2.65E+3
III	1.05E-1	1.17E-1	1.17E-1	1.05E-1	1.16E-1	1.16E-1	1.04E-1	1.16E-1	1.16E-1	1.01E-1	1.13E-1	1.13E-1	9.68E-2	1.08E-1	1.08E-1
IV	1.94E-1	1.35E+0	2.82E+0	1.92E-1	1.34E+0	2.80E+0	1.91E-1	1.34E+0	2.78E+0	1.88E-1	1.31E+0	2.74E+0	1.86E-1	1.30E+0	2.70E+0
V	6.50E+0	7.16E+0	7.16E+0	6.49E+0	7.15E+0	7.15E+0	6.48E+0	7.14E+0	7.14E+0	6.45E+0	7.10E+0	7.10E+0	6.41E+0	7.07E+0	7.07E+0
VI	4.35E+0	3.84E+1	4.23E+2	4.34E+0	3.84E+1	4.23E+2	4.34E+0	3.84E+1	4.23E+2	4.34E+0	3.84E+1	4.23E+2	4.34E+0	3.84E+1	4.23E+2
VII	2.18E+0	1.57E+1	1.04E+2	2.13E+0	1.53E+1	1.01E+2	2.06E+0	1.47E+1	9.76E+1	1.90E+0	1.34E+1	8.88E+1	1.80E+0	1.26E+1	8.33E+1
IX	8.19E-3	6.58E-2	4.02E-1	7.77E-3	6.24E-2	3.82E-1	7.38E-3	5.93E-2	3.63E-1	6.42E-3	5.15E-2	3.15E-1	5.77E-3	4.63E-2	2.83E-1
X	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.20E+0	3.54E+0	1.01E+0	3.18E+0	3.51E+0
XII	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.71E-1
XIIIA	1.01E-4	7.71E-4	2.07E-3	8.15E-5	6.19E-4	1.66E-3	5.69E-5	4.32E-4	1.16E-3	1.12E-5	8.52E-5	2.29E-4	.00E+0	.00E+0	.00E+0
XIIIB	9.66E-5	5.50E-4	8.77E-4	7.75E-5	4.42E-4	7.04E-4	5.41E-5	3.08E-4	4.92E-4	1.07E-5	6.08E-5	9.69E-5	.00E+0	.00E+0	.00E+0
XIIIC	8.80E-5	3.08E-4	6.28E-3	7.06E-5	2.47E-4	5.04E-3	4.93E-5	1.73E-4	3.52E-3	9.72E-6	3.40E-5	6.94E-4	.00E+0	.00E+0	.00E+0
XVIA	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4
XVIB	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4
XVIC	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.87E-4	3.87E-4
XVIIIA	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2
XVIIIB	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2
XVIIIC	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2
XXA	1.20E-2	9.66E-2	7.66E-1	9.09E-3	7.32E-2	5.80E-1	7.70E-3	6.20E-2	4.92E-1	5.36E-3	4.31E-2	3.42E-1	4.04E-3	3.25E-2	2.58E-1
XXB	1.15E-2	6.95E-2	3.13E-1	8.74E-3	5.27E-2	2.37E-1	7.41E-3	4.46E-2	2.01E-1	5.16E-3	3.10E-2	1.40E-1	3.89E-3	2.34E-2	1.05E-1
XXC	1.06E-2	3.93E-2	8.95E-1	8.01E-3	2.98E-2	6.78E-1	6.79E-3	2.52E-2	5.74E-1	4.72E-3	1.76E-2	4.00E-1	3.56E-3	1.32E-2	3.01E-1
XXIA	2.79E-3	2.83E-2	2.75E-1	2.79E-3	2.83E-2	2.75E-1	2.79E-3	2.83E-2	2.75E-1	2.79E-3	2.83E-2	2.75E-1	2.78E-3	2.82E-2	2.75E-1
XXIB	2.77E-3	2.81E-2	2.64E-1	2.77E-3	2.81E-2	2.64E-1	2.77E-3	2.81E-2	2.64E-1	2.77E-3	2.81E-2	2.64E-1	2.77E-3	2.81E-2	2.64E-1
XXIC	2.75E-3	2.75E-2	2.44E-1	2.75E-3	2.75E-2	2.44E-1	2.75E-3	2.75E-2	2.44E-1	2.75E-3	2.75E-2	2.44E-1	2.75E-3	2.75E-2	2.44E-1
XXII	4.00E-1	9.13E+0	1.70E+1	4.00E-1	9.13E+0	1.70E+1	3.99E-1	9.13E+0	1.69E+1	3.98E-1	9.12E+0	1.69E+1	3.97E-1	9.11E+0	1.69E+1
DOE	1.43E+2	1.27E+3	1.25E+4	1.43E+2	1.27E+3	1.25E+4	1.43E+2	1.27E+3	1.25E+4	1.43E+2	1.27E+3	1.25E+4	1.42E+2	1.27E+3	1.25E+4
DOD	1.73E-2	1.08E-1	1.97E-1	1.71E-2	1.07E-1	1.92E-1	1.69E-2	1.06E-1	1.85E-1	1.66E-2	1.03E-1	1.73E-1	1.65E-2	1.03E-1	1.71E-1
NRC	1.65E+0	3.09E+0	1.65E+1	1.61E+0	2.86E+0	1.42E+1	1.59E+0	2.74E+0	1.32E+1	1.56E+0	2.56E+0	1.14E+1	1.54E+0	2.45E+0	1.04E+1
Total	1.45E+2	1.27E+3	1.25E+4	1.45E+2	1.27E+3	1.25E+4	1.45E+2	1.27E+3	1.25E+4	1.44E+2	1.27E+3	1.25E+4	1.44E+2	1.27E+3	1.25E+4

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 Table M-154. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.20E-1	2.44E-1	2.44E-1	2.12E-1	2.35E-1	2.35E-1	2.01E-1	2.23E-1	2.23E-1	1.72E-1	1.90E-1	1.90E-1	1.64E-1	1.82E-1	1.82E-1
II	3.13E+1	3.08E+2	2.65E+3	3.13E+1	3.08E+2	2.64E+3	3.13E+1	3.07E+2	2.63E+3	3.13E+1	3.07E+2	2.61E+3	3.13E+1	3.07E+2	2.60E+3
III	8.31E-2	9.24E-2	9.24E-2	7.68E-2	8.53E-2	8.53E-2	6.94E-2	7.71E-2	7.71E-2	3.21E-2	3.57E-2	3.57E-2	2.07E-2	2.30E-2	2.30E-2
IV	1.81E-1	1.27E+0	2.64E+0	1.79E-1	1.25E+0	2.60E+0	1.73E-1	1.21E+0	2.53E+0	1.47E-1	1.03E+0	2.14E+0	1.34E-1	9.37E-1	1.95E+0
V	6.33E+0	6.97E+0	6.97E+0	6.26E+0	6.89E+0	6.89E+0	6.13E+0	6.76E+0	6.76E+0	5.52E+0	6.08E+0	6.08E+0	5.21E+0	5.74E+0	5.74E+0
VI	4.34E+0	3.84E+1	4.23E+2	4.33E+0	3.84E+1	4.22E+2	4.32E+0	3.83E+1	4.22E+2	4.28E+0	3.80E+1	4.19E+2	4.25E+0	3.78E+1	4.17E+2
VII	1.63E+0	1.13E+1	7.48E+1	1.50E+0	1.04E+1	6.85E+1	1.17E+0	8.07E+0	5.33E+1	4.86E-1	3.42E+0	2.26E+1	3.83E-1	2.71E+0	1.80E+1
IX	4.82E-3	3.87E-2	2.37E-1	4.05E-3	3.25E-2	1.99E-1	3.30E-3	2.65E-2	1.62E-1	1.55E-3	1.24E-2	7.61E-2	1.09E-3	8.72E-3	5.34E-2
X	1.00E+0	3.09E+0	3.41E+0	9.94E-1	2.98E+0	3.28E+0	9.80E-1	2.75E+0	3.02E+0	9.29E-1	2.05E+0	2.22E+0	9.05E-1	1.89E+0	2.03E+0
XII	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.70E-1	1.64E-2	1.03E-1	1.70E-1	1.64E-2	1.03E-1	1.70E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.59E-4	3.93E-4	3.93E-4	3.58E-4	3.93E-4	3.93E-4	3.58E-4	3.92E-4	3.92E-4	3.56E-4	3.90E-4	3.90E-4	3.55E-4	3.89E-4	3.89E-4
XVIB	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.57E-4	3.89E-4	3.89E-4	3.55E-4	3.87E-4	3.87E-4	3.54E-4	3.86E-4	3.86E-4
XVIC	3.55E-4	3.86E-4	3.86E-4	3.54E-4	3.86E-4	3.86E-4	3.54E-4	3.85E-4	3.85E-4	3.52E-4	3.83E-4	3.83E-4	3.51E-4	3.82E-4	3.82E-4
XVIII A	2.47E-2	2.66E-2	2.66E-2	2.46E-2	2.66E-2	2.66E-2	2.46E-2	2.65E-2	2.65E-2	2.43E-2	2.62E-2	2.62E-2	2.41E-2	2.60E-2	2.60E-2
XVIII B	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.37E-2	2.37E-2	2.22E-2	2.34E-2	2.34E-2	2.20E-2	2.33E-2	2.33E-2
XVIII C	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.87E-2	1.93E-2	1.93E-2	1.85E-2	1.91E-2	1.91E-2	1.84E-2	1.90E-2	1.90E-2
XXA	1.92E-3	1.54E-2	1.23E-1	7.94E-4	6.39E-3	5.07E-2	5.16E-4	4.16E-3	3.30E-2	4.12E-4	3.32E-3	2.64E-2	3.82E-4	3.08E-3	2.45E-2
XXB	1.85E-3	1.11E-2	5.00E-2	7.64E-4	4.60E-3	2.07E-2	4.97E-4	2.99E-3	1.35E-2	3.97E-4	2.39E-3	1.08E-2	3.68E-4	2.22E-3	9.98E-3
XXC	1.69E-3	6.28E-3	1.43E-1	7.00E-4	2.60E-3	5.92E-2	4.55E-4	1.69E-3	3.85E-2	3.63E-4	1.35E-3	3.07E-2	3.37E-4	1.25E-3	2.85E-2
XXIA	2.78E-3	2.82E-2	2.74E-1	2.77E-3	2.81E-2	2.74E-1	2.75E-3	2.79E-2	2.72E-1	2.67E-3	2.71E-2	2.64E-1	2.60E-3	2.64E-2	2.57E-1
XXIB	2.76E-3	2.80E-2	2.63E-1	2.75E-3	2.79E-2	2.63E-1	2.73E-3	2.77E-2	2.61E-1	2.65E-3	2.69E-2	2.53E-1	2.58E-3	2.62E-2	2.47E-1
XXIC	2.74E-3	2.74E-2	2.43E-1	2.73E-3	2.74E-2	2.43E-1	2.72E-3	2.72E-2	2.41E-1	2.63E-3	2.64E-2	2.34E-1	2.56E-3	2.57E-2	2.28E-1
XXII	3.95E-1	9.09E+0	1.68E+1	3.92E-1	9.05E+0	1.68E+1	3.90E-1	8.94E+0	1.66E+1	3.68E-1	8.60E+0	1.59E+1	3.65E-1	8.49E+0	1.57E+1
DOE	1.42E+2	1.27E+3	1.24E+4	1.42E+2	1.26E+3	1.24E+4	1.41E+2	1.26E+3	1.24E+4	1.38E+2	1.24E+3	1.23E+4	1.37E+2	1.24E+3	1.22E+4
DOD	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.70E-1	1.64E-2	1.03E-1	1.70E-1	1.64E-2	1.03E-1	1.70E-1
NRC	1.52E+0	2.28E+0	8.71E+0	1.50E+0	2.19E+0	7.83E+0	1.49E+0	2.16E+0	7.58E+0	1.47E+0	2.11E+0	7.32E+0	1.46E+0	2.09E+0	7.14E+0
Total	1.44E+2	1.27E+3	1.25E+4	1.43E+2	1.27E+3	1.24E+4	1.43E+2	1.26E+3	1.24E+4	1.40E+2	1.24E+3	1.23E+4	1.39E+2	1.24E+3	1.22E+4

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 Table M-155. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.46E-1	2.72E-1	2.72E-1	2.40E-1	2.66E-1	2.66E-1	2.36E-1	2.61E-1	2.61E-1	2.23E-1	2.47E-1	2.47E-1	2.14E-1	2.37E-1	2.37E-1
II	3.14E+1	3.08E+2	2.65E+3	3.13E+1	3.08E+2	2.65E+3	3.13E+1	3.08E+2	2.65E+3	3.13E+1	3.08E+2	2.65E+3	3.13E+1	3.08E+2	2.64E+3
III	1.05E-1	1.16E-1	1.16E-1	1.04E-1	1.16E-1	1.16E-1	1.02E-1	1.13E-1	1.13E-1	8.76E-2	9.73E-2	9.73E-2	7.75E-2	8.61E-2	8.61E-2
IV	1.93E-1	1.35E+0	2.81E+0	1.90E-1	1.33E+0	2.77E+0	1.88E-1	1.31E+0	2.73E+0	1.82E-1	1.27E+0	2.65E+0	1.78E-1	1.25E+0	2.60E+0
V	6.49E+0	7.15E+0	7.15E+0	6.47E+0	7.13E+0	7.13E+0	6.45E+0	7.11E+0	7.11E+0	6.35E+0	7.00E+0	7.00E+0	6.27E+0	6.91E+0	6.91E+0
VI	4.35E+0	3.84E+1	4.23E+2	4.34E+0	3.84E+1	4.23E+2	4.34E+0	3.84E+1	4.23E+2	4.34E+0	3.84E+1	4.23E+2	4.34E+0	3.84E+1	4.23E+2
VII	2.17E+0	1.56E+1	1.03E+2	1.99E+0	1.42E+1	9.38E+1	1.87E+0	1.32E+1	8.75E+1	1.63E+0	1.13E+1	7.48E+1	1.44E+0	9.96E+0	6.58E+1
IX	7.91E-3	6.36E-2	3.89E-1	6.97E-3	5.60E-2	3.43E-1	6.29E-3	5.05E-2	3.09E-1	4.78E-3	3.84E-2	2.35E-1	3.78E-3	3.04E-2	1.86E-1
X	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.21E+0	3.55E+0	1.01E+0	3.15E+0	3.49E+0	9.99E-1	3.07E+0	3.39E+0
XII	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.70E-1
XIIIA	9.24E-5	7.02E-4	1.88E-3	5.40E-5	4.10E-4	1.10E-3	2.64E-5	2.01E-4	5.39E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	8.80E-5	5.01E-4	7.99E-4	5.13E-5	2.93E-4	4.66E-4	2.51E-5	1.43E-4	2.28E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	8.01E-5	2.81E-4	5.72E-3	4.68E-5	1.64E-4	3.34E-3	2.29E-5	8.02E-5	1.64E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4	3.59E-4	3.93E-4	3.93E-4
XVIB	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4	3.58E-4	3.90E-4	3.90E-4
XVIC	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.87E-4	3.87E-4	3.55E-4	3.87E-4	3.87E-4
XVIIIA	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2	2.47E-2	2.66E-2	2.66E-2	2.46E-2	2.66E-2	2.66E-2
XVIIIB	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2	2.25E-2	2.38E-2	2.38E-2
XVIIIC	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2	1.88E-2	1.94E-2	1.94E-2
XXA	9.57E-3	7.71E-2	6.11E-1	6.31E-3	5.08E-2	4.03E-1	4.67E-3	3.76E-2	2.98E-1	1.33E-3	1.07E-2	8.52E-2	5.63E-4	4.54E-3	3.60E-2
XXB	9.21E-3	5.55E-2	2.50E-1	6.07E-3	3.66E-2	1.65E-1	4.50E-3	2.71E-2	1.22E-1	1.28E-3	7.73E-3	3.48E-2	5.42E-4	3.27E-3	1.47E-2
XXC	8.44E-3	3.14E-2	7.14E-1	5.56E-3	2.07E-2	4.71E-1	4.12E-3	1.53E-2	3.49E-1	1.18E-3	4.37E-3	9.95E-2	4.97E-4	1.85E-3	4.20E-2
XXIA	2.79E-3	2.83E-2	2.75E-1	2.79E-3	2.83E-2	2.75E-1	2.79E-3	2.83E-2	2.75E-1	2.78E-3	2.82E-2	2.74E-1	2.77E-3	2.81E-2	2.73E-1
XXIB	2.77E-3	2.81E-2	2.64E-1	2.77E-3	2.81E-2	2.64E-1	2.77E-3	2.81E-2	2.64E-1	2.76E-3	2.80E-2	2.64E-1	2.75E-3	2.79E-2	2.63E-1
XXIC	2.75E-3	2.75E-2	2.44E-1	2.75E-3	2.75E-2	2.44E-1	2.75E-3	2.75E-2	2.44E-1	2.74E-3	2.74E-2	2.43E-1	2.73E-3	2.73E-2	2.43E-1
XXII	4.00E-1	9.13E+0	1.70E+1	3.99E-1	9.13E+0	1.69E+1	3.98E-1	9.12E+0	1.69E+1	3.95E-1	9.09E+0	1.68E+1	3.92E-1	9.06E+0	1.68E+1
DOE	1.43E+2	1.27E+3	1.25E+4	1.43E+2	1.27E+3	1.25E+4	1.43E+2	1.27E+3	1.25E+4	1.42E+2	1.27E+3	1.24E+4	1.42E+2	1.26E+3	1.24E+4
DOD	1.72E-2	1.07E-1	1.94E-1	1.69E-2	1.05E-1	1.84E-1	1.67E-2	1.04E-1	1.77E-1	1.65E-2	1.03E-1	1.71E-1	1.65E-2	1.03E-1	1.70E-1
NRC	1.62E+0	2.89E+0	1.46E+1	1.57E+0	2.63E+0	1.21E+1	1.55E+0	2.50E+0	1.08E+1	1.51E+0	2.23E+0	8.27E+0	1.50E+0	2.17E+0	7.65E+0
Total	1.45E+2	1.27E+3	1.25E+4	1.44E+2	1.27E+3	1.25E+4	1.44E+2	1.27E+3	1.25E+4	1.44E+2	1.27E+3	1.25E+4	1.43E+2	1.27E+3	1.24E+4

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 Table M-156. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.99E-1	2.20E-1	2.20E-1	1.88E-1	2.09E-1	2.09E-1	1.74E-1	1.92E-1	1.92E-1	1.25E-1	1.38E-1	1.38E-1	1.08E-1	1.20E-1	1.20E-1
II	3.13E+1	3.07E+2	2.62E+3	3.13E+1	3.07E+2	2.62E+3	3.13E+1	3.07E+2	2.61E+3	3.11E+1	3.04E+2	2.57E+3	3.09E+1	3.02E+2	2.54E+3
III	6.70E-2	7.45E-2	7.45E-2	5.54E-2	6.15E-2	6.15E-2	3.52E-2	3.91E-2	3.91E-2	9.23E-3	1.03E-2	1.03E-2	5.21E-3	5.78E-3	5.78E-3
IV	1.70E-1	1.19E+0	2.48E+0	1.62E-1	1.13E+0	2.36E+0	1.46E-1	1.02E+0	2.12E+0	6.48E-2	4.53E-1	9.43E-1	2.41E-2	1.69E-1	3.51E-1
V	6.10E+0	6.72E+0	6.72E+0	5.93E+0	6.53E+0	6.53E+0	5.59E+0	6.15E+0	6.15E+0	4.66E+0	5.14E+0	5.14E+0	4.44E+0	4.89E+0	4.89E+0
VI	4.32E+0	3.83E+1	4.22E+2	4.31E+0	3.82E+1	4.21E+2	4.28E+0	3.80E+1	4.19E+2	4.13E+0	3.69E+1	4.07E+2	4.08E+0	3.66E+1	4.03E+2
VII	9.72E-1	6.73E+0	4.45E+1	6.86E-1	4.79E+0	3.16E+1	4.50E-1	3.18E+0	2.10E+1	2.86E-3	1.74E-2	1.12E-1	.00E+0	.00E+0	.00E+0
IX	2.76E-3	2.21E-2	1.36E-1	1.99E-3	1.60E-2	9.78E-2	1.36E-3	1.09E-2	6.69E-2	2.47E-4	1.98E-3	1.21E-2	.00E+0	.00E+0	.00E+0
X	9.83E-1	2.83E+0	3.11E+0	9.69E-1	2.59E+0	2.84E+0	9.48E-1	2.25E+0	2.44E+0	8.60E-1	1.61E+0	1.72E+0	8.34E-1	1.46E+0	1.55E+0
XII	1.65E-2	1.03E-1	1.70E-1	1.64E-2	1.03E-1	1.70E-1	1.64E-2	1.03E-1	1.70E-1	1.63E-2	1.02E-1	1.69E-1	1.63E-2	1.02E-1	1.68E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.57E-4	3.92E-4	3.92E-4	3.57E-4	3.91E-4	3.91E-4	3.56E-4	3.90E-4	3.90E-4	3.48E-4	3.82E-4	3.82E-4	3.43E-4	3.77E-4	3.77E-4
XVIB	3.57E-4	3.89E-4	3.89E-4	3.56E-4	3.88E-4	3.88E-4	3.56E-4	3.87E-4	3.87E-4	3.48E-4	3.79E-4	3.79E-4	3.43E-4	3.74E-4	3.74E-4
XVIC	3.53E-4	3.85E-4	3.85E-4	3.53E-4	3.85E-4	3.85E-4	3.52E-4	3.84E-4	3.84E-4	3.44E-4	3.75E-4	3.75E-4	3.40E-4	3.71E-4	3.71E-4
XVIIIA	2.46E-2	2.65E-2	2.65E-2	2.45E-2	2.64E-2	2.64E-2	2.43E-2	2.62E-2	2.62E-2	2.32E-2	2.50E-2	2.50E-2	2.27E-2	2.44E-2	2.44E-2
XVIIIB	2.25E-2	2.37E-2	2.37E-2	2.24E-2	2.36E-2	2.36E-2	2.22E-2	2.34E-2	2.34E-2	2.12E-2	2.24E-2	2.24E-2	2.07E-2	2.19E-2	2.19E-2
XVIIIC	1.87E-2	1.93E-2	1.93E-2	1.87E-2	1.93E-2	1.93E-2	1.85E-2	1.91E-2	1.91E-2	1.77E-2	1.82E-2	1.82E-2	1.73E-2	1.78E-2	1.78E-2
XXA	4.76E-4	3.83E-3	3.04E-2	4.37E-4	3.52E-3	2.80E-2	3.85E-4	3.10E-3	2.46E-2	2.67E-4	2.15E-3	1.71E-2	2.25E-4	1.82E-3	1.44E-2
XXB	4.58E-4	2.76E-3	1.24E-2	4.21E-4	2.53E-3	1.14E-2	3.71E-4	2.23E-3	1.01E-2	2.57E-4	1.55E-3	6.97E-3	2.17E-4	1.31E-3	5.89E-3
XXC	4.20E-4	1.56E-3	3.55E-2	3.85E-4	1.43E-3	3.26E-2	3.40E-4	1.26E-3	2.88E-2	2.35E-4	8.74E-4	1.99E-2	1.99E-4	7.39E-4	1.68E-2
XXIA	2.74E-3	2.78E-2	2.71E-1	2.72E-3	2.76E-2	2.68E-1	2.67E-3	2.70E-2	2.63E-1	2.24E-3	2.27E-2	2.21E-1	2.09E-3	2.11E-2	2.06E-1
XXIB	2.72E-3	2.76E-2	2.60E-1	2.70E-3	2.74E-2	2.58E-1	2.65E-3	2.69E-2	2.53E-1	2.23E-3	2.26E-2	2.13E-1	2.07E-3	2.10E-2	1.98E-1
XXIC	2.71E-3	2.71E-2	2.40E-1	2.68E-3	2.68E-2	2.38E-1	2.63E-3	2.63E-2	2.34E-1	2.21E-3	2.21E-2	1.96E-1	2.06E-3	2.06E-2	1.83E-1
XXII	3.89E-1	8.93E+0	1.66E+1	3.81E-1	8.84E+0	1.64E+1	3.68E-1	8.61E+0	1.59E+1	3.53E-1	8.25E+0	1.52E+1	3.15E-1	8.13E+0	1.50E+1
DOE	1.41E+2	1.26E+3	1.24E+4	1.40E+2	1.25E+3	1.23E+4	1.38E+2	1.24E+3	1.23E+4	1.33E+2	1.21E+3	1.19E+4	1.31E+2	1.20E+3	1.18E+4
DOD	1.65E-2	1.03E-1	1.70E-1	1.64E-2	1.03E-1	1.70E-1	1.64E-2	1.03E-1	1.70E-1	1.63E-2	1.02E-1	1.69E-1	1.63E-2	1.02E-1	1.68E-1
NRC	1.49E+0	2.15E+0	7.53E+0	1.49E+0	2.14E+0	7.44E+0	1.47E+0	2.11E+0	1.72E+0	1.40E+0	1.94E+0	6.25E+0	1.36E+0	1.87E+0	5.87E+0
Total	1.42E+2	1.26E+3	1.24E+4	1.41E+2	1.25E+3	1.23E+4	1.40E+2	1.25E+3	1.23E+4	1.35E+2	1.21E+3	1.19E+4	1.33E+2	1.20E+3	1.18E+4

Medium Population Density With Agriculture - 09-19-94 1:57p
 Table M-157. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.62E+3	2.85E+3	2.85E+3	2.58E+3	2.81E+3	2.81E+3	2.56E+3	2.78E+3	2.78E+3	2.49E+3	2.70E+3	2.70E+3	2.44E+3	2.65E+3	2.65E+3
II	2.86E+5	6.41E+6	2.37E+7	2.86E+5	6.41E+6	2.37E+7	2.86E+5	6.41E+6	2.37E+7	2.86E+5	6.41E+6	2.36E+7	2.86E+5	6.41E+6	2.36E+7
III	1.13E+3	1.26E+3	1.26E+3	1.13E+3	1.26E+3	1.26E+3	1.13E+3	1.25E+3	1.25E+3	1.10E+3	1.22E+3	1.22E+3	1.05E+3	1.16E+3	1.16E+3
IV	1.77E+3	1.13E+4	2.32E+4	1.76E+3	1.12E+4	2.31E+4	1.75E+3	1.11E+4	2.29E+4	1.72E+3	1.09E+4	2.25E+4	1.70E+3	1.08E+4	2.23E+4
V	6.81E+4	7.41E+4	7.41E+4	6.80E+4	7.40E+4	7.40E+4	6.79E+4	7.39E+4	7.39E+4	6.76E+4	7.35E+4	7.35E+4	6.72E+4	7.31E+4	7.31E+4
VI	4.61E+4	3.83E+5	3.71E+6	4.61E+4	3.83E+5	3.71E+6	4.61E+4	3.83E+5	3.71E+6	4.61E+4	3.83E+5	3.71E+6	4.61E+4	3.83E+5	3.70E+6
VII	1.10E+5	9.53E+5	7.40E+6	1.07E+5	9.28E+5	7.21E+6	1.03E+5	8.93E+5	6.93E+6	9.39E+4	8.12E+5	6.31E+6	8.82E+4	7.62E+5	5.92E+6
IX	5.02E+2	4.38E+3	2.77E+4	4.76E+2	4.16E+3	2.63E+4	4.53E+2	3.95E+3	2.50E+4	3.93E+2	3.44E+3	2.17E+4	3.53E+2	3.09E+3	1.95E+4
X	1.54E+3	1.88E+4	2.15E+4	1.54E+3	1.88E+4	2.15E+4	1.53E+3	1.88E+4	2.15E+4	1.51E+3	1.87E+4	2.14E+4	1.50E+3	1.85E+4	2.12E+4
XII	3.16E+2	1.83E+3	2.95E+3	3.16E+2	1.83E+3	2.95E+3	3.16E+2	1.83E+3	2.95E+3	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3
XIIIA	8.78E-1	5.89E+0	1.55E+1	7.05E-1	4.73E+0	1.24E+1	4.92E-1	3.30E+0	8.68E+0	9.70E-2	6.51E-1	1.71E+0	.00E+0	.00E+0	.00E+0
XIIIB	8.08E-1	4.03E+0	6.52E+0	6.48E-1	3.23E+0	5.24E+0	4.53E-1	2.26E+0	3.66E+0	8.92E-2	4.45E-1	7.21E-1	.00E+0	.00E+0	.00E+0
XIIIC	6.99E-1	2.22E+0	4.34E+1	5.61E-1	1.79E+0	3.48E+1	3.92E-1	1.25E+0	2.43E+1	7.72E-2	2.46E-1	4.79E+0	.00E+0	.00E+0	.00E+0
XVIA	4.27E+0	4.53E+0	4.53E+0	4.27E+0	4.53E+0	4.53E+0	4.27E+0	4.53E+0	4.53E+0	4.27E+0	4.53E+0	4.53E+0	4.27E+0	4.52E+0	4.52E+0
XVIB	4.23E+0	4.47E+0	4.47E+0	4.23E+0	4.47E+0	4.47E+0	4.23E+0	4.47E+0	4.47E+0	4.23E+0	4.47E+0	4.47E+0	4.22E+0	4.47E+0	4.47E+0
XVIC	4.14E+0	4.36E+0	4.36E+0	4.14E+0	4.36E+0	4.36E+0	4.14E+0	4.36E+0	4.36E+0	4.14E+0	4.36E+0	4.36E+0	4.13E+0	4.35E+0	4.35E+0
XVIIIA	8.69E+1	9.37E+1	9.37E+1	8.69E+1	9.37E+1	9.37E+1	8.69E+1	9.37E+1	9.37E+1	8.69E+1	9.37E+1	9.37E+1	8.69E+1	9.37E+1	9.37E+1
XVIIIB	7.97E+1	8.47E+1	8.47E+1	7.97E+1	8.47E+1	8.47E+1	7.97E+1	8.47E+1	8.47E+1	7.97E+1	8.46E+1	8.46E+1	7.97E+1	8.46E+1	8.46E+1
XVIIIC	6.77E+1	7.03E+1	7.03E+1	6.77E+1	7.03E+1	7.03E+1	6.77E+1	7.03E+1	7.03E+1	6.77E+1	7.03E+1	7.03E+1	6.77E+1	7.03E+1	7.03E+1
XXA	1.10E+2	8.75E+2	6.75E+3	8.35E+1	6.62E+2	5.11E+3	7.08E+1	5.61E+2	4.33E+3	4.93E+1	3.90E+2	3.01E+3	3.71E+1	2.94E+2	2.27E+3
XXB	1.06E+2	6.25E+2	2.74E+3	7.99E+1	4.74E+2	2.07E+3	6.77E+1	4.01E+2	1.76E+3	4.71E+1	2.79E+2	1.22E+3	3.55E+1	2.10E+2	9.22E+2
XXC	9.62E+1	3.53E+2	8.04E+3	7.29E+1	2.68E+2	6.09E+3	6.17E+1	2.27E+2	5.16E+3	4.30E+1	1.58E+2	3.59E+3	3.24E+1	1.19E+2	2.70E+3
XXIA	4.53E+1	4.65E+2	4.44E+3	4.53E+1	4.65E+2	4.44E+3	4.53E+1	4.65E+2	4.44E+3	4.53E+1	4.65E+2	4.44E+3	4.53E+1	4.64E+2	4.44E+3
XXIB	4.49E+1	4.59E+2	4.15E+3	4.49E+1	4.59E+2	4.15E+3	4.49E+1	4.59E+2	4.15E+3	4.49E+1	4.59E+2	4.15E+3	4.49E+1	4.59E+2	4.14E+3
XXIC	4.46E+1	4.46E+2	3.60E+3	4.46E+1	4.46E+2	3.60E+3	4.46E+1	4.46E+2	3.60E+3	4.45E+1	4.46E+2	3.60E+3	4.45E+1	4.46E+2	3.60E+3
XXII	4.08E+3	8.88E+4	1.50E+5	4.08E+3	8.88E+4	1.50E+5	4.07E+3	8.87E+4	1.50E+5	4.06E+3	8.86E+4	1.50E+5	4.05E+3	8.85E+4	1.50E+5
DOE	1.55E+6	1.68E+7	1.16E+8	1.54E+6	1.68E+7	1.16E+8	1.54E+6	1.67E+7	1.16E+8	1.53E+6	1.66E+7	1.15E+8	1.52E+6	1.66E+7	1.15E+8
DOD	3.23E+2	1.86E+3	3.13E+3	3.22E+2	1.85E+3	3.09E+3	3.20E+2	1.84E+3	3.05E+3	3.17E+2	1.83E+3	2.96E+3	3.16E+2	1.82E+3	2.94E+3
NRC	7.89E+3	2.45E+4	1.77E+5	7.54E+3	2.24E+4	1.57E+5	7.37E+3	2.14E+4	1.48E+5	7.08E+3	1.97E+4	1.32E+5	6.92E+3	1.87E+4	1.23E+5
Total	1.56E+6	1.68E+7	1.17E+8	1.55E+6	1.68E+7	1.16E+8	1.55E+6	1.68E+7	1.16E+8	1.54E+6	1.67E+7	1.15E+8	1.53E+6	1.66E+7	1.15E+8

Medium Population Density With Agriculture - 09-19-94 1:57p
 Table M-158. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.33E+3	2.53E+3	2.53E+3	2.25E+3	2.44E+3	2.44E+3	2.13E+3	2.31E+3	2.31E+3	1.82E+3	1.97E+3	1.97E+3	1.73E+3	1.88E+3	1.88E+3
II	2.86E+5	6.41E+6	2.36E+7	2.86E+5	6.41E+6	2.36E+7	2.86E+5	6.41E+6	2.35E+7	2.86E+5	6.40E+6	2.33E+7	2.86E+5	6.40E+6	2.33E+7
III	8.99E+2	9.99E+2	9.99E+2	8.30E+2	9.23E+2	9.23E+2	7.50E+2	8.34E+2	8.34E+2	3.47E+2	3.86E+2	3.86E+2	2.24E+2	2.49E+2	2.49E+2
IV	1.66E+3	1.06E+4	2.17E+4	1.63E+3	1.04E+4	2.14E+4	1.58E+3	1.01E+4	2.08E+4	1.34E+3	8.57E+3	1.77E+4	1.22E+3	7.81E+3	1.61E+4
V	6.63E+4	7.21E+4	7.21E+4	6.56E+4	7.13E+4	7.13E+4	6.43E+4	6.99E+4	6.99E+4	5.79E+4	6.30E+4	6.30E+4	5.47E+4	5.95E+4	5.95E+4
VI	4.60E+4	3.83E+5	3.70E+6	4.60E+4	3.83E+5	3.70E+6	4.59E+4	3.82E+5	3.70E+6	4.54E+4	3.79E+5	3.67E+6	4.51E+4	3.77E+5	3.65E+6
VII	7.95E+4	6.84E+5	5.31E+6	7.28E+4	6.27E+5	4.87E+6	5.66E+4	4.87E+5	3.78E+6	2.40E+4	2.07E+5	1.61E+6	1.90E+4	1.64E+5	1.28E+6
IX	2.95E+2	2.58E+3	1.63E+4	2.48E+2	2.17E+3	1.37E+4	2.02E+2	1.77E+3	1.12E+4	9.49E+1	8.29E+2	5.24E+3	6.66E+1	5.81E+2	3.67E+3
X	1.48E+3	1.78E+4	2.04E+4	1.46E+3	1.69E+4	1.94E+4	1.43E+3	1.52E+4	1.73E+4	1.35E+3	9.88E+3	1.12E+4	1.31E+3	8.73E+3	9.87E+3
XII	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.15E+2	1.82E+3	2.94E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	4.27E+0	4.52E+0	4.52E+0	4.26E+0	4.52E+0	4.52E+0	4.25E+0	4.50E+0	4.50E+0	4.21E+0	4.46E+0	4.46E+0	4.19E+0	4.45E+0	4.45E+0
XVIB	4.22E+0	4.47E+0	4.47E+0	4.22E+0	4.46E+0	4.46E+0	4.20E+0	4.45E+0	4.45E+0	4.17E+0	4.41E+0	4.41E+0	4.15E+0	4.39E+0	4.39E+0
XVIC	4.13E+0	4.35E+0	4.35E+0	4.13E+0	4.35E+0	4.35E+0	4.11E+0	4.33E+0	4.33E+0	4.08E+0	4.30E+0	4.30E+0	4.06E+0	4.28E+0	4.28E+0
XVIIIA	8.69E+1	9.37E+1	9.37E+1	8.68E+1	9.36E+1	9.36E+1	8.67E+1	9.35E+1	9.35E+1	8.56E+1	9.23E+1	9.23E+1	8.50E+1	9.17E+1	9.17E+1
XVIIIB	7.97E+1	8.46E+1	8.46E+1	7.96E+1	8.46E+1	8.46E+1	7.95E+1	8.45E+1	8.45E+1	7.85E+1	8.34E+1	8.34E+1	7.79E+1	8.28E+1	8.28E+1
XVIIIC	6.77E+1	7.03E+1	7.03E+1	6.76E+1	7.03E+1	7.03E+1	6.75E+1	7.02E+1	7.02E+1	6.67E+1	6.93E+1	6.93E+1	6.62E+1	6.88E+1	6.88E+1
XXA	1.76E+1	1.40E+2	1.08E+3	7.29E+0	5.78E+1	4.47E+2	4.75E+0	3.76E+1	2.91E+2	3.79E+0	3.00E+1	2.32E+2	3.52E+0	2.79E+1	2.15E+2
XXB	1.69E+1	1.00E+2	4.38E+2	6.98E+0	4.14E+1	1.81E+2	4.54E+0	2.69E+1	1.18E+2	3.62E+0	2.15E+1	9.42E+1	3.36E+0	1.99E+1	8.75E+1
XXC	1.54E+1	5.65E+1	1.28E+3	6.36E+0	2.34E+1	5.32E+2	4.14E+0	1.52E+1	3.46E+2	3.30E+0	1.21E+1	2.76E+2	3.07E+0	1.13E+1	2.56E+2
XXIA	4.51E+1	4.63E+2	4.43E+3	4.50E+1	4.62E+2	4.41E+3	4.47E+1	4.59E+2	4.39E+3	4.34E+1	4.45E+2	4.26E+3	4.23E+1	4.34E+2	4.14E+3
XXIB	4.48E+1	4.58E+2	4.13E+3	4.46E+1	4.56E+2	4.12E+3	4.44E+1	4.54E+2	4.10E+3	4.31E+1	4.40E+2	3.98E+3	4.19E+1	4.28E+2	3.87E+3
XXIC	4.44E+1	4.45E+2	3.59E+3	4.43E+1	4.44E+2	3.57E+3	4.40E+1	4.41E+2	3.55E+3	4.27E+1	4.28E+2	3.45E+3	4.16E+1	4.16E+2	3.36E+3
XXII	4.03E+3	8.82E+4	1.49E+5	4.00E+3	8.79E+4	1.49E+5	3.97E+3	8.69E+4	1.47E+5	3.76E+3	8.35E+4	1.41E+5	3.73E+3	8.23E+4	1.39E+5
DOE	1.51E+6	1.65E+7	1.14E+8	1.50E+6	1.64E+7	1.14E+8	1.48E+6	1.63E+7	1.12E+8	1.43E+6	1.59E+7	1.09E+8	1.41E+6	1.58E+7	1.08E+8
DOD	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.15E+2	1.82E+3	2.94E+3
NRC	6.66E+3	1.72E+4	1.08E+5	6.52E+3	1.63E+4	1.00E+5	6.47E+3	1.61E+4	9.76E+4	6.36E+3	1.56E+4	9.42E+4	6.30E+3	1.53E+4	9.16E+4
Total	1.52E+6	1.65E+7	1.14E+8	1.51E+6	1.65E+7	1.14E+8	1.49E+6	1.63E+7	1.12E+8	1.44E+6	1.59E+7	1.09E+8	1.42E+6	1.58E+7	1.09E+8

Medium Population Density With Agriculture - 09-19-94 1:57p
 Table M-159. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.60E+3	2.83E+3	2.83E+3	2.54E+3	2.76E+3	2.76E+3	2.49E+3	2.71E+3	2.71E+3	2.36E+3	2.57E+3	2.57E+3	2.26E+3	2.46E+3	2.46E+3
II	2.86E+5	6.41E+6	2.37E+7	2.86E+5	6.41E+6	2.36E+7	2.86E+5	6.41E+6	2.36E+7	2.86E+5	6.41E+6	2.36E+7	2.86E+5	6.41E+6	2.36E+7
III	1.13E+3	1.26E+3	1.26E+3	1.12E+3	1.25E+3	1.25E+3	1.10E+3	1.22E+3	1.22E+3	9.47E+2	1.05E+3	1.05E+3	8.37E+2	9.31E+2	9.31E+2
IV	1.76E+3	1.12E+4	2.31E+4	1.74E+3	1.11E+4	2.28E+4	1.72E+3	1.09E+4	2.25E+4	1.66E+3	1.06E+4	2.18E+4	1.63E+3	1.04E+4	2.14E+4
V	6.81E+4	7.40E+4	7.40E+4	6.79E+4	7.38E+4	7.38E+4	6.76E+4	7.35E+4	7.35E+4	6.66E+4	7.25E+4	7.25E+4	6.57E+4	7.15E+4	7.15E+4
VI	4.61E+4	3.83E+5	3.71E+6	4.61E+4	3.83E+5	3.71E+6	4.61E+4	3.83E+5	3.71E+6	4.61E+4	3.83E+5	3.70E+6	4.60E+4	3.83E+5	3.70E+6
VII	1.09E+5	9.44E+5	7.33E+6	9.90E+4	8.58E+5	6.66E+6	9.26E+4	8.00E+5	6.21E+6	7.94E+4	6.84E+5	5.31E+6	6.99E+4	6.01E+5	4.67E+6
IX	4.85E+2	4.24E+3	2.68E+4	4.27E+2	3.73E+3	2.36E+4	3.85E+2	3.37E+3	2.13E+4	2.93E+2	2.56E+3	1.62E+4	2.32E+2	2.03E+3	1.28E+4
X	1.54E+3	1.88E+4	2.15E+4	1.53E+3	1.88E+4	2.15E+4	1.52E+3	1.87E+4	2.14E+4	1.49E+3	1.83E+4	2.10E+4	1.47E+3	1.77E+4	2.02E+4
XII	3.16E+2	1.83E+3	2.95E+3	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3
XIIIA	8.00E-1	5.36E+0	1.41E+1	4.67E-1	3.13E+0	8.24E+0	2.29E-1	1.53E+0	4.03E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	7.36E-1	3.67E+0	5.94E+0	4.29E-1	2.14E+0	3.47E+0	2.10E-1	1.05E+0	1.70E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	6.37E-1	2.03E+0	3.95E+1	3.72E-1	1.18E+0	2.31E+1	1.82E-1	5.79E-1	1.13E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	4.27E+0	4.53E+0	4.53E+0	4.27E+0	4.53E+0	4.53E+0	4.27E+0	4.53E+0	4.53E+0	4.27E+0	4.52E+0	4.52E+0	4.26E+0	4.52E+0	4.52E+0
XVIB	4.23E+0	4.47E+0	4.47E+0	4.23E+0	4.47E+0	4.47E+0	4.23E+0	4.47E+0	4.47E+0	4.22E+0	4.47E+0	4.47E+0	4.22E+0	4.46E+0	4.46E+0
XVIC	4.14E+0	4.36E+0	4.36E+0	4.14E+0	4.36E+0	4.36E+0	4.14E+0	4.36E+0	4.36E+0	4.13E+0	4.35E+0	4.35E+0	4.13E+0	4.35E+0	4.35E+0
XVIIIA	8.69E+1	9.37E+1	9.37E+1	8.69E+1	9.37E+1	9.37E+1	8.69E+1	9.37E+1	9.37E+1	8.69E+1	9.37E+1	9.37E+1	8.68E+1	9.36E+1	9.36E+1
XVIIIB	7.97E+1	8.47E+1	8.47E+1	7.97E+1	8.46E+1	8.46E+1	7.97E+1	8.46E+1	8.46E+1	7.97E+1	8.46E+1	8.46E+1	7.96E+1	8.46E+1	8.46E+1
XVIIIC	6.77E+1	7.03E+1	7.03E+1	6.77E+1	7.03E+1	7.03E+1	6.77E+1	7.03E+1	7.03E+1	6.77E+1	7.03E+1	7.03E+1	6.76E+1	7.03E+1	7.03E+1
XXA	8.80E+1	6.98E+2	5.39E+3	5.80E+1	4.60E+2	3.55E+3	4.30E+1	3.41E+2	2.63E+3	1.23E+1	9.72E+1	7.51E+2	5.18E+0	4.11E+1	3.17E+2
XXB	8.42E+1	4.99E+2	2.19E+3	5.55E+1	3.29E+2	1.44E+3	4.11E+1	2.44E+2	1.07E+3	1.17E+1	6.95E+1	3.05E+2	4.95E+0	2.94E+1	1.29E+2
XXC	7.68E+1	2.82E+2	6.41E+3	5.06E+1	1.86E+2	4.23E+3	3.75E+1	1.38E+2	3.13E+3	1.07E+1	3.93E+1	8.93E+2	4.52E+0	1.66E+1	3.77E+2
XXIA	4.53E+1	4.65E+2	4.44E+3	4.53E+1	4.65E+2	4.44E+3	4.53E+1	4.65E+2	4.44E+3	4.52E+1	4.63E+2	4.43E+3	4.50E+1	4.62E+2	4.41E+3
XXIB	4.49E+1	4.59E+2	4.15E+3	4.49E+1	4.59E+2	4.15E+3	4.49E+1	4.59E+2	4.15E+3	4.48E+1	4.58E+2	4.14E+3	4.46E+1	4.56E+2	4.12E+3
XXIC	4.46E+1	4.46E+2	3.60E+3	4.46E+1	4.46E+2	3.60E+3	4.45E+1	4.46E+2	3.60E+3	4.44E+1	4.45E+2	3.59E+3	4.43E+1	4.43E+2	3.57E+3
XXII	4.08E+3	8.88E+4	1.50E+5	4.07E+3	8.87E+4	1.50E+5	4.06E+3	8.86E+4	1.50E+5	4.03E+3	8.83E+4	1.49E+5	4.00E+3	8.80E+4	1.49E+5
DOE	1.55E+6	1.68E+7	1.16E+8	1.54E+6	1.67E+7	1.16E+8	1.53E+6	1.66E+7	1.15E+8	1.51E+6	1.65E+7	1.14E+8	1.50E+6	1.64E+7	1.13E+8
DOD	3.23E+2	1.86E+3	3.11E+3	3.20E+2	1.84E+3	3.04E+3	3.18E+2	1.83E+3	2.99E+3	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3
NRC	7.60E+3	2.27E+4	1.60E+5	7.20E+3	2.04E+4	1.38E+5	7.00E+3	1.92E+4	1.27E+5	6.59E+3	1.68E+4	1.04E+5	6.49E+3	1.62E+4	9.84E+4
Total	1.55E+6	1.68E+7	1.16E+8	1.54E+6	1.67E+7	1.16E+8	1.54E+6	1.67E+7	1.15E+8	1.52E+6	1.65E+7	1.14E+8	1.51E+6	1.64E+7	1.14E+8

Medium Population Density With Agriculture - 09-19-94 1:57p
 Table M-160. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.10E+3	2.28E+3	2.28E+3	1.99E+3	2.16E+3	2.16E+3	1.84E+3	1.99E+3	1.99E+3	1.32E+3	1.43E+3	1.43E+3	1.15E+3	1.24E+3	1.24E+3
II	2.86E+5	6.40E+6	2.34E+7	2.86E+5	6.40E+6	2.34E+7	2.86E+5	6.40E+6	2.33E+7	2.84E+5	6.35E+6	2.29E+7	2.82E+5	6.31E+6	2.27E+7
III	7.25E+2	8.06E+2	8.06E+2	5.99E+2	6.66E+2	6.66E+2	3.80E+2	4.23E+2	4.23E+2	9.98E+1	1.11E+2	1.11E+2	5.63E+1	6.26E+1	6.26E+1
IV	1.56E+3	9.92E+3	2.04E+4	1.48E+3	9.44E+3	1.95E+4	1.33E+3	8.50E+3	1.75E+4	5.91E+2	3.77E+3	7.76E+3	2.20E+2	1.41E+3	2.89E+3
V	6.39E+4	6.95E+4	6.95E+4	6.21E+4	6.76E+4	6.76E+4	5.86E+4	6.37E+4	6.37E+4	4.89E+4	5.32E+4	5.32E+4	4.65E+4	5.06E+4	5.06E+4
VI	4.59E+4	3.82E+5	3.70E+6	4.57E+4	3.81E+5	3.69E+6	4.54E+4	3.79E+5	3.67E+6	4.39E+4	3.68E+5	3.57E+6	4.33E+4	3.65E+5	3.53E+6
VII	4.72E+4	4.07E+5	3.16E+6	3.35E+4	2.89E+5	2.25E+6	2.22E+4	1.92E+5	1.49E+6	1.23E+2	1.03E+3	7.94E+3	.00E+0	.00E+0	.00E+0
IX	1.69E+2	1.48E+3	9.33E+3	1.22E+2	1.07E+3	6.74E+3	8.34E+1	7.29E+2	4.61E+3	1.51E+1	1.32E+2	8.36E+2	.00E+0	.00E+0	.00E+0
X	1.44E+3	1.58E+4	1.80E+4	1.41E+3	1.40E+4	1.59E+4	1.38E+3	1.13E+4	1.29E+4	1.24E+3	6.85E+3	7.71E+3	1.20E+3	5.80E+3	6.51E+3
XII	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.15E+2	1.82E+3	2.93E+3	3.13E+2	1.81E+3	2.91E+3	3.12E+2	1.80E+3	2.91E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	4.24E+0	4.50E+0	4.50E+0	4.23E+0	4.49E+0	4.49E+0	4.21E+0	4.47E+0	4.47E+0	4.06E+0	4.31E+0	4.31E+0	3.97E+0	4.22E+0	4.22E+0
XVIB	4.20E+0	4.44E+0	4.44E+0	4.19E+0	4.43E+0	4.43E+0	4.17E+0	4.42E+0	4.42E+0	4.02E+0	4.26E+0	4.26E+0	3.93E+0	4.17E+0	4.17E+0
XVIC	4.11E+0	4.33E+0	4.33E+0	4.10E+0	4.32E+0	4.32E+0	4.08E+0	4.30E+0	4.30E+0	3.93E+0	4.15E+0	4.15E+0	3.85E+0	4.06E+0	4.06E+0
XVIIIA	8.67E+1	9.35E+1	9.35E+1	8.64E+1	9.31E+1	9.31E+1	8.56E+1	9.23E+1	9.23E+1	8.18E+1	8.82E+1	8.82E+1	7.99E+1	8.61E+1	8.61E+1
XVIIIB	7.95E+1	8.44E+1	8.44E+1	7.92E+1	8.41E+1	8.41E+1	7.85E+1	8.34E+1	8.34E+1	7.50E+1	7.96E+1	7.96E+1	7.32E+1	7.78E+1	7.78E+1
XVIIIC	6.75E+1	7.02E+1	7.02E+1	6.73E+1	6.99E+1	6.99E+1	6.67E+1	6.93E+1	6.93E+1	6.37E+1	6.62E+1	6.62E+1	6.22E+1	6.46E+1	6.46E+1
XXA	4.37E+0	3.47E+1	2.68E+2	4.02E+0	3.19E+1	2.46E+2	3.54E+0	2.81E+1	2.17E+2	2.45E+0	1.94E+1	1.50E+2	2.07E+0	1.64E+1	1.27E+2
XXB	4.18E+0	2.48E+1	1.09E+2	3.84E+0	2.28E+1	9.99E+1	3.39E+0	2.01E+1	8.81E+1	2.35E+0	1.39E+1	6.10E+1	1.98E+0	1.18E+1	5.16E+1
XXC	3.82E+0	1.40E+1	3.19E+2	3.50E+0	1.29E+1	2.93E+2	3.09E+0	1.14E+1	2.58E+2	2.14E+0	7.86E+0	1.79E+2	1.81E+0	6.64E+0	1.51E+2
XXIA	4.46E+1	4.57E+2	4.37E+3	4.42E+1	4.53E+2	4.33E+3	4.33E+1	4.45E+2	4.25E+3	3.64E+1	3.74E+2	3.57E+3	3.39E+1	3.48E+2	3.32E+3
XXIB	4.42E+1	4.52E+2	4.08E+3	4.38E+1	4.48E+2	4.04E+3	4.30E+1	4.39E+2	3.97E+3	3.61E+1	3.69E+2	3.34E+3	3.36E+1	3.44E+2	3.10E+3
XXIC	4.38E+1	4.39E+2	3.54E+3	4.34E+1	4.35E+2	3.51E+3	4.26E+1	4.27E+2	3.44E+3	3.58E+1	3.59E+2	2.89E+3	3.33E+1	3.34E+2	2.69E+3
XXII	3.96E+3	8.67E+4	1.47E+5	3.88E+3	8.59E+4	1.45E+5	3.75E+3	8.35E+4	1.41E+5	3.60E+3	8.00E+4	1.35E+5	3.20E+3	7.88E+4	1.33E+5
DOE	1.47E+6	1.62E+7	1.12E+8	1.45E+6	1.60E+7	1.10E+8	1.43E+6	1.59E+7	1.09E+8	1.36E+6	1.53E+7	1.05E+8	1.34E+6	1.52E+7	1.04E+8
DOD	3.16E+2	1.82E+3	2.94E+3	3.16E+2	1.82E+3	2.94E+3	3.15E+2	1.82E+3	2.93E+3	3.13E+2	1.81E+3	2.91E+3	3.12E+2	1.80E+3	2.91E+3
NRC	6.46E+3	1.60E+4	9.70E+4	6.43E+3	1.59E+4	9.59E+4	6.36E+3	1.56E+4	9.38E+4	5.96E+3	1.37E+4	7.91E+4	5.78E+3	1.30E+4	7.37E+4
Total	1.48E+6	1.62E+7	1.12E+8	1.46E+6	1.61E+7	1.11E+8	1.44E+6	1.59E+7	1.09E+8	1.36E+6	1.54E+7	1.05E+8	1.34E+6	1.52E+7	1.04E+8

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 Table M-161. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.13E+0	1.24E+0	1.24E+0	1.12E+0	1.22E+0	1.22E+0	1.10E+0	1.21E+0	1.21E+0	1.07E+0	1.17E+0	1.17E+0	1.05E+0	1.15E+0	1.15E+0
II	4.85E+1	4.75E+2	3.84E+3	4.85E+1	4.75E+2	3.84E+3	4.85E+1	4.75E+2	3.84E+3	4.85E+1	4.74E+2	3.84E+3	4.85E+1	4.74E+2	3.84E+3
III	4.91E-1	5.44E-1	5.44E-1	4.91E-1	5.44E-1	5.44E-1	4.89E-1	5.42E-1	5.42E-1	4.75E-1	5.26E-1	5.26E-1	4.53E-1	5.02E-1	5.02E-1
IV	3.70E-1	2.34E+0	4.58E+0	3.67E-1	2.32E+0	4.55E+0	3.65E-1	2.31E+0	4.52E+0	3.59E-1	2.27E+0	4.45E+0	3.54E-1	2.24E+0	4.39E+0
V	2.95E+1	3.22E+1	3.22E+1	2.95E+1	3.22E+1	3.22E+1	2.94E+1	3.21E+1	3.21E+1	2.93E+1	3.20E+1	3.20E+1	2.91E+1	3.18E+1	3.18E+1
VI	1.01E+1	7.87E+1	6.84E+2	1.01E+1	7.87E+1	6.84E+2	1.01E+1	7.87E+1	6.84E+2	1.01E+1	7.87E+1	6.84E+2	1.01E+1	7.87E+1	6.84E+2
VII	7.75E+0	5.80E+1	4.28E+2	7.57E+0	5.65E+1	4.17E+2	7.33E+0	5.44E+1	4.01E+2	6.78E+0	4.96E+1	3.65E+2	6.43E+0	4.66E+1	3.42E+2
IX	3.05E-2	2.60E-1	1.60E+0	2.89E-2	2.47E-1	1.52E+0	2.75E-2	2.34E-1	1.45E+0	2.39E-2	2.04E-1	1.26E+0	2.15E-2	1.83E-1	1.13E+0
X	1.56E+0	5.13E+0	5.68E+0	1.56E+0	5.13E+0	5.68E+0	1.56E+0	5.13E+0	5.68E+0	1.55E+0	5.11E+0	5.66E+0	1.54E+0	5.07E+0	5.61E+0
XII	2.24E-2	1.32E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1
XIIIA	2.11E-4	1.41E-3	3.46E-3	1.69E-4	1.14E-3	2.77E-3	1.18E-4	7.93E-4	1.94E-3	2.33E-5	1.56E-4	3.82E-4	.00E+0	.00E+0	.00E+0
XIIIB	1.95E-4	9.63E-4	1.46E-3	1.57E-4	7.73E-4	1.17E-3	1.09E-4	5.40E-4	8.16E-4	2.15E-5	1.06E-4	1.61E-4	.00E+0	.00E+0	.00E+0
XIIIC	1.68E-4	5.32E-4	1.04E-2	1.35E-4	4.27E-4	8.32E-3	9.43E-5	2.98E-4	5.81E-3	1.86E-5	5.88E-5	1.14E-3	.00E+0	.00E+0	.00E+0
XVIA	1.85E-3	1.97E-3	1.97E-3	1.85E-3	1.97E-3	1.97E-3	1.85E-3	1.97E-3	1.97E-3	1.85E-3	1.96E-3	1.96E-3	1.85E-3	1.96E-3	1.96E-3
XVIB	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3
XVIC	1.79E-3	1.90E-3	1.90E-3	1.79E-3	1.90E-3	1.90E-3	1.79E-3	1.90E-3	1.90E-3	1.79E-3	1.89E-3	1.89E-3	1.79E-3	1.89E-3	1.89E-3
XVIIIA	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2
XVIIIB	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2
XVIIIC	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2
XXA	2.00E-2	1.58E-1	1.09E+0	1.52E-2	1.20E-1	8.26E-1	1.28E-2	1.01E-1	7.00E-1	8.94E-3	7.05E-2	4.87E-1	6.73E-3	5.32E-2	3.67E-1
XXB	1.92E-2	1.13E-1	4.44E-1	1.45E-2	8.57E-2	3.36E-1	1.23E-2	7.26E-2	2.85E-1	8.56E-3	5.05E-2	1.98E-1	6.45E-3	3.81E-2	1.49E-1
XXC	1.75E-2	6.37E-2	1.42E+0	1.32E-2	4.82E-2	1.08E+0	1.12E-2	4.08E-2	9.12E-1	7.81E-3	2.84E-2	6.35E-1	5.88E-3	2.14E-2	4.78E-1
XXIA	1.43E-2	1.48E-1	1.41E+0	1.43E-2	1.48E-1	1.41E+0	1.43E-2	1.48E-1	1.41E+0	1.43E-2	1.48E-1	1.41E+0	1.43E-2	1.48E-1	1.41E+0
XXIB	1.42E-2	1.46E-1	1.30E+0	1.42E-2	1.46E-1	1.30E+0	1.42E-2	1.46E-1	1.30E+0	1.42E-2	1.46E-1	1.30E+0	1.42E-2	1.46E-1	1.30E+0
XXIC	1.41E-2	1.42E-1	1.10E+0	1.41E-2	1.42E-1	1.10E+0	1.41E-2	1.42E-1	1.10E+0	1.40E-2	1.42E-1	1.10E+0	1.40E-2	1.42E-1	1.10E+0
XXII	8.59E-1	1.66E+1	3.11E+1	8.58E-1	1.66E+1	3.11E+1	8.58E-1	1.66E+1	3.10E+1	8.56E-1	1.66E+1	3.10E+1	8.54E-1	1.66E+1	3.10E+1
DOE	3.26E+2	2.48E+3	2.01E+4	3.25E+2	2.47E+3	2.00E+4	3.25E+2	2.47E+3	2.00E+4	3.24E+2	2.47E+3	2.00E+4	3.23E+2	2.46E+3	2.00E+4
DOD	2.40E-2	1.40E-1	2.56E-1	2.37E-2	1.38E-1	2.48E-1	2.33E-2	1.36E-1	2.37E-1	2.26E-2	1.32E-1	2.18E-1	2.24E-2	1.31E-1	2.13E-1
NRC	2.81E+0	7.13E+0	4.41E+1	2.74E+0	6.75E+0	4.07E+1	2.71E+0	6.57E+0	3.92E+1	2.66E+0	6.27E+0	3.65E+1	2.63E+0	6.09E+0	3.49E+1
Total	3.29E+2	2.48E+3	2.01E+4	3.28E+2	2.48E+3	2.01E+4	3.28E+2	2.48E+3	2.01E+4	3.27E+2	2.47E+3	2.00E+4	3.26E+2	2.47E+3	2.00E+4

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 Table M-162. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.01E+0	1.10E+0	1.10E+0	9.71E-1	1.06E+0	1.06E+0	9.20E-1	1.01E+0	1.01E+0	7.84E-1	8.57E-1	8.57E-1	7.49E-1	8.18E-1	8.18E-1
II	4.85E+1	4.74E+2	3.83E+3	4.85E+1	4.74E+2	3.83E+3	4.85E+1	4.73E+2	3.81E+3	4.85E+1	4.73E+2	3.78E+3	4.84E+1	4.72E+2	3.77E+3
III	3.90E-1	4.32E-1	4.32E-1	3.60E-1	3.99E-1	3.99E-1	3.25E-1	3.60E-1	3.60E-1	1.51E-1	1.67E-1	1.67E-1	9.72E-2	1.08E-1	1.08E-1
IV	3.46E-1	2.19E+0	4.29E+0	3.41E-1	2.16E+0	4.23E+0	3.31E-1	2.09E+0	4.10E+0	2.81E-1	1.78E+0	3.48E+0	2.56E-1	1.62E+0	3.17E+0
V	2.87E+1	3.14E+1	3.14E+1	2.84E+1	3.10E+1	3.10E+1	2.79E+1	3.04E+1	3.04E+1	2.51E+1	2.74E+1	2.74E+1	2.37E+1	2.59E+1	2.59E+1
VI	1.01E+1	7.86E+1	6.84E+2	1.01E+1	7.86E+1	6.84E+2	1.01E+1	7.85E+1	6.83E+2	9.93E+0	7.78E+1	6.77E+2	9.85E+0	7.73E+1	6.74E+2
VII	5.87E+0	4.20E+1	3.07E+2	5.40E+0	3.85E+1	2.82E+2	4.20E+0	2.99E+1	2.19E+2	1.73E+0	1.27E+1	9.30E+1	1.37E+0	1.00E+1	7.39E+1
IX	1.79E-2	1.53E-1	9.43E-1	1.51E-2	1.28E-1	7.93E-1	1.23E-2	1.05E-1	6.47E-1	5.76E-3	4.91E-2	3.03E-1	4.04E-3	3.44E-2	2.13E-1
X	1.53E+0	4.93E+0	5.45E+0	1.52E+0	4.74E+0	5.24E+0	1.50E+0	4.38E+0	4.81E+0	1.42E+0	3.24E+0	3.51E+0	1.38E+0	2.98E+0	3.21E+0
XII	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.12E-1	2.23E-2	1.31E-1	2.12E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.85E-3	1.96E-3	1.96E-3	1.85E-3	1.96E-3	1.96E-3	1.84E-3	1.95E-3	1.95E-3	1.82E-3	1.94E-3	1.94E-3	1.82E-3	1.93E-3	1.93E-3
XVIB	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.82E-3	1.93E-3	1.93E-3	1.81E-3	1.92E-3	1.92E-3	1.80E-3	1.91E-3	1.91E-3
XVIC	1.79E-3	1.89E-3	1.89E-3	1.79E-3	1.89E-3	1.89E-3	1.78E-3	1.89E-3	1.89E-3	1.77E-3	1.87E-3	1.87E-3	1.76E-3	1.86E-3	1.86E-3
XVIIIA	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.80E-2	3.80E-2	3.47E-2	3.75E-2	3.75E-2	3.45E-2	3.73E-2	3.73E-2
XVIIIB	3.25E-2	3.45E-2	3.45E-2	3.24E-2	3.45E-2	3.45E-2	3.24E-2	3.45E-2	3.45E-2	3.20E-2	3.40E-2	3.40E-2	3.18E-2	3.38E-2	3.38E-2
XVIIIC	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.87E-2	2.87E-2	2.76E-2	2.87E-2	2.87E-2	2.72E-2	2.83E-2	2.83E-2	2.70E-2	2.81E-2	2.81E-2
XXA	3.20E-3	2.53E-2	1.74E-1	1.32E-3	1.04E-2	7.22E-2	8.61E-4	6.80E-3	4.70E-2	6.87E-4	5.43E-3	3.75E-2	6.38E-4	5.04E-3	3.48E-2
XXB	3.07E-3	1.81E-2	7.10E-2	1.27E-3	7.48E-3	2.94E-2	8.25E-4	4.87E-3	1.91E-2	6.58E-4	3.88E-3	1.53E-2	6.11E-4	3.61E-3	1.42E-2
XXC	2.79E-3	1.02E-2	2.27E-1	1.16E-3	4.21E-3	9.40E-2	7.52E-4	2.74E-3	6.12E-2	6.00E-4	2.19E-3	4.88E-2	5.57E-4	2.03E-3	4.53E-2
XXIA	1.43E-2	1.48E-1	1.41E+0	1.42E-2	1.47E-1	1.40E+0	1.41E-2	1.46E-1	1.39E+0	1.37E-2	1.42E-1	1.35E+0	1.34E-2	1.38E-1	1.32E+0
XXIB	1.42E-2	1.46E-1	1.29E+0	1.41E-2	1.45E-1	1.29E+0	1.40E-2	1.44E-1	1.28E+0	1.36E-2	1.40E-1	1.25E+0	1.33E-2	1.36E-1	1.21E+0
XXIC	1.40E-2	1.41E-1	1.09E+0	1.40E-2	1.41E-1	1.09E+0	1.39E-2	1.40E-1	1.08E+0	1.35E-2	1.36E-1	1.05E+0	1.31E-2	1.32E-1	1.02E+0
XXII	8.49E-1	1.65E+1	3.08E+1	8.43E-1	1.65E+1	3.07E+1	8.37E-1	1.63E+1	3.04E+1	7.92E-1	1.57E+1	2.92E+1	7.86E-1	1.54E+1	2.88E+1
DOE	3.22E+2	2.46E+3	1.99E+4	3.21E+2	2.45E+3	1.99E+4	3.18E+2	2.44E+3	1.98E+4	3.09E+2	2.39E+3	1.95E+4	3.05E+2	2.38E+3	1.94E+4
DOD	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.12E-1	2.23E-2	1.31E-1	2.12E-1
NRC	2.58E+0	5.81E+0	3.24E+1	2.56E+0	5.65E+0	3.10E+1	2.55E+0	5.59E+0	3.05E+1	2.51E+0	5.46E+0	2.96E+1	2.48E+0	5.35E+0	2.88E+1
Total	3.25E+2	2.46E+3	2.00E+4	3.23E+2	2.46E+3	1.99E+4	3.21E+2	2.44E+3	1.98E+4	3.11E+2	2.40E+3	1.95E+4	3.08E+2	2.38E+3	1.94E+4

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 Table M-163. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.12E+0	1.23E+0	1.23E+0	1.10E+0	1.20E+0	1.20E+0	1.08E+0	1.18E+0	1.18E+0	1.02E+0	1.12E+0	1.12E+0	9.78E-1	1.07E+0	1.07E+0
II	4.85E+1	4.75E+2	3.84E+3	4.85E+1	4.74E+2	3.84E+3	4.85E+1	4.74E+2	3.84E+3	4.85E+1	4.74E+2	3.83E+3	4.85E+1	4.74E+2	3.82E+3
III	4.91E-1	5.44E-1	5.44E-1	4.87E-1	5.40E-1	5.40E-1	4.77E-1	5.29E-1	5.29E-1	4.10E-1	4.55E-1	4.55E-1	3.63E-1	4.02E-1	4.02E-1
IV	3.68E-1	2.33E+0	4.56E+0	3.63E-1	2.29E+0	4.50E+0	3.59E-1	2.27E+0	4.44E+0	3.47E-1	2.19E+0	4.30E+0	3.41E-1	2.15E+0	4.22E+0
V	2.95E+1	3.22E+1	3.22E+1	2.94E+1	3.21E+1	3.21E+1	2.93E+1	3.20E+1	3.20E+1	2.89E+1	3.15E+1	3.15E+1	2.85E+1	3.11E+1	3.11E+1
VI	1.01E+1	7.87E+1	6.84E+2	1.01E+1	7.87E+1	6.84E+2	1.01E+1	7.87E+1	6.84E+2	1.01E+1	7.86E+1	6.84E+2	1.01E+1	7.86E+1	6.84E+2
VII	7.68E+0	5.75E+1	4.24E+2	7.09E+0	5.23E+1	3.85E+2	6.69E+0	4.89E+1	3.60E+2	5.86E+0	4.19E+1	3.07E+2	5.19E+0	3.69E+1	2.70E+2
IX	2.95E-2	2.51E-1	1.55E+0	2.60E-2	2.21E-1	1.37E+0	2.34E-2	1.99E-1	1.23E+0	1.78E-2	1.52E-1	9.37E-1	1.41E-2	1.20E-1	7.41E-1
X	1.56E+0	5.13E+0	5.68E+0	1.56E+0	5.13E+0	5.68E+0	1.55E+0	5.12E+0	5.67E+0	1.54E+0	5.04E+0	5.57E+0	1.52E+0	4.90E+0	5.42E+0
XII	2.24E-2	1.32E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1
XIIIA	1.92E-4	1.29E-3	3.15E-3	1.12E-4	7.52E-4	1.84E-3	5.48E-5	3.68E-4	9.00E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.78E-4	8.77E-4	1.33E-3	1.04E-4	5.12E-4	7.74E-4	5.08E-5	2.51E-4	3.79E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.53E-4	4.85E-4	9.44E-3	8.95E-5	2.83E-4	5.51E-3	4.38E-5	1.39E-4	2.70E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.85E-3	1.97E-3	1.97E-3	1.85E-3	1.97E-3	1.97E-3	1.85E-3	1.96E-3	1.96E-3	1.83E-3	1.96E-3	1.96E-3	1.85E-3	1.96E-3	1.96E-3
XVIB	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3	1.83E-3	1.94E-3	1.94E-3
XVIC	1.79E-3	1.90E-3	1.90E-3	1.79E-3	1.89E-3	1.89E-3	1.79E-3	1.89E-3	1.89E-3	1.79E-3	1.89E-3	1.89E-3	1.79E-3	1.89E-3	1.89E-3
XVIIIA	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2	3.52E-2	3.81E-2	3.81E-2
XVIIIB	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2	3.25E-2	3.45E-2	3.45E-2
XVIIIC	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2	2.76E-2	2.88E-2	2.88E-2
XXA	1.60E-2	1.26E-1	8.71E-1	1.05E-2	8.31E-2	5.74E-1	7.80E-3	6.15E-2	4.25E-1	2.22E-3	1.76E-2	1.21E-1	9.40E-4	7.42E-3	5.13E-2
XXB	1.53E-2	9.03E-2	3.54E-1	1.01E-2	5.95E-2	2.34E-1	7.47E-3	4.41E-2	1.73E-1	2.13E-3	1.26E-2	4.94E-2	9.00E-4	5.31E-3	2.09E-2
XXC	1.39E-2	5.08E-2	1.13E+0	9.19E-3	3.35E-2	7.48E-1	6.81E-3	2.48E-2	5.54E-1	1.94E-3	7.08E-3	1.58E-1	8.21E-4	2.99E-3	6.68E-2
XXIA	1.43E-2	1.48E-1	1.41E+0	1.43E-2	1.48E-1	1.41E+0	1.43E-2	1.48E-1	1.41E+0	1.43E-2	1.48E-1	1.41E+0	1.42E-2	1.47E-1	1.40E+0
XXIB	1.42E-2	1.46E-1	1.30E+0	1.42E-2	1.46E-1	1.30E+0	1.42E-2	1.46E-1	1.30E+0	1.42E-2	1.46E-1	1.30E+0	1.41E-2	1.45E-1	1.29E+0
XXIC	1.41E-2	1.42E-1	1.10E+0	1.41E-2	1.42E-1	1.10E+0	1.40E-2	1.42E-1	1.10E+0	1.40E-2	1.41E-1	1.09E+0	1.40E-2	1.41E-1	1.09E+0
XXII	8.59E-1	1.66E+1	3.11E+1	8.57E-1	1.66E+1	3.10E+1	8.55E-1	1.66E+1	3.10E+1	8.49E-1	1.65E+1	3.09E+1	8.42E-1	1.65E+1	3.08E+1
DOE	3.26E+2	2.47E+3	2.01E+4	3.25E+2	2.47E+3	2.00E+4	3.24E+2	2.47E+3	2.00E+4	3.22E+2	2.46E+3	1.99E+4	3.21E+2	2.45E+3	1.99E+4
DOD	2.39E-2	1.39E-1	2.52E-1	2.33E-2	1.36E-1	2.36E-1	2.28E-2	1.34E-1	2.24E-1	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.13E-1
NRC	2.75E+0	6.82E+0	4.13E+1	2.68E+0	6.39E+0	3.76E+1	2.65E+0	6.18E+0	3.57E+1	2.57E+0	5.73E+0	3.17E+1	2.55E+0	5.62E+0	3.08E+1
Total	3.28E+2	2.48E+3	2.01E+4	3.28E+2	2.48E+3	2.01E+4	3.27E+2	2.47E+3	2.00E+4	3.25E+2	2.46E+3	2.00E+4	3.23E+2	2.45E+3	1.99E+4

Medium Population Density With Agriculture - 09-19-94 1:57p
 Table M-164. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	9.08E-1	9.92E-1	9.92E-1	8.61E-1	9.40E-1	9.40E-1	7.93E-1	8.66E-1	8.66E-1	5.69E-1	6.22E-1	6.22E-1	4.95E-1	5.41E-1	5.41E-1
II	4.85E+1	4.73E+2	3.80E+3	4.85E+1	4.73E+2	3.80E+3	4.84E+1	4.72E+2	3.78E+3	4.81E+1	4.68E+2	3.72E+3	4.78E+1	4.65E+2	3.69E+3
III	3.14E-1	3.48E-1	3.48E-1	2.60E-1	2.88E-1	2.88E-1	1.65E-1	1.83E-1	1.83E-1	4.33E-2	4.79E-2	4.79E-2	2.44E-2	2.70E-2	2.70E-2
IV	3.25E-1	2.06E+0	4.03E+0	3.10E-1	1.96E+0	3.84E+0	2.79E-1	1.76E+0	3.45E+0	1.24E-1	7.81E-1	1.53E+0	4.61E-2	2.91E-1	5.71E-1
V	2.77E+1	3.02E+1	3.02E+1	2.69E+1	2.94E+1	2.94E+1	2.54E+1	2.77E+1	2.77E+1	2.12E+1	2.31E+1	2.31E+1	2.02E+1	2.20E+1	2.20E+1
VI	1.01E+1	7.84E+1	6.83E+2	1.00E+1	7.83E+1	6.81E+2	9.94E+0	7.78E+1	6.78E+2	9.53E+0	7.55E+1	6.59E+2	9.40E+0	7.47E+1	6.52E+2
VII	3.49E+0	2.49E+1	1.83E+2	2.46E+0	1.77E+1	1.30E+2	1.61E+0	1.18E+1	8.64E+1	1.07E-2	6.48E-2	4.62E-1	.00E+0	.00E+0	.00E+0
IX	1.03E-2	8.75E-2	5.40E-1	7.41E-3	6.32E-2	3.90E-1	5.07E-3	4.32E-2	2.67E-1	9.19E-4	7.83E-3	4.84E-2	.00E+0	.00E+0	.00E+0
X	1.50E+0	4.51E+0	4.96E+0	1.48E+0	4.12E+0	4.52E+0	1.45E+0	3.56E+0	3.87E+0	1.31E+0	2.54E+0	2.71E+0	1.27E+0	2.28E+0	2.42E+0
XII	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.12E-1	2.23E-2	1.31E-1	2.12E-1	2.22E-2	1.30E-1	2.11E-1	2.21E-2	1.30E-1	2.10E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.84E-3	1.95E-3	1.95E-3	1.83E-3	1.95E-3	1.95E-3	1.83E-3	1.94E-3	1.94E-3	1.76E-3	1.88E-3	1.88E-3	1.73E-3	1.84E-3	1.84E-3
XVIB	1.82E-3	1.93E-3	1.93E-3	1.82E-3	1.93E-3	1.93E-3	1.81E-3	1.92E-3	1.92E-3	1.75E-3	1.86E-3	1.86E-3	1.71E-3	1.82E-3	1.82E-3
XVIC	1.78E-3	1.88E-3	1.88E-3	1.78E-3	1.88E-3	1.88E-3	1.77E-3	1.87E-3	1.87E-3	1.71E-3	1.81E-3	1.81E-3	1.67E-3	1.77E-3	1.77E-3
XVIIIA	3.51E-2	3.80E-2	3.80E-2	3.50E-2	3.79E-2	3.79E-2	3.47E-2	3.75E-2	3.75E-2	3.32E-2	3.58E-2	3.58E-2	3.24E-2	3.50E-2	3.50E-2
XVIIIB	3.24E-2	3.44E-2	3.44E-2	3.23E-2	3.43E-2	3.43E-2	3.20E-2	3.40E-2	3.40E-2	3.06E-2	3.25E-2	3.25E-2	2.98E-2	3.17E-2	3.17E-2
XVIIIC	2.76E-2	2.87E-2	2.87E-2	2.75E-2	2.86E-2	2.86E-2	2.72E-2	2.83E-2	2.83E-2	2.60E-2	2.71E-2	2.71E-2	2.54E-2	2.64E-2	2.64E-2
XXA	7.94E-4	6.27E-3	4.33E-2	7.29E-4	5.75E-3	3.98E-2	6.43E-4	5.07E-3	3.51E-2	4.45E-4	3.51E-3	2.43E-2	3.76E-4	2.97E-3	2.06E-2
XXB	7.60E-4	4.49E-3	1.76E-2	6.98E-4	4.12E-3	1.62E-2	6.16E-4	3.63E-3	1.43E-2	4.26E-4	2.52E-3	9.89E-3	3.60E-4	2.13E-3	8.36E-3
XXC	6.93E-4	2.52E-3	5.64E-2	6.37E-4	2.32E-3	5.18E-2	5.61E-4	2.04E-3	4.57E-2	3.89E-4	1.42E-3	3.16E-2	3.28E-4	1.20E-3	2.67E-2
XXIA	1.41E-2	1.46E-1	1.39E+0	1.40E-2	1.45E-1	1.38E+0	1.37E-2	1.42E-1	1.35E+0	1.15E-2	1.19E-1	1.13E+0	1.07E-2	1.11E-1	1.06E+0
XXIB	1.40E-2	1.44E-1	1.28E+0	1.39E-2	1.43E-1	1.27E+0	1.36E-2	1.40E-1	1.24E+0	1.14E-2	1.18E-1	1.04E+0	1.06E-2	1.09E-1	9.72E-1
XXIC	1.38E-2	1.40E-1	1.08E+0	1.37E-2	1.38E-1	1.07E+0	1.34E-2	1.36E-1	1.05E+0	1.13E-2	1.14E-1	8.83E-1	1.05E-2	1.06E-1	8.21E-1
XXII	8.35E-1	1.63E+1	3.04E+1	8.18E-1	1.61E+1	3.01E+1	7.91E-1	1.57E+1	2.92E+1	7.57E-1	1.50E+1	2.79E+1	6.67E-1	1.48E+1	2.74E+1
DOE	3.17E+2	2.43E+3	1.97E+4	3.14E+2	2.42E+3	1.96E+4	3.09E+2	2.39E+3	1.95E+4	2.93E+2	2.31E+3	1.89E+4	2.88E+2	2.29E+3	1.87E+4
DOD	2.24E-2	1.31E-1	2.13E-1	2.24E-2	1.31E-1	2.12E-1	2.23E-2	1.31E-1	2.12E-1	2.22E-2	1.30E-1	2.11E-1	2.21E-2	1.30E-1	2.10E-1
NRC	2.54E+0	5.58E+0	3.04E+1	2.53E+0	5.53E+0	3.01E+1	2.50E+0	5.45E+0	2.95E+1	2.36E+0	4.84E+0	2.50E+1	2.29E+0	4.61E+0	2.33E+1
Total	3.20E+2	2.43E+3	1.98E+4	3.17E+2	2.42E+3	1.97E+4	3.12E+2	2.40E+3	1.95E+4	2.95E+2	2.32E+3	1.89E+4	2.90E+2	2.29E+3	1.87E+4

Medium Population Density With Agriculture - 09-19-94 1:57p
 Table M-165. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.48E-1	8.18E-1	8.18E-1	7.37E-1	8.06E-1	8.06E-1	7.29E-1	7.97E-1	7.97E-1	7.09E-1	7.75E-1	7.75E-1	6.95E-1	7.60E-1	7.60E-1
II	3.57E+1	3.49E+2	2.85E+3	3.57E+1	3.49E+2	2.85E+3	3.57E+1	3.49E+2	2.85E+3	3.57E+1	3.49E+2	2.85E+3	3.56E+1	3.49E+2	2.84E+3
III	3.25E-1	3.60E-1	3.60E-1	3.25E-1	3.60E-1	3.60E-1	3.24E-1	3.59E-1	3.59E-1	3.14E-1	3.48E-1	3.48E-1	3.00E-1	3.32E-1	3.32E-1
IV	2.34E-1	1.45E+0	2.92E+0	2.33E-1	1.44E+0	2.90E+0	2.31E-1	1.43E+0	2.88E+0	2.27E-1	1.41E+0	2.83E+0	2.25E-1	1.39E+0	2.80E+0
V	1.95E+1	2.13E+1	2.13E+1	1.95E+1	2.12E+1	2.12E+1	1.95E+1	2.12E+1	2.12E+1	1.94E+1	2.11E+1	2.11E+1	1.93E+1	2.10E+1	2.10E+1
VI	6.65E+0	5.10E+1	4.64E+2	6.65E+0	5.10E+1	4.64E+2	6.64E+0	5.10E+1	4.64E+2	6.64E+0	5.10E+1	4.64E+2	6.64E+0	5.10E+1	4.64E+2
VII	6.54E+0	5.09E+1	3.82E+2	6.39E+0	4.96E+1	3.72E+2	6.18E+0	4.78E+1	3.58E+2	5.69E+0	4.35E+1	3.26E+2	5.39E+0	4.09E+1	3.05E+2
IX	2.68E-2	2.30E-1	1.43E+0	2.54E-2	2.19E-1	1.36E+0	2.42E-2	2.08E-1	1.29E+0	2.10E-2	1.81E-1	1.12E+0	1.89E-2	1.62E-1	1.01E+0
X	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.20E+0	3.54E+0	1.01E+0	3.18E+0	3.51E+0
XII	1.89E-2	1.10E-1	1.78E-1	1.89E-2	1.10E-1	1.78E-1	1.89E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1
XIIIA	1.34E-4	8.78E-4	2.20E-3	1.08E-4	7.05E-4	1.77E-3	7.52E-5	4.92E-4	1.23E-3	1.48E-5	9.70E-5	2.43E-4	.00E+0	.00E+0	.00E+0
XIIIB	1.24E-4	5.98E-4	9.26E-4	9.92E-5	4.80E-4	7.44E-4	6.93E-5	3.35E-4	5.19E-4	1.37E-5	6.60E-5	1.02E-4	.00E+0	.00E+0	.00E+0
XIIIC	1.06E-4	3.29E-4	6.34E-3	8.47E-5	2.64E-4	5.09E-3	5.92E-5	1.84E-4	3.56E-3	1.17E-5	3.63E-5	7.01E-4	.00E+0	.00E+0	.00E+0
XVIA	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.22E-3	1.30E-3	1.22E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3
XVIB	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3
XVIC	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3
XVIIIA	2.71E-2	2.92E-2	2.92E-2	2.71E-2	2.92E-2	2.92E-2	2.71E-2	2.92E-2	2.92E-2	2.71E-2	2.92E-2	2.92E-2	2.71E-2	2.92E-2	2.92E-2
XVIIIB	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.64E-2	2.64E-2
XVIIIC	2.11E-2	2.19E-2	2.19E-2	2.11E-2	2.19E-2	2.19E-2	2.11E-2	2.19E-2	2.19E-2	2.11E-2	2.19E-2	2.19E-2	2.11E-2	2.19E-2	2.19E-2
XXA	1.24E-2	9.81E-2	7.75E-1	9.38E-3	7.43E-2	5.87E-1	7.95E-3	6.29E-2	4.97E-1	5.53E-3	4.38E-2	3.46E-1	4.17E-3	3.30E-2	2.61E-1
XXB	1.18E-2	7.00E-2	3.13E-1	8.96E-3	5.30E-2	2.37E-1	7.59E-3	4.49E-2	2.01E-1	5.28E-3	3.13E-2	1.40E-1	3.98E-3	2.36E-2	1.05E-1
XXC	1.08E-2	3.94E-2	8.95E-1	8.17E-3	2.99E-2	6.78E-1	6.92E-3	2.53E-2	5.74E-1	4.82E-3	1.76E-2	4.00E-1	3.63E-3	1.33E-2	3.01E-1
XXIA	9.50E-3	9.83E-2	9.36E-1	9.50E-3	9.83E-2	9.36E-1	9.50E-3	9.83E-2	9.36E-1	9.50E-3	9.83E-2	9.36E-1	9.49E-3	9.82E-2	9.35E-1
XXIB	9.44E-3	9.70E-2	8.63E-1	9.44E-3	9.70E-2	8.63E-1	9.44E-3	9.70E-2	8.63E-1	9.44E-3	9.70E-2	8.62E-1	9.44E-3	9.69E-2	8.62E-1
XXIC	9.31E-3	9.41E-2	7.29E-1	9.31E-3	9.41E-2	7.29E-1	9.31E-3	9.41E-2	7.29E-1	9.31E-3	9.41E-2	7.29E-1	9.31E-3	9.40E-2	7.28E-1
XXII	6.01E-1	1.07E+1	2.07E+1	6.00E-1	1.07E+1	2.07E+1	6.00E-1	1.07E+1	2.07E+1	5.98E-1	1.07E+1	2.07E+1	5.97E-1	1.07E+1	2.07E+1
DOE	2.19E+2	1.66E+3	1.39E+4	2.19E+2	1.66E+3	1.39E+4	2.19E+2	1.66E+3	1.39E+4	2.18E+2	1.65E+3	1.39E+4	2.17E+2	1.65E+3	1.39E+4
DOD	1.99E-2	1.15E-1	2.05E-1	1.97E-2	1.14E-1	1.99E-1	1.94E-2	1.13E-1	1.93E-1	1.90E-2	1.11E-1	1.81E-1	1.88E-2	1.10E-1	1.78E-1
NRC	2.05E+0	4.88E+0	2.96E+1	2.01E+0	4.64E+0	2.73E+1	2.00E+0	4.53E+0	2.63E+1	1.96E+0	4.34E+0	2.44E+1	1.95E+0	4.23E+0	2.34E+1
Total	2.21E+2	1.66E+3	1.40E+4	2.21E+2	1.66E+3	1.40E+4	2.21E+2	1.66E+3	1.39E+4	2.20E+2	1.66E+3	1.39E+4	2.19E+2	1.65E+3	1.39E+4

Medium Population Density With Agriculture - 09-19-94 1:57p
 Table M-166. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.65E-1	7.26E-1	7.26E-1	6.41E-1	7.01E-1	7.01E-1	6.07E-1	6.64E-1	6.64E-1	5.18E-1	5.66E-1	5.66E-1	4.94E-1	5.40E-1	5.40E-1
II	3.56E+1	3.49E+2	2.84E+3	3.56E+1	3.49E+2	2.84E+3	3.56E+1	3.48E+2	2.82E+3	3.56E+1	3.48E+2	2.81E+3	3.56E+1	3.47E+2	2.80E+3
III	2.58E-1	2.86E-1	2.86E-1	2.38E-1	2.64E-1	2.64E-1	2.15E-1	2.38E-1	2.38E-1	9.96E-2	1.10E-1	1.10E-1	6.43E-2	7.12E-2	7.12E-2
IV	2.19E-1	1.36E+0	2.73E+0	2.16E-1	1.34E+0	2.69E+0	2.10E-1	1.30E+0	2.61E+0	1.78E-1	1.10E+0	2.22E+0	1.62E-1	1.01E+0	2.02E+0
V	1.90E+1	2.07E+1	2.07E+1	1.88E+1	2.05E+1	2.05E+1	1.84E+1	2.01E+1	2.01E+1	1.66E+1	1.81E+1	1.81E+1	1.57E+1	1.71E+1	1.71E+1
VI	6.63E+0	5.09E+1	4.64E+2	6.61E+0	5.09E+1	4.64E+2	6.60E+0	5.08E+1	4.63E+2	6.50E+0	5.04E+1	4.60E+2	6.45E+0	5.01E+1	4.57E+2
VII	4.90E+0	3.68E+1	2.74E+2	4.50E+0	3.37E+1	2.51E+2	3.50E+0	2.62E+1	1.95E+2	1.46E+0	1.11E+1	8.31E+1	1.15E+0	8.80E+0	6.59E+1
IX	1.58E-2	1.35E-1	8.41E-1	1.32E-2	1.14E-1	7.07E-1	1.08E-2	9.29E-2	5.77E-1	5.06E-3	4.35E-2	2.70E-1	3.55E-3	3.05E-2	1.90E-1
X	1.00E+0	3.09E+0	3.41E+0	9.94E-1	2.98E+0	3.28E+0	9.81E-1	2.75E+0	3.02E+0	9.29E-1	2.05E+0	2.22E+0	9.05E-1	1.89E+0	2.03E+0
XII	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.77E-1	1.88E-2	1.10E-1	1.77E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3	1.21E-3	1.29E-3	1.29E-3	1.20E-3	1.28E-3	1.28E-3	1.20E-3	1.28E-3	1.28E-3
XVIB	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.20E-3	1.27E-3	1.27E-3	1.19E-3	1.26E-3	1.26E-3
XVIC	1.19E-3	1.25E-3	1.25E-3	1.18E-3	1.25E-3	1.25E-3	1.18E-3	1.25E-3	1.25E-3	1.17E-3	1.24E-3	1.24E-3	1.17E-3	1.23E-3	1.23E-3
XVIIIA	2.71E-2	2.92E-2	2.92E-2	2.70E-2	2.92E-2	2.92E-2	2.70E-2	2.92E-2	2.92E-2	2.67E-2	2.88E-2	2.88E-2	2.65E-2	2.86E-2	2.86E-2
XVIIIB	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.63E-2	2.63E-2	2.48E-2	2.63E-2	2.63E-2	2.45E-2	2.60E-2	2.60E-2	2.43E-2	2.58E-2	2.58E-2
XVIIIC	2.11E-2	2.19E-2	2.19E-2	2.10E-2	2.19E-2	2.19E-2	2.10E-2	2.18E-2	2.18E-2	2.08E-2	2.16E-2	2.16E-2	2.06E-2	2.14E-2	2.14E-2
XXA	1.98E-3	1.57E-2	1.24E-1	8.19E-4	6.48E-3	5.13E-2	5.33E-4	4.22E-3	3.34E-2	4.25E-4	3.37E-3	2.66E-2	3.95E-4	3.13E-3	2.47E-2
XXB	1.89E-3	1.12E-2	5.01E-2	7.82E-4	4.63E-3	2.07E-2	5.09E-4	3.01E-3	1.35E-2	4.06E-4	2.40E-3	1.08E-2	3.77E-4	2.23E-3	9.99E-3
XXC	1.72E-3	6.30E-3	1.43E-1	7.13E-4	2.61E-3	5.92E-2	4.64E-4	1.70E-3	3.85E-2	3.70E-4	1.35E-3	3.07E-2	3.44E-4	1.26E-3	2.85E-2
XXIA	9.47E-3	9.80E-2	9.33E-1	9.44E-3	9.77E-2	9.30E-1	9.38E-3	9.71E-2	9.24E-1	9.11E-3	9.42E-2	8.97E-1	8.86E-3	9.17E-2	8.73E-1
XXIB	9.41E-3	9.67E-2	8.60E-1	9.38E-3	9.64E-2	8.57E-1	9.33E-3	9.58E-2	8.52E-1	9.05E-3	9.30E-2	8.27E-1	8.81E-3	9.05E-2	8.05E-1
XXIC	9.28E-3	9.37E-2	7.26E-1	9.25E-3	9.35E-2	7.24E-1	9.20E-3	9.29E-2	7.20E-1	8.92E-3	9.02E-2	6.98E-1	8.69E-3	8.77E-2	6.80E-1
XXII	5.94E-1	1.06E+1	2.06E+1	5.90E-1	1.06E+1	2.05E+1	5.86E-1	1.05E+1	2.03E+1	5.54E-1	1.01E+1	1.94E+1	5.50E-1	9.94E+0	1.92E+1
DOE	2.16E+2	1.64E+3	1.38E+4	2.15E+2	1.64E+3	1.38E+4	2.13E+2	1.63E+3	1.37E+4	2.07E+2	1.59E+3	1.35E+4	2.04E+2	1.58E+3	1.34E+4
DOD	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.77E-1	1.88E-2	1.10E-1	1.77E-1
NRC	1.92E+0	4.06E+0	2.17E+1	1.90E+0	3.96E+0	2.08E+1	1.89E+0	3.92E+0	2.05E+1	1.86E+0	3.83E+0	1.98E+1	1.85E+0	3.76E+0	1.93E+1
Total	2.18E+2	1.65E+3	1.38E+4	2.17E+2	1.64E+3	1.38E+4	2.15E+2	1.63E+3	1.37E+4	2.09E+2	1.60E+3	1.35E+4	2.06E+2	1.59E+3	1.34E+4

Medium Population Density With Agriculture - 09-19-94 1:57p
 Table M-167. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.42E-1	8.11E-1	8.11E-1	7.24E-1	7.91E-1	7.91E-1	7.10E-1	7.77E-1	7.77E-1	6.74E-1	7.37E-1	7.37E-1	6.45E-1	7.06E-1	7.06E-1
II	3.57E+1	3.49E+2	2.85E+3	3.57E+1	3.49E+2	2.85E+3	3.57E+1	3.49E+2	2.85E+3	3.56E+1	3.49E+2	2.84E+3	3.56E+1	3.49E+2	2.84E+3
III	3.25E-1	3.60E-1	3.60E-1	3.23E-1	3.57E-1	3.57E-1	3.16E-1	3.50E-1	3.50E-1	2.72E-1	3.01E-1	3.01E-1	2.40E-1	2.66E-1	2.66E-1
IV	2.33E-1	1.45E+0	2.91E+0	2.30E-1	1.43E+0	2.87E+0	2.27E-1	1.41E+0	2.83E+0	2.20E-1	1.36E+0	2.74E+0	2.16E-1	1.34E+0	2.69E+0
V	1.95E+1	2.12E+1	2.12E+1	1.95E+1	2.12E+1	2.12E+1	1.94E+1	2.11E+1	2.11E+1	1.91E+1	2.08E+1	2.08E+1	1.88E+1	2.05E+1	2.05E+1
VI	6.65E+0	5.10E+1	4.64E+2	6.64E+0	5.10E+1	4.64E+2	6.64E+0	5.10E+1	4.64E+2	6.63E+0	5.10E+1	4.64E+2	6.62E+0	5.09E+1	4.64E+2
VII	6.49E+0	5.05E+1	3.79E+2	5.97E+0	4.59E+1	3.44E+2	5.62E+0	4.29E+1	3.21E+2	4.90E+0	3.67E+1	2.74E+2	4.33E+0	3.23E+1	2.41E+2
IX	2.59E-2	2.23E-1	1.38E+0	2.28E-2	1.96E-1	1.22E+0	2.06E-2	1.77E-1	1.10E+0	1.56E-2	1.35E-1	8.35E-1	1.24E-2	1.06E-1	6.61E-1
X	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.21E+0	3.55E+0	1.01E+0	3.15E+0	3.49E+0	9.99E-1	3.07E+0	3.39E+0
XII	1.89E-2	1.10E-1	1.78E-1	1.89E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1
XIIIA	1.22E-4	8.00E-4	2.01E-3	7.14E-5	4.67E-4	1.17E-3	3.49E-5	2.29E-4	5.73E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.13E-4	5.44E-4	8.44E-4	6.57E-5	3.18E-4	4.93E-4	3.22E-5	1.56E-4	2.41E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	9.61E-5	3.00E-4	5.78E-3	5.61E-5	1.75E-4	3.37E-3	2.75E-5	8.56E-5	1.65E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3	1.22E-3	1.30E-3	1.30E-3
XVIB	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3	1.21E-3	1.28E-3	1.28E-3
XVIC	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3	1.19E-3	1.25E-3	1.25E-3
XVIIIA	2.71E-2	2.92E-2	2.92E-2	2.71E-2	2.92E-2	2.92E-2	2.71E-2	2.92E-2	2.92E-2	2.71E-2	2.92E-2	2.92E-2	2.70E-2	2.92E-2	2.92E-2
XVIIIB	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.64E-2	2.64E-2	2.48E-2	2.63E-2	2.63E-2
XVIIIC	2.11E-2	2.19E-2	2.19E-2	2.11E-2	2.19E-2	2.19E-2	2.11E-2	2.19E-2	2.19E-2	2.11E-2	2.19E-2	2.19E-2	2.10E-2	2.19E-2	2.19E-2
XXA	9.88E-3	7.82E-2	6.18E-1	6.51E-3	5.16E-2	4.07E-1	4.82E-3	3.82E-2	3.02E-1	1.38E-3	1.09E-2	8.62E-2	5.81E-4	4.60E-3	3.64E-2
XXB	9.44E-3	5.59E-2	2.50E-1	6.22E-3	3.68E-2	1.65E-1	4.61E-3	2.73E-2	1.22E-1	1.32E-3	7.78E-3	3.48E-2	5.55E-4	3.29E-3	1.47E-2
XXC	8.61E-3	3.15E-2	7.14E-1	5.67E-3	2.07E-2	4.71E-1	4.20E-3	1.54E-2	3.49E-1	1.20E-3	4.38E-3	9.95E-2	5.06E-4	1.85E-3	4.20E-2
XXIA	9.50E-3	9.83E-2	9.36E-1	9.50E-3	9.83E-2	9.36E-1	9.50E-3	9.83E-2	9.36E-1	9.47E-3	9.80E-2	9.33E-1	9.44E-3	9.76E-2	9.30E-1
XXIB	9.44E-3	9.70E-2	8.63E-1	9.44E-3	9.70E-2	8.63E-1	9.44E-3	9.70E-2	8.62E-1	9.41E-3	9.67E-2	8.60E-1	9.38E-3	9.64E-2	8.57E-1
XXIC	9.31E-3	9.41E-2	7.29E-1	9.31E-3	9.41E-2	7.29E-1	9.31E-3	9.40E-2	7.29E-1	9.28E-3	9.38E-2	7.26E-1	9.25E-3	9.34E-2	7.24E-1
XXII	6.00E-1	1.07E+1	2.07E+1	5.99E-1	1.07E+1	2.07E+1	5.98E-1	1.07E+1	2.07E+1	5.94E-1	1.07E+1	2.06E+1	5.89E-1	1.06E+1	2.05E+1
DOE	2.19E+2	1.66E+3	1.39E+4	2.18E+2	1.65E+3	1.39E+4	2.18E+2	1.65E+3	1.39E+4	2.17E+2	1.64E+3	1.38E+4	2.15E+2	1.64E+3	1.38E+4
DOD	1.98E-2	1.15E-1	2.02E-1	1.94E-2	1.13E-1	1.92E-1	1.91E-2	1.11E-1	1.85E-1	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.78E-1
NRC	2.02E+0	4.68E+0	2.77E+1	1.98E+0	4.42E+0	2.52E+1	1.95E+0	4.29E+0	2.39E+1	1.91E+0	4.01E+0	2.13E+1	1.90E+0	3.94E+0	2.06E+1
Total	2.21E+2	1.66E+3	1.40E+4	2.20E+2	1.66E+3	1.39E+4	2.20E+2	1.65E+3	1.39E+4	2.18E+2	1.65E+3	1.38E+4	2.17E+2	1.64E+3	1.38E+4

Medium Population Density With Agriculture - 09-19-94 1:57p
 Table M-168. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.99E-1	6.55E-1	6.55E-1	5.68E-1	6.21E-1	6.21E-1	5.23E-1	5.72E-1	5.72E-1	3.76E-1	4.11E-1	4.11E-1	3.27E-1	3.57E-1	3.57E-1
II	3.56E+1	3.48E+2	2.82E+3	3.56E+1	3.48E+2	2.81E+3	3.56E+1	3.48E+2	2.80E+3	3.53E+1	3.45E+2	2.76E+3	3.51E+1	3.42E+2	2.73E+3
III	2.08E-1	2.30E-1	2.30E-1	1.72E-1	1.90E-1	1.90E-1	1.09E-1	1.21E-1	1.21E-1	2.86E-2	3.17E-2	3.17E-2	1.61E-2	1.79E-2	1.79E-2
IV	2.06E-1	1.28E+0	2.57E+0	1.96E-1	1.22E+0	2.45E+0	1.77E-1	1.10E+0	2.20E+0	7.83E-2	4.86E-1	9.76E-1	2.92E-2	1.81E-1	3.64E-1
V	1.83E+1	2.00E+1	2.00E+1	1.78E+1	1.94E+1	1.94E+1	1.68E+1	1.83E+1	1.83E+1	1.40E+1	1.53E+1	1.53E+1	1.33E+1	1.45E+1	1.45E+1
VI	6.59E+0	5.08E+1	4.63E+2	6.57E+0	5.07E+1	4.62E+2	6.51E+0	5.04E+1	4.60E+2	6.24E+0	4.89E+1	4.47E+2	6.16E+0	4.84E+1	4.43E+2
VII	2.92E+0	2.18E+1	1.63E+2	2.06E+0	1.55E+1	1.16E+2	1.35E+0	1.03E+1	7.72E+1	8.59E-3	5.63E-2	4.11E-1	.00E+0	.00E+0	.00E+0
IX	9.02E-3	7.76E-2	4.82E-1	6.51E-3	5.60E-2	3.48E-1	4.45E-3	3.83E-2	2.38E-1	8.08E-4	6.95E-3	4.31E-2	.00E+0	.00E+0	.00E+0
X	9.83E-1	2.83E+0	3.11E+0	9.69E-1	2.59E+0	2.84E+0	9.48E-1	2.25E+0	2.44E+0	8.60E-1	1.61E+0	1.72E+0	8.34E-1	1.46E+0	1.55E+0
XII	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.77E-1	1.88E-2	1.10E-1	1.77E-1	1.87E-2	1.09E-1	1.76E-1	1.86E-2	1.09E-1	1.75E-1
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.21E-3	1.29E-3	1.29E-3	1.21E-3	1.29E-3	1.29E-3	1.21E-3	1.28E-3	1.28E-3	1.16E-3	1.24E-3	1.24E-3	1.14E-3	1.22E-3	1.22E-3
XVIB	1.20E-3	1.28E-3	1.28E-3	1.20E-3	1.27E-3	1.27E-3	1.20E-3	1.27E-3	1.27E-3	1.15E-3	1.23E-3	1.23E-3	1.13E-3	1.20E-3	1.20E-3
XVIC	1.18E-3	1.25E-3	1.25E-3	1.18E-3	1.24E-3	1.24E-3	1.17E-3	1.24E-3	1.24E-3	1.13E-3	1.20E-3	1.20E-3	1.11E-3	1.17E-3	1.17E-3
XVIII A	2.70E-2	2.92E-2	2.92E-2	2.69E-2	2.90E-2	2.90E-2	2.67E-2	2.88E-2	2.88E-2	2.55E-2	2.75E-2	2.75E-2	2.49E-2	2.69E-2	2.69E-2
XVIII B	2.48E-2	2.63E-2	2.63E-2	2.47E-2	2.62E-2	2.62E-2	2.45E-2	2.60E-2	2.60E-2	2.34E-2	2.48E-2	2.48E-2	2.28E-2	2.42E-2	2.42E-2
XVIII C	2.10E-2	2.18E-2	2.18E-2	2.09E-2	2.17E-2	2.17E-2	2.07E-2	2.15E-2	2.15E-2	1.98E-2	2.06E-2	2.06E-2	1.94E-2	2.01E-2	2.01E-2
XXA	4.91E-4	3.89E-3	3.08E-2	4.51E-4	3.57E-3	2.83E-2	3.98E-4	3.15E-3	2.49E-2	2.75E-4	2.18E-3	1.73E-2	2.33E-4	1.84E-3	1.46E-2
XXB	4.69E-4	2.78E-3	1.24E-2	4.31E-4	2.55E-3	1.14E-2	3.80E-4	2.25E-3	1.01E-2	2.63E-4	1.56E-3	6.98E-3	2.22E-4	1.32E-3	5.90E-3
XXC	4.28E-4	1.56E-3	3.55E-2	3.93E-4	1.44E-3	3.26E-2	3.46E-4	1.27E-3	2.88E-2	2.40E-4	8.77E-4	1.99E-2	2.03E-4	7.41E-4	1.68E-2
XXIA	9.35E-3	9.67E-2	9.21E-1	9.26E-3	9.58E-2	9.13E-1	9.09E-3	9.41E-2	8.96E-1	7.64E-3	7.90E-2	7.53E-1	7.11E-3	7.36E-2	7.00E-1
XXIB	9.29E-3	9.55E-2	8.49E-1	9.21E-3	9.46E-2	8.41E-1	9.04E-3	9.28E-2	8.25E-1	7.59E-3	7.80E-2	6.94E-1	7.07E-3	7.26E-2	6.45E-1
XXIC	9.16E-3	9.26E-2	7.17E-1	9.08E-3	9.17E-2	7.11E-1	8.91E-3	9.00E-2	6.97E-1	7.49E-3	7.56E-2	5.86E-1	6.97E-3	7.04E-2	5.45E-1
XXII	5.84E-1	1.05E+1	2.03E+1	5.72E-1	1.04E+1	2.01E+1	5.53E-1	1.01E+1	1.95E+1	5.29E-1	9.66E+0	1.86E+1	4.67E-1	9.50E+0	1.83E+1
DOE	2.13E+2	1.62E+3	1.37E+4	2.10E+2	1.61E+3	1.36E+4	2.07E+2	1.60E+3	1.35E+4	1.96E+2	1.54E+3	1.30E+4	1.93E+2	1.52E+3	1.29E+4
DOD	1.88E-2	1.10E-1	1.78E-1	1.88E-2	1.10E-1	1.77E-1	1.88E-2	1.10E-1	1.77E-1	1.87E-2	1.09E-1	1.76E-1	1.86E-2	1.09E-1	1.75E-1
NRC	1.89E+0	3.91E+0	2.04E+1	1.88E+0	3.88E+0	2.02E+1	1.86E+0	3.82E+0	1.98E+1	1.76E+0	3.41E+0	1.68E+1	1.71E+0	3.25E+0	1.57E+1
Total	2.15E+2	1.63E+3	1.37E+4	2.12E+2	1.61E+3	1.36E+4	2.09E+2	1.60E+3	1.35E+4	1.98E+2	1.54E+3	1.31E+4	1.94E+2	1.53E+3	1.29E+4

Medium Population Density Without Agriculture - 09-19-94 1:57p
 Table M-169. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.15E+3	2.34E+3	2.34E+3	2.12E+3	2.30E+3	2.30E+3	2.10E+3	2.28E+3	2.28E+3	2.04E+3	2.21E+3	2.21E+3	2.00E+3	2.17E+3	2.17E+3
II	1.84E+4	1.71E+5	8.37E+5	1.84E+4	1.71E+5	8.37E+5	1.84E+4	1.71E+5	8.37E+5	1.84E+4	1.71E+5	8.37E+5	1.84E+4	1.71E+5	8.36E+5
III	9.48E+2	1.05E+3	1.05E+3	9.47E+2	1.05E+3	1.05E+3	9.44E+2	1.05E+3	1.05E+3	9.17E+2	1.02E+3	1.02E+3	8.75E+2	9.69E+2	9.69E+2
IV	2.82E+2	7.00E+2	7.07E+2	2.80E+2	6.95E+2	7.02E+2	2.78E+2	6.91E+2	6.97E+2	2.73E+2	6.79E+2	6.86E+2	2.70E+2	6.71E+2	6.78E+2
V	5.61E+4	6.08E+4	6.08E+4	5.60E+4	6.08E+4	6.08E+4	5.59E+4	6.07E+4	6.07E+4	5.56E+4	6.04E+4	6.04E+4	5.53E+4	6.01E+4	6.01E+4
VI	1.52E+4	9.24E+4	2.46E+5	1.52E+4	9.24E+4	2.46E+5	1.52E+4	9.24E+4	2.46E+5	1.52E+4	9.24E+4	2.46E+5	1.52E+4	9.24E+4	2.46E+5
VII	8.49E+4	7.63E+5	6.20E+6	8.27E+4	7.43E+5	6.03E+6	7.96E+4	7.14E+5	5.80E+6	7.27E+4	6.50E+5	5.28E+6	6.83E+4	6.10E+5	4.95E+6
IX	4.02E+2	3.61E+3	2.30E+4	3.81E+2	3.43E+3	2.18E+4	3.62E+2	3.26E+3	2.07E+4	3.15E+2	2.83E+3	1.80E+4	2.83E+2	2.54E+3	1.62E+4
X	1.39E+3	1.86E+4	2.12E+4	1.39E+3	1.86E+4	2.11E+4	1.39E+3	1.86E+4	2.11E+4	1.38E+3	1.85E+4	2.10E+4	1.37E+3	1.83E+4	2.08E+4
XII	5.11E+1	1.56E+2	1.60E+2	5.11E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2
XIIIA	2.09E-1	6.80E-1	7.86E-1	1.68E-1	5.46E-1	6.31E-1	1.17E-1	3.81E-1	4.40E-1	2.31E-2	7.51E-2	8.68E-2	.00E+0	.00E+0	.00E+0
XIIIB	1.68E-1	2.99E-1	3.19E-1	1.35E-1	2.40E-1	2.56E-1	9.43E-2	1.68E-1	1.79E-1	1.86E-2	3.31E-2	3.53E-2	.00E+0	.00E+0	.00E+0
XIIIC	1.11E-1	1.31E-1	4.08E+1	8.91E-2	1.05E-1	3.28E+1	6.22E-2	7.36E-2	2.29E+1	1.23E-2	1.45E-2	4.51E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E+0	3.84E+0	3.84E+0	3.65E+0	3.84E+0	3.84E+0	3.65E+0	3.84E+0	3.84E+0	3.65E+0	3.84E+0	3.84E+0	3.65E+0	3.84E+0	3.84E+0
XVIB	3.61E+0	3.79E+0	3.79E+0	3.61E+0	3.79E+0	3.79E+0	3.61E+0	3.79E+0	3.79E+0	3.61E+0	3.79E+0	3.79E+0	3.61E+0	3.78E+0	3.78E+0
XVIC	3.52E+0	3.67E+0	3.67E+0	3.52E+0	3.67E+0	3.67E+0	3.52E+0	3.67E+0	3.67E+0	3.52E+0	3.67E+0	3.67E+0	3.52E+0	3.67E+0	3.67E+0
XVIIIA	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1
XVIIIB	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1
XVIIIC	9.79E+0	1.07E+1	1.07E+1	9.79E+0	1.07E+1	1.07E+1	9.79E+0	1.07E+1	1.07E+1	9.79E+0	1.07E+1	1.07E+1	9.79E+0	1.07E+1	1.07E+1
XXA	3.04E+0	1.07E+1	3.72E+1	2.30E+0	8.13E+0	2.81E+1	1.95E+0	6.89E+0	2.39E+1	1.36E+0	4.79E+0	1.66E+1	1.02E+0	3.61E+0	1.25E+1
XXB	2.45E+0	4.72E+0	1.08E+1	1.86E+0	3.58E+0	8.14E+0	1.57E+0	3.03E+0	6.90E+0	1.09E+0	2.11E+0	4.80E+0	8.25E-1	1.59E+0	3.62E+0
XXC	1.62E+0	2.04E+0	7.06E+3	1.23E+0	1.54E+0	5.35E+3	1.04E+0	1.31E+0	4.53E+3	7.23E-1	9.09E-1	3.15E+3	5.45E-1	6.85E-1	2.38E+3
XXIA	2.89E+1	3.00E+2	2.84E+3	2.89E+1	3.00E+2	2.84E+3	2.89E+1	3.00E+2	2.84E+3	2.89E+1	3.00E+2	2.84E+3	2.89E+1	3.00E+2	2.84E+3
XXIB	2.87E+1	2.97E+2	2.57E+3	2.87E+1	2.97E+2	2.57E+3	2.87E+1	2.97E+2	2.57E+3	2.87E+1	2.97E+2	2.57E+3	2.87E+1	2.96E+2	2.57E+3
XXIC	2.83E+1	2.86E+2	2.07E+3	2.83E+1	2.86E+2	2.07E+3	2.83E+1	2.86E+2	2.07E+3	2.83E+1	2.86E+2	2.07E+3	2.83E+1	2.85E+2	2.07E+3
XXII	8.67E+2	5.75E+4	9.23E+4	8.66E+2	5.75E+4	9.23E+4	8.66E+2	5.75E+4	9.23E+4	8.63E+2	5.75E+4	9.22E+4	8.61E+2	5.74E+4	9.21E+4
DOE	5.17E+5	3.52E+6	1.34E+7	5.14E+5	3.50E+6	1.32E+7	5.11E+5	3.47E+6	1.30E+7	5.03E+5	3.40E+6	1.24E+7	4.98E+5	3.36E+6	1.21E+7
DOD	5.24E+1	1.59E+2	2.79E+2	5.22E+1	1.58E+2	2.55E+2	5.18E+1	1.58E+2	2.27E+2	5.12E+1	1.56E+2	1.73E+2	5.10E+1	1.56E+2	1.60E+2
NRC	1.75E+3	7.72E+3	8.93E+4	1.74E+3	7.70E+3	8.12E+4	1.73E+3	7.69E+3	7.74E+4	1.73E+3	7.68E+3	7.09E+4	1.72E+3	7.66E+3	6.72E+4
Total	5.18E+5	3.53E+6	1.35E+7	5.16E+5	3.51E+6	1.33E+7	5.13E+5	3.48E+6	1.30E+7	5.05E+5	3.41E+6	1.25E+7	5.00E+5	3.37E+6	1.22E+7

Medium Population Density Without Agriculture - 09-19-94 1:57p
 Table M-170. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.91E+3	2.08E+3	2.08E+3	1.84E+3	2.00E+3	2.00E+3	1.75E+3	1.90E+3	1.90E+3	1.49E+3	1.62E+3	1.62E+3	1.42E+3	1.54E+3	1.54E+3
II	1.84E+4	1.71E+5	8.36E+5	1.83E+4	1.71E+5	8.34E+5	1.83E+4	1.70E+5	8.31E+5	1.83E+4	1.70E+5	8.27E+5	1.83E+4	1.70E+5	8.25E+5
III	7.52E+2	8.32E+2	8.32E+2	6.94E+2	7.69E+2	7.69E+2	6.27E+2	6.95E+2	6.95E+2	2.90E+2	3.21E+2	3.21E+2	1.88E+2	2.08E+2	2.08E+2
IV	2.64E+2	6.55E+2	6.62E+2	2.60E+2	6.46E+2	6.52E+2	2.52E+2	6.27E+2	6.33E+2	2.14E+2	5.32E+2	5.37E+2	1.95E+2	4.85E+2	4.89E+2
V	5.46E+4	5.93E+4	5.93E+4	5.40E+4	5.86E+4	5.86E+4	5.29E+4	5.75E+4	5.75E+4	4.77E+4	5.17E+4	5.17E+4	4.50E+4	4.88E+4	4.88E+4
VI	1.52E+4	9.23E+4	2.46E+5	1.52E+4	9.23E+4	2.46E+5	1.51E+4	9.21E+4	2.45E+5	1.49E+4	9.13E+4	2.43E+5	1.47E+4	9.07E+4	2.42E+5
VII	6.15E+4	5.48E+5	4.45E+6	5.64E+4	5.02E+5	4.07E+6	4.38E+4	3.90E+5	3.16E+6	1.85E+4	1.66E+5	1.35E+6	1.47E+4	1.32E+5	1.07E+6
IX	2.36E+2	2.12E+3	1.35E+4	1.99E+2	1.78E+3	1.14E+4	1.62E+2	1.46E+3	9.28E+3	7.60E+1	6.83E+2	4.35E+3	5.33E+1	4.79E+2	3.05E+3
X	1.36E+3	1.76E+4	2.00E+4	1.35E+3	1.67E+4	1.91E+4	1.34E+3	1.50E+4	1.70E+4	1.27E+3	9.75E+3	1.10E+4	1.24E+3	8.61E+3	9.70E+3
XII	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.09E+1	1.56E+2	1.60E+2	5.09E+1	1.55E+2	1.60E+2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.64E+0	3.83E+0	3.83E+0	3.64E+0	3.83E+0	3.83E+0	3.63E+0	3.82E+0	3.82E+0	3.59E+0	3.78E+0	3.78E+0	3.57E+0	3.76E+0	3.76E+0
XVIB	3.60E+0	3.78E+0	3.78E+0	3.60E+0	3.78E+0	3.78E+0	3.58E+0	3.76E+0	3.76E+0	3.55E+0	3.73E+0	3.73E+0	3.53E+0	3.71E+0	3.71E+0
XVIC	3.52E+0	3.67E+0	3.67E+0	3.51E+0	3.66E+0	3.66E+0	3.50E+0	3.65E+0	3.65E+0	3.47E+0	3.62E+0	3.62E+0	3.45E+0	3.60E+0	3.60E+0
XVIIIA	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.11E+1	1.11E+1
XVIIIB	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.11E+1	1.11E+1	9.96E+0	1.10E+1	1.10E+1	9.89E+0	1.09E+1	1.09E+1
XVIIIC	9.79E+0	1.07E+1	1.07E+1	9.78E+0	1.07E+1	1.07E+1	9.77E+0	1.07E+1	1.07E+1	9.65E+0	1.05E+1	1.05E+1	9.58E+0	1.04E+1	1.04E+1
XXA	4.85E-1	1.71E+0	5.94E+0	2.00E-1	7.06E-1	2.46E+0	1.30E-1	4.58E-1	1.60E+0	1.03E-1	3.65E-1	1.27E+0	9.59E-2	3.39E-1	1.18E+0
XXB	3.91E-1	7.53E-1	1.72E+0	1.61E-1	3.11E-1	7.10E-1	1.05E-1	2.02E-1	4.61E-1	8.34E-2	1.61E-1	3.68E-1	7.73E-2	1.49E-1	3.42E-1
XXC	2.59E-1	3.25E-1	1.13E+3	1.07E-1	1.34E-1	4.67E+2	6.91E-2	8.70E-2	3.04E+2	5.51E-2	6.93E-2	2.43E+2	5.11E-2	6.43E-2	2.25E+2
XXIA	2.88E+1	2.99E+2	2.83E+3	2.87E+1	2.98E+2	2.83E+3	2.86E+1	2.97E+2	2.81E+3	2.77E+1	2.88E+2	2.73E+3	2.70E+1	2.80E+2	2.65E+3
XXIB	2.86E+1	2.96E+2	2.56E+3	2.85E+1	2.95E+2	2.55E+3	2.84E+1	2.93E+2	2.54E+3	2.75E+1	2.84E+2	2.46E+3	2.68E+1	2.77E+2	2.40E+3
XXIC	2.82E+1	2.85E+2	2.07E+3	2.82E+1	2.84E+2	2.06E+3	2.80E+1	2.82E+2	2.05E+3	2.72E+1	2.74E+2	1.99E+3	2.64E+1	2.66E+2	1.93E+3
XXII	8.57E+2	5.73E+4	9.18E+4	8.52E+2	5.71E+4	9.15E+4	8.46E+2	5.63E+4	9.04E+4	8.01E+2	5.43E+4	8.68E+4	7.96E+2	5.36E+4	8.57E+4
DOE	4.90E+5	3.29E+6	1.16E+7	4.83E+5	3.24E+6	1.12E+7	4.68E+5	3.12E+6	1.03E+7	4.31E+5	2.85E+6	8.37E+6	4.21E+5	2.79E+6	8.05E+6
DOD	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.09E+1	1.56E+2	1.60E+2	5.09E+1	1.55E+2	1.60E+2
NRC	1.72E+3	7.63E+3	6.12E+4	1.71E+3	7.60E+3	5.79E+4	1.70E+3	7.56E+3	5.68E+4	1.67E+3	7.36E+3	5.49E+4	1.65E+3	7.18E+3	5.34E+4
Total	4.92E+5	3.30E+6	1.17E+7	4.85E+5	3.25E+6	1.13E+7	4.70E+5	3.13E+6	1.03E+7	4.33E+5	2.86E+6	8.42E+6	4.23E+5	2.80E+6	8.10E+6

Medium Population Density Without Agriculture - 09-19-94 1:57p
 Table M-171. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.13E+3	2.32E+3	2.32E+3	2.08E+3	2.26E+3	2.26E+3	2.04E+3	2.22E+3	2.22E+3	1.94E+3	2.11E+3	2.11E+3	1.86E+3	2.02E+3	2.02E+3
II	1.84E+4	1.71E+5	8.37E+5	1.84E+4	1.71E+5	8.37E+5	1.84E+4	1.71E+5	8.37E+5	1.84E+4	1.71E+5	8.37E+5	1.84E+4	1.71E+5	8.37E+5
III	9.48E+2	1.05E+3	1.05E+3	9.40E+2	1.04E+3	1.04E+3	9.20E+2	1.02E+3	1.02E+3	7.92E+2	8.77E+2	8.77E+2	7.00E+2	7.75E+2	7.75E+2
IV	2.80E+2	6.97E+2	7.04E+2	2.76E+2	6.87E+2	6.94E+2	2.73E+2	6.79E+2	6.86E+2	2.64E+2	6.57E+2	6.63E+2	2.60E+2	6.45E+2	6.51E+2
V	5.60E+4	6.08E+4	6.08E+4	5.59E+4	6.06E+4	6.06E+4	5.57E+4	6.04E+4	6.04E+4	5.48E+4	5.95E+4	5.95E+4	5.41E+4	5.87E+4	5.87E+4
VI	1.52E+4	9.24E+4	2.46E+5	1.52E+4	9.24E+4	2.46E+5	1.52E+4	9.24E+4	2.46E+5	1.52E+4	9.24E+4	2.46E+5	1.52E+4	9.24E+4	2.46E+5
VII	8.41E+4	7.55E+5	6.14E+6	7.66E+4	6.86E+5	5.58E+6	7.16E+4	6.40E+5	5.20E+6	6.14E+4	5.47E+5	4.44E+6	5.41E+4	4.82E+5	3.91E+6
IX	3.88E+2	3.49E+3	2.22E+4	3.42E+2	3.07E+3	1.96E+4	3.08E+2	2.77E+3	1.77E+4	2.35E+2	2.11E+3	1.34E+4	1.86E+2	1.67E+3	1.06E+4
X	1.39E+3	1.86E+4	2.12E+4	1.39E+3	1.86E+4	2.12E+4	1.38E+3	1.85E+4	2.11E+4	1.37E+3	1.81E+4	2.06E+4	1.36E+3	1.75E+4	1.99E+4
XII	5.11E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2
XIIIA	1.90E-1	6.20E-1	7.16E-1	1.11E-1	3.62E-1	4.18E-1	5.44E-2	1.77E-1	2.05E-1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.53E-1	2.73E-1	2.91E-1	8.95E-2	1.59E-1	1.70E-1	4.38E-2	7.79E-2	8.32E-2	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.01E-1	1.20E-1	3.72E+1	5.90E-2	6.98E-2	2.17E+1	2.89E-2	3.42E-2	1.06E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.65E+0	3.84E+0	3.84E+0	3.65E+0	3.84E+0	3.84E+0	3.65E+0	3.84E+0	3.84E+0	3.64E+0	3.84E+0	3.84E+0	3.64E+0	3.83E+0	3.83E+0
XVIB	3.61E+0	3.79E+0	3.79E+0	3.61E+0	3.79E+0	3.79E+0	3.61E+0	3.79E+0	3.79E+0	3.60E+0	3.78E+0	3.78E+0	3.60E+0	3.78E+0	3.78E+0
XVIC	3.52E+0	3.67E+0	3.67E+0	3.52E+0	3.67E+0	3.67E+0	3.52E+0	3.67E+0	3.67E+0	3.52E+0	3.67E+0	3.67E+0	3.51E+0	3.67E+0	3.67E+0
XVIIIA	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1	1.03E+1	1.14E+1	1.14E+1
XVIIIB	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1	1.01E+1	1.12E+1	1.12E+1
XVIIIC	9.79E+0	1.07E+1	1.07E+1	9.79E+0	1.07E+1	1.07E+1	9.79E+0	1.07E+1	1.07E+1	9.79E+0	1.07E+1	1.07E+1	9.78E+0	1.07E+1	1.07E+1
XXA	2.43E+0	8.56E+0	2.97E+1	1.60E+0	5.64E+0	1.95E+1	1.18E+0	4.18E+0	1.45E+1	3.37E-1	1.19E+0	4.13E+0	1.42E-1	5.01E-1	1.74E+0
XXB	1.96E+0	3.77E+0	8.58E+0	1.29E+0	2.48E+0	5.65E+0	9.55E-1	1.84E+0	4.19E+0	2.72E-1	5.23E-1	1.19E+0	1.14E-1	2.20E-1	5.04E-1
XXC	1.29E+0	1.63E+0	5.63E+3	8.52E-1	1.07E+0	3.71E+3	6.31E-1	7.93E-1	2.75E+3	1.80E-1	2.26E-1	7.85E+2	7.55E-2	9.50E-2	3.32E+2
XXIA	2.89E+1	3.00E+2	2.84E+3	2.89E+1	3.00E+2	2.84E+3	2.89E+1	3.00E+2	2.84E+3	2.88E+1	2.99E+2	2.84E+3	2.87E+1	2.98E+2	2.83E+3
XXIB	2.87E+1	2.97E+2	2.57E+3	2.87E+1	2.97E+2	2.57E+3	2.87E+1	2.97E+2	2.57E+3	2.86E+1	2.96E+2	2.56E+3	2.85E+1	2.95E+2	2.55E+3
XXIC	2.83E+1	2.86E+2	2.07E+3	2.83E+1	2.86E+2	2.07E+3	2.83E+1	2.86E+2	2.07E+3	2.83E+1	2.85E+2	2.07E+3	2.81E+1	2.84E+2	2.06E+3
XXII	8.66E+2	5.75E+4	9.23E+4	8.65E+2	5.75E+4	9.23E+4	8.63E+2	5.75E+4	9.22E+4	8.57E+2	5.73E+4	9.18E+4	8.51E+2	5.71E+4	9.15E+4
DOE	5.16E+5	3.51E+6	1.33E+7	5.08E+5	3.44E+6	1.27E+7	5.02E+5	3.39E+6	1.24E+7	4.90E+5	3.30E+6	1.16E+7	4.81E+5	3.22E+6	1.10E+7
DOD	5.23E+1	1.59E+2	2.68E+2	5.18E+1	1.58E+2	2.23E+2	5.14E+1	1.57E+2	1.91E+2	5.10E+1	1.56E+2	1.60E+2	5.10E+1	1.56E+2	1.60E+2
NRC	1.74E+3	7.71E+3	8.26E+4	1.73E+3	7.68E+3	7.35E+4	1.73E+3	7.67E+3	6.90E+4	1.71E+3	7.63E+3	5.96E+4	1.71E+3	7.60E+3	5.73E+4
Total	5.18E+5	3.52E+6	1.34E+7	5.10E+5	3.45E+6	1.28E+7	5.04E+5	3.40E+6	1.24E+7	4.92E+5	3.30E+6	1.17E+7	4.83E+5	3.23E+6	1.11E+7

Medium Population Density Without Agriculture - 09-19-94 1:57p
 Table M-172. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.72E+3	1.87E+3	1.87E+3	1.63E+3	1.77E+3	1.77E+3	1.51E+3	1.63E+3	1.63E+3	1.08E+3	1.17E+3	1.17E+3	9.40E+2	1.02E+3	1.02E+3
II	1.83E+4	1.70E+5	8.30E+5	1.83E+4	1.70E+5	8.29E+5	1.83E+4	1.70E+5	8.27E+5	1.82E+4	1.69E+5	8.14E+5	1.81E+4	1.67E+5	8.07E+5
III	6.06E+2	6.71E+2	6.71E+2	5.01E+2	5.54E+2	5.54E+2	3.18E+2	3.52E+2	3.52E+2	8.35E+1	9.24E+1	9.24E+1	4.71E+1	5.21E+1	5.21E+1
IV	2.48E+2	6.16E+2	6.22E+2	2.36E+2	5.86E+2	5.92E+2	2.12E+2	5.28E+2	5.33E+2	9.42E+1	2.34E+2	2.36E+2	3.51E+1	8.72E+1	8.81E+1
V	5.26E+4	5.71E+4	5.71E+4	5.12E+4	5.55E+4	5.55E+4	4.82E+4	5.23E+4	5.23E+4	4.02E+4	4.37E+4	4.37E+4	3.83E+4	4.16E+4	4.16E+4
VI	1.51E+4	9.21E+4	2.45E+5	1.50E+4	9.19E+4	2.45E+5	1.49E+4	9.14E+4	2.44E+5	1.42E+4	8.85E+4	2.37E+5	1.40E+4	8.76E+4	2.34E+5
VII	3.65E+4	3.26E+5	2.64E+6	2.60E+4	2.32E+5	1.88E+6	1.72E+4	1.54E+5	1.25E+6	9.55E+1	8.23E+2	6.65E+3	.00E+0	.00E+0	.00E+0
IX	1.35E+2	1.22E+3	7.75E+3	9.77E+1	8.78E+2	5.59E+3	6.68E+1	6.00E+2	3.82E+3	1.21E+1	1.09E+2	6.94E+2	.00E+0	.00E+0	.00E+0
X	1.34E+3	1.56E+4	1.78E+4	1.32E+3	1.38E+4	1.57E+4	1.29E+3	1.12E+4	1.27E+4	1.18E+3	6.75E+3	7.57E+3	1.14E+3	5.71E+3	6.39E+3
XII	5.10E+1	1.56E+2	1.60E+2	5.09E+1	1.56E+2	1.60E+2	5.08E+1	1.55E+2	1.59E+2	5.05E+1	1.54E+2	1.58E+2	5.04E+1	1.54E+2	1.58E+2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.62E+0	3.81E+0	3.81E+0	3.61E+0	3.80E+0	3.80E+0	3.60E+0	3.79E+0	3.79E+0	3.45E+0	3.64E+0	3.64E+0	3.37E+0	3.56E+0	3.56E+0
XVIB	3.58E+0	3.76E+0	3.76E+0	3.57E+0	3.75E+0	3.75E+0	3.56E+0	3.73E+0	3.73E+0	3.41E+0	3.59E+0	3.59E+0	3.33E+0	3.51E+0	3.51E+0
XVIC	3.50E+0	3.65E+0	3.65E+0	3.49E+0	3.64E+0	3.64E+0	3.47E+0	3.62E+0	3.62E+0	3.33E+0	3.48E+0	3.48E+0	3.25E+0	3.40E+0	3.40E+0
XVIIIA	1.03E+1	1.14E+1	1.14E+1	1.02E+1	1.13E+1	1.13E+1	1.01E+1	1.12E+1	1.12E+1	9.68E+0	1.07E+1	1.07E+1	9.45E+0	1.05E+1	1.05E+1
XVIIIB	1.01E+1	1.11E+1	1.11E+1	1.00E+1	1.11E+1	1.11E+1	9.96E+0	1.10E+1	1.10E+1	9.51E+0	1.05E+1	1.05E+1	9.29E+0	1.03E+1	1.03E+1
XVIIIC	9.77E+0	1.06E+1	1.06E+1	9.73E+0	1.06E+1	1.06E+1	9.64E+0	1.05E+1	1.05E+1	9.21E+0	1.00E+1	1.00E+1	9.00E+0	9.81E+0	9.81E+0
XXA	1.20E-1	4.22E-1	1.47E+0	1.10E-1	3.88E-1	1.35E+0	9.66E-2	3.41E-1	1.19E+0	6.66E-2	2.35E-1	8.25E-1	5.62E-2	1.99E-1	6.97E-1
XXB	9.64E-2	1.86E-1	4.25E-1	8.85E-2	1.70E-1	3.91E-1	7.79E-2	1.50E-1	3.44E-1	5.37E-2	1.04E-1	2.38E-1	4.53E-2	8.74E-2	2.01E-1
XXC	6.37E-2	8.02E-2	2.80E+2	5.85E-2	7.36E-2	2.57E+2	5.15E-2	6.48E-2	2.27E+2	3.55E-2	4.47E-2	1.57E+2	2.99E-2	3.77E-2	1.33E+2
XXIA	2.85E+1	2.96E+2	2.80E+3	2.82E+1	2.93E+2	2.77E+3	2.77E+1	2.87E+2	2.72E+3	2.32E+1	2.42E+2	2.29E+3	2.16E+1	2.25E+2	2.13E+3
XXIB	2.83E+1	2.92E+2	2.53E+3	2.80E+1	2.89E+2	2.51E+3	2.75E+1	2.84E+2	2.46E+3	2.31E+1	2.39E+2	2.07E+3	2.15E+1	2.22E+2	1.92E+3
XXIC	2.79E+1	2.81E+2	2.04E+3	2.76E+1	2.79E+2	2.02E+3	2.71E+1	2.73E+2	1.98E+3	2.28E+1	2.30E+2	1.67E+3	2.12E+1	2.14E+2	1.55E+3
XXII	8.44E+2	5.62E+4	9.02E+4	8.26E+2	5.57E+4	8.94E+4	8.00E+2	5.43E+4	8.69E+4	7.63E+2	5.22E+4	8.33E+4	6.56E+2	5.13E+4	8.19E+4
DOE	4.60E+5	3.05E+6	9.75E+6	4.46E+5	2.95E+6	8.97E+6	4.31E+5	2.84E+6	8.28E+6	3.89E+5	2.59E+6	6.82E+6	3.81E+5	2.56E+6	6.74E+6
DOD	5.10E+1	1.56E+2	1.60E+2	5.09E+1	1.56E+2	1.60E+2	5.08E+1	1.55E+2	1.59E+2	5.05E+1	1.54E+2	1.58E+2	5.04E+1	1.54E+2	1.58E+2
NRC	1.70E+3	7.54E+3	5.65E+4	1.69E+3	7.47E+3	5.59E+4	1.67E+3	7.35E+3	5.48E+4	1.53E+3	6.31E+3	4.60E+4	1.47E+3	5.92E+3	4.28E+4
Total	4.62E+5	3.06E+6	9.81E+6	4.48E+5	2.95E+6	9.02E+6	4.33E+5	2.85E+6	8.33E+6	3.91E+5	2.60E+6	6.86E+6	3.83E+5	2.56E+6	6.78E+6

Medium Population Density Without Agriculture - 09-19-94 1:57p
 Table M-173. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.45E-1	9.18E-1	9.18E-1	8.32E-1	9.05E-1	9.05E-1	8.23E-1	8.95E-1	8.95E-1	8.00E-1	8.70E-1	8.70E-1	7.85E-1	8.53E-1	8.53E-1
II	7.34E+0	6.83E+1	3.37E+2	7.33E+0	6.83E+1	3.37E+2	7.33E+0	6.83E+1	3.37E+2	7.33E+0	6.83E+1	3.37E+2	7.33E+0	6.83E+1	3.37E+2
III	3.71E-1	4.11E-1	4.11E-1	3.70E-1	4.10E-1	4.10E-1	3.69E-1	4.09E-1	4.09E-1	3.59E-1	3.97E-1	3.97E-1	3.42E-1	3.79E-1	3.79E-1
IV	6.05E-2	1.51E-1	1.53E-1	6.01E-2	1.50E-1	1.52E-1	5.97E-2	1.49E-1	1.51E-1	5.88E-2	1.46E-1	1.48E-1	5.80E-2	1.45E-1	1.46E-1
V	2.20E+1	2.39E+1	2.39E+1	2.20E+1	2.38E+1	2.38E+1	2.20E+1	2.38E+1	2.38E+1	2.18E+1	2.37E+1	2.37E+1	2.17E+1	2.36E+1	2.36E+1
VI	3.50E+0	1.84E+1	6.43E+1	3.50E+0	1.84E+1	6.43E+1	3.50E+0	1.84E+1	6.43E+1	3.49E+0	1.84E+1	6.43E+1	3.49E+0	1.84E+1	6.43E+1
VII	5.65E+0	4.38E+1	3.40E+2	5.53E+0	4.27E+1	3.31E+2	5.35E+0	4.11E+1	3.19E+2	4.95E+0	3.75E+1	2.90E+2	4.69E+0	3.52E+1	2.72E+2
IX	2.31E-2	2.03E-1	1.26E+0	2.19E-2	1.93E-1	1.20E+0	2.08E-2	1.83E-1	1.14E+0	1.81E-2	1.59E-1	9.87E-1	1.63E-2	1.43E-1	8.87E-1
X	1.49E+0	5.05E+0	5.58E+0	1.49E+0	5.04E+0	5.58E+0	1.49E+0	5.04E+0	5.58E+0	1.49E+0	5.03E+0	5.56E+0	1.48E+0	4.99E+0	5.51E+0
XII	2.97E-3	9.20E-3	9.46E-3	2.97E-3	9.20E-3	9.46E-3	2.96E-3	9.19E-3	9.46E-3	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.19E-3	9.45E-3
XIIIA	5.08E-5	1.66E-4	2.04E-4	4.08E-5	1.33E-4	1.63E-4	2.85E-5	9.32E-5	1.14E-4	5.62E-6	1.84E-5	2.25E-5	.00E+0	.00E+0	.00E+0
XIIIB	4.10E-5	7.27E-5	8.02E-5	3.29E-5	5.84E-5	6.44E-5	2.30E-5	4.08E-5	4.49E-5	4.53E-6	8.04E-6	8.86E-6	.00E+0	.00E+0	.00E+0
XIIIC	2.70E-5	3.20E-5	9.75E-3	2.17E-5	2.56E-5	7.82E-3	1.51E-5	1.79E-5	5.46E-3	2.98E-6	3.53E-6	1.08E-3	.00E+0	.00E+0	.00E+0
XVIA	1.46E-3	1.53E-3	1.53E-3	1.46E-3	1.53E-3	1.53E-3	1.46E-3	1.53E-3	1.46E-3	1.46E-3	1.53E-3	1.53E-3	1.46E-3	1.53E-3	1.53E-3
XVIB	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.51E-3	1.51E-3
XVIC	1.40E-3	1.47E-3	1.47E-3	1.40E-3	1.47E-3	1.47E-3	1.40E-3	1.47E-3	1.47E-3	1.40E-3	1.47E-3	1.47E-3	1.40E-3	1.46E-3	1.46E-3
XVIIIA	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3
XVIIIB	3.96E-3	4.38E-3	4.38E-3	3.96E-3	4.38E-3	4.38E-3	3.96E-3	4.38E-3	4.38E-3	3.96E-3	4.38E-3	4.38E-3	3.96E-3	4.38E-3	4.38E-3
XVIIIC	3.82E-3	4.17E-3	4.17E-3	3.82E-3	4.17E-3	4.17E-3	3.82E-3	4.17E-3	4.17E-3	3.82E-3	4.17E-3	4.17E-3	3.82E-3	4.17E-3	4.17E-3
XXA	5.32E-4	2.05E-3	1.24E-2	4.03E-4	1.55E-3	9.42E-3	3.41E-4	1.31E-3	7.98E-3	2.37E-4	9.13E-4	5.55E-3	1.79E-4	6.87E-4	4.18E-3
XXB	4.29E-4	9.03E-4	3.23E-3	3.25E-4	6.84E-4	2.44E-3	2.75E-4	5.79E-4	2.07E-3	1.91E-4	4.03E-4	1.44E-3	1.44E-4	3.04E-4	1.09E-3
XXC	2.84E-4	3.81E-4	1.26E+0	2.15E-4	2.88E-4	9.57E-1	1.82E-4	2.44E-4	8.11E-1	1.27E-4	1.70E-4	5.64E-1	9.53E-5	1.28E-4	4.25E-1
XXIA	1.13E-2	1.18E-1	1.11E+0	1.13E-2	1.18E-1	1.11E+0	1.13E-2	1.18E-1	1.11E+0	1.13E-2	1.18E-1	1.11E+0	1.13E-2	1.18E-1	1.11E+0
XXIB	1.12E-2	1.16E-1	1.00E+0	1.12E-2	1.16E-1	1.00E+0	1.12E-2	1.16E-1	1.00E+0	1.12E-2	1.16E-1	1.00E+0	1.12E-2	1.16E-1	1.00E+0
XXIC	1.10E-2	1.12E-1	8.13E-1	1.10E-2	1.12E-1	8.13E-1	1.10E-2	1.12E-1	8.13E-1	1.10E-2	1.12E-1	8.13E-1	1.10E-2	1.12E-1	8.13E-1
XXII	3.38E-1	1.32E+1	2.12E+1	3.38E-1	1.32E+1	2.12E+1	3.38E-1	1.32E+1	2.12E+1	3.37E-1	1.32E+1	2.12E+1	3.36E-1	1.32E+1	2.11E+1
DOE	1.20E+2	6.53E+2	2.32E+3	1.19E+2	6.51E+2	2.31E+3	1.19E+2	6.50E+2	2.30E+3	1.19E+2	6.46E+2	2.27E+3	1.18E+2	6.43E+2	2.25E+3
DOD	3.30E-3	9.97E-3	3.79E-2	3.24E-3	9.81E-3	3.23E-2	3.15E-3	9.62E-3	2.54E-2	3.00E-3	9.28E-3	1.26E-2	2.96E-3	9.19E-3	9.45E-3
NRC	6.79E-1	3.01E+0	2.79E+1	6.77E-1	3.01E+0	2.64E+1	6.77E-1	3.00E+0	2.58E+1	6.75E-1	3.00E+0	2.46E+1	6.74E-1	3.00E+0	2.39E+1
Total	1.20E+2	6.56E+2	2.35E+3	1.20E+2	6.54E+2	2.33E+3	1.20E+2	6.53E+2	2.32E+3	1.19E+2	6.49E+2	2.29E+3	1.19E+2	6.46E+2	2.27E+3

Medium Population Density Without Agriculture - 09-19-94 1:57p
 Table M-174. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.50E-1	8.16E-1	8.16E-1	7.24E-1	7.87E-1	7.87E-1	6.86E-1	7.46E-1	7.46E-1	5.84E-1	6.35E-1	6.35E-1	5.58E-1	6.07E-1	6.07E-1
II	7.33E+0	6.83E+1	3.37E+2	7.33E+0	6.82E+1	3.36E+2	7.33E+0	6.81E+1	3.35E+2	7.32E+0	6.80E+1	3.33E+2	7.32E+0	6.80E+1	3.33E+2
III	2.94E-1	3.26E-1	3.26E-1	2.72E-1	3.01E-1	3.01E-1	2.45E-1	2.72E-1	2.72E-1	1.14E-1	1.26E-1	1.26E-1	7.33E-2	8.13E-2	8.13E-2
IV	5.67E-2	1.41E-1	1.43E-1	5.59E-2	1.39E-1	1.41E-1	5.42E-2	1.35E-1	1.37E-1	4.60E-2	1.15E-1	1.16E-1	4.19E-2	1.04E-1	1.06E-1
V	2.14E+1	2.32E+1	2.32E+1	2.12E+1	2.30E+1	2.30E+1	2.08E+1	2.25E+1	2.25E+1	1.87E+1	2.03E+1	2.03E+1	1.77E+1	1.91E+1	1.91E+1
VI	3.48E+0	1.84E+1	6.43E+1	3.47E+0	1.84E+1	6.42E+1	3.45E+0	1.83E+1	6.42E+1	3.37E+0	1.81E+1	6.36E+1	3.34E+0	1.80E+1	6.33E+1
VII	4.29E+0	3.17E+1	2.44E+2	3.94E+0	2.90E+1	2.24E+2	3.07E+0	2.26E+1	1.74E+2	1.27E+0	9.55E+0	7.40E+1	9.97E-1	7.58E+0	5.87E+1
IX	1.36E-2	1.19E-1	7.40E-1	1.14E-2	1.00E-1	6.22E-1	9.32E-3	8.19E-2	5.08E-1	4.37E-3	3.84E-2	2.38E-1	3.06E-3	2.69E-2	1.67E-1
X	1.47E+0	4.84E+0	5.35E+0	1.46E+0	4.66E+0	5.14E+0	1.44E+0	4.30E+0	4.72E+0	1.36E+0	3.17E+0	3.44E+0	1.33E+0	2.92E+0	3.14E+0
XII	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.17E-3	9.44E-3	2.95E-3	9.16E-3	9.43E-3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-3	1.53E-3	1.53E-3	1.45E-3	1.53E-3	1.53E-3	1.45E-3	1.52E-3	1.52E-3	1.43E-3	1.51E-3	1.51E-3	1.43E-3	1.50E-3	1.50E-3
XVIB	1.44E-3	1.51E-3	1.51E-3	1.43E-3	1.50E-3	1.50E-3	1.43E-3	1.50E-3	1.50E-3	1.42E-3	1.49E-3	1.49E-3	1.41E-3	1.48E-3	1.48E-3
XVIC	1.40E-3	1.46E-3	1.46E-3	1.40E-3	1.46E-3	1.46E-3	1.40E-3	1.46E-3	1.46E-3	1.38E-3	1.44E-3	1.44E-3	1.38E-3	1.44E-3	1.44E-3
XVIIIA	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.02E-3	4.44E-3	4.44E-3	3.97E-3	4.39E-3	4.39E-3	3.94E-3	4.36E-3	4.36E-3
XVIIIB	3.96E-3	4.38E-3	4.38E-3	3.95E-3	4.38E-3	4.38E-3	3.95E-3	4.37E-3	4.37E-3	3.90E-3	4.32E-3	4.32E-3	3.87E-3	4.29E-3	4.29E-3
XVIIIC	3.82E-3	4.17E-3	4.17E-3	3.81E-3	4.17E-3	4.17E-3	3.81E-3	4.16E-3	4.16E-3	3.76E-3	4.11E-3	4.11E-3	3.73E-3	4.08E-3	4.08E-3
XXA	8.47E-5	3.26E-4	1.99E-3	3.49E-5	1.34E-4	8.22E-4	2.26E-5	8.70E-5	5.35E-4	1.80E-5	6.93E-5	4.27E-4	1.67E-5	6.42E-5	3.96E-4
XXB	6.84E-5	1.44E-4	5.15E-4	2.81E-5	5.93E-5	2.13E-4	1.82E-5	3.84E-5	1.39E-4	1.45E-5	3.06E-5	1.11E-4	1.34E-5	2.84E-5	1.03E-4
XXC	4.52E-5	6.07E-5	2.02E-1	1.86E-5	2.50E-5	8.36E-2	1.20E-5	1.62E-5	5.44E-2	9.58E-6	1.29E-5	4.34E-2	8.88E-6	1.19E-5	4.03E-2
XXIA	1.12E-2	1.17E-1	1.11E+0	1.12E-2	1.17E-1	1.10E+0	1.11E-2	1.16E-1	1.10E+0	1.08E-2	1.13E-1	1.06E+0	1.05E-2	1.10E-1	1.04E+0
XXIB	1.12E-2	1.16E-1	1.00E+0	1.11E-2	1.15E-1	9.97E-1	1.11E-2	1.15E-1	9.92E-1	1.07E-2	1.11E-1	9.62E-1	1.04E-2	1.08E-1	9.36E-1
XXIC	1.10E-2	1.11E-1	8.10E-1	1.10E-2	1.11E-1	8.08E-1	1.09E-2	1.10E-1	8.03E-1	1.06E-2	1.07E-1	7.79E-1	1.03E-2	1.04E-1	7.58E-1
XXII	3.35E-1	1.31E+1	2.11E+1	3.33E-1	1.31E+1	2.10E+1	3.31E-1	1.29E+1	2.08E+1	3.13E-1	1.24E+1	1.99E+1	3.11E-1	1.23E+1	1.97E+1
DOE	1.17E+2	6.38E+2	2.22E+3	1.16E+2	6.34E+2	2.19E+3	1.14E+2	6.25E+2	2.14E+3	1.08E+2	6.00E+2	2.01E+3	1.06E+2	5.93E+2	1.99E+3
DOD	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.17E-3	9.44E-3	2.95E-3	9.16E-3	9.43E-3
NRC	6.73E-1	2.99E+0	2.28E+1	6.71E-1	2.98E+0	2.22E+1	6.68E-1	2.96E+0	2.19E+1	6.56E-1	2.88E+0	2.12E+1	6.47E-1	2.81E+0	2.07E+1
Total	1.18E+2	6.41E+2	2.24E+3	1.17E+2	6.37E+2	2.22E+3	1.15E+2	6.28E+2	2.16E+3	1.09E+2	6.03E+2	2.04E+3	1.07E+2	5.96E+2	2.01E+3

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 Table M-175. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	8.38E-1	9.11E-1	9.11E-1	8.17E-1	8.89E-1	8.89E-1	8.02E-1	8.72E-1	8.72E-1	7.61E-1	8.27E-1	8.27E-1	7.29E-1	7.92E-1	7.92E-1
II	7.33E+0	6.83E+1	3.37E+2	7.33E+0	6.83E+1	3.37E+2	7.33E+0	6.83E+1	3.37E+2	7.33E+0	6.83E+1	3.37E+2	7.33E+0	6.82E+1	3.36E+2
III	3.71E-1	4.11E-1	4.11E-1	3.68E-1	4.08E-1	4.08E-1	3.60E-1	3.99E-1	3.99E-1	3.10E-1	3.43E-1	3.43E-1	2.74E-1	3.04E-1	3.04E-1
IV	6.03E-2	1.50E-1	1.52E-1	5.94E-2	1.48E-1	1.50E-1	5.87E-2	1.46E-1	1.48E-1	5.68E-2	1.41E-1	1.43E-1	5.58E-2	1.39E-1	1.41E-1
V	2.20E+1	2.38E+1	2.38E+1	2.19E+1	2.38E+1	2.38E+1	2.19E+1	2.37E+1	2.37E+1	2.15E+1	2.33E+1	2.33E+1	2.12E+1	2.30E+1	2.30E+1
VI	3.50E+0	1.84E+1	6.43E+1	3.50E+0	1.84E+1	6.43E+1	3.49E+0	1.84E+1	6.43E+1	3.48E+0	1.84E+1	6.43E+1	3.47E+0	1.84E+1	6.43E+1
VII	5.60E+0	4.34E+1	3.37E+2	5.17E+0	3.95E+1	3.06E+2	4.89E+0	3.69E+1	2.86E+2	4.28E+0	3.16E+1	2.44E+2	3.79E+0	2.79E+1	2.15E+2
IX	2.23E-2	1.96E-1	1.22E+0	1.97E-2	1.73E-1	1.07E+0	1.77E-2	1.56E-1	9.67E-1	1.35E-2	1.19E-1	7.35E-1	1.07E-2	9.38E-2	5.82E-1
X	1.49E+0	5.05E+0	5.58E+0	1.49E+0	5.04E+0	5.58E+0	1.49E+0	5.04E+0	5.57E+0	1.47E+0	4.95E+0	5.47E+0	1.46E+0	4.82E+0	5.32E+0
XII	2.97E-3	9.20E-3	9.46E-3	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.19E-3	9.45E-3
XIIIA	4.63E-5	1.51E-4	1.86E-4	2.70E-5	8.84E-5	1.08E-4	1.32E-5	4.33E-5	5.30E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	3.73E-5	6.63E-5	7.30E-5	2.18E-5	3.87E-5	4.26E-5	1.07E-5	1.89E-5	2.09E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	2.46E-5	2.91E-5	8.88E-3	1.44E-5	1.70E-5	5.18E-3	7.03E-6	8.32E-6	2.54E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.46E-3	1.53E-3	1.53E-3	1.46E-3	1.53E-3	1.53E-3	1.46E-3	1.53E-3	1.53E-3	1.46E-3	1.53E-3	1.53E-3	1.45E-3	1.53E-3	1.53E-3
XVIB	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.51E-3	1.51E-3	1.44E-3	1.50E-3	1.50E-3
XVIC	1.40E-3	1.47E-3	1.47E-3	1.40E-3	1.47E-3	1.47E-3	1.40E-3	1.47E-3	1.47E-3	1.40E-3	1.46E-3	1.46E-3	1.40E-3	1.46E-3	1.46E-3
XVIIIA	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3	4.03E-3	4.45E-3	4.45E-3
XVIIIB	3.96E-3	4.38E-3	4.38E-3	3.96E-3	4.38E-3	4.38E-3	3.96E-3	4.38E-3	4.38E-3	3.96E-3	4.38E-3	4.38E-3	3.95E-3	4.38E-3	4.38E-3
XVIIIC	3.82E-3	4.17E-3	4.17E-3	3.82E-3	4.17E-3	4.17E-3	3.82E-3	4.17E-3	4.17E-3	3.82E-3	4.17E-3	4.17E-3	3.81E-3	4.17E-3	4.17E-3
XXA	4.24E-4	1.63E-3	9.92E-3	2.80E-4	1.08E-3	6.54E-3	2.07E-4	7.96E-4	4.84E-3	5.88E-5	2.26E-4	1.38E-3	2.47E-5	9.51E-5	5.84E-4
XXB	3.42E-4	7.21E-4	2.57E-3	2.26E-4	4.75E-4	1.70E-3	1.67E-4	3.51E-4	1.26E-3	4.75E-5	1.00E-4	3.58E-4	1.99E-5	4.20E-5	1.51E-4
XXC	2.26E-4	3.04E-4	1.01E+0	1.49E-4	2.00E-4	6.65E-1	1.10E-4	1.48E-4	4.92E-1	3.14E-5	4.21E-5	1.41E-1	1.32E-5	1.77E-5	5.94E-2
XXIA	1.13E-2	1.18E-1	1.11E+0	1.13E-2	1.18E-1	1.11E+0	1.13E-2	1.18E-1	1.11E+0	1.13E-2	1.17E-1	1.11E+0	1.12E-2	1.17E-1	1.10E+0
XXIB	1.12E-2	1.16E-1	1.00E+0	1.12E-2	1.16E-1	1.00E+0	1.12E-2	1.16E-1	1.00E+0	1.12E-2	1.16E-1	1.00E+0	1.11E-2	1.15E-1	9.97E-1
XXIC	1.10E-2	1.12E-1	8.13E-1	1.10E-2	1.12E-1	8.13E-1	1.10E-2	1.12E-1	8.13E-1	1.10E-2	1.11E-1	8.11E-1	1.09E-2	1.11E-1	8.08E-1
XXII	3.38E-1	1.32E+1	2.12E+1	3.38E-1	1.32E+1	2.12E+1	3.37E-1	1.32E+1	2.12E+1	3.35E-1	1.31E+1	2.11E+1	3.32E-1	1.31E+1	2.10E+1
DOE	1.20E+2	6.52E+2	2.31E+3	1.19E+2	6.48E+2	2.28E+3	1.19E+2	6.45E+2	2.26E+3	1.17E+2	6.39E+2	2.22E+3	1.16E+2	6.33E+2	2.19E+3
DOD	3.27E-3	9.90E-3	3.53E-2	3.14E-3	9.60E-3	2.46E-2	3.05E-3	9.39E-3	1.69E-2	2.96E-3	9.19E-3	9.45E-3	2.96E-3	9.19E-3	9.45E-3
NRC	6.77E-1	3.01E+0	2.67E+1	6.76E-1	3.00E+0	2.51E+1	6.75E-1	3.00E+0	2.42E+1	6.72E-1	2.99E+0	2.25E+1	6.71E-1	2.98E+0	2.21E+1
Total	1.20E+2	6.55E+2	2.34E+3	1.20E+2	6.51E+2	2.31E+3	1.19E+2	6.48E+2	2.29E+3	1.18E+2	6.42E+2	2.24E+3	1.17E+2	6.36E+2	2.21E+3

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 Table M-176. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.77E-1	7.36E-1	7.36E-1	6.41E-1	6.97E-1	6.97E-1	5.91E-1	6.43E-1	6.43E-1	4.24E-1	4.61E-1	4.61E-1	3.69E-1	4.01E-1	4.01E-1
II	7.33E+0	6.81E+1	3.35E+2	7.33E+0	6.81E+1	3.34E+2	7.32E+0	6.80E+1	3.33E+2	7.27E+0	6.74E+1	3.28E+2	7.22E+0	6.70E+1	3.25E+2
III	2.37E-1	2.63E-1	2.63E-1	1.96E-1	2.17E-1	2.17E-1	1.24E-1	1.38E-1	1.38E-1	3.26E-2	3.62E-2	3.62E-2	1.84E-2	2.04E-2	2.04E-2
IV	5.32E-2	1.33E-1	1.34E-1	5.07E-2	1.26E-1	1.28E-1	4.56E-2	1.14E-1	1.15E-1	2.02E-2	5.04E-2	5.11E-2	7.54E-3	1.88E-2	1.90E-2
V	2.07E+1	2.24E+1	2.24E+1	2.01E+1	2.18E+1	2.18E+1	1.89E+1	2.05E+1	2.05E+1	1.58E+1	1.71E+1	1.71E+1	1.50E+1	1.63E+1	1.63E+1
VI	3.45E+0	1.83E+1	6.41E+1	3.42E+0	1.83E+1	6.40E+1	3.38E+0	1.82E+1	6.37E+1	3.19E+0	1.76E+1	6.18E+1	3.13E+0	1.73E+1	6.11E+1
VII	2.55E+0	1.88E+1	1.45E+2	1.80E+0	1.34E+1	1.03E+2	1.17E+0	8.87E+0	6.87E+1	7.84E-3	4.89E-2	3.67E-1	.00E+0	.00E+0	.00E+0
IX	7.78E-3	6.84E-2	4.24E-1	5.62E-3	4.94E-2	3.06E-1	3.84E-3	3.37E-2	2.09E-1	6.97E-4	6.12E-3	3.80E-2	.00E+0	.00E+0	.00E+0
X	1.44E+0	4.43E+0	4.87E+0	1.42E+0	4.04E+0	4.43E+0	1.39E+0	3.49E+0	3.80E+0	1.26E+0	2.48E+0	2.65E+0	1.23E+0	2.23E+0	2.37E+0
XII	2.96E-3	9.18E-3	9.45E-3	2.96E-3	9.17E-3	9.44E-3	2.95E-3	9.16E-3	9.42E-3	2.93E-3	9.09E-3	9.35E-3	2.92E-3	9.07E-3	9.33E-3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	1.45E-3	1.52E-3	1.52E-3	1.44E-3	1.52E-3	1.52E-3	1.44E-3	1.51E-3	1.51E-3	1.38E-3	1.45E-3	1.45E-3	1.35E-3	1.42E-3	1.42E-3
XVIB	1.43E-3	1.50E-3	1.50E-3	1.42E-3	1.49E-3	1.49E-3	1.42E-3	1.49E-3	1.49E-3	1.36E-3	1.43E-3	1.43E-3	1.33E-3	1.40E-3	1.40E-3
XVIC	1.39E-3	1.46E-3	1.46E-3	1.39E-3	1.45E-3	1.45E-3	1.38E-3	1.44E-3	1.44E-3	1.33E-3	1.39E-3	1.39E-3	1.30E-3	1.35E-3	1.35E-3
XVIIIA	4.02E-3	4.44E-3	4.44E-3	4.00E-3	4.43E-3	4.43E-3	3.97E-3	4.39E-3	4.39E-3	3.79E-3	4.19E-3	4.19E-3	3.70E-3	4.09E-3	4.09E-3
XVIIIB	3.95E-3	4.37E-3	4.37E-3	3.93E-3	4.35E-3	4.35E-3	3.90E-3	4.32E-3	4.32E-3	3.72E-3	4.12E-3	4.12E-3	3.64E-3	4.03E-3	4.03E-3
XVIIIC	3.81E-3	4.16E-3	4.16E-3	3.79E-3	4.14E-3	4.14E-3	3.76E-3	4.11E-3	4.11E-3	3.59E-3	3.92E-3	3.92E-3	3.51E-3	3.83E-3	3.83E-3
XXA	2.08E-5	8.02E-5	4.93E-4	1.91E-5	7.35E-5	4.53E-4	1.68E-5	6.47E-5	3.99E-4	1.15E-5	4.45E-5	2.76E-4	9.72E-6	3.76E-5	2.33E-4
XXB	1.68E-5	3.54E-5	1.28E-4	1.54E-5	3.25E-5	1.17E-4	1.35E-5	2.86E-5	1.03E-4	9.30E-6	1.97E-5	7.15E-5	7.84E-6	1.66E-5	6.04E-5
XXC	1.11E-5	1.49E-5	5.01E-2	1.02E-5	1.37E-5	4.60E-2	8.95E-6	1.20E-5	4.06E-2	6.15E-6	8.28E-6	2.81E-2	5.18E-6	6.98E-6	2.38E-2
XXIA	1.11E-2	1.16E-1	1.09E+0	1.10E-2	1.15E-1	1.08E+0	1.08E-2	1.13E-1	1.06E+0	9.07E-3	9.47E-2	8.93E-1	8.45E-3	8.81E-2	8.31E-1
XXIB	1.10E-2	1.14E-1	9.88E-1	1.09E-2	1.13E-1	9.79E-1	1.07E-2	1.11E-1	9.61E-1	9.00E-3	9.32E-2	8.07E-1	8.38E-3	8.67E-2	7.51E-1
XXIC	1.08E-2	1.10E-1	8.00E-1	1.07E-2	1.09E-1	7.93E-1	1.05E-2	1.07E-1	7.78E-1	8.86E-3	8.98E-2	6.54E-1	8.25E-3	8.36E-2	6.08E-1
XXII	3.30E-1	1.29E+1	2.07E+1	3.23E-1	1.28E+1	2.05E+1	3.13E-1	1.24E+1	2.00E+1	2.98E-1	1.19E+1	1.91E+1	2.56E-1	1.17E+1	1.88E+1
DOE	1.14E+2	6.21E+2	2.11E+3	1.12E+2	6.12E+2	2.06E+3	1.09E+2	6.00E+2	2.01E+3	9.94E+1	5.69E+2	1.88E+3	9.68E+1	5.61E+2	1.86E+3
DOD	2.96E+3	9.18E+3	9.45E+3	2.96E+3	9.17E+3	9.44E+3	2.95E+3	9.16E+3	9.42E+3	2.93E+3	9.09E+3	9.35E+3	2.92E+3	9.07E+3	9.33E+3
NRC	6.67E-1	2.95E+0	2.18E+1	6.64E-1	2.93E+0	2.16E+1	6.56E-1	2.88E+0	2.12E+1	6.00E-1	2.47E+0	1.78E+1	5.77E-1	2.32E+0	1.66E+1
Total	1.14E+2	6.24E+2	2.13E+3	1.12E+2	6.15E+2	2.08E+3	1.09E+2	6.03E+2	2.03E+3	1.00E+2	5.71E+2	1.90E+3	9.74E+1	5.63E+2	1.88E+3

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 Table M-177. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.55E-1	6.05E-1	6.05E-1	5.47E-1	5.96E-1	5.96E-1	5.41E-1	5.89E-1	5.89E-1	5.26E-1	5.73E-1	5.73E-1	5.16E-1	5.62E-1	5.62E-1
II	4.83E+0	4.51E+1	2.22E+2	4.82E+0	4.51E+1	2.22E+2	4.82E+0	4.51E+1	2.22E+2	4.82E+0	4.50E+1	2.22E+2	4.82E+0	4.50E+1	2.22E+2
III	2.45E-1	2.70E-1	2.70E-1	2.44E-1	2.70E-1	2.70E-1	2.44E-1	2.69E-1	2.69E-1	2.37E-1	2.61E-1	2.61E-1	2.26E-1	2.49E-1	2.49E-1
IV	4.48E-2	1.11E-1	1.13E-1	4.45E-2	1.11E-1	1.12E-1	4.42E-2	1.10E-1	1.11E-1	4.35E-2	1.08E-1	1.10E-1	4.30E-2	1.07E-1	1.08E-1
V	1.44E+1	1.57E+1	1.57E+1	1.44E+1	1.57E+1	1.57E+1	1.44E+1	1.57E+1	1.57E+1	1.43E+1	1.56E+1	1.56E+1	1.42E+1	1.55E+1	1.55E+1
VI	2.55E+0	1.39E+1	4.56E+1	2.55E+0	1.39E+1	4.56E+1	2.55E+0	1.39E+1	4.56E+1	2.55E+0	1.39E+1	4.56E+1	2.55E+0	1.39E+1	4.56E+1
VII	4.84E+0	3.92E+1	3.08E+2	4.73E+0	3.82E+1	3.00E+2	4.58E+0	3.67E+1	2.88E+2	4.22E+0	3.35E+1	2.62E+2	3.99E+0	3.14E+1	2.46E+2
IX	2.07E-2	1.83E-1	1.14E+0	1.96E-2	1.73E-1	1.08E+0	1.86E-2	1.65E-1	1.03E+0	1.62E-2	1.43E-1	8.95E-1	1.45E-2	1.29E-1	8.04E-1
X	9.79E-1	3.16E+0	3.49E+0	9.79E-1	3.16E+0	3.49E+0	9.78E-1	3.16E+0	3.49E+0	9.74E-1	3.15E+0	3.47E+0	9.70E-1	3.12E+0	3.45E+0
XII	2.64E-3	8.16E-3	8.39E-3	2.64E-3	8.16E-3	8.39E-3	2.64E-3	8.16E-3	8.39E-3	2.64E-3	8.15E-3	8.39E-3	2.64E-3	8.15E-3	8.38E-3
XIIIA	3.67E-5	1.20E-4	1.45E-4	2.94E-5	9.60E-5	1.16E-4	2.06E-5	6.70E-5	8.13E-5	4.05E-6	1.32E-5	1.60E-5	.00E+0	.00E+0	.00E+0
XIIIB	2.96E-5	5.25E-5	5.74E-5	2.37E-5	4.22E-5	4.61E-5	1.66E-5	2.94E-5	3.22E-5	3.27E-6	5.80E-6	6.34E-6	.00E+0	.00E+0	.00E+0
XIIIC	1.95E-5	2.31E-5	5.97E-3	1.57E-5	1.85E-5	4.79E-3	1.09E-5	1.29E-5	3.34E-3	2.15E-6	2.55E-6	6.59E-4	.00E+0	.00E+0	.00E+0
XVIA	9.57E-4	1.01E-3	1.01E-3	9.57E-4	1.01E-3	1.01E-3	9.56E-4	1.01E-3	1.01E-3	9.56E-4	1.01E-3	1.01E-3	9.56E-4	1.01E-3	1.01E-3
XVIB	9.47E-4	9.93E-4	9.93E-4	9.47E-4	9.93E-4	9.93E-4	9.47E-4	9.93E-4	9.93E-4	9.47E-4	9.93E-4	9.93E-4	9.47E-4	9.93E-4	9.93E-4
XVIC	9.23E-4	9.63E-4	9.63E-4	9.23E-4	9.63E-4	9.63E-4	9.22E-4	9.63E-4	9.63E-4	9.22E-4	9.63E-4	9.63E-4	9.22E-4	9.62E-4	9.62E-4
XVIIIA	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3
XVIIIB	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.88E-3	2.88E-3
XVIIIC	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3
XXA	4.14E-4	1.55E-3	8.40E-3	3.13E-4	1.18E-3	6.36E-3	2.66E-4	9.96E-4	5.39E-3	1.85E-4	6.93E-4	3.75E-3	1.39E-4	5.22E-4	2.83E-3
XXB	3.34E-4	6.85E-4	2.21E-3	2.53E-4	5.19E-4	1.68E-3	2.14E-4	4.39E-4	1.42E-3	1.49E-4	3.06E-4	9.89E-4	1.12E-4	2.30E-4	7.45E-4
XXC	2.20E-4	2.90E-4	7.86E-1	1.67E-4	2.20E-4	5.95E-1	1.41E-4	1.86E-4	5.04E-1	9.83E-5	1.30E-4	3.51E-1	7.41E-5	9.76E-5	2.64E-1
XXIA	7.47E-3	7.80E-2	7.34E-1	7.47E-3	7.80E-2	7.34E-1	7.47E-3	7.80E-2	7.34E-1	7.46E-3	7.79E-2	7.34E-1	7.46E-3	7.79E-2	7.34E-1
XXIB	7.41E-3	7.67E-2	6.64E-1	7.41E-3	7.67E-2	6.64E-1	7.41E-3	7.67E-2	6.64E-1	7.41E-3	7.67E-2	6.64E-1	7.40E-3	7.66E-2	6.64E-1
XXIC	7.30E-3	7.39E-2	5.38E-1	7.30E-3	7.39E-2	5.38E-1	7.30E-3	7.39E-2	5.38E-1	7.29E-3	7.39E-2	5.38E-1	7.29E-3	7.39E-2	5.37E-1
XXII	2.24E-1	8.19E+0	1.38E+1	2.24E-1	8.19E+0	1.38E+1	2.23E-1	8.19E+0	1.37E+1	2.23E-1	8.19E+0	1.37E+1	2.22E-1	8.18E+0	1.37E+1
DOE	8.55E+1	4.77E+2	1.68E+3	8.54E+1	4.76E+2	1.67E+3	8.52E+1	4.75E+2	1.66E+3	8.46E+1	4.71E+2	1.63E+3	8.42E+1	4.69E+2	1.62E+3
DOD	2.88E-3	8.71E-3	2.59E-2	2.83E-3	8.60E-3	2.24E-2	2.77E-3	8.47E-3	1.82E-2	2.66E-3	8.21E-3	1.03E-2	2.64E-3	8.15E-3	8.38E-3
NRC	4.48E-1	1.99E+0	1.82E+1	4.47E-1	1.99E+0	1.73E+1	4.47E-1	1.99E+0	1.69E+1	4.46E-1	1.98E+0	1.62E+1	4.45E-1	1.98E+0	1.57E+1
Total	8.60E+1	4.79E+2	1.70E+3	8.58E+1	4.78E+2	1.69E+3	8.56E+1	4.77E+2	1.68E+3	8.51E+1	4.73E+2	1.65E+3	8.47E+1	4.71E+2	1.63E+3

Medium Population Density Without Agriculture - 09-19-94 1:57p
 Table M-178. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.93E-1	5.37E-1	5.37E-1	4.76E-1	5.18E-1	5.18E-1	4.51E-1	4.91E-1	4.91E-1	3.84E-1	4.18E-1	4.18E-1	3.67E-1	4.00E-1	4.00E-1
II	4.82E+0	4.50E+1	2.21E+2	4.82E+0	4.50E+1	2.21E+2	4.82E+0	4.50E+1	2.20E+2	4.82E+0	4.49E+1	2.19E+2	4.81E+0	4.48E+1	2.19E+2
III	1.94E-1	2.14E-1	2.14E-1	1.79E-1	1.98E-1	1.98E-1	1.62E-1	1.79E-1	1.79E-1	7.49E-2	8.27E-2	8.27E-2	4.84E-2	5.34E-2	5.34E-2
IV	4.20E-2	1.04E-1	1.06E-1	4.14E-2	1.03E-1	1.04E-1	4.02E-2	9.98E-2	1.01E-1	3.41E-2	8.47E-2	8.58E-2	3.10E-2	7.72E-2	7.82E-2
V	1.40E+1	1.53E+1	1.53E+1	1.39E+1	1.51E+1	1.51E+1	1.36E+1	1.49E+1	1.49E+1	1.23E+1	1.34E+1	1.34E+1	1.16E+1	1.26E+1	1.26E+1
VI	2.54E+0	1.39E+1	4.56E+1	2.53E+0	1.39E+1	4.55E+1	2.52E+0	1.39E+1	4.55E+1	2.47E+0	1.37E+1	4.51E+1	2.44E+0	1.36E+1	4.48E+1
VII	3.63E+0	2.83E+1	2.21E+2	3.34E+0	2.59E+1	2.03E+2	2.60E+0	2.01E+1	1.57E+2	1.08E+0	8.54E+0	6.69E+1	8.50E-1	6.77E+0	5.31E+1
IX	1.21E-2	1.07E-1	6.71E-1	1.02E-2	9.03E-2	5.64E-1	8.33E-3	7.37E-2	4.61E-1	3.91E-3	3.45E-2	2.16E-1	2.74E-3	2.42E-2	1.51E-1
X	9.61E-1	3.04E+0	3.34E+0	9.55E-1	2.92E+0	3.22E+0	9.42E-1	2.70E+0	2.96E+0	8.95E-1	2.01E+0	2.17E+0	8.72E-1	1.85E+0	1.99E+0
XII	2.64E-3	8.15E-3	8.38E-3	2.64E-3	8.15E-3	8.38E-3	2.64E-3	8.15E-3	8.38E-3	2.63E-3	8.14E-3	8.37E-3	2.63E-3	8.13E-3	8.36E-3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.55E-4	1.00E-3	1.00E-3	9.54E-4	1.00E-3	1.00E-3	9.51E-4	1.00E-3	1.00E-3	9.42E-4	9.90E-4	9.90E-4	9.37E-4	9.86E-4	9.86E-4
XVIB	9.46E-4	9.92E-4	9.92E-4	9.44E-4	9.91E-4	9.91E-4	9.41E-4	9.87E-4	9.87E-4	9.32E-4	9.78E-4	9.78E-4	9.28E-4	9.74E-4	9.74E-4
XVIC	9.21E-4	9.62E-4	9.62E-4	9.20E-4	9.60E-4	9.60E-4	9.17E-4	9.57E-4	9.57E-4	9.08E-4	9.48E-4	9.48E-4	9.04E-4	9.44E-4	9.44E-4
XVIIIA	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.61E-3	2.89E-3	2.89E-3	2.59E-3	2.87E-3	2.87E-3
XVIIIB	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.87E-3	2.87E-3	2.60E-3	2.87E-3	2.87E-3	2.57E-3	2.83E-3	2.83E-3	2.55E-3	2.81E-3	2.81E-3
XVIIIC	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.49E-3	2.71E-3	2.71E-3	2.47E-3	2.69E-3	2.69E-3
XXA	6.60E-5	2.48E-4	1.34E-3	2.72E-5	1.02E-4	5.55E-4	1.76E-5	6.62E-5	3.61E-4	1.40E-5	5.27E-5	2.88E-4	1.30E-5	4.89E-5	2.68E-4
XXB	5.32E-5	1.09E-4	3.54E-4	2.19E-5	4.50E-5	1.46E-4	1.42E-5	2.92E-5	9.51E-5	1.13E-5	2.33E-5	7.59E-5	1.05E-5	2.16E-5	7.04E-5
XXC	3.51E-5	4.63E-5	1.26E-1	1.45E-5	1.91E-5	5.19E-2	9.38E-6	1.24E-5	3.38E-2	7.46E-6	9.85E-6	2.70E-2	6.92E-6	9.14E-6	2.50E-2
XXIA	7.44E-3	7.77E-2	7.31E-1	7.42E-3	7.75E-2	7.29E-1	7.37E-3	7.70E-2	7.25E-1	7.16E-3	7.47E-2	7.04E-1	6.96E-3	7.27E-2	6.85E-1
XXIB	7.38E-3	7.64E-2	6.62E-1	7.36E-3	7.62E-2	6.60E-1	7.32E-3	7.57E-2	6.56E-1	7.10E-3	7.35E-2	6.37E-1	6.91E-3	7.15E-2	6.20E-1
XXIC	7.27E-3	7.37E-2	5.36E-1	7.25E-3	7.34E-2	5.34E-1	7.21E-3	7.30E-2	5.31E-1	6.99E-3	7.08E-2	5.15E-1	6.80E-3	6.89E-2	5.02E-1
XXII	2.21E-1	8.16E+0	1.37E+1	2.20E-1	8.13E+0	1.36E+1	2.18E-1	8.03E+0	1.35E+1	2.07E-1	7.73E+0	1.29E+1	2.05E-1	7.63E+0	1.28E+1
DOE	8.34E+1	4.65E+2	1.59E+3	8.28E+1	4.62E+2	1.57E+3	8.15E+1	4.54E+2	1.52E+3	7.71E+1	4.35E+2	1.42E+3	7.55E+1	4.29E+2	1.39E+3
DOD	2.64E-3	8.15E-3	8.38E-3	2.64E-3	8.15E-3	8.38E-3	2.64E-3	8.15E-3	8.38E-3	2.63E-3	8.14E-3	8.37E-3	2.63E-3	8.13E-3	8.36E-3
NRC	4.44E-1	1.97E+0	1.50E+1	4.43E-1	1.97E+0	1.47E+1	4.41E-1	1.96E+0	1.45E+1	4.33E-1	1.91E+0	1.40E+1	4.27E-1	1.86E+0	1.37E+1
Total	8.39E+1	4.67E+2	1.61E+3	8.32E+1	4.64E+2	1.59E+3	8.19E+1	4.56E+2	1.54E+3	7.75E+1	4.37E+2	1.43E+3	7.59E+1	4.31E+2	1.41E+3

Medium Population Density Without Agriculture - 09-19-94 1:57p
 Table M-179. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.51E-1	6.00E-1	6.00E-1	5.37E-1	5.85E-1	5.85E-1	5.28E-1	5.74E-1	5.74E-1	5.00E-1	5.45E-1	5.45E-1	4.79E-1	5.22E-1	5.22E-1
II	4.82E+0	4.51E+1	2.22E+2	4.82E+0	4.51E+1	2.22E+2	4.82E+0	4.50E+1	2.22E+2	4.82E+0	4.50E+1	2.21E+2	4.82E+0	4.50E+1	2.21E+2
III	2.45E-1	2.70E-1	2.70E-1	2.43E-1	2.68E-1	2.68E-1	2.38E-1	2.62E-1	2.62E-1	2.04E-1	2.26E-1	2.26E-1	1.81E-1	2.00E-1	2.00E-1
IV	4.46E-2	1.11E-1	1.12E-1	4.40E-2	1.09E-1	1.11E-1	4.35E-2	1.08E-1	1.10E-1	4.21E-2	1.05E-1	1.06E-1	4.13E-2	1.03E-1	1.04E-1
V	1.44E+1	1.57E+1	1.57E+1	1.44E+1	1.57E+1	1.57E+1	1.43E+1	1.56E+1	1.56E+1	1.41E+1	1.54E+1	1.54E+1	1.39E+1	1.52E+1	1.52E+1
VI	2.55E+0	1.39E+1	4.56E+1	2.55E+0	1.39E+1	4.56E+1	2.55E+0	1.39E+1	4.56E+1	2.54E+0	1.39E+1	4.56E+1	2.53E+0	1.39E+1	4.55E+1
VII	4.80E+0	3.88E+1	3.05E+2	4.42E+0	3.53E+1	2.77E+2	4.16E+0	3.30E+1	2.59E+2	3.63E+0	2.82E+1	2.21E+2	3.20E+0	2.49E+1	1.94E+2
IX	2.00E-2	1.77E-1	1.10E+0	1.76E-2	1.56E-1	9.73E-1	1.59E-2	1.40E-1	8.76E-1	1.21E-2	1.07E-1	6.67E-1	9.55E-3	8.44E-2	5.28E-1
X	9.79E-1	3.16E+0	3.49E+0	9.77E-1	3.16E+0	3.48E+0	9.75E-1	3.15E+0	3.48E+0	9.66E-1	3.10E+0	3.42E+0	9.59E-1	3.02E+0	3.33E+0
XII	2.64E-3	8.16E-3	8.39E-3	2.64E-3	8.15E-3	8.39E-3	2.64E-3	8.15E-3	8.38E-3	2.64E-3	8.15E-3	8.38E-3	2.64E-3	8.15E-3	8.38E-3
XIIIA	3.34E-5	1.09E-4	1.32E-4	1.95E-5	6.36E-5	7.71E-5	9.55E-6	3.11E-5	3.78E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.69E-5	4.78E-5	5.23E-5	1.57E-5	2.79E-5	3.05E-5	7.70E-6	1.37E-5	1.50E-5	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.78E-5	2.10E-5	5.44E-3	1.04E-5	1.23E-5	3.17E-3	5.08E-6	6.00E-6	1.55E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.57E-4	1.01E-3	1.01E-3	9.56E-4	1.01E-3	1.01E-3	9.56E-4	1.01E-3	1.01E-3	9.56E-4	1.00E-3	1.00E-3	9.54E-4	1.00E-3	1.00E-3
XVIB	9.47E-4	9.93E-4	9.93E-4	9.47E-4	9.93E-4	9.93E-4	9.47E-4	9.93E-4	9.93E-4	9.46E-4	9.92E-4	9.92E-4	9.45E-4	9.91E-4	9.91E-4
XVIC	9.23E-4	9.63E-4	9.63E-4	9.22E-4	9.63E-4	9.63E-4	9.22E-4	9.63E-4	9.63E-4	9.22E-4	9.62E-4	9.62E-4	9.20E-4	9.61E-4	9.61E-4
XVIIIA	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3	2.65E-3	2.93E-3	2.93E-3
XVIIIB	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.88E-3	2.88E-3	2.61E-3	2.87E-3	2.87E-3
XVIIIC	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3	2.52E-3	2.75E-3	2.75E-3
XXA	3.30E-4	1.24E-3	6.70E-3	2.18E-4	8.16E-4	4.42E-3	1.61E-4	6.04E-4	3.27E-3	4.58E-5	1.72E-4	9.33E-4	1.92E-5	7.23E-5	3.94E-4
XXB	2.66E-4	5.47E-4	1.77E-3	1.75E-4	3.60E-4	1.16E-3	1.30E-4	2.67E-4	8.62E-4	3.69E-5	7.59E-5	2.46E-4	1.55E-5	3.19E-5	1.04E-4
XXC	1.76E-4	2.32E-4	6.27E-1	1.16E-4	1.53E-4	4.13E-1	8.57E-5	1.13E-4	3.06E-1	2.44E-5	3.22E-5	8.73E-2	1.02E-5	1.35E-5	3.69E-2
XXIA	7.47E-3	7.80E-2	7.34E-1	7.47E-3	7.80E-2	7.34E-1	7.46E-3	7.79E-2	7.34E-1	7.44E-3	7.77E-2	7.32E-1	7.42E-3	7.74E-2	7.29E-1
XXIB	7.41E-3	7.67E-2	6.64E-1	7.41E-3	7.67E-2	6.64E-1	7.41E-3	7.67E-2	6.64E-1	7.39E-3	7.64E-2	6.62E-1	7.36E-3	7.62E-2	6.60E-1
XXIC	7.30E-3	7.39E-2	5.38E-1	7.30E-3	7.39E-2	5.38E-1	7.29E-3	7.39E-2	5.38E-1	7.27E-3	7.37E-2	5.36E-1	7.25E-3	7.34E-2	5.34E-1
XXII	2.24E-1	8.19E+0	1.38E+1	2.23E-1	8.19E+0	1.37E+1	2.23E-1	8.19E+0	1.37E+1	2.21E-1	8.16E+0	1.37E+1	2.20E-1	8.14E+0	1.36E+1
DOE	8.55E+1	4.77E+2	1.68E+3	8.50E+1	4.73E+2	1.65E+3	8.46E+1	4.71E+2	1.63E+3	8.36E+1	4.65E+2	1.59E+3	8.27E+1	4.61E+2	1.56E+3
DOD	2.86E-3	8.66E-3	2.43E-2	2.77E-3	8.45E-3	1.77E-2	2.70E-3	8.29E-3	1.29E-2	2.64E-3	8.15E-3	8.38E-3	2.64E-3	8.15E-3	8.38E-3
NRC	4.47E-1	1.99E+0	1.75E+1	4.46E-1	1.99E+0	1.65E+1	4.45E-1	1.98E+0	1.59E+1	4.44E-1	1.98E+0	1.49E+1	4.42E-1	1.97E+0	1.46E+1
Total	8.59E+1	4.79E+2	1.70E+3	8.54E+1	4.75E+2	1.67E+3	8.50E+1	4.73E+2	1.65E+3	8.40E+1	4.67E+2	1.61E+3	8.32E+1	4.63E+2	1.58E+3

Medium Population Density Without Agriculture - 09-19-94 1:57p
Table M-180. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	4.45E-1	4.84E-1	4.84E-1	4.22E-1	4.59E-1	4.59E-1	3.89E-1	4.23E-1	4.23E-1	2.79E-1	3.04E-1	3.04E-1	2.43E-1	2.64E-1	2.64E-1
II	4.82E+0	4.49E+1	2.20E+2	4.82E+0	4.49E+1	2.20E+2	4.82E+0	4.49E+1	2.19E+2	4.78E+0	4.45E+1	2.16E+2	4.75E+0	4.42E+1	2.14E+2
III	1.56E-1	1.73E-1	1.73E-1	1.29E-1	1.43E-1	1.43E-1	8.21E-2	9.06E-2	9.06E-2	2.15E-2	2.38E-2	2.38E-2	1.21E-2	1.34E-2	1.34E-2
IV	3.94E-2	9.80E-2	9.93E-2	3.75E-2	9.34E-2	9.46E-2	3.38E-2	8.40E-2	8.51E-2	1.50E-2	3.73E-2	3.78E-2	5.59E-3	1.39E-2	1.41E-2
V	1.35E+1	1.48E+1	1.48E+1	1.32E+1	1.43E+1	1.43E+1	1.24E+1	1.35E+1	1.35E+1	1.04E+1	1.13E+1	1.13E+1	9.86E+0	1.07E+1	1.07E+1
VI	2.52E+0	1.39E+1	4.55E+1	2.50E+0	1.38E+1	4.54E+1	2.47E+0	1.37E+1	4.51E+1	2.34E+0	1.33E+1	4.38E+1	2.30E+0	1.31E+1	4.33E+1
VII	2.16E+0	1.68E+1	1.31E+2	1.52E+0	1.19E+1	9.35E+1	9.99E-1	7.93E+0	6.22E+1	6.37E-3	4.33E-2	3.31E-1	.00E+0	.00E+0	.00E+0
IX	6.96E-3	6.15E-2	3.85E-1	5.02E-3	4.44E-2	2.78E-1	3.43E-3	3.04E-2	1.90E-1	6.23E-4	5.51E-3	3.44E-2	.00E+0	.00E+0	.00E+0
X	9.45E-1	2.78E+0	3.05E+0	9.32E-1	2.54E+0	2.78E+0	9.13E-1	2.20E+0	2.39E+0	8.29E-1	1.58E+0	1.68E+0	8.05E-1	1.42E+0	1.51E+0
XII	2.64E-3	8.15E-3	8.38E-3	2.63E-3	8.14E-3	8.37E-3	2.63E-3	8.12E-3	8.36E-3	2.61E-3	8.07E-3	8.30E-3	2.60E-3	8.05E-3	8.28E-3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	9.50E-4	9.99E-4	9.99E-4	9.47E-4	9.96E-4	9.96E-4	9.43E-4	9.92E-4	9.92E-4	9.05E-4	9.53E-4	9.53E-4	8.83E-4	9.31E-4	9.31E-4
XVIB	9.40E-4	9.87E-4	9.87E-4	9.38E-4	9.84E-4	9.84E-4	9.33E-4	9.79E-4	9.79E-4	8.96E-4	9.41E-4	9.41E-4	8.74E-4	9.19E-4	9.19E-4
XVIC	9.16E-4	9.56E-4	9.56E-4	9.13E-4	9.54E-4	9.54E-4	9.09E-4	9.49E-4	9.49E-4	8.72E-4	9.12E-4	9.12E-4	8.51E-4	8.90E-4	8.90E-4
XVIIIA	2.64E-3	2.93E-3	2.93E-3	2.63E-3	2.91E-3	2.91E-3	2.61E-3	2.89E-3	2.89E-3	2.49E-3	2.76E-3	2.76E-3	2.44E-3	2.70E-3	2.70E-3
XVIIIB	2.60E-3	2.87E-3	2.87E-3	2.59E-3	2.86E-3	2.86E-3	2.57E-3	2.83E-3	2.83E-3	2.45E-3	2.71E-3	2.71E-3	2.40E-3	2.64E-3	2.64E-3
XVIIIC	2.52E-3	2.75E-3	2.75E-3	2.51E-3	2.74E-3	2.74E-3	2.49E-3	2.71E-3	2.71E-3	2.37E-3	2.59E-3	2.59E-3	2.32E-3	2.53E-3	2.53E-3
XXA	1.62E-5	6.10E-5	3.33E-4	1.49E-5	5.59E-5	3.06E-4	1.31E-5	4.93E-5	2.70E-4	9.01E-6	3.39E-5	1.87E-4	7.60E-6	2.86E-5	1.58E-4
XXB	1.31E-5	2.69E-5	8.77E-5	1.20E-5	2.47E-5	8.05E-5	1.06E-5	2.17E-5	7.09E-5	7.26E-6	1.50E-5	4.91E-5	6.13E-6	1.26E-5	4.15E-5
XXC	8.64E-6	1.14E-5	3.12E-2	7.92E-6	1.05E-5	2.86E-2	6.97E-6	9.21E-6	2.52E-2	4.80E-6	6.34E-6	1.75E-2	4.05E-6	5.35E-6	1.48E-2
XXIA	7.35E-3	7.67E-2	7.22E-1	7.28E-3	7.60E-2	7.16E-1	7.14E-3	7.46E-2	7.02E-1	6.00E-3	6.27E-2	5.90E-1	5.59E-3	5.83E-2	5.49E-1
XXIB	7.29E-3	7.55E-2	6.54E-1	7.22E-3	7.48E-2	6.48E-1	7.09E-3	7.34E-2	6.36E-1	5.96E-3	6.16E-2	5.34E-1	5.54E-3	5.74E-2	4.97E-1
XXIC	7.18E-3	7.27E-2	5.29E-1	7.11E-3	7.21E-2	5.24E-1	6.98E-3	7.07E-2	5.15E-1	5.87E-3	5.94E-2	4.32E-1	5.46E-3	5.53E-2	4.02E-1
XXII	2.18E-1	8.01E+0	1.34E+1	2.13E-1	7.94E+0	1.33E+1	2.07E-1	7.73E+0	1.29E+1	1.97E-1	7.42E+0	1.24E+1	1.69E-1	7.30E+0	1.22E+1
DOE	8.09E+1	4.50E+2	1.50E+3	7.94E+1	4.43E+2	1.45E+3	7.73E+1	4.35E+2	1.41E+3	7.09E+1	4.11E+2	1.31E+3	6.91E+1	4.05E+2	1.29E+3
DOD	2.64E+3	8.15E+3	8.38E+3	2.63E+3	8.14E+3	8.37E+3	2.63E+3	8.12E+3	8.36E+3	2.61E+3	8.07E+3	8.30E+3	2.60E+3	8.05E+3	8.28E+3
NRC	4.40E-1	1.95E+0	1.44E+1	4.38E-1	1.94E+0	1.43E+1	4.33E-1	1.90E+0	1.40E+1	3.96E-1	1.63E+0	1.18E+1	1.18E+1	1.53E+0	1.10E+1
Total	8.13E+1	4.52E+2	1.51E+3	7.98E+1	4.45E+2	1.47E+3	7.77E+1	4.37E+2	1.43E+3	7.13E+1	4.12E+2	1.32E+3	6.94E+1	4.07E+2	1.31E+3

Reasonable Occupancy Scenario - 09-19-94 2:00p
 Table M-181. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.62E+3	2.85E+3	2.85E+3	2.58E+3	2.81E+3	2.81E+3	2.56E+3	2.78E+3	2.78E+3	2.49E+3	2.70E+3	2.70E+3	2.44E+3	2.65E+3	2.65E+3
II	1.84E+5	1.71E+6	8.37E+6	1.84E+5	1.71E+6	8.37E+6	1.84E+5	1.71E+6	8.37E+6	1.84E+5	1.71E+6	8.37E+6	1.84E+5	1.71E+6	8.36E+6
III	1.13E+3	1.26E+3	1.26E+3	1.13E+3	1.26E+3	1.26E+3	1.13E+3	1.25E+3	1.25E+3	1.10E+3	1.22E+3	1.22E+3	1.05E+3	1.16E+3	1.16E+3
IV	2.05E+3	1.20E+4	2.39E+4	2.04E+3	1.19E+4	2.38E+4	2.02E+3	1.18E+4	2.36E+4	1.99E+3	1.16E+4	2.32E+4	1.97E+3	1.15E+4	2.29E+4
V	6.81E+4	7.41E+4	7.41E+4	6.80E+4	7.40E+4	7.40E+4	6.79E+4	7.39E+4	7.39E+4	6.76E+4	7.35E+4	7.35E+4	6.72E+4	7.31E+4	7.31E+4
VI	7.65E+4	5.67E+5	4.20E+6	7.65E+4	5.67E+5	4.20E+6	7.65E+4	5.67E+5	4.20E+6	7.64E+4	5.67E+5	4.20E+6	7.64E+4	5.67E+5	4.20E+6
VII	3.34E+4	2.66E+5	1.82E+6	3.26E+4	2.59E+5	1.77E+6	3.13E+4	2.49E+5	1.70E+6	2.86E+4	2.27E+5	1.55E+6	2.68E+4	2.13E+5	1.45E+6
IX	9.04E+2	8.00E+3	5.05E+4	8.58E+2	7.59E+3	4.80E+4	8.15E+2	7.21E+3	4.56E+4	7.08E+2	6.27E+3	3.96E+4	6.37E+2	5.64E+3	3.56E+4
X	1.54E+3	1.88E+4	2.15E+4	1.54E+3	1.88E+4	2.15E+4	1.53E+3	1.88E+4	2.15E+4	1.51E+3	1.87E+4	2.14E+4	1.50E+3	1.85E+4	2.12E+4
XII	5.11E+2	1.56E+3	1.60E+3	5.11E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3
XIIIA	1.08E+0	6.58E+0	1.63E+1	8.71E-1	5.28E+0	1.31E+1	6.08E-1	3.69E+0	9.13E+0	1.20E-1	7.27E-1	1.80E+0	.00E+0	.00E+0	.00E+0
XIIIB	9.81E-1	4.33E+0	6.85E+0	7.88E-1	3.47E+0	5.50E+0	5.50E-1	2.42E+0	3.84E+0	1.08E-1	4.78E-1	7.57E-1	.00E+0	.00E+0	.00E+0
XIIIC	8.09E-1	2.35E+0	4.35E+1	6.49E-1	1.89E+0	3.49E+1	4.53E-1	1.32E+0	2.44E+1	8.93E-2	2.60E-1	4.81E+0	.00E+0	.00E+0	.00E+0
XVIA	7.90E+0	8.36E+0	8.36E+0	7.90E+0	8.36E+0	8.36E+0	7.90E+0	8.36E+0	8.36E+0	7.90E+0	8.36E+0	8.36E+0	7.89E+0	8.36E+0	8.36E+0
XVIB	7.84E+0	8.27E+0	8.27E+0	7.84E+0	8.27E+0	8.27E+0	7.84E+0	8.27E+0	8.27E+0	7.84E+0	8.27E+0	8.27E+0	7.84E+0	8.27E+0	8.27E+0
XVIC	7.65E+0	8.03E+0	8.03E+0	7.65E+0	8.03E+0	8.03E+0	7.65E+0	8.03E+0	8.03E+0	7.65E+0	8.03E+0	8.03E+0	7.65E+0	8.02E+0	8.02E+0
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2
XVIIIC	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2
XXA	1.13E+2	8.85E+2	6.77E+3	8.58E+1	6.70E+2	5.13E+3	7.27E+1	5.68E+2	4.35E+3	5.06E+1	3.95E+2	3.02E+3	3.81E+1	2.98E+2	2.28E+3
XXB	1.08E+2	6.31E+2	2.76E+3	8.18E+1	4.78E+2	2.09E+3	6.93E+1	4.05E+2	1.77E+3	4.82E+1	2.82E+2	1.23E+3	3.64E+1	2.12E+2	9.29E+2
XXC	9.79E+1	3.54E+2	8.04E+3	7.41E+1	2.68E+2	6.09E+3	6.28E+1	2.27E+2	5.16E+3	4.37E+1	1.58E+2	3.59E+3	3.29E+1	1.19E+2	2.70E+3
XXIA	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4
XXIB	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.96E+3	2.57E+4
XXIC	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.85E+3	2.07E+4
XXII	1.21E+4	1.46E+5	3.04E+5	1.21E+4	1.46E+5	3.04E+5	1.21E+4	1.46E+5	3.04E+5	1.21E+4	1.45E+5	3.03E+5	1.21E+4	1.45E+5	3.03E+5
DOE	2.11E+6	1.60E+7	1.08E+8	2.11E+6	1.60E+7	1.08E+8	2.11E+6	1.60E+7	1.08E+8	2.11E+6	1.59E+7	1.07E+8	2.10E+6	1.59E+7	1.07E+8
DOD	5.19E+2	1.60E+3	1.79E+3	5.17E+2	1.59E+3	1.75E+3	5.15E+2	1.58E+3	1.71E+3	5.11E+2	1.56E+3	1.62E+3	5.10E+2	1.56E+3	1.60E+3
NRC	1.51E+4	8.15E+4	6.39E+5	1.47E+4	7.93E+4	6.19E+5	1.46E+4	7.83E+4	6.10E+5	1.43E+4	7.66E+4	5.94E+5	1.41E+4	7.56E+4	5.84E+5
Total	2.13E+6	1.61E+7	1.08E+8	2.13E+6	1.61E+7	1.08E+8	2.13E+6	1.60E+7	1.08E+8	2.12E+6	1.60E+7	1.08E+8	2.12E+6	1.60E+7	1.08E+8

Reasonable Occupancy Scenario - 09-19-94 2:00p
 Table M-182. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.33E+3	2.53E+3	2.53E+3	2.25E+3	2.44E+3	2.44E+3	2.13E+3	2.31E+3	2.31E+3	1.82E+3	1.97E+3	1.97E+3	1.73E+3	1.88E+3	1.88E+3
II	1.84E+5	1.71E+6	8.36E+6	1.83E+5	1.71E+6	8.34E+6	1.83E+5	1.70E+6	8.31E+6	1.83E+5	1.70E+6	8.27E+6	1.83E+5	1.70E+6	8.25E+6
III	8.99E+2	9.99E+2	9.99E+2	8.30E+2	9.23E+2	9.23E+2	7.50E+2	8.34E+2	8.34E+2	3.47E+2	3.86E+2	3.86E+2	2.24E+2	2.49E+2	2.49E+2
IV	1.92E+3	1.12E+4	2.24E+4	1.89E+3	1.11E+4	2.21E+4	1.84E+3	1.07E+4	2.14E+4	1.56E+3	9.11E+3	1.82E+4	1.42E+3	8.30E+3	1.66E+4
V	6.63E+4	7.21E+4	7.21E+4	6.56E+4	7.13E+4	7.13E+4	6.43E+4	6.99E+4	6.99E+4	5.79E+4	6.30E+4	6.30E+4	5.47E+4	5.95E+4	5.95E+4
VI	7.63E+4	5.67E+5	4.20E+6	7.62E+4	5.67E+5	4.19E+6	7.60E+4	5.66E+5	4.19E+6	7.50E+4	5.61E+5	4.16E+6	7.45E+4	5.58E+5	4.13E+6
VII	2.41E+4	1.91E+5	1.31E+6	2.21E+4	1.75E+5	1.20E+6	1.72E+4	1.36E+5	9.29E+5	7.28E+3	5.78E+4	3.95E+5	5.77E+3	4.59E+4	3.14E+5
IX	5.32E+2	4.71E+3	2.97E+4	4.47E+2	3.95E+3	2.50E+4	3.65E+2	3.23E+3	2.04E+4	1.71E+2	1.51E+3	9.55E+3	1.20E+2	1.06E+3	6.70E+3
X	1.48E+3	1.78E+4	2.04E+4	1.46E+3	1.69E+4	1.94E+4	1.43E+3	1.52E+4	1.73E+4	1.35E+3	9.88E+3	1.12E+4	1.31E+3	8.73E+3	9.87E+3
XII	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.09E+2	1.56E+3	1.60E+3	5.09E+2	1.55E+3	1.60E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	7.89E+0	8.35E+0	8.35E+0	7.88E+0	8.34E+0	8.34E+0	7.85E+0	8.31E+0	8.31E+0	7.78E+0	8.24E+0	8.24E+0	7.75E+0	8.21E+0	8.21E+0
XVIB	7.83E+0	8.26E+0	8.26E+0	7.82E+0	8.25E+0	8.25E+0	7.79E+0	8.23E+0	8.23E+0	7.72E+0	8.15E+0	8.15E+0	7.69E+0	8.12E+0	8.12E+0
XVIC	7.64E+0	8.02E+0	8.02E+0	7.63E+0	8.01E+0	8.01E+0	7.61E+0	7.98E+0	7.98E+0	7.54E+0	7.91E+0	7.91E+0	7.50E+0	7.88E+0	7.88E+0
XVIII	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.11E+2	1.11E+2
XVIII	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.11E+2	1.11E+2	9.96E+1	1.10E+2	1.10E+2	9.89E+1	1.09E+2	1.09E+2
XVIII	9.79E+1	1.07E+2	1.07E+2	9.78E+1	1.07E+2	1.07E+2	9.77E+1	1.07E+2	1.07E+2	9.65E+1	1.05E+2	1.05E+2	9.58E+1	1.04E+2	1.04E+2
XXA	1.81E+1	1.41E+2	1.08E+3	7.49E+0	5.85E+1	4.48E+2	4.87E+0	3.81E+1	2.92E+2	3.89E+0	3.04E+1	2.33E+2	3.61E+0	2.82E+1	2.16E+2
XXB	1.73E+1	1.01E+2	4.41E+2	7.14E+0	4.17E+1	1.83E+2	4.65E+0	2.71E+1	1.19E+2	3.71E+0	2.17E+1	9.49E+1	3.44E+0	2.01E+1	8.81E+1
XXC	1.56E+1	5.66E+1	1.28E+3	6.47E+0	2.34E+1	5.32E+2	4.21E+0	1.52E+1	3.46E+2	3.36E+0	1.22E+1	2.76E+2	3.12E+0	1.13E+1	2.56E+2
XXIA	2.88E+2	2.99E+3	2.83E+4	2.87E+2	2.98E+3	2.83E+4	2.86E+2	2.97E+3	2.81E+4	2.77E+2	2.88E+3	2.73E+4	2.70E+2	2.80E+3	2.65E+4
XXIB	2.86E+2	2.96E+3	2.56E+4	2.85E+2	2.95E+3	2.55E+4	2.84E+2	2.93E+3	2.54E+4	2.75E+2	2.84E+3	2.46E+4	2.68E+2	2.77E+3	2.40E+4
XXIC	2.82E+2	2.85E+3	2.07E+4	2.82E+2	2.84E+3	2.06E+4	2.80E+2	2.82E+3	2.05E+4	2.72E+2	2.74E+3	1.99E+4	2.64E+2	2.66E+3	1.93E+4
XXII	1.20E+4	1.45E+5	3.02E+5	1.19E+4	1.44E+5	3.01E+5	1.19E+4	1.43E+5	2.98E+5	1.12E+4	1.37E+5	2.85E+5	1.12E+4	1.35E+5	2.81E+5
DOE	2.10E+6	1.59E+7	1.07E+8	2.09E+6	1.58E+7	1.07E+8	2.08E+6	1.58E+7	1.07E+8	2.03E+6	1.55E+7	1.05E+8	2.02E+6	1.54E+7	1.04E+8
DOD	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.09E+2	1.56E+3	1.60E+3	5.09E+2	1.55E+3	1.60E+3
NRC	1.38E+4	7.39E+4	5.68E+5	1.37E+4	7.29E+4	5.59E+5	1.36E+4	7.23E+4	5.54E+5	1.33E+4	7.02E+4	5.37E+5	1.31E+4	6.85E+4	5.23E+5
Total	2.11E+6	1.60E+7	1.08E+8	2.10E+6	1.59E+7	1.08E+8	2.09E+6	1.58E+7	1.07E+8	2.05E+6	1.56E+7	1.06E+8	2.03E+6	1.55E+7	1.05E+8

Reasonable Occupancy Scenario - 09-19-94 2:00p
 Table M-183. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.60E+3	2.83E+3	2.83E+3	2.54E+3	2.76E+3	2.76E+3	2.49E+3	2.71E+3	2.71E+3	2.36E+3	2.57E+3	2.57E+3	2.26E+3	2.46E+3	2.46E+3
II	1.84E+5	1.71E+6	8.37E+6	1.84E+5	1.71E+6	8.37E+6	1.84E+5	1.71E+6	8.37E+6	1.84E+5	1.71E+6	8.37E+6	1.84E+5	1.71E+6	8.37E+6
III	1.13E+3	1.26E+3	1.26E+3	1.12E+3	1.25E+3	1.25E+3	1.10E+3	1.22E+3	1.22E+3	9.47E+2	1.05E+3	1.05E+3	8.37E+2	9.31E+2	9.31E+2
IV	2.04E+3	1.19E+4	2.38E+4	2.01E+3	1.18E+4	2.35E+4	1.99E+3	1.16E+4	2.32E+4	1.93E+3	1.12E+4	2.25E+4	1.89E+3	1.10E+4	2.21E+4
V	6.81E+4	7.40E+4	7.40E+4	6.79E+4	7.38E+4	7.38E+4	6.76E+4	7.35E+4	7.35E+4	6.66E+4	7.25E+4	7.25E+4	6.57E+4	7.15E+4	7.15E+4
VI	7.65E+4	5.67E+5	4.20E+6	7.65E+4	5.67E+5	4.20E+6	7.65E+4	5.67E+5	4.20E+6	7.65E+4	5.67E+5	4.20E+6	7.65E+4	5.67E+5	4.20E+6
VII	3.31E+4	2.64E+5	1.80E+6	3.01E+4	2.40E+5	1.64E+6	2.81E+4	2.23E+5	1.53E+6	2.41E+4	1.91E+5	1.30E+6	2.12E+4	1.68E+5	1.15E+6
IX	8.74E+2	7.73E+3	4.88E+4	7.70E+2	6.81E+3	4.30E+4	6.94E+2	6.14E+3	3.88E+4	5.28E+2	4.67E+3	2.95E+4	4.18E+2	3.70E+3	2.33E+4
X	1.54E+3	1.88E+4	2.15E+4	1.53E+3	1.88E+4	2.15E+4	1.52E+3	1.87E+4	2.14E+4	1.49E+3	1.83E+4	2.10E+4	1.47E+3	1.77E+4	2.02E+4
XII	5.11E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3
XIIIA	9.88E-1	5.99E+0	1.48E+1	5.77E-1	3.50E+0	8.66E+0	2.82E-1	1.71E+0	4.24E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	8.94E-1	3.94E+0	6.24E+0	5.22E-1	2.30E+0	3.64E+0	2.56E-1	1.13E+0	1.78E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	7.37E-1	2.14E+0	3.96E+1	4.30E-1	1.25E+0	2.31E+1	2.11E-1	6.13E-1	1.13E+1	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	7.90E+0	8.36E+0	8.36E+0	7.90E+0	8.36E+0	8.36E+0	7.90E+0	8.36E+0	8.36E+0	7.89E+0	8.35E+0	8.35E+0	7.88E+0	8.34E+0	8.34E+0
XVIB	7.84E+0	8.27E+0	8.27E+0	7.84E+0	8.27E+0	8.27E+0	7.84E+0	8.27E+0	8.27E+0	7.83E+0	8.27E+0	8.27E+0	7.82E+0	8.26E+0	8.26E+0
XVIC	7.65E+0	8.03E+0	8.03E+0	7.65E+0	8.03E+0	8.03E+0	7.65E+0	8.03E+0	8.03E+0	7.65E+0	8.02E+0	8.02E+0	7.64E+0	8.01E+0	8.01E+0
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2	1.03E+2	1.14E+2	1.14E+2
XVIIIB	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2	1.01E+2	1.12E+2	1.12E+2
XVIIIC	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.79E+1	1.07E+2	1.07E+2	9.78E+1	1.07E+2	1.07E+2
XXA	9.04E+1	7.06E+2	5.40E+3	5.96E+1	4.65E+2	3.56E+3	4.41E+1	3.44E+2	2.64E+3	1.26E+1	9.83E+1	7.53E+2	5.32E+0	4.15E+1	3.18E+2
XXB	8.62E+1	5.03E+2	2.20E+3	5.68E+1	3.32E+2	1.45E+3	4.21E+1	2.46E+2	1.08E+3	1.20E+1	7.01E+1	3.07E+2	5.07E+0	2.96E+1	1.30E+2
XXC	7.81E+1	2.83E+2	6.41E+3	5.15E+1	1.86E+2	4.23E+3	3.81E+1	1.38E+2	3.13E+3	1.09E+1	3.94E+1	8.93E+2	4.59E+0	1.66E+1	3.77E+2
XXIA	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.89E+2	3.00E+3	2.84E+4	2.88E+2	2.99E+3	2.84E+4	2.87E+2	2.98E+3	2.83E+4
XXIB	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.87E+2	2.97E+3	2.57E+4	2.86E+2	2.96E+3	2.56E+4	2.85E+2	2.95E+3	2.55E+4
XXIC	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.86E+3	2.07E+4	2.83E+2	2.85E+3	2.07E+4	2.81E+2	2.84E+3	2.06E+4
XXII	1.21E+4	1.46E+5	3.04E+5	1.21E+4	1.46E+5	3.04E+5	1.21E+4	1.45E+5	3.03E+5	1.20E+4	1.45E+5	3.02E+5	1.19E+4	1.44E+5	3.01E+5
DOE	2.11E+6	1.60E+7	1.08E+8	2.11E+6	1.59E+7	1.08E+8	2.11E+6	1.59E+7	1.07E+8	2.10E+6	1.59E+7	1.07E+8	2.09E+6	1.58E+7	1.07E+8
DOD	5.18E+2	1.59E+3	1.77E+3	5.15E+2	1.58E+3	1.70E+3	5.12E+2	1.57E+3	1.65E+3	5.10E+2	1.56E+3	1.60E+3	5.10E+2	1.56E+3	1.60E+3
NRC	1.48E+4	7.97E+4	6.23E+5	1.44E+4	7.73E+4	6.00E+5	1.42E+4	7.61E+4	5.89E+5	1.38E+4	7.35E+4	5.64E+5	1.36E+4	7.27E+4	5.57E+5
Total	2.13E+6	1.61E+7	1.08E+8	2.12E+6	1.60E+7	1.08E+8	2.12E+6	1.60E+7	1.08E+8	2.11E+6	1.60E+7	1.08E+8	2.10E+6	1.59E+7	1.07E+8

Reasonable Occupancy Scenario - 09-19-94 2:00p
 Table M-184. POPULATION DOSE AVERTED (p-rem)--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	2.10E+3	2.28E+3	2.28E+3	1.99E+3	2.16E+3	2.16E+3	1.84E+3	1.99E+3	1.99E+3	1.32E+3	1.43E+3	1.43E+3	1.15E+3	1.24E+3	1.24E+3
II	1.83E+5	1.70E+6	8.30E+6	1.83E+5	1.70E+6	8.29E+6	1.83E+5	1.70E+6	8.27E+6	1.82E+5	1.69E+6	8.14E+6	1.81E+5	1.67E+6	8.07E+6
III	7.25E+2	8.06E+2	8.06E+2	5.99E+2	6.66E+2	6.66E+2	3.80E+2	4.23E+2	4.23E+2	9.98E+1	1.11E+2	1.11E+2	5.63E+1	6.26E+1	6.26E+1
IV	1.80E+3	1.05E+4	2.10E+4	1.72E+3	1.00E+4	2.00E+4	1.55E+3	9.03E+3	1.80E+4	6.86E+2	4.01E+3	8.00E+3	2.56E+2	1.49E+3	2.98E+3
V	6.39E+4	6.95E+4	6.95E+4	6.21E+4	6.76E+4	6.76E+4	5.86E+4	6.37E+4	6.37E+4	4.89E+4	5.32E+4	5.32E+4	4.65E+4	5.06E+4	5.06E+4
VI	7.60E+4	5.66E+5	4.19E+6	7.57E+4	5.64E+5	4.18E+6	7.51E+4	5.61E+5	4.16E+6	7.22E+4	5.45E+5	4.04E+6	7.12E+4	5.39E+5	4.00E+6
VII	1.43E+4	1.13E+5	7.76E+5	1.02E+4	8.08E+4	5.52E+5	6.76E+3	5.37E+4	3.67E+5	3.72E+1	2.87E+2	1.95E+3	.00E+0	.00E+0	.00E+0
IX	3.04E+2	2.69E+3	1.70E+4	2.20E+2	1.95E+3	1.23E+4	1.50E+2	1.33E+3	8.40E+3	2.73E+1	2.41E+2	1.52E+3	.00E+0	.00E+0	.00E+0
X	1.44E+3	1.58E+4	1.80E+4	1.41E+3	1.40E+4	1.59E+4	1.38E+3	1.13E+4	1.29E+4	1.24E+3	6.85E+3	7.71E+3	1.20E+3	5.80E+3	6.51E+3
XII	5.10E+2	1.56E+3	1.60E+3	5.09E+2	1.56E+3	1.60E+3	5.08E+2	1.55E+3	1.59E+3	5.05E+2	1.54E+3	1.58E+3	5.04E+2	1.54E+3	1.58E+3
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	7.85E+0	8.31E+0	8.31E+0	7.82E+0	8.29E+0	8.29E+0	7.79E+0	8.25E+0	8.25E+0	7.49E+0	7.95E+0	7.95E+0	7.33E+0	7.78E+0	7.78E+0
XVIB	7.79E+0	8.22E+0	8.22E+0	7.77E+0	8.20E+0	8.20E+0	7.73E+0	8.16E+0	8.16E+0	7.44E+0	7.86E+0	7.86E+0	7.27E+0	7.69E+0	7.69E+0
XVIC	7.60E+0	7.98E+0	7.98E+0	7.58E+0	7.95E+0	7.95E+0	7.55E+0	7.92E+0	7.92E+0	7.26E+0	7.63E+0	7.63E+0	7.09E+0	7.46E+0	7.46E+0
XVIIIA	1.03E+2	1.14E+2	1.14E+2	1.02E+2	1.13E+2	1.13E+2	1.01E+2	1.12E+2	1.12E+2	9.68E+1	1.07E+2	1.07E+2	9.45E+1	1.05E+2	1.05E+2
XVIIIB	1.01E+2	1.11E+2	1.11E+2	1.00E+2	1.11E+2	1.11E+2	9.96E+1	1.10E+2	1.10E+2	9.51E+1	1.05E+2	1.05E+2	9.29E+1	1.03E+2	1.03E+2
XVIIIC	9.77E+1	1.06E+2	1.06E+2	9.73E+1	1.06E+2	1.06E+2	9.64E+1	1.05E+2	1.05E+2	9.21E+1	1.00E+2	1.00E+2	9.00E+1	9.81E+1	9.81E+1
XXA	4.49E+0	3.51E+1	2.69E+2	4.13E+0	3.22E+1	2.47E+2	3.64E+0	2.84E+1	2.18E+2	2.52E+0	1.97E+1	1.51E+2	2.13E+0	1.66E+1	1.28E+2
XXB	4.28E+0	2.50E+1	1.10E+2	3.93E+0	2.30E+1	1.01E+2	3.47E+0	2.03E+1	8.88E+1	2.40E+0	1.40E+1	6.15E+1	2.03E+0	1.19E+1	5.20E+1
XXC	3.88E+0	1.40E+1	3.19E+2	3.56E+0	1.29E+1	2.93E+2	3.14E+0	1.14E+1	2.58E+2	2.17E+0	7.87E+0	1.79E+2	1.84E+0	6.66E+0	1.51E+2
XXIA	2.85E+2	2.96E+3	2.80E+4	2.82E+2	2.93E+3	2.77E+4	2.77E+2	2.87E+3	2.72E+4	2.32E+2	2.42E+3	2.29E+4	2.16E+2	2.25E+3	2.13E+4
XXIB	2.83E+2	2.92E+3	2.53E+4	2.80E+2	2.89E+3	2.51E+4	2.75E+2	2.84E+3	2.46E+4	2.31E+2	2.39E+3	2.07E+4	2.15E+2	2.22E+3	1.92E+4
XXIC	2.79E+2	2.81E+3	2.04E+4	2.76E+2	2.79E+3	2.02E+4	2.71E+2	2.73E+3	1.98E+4	2.28E+2	2.30E+3	1.67E+4	2.12E+2	2.14E+3	1.55E+4
XXII	1.18E+4	1.43E+5	2.97E+5	1.16E+4	1.41E+5	2.94E+5	1.12E+4	1.37E+5	2.85E+5	1.07E+4	1.31E+5	2.73E+5	9.19E+3	1.28E+5	2.67E+5
DOE	2.07E+6	1.57E+7	1.06E+8	2.06E+6	1.57E+7	1.06E+8	2.04E+6	1.55E+7	1.05E+8	1.95E+6	1.50E+7	1.02E+8	1.91E+6	1.49E+7	1.01E+8
DOD	5.10E+2	1.56E+3	1.60E+3	5.09E+2	1.56E+3	1.60E+3	5.08E+2	1.55E+3	1.59E+3	5.05E+2	1.54E+3	1.58E+3	5.04E+2	1.54E+3	1.58E+3
NRC	1.36E+4	7.20E+4	5.52E+5	1.35E+4	7.14E+4	5.46E+5	1.33E+4	7.01E+4	5.36E+5	1.20E+4	5.98E+4	4.51E+5	1.15E+4	5.60E+4	4.20E+5
Total	2.09E+6	1.58E+7	1.07E+8	2.07E+6	1.57E+7	1.06E+8	2.05E+6	1.56E+7	1.06E+8	1.96E+6	1.51E+7	1.02E+8	1.92E+6	1.49E+7	1.01E+8

Reasonable Occupancy Scenario - 09-19-94 2:00p
 Table M-185. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.13E+0	1.24E+0	1.24E+0	1.12E+0	1.22E+0	1.22E+0	1.10E+0	1.21E+0	1.21E+0	1.07E+0	1.17E+0	1.17E+0	1.05E+0	1.15E+0	1.15E+0
II	7.34E+1	6.83E+2	3.37E+3	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.83E+2	3.37E+3
III	4.91E-1	5.44E-1	5.44E-1	4.91E-1	5.44E-1	5.44E-1	4.89E-1	5.42E-1	5.42E-1	4.75E-1	5.26E-1	5.26E-1	4.53E-1	5.02E-1	5.02E-1
IV	4.31E-1	2.49E+0	4.73E+0	4.27E-1	2.47E+0	4.70E+0	4.25E-1	2.45E+0	4.67E+0	4.18E-1	2.41E+0	4.59E+0	4.13E-1	2.38E+0	4.54E+0
V	2.95E+1	3.22E+1	3.22E+1	2.95E+1	3.22E+1	3.22E+1	2.94E+1	3.21E+1	3.21E+1	2.93E+1	3.20E+1	3.20E+1	2.91E+1	3.18E+1	3.18E+1
VI	1.71E+1	1.16E+2	8.13E+2	1.71E+1	1.16E+2	8.13E+2	1.71E+1	1.16E+2	8.13E+2	1.71E+1	1.16E+2	8.13E+2	1.71E+1	1.16E+2	8.13E+2
VII	2.67E+0	1.86E+1	1.22E+2	2.61E+0	1.82E+1	1.19E+2	2.52E+0	1.75E+1	1.15E+2	2.33E+0	1.60E+1	1.04E+2	2.21E+0	1.50E+1	9.78E+1
IX	5.37E-2	4.63E-1	2.87E+0	5.10E-2	4.40E-1	2.72E+0	4.84E-2	4.18E-1	2.58E+0	4.21E-2	3.63E-1	2.25E+0	3.78E-2	3.26E-1	2.02E+0
X	1.56E+0	5.13E+0	5.68E+0	1.56E+0	5.13E+0	5.68E+0	1.56E+0	5.13E+0	5.68E+0	1.55E+0	5.11E+0	5.66E+0	1.54E+0	5.07E+0	5.61E+0
XII	2.97E-2	9.20E-2	9.46E-2	2.97E-2	9.20E-2	9.46E-2	2.96E-2	9.19E-2	9.46E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2
XIIIA	2.62E-4	1.58E-3	3.66E-3	2.10E-4	1.27E-3	2.94E-3	1.47E-4	8.85E-4	2.05E-3	2.89E-5	1.74E-4	4.04E-4	.00E+0	.00E+0	.00E+0
XIIIB	2.36E-4	1.04E-3	1.54E-3	1.89E-4	8.33E-4	1.24E-3	1.32E-4	5.82E-4	8.63E-4	2.61E-5	1.15E-4	1.70E-4	.00E+0	.00E+0	.00E+0
XIIIC	1.95E-4	5.64E-4	1.04E-2	1.57E-4	4.53E-4	8.32E-3	1.09E-4	3.16E-4	5.81E-3	2.16E-5	6.23E-5	1.14E-3	.00E+0	.00E+0	.00E+0
XVIA	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.50E-3	3.50E-3
XVIB	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.45E-3	3.45E-3	3.27E-3	3.45E-3	3.45E-3
XVIC	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2
XVIIIC	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2
XXA	2.06E-2	1.60E-1	1.10E+0	1.56E-2	1.21E-1	8.36E-1	1.32E-2	1.03E-1	7.08E-1	9.18E-3	7.15E-2	4.93E-1	6.92E-3	5.39E-2	3.72E-1
XXB	1.96E-2	1.14E-1	4.46E-1	1.48E-2	8.63E-2	3.38E-1	1.26E-2	7.31E-2	2.86E-1	8.75E-3	5.09E-2	1.99E-1	6.59E-3	3.84E-2	1.50E-1
XXC	1.78E-2	6.41E-2	1.42E+0	1.35E-2	4.85E-2	1.08E+0	1.14E-2	4.11E-2	9.12E-1	7.94E-3	2.86E-2	6.35E-1	5.99E-3	2.16E-2	4.78E-1
XXIA	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1
XXIB	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1
XXIC	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0
XXII	4.74E+0	4.77E+1	1.04E+2	4.74E+0	4.77E+1	1.04E+2	4.73E+0	4.76E+1	1.04E+2	4.72E+0	4.75E+1	1.03E+2	4.71E+0	4.75E+1	1.03E+2
DOE	5.31E+2	3.70E+3	2.27E+4	5.31E+2	3.70E+3	2.27E+4	5.31E+2	3.70E+3	2.27E+4	5.30E+2	3.69E+3	2.27E+4	5.29E+2	3.69E+3	2.27E+4
DOD	3.16E-2	1.01E-1	1.39E-1	3.12E-2	9.92E-2	1.30E-1	3.07E-2	9.70E-2	1.19E-1	2.98E-2	9.29E-2	9.94E-2	2.96E-2	9.19E-2	9.45E-2
NRC	5.61E+0	3.01E+1	2.32E+2	5.55E+0	2.97E+1	2.28E+2	5.52E+0	2.95E+1	2.27E+2	5.46E+0	2.92E+1	2.24E+2	5.43E+0	2.90E+1	2.22E+2
Total	5.37E+2	3.73E+3	2.30E+4	5.36E+2	3.73E+3	2.29E+4	5.36E+2	3.73E+3	2.29E+4	5.35E+2	3.72E+3	2.29E+4	5.35E+2	3.72E+3	2.29E+4

Reasonable Occupancy Scenario - 09-19-94 2:00p
 Table M-186. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.01E+0	1.10E+0	1.10E+0	9.71E-1	1.06E+0	1.06E+0	9.20E-1	1.01E+0	1.01E+0	7.84E-1	8.57E-1	8.57E-1	7.49E-1	8.18E-1	8.18E-1
II	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.82E+2	3.36E+3	7.33E+1	6.81E+2	3.35E+3	7.32E+1	6.80E+2	3.33E+3	7.32E+1	6.80E+2	3.33E+3
III	3.90E-1	4.32E-1	4.32E-1	3.60E-1	3.99E-1	3.99E-1	3.25E-1	3.60E-1	3.60E-1	1.51E-1	1.67E-1	1.67E-1	9.72E-2	1.08E-1	1.08E-1
IV	4.03E-1	2.33E+0	4.43E+0	3.97E-1	2.29E+0	4.37E+0	3.86E-1	2.23E+0	4.24E+0	3.27E-1	1.89E+0	3.60E+0	2.98E-1	1.72E+0	3.28E+0
V	2.87E+1	3.14E+1	3.14E+1	2.84E+1	3.10E+1	3.10E+1	2.79E+1	3.04E+1	3.04E+1	2.51E+1	2.74E+1	2.74E+1	2.37E+1	2.59E+1	2.59E+1
VI	1.71E+1	1.16E+2	8.13E+2	1.70E+1	1.15E+2	8.12E+2	1.70E+1	1.15E+2	8.12E+2	1.67E+1	1.14E+2	8.05E+2	1.65E+1	1.13E+2	8.01E+2
VII	2.01E+0	1.35E+1	8.78E+1	1.85E+0	1.24E+1	8.05E+1	1.44E+0	9.60E+0	6.25E+1	5.96E-1	4.07E+0	2.66E+1	4.69E-1	3.23E+0	2.11E+1
IX	3.16E-2	2.72E-1	1.69E+0	2.65E-2	2.29E-1	1.42E+0	2.17E-2	1.87E-1	1.16E+0	1.02E-2	8.76E-2	5.42E-1	7.12E-3	6.14E-2	3.80E-1
X	1.53E+0	4.93E+0	5.45E+0	1.52E+0	4.74E+0	5.24E+0	1.50E+0	4.38E+0	4.81E+0	1.42E+0	3.24E+0	3.51E+0	1.38E+0	2.98E+0	3.21E+0
XII	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.17E-2	9.44E-2	2.95E-2	9.16E-2	9.43E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.30E-3	3.49E-3	3.49E-3	3.30E-3	3.49E-3	3.49E-3	3.29E-3	3.48E-3	3.48E-3	3.26E-3	3.45E-3	3.45E-3	3.24E-3	3.43E-3	3.43E-3
XVIB	3.27E-3	3.45E-3	3.45E-3	3.27E-3	3.45E-3	3.45E-3	3.25E-3	3.44E-3	3.44E-3	3.23E-3	3.41E-3	3.41E-3	3.21E-3	3.39E-3	3.39E-3
XVIC	3.20E-3	3.36E-3	3.36E-3	3.19E-3	3.35E-3	3.35E-3	3.18E-3	3.34E-3	3.34E-3	3.15E-3	3.31E-3	3.31E-3	3.14E-3	3.30E-3	3.30E-3
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.02E-2	4.44E-2	4.44E-2	3.97E-2	4.39E-2	4.39E-2	3.94E-2	4.36E-2	4.36E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.95E-2	4.38E-2	4.38E-2	3.95E-2	4.37E-2	4.37E-2	3.90E-2	4.32E-2	4.32E-2	3.87E-2	4.29E-2	4.29E-2
XVIIIC	3.82E-2	4.17E-2	4.17E-2	3.81E-2	4.17E-2	4.17E-2	3.81E-2	4.16E-2	4.16E-2	3.76E-2	4.11E-2	4.11E-2	3.73E-2	4.08E-2	4.08E-2
XXA	3.29E-3	2.56E-2	1.77E-1	1.36E-3	1.06E-2	7.31E-2	8.84E-4	6.89E-3	4.75E-2	7.06E-4	5.50E-3	3.80E-2	6.55E-4	5.10E-3	3.52E-2
XXB	3.13E-3	1.82E-2	7.14E-2	1.29E-3	7.54E-3	2.95E-2	8.42E-4	4.90E-3	1.92E-2	6.72E-4	3.91E-3	1.54E-2	6.24E-4	3.63E-3	1.42E-2
XXC	2.84E-3	1.02E-2	2.27E-1	1.18E-3	4.24E-3	9.40E-2	7.65E-4	2.76E-3	6.12E-2	6.11E-4	2.20E-3	4.88E-2	5.67E-4	2.04E-3	4.53E-2
XXIA	1.12E-1	1.17E+0	1.11E+1	1.12E-1	1.17E+0	1.10E+1	1.11E-1	1.16E+0	1.10E+1	1.08E-1	1.13E+0	1.06E+1	1.05E-1	1.10E+0	1.04E+1
XXIB	1.12E-1	1.16E+0	1.00E+1	1.11E-1	1.15E+0	9.97E+0	1.11E-1	1.15E+0	9.92E+0	1.07E-1	1.11E+0	9.62E+0	1.04E-1	1.08E+0	9.36E+0
XXIC	1.10E-1	1.11E+0	8.10E+0	1.10E-1	1.11E+0	8.08E+0	1.09E-1	1.10E+0	8.03E+0	1.06E-1	1.07E+0	7.79E+0	1.03E-1	1.04E+0	7.58E+0
XXII	4.68E+0	4.73E+1	1.03E+2	4.66E+0	4.72E+1	1.03E+2	4.63E+0	4.67E+1	1.02E+2	4.38E+0	4.47E+1	9.72E+1	4.35E+0	4.41E+1	9.60E+1
DOE	5.27E+2	3.69E+3	2.27E+4	5.26E+2	3.68E+3	2.26E+4	5.23E+2	3.67E+3	2.26E+4	5.10E+2	3.62E+3	2.23E+4	5.05E+2	3.60E+3	2.22E+4
DOD	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.17E-2	9.44E-2	2.95E-2	9.16E-2	9.43E-2
NRC	5.38E+0	2.87E+1	2.19E+2	5.34E+0	2.84E+1	2.17E+2	5.32E+0	2.82E+1	2.16E+2	5.21E+0	2.74E+1	2.09E+2	5.12E+0	2.68E+1	2.04E+2
Total	5.33E+2	3.71E+3	2.29E+4	5.31E+2	3.71E+3	2.29E+4	5.28E+2	3.70E+3	2.28E+4	5.16E+2	3.65E+3	2.25E+4	5.10E+2	3.62E+3	2.24E+4

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 Table M-187. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	1.12E+0	1.23E+0	1.23E+0	1.10E+0	1.20E+0	1.20E+0	1.08E+0	1.18E+0	1.18E+0	1.02E+0	1.12E+0	1.12E+0	9.78E-1	1.07E+0	1.07E+0
II	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.83E+2	3.37E+3	7.33E+1	6.82E+2	3.36E+3
III	4.91E-1	5.44E-1	5.44E-1	4.87E-1	5.40E-1	5.40E-1	4.77E-1	5.29E-1	5.29E-1	4.10E-1	4.55E-1	4.55E-1	3.63E-1	4.02E-1	4.02E-1
IV	4.29E-1	2.48E+0	4.71E+0	4.23E-1	2.44E+0	4.65E+0	4.18E-1	2.41E+0	4.59E+0	4.04E-1	2.33E+0	4.44E+0	3.97E-1	2.29E+0	4.36E+0
V	2.95E+1	3.22E+1	3.22E+1	2.94E+1	3.21E+1	3.21E+1	2.93E+1	3.20E+1	3.20E+1	2.89E+1	3.15E+1	3.15E+1	2.85E+1	3.11E+1	3.11E+1
VI	1.71E+1	1.16E+2	8.13E+2	1.71E+1	1.16E+2	8.13E+2	1.71E+1	1.16E+2	8.13E+2	1.71E+1	1.16E+2	8.13E+2	1.70E+1	1.15E+2	8.13E+2
VII	2.65E+0	1.85E+1	1.21E+2	2.44E+0	1.68E+1	1.10E+2	2.30E+0	1.57E+1	1.03E+2	2.01E+0	1.35E+1	8.78E+1	1.78E+0	1.19E+1	7.72E+1
IX	5.19E-2	4.48E-1	2.77E+0	4.57E-2	3.95E-1	2.44E+0	4.12E-2	3.56E-1	2.20E+0	3.14E-2	2.71E-1	1.67E+0	2.48E-2	2.14E-1	1.32E+0
X	1.56E+0	5.13E+0	5.68E+0	1.56E+0	5.13E+0	5.68E+0	1.55E+0	5.12E+0	5.67E+0	1.54E+0	5.04E+0	5.57E+0	1.52E+0	4.90E+0	5.42E+0
XII	2.97E-2	9.20E-2	9.46E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2
XIIIA	2.38E-4	1.44E-3	3.33E-3	1.39E-4	8.39E-4	1.95E-3	6.81E-5	4.11E-4	9.53E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	2.15E-4	9.46E-4	1.40E-3	1.25E-4	5.52E-4	8.18E-4	6.14E-5	2.70E-4	4.01E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.78E-4	5.14E-4	9.44E-3	1.04E-4	3.00E-4	5.51E-3	5.09E-5	1.47E-4	2.70E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.50E-3	3.50E-3	3.30E-3	3.49E-3	3.49E-3
XVIB	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.46E-3	3.46E-3	3.27E-3	3.45E-3	3.45E-3	3.27E-3	3.45E-3	3.45E-3	3.27E-3	3.45E-3	3.45E-3
XVIC	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.20E-3	3.36E-3	3.36E-3	3.19E-3	3.35E-3	3.35E-3
XVIIIA	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2	4.03E-2	4.45E-2	4.45E-2
XVIIIB	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.96E-2	4.38E-2	4.38E-2	3.95E-2	4.38E-2	4.38E-2
XVIIIC	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.82E-2	4.17E-2	4.17E-2	3.81E-2	4.17E-2	4.17E-2
XXA	1.64E-2	1.28E-1	8.81E-1	1.08E-2	8.42E-2	5.81E-1	8.01E-3	6.23E-2	4.30E-1	2.29E-3	1.78E-2	1.23E-1	9.65E-4	7.52E-3	5.19E-2
XXB	1.56E-2	9.10E-2	3.56E-1	1.03E-2	6.00E-2	2.35E-1	7.63E-3	4.44E-2	1.74E-1	2.18E-3	1.27E-2	4.96E-2	9.19E-4	5.35E-3	2.10E-2
XXC	1.42E-2	5.11E-2	1.13E+0	9.36E-3	3.37E-2	7.48E-1	6.93E-3	2.50E-2	5.54E-1	1.98E-3	7.12E-3	1.58E-1	8.35E-4	3.01E-3	6.68E-2
XXIA	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.18E+0	1.11E+1	1.13E-1	1.17E+0	1.11E+1	1.12E-1	1.17E+0	1.10E+1
XXIB	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.12E-1	1.16E+0	1.00E+1	1.11E-1	1.15E+0	9.97E+0
XXIC	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.12E+0	8.13E+0	1.10E-1	1.11E+0	8.11E+0	1.09E-1	1.11E+0	8.08E+0
XXII	4.74E+0	4.77E+1	1.04E+2	4.73E+0	4.76E+1	1.04E+2	4.72E+0	4.75E+1	1.03E+2	4.69E+0	4.73E+1	1.03E+2	4.65E+0	4.72E+1	1.03E+2
DOE	5.31E+2	3.70E+3	2.27E+4	5.30E+2	3.69E+3	2.27E+4	5.30E+2	3.69E+3	2.27E+4	5.28E+2	3.69E+3	2.27E+4	5.26E+2	3.68E+3	2.26E+4
DOD	3.14E-2	1.00E-1	1.35E-1	3.07E-2	9.67E-2	1.18E-1	3.01E-2	9.42E-2	1.06E-1	2.96E-2	9.19E-2	9.45E-2	2.96E-2	9.19E-2	9.45E-2
NRC	5.56E+0	2.97E+1	2.29E+2	5.49E+0	2.93E+1	2.25E+2	5.45E+0	2.91E+1	2.23E+2	5.36E+0	2.86E+1	2.19E+2	5.34E+0	2.84E+1	2.17E+2
Total	5.37E+2	3.73E+3	2.29E+4	5.36E+2	3.72E+3	2.29E+4	5.35E+2	3.72E+3	2.29E+4	5.33E+2	3.72E+3	2.29E+4	5.31E+2	3.71E+3	2.29E+4

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Table M-188. POTENTIAL CANCERS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	9.08E-1	9.92E-1	9.92E-1	8.61E-1	9.40E-1	9.40E-1	7.93E-1	8.66E-1	8.66E-1	5.69E-1	6.22E-1	6.22E-1	4.95E-1	5.41E-1	5.41E-1
II	7.33E+1	6.81E+2	3.35E+3	7.33E+1	6.81E+2	3.34E+3	7.32E+1	6.80E+2	3.33E+3	7.27E+1	6.74E+2	3.28E+3	7.22E+1	6.70E+2	3.25E+3
III	3.14E-1	3.48E-1	3.48E-1	2.60E-1	2.88E-1	2.88E-1	1.65E-1	1.83E-1	1.83E-1	4.33E-2	4.79E-2	4.79E-2	2.44E-2	2.70E-2	2.70E-2
IV	3.79E-1	2.19E+0	4.16E+0	3.61E-1	2.08E+0	3.97E+0	3.25E-1	1.87E+0	3.57E+0	1.44E-1	8.31E-1	1.58E+0	5.37E-2	3.10E-1	5.90E-1
V	2.77E+1	3.02E+1	3.02E+1	2.69E+1	2.94E+1	2.94E+1	2.54E+1	2.77E+1	2.77E+1	2.12E+1	2.31E+1	2.31E+1	2.02E+1	2.20E+1	2.20E+1
VI	1.70E+1	1.15E+2	8.11E+2	1.69E+1	1.15E+2	8.10E+2	1.67E+1	1.14E+2	8.06E+2	1.59E+1	1.11E+2	7.83E+2	1.57E+1	1.09E+2	7.75E+2
VII	1.20E+0	8.01E+0	5.22E+1	8.45E-1	5.69E+0	3.71E+1	5.52E-1	3.78E+0	2.47E+1	3.64E-3	2.08E-2	1.32E-1	.00E+0	.00E+0	.00E+0
IX	1.81E-2	1.56E-1	9.66E-1	1.31E-2	1.13E-1	6.97E-1	8.92E-3	7.70E-2	4.76E-1	1.62E-3	1.40E-2	8.65E-2	.00E+0	.00E+0	.00E+0
X	1.50E+0	4.51E+0	4.96E+0	1.48E+0	4.12E+0	4.52E+0	1.45E+0	3.56E+0	3.87E+0	1.31E+0	2.54E+0	2.71E+0	1.27E+0	2.28E+0	2.42E+0
XII	2.96E-2	9.18E-2	9.45E-2	2.96E-2	9.17E-2	9.44E-2	2.95E-2	9.16E-2	9.42E-2	2.93E-2	9.09E-2	9.35E-2	2.92E-2	9.07E-2	9.33E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	3.28E-3	3.48E-3	3.48E-3	3.27E-3	3.47E-3	3.47E-3	3.26E-3	3.45E-3	3.45E-3	3.14E-3	3.33E-3	3.33E-3	3.07E-3	3.26E-3	3.26E-3
XVIB	3.25E-3	3.43E-3	3.43E-3	3.24E-3	3.42E-3	3.42E-3	3.23E-3	3.41E-3	3.41E-3	3.11E-3	3.29E-3	3.29E-3	3.04E-3	3.22E-3	3.22E-3
XVIC	3.18E-3	3.34E-3	3.34E-3	3.17E-3	3.33E-3	3.33E-3	3.16E-3	3.32E-3	3.32E-3	3.04E-3	3.20E-3	3.20E-3	2.97E-3	3.13E-3	3.13E-3
XVIII	4.02E-2	4.44E-2	4.44E-2	4.00E-2	4.43E-2	4.43E-2	3.97E-2	4.39E-2	4.39E-2	3.79E-2	4.19E-2	4.19E-2	3.70E-2	4.09E-2	4.09E-2
XVIIIA	3.95E-2	4.37E-2	4.37E-2	3.93E-2	4.35E-2	4.35E-2	3.90E-2	4.32E-2	4.32E-2	3.72E-2	4.12E-2	4.12E-2	3.64E-2	4.03E-2	4.03E-2
XVIIIB	3.81E-2	4.16E-2	4.16E-2	3.79E-2	4.14E-2	4.14E-2	3.76E-2	4.11E-2	4.11E-2	3.59E-2	3.92E-2	3.92E-2	3.51E-2	3.83E-2	3.83E-2
XVIIIC	3.81E-2	4.16E-2	4.16E-2	3.79E-2	4.14E-2	4.14E-2	3.76E-2	4.11E-2	4.11E-2	3.59E-2	3.92E-2	3.92E-2	3.51E-2	3.83E-2	3.83E-2
XXA	8.15E-4	6.35E-3	4.38E-2	7.48E-4	5.83E-3	4.03E-2	6.60E-4	5.14E-3	3.55E-2	4.57E-4	3.56E-3	2.46E-2	3.86E-4	3.01E-3	2.08E-2
XXB	7.76E-4	4.52E-3	1.77E-2	7.13E-4	4.15E-3	1.63E-2	6.29E-4	3.66E-3	1.44E-2	4.35E-4	2.53E-3	9.94E-3	3.68E-4	2.14E-3	8.41E-3
XXC	7.05E-4	2.54E-3	5.64E-2	6.48E-4	2.33E-3	5.18E-2	5.71E-4	2.06E-3	4.57E-2	3.95E-4	1.42E-3	3.16E-2	3.34E-4	1.20E-3	2.67E-2
XXIA	1.11E-1	1.16E+0	1.09E+1	1.10E-1	1.15E+0	1.08E+1	1.08E-1	1.13E+0	1.06E+1	9.07E-2	9.47E-1	8.93E+0	8.45E-2	8.81E-1	8.31E+0
XXIB	1.10E-1	1.14E+0	9.88E+0	1.09E-1	1.13E+0	9.79E+0	1.07E-1	1.11E+0	9.61E+0	9.00E-2	9.32E-1	8.07E+0	8.38E-2	8.67E-1	7.51E+0
XXIC	1.08E-1	1.10E+0	8.00E+0	1.07E-1	1.09E+0	7.93E+0	1.05E-1	1.07E+0	7.78E+0	8.86E-2	8.98E-1	6.54E+0	8.25E-2	8.36E-1	6.08E+0
XXII	4.61E+0	4.66E+1	1.01E+2	4.52E+0	4.61E+1	1.00E+2	4.38E+0	4.47E+1	9.72E+1	4.17E+0	4.28E+1	9.29E+1	3.59E+0	4.19E+1	9.09E+1
DOE	5.22E+2	3.66E+3	2.26E+4	5.18E+2	3.65E+3	2.25E+4	5.11E+2	3.62E+3	2.24E+4	4.86E+2	3.51E+3	2.17E+4	4.74E+2	3.47E+3	2.15E+4
DOD	2.96E-2	9.18E-2	9.45E-2	2.96E-2	9.17E-2	9.44E-2	2.95E-2	9.16E-2	9.42E-2	2.93E-2	9.09E-2	9.35E-2	2.92E-2	9.07E-2	9.33E-2
NRC	5.31E+0	2.81E+1	2.15E+2	5.27E+0	2.79E+1	2.13E+2	5.20E+0	2.74E+1	2.09E+2	4.70E+0	2.34E+1	1.76E+2	4.50E+0	2.19E+1	1.64E+2
Total	5.27E+2	3.69E+3	2.28E+4	5.24E+2	3.68E+3	2.27E+4	5.17E+2	3.65E+3	2.26E+4	4.91E+2	3.53E+3	2.19E+4	4.79E+2	3.49E+3	2.17E+4

Reasonable Occupancy Scenario - 09-19-94 2:00p
 Table M-189. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.48E-1	8.18E-1	8.18E-1	7.37E-1	8.06E-1	8.06E-1	7.29E-1	7.97E-1	7.97E-1	7.09E-1	7.75E-1	7.75E-1	6.95E-1	7.60E-1	7.60E-1
II	4.83E+1	4.51E+2	2.22E+3	4.82E+1	4.51E+2	2.22E+3	4.82E+1	4.51E+2	2.22E+3	4.82E+1	4.50E+2	2.22E+3	4.82E+1	4.50E+2	2.22E+3
III	3.25E-1	3.60E-1	3.60E-1	3.25E-1	3.60E-1	3.60E-1	3.24E-1	3.59E-1	3.59E-1	3.14E-1	3.48E-1	3.48E-1	3.00E-1	3.32E-1	3.32E-1
IV	2.79E-1	1.57E+0	3.03E+0	2.77E-1	1.55E+0	3.01E+0	2.75E-1	1.54E+0	2.99E+0	2.71E-1	1.52E+0	2.94E+0	2.67E-1	1.50E+0	2.91E+0
V	1.95E+1	2.13E+1	2.13E+1	1.95E+1	2.12E+1	2.12E+1	1.95E+1	2.12E+1	2.12E+1	1.94E+1	2.11E+1	2.11E+1	1.93E+1	2.10E+1	2.10E+1
VI	1.17E+1	7.88E+1	5.55E+2	1.17E+1	7.88E+1	5.55E+2	1.17E+1	7.88E+1	5.55E+2	1.17E+1	7.88E+1	5.55E+2	1.17E+1	7.88E+1	5.55E+2
VII	2.18E+0	1.57E+1	1.04E+2	2.13E+0	1.53E+1	1.01E+2	2.06E+0	1.47E+1	9.76E+1	1.90E+0	1.34E+1	8.88E+1	1.80E+0	1.26E+1	8.33E+1
IX	4.75E-2	4.13E-1	2.57E+0	4.51E-2	3.92E-1	2.44E+0	4.28E-2	3.72E-1	2.32E+0	3.72E-2	3.24E-1	2.02E+0	3.34E-2	2.91E-1	1.81E+0
X	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.20E+0	3.54E+0	1.01E+0	3.18E+0	3.51E+0
XII	2.64E-2	8.16E-2	8.39E-2	2.64E-2	8.16E-2	8.39E-2	2.64E-2	8.16E-2	8.39E-2	2.64E-2	8.15E-2	8.39E-2	2.64E-2	8.15E-2	8.38E-2
XIIIA	1.71E-4	9.99E-4	2.34E-3	1.37E-4	8.02E-4	1.88E-3	9.57E-5	5.60E-4	1.31E-3	1.89E-5	1.10E-4	2.59E-4	.00E+0	.00E+0	.00E+0
XIIIB	1.53E-4	6.50E-4	9.82E-4	1.23E-4	5.22E-4	7.88E-4	8.58E-5	3.64E-4	5.50E-4	1.69E-5	7.18E-5	1.08E-4	.00E+0	.00E+0	.00E+0
XIIIC	1.25E-4	3.52E-4	6.35E-3	1.00E-4	2.82E-4	5.09E-3	7.01E-5	1.97E-4	3.56E-3	1.38E-5	3.88E-5	7.01E-4	.00E+0	.00E+0	.00E+0
XVIA	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.30E-3	2.30E-3	2.18E-3	2.30E-3	2.30E-3
XVIB	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3
XVIC	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2
XVIIIB	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2
XXA	1.28E-2	9.96E-2	7.83E-1	9.69E-3	7.54E-2	5.93E-1	8.21E-3	6.39E-2	5.03E-1	5.71E-3	4.45E-2	3.50E-1	4.30E-3	3.35E-2	2.64E-1
XXB	1.22E-2	7.08E-2	3.15E-1	9.22E-3	5.36E-2	2.39E-1	7.81E-3	4.54E-2	2.02E-1	5.43E-3	3.16E-2	1.41E-1	4.10E-3	2.38E-2	1.06E-1
XXC	1.10E-2	3.98E-2	8.97E-1	8.34E-3	3.01E-2	6.79E-1	7.06E-3	2.55E-2	5.76E-1	4.91E-3	1.78E-2	4.01E-1	3.70E-3	1.34E-2	3.02E-1
XXIA	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.46E-2	7.79E-1	7.34E+0	7.46E-2	7.79E-1	7.34E+0
XXIB	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.40E-2	7.66E-1	6.64E+0
XXIC	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.29E-2	7.39E-1	5.38E+0	7.29E-2	7.39E-1	5.37E+0
XXII	3.13E+0	3.11E+1	6.84E+1	3.13E+0	3.10E+1	6.84E+1	3.13E+0	3.10E+1	6.83E+1	3.12E+0	3.10E+1	6.82E+1	3.11E+0	3.09E+1	6.80E+1
DOE	3.61E+2	2.50E+3	1.54E+4	3.61E+2	2.50E+3	1.54E+4	3.60E+2	2.50E+3	1.54E+4	3.60E+2	2.49E+3	1.54E+4	3.59E+2	2.49E+3	1.54E+4
DOD	2.77E-2	8.73E-2	1.11E-1	2.74E-2	8.61E-2	1.06E-1	2.71E-2	8.47E-2	9.93E-2	2.65E-2	8.21E-2	8.69E-2	2.64E-2	8.15E-2	8.38E-2
NRC	3.70E+0	1.98E+1	1.53E+2	3.66E+0	1.96E+1	1.51E+2	3.64E+0	1.95E+1	1.50E+2	3.60E+0	1.93E+1	1.48E+2	3.58E+0	1.92E+1	1.47E+2
Total	3.65E+2	2.52E+3	1.56E+4	3.64E+2	2.52E+3	1.56E+4	3.64E+2	2.52E+3	1.56E+4	3.64E+2	2.51E+3	1.56E+4	3.63E+2	2.51E+3	1.55E+4

Reasonable Occupancy Scenario - 09-19-94 2:00p
 Table M-190. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	6.65E-1	7.26E-1	7.26E-1	6.41E-1	7.01E-1	7.01E-1	6.07E-1	6.64E-1	6.64E-1	5.18E-1	5.66E-1	5.66E-1	4.94E-1	5.40E-1	5.40E-1
II	4.82E+1	4.50E+2	2.21E+3	4.82E+1	4.50E+2	2.21E+3	4.82E+1	4.50E+2	2.20E+3	4.82E+1	4.49E+2	2.19E+3	4.81E+1	4.48E+2	2.19E+3
III	2.58E-1	2.86E-1	2.86E-1	2.38E-1	2.64E-1	2.64E-1	2.15E-1	2.38E-1	2.38E-1	9.96E-2	1.10E-1	1.10E-1	6.43E-2	7.12E-2	7.12E-2
IV	2.61E-1	1.47E+0	2.84E+0	2.57E-1	1.44E+0	2.80E+0	2.50E-1	1.40E+0	2.72E+0	2.12E-1	1.19E+0	2.31E+0	1.93E-1	1.08E+0	2.10E+0
V	1.90E+1	2.07E+1	2.07E+1	1.88E+1	2.05E+1	2.05E+1	1.84E+1	2.01E+1	2.01E+1	1.66E+1	1.81E+1	1.81E+1	1.57E+1	1.71E+1	1.71E+1
VI	1.17E+1	7.88E+1	5.55E+2	1.17E+1	7.87E+1	5.55E+2	1.16E+1	7.86E+1	5.54E+2	1.14E+1	7.78E+1	5.50E+2	1.13E+1	7.74E+1	5.47E+2
VII	1.63E+0	1.13E+1	7.48E+1	1.50E+0	1.04E+1	6.85E+1	1.17E+0	8.07E+0	5.33E+1	4.86E-1	3.42E+0	2.26E+1	3.83E-1	2.71E+0	1.80E+1
IX	2.79E-2	2.43E-1	1.51E+0	2.35E-2	2.04E-1	1.27E+0	1.92E-2	1.67E-1	1.04E+0	8.98E-3	7.81E-2	4.86E-1	6.29E-3	5.48E-2	3.41E-1
X	1.00E+0	3.09E+0	3.41E+0	9.94E-1	2.98E+0	3.28E+0	9.81E-1	2.75E+0	3.02E+0	9.29E-1	2.05E+0	2.22E+0	9.05E-1	1.89E+0	2.03E+0
XII	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2	2.63E-2	8.14E-2	8.37E-2	2.63E-2	8.13E-2	8.36E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	2.18E-3	2.30E-3	2.30E-3	2.17E-3	2.30E-3	2.30E-3	2.17E-3	2.29E-3	2.29E-3	2.15E-3	2.27E-3	2.27E-3	2.14E-3	2.26E-3	2.26E-3
XVIB	2.15E-3	2.28E-3	2.28E-3	2.15E-3	2.27E-3	2.27E-3	2.14E-3	2.26E-3	2.26E-3	2.13E-3	2.25E-3	2.25E-3	2.12E-3	2.24E-3	2.24E-3
XVIC	2.11E-3	2.21E-3	2.21E-3	2.11E-3	2.21E-3	2.21E-3	2.10E-3	2.20E-3	2.20E-3	2.08E-3	2.19E-3	2.19E-3	2.07E-3	2.18E-3	2.18E-3
XVIII	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.61E-2	2.89E-2	2.89E-2	2.59E-2	2.87E-2	2.87E-2
XVIII A	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.87E-2	2.87E-2	2.60E-2	2.87E-2	2.87E-2	2.57E-2	2.83E-2	2.83E-2	2.55E-2	2.81E-2	2.81E-2
XVIII B	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.49E-2	2.71E-2	2.71E-2	2.47E-2	2.69E-2	2.69E-2
XVIII C	2.04E-3	1.59E-2	1.25E-1	8.46E-4	6.59E-3	5.18E-2	5.50E-4	4.28E-3	3.37E-2	4.39E-4	3.42E-3	2.69E-2	4.07E-4	3.17E-3	2.50E-2
XXA	1.95E-3	1.13E-2	5.04E-2	8.05E-4	4.68E-3	2.09E-2	5.23E-4	3.04E-3	1.36E-2	4.18E-4	2.43E-3	1.08E-2	3.88E-4	2.26E-3	1.01E-2
XXB	1.76E-3	6.36E-3	1.43E-1	7.28E-4	2.63E-3	5.93E-2	4.73E-4	1.71E-3	3.86E-2	3.78E-4	1.37E-3	3.08E-2	3.51E-4	1.27E-3	2.86E-2
XXC	7.44E-2	7.77E-1	7.31E+0	7.42E-2	7.75E-1	7.29E+0	7.37E-2	7.70E-1	7.25E+0	7.16E-2	7.47E-1	7.04E+0	6.96E-2	7.27E-1	6.85E+0
XXIA	7.38E-2	7.64E-1	6.62E+0	7.36E-2	7.62E-1	6.60E+0	7.32E-2	7.57E-1	6.56E+0	7.10E-2	7.35E-1	6.37E+0	6.91E-2	7.15E-1	6.20E+0
XXIB	7.38E-2	7.64E-1	6.62E+0	7.36E-2	7.62E-1	6.60E+0	7.32E-2	7.57E-1	6.56E+0	7.10E-2	7.35E-1	6.37E+0	6.91E-2	7.15E-1	6.20E+0
XXIC	7.27E-2	7.37E-1	5.36E+0	7.25E-2	7.34E-1	5.34E+0	7.21E-2	7.30E-1	5.31E+0	6.99E-2	7.08E-1	5.15E+0	6.80E-2	6.89E-1	5.02E+0
XXII	3.10E+0	3.08E+1	6.78E+1	3.08E+0	3.07E+1	6.76E+1	3.06E+0	3.04E+1	6.70E+1	2.90E+0	2.91E+1	6.40E+1	2.88E+0	2.88E+1	6.32E+1
DOE	3.58E+2	2.49E+3	1.54E+4	3.57E+2	2.49E+3	1.54E+4	3.55E+2	2.48E+3	1.53E+4	3.47E+2	2.44E+3	1.52E+4	3.43E+2	2.43E+3	1.51E+4
DOD	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2	2.63E-2	8.14E-2	8.37E-2	2.63E-2	8.13E-2	8.36E-2
NRC	3.55E+0	1.89E+1	1.45E+2	3.53E+0	1.88E+1	1.44E+2	3.51E+0	1.87E+1	1.43E+2	3.44E+0	1.81E+1	1.38E+2	3.38E+0	1.77E+1	1.35E+2
Total	3.62E+2	2.51E+3	1.55E+4	3.61E+2	2.50E+3	1.55E+4	3.59E+2	2.50E+3	1.55E+4	3.50E+2	2.46E+3	1.53E+4	3.46E+2	2.45E+3	1.52E+4

Reasonable Occupancy Scenario - 09-19-94 2:00p
 Table M-191. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	.10			.50			1.00			3.00			5.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	7.42E-1	8.11E-1	8.11E-1	7.24E-1	7.91E-1	7.91E-1	7.10E-1	7.77E-1	7.77E-1	6.74E-1	7.37E-1	7.37E-1	6.45E-1	7.06E-1	7.06E-1
II	4.82E+1	4.51E+2	2.22E+3	4.82E+1	4.51E+2	2.22E+3	4.82E+1	4.50E+2	2.22E+3	4.82E+1	4.50E+2	2.21E+3	4.82E+1	4.50E+2	2.21E+3
III	3.25E-1	3.60E-1	3.60E-1	3.23E-1	3.57E-1	3.57E-1	3.16E-1	3.50E-1	3.50E-1	2.72E-1	3.01E-1	3.01E-1	2.40E-1	2.66E-1	2.66E-1
IV	2.78E-1	1.56E+0	3.02E+0	2.74E-1	1.54E+0	2.98E+0	2.70E-1	1.52E+0	2.94E+0	2.62E-1	1.47E+0	2.85E+0	2.57E-1	1.44E+0	2.80E+0
V	1.95E+1	2.12E+1	2.12E+1	1.95E+1	2.12E+1	2.12E+1	1.94E+1	2.11E+1	2.11E+1	1.91E+1	2.08E+1	2.08E+1	1.88E+1	2.05E+1	2.05E+1
VI	1.17E+1	7.88E+1	5.55E+2	1.17E+1	7.88E+1	5.55E+2	1.17E+1	7.88E+1	5.55E+2	1.17E+1	7.88E+1	5.55E+2	1.17E+1	7.87E+1	5.55E+2
VII	2.17E+0	1.56E+1	1.03E+2	1.99E+0	1.42E+1	9.38E+1	1.87E+0	1.32E+1	8.75E+1	1.63E+0	1.13E+1	7.48E+1	1.44E+0	9.96E+0	6.58E+1
IX	4.59E-2	3.99E-1	2.49E+0	4.04E-2	3.52E-1	2.19E+0	3.64E-2	3.17E-1	1.97E+0	2.77E-2	2.41E-1	1.50E+0	2.19E-2	1.91E-1	1.19E+0
X	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.21E+0	3.55E+0	1.02E+0	3.21E+0	3.55E+0	1.01E+0	3.15E+0	3.49E+0	9.99E-1	3.07E+0	3.39E+0
XII	2.64E-2	8.16E-2	8.39E-2	2.64E-2	8.15E-2	8.39E-2	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2
XIIIA	1.55E-4	9.10E-4	2.14E-3	9.07E-5	5.31E-4	1.25E-3	4.44E-5	2.60E-4	6.10E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	1.39E-4	5.92E-4	8.94E-4	8.14E-5	3.46E-4	5.22E-4	3.99E-5	1.69E-4	2.56E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	1.14E-4	3.20E-4	5.78E-3	6.65E-5	1.87E-4	3.37E-3	3.26E-5	9.16E-5	1.65E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.31E-3	2.31E-3	2.18E-3	2.30E-3	2.30E-3	2.18E-3	2.30E-3	2.30E-3	2.17E-3	2.30E-3	2.30E-3
XVIB	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.16E-3	2.28E-3	2.28E-3	2.15E-3	2.28E-3	2.28E-3	2.15E-3	2.27E-3	2.27E-3
XVIC	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.22E-3	2.22E-3	2.11E-3	2.21E-3	2.21E-3
XVIIIA	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2	2.65E-2	2.93E-2	2.93E-2
XVIIIB	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.88E-2	2.88E-2	2.61E-2	2.87E-2	2.87E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2	2.52E-2	2.75E-2	2.75E-2
XXA	1.02E-2	7.95E-2	6.25E-1	6.73E-3	5.24E-2	4.12E-1	4.98E-3	3.88E-2	3.05E-1	1.42E-3	1.11E-2	8.71E-2	6.00E-4	4.68E-3	3.68E-2
XXB	9.71E-3	5.65E-2	2.52E-1	6.40E-3	3.72E-2	1.66E-1	4.74E-3	2.76E-2	1.23E-1	1.35E-3	7.86E-3	3.51E-2	5.71E-4	3.32E-3	1.48E-2
XXC	8.78E-3	3.17E-2	7.16E-1	5.79E-3	2.09E-2	4.72E-1	4.29E-3	1.55E-2	3.49E-1	1.22E-3	4.42E-3	9.97E-2	5.17E-4	1.87E-3	4.21E-2
XXIA	7.47E-2	7.80E-1	7.34E+0	7.47E-2	7.80E-1	7.34E+0	7.46E-2	7.79E-1	7.34E+0	7.44E-2	7.77E-1	7.32E+0	7.42E-2	7.74E-1	7.29E+0
XXIB	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.41E-2	7.67E-1	6.64E+0	7.39E-2	7.64E-1	6.62E+0	7.36E-2	7.62E-1	6.60E+0
XXIC	7.30E-2	7.39E-1	5.38E+0	7.30E-2	7.39E-1	5.38E+0	7.29E-2	7.39E-1	5.38E+0	7.27E-2	7.37E-1	5.36E+0	7.25E-2	7.34E-1	5.34E+0
XXII	3.13E+0	3.11E+1	6.84E+1	3.13E+0	3.10E+1	6.83E+1	3.12E+0	3.10E+1	6.82E+1	3.10E+0	3.08E+1	6.78E+1	3.08E+0	3.07E+1	6.76E+1
DOE	3.61E+2	2.50E+3	1.54E+4	3.60E+2	2.50E+3	1.54E+4	3.60E+2	2.49E+3	1.54E+4	3.58E+2	2.49E+3	1.54E+4	3.57E+2	2.49E+3	1.54E+4
DOD	2.75E-2	8.67E-2	1.09E-1	2.70E-2	8.45E-2	9.84E-2	2.67E-2	8.30E-2	9.10E-2	2.64E-2	8.15E-2	8.38E-2	2.64E-2	8.15E-2	8.38E-2
NRC	3.66E+0	1.96E+1	1.52E+2	3.62E+0	1.94E+1	1.49E+2	3.59E+0	1.92E+1	1.48E+2	3.54E+0	1.89E+1	1.45E+2	3.52E+0	1.88E+1	1.44E+2
Total	3.64E+2	2.52E+3	1.56E+4	3.64E+2	2.52E+3	1.56E+4	3.64E+2	2.51E+3	1.56E+4	3.62E+2	2.51E+3	1.55E+4	3.61E+2	2.50E+3	1.55E+4

Reasonable Occupancy Scenario - 09-19-94 2:00p
 Table M-192. POTENTIAL CANCER DEATHS AVERTED--Indoor radon pathway excluded

Ref. Site No.	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
	10.00			15.00			25.00			75.00			100.00		
	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	5.99E-1	6.55E-1	6.55E-1	5.68E-1	6.21E-1	6.21E-1	5.23E-1	5.72E-1	5.72E-1	3.76E-1	4.11E-1	4.11E-1	3.27E-1	3.57E-1	3.57E-1
II	4.82E+1	4.49E+2	2.20E+3	4.82E+1	4.49E+2	2.20E+3	4.82E+1	4.49E+2	2.19E+3	4.78E+1	4.45E+2	2.16E+3	4.75E+1	4.42E+2	2.14E+3
III	2.08E-1	2.30E-1	2.30E-1	1.72E-1	1.90E-1	1.90E-1	1.09E-1	1.21E-1	1.21E-1	2.86E-2	3.17E-2	3.17E-2	1.61E-2	1.79E-2	1.79E-2
IV	2.45E-1	1.38E+0	2.67E+0	2.34E-1	1.31E+0	2.54E+0	2.10E-1	1.18E+0	2.29E+0	9.32E-2	5.23E-1	1.01E+0	3.47E-2	1.95E-1	3.78E-1
V	1.83E+1	2.00E+1	2.00E+1	1.78E+1	1.94E+1	1.94E+1	1.68E+1	1.83E+1	1.83E+1	1.40E+1	1.53E+1	1.53E+1	1.33E+1	1.45E+1	1.45E+1
VI	1.16E+1	7.85E+1	5.54E+2	1.16E+1	7.84E+1	5.53E+2	1.15E+1	7.79E+1	5.50E+2	1.09E+1	7.55E+1	5.34E+2	1.07E+1	7.47E+1	5.29E+2
VII	9.72E-1	6.73E+0	4.45E+1	6.86E-1	4.79E+0	3.16E+1	4.50E-1	3.18E+0	2.10E+1	2.86E-3	1.74E-2	1.12E-1	.00E+0	.00E+0	.00E+0
IX	1.60E-2	1.39E-1	8.66E-1	1.15E-2	1.00E-1	6.25E-1	7.89E-3	6.86E-2	4.28E-1	1.43E-3	1.25E-2	7.76E-2	.00E+0	.00E+0	.00E+0
X	9.83E-1	2.83E+0	3.11E+0	9.69E-1	2.59E+0	2.84E+0	9.48E-1	2.25E+0	2.44E+0	8.60E-1	1.61E+0	1.72E+0	8.34E-1	1.46E+0	1.55E+0
XII	2.64E-2	8.15E-2	8.38E-2	2.63E-2	8.14E-2	8.37E-2	2.63E-2	8.12E-2	8.36E-2	2.61E-2	8.07E-2	8.30E-2	2.60E-2	8.05E-2	8.28E-2
XIIIA	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIB	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIIIC	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	2.16E-3	2.29E-3	2.29E-3	2.16E-3	2.28E-3	2.28E-3	2.15E-3	2.28E-3	2.28E-3	2.07E-3	2.19E-3	2.19E-3	2.02E-3	2.15E-3	2.15E-3
XVIB	2.14E-3	2.26E-3	2.26E-3	2.14E-3	2.26E-3	2.26E-3	2.13E-3	2.25E-3	2.25E-3	2.05E-3	2.17E-3	2.17E-3	2.00E-3	2.12E-3	2.12E-3
XVIC	2.10E-3	2.20E-3	2.20E-3	2.09E-3	2.20E-3	2.20E-3	2.08E-3	2.19E-3	2.19E-3	2.01E-3	2.11E-3	2.11E-3	1.96E-3	2.06E-3	2.06E-3
XVIIIA	2.64E-2	2.93E-2	2.93E-2	2.63E-2	2.91E-2	2.91E-2	2.61E-2	2.89E-2	2.89E-2	2.49E-2	2.76E-2	2.76E-2	2.44E-2	2.70E-2	2.70E-2
XVIIIB	2.60E-2	2.87E-2	2.87E-2	2.59E-2	2.86E-2	2.86E-2	2.57E-2	2.83E-2	2.83E-2	2.45E-2	2.71E-2	2.71E-2	2.40E-2	2.64E-2	2.64E-2
XVIIIC	2.52E-2	2.75E-2	2.75E-2	2.51E-2	2.74E-2	2.74E-2	2.49E-2	2.71E-2	2.71E-2	2.37E-2	2.59E-2	2.59E-2	2.32E-2	2.53E-2	2.53E-2
XXA	5.07E-4	3.95E-3	3.11E-2	4.66E-4	3.63E-3	2.86E-2	4.10E-4	3.20E-3	2.52E-2	2.84E-4	2.21E-3	1.75E-2	2.40E-4	1.87E-3	1.48E-2
XXB	4.82E-4	2.81E-3	1.25E-2	4.43E-4	2.58E-3	1.15E-2	3.91E-4	2.27E-3	1.01E-2	2.70E-4	1.57E-3	7.03E-3	2.28E-4	1.33E-3	5.94E-3
XXC	4.36E-4	1.58E-3	3.56E-2	4.01E-4	1.45E-3	3.27E-2	3.53E-4	1.28E-3	2.88E-2	2.45E-4	8.85E-4	2.00E-2	2.07E-4	7.48E-4	1.69E-2
XXIA	7.35E-2	7.67E-1	7.22E+0	7.28E-2	7.60E-1	7.16E+0	7.14E-2	7.46E-1	7.02E+0	6.00E-2	6.27E-1	5.90E+0	5.59E-2	5.83E-1	5.49E+0
XXIB	7.29E-2	7.55E-1	6.54E+0	7.22E-2	7.48E-1	6.48E+0	7.09E-2	7.34E-1	6.36E+0	5.96E-2	6.16E-1	5.34E+0	5.54E-2	5.74E-1	4.97E+0
XXIC	7.18E-2	7.27E-1	5.29E+0	7.11E-2	7.21E-1	5.24E+0	6.98E-2	7.07E-1	5.15E+0	5.87E-2	5.94E-1	4.32E+0	5.46E-2	5.53E-1	4.02E+0
XXII	3.05E+0	3.04E+1	6.69E+1	2.99E+0	3.01E+1	6.62E+1	2.89E+0	2.91E+1	6.41E+1	2.76E+0	2.79E+1	6.12E+1	2.37E+0	2.73E+1	5.99E+1
DOE	3.55E+2	2.47E+3	1.53E+4	3.52E+2	2.46E+3	1.53E+4	3.47E+2	2.44E+3	1.52E+4	3.30E+2	2.37E+3	1.47E+4	3.23E+2	2.34E+3	1.46E+4
DOD	2.64E-2	8.15E-2	8.38E-2	2.63E-2	8.14E-2	8.37E-2	2.63E-2	8.12E-2	8.36E-2	2.61E-2	8.07E-2	8.30E-2	2.60E-2	8.05E-2	8.28E-2
NRC	3.50E+0	1.86E+1	1.42E+2	3.48E+0	1.84E+1	1.41E+2	3.44E+0	1.81E+1	1.38E+2	3.10E+0	1.55E+1	1.16E+2	2.97E+0	1.45E+1	1.08E+2
Total	3.58E+2	2.49E+3	1.54E+4	3.56E+2	2.48E+3	1.54E+4	3.51E+2	2.46E+3	1.53E+4	3.33E+2	2.38E+3	1.48E+4	3.25E+2	2.36E+3	1.47E+4

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Table M-193. ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)															
		.10			.50			1.00			3.00			5.00			
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	
I	Cs-137	3.71E+1	3.71E+1	3.71E+1	3.66E+1	3.66E+1	3.66E+1	3.61E+1	3.61E+1	3.61E+1	3.51E+1	3.51E+1	3.51E+1	3.45E+1	3.45E+1	3.45E+1	
II	Ra-226	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	
	Th-230	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	
	Ra-228	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.54E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0	
	Th-232	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0
	U-234	2.26E+2	2.26E+2	2.26E+2	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.24E+2	2.24E+2	2.24E+2	2.24E+2	2.24E+2	2.24E+2
	U-235	3.67E+0	3.67E+0	3.67E+0	3.64E+0	3.64E+0	3.64E+0	3.64E+0	3.63E+0	3.63E+0	3.63E+0	3.62E+0	3.62E+0	3.62E+0	3.62E+0	3.62E+0	3.62E+0
	U-238	9.95E+1	9.95E+1	9.95E+1	9.88E+1	9.88E+1	9.88E+1	9.86E+1	9.87E+1	9.87E+1	9.87E+1	9.84E+1	9.84E+1	9.84E+1	9.84E+1	9.84E+1	9.84E+1
III	Cs-137	1.54E+1	1.54E+1	1.54E+1	1.53E+1	1.53E+1	1.53E+1	1.53E+1	1.53E+1	1.53E+1	1.49E+1	1.49E+1	1.49E+1	1.42E+1	1.42E+1	1.42E+1	
IV	U-234	3.50E+1	3.50E+1	3.50E+1	3.48E+1	3.48E+1	3.48E+1	3.46E+1	3.46E+1	3.46E+1	3.40E+1	3.40E+1	3.40E+1	3.36E+1	3.36E+1	3.36E+1	
	U-235	1.65E+0	1.65E+0	1.65E+0	1.63E+0	1.63E+0	1.63E+0	1.62E+0	1.62E+0	1.62E+0	1.60E+0	1.60E+0	1.60E+0	1.58E+0	1.58E+0	1.58E+0	
	U-238	3.50E+1	3.50E+1	3.50E+1	3.48E+1	3.48E+1	3.48E+1	3.46E+1	3.46E+1	3.46E+1	3.40E+1	3.40E+1	3.40E+1	3.36E+1	3.36E+1	3.36E+1	
V	Cs-137	9.72E+2	9.72E+2	9.72E+2	9.71E+2	9.71E+2	9.71E+2	9.69E+2	9.69E+2	9.69E+2	9.64E+2	9.64E+2	9.64E+2	9.59E+2	9.59E+2	9.59E+2	
VI	Cs-137	4.87E+1	4.87E+1	4.87E+1	4.87E+1	4.87E+1	4.87E+1	4.87E+1	4.87E+1	4.87E+1	4.85E+1	4.85E+1	4.85E+1	4.83E+1	4.83E+1	4.83E+1	
	U-234	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	
	U-235	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	
	U-238	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	
VII	Pu-239	3.13E+3	3.13E+3	3.13E+3	3.05E+3	3.05E+3	3.05E+3	2.93E+3	2.93E+3	2.93E+3	2.66E+3	2.66E+3	2.66E+3	2.50E+3	2.50E+3	2.50E+3	
	Am-241	5.24E+2	5.24E+2	5.24E+2	5.10E+2	5.10E+2	5.10E+2	4.90E+2	4.90E+2	4.90E+2	4.46E+2	4.46E+2	4.46E+2	4.18E+2	4.18E+2	4.18E+2	
	Cs-137	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	
IX	Pu-239	1.29E+1	1.29E+1	1.29E+1	1.22E+1	1.22E+1	1.22E+1	1.16E+1	1.16E+1	1.16E+1	1.01E+1	1.01E+1	1.01E+1	9.05E+0	9.05E+0	9.05E+0	
	Am-241	2.14E+0	2.14E+0	2.14E+0	2.03E+0	2.03E+0	2.03E+0	1.93E+0	1.93E+0	1.93E+0	1.68E+0	1.68E+0	1.68E+0	1.51E+0	1.51E+0	1.51E+0	
X	Tc-99	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.12E+2	2.13E+2	2.13E+2	2.11E+2	2.13E+2	2.13E+2	
	U-238	7.57E+0	7.57E+0	7.57E+0	7.39E+0	7.57E+0	7.57E+0	7.09E+0	7.57E+0	7.57E+0	6.19E+0	7.53E+0	7.53E+0	5.57E+0	7.46E+0	7.46E+0	
	U-234	7.57E+0	7.57E+0	7.57E+0	7.39E+0	7.57E+0	7.57E+0	7.09E+0	7.57E+0	7.57E+0	6.19E+0	7.53E+0	7.53E+0	5.57E+0	7.46E+0	7.46E+0	
XII	Pu-239	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	
	Am-241	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	
XIII A	U-238	2.90E-2	2.90E-2	2.90E-2	2.33E-2	2.33E-2	2.33E-2	1.63E-2	1.63E-2	1.63E-2	3.21E-3	3.21E-3	3.21E-3	.00E+0	.00E+0	.00E+0	
	U-235	4.71E-4	4.71E-4	4.71E-4	3.78E-4	3.78E-4	3.78E-4	2.63E-4	2.63E-4	2.63E-4	5.20E-5	5.20E-5	5.20E-5	.00E+0	.00E+0	.00E+0	
	U-234	2.72E-3	2.72E-3	2.72E-3	2.18E-3	2.18E-3	2.18E-3	1.52E-3	1.52E-3	1.52E-3	3.00E-4	3.00E-4	3.00E-4	.00E+0	.00E+0	.00E+0	
XIII B	U-238	2.90E-2	2.90E-2	2.90E-2	2.33E-2	2.33E-2	2.33E-2	1.63E-2	1.63E-2	1.63E-2	3.21E-3	3.21E-3	3.21E-3	.00E+0	.00E+0	.00E+0	
	U-235	4.71E-4	4.71E-4	4.71E-4	3.78E-4	3.78E-4	3.78E-4	2.63E-4	2.63E-4	2.63E-4	5.20E-5	5.20E-5	5.20E-5	.00E+0	.00E+0	.00E+0	
	U-234	2.72E-3	2.72E-3	2.72E-3	2.18E-3	2.18E-3	2.18E-3	1.52E-3	1.52E-3	1.52E-3	3.00E-4	3.00E-4	3.00E-4	.00E+0	.00E+0	.00E+0	

ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		.10			.50			1.00			3.00			5.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIIC	U-238	2.90E-2	2.90E-2	2.90E-2	2.33E-2	2.33E-2	2.33E-2	1.63E-2	1.63E-2	1.63E-2	3.21E-3	3.21E-3	3.21E-3	.00E+0	.00E+0	.00E+0
	U-235	4.71E-4	4.71E-4	4.71E-4	3.78E-4	3.78E-4	3.78E-4	2.63E-4	2.63E-4	2.63E-4	5.20E-5	5.20E-5	5.20E-5	.00E+0	.00E+0	.00E+0
	U-234	2.72E-3	2.72E-3	2.72E-3	2.18E-3	2.18E-3	2.18E-3	1.52E-3	1.52E-3	1.52E-3	3.00E-4	3.00E-4	3.00E-4	.00E+0	.00E+0	.00E+0
XVIA	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.09E-2	6.09E-2	6.09E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2
XVIB	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.09E-2	6.09E-2	6.09E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2
XVIC	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.09E-2	6.09E-2	6.09E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2
XVIIIIA	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
XVIIIB	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
XVIIIC	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
XXA	U-234	4.16E+0	4.16E+0	4.16E+0	3.15E+0	3.15E+0	3.15E+0	2.67E+0	2.67E+0	2.67E+0	1.86E+0	1.86E+0	1.86E+0	1.40E+0	1.40E+0	1.40E+0
	U-235	1.40E-1	1.40E-1	1.40E-1	1.06E-1	1.06E-1	1.06E-1	8.96E-2	8.96E-2	8.96E-2	6.23E-2	6.23E-2	6.23E-2	4.68E-2	4.68E-2	4.68E-2
	U-238	7.14E-1	7.14E-1	7.14E-1	5.41E-1	5.41E-1	5.41E-1	4.58E-1	4.58E-1	4.58E-1	3.19E-1	3.19E-1	3.19E-1	2.40E-1	2.40E-1	2.40E-1
XXB	U-234	4.16E+0	4.16E+0	4.16E+0	3.15E+0	3.15E+0	3.15E+0	2.67E+0	2.67E+0	2.67E+0	1.86E+0	1.86E+0	1.86E+0	1.40E+0	1.40E+0	1.40E+0
	U-235	1.40E-1	1.40E-1	1.40E-1	1.06E-1	1.06E-1	1.06E-1	8.96E-2	8.96E-2	8.96E-2	6.23E-2	6.23E-2	6.23E-2	4.68E-2	4.68E-2	4.68E-2
	U-238	7.14E-1	7.14E-1	7.14E-1	5.41E-1	5.41E-1	5.41E-1	4.58E-1	4.58E-1	4.58E-1	3.19E-1	3.19E-1	3.19E-1	2.40E-1	2.40E-1	2.40E-1
XXC	U-234	4.16E+0	4.16E+0	4.16E+0	3.15E+0	3.15E+0	3.15E+0	2.67E+0	2.67E+0	2.67E+0	1.86E+0	1.86E+0	1.86E+0	1.40E+0	1.40E+0	1.40E+0
	U-235	1.40E-1	1.40E-1	1.40E-1	1.06E-1	1.06E-1	1.06E-1	8.96E-2	8.96E-2	8.96E-2	6.23E-2	6.23E-2	6.23E-2	4.68E-2	4.68E-2	4.68E-2
	U-238	7.14E-1	7.14E-1	7.14E-1	5.41E-1	5.41E-1	5.41E-1	4.58E-1	4.58E-1	4.58E-1	3.19E-1	3.19E-1	3.19E-1	2.40E-1	2.40E-1	2.40E-1
XXIA	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0
XXIB	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0
XXIC	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0

09-19-94 1:56p
 ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		.10			.50			1.00			3.00			5.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XXII	Ra-226	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.76E+0	3.75E+0	3.75E+0	3.75E+0	3.74E+0	3.74E+0	3.74E+0
	Th-232	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.28E+1	2.27E+1	2.27E+1	2.27E+1	2.27E+1	2.27E+1	2.27E+1	2.26E+1	2.27E+1	2.27E+1
	U-234	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1
	U-235	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.47E-1	9.47E-1	9.47E-1
	U-238	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1

Table M-194. ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
I	Cs-137	3.30E+1	3.30E+1	3.30E+1	3.18E+1	3.18E+1	3.18E+1	3.01E+1	3.01E+1	3.01E+1	2.57E+1	2.57E+1	2.57E+1	2.45E+1	2.45E+1	2.45E+1
II	Ra-226	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.71E+2	1.71E+2	1.71E+2
	Th-230	1.71E+2	1.71E+2	1.71E+2	1.70E+2	1.71E+2	1.71E+2	1.69E+2	1.70E+2	1.70E+2	1.68E+2	1.68E+2	1.68E+2	1.67E+2	1.68E+2	1.68E+2
	Ra-228	8.53E+0	8.53E+0	8.53E+0	8.52E+0	8.53E+0	8.53E+0	8.52E+0	8.52E+0	8.52E+0	8.49E+0	8.50E+0	8.50E+0	8.48E+0	8.49E+0	8.49E+0
	Th-232	3.05E+0	3.06E+0	3.06E+0	3.05E+0	3.06E+0	3.06E+0	3.06E+0	3.05E+0	3.05E+0	3.03E+0	3.04E+0	3.04E+0	3.02E+0	3.04E+0	3.04E+0
	U-234	2.22E+2	2.23E+2	2.23E+2	2.19E+2	2.22E+2	2.22E+2	2.18E+2	2.19E+2	2.19E+2	2.17E+2	2.17E+2	2.17E+2	2.16E+2	2.16E+2	2.16E+2
	U-235	3.62E+0	3.62E+0	3.62E+0	3.61E+0	3.61E+0	3.61E+0	3.61E+0	3.61E+0	3.61E+0	3.59E+0	3.59E+0	3.59E+0	3.58E+0	3.58E+0	3.58E+0
	U-238	9.82E+1	9.83E+1	9.83E+1	9.81E+1	9.82E+1	9.82E+1	9.80E+1	9.80E+1	9.80E+1	9.78E+1	9.79E+1	9.79E+1	9.77E+1	9.78E+1	9.78E+1
III	Cs-137	1.22E+1	1.22E+1	1.22E+1	1.12E+1	1.12E+1	1.12E+1	1.02E+1	1.02E+1	1.02E+1	4.70E+0	4.70E+0	4.70E+0	3.04E+0	3.04E+0	3.04E+0
IV	U-234	3.28E+1	3.28E+1	3.28E+1	3.23E+1	3.23E+1	3.23E+1	3.14E+1	3.14E+1	3.14E+1	2.66E+1	2.66E+1	2.66E+1	2.42E+1	2.42E+1	2.42E+1
	U-235	1.54E+0	1.54E+0	1.54E+0	1.52E+0	1.52E+0	1.52E+0	1.47E+0	1.47E+0	1.47E+0	1.25E+0	1.25E+0	1.25E+0	1.14E+0	1.14E+0	1.14E+0
	U-238	3.28E+1	3.28E+1	3.28E+1	3.23E+1	3.23E+1	3.23E+1	3.14E+1	3.14E+1	3.14E+1	2.66E+1	2.66E+1	2.66E+1	2.42E+1	2.42E+1	2.42E+1
V	Cs-137	9.46E+2	9.46E+2	9.46E+2	9.36E+2	9.36E+2	9.36E+2	9.18E+2	9.18E+2	9.18E+2	8.26E+2	8.26E+2	8.26E+2	7.80E+2	7.80E+2	7.80E+2
VI	Cs-137	4.79E+1	4.79E+1	4.79E+1	4.75E+1	4.75E+1	4.75E+1	4.70E+1	4.70E+1	4.70E+1	4.46E+1	4.46E+1	4.46E+1	4.34E+1	4.34E+1	4.34E+1
	U-234	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.83E+2	6.83E+2	6.83E+2	6.77E+2	6.77E+2	6.77E+2	6.74E+2	6.74E+2	6.74E+2
	U-235	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.18E+1	3.18E+1	3.18E+1	3.17E+1	3.17E+1	3.17E+1
	U-238	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.83E+2	6.83E+2	6.83E+2	6.77E+2	6.77E+2	6.77E+2	6.74E+2	6.74E+2	6.74E+2
VII	Pu-239	2.24E+3	2.24E+3	2.24E+3	2.06E+3	2.06E+3	2.06E+3	1.60E+3	1.60E+3	1.60E+3	6.79E+2	6.79E+2	6.79E+2	5.39E+2	5.39E+2	5.39E+2
	Am-241	3.75E+2	3.75E+2	3.75E+2	3.43E+2	3.43E+2	3.43E+2	2.66E+2	2.66E+2	2.66E+2	1.13E+2	1.13E+2	1.13E+2	9.00E+1	9.00E+1	9.00E+1
	Cs-137	3.81E+1	3.81E+1	3.81E+1	3.58E+1	3.58E+1	3.58E+1	2.80E+1	2.80E+1	2.80E+1	1.02E+1	1.02E+1	1.02E+1	7.72E+0	7.72E+0	7.72E+0
IX	Pu-239	7.56E+0	7.56E+0	7.56E+0	6.35E+0	6.35E+0	6.35E+0	5.19E+0	5.19E+0	5.19E+0	2.43E+0	2.43E+0	2.43E+0	1.70E+0	1.70E+0	1.70E+0
	Am-241	1.26E+0	1.26E+0	1.26E+0	1.06E+0	1.06E+0	1.06E+0	8.64E-1	8.64E-1	8.64E-1	4.05E-1	4.05E-1	4.05E-1	2.84E-1	2.84E-1	2.84E-1
X	Tc-99	2.09E+2	2.13E+2	2.13E+2	2.08E+2	2.12E+2	2.12E+2	2.05E+2	2.12E+2	2.12E+2	1.95E+2	2.04E+2	2.04E+2	1.90E+2	2.01E+2	2.01E+2
	U-238	4.77E+0	7.15E+0	7.15E+0	4.34E+0	6.77E+0	6.77E+0	3.81E+0	6.00E+0	6.00E+0	2.65E+0	3.71E+0	3.71E+0	2.29E+0	3.22E+0	3.22E+0
	U-234	4.77E+0	7.15E+0	7.15E+0	4.34E+0	6.77E+0	6.77E+0	3.81E+0	6.00E+0	6.00E+0	2.65E+0	3.71E+0	3.71E+0	2.29E+0	3.22E+0	3.22E+0
XII	Pu-239	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.58E+1	3.58E+1	3.58E+1	3.58E+1	3.58E+1	3.58E+1
	Am-241	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.97E+0	5.97E+0	5.97E+0	5.96E+0	5.96E+0	5.96E+0
XIII A	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XIII B	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0

ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIC	U-238	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	Co-60	6.08E-2	6.08E-2	6.08E-2	6.07E-2	6.07E-2	6.07E-2	6.04E-2	6.04E-2	6.04E-2	5.95E-2	5.95E-2	5.95E-2	5.90E-2	5.90E-2	5.90E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.84E-2	4.84E-2	4.84E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2
XVIB	Co-60	6.08E-2	6.08E-2	6.08E-2	6.07E-2	6.07E-2	6.07E-2	6.04E-2	6.04E-2	6.04E-2	5.95E-2	5.95E-2	5.95E-2	5.90E-2	5.90E-2	5.90E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.84E-2	4.84E-2	4.84E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2
XVIC	Co-60	6.08E-2	6.08E-2	6.08E-2	6.07E-2	6.07E-2	6.07E-2	6.04E-2	6.04E-2	6.04E-2	5.95E-2	5.95E-2	5.95E-2	5.90E-2	5.90E-2	5.90E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.84E-2	4.84E-2	4.84E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2	4.82E-2
XVIII A	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.76E-1	2.76E-1	2.76E-1	2.74E-1	2.74E-1	2.74E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.76E-1	2.76E-1	2.76E-1	2.74E-1	2.74E-1	2.74E-1
XVIII B	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.76E-1	2.76E-1	2.76E-1	2.74E-1	2.74E-1	2.74E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.76E-1	2.76E-1	2.76E-1	2.74E-1	2.74E-1	2.74E-1
XVIII C	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.76E-1	2.76E-1	2.76E-1	2.74E-1	2.74E-1	2.74E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.79E-1	2.79E-1	2.79E-1	2.76E-1	2.76E-1	2.76E-1	2.74E-1	2.74E-1	2.74E-1
XXA	U-234	6.66E-1	6.66E-1	6.66E-1	2.76E-1	2.76E-1	2.76E-1	1.79E-1	1.79E-1	1.79E-1	1.43E-1	1.43E-1	1.43E-1	1.33E-1	1.33E-1	1.33E-1
	U-235	2.21E-2	2.21E-2	2.21E-2	8.96E-3	8.96E-3	8.96E-3	5.72E-3	5.72E-3	5.72E-3	4.50E-3	4.50E-3	4.50E-3	4.16E-3	4.16E-3	4.16E-3
	U-238	1.14E-1	1.14E-1	1.14E-1	4.72E-2	4.72E-2	4.72E-2	3.07E-2	3.07E-2	3.07E-2	2.46E-2	2.46E-2	2.46E-2	2.28E-2	2.28E-2	2.28E-2
XXB	U-234	6.66E-1	6.66E-1	6.66E-1	2.76E-1	2.76E-1	2.76E-1	1.79E-1	1.79E-1	1.79E-1	1.43E-1	1.43E-1	1.43E-1	1.33E-1	1.33E-1	1.33E-1
	U-235	2.21E-2	2.21E-2	2.21E-2	8.96E-3	8.96E-3	8.96E-3	5.72E-3	5.72E-3	5.72E-3	4.50E-3	4.50E-3	4.50E-3	4.16E-3	4.16E-3	4.16E-3
	U-238	1.14E-1	1.14E-1	1.14E-1	4.72E-2	4.72E-2	4.72E-2	3.07E-2	3.07E-2	3.07E-2	2.46E-2	2.46E-2	2.46E-2	2.28E-2	2.28E-2	2.28E-2
XXC	U-234	6.66E-1	6.66E-1	6.66E-1	2.76E-1	2.76E-1	2.76E-1	1.79E-1	1.79E-1	1.79E-1	1.43E-1	1.43E-1	1.43E-1	1.33E-1	1.33E-1	1.33E-1
	U-235	2.21E-2	2.21E-2	2.21E-2	8.96E-3	8.96E-3	8.96E-3	5.72E-3	5.72E-3	5.72E-3	4.50E-3	4.50E-3	4.50E-3	4.16E-3	4.16E-3	4.16E-3
	U-238	1.14E-1	1.14E-1	1.14E-1	4.72E-2	4.72E-2	4.72E-2	3.07E-2	3.07E-2	3.07E-2	2.46E-2	2.46E-2	2.46E-2	2.28E-2	2.28E-2	2.28E-2
XXIA	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.00E+0	1.00E+0	1.00E+0	9.70E-1	9.70E-1	9.70E-1	9.44E-1	9.44E-1	9.44E-1
XXIB	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.00E+0	1.00E+0	1.00E+0	9.70E-1	9.70E-1	9.70E-1	9.44E-1	9.44E-1	9.44E-1
XXIC	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.00E+0	1.00E+0	1.00E+0	9.70E-1	9.70E-1	9.70E-1	9.44E-1	9.44E-1	9.44E-1

09-19-94 1:56p
 ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR RESIDENTIAL OCCUPANCY/Assessment Period (years)														
		10.00			15.00			25.00			75.00			100.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XXII	Ra-226	3.71E+0	3.72E+0	3.72E+0	3.69E+0	3.71E+0	3.71E+0	3.66E+0	3.67E+0	3.67E+0	3.45E+0	3.51E+0	3.51E+0	3.42E+0	3.45E+0	3.45E+0
	Th-232	2.25E+1	2.26E+1	2.26E+1	2.24E+1	2.25E+1	2.25E+1	2.23E+1	2.23E+1	2.23E+1	2.11E+1	2.13E+1	2.13E+1	2.09E+1	2.10E+1	2.10E+1
	U-234	2.01E+1	2.01E+1	2.01E+1	1.99E+1	2.00E+1	2.00E+1	1.97E+1	1.98E+1	1.98E+1	1.89E+1	1.91E+1	1.91E+1	1.87E+1	1.88E+1	1.88E+1
	U-235	9.43E-1	9.45E-1	9.45E-1	9.34E-1	9.42E-1	9.42E-1	9.26E-1	9.29E-1	9.29E-1	8.86E-1	8.96E-1	8.96E-1	8.80E-1	8.85E-1	8.85E-1
	U-238	2.01E+1	2.01E+1	2.01E+1	1.99E+1	2.00E+1	2.00E+1	1.97E+1	1.98E+1	1.98E+1	1.89E+1	1.91E+1	1.91E+1	1.87E+1	1.88E+1	1.88E+1

Table M-195. ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)															
		.10			.50			1.00			3.00			5.00			
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	
I	Cs-137	3.68E+1	3.68E+1	3.68E+1	3.59E+1	3.59E+1	3.59E+1	3.52E+1	3.52E+1	3.52E+1	3.34E+1	3.34E+1	3.34E+1	3.20E+1	3.20E+1	3.20E+1	
II	Ra-226	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	1.72E+2	
	Th-230	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.71E+2	1.70E+2	1.71E+2	1.71E+2	
	Ra-228	8.54E+0	8.54E+0	8.54E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.53E+0	8.52E+0	8.53E+0	8.53E+0	
	Th-232	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.06E+0	3.05E+0	3.05E+0	
	U-234	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.25E+2	2.24E+2	2.24E+2	2.24E+2	2.22E+2	2.23E+2	2.23E+2	2.19E+2	2.22E+2	2.22E+2
	U-235	3.65E+0	3.65E+0	3.65E+0	3.63E+0	3.63E+0	3.63E+0	3.63E+0	3.62E+0	3.62E+0	3.62E+0	3.62E+0	3.62E+0	3.62E+0	3.61E+0	3.61E+0	3.61E+0
	U-238	9.90E+1	9.90E+1	9.90E+1	9.85E+1	9.85E+1	9.85E+1	9.84E+1	9.84E+1	9.84E+1	9.84E+1	9.82E+1	9.83E+1	9.83E+1	9.80E+1	9.82E+1	9.82E+1
III	Cs-137	1.54E+1	1.54E+1	1.54E+1	1.52E+1	1.52E+1	1.52E+1	1.49E+1	1.49E+1	1.49E+1	1.28E+1	1.28E+1	1.28E+1	1.13E+1	1.13E+1	1.13E+1	
IV	U-234	3.49E+1	3.49E+1	3.49E+1	3.44E+1	3.44E+1	3.44E+1	3.40E+1	3.40E+1	3.40E+1	3.29E+1	3.29E+1	3.29E+1	3.23E+1	3.23E+1	3.23E+1	
	U-235	1.64E+0	1.64E+0	1.64E+0	1.62E+0	1.62E+0	1.62E+0	1.60E+0	1.60E+0	1.60E+0	1.54E+0	1.54E+0	1.54E+0	1.52E+0	1.52E+0	1.52E+0	
	U-238	3.49E+1	3.49E+1	3.49E+1	3.44E+1	3.44E+1	3.44E+1	3.40E+1	3.40E+1	3.40E+1	3.29E+1	3.29E+1	3.29E+1	3.23E+1	3.23E+1	3.23E+1	
V	Cs-137	9.71E+2	9.71E+2	9.71E+2	9.68E+2	9.68E+2	9.68E+2	9.65E+2	9.65E+2	9.65E+2	9.51E+2	9.51E+2	9.51E+2	9.38E+2	9.38E+2	9.38E+2	
VI	Cs-137	4.87E+1	4.87E+1	4.87E+1	4.86E+1	4.86E+1	4.86E+1	4.85E+1	4.85E+1	4.85E+1	4.80E+1	4.80E+1	4.80E+1	4.76E+1	4.76E+1	4.76E+1	
	U-234	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	
	U-235	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.22E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	3.21E+1	
	U-238	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	6.84E+2	
VII	Pu-239	3.10E+3	3.10E+3	3.10E+3	2.81E+3	2.81E+3	2.81E+3	2.62E+3	2.62E+3	2.62E+3	2.24E+3	2.24E+3	2.24E+3	1.97E+3	1.97E+3	1.97E+3	
	Am-241	5.19E+2	5.19E+2	5.19E+2	4.71E+2	4.71E+2	4.71E+2	4.39E+2	4.39E+2	4.39E+2	3.75E+2	3.75E+2	3.75E+2	3.29E+2	3.29E+2	3.29E+2	
	Cs-137	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.91E+1	3.81E+1	3.81E+1	3.81E+1	3.46E+1	3.46E+1	3.46E+1	
IX	Pu-239	1.24E+1	1.24E+1	1.24E+1	1.09E+1	1.09E+1	1.09E+1	9.87E+0	9.87E+0	9.87E+0	7.51E+0	7.51E+0	7.51E+0	5.94E+0	5.94E+0	5.94E+0	
	Am-241	2.07E+0	2.07E+0	2.07E+0	1.82E+0	1.82E+0	1.82E+0	1.64E+0	1.64E+0	1.64E+0	1.25E+0	1.25E+0	1.25E+0	9.90E-1	9.90E-1	9.90E-1	
X	Tc-99	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.13E+2	2.12E+2	2.13E+2	2.13E+2	2.10E+2	2.13E+2	2.13E+2	2.09E+2	2.13E+2	2.13E+2	
	U-238	7.52E+0	7.57E+0	7.57E+0	6.93E+0	7.57E+0	7.57E+0	6.38E+0	7.55E+0	7.55E+0	5.14E+0	7.38E+0	7.38E+0	4.60E+0	7.10E+0	7.10E+0	
	U-234	7.52E+0	7.57E+0	7.57E+0	6.93E+0	7.57E+0	7.57E+0	6.38E+0	7.55E+0	7.55E+0	5.14E+0	7.38E+0	7.38E+0	4.60E+0	7.10E+0	7.10E+0	
XII	Pu-239	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	3.59E+1	
	Am-241	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	5.98E+0	
XIIIA	U-238	2.64E-2	2.64E-2	2.64E-2	1.54E-2	1.54E-2	1.54E-2	7.56E-3	7.56E-3	7.56E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	
	U-235	4.29E-4	4.29E-4	4.29E-4	2.50E-4	2.50E-4	2.50E-4	1.23E-4	1.23E-4	1.23E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	
	U-234	2.48E-3	2.48E-3	2.48E-3	1.45E-3	1.45E-3	1.45E-3	7.07E-4	7.07E-4	7.07E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	
XIIIB	U-238	2.64E-2	2.64E-2	2.64E-2	1.54E-2	1.54E-2	1.54E-2	7.56E-3	7.56E-3	7.56E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	
	U-235	4.29E-4	4.29E-4	4.29E-4	2.50E-4	2.50E-4	2.50E-4	1.23E-4	1.23E-4	1.23E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	
	U-234	2.48E-3	2.48E-3	2.48E-3	1.45E-3	1.45E-3	1.45E-3	7.07E-4	7.07E-4	7.07E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	

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ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)														
		.10			.50			1.00			3.00			5.00		
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000
XIIIIC	U-238	2.64E-2	2.64E-2	2.64E-2	1.54E-2	1.54E-2	1.54E-2	7.56E-3	7.56E-3	7.56E-3	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-235	4.29E-4	4.29E-4	4.29E-4	2.50E-4	2.50E-4	2.50E-4	1.23E-4	1.23E-4	1.23E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
	U-234	2.48E-3	2.48E-3	2.48E-3	1.45E-3	1.45E-3	1.45E-3	7.07E-4	7.07E-4	7.07E-4	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0	.00E+0
XVIA	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.09E-2	6.09E-2	6.09E-2	6.07E-2	6.07E-2	6.07E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2
XVIB	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.09E-2	6.09E-2	6.09E-2	6.07E-2	6.07E-2	6.07E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2
XVIC	Co-60	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.10E-2	6.09E-2	6.09E-2	6.09E-2	6.07E-2	6.07E-2	6.07E-2
	Cs-137	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2	4.85E-2
XVIII A	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
XVIII B	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
XVIII C	Cs-137	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
	Sr-90	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1	2.80E-1
XXA	U-234	3.32E+0	3.32E+0	3.32E+0	2.19E+0	2.19E+0	2.19E+0	1.62E+0	1.62E+0	1.62E+0	4.63E-1	4.63E-1	4.63E-1	1.96E-1	1.96E-1	1.96E-1
	U-235	1.12E-1	1.12E-1	1.12E-1	7.34E-2	7.34E-2	7.34E-2	5.43E-2	5.43E-2	5.43E-2	1.53E-2	1.53E-2	1.53E-2	6.27E-3	6.27E-3	6.27E-3
	U-238	5.70E-1	5.70E-1	5.70E-1	3.76E-1	3.76E-1	3.76E-1	2.78E-1	2.78E-1	2.78E-1	7.94E-2	7.94E-2	7.94E-2	3.36E-2	3.36E-2	3.36E-2
XXB	U-234	3.32E+0	3.32E+0	3.32E+0	2.19E+0	2.19E+0	2.19E+0	1.62E+0	1.62E+0	1.62E+0	4.63E-1	4.63E-1	4.63E-1	1.96E-1	1.96E-1	1.96E-1
	U-235	1.12E-1	1.12E-1	1.12E-1	7.34E-2	7.34E-2	7.34E-2	5.43E-2	5.43E-2	5.43E-2	1.53E-2	1.53E-2	1.53E-2	6.27E-3	6.27E-3	6.27E-3
	U-238	5.70E-1	5.70E-1	5.70E-1	3.76E-1	3.76E-1	3.76E-1	2.78E-1	2.78E-1	2.78E-1	7.94E-2	7.94E-2	7.94E-2	3.36E-2	3.36E-2	3.36E-2
XXC	U-234	3.32E+0	3.32E+0	3.32E+0	2.19E+0	2.19E+0	2.19E+0	1.62E+0	1.62E+0	1.62E+0	4.63E-1	4.63E-1	4.63E-1	1.96E-1	1.96E-1	1.96E-1
	U-235	1.12E-1	1.12E-1	1.12E-1	7.34E-2	7.34E-2	7.34E-2	5.43E-2	5.43E-2	5.43E-2	1.53E-2	1.53E-2	1.53E-2	6.27E-3	6.27E-3	6.27E-3
	U-238	5.70E-1	5.70E-1	5.70E-1	3.76E-1	3.76E-1	3.76E-1	2.78E-1	2.78E-1	2.78E-1	7.94E-2	7.94E-2	7.94E-2	3.36E-2	3.36E-2	3.36E-2
XXIA	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0
XXIB	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0
XXIC	Th-232	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0	1.01E+0

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 ACTIVITIES REMOVED (Ci)--Indoor radon pathway excluded

Ref. Site No.	Nuclide	CLEANUP GOAL BASED ON SITE-SPECIFIC DOSE LIMITS (mrem/yr) FOR COMMERCIAL OCCUPANCY/Assessment Period (years)															
		.10			.50			1.00			3.00			5.00			
		100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	100	1,000	10,000	
XXII	Ra-226	3.76E+0	3.76E+0	3.76E+0	3.75E+0	3.75E+0	3.75E+0	3.74E+0	3.75E+0	3.75E+0	3.71E+0	3.72E+0	3.72E+0	3.68E+0	3.71E+0	3.71E+0	
	Th-232	2.28E+1	2.28E+1	2.28E+1	2.27E+1	2.27E+1	2.27E+1	2.27E+1	2.27E+1	2.27E+1	2.25E+1	2.26E+1	2.26E+1	2.24E+1	2.25E+1	2.25E+1	
	U-234	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.01E+1	2.01E+1	2.01E+1	1.99E+1	2.00E+1	2.00E+1	
	U-235	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.48E-1	9.46E-1	9.46E-1	9.46E-1	9.33E-1	9.42E-1	9.42E-1
	U-238	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.02E+1	2.01E+1	2.01E+1	2.01E+1	1.99E+1	2.00E+1	2.00E+1

APPENDIX N

RESULTS OF POPULATION MODELING FOR REFERENCE SITES

Table N-1. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 100 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	2.01E+04	2.12E-01	0.00E+00	4.26E+02		6.27E+02	2.02E+02	2.44E+03	2.02E+03	2.02E+04	2.44E+03
	Total			2.01E+04	2.12E-01	0.00E+00	4.26E+02		6.27E+02	2.02E+02	2.44E+03	2.02E+03	2.02E+04	2.44E+03
II-1	Ra-226+D	5.43E+01	4.65E+05	1.70E+05	2.54E+02	0.00E+00	2.58E+05	3.13E+05	2.62E+05	4.83E+03	3.06E+05	4.83E+04	4.83E+05	4.83E+05
	Ra-228	2.69E+00	4.65E+05	3.79E+02	1.67E-01	0.00E+00	2.71E+01		3.09E+01	3.79E+00	6.50E+01	3.79E+01	3.79E+02	3.79E+02
	Th-228	2.69E+00	2.96E+05	2.03E+02	3.83E+00	0.00E+00	3.20E-01		2.39E+00	2.07E+00	2.10E+01	2.07E+01	2.07E+02	2.07E+02
	Th-230	5.40E+01	2.96E+05	3.68E+03	2.85E+03	0.00E+00	3.65E+03	6.78E+03	3.79E+03	1.33E+02	4.98E+03	1.33E+03	1.33E+04	1.33E+04
	Th-232+D	9.66E-01	2.96E+05	3.80E+03	2.99E+02	0.00E+00	1.26E+02		1.67E+02	4.10E+01	5.37E+02	4.10E+02	4.10E+03	4.10E+03
	U-234+D	7.07E+01	8.17E+04	2.10E+01	1.47E+03	0.00E+00	4.92E+03	2.67E+00	4.94E+03	1.50E+01	5.07E+03	1.50E+02	1.50E+03	1.50E+03
	U-235	1.14E+00	8.17E+04	2.04E+02	2.19E+01	0.00E+00	7.65E+01		7.87E+01	2.26E+00	9.90E+01	2.26E+01	2.26E+02	2.26E+02
	U-238+D	3.11E+01	8.17E+04	7.86E+02	5.97E+02	0.00E+00	2.08E+03		2.09E+03	1.38E+01	2.22E+03	1.38E+02	1.38E+03	1.38E+03
Total			1.79E+05	5.49E+03	0.00E+00	2.68E+05	3.20E+05	2.73E+05	5.04E+03	3.19E+05	5.04E+04	5.04E+05	5.04E+05	
II-2	U-234+D	2.52E+02	8.60E+04	1.44E+02	1.47E+04	0.00E+00	4.92E+03	2.67E+00	5.07E+03	1.49E+02	6.41E+03	1.49E+03	1.49E+04	1.49E+04
	U-235	4.08E+00	8.60E+04	1.39E+03	2.19E+02	0.00E+00	7.65E+01		9.25E+01	1.61E+01	2.37E+02	1.61E+02	1.61E+03	1.61E+03
	U-238+D	1.11E+02	8.60E+04	3.74E+03	5.97E+03	0.00E+00	2.08E+03		2.18E+03	9.70E+01	3.05E+03	9.70E+02	9.70E+03	9.70E+03
	Total			5.27E+03	2.09E+04	0.00E+00	7.08E+03	2.67E+00	7.34E+03	2.62E+02	9.69E+03	2.62E+03	2.62E+04	2.62E+04
III	Cs-137	9.89E+00	2.00E+06	8.85E+03	9.32E-02	0.00E+00	1.78E+02		2.66E+02	8.85E+01	1.06E+03	8.85E+02	8.85E+03	1.06E+03
	Total			8.85E+03	9.32E-02	0.00E+00	1.78E+02		2.66E+02	8.85E+01	1.06E+03	8.85E+02	8.85E+03	1.06E+03
IV	U-234+D	3.24E+02	1.48E+04	1.05E+01	8.15E+02	0.00E+00	6.99E+02	3.89E-01	7.07E+02	8.26E+00	7.82E+02	8.26E+01	8.26E+02	8.64E+02
	U-235	1.52E+01	1.48E+04	3.00E+02	3.53E+01	0.00E+00	3.16E+01		3.49E+01	3.35E+00	6.51E+01	3.35E+01	3.35E+02	9.86E+01
	U-238+D	3.24E+02	1.48E+04	7.45E+02	7.51E+02	0.00E+00	6.72E+02		6.87E+02	1.50E+01	8.22E+02	1.50E+02	1.50E+03	9.71E+02
	Total			1.06E+03	1.60E+03	0.00E+00	1.40E+03	3.89E-01	1.43E+03	2.66E+01	1.67E+03	2.66E+02	2.66E+03	1.93E+03
V	Cs-137	1.07E+03	2.39E+04	5.54E+05	5.83E+00	0.00E+00	1.18E+04		1.73E+04	5.54E+03	6.72E+04	5.54E+04	5.54E+05	6.72E+04
	Total			5.54E+05	5.83E+00	0.00E+00	1.18E+04		1.73E+04	5.54E+03	6.72E+04	5.54E+04	5.54E+05	6.72E+04
VI	Cs-137	8.63E+01	2.07E+05	2.97E+04	3.03E-01	0.00E+00	6.01E+02		8.98E+02	2.97E+02	3.57E+03	2.97E+03	2.97E+04	9.50E+03
	U-234	1.22E+03	3.31E+04	4.31E+02	4.30E+04	0.00E+00	1.50E+04	8.17E+00	1.55E+04	4.34E+02	1.94E+04	4.34E+03	4.34E+04	2.80E+04
	U-235	5.75E+01	3.31E+04	1.21E+04	1.87E+03	0.00E+00	6.80E+02		8.19E+02	1.39E+02	2.07E+03	1.39E+03	1.39E+04	4.86E+03
	U-238+D	1.22E+03	3.31E+04	2.56E+04	3.96E+04	0.00E+00	1.44E+04		1.51E+04	6.52E+02	2.10E+04	6.52E+03	6.52E+04	3.40E+04
	Total			6.78E+04	8.45E+04	0.00E+00	3.07E+04	8.17E+00	3.23E+04	1.52E+03	4.60E+04	1.52E+04	1.52E+05	7.64E+04

Table N-1. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
 FOR AN INTEGRATION PERIOD OF 100 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	5.66E+02	4.00E+05	0.00E+00	7.33E+03		1.13E+04	4.01E+03	4.74E+04	4.01E+04	4.01E+05	1.13E+04
	Cs-137	8.95E-01	8.42E+08	1.86E+04	1.74E-01	0.00E+00	3.92E+02		5.79E+02	1.86E+02	2.26E+03	1.86E+03	1.86E+04	5.79E+02
	Am-241	8.44E+00	5.71E+09	5.80E+03	6.30E+04	0.00E+00	6.57E+03		7.26E+03	6.88E+02	1.35E+04	6.88E+03	6.88E+04	7.26E+03
	Total			2.50E+04	4.63E+05	0.00E+00	1.43E+04		1.92E+04	4.88E+03	6.31E+04	4.88E+04	4.88E+05	1.92E+04
IX	Pu-239	9.47E+00	2.39E+05	1.06E+00	8.08E+02	0.00E+00	1.25E+01		2.06E+01	8.09E+00	9.33E+01	8.09E+01	8.09E+02	1.74E+02
	Am-241	1.58E+00	2.67E+06	1.09E+01	1.27E+02	0.00E+00	1.12E+01		1.26E+01	1.38E+00	2.50E+01	1.38E+01	1.38E+02	3.88E+01
	Total			1.20E+01	9.35E+02	0.00E+00	2.37E+01		3.31E+01	9.47E+00	1.18E+02	9.47E+01	9.47E+02	2.13E+02
X	Tc-99	8.16E+03	6.21E+00	1.18E-05	4.19E-05	1.38E+03	4.77E+01		1.43E+03	1.38E+03	1.43E+03	1.38E+03	1.38E+03	1.43E+03
	U-234+D	2.80E+02	5.76E+02	3.48E-02	2.31E+00	0.00E+00	5.06E+01	8.33E-02	5.06E+01	2.43E-02	5.08E+01	2.43E-01	2.43E+00	5.08E+01
	U-238+D	2.80E+02	5.76E+02	2.81E+00	2.13E+00	0.00E+00	4.86E+01		4.87E+01	4.93E-02	4.91E+01	4.93E-01	4.93E+00	4.91E+01
	Total			2.84E+00	4.43E+00	1.38E+03	1.47E+02	8.33E-02	1.53E+03	1.38E+03	1.53E+03	1.39E+03	1.39E+03	1.53E+03
XII	Pu-239	1.27E+03	1.25E+04	7.60E-01	4.24E+02	0.00E+00	1.39E+02		1.43E+02	4.24E+00	1.81E+02	4.24E+01	4.24E+02	4.24E+02
	Am-241	2.12E+02	4.33E+04	8.71E+00	7.68E+01	0.00E+00	1.27E+02		1.28E+02	8.55E-01	1.36E+02	8.55E+00	8.55E+01	8.55E+01
	Total			9.47E+00	5.00E+02	0.00E+00	2.66E+02		2.71E+02	5.10E+00	3.17E+02	5.10E+01	5.10E+02	5.10E+02
XIII	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIII B	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIII C	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XVIA	Co-60	3.63E+01	4.29E+05	1.86E+01	1.21E-04	0.00E+00	1.79E-02		2.04E-01	1.86E-01	1.88E+00	1.86E+00	1.86E+01	3.75E+00
	Cs-137+D	2.89E+01	8.59E+05	1.78E+01	1.05E-04	0.00E+00	6.03E-01		7.81E-01	1.78E-01	2.38E+00	1.78E+00	1.78E+01	4.17E+00
	Total			3.64E+01	2.26E-04	0.00E+00	6.21E-01		9.86E-01	3.64E-01	4.27E+00	3.64E+00	3.64E+01	7.91E+00
XVIB	Co-60	3.63E+01	6.09E+04	1.85E+01	1.20E-04	0.00E+00	1.79E-02		2.03E-01	1.85E-01	1.87E+00	1.85E+00	1.85E+01	3.72E+00
	Cs-137+D	2.89E+01	1.22E+05	1.75E+01	1.04E-04	0.00E+00	6.02E-01		7.77E-01	1.75E-01	2.36E+00	1.75E+00	1.75E+01	4.11E+00
	Total			3.60E+01	2.24E-04	0.00E+00	6.19E-01		9.80E-01	3.60E-01	4.22E+00	3.60E+00	3.60E+01	7.83E+00

Table N-1. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 100 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	1.82E+01	1.18E-04	0.00E+00	1.79E-02		2.00E-01	1.82E-01	1.84E+00	1.82E+00	1.82E+01	3.66E+00
	Cs-137+D	2.89E+01	1.07E+04	1.70E+01	1.00E-04	0.00E+00	5.98E-01		7.68E-01	1.70E-01	2.29E+00	1.70E+00	1.70E+01	3.99E+00
	Total			3.52E+01	2.18E-04	0.00E+00	6.16E-01		9.68E-01	3.52E-01	4.13E+00	3.52E+00	3.52E+01	7.65E+00
XVIII A	Cs-137+D	3.54E+02	8.59E+05	1.03E+02	6.07E-04	0.00E+00	3.48E+00		4.51E+00	1.03E+00	1.38E+01	1.03E+01	1.03E+02	1.03E+02
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	1.60E-02	0.00E+00	7.30E+01		7.30E+01	1.60E-04	7.30E+01	1.60E-03	1.60E-02	1.60E-02
	Total			1.03E+02	1.66E-02	0.00E+00	7.65E+01		7.75E+01	1.03E+00	8.68E+01	1.03E+01	1.03E+02	1.03E+02
XVIII B	Cs-137+D	3.54E+02	1.22E+05	1.01E+02	5.98E-04	0.00E+00	3.47E+00		4.49E+00	1.01E+00	1.36E+01	1.01E+01	1.01E+02	1.01E+02
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	1.07E-02	0.00E+00	6.62E+01		6.62E+01	1.07E-04	6.62E+01	1.07E-03	1.07E-02	1.07E-02
	Total			1.01E+02	1.13E-02	0.00E+00	6.97E+01		7.07E+01	1.01E+00	7.98E+01	1.01E+01	1.01E+02	1.01E+02
XVIII C	Cs-137+D	3.54E+02	3.22E+04	9.79E+01	5.78E-04	0.00E+00	3.45E+00		4.43E+00	9.79E-01	1.32E+01	9.79E+00	9.79E+01	9.79E+01
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	6.11E-03	0.00E+00	5.44E+01		5.44E+01	6.11E-05	5.44E+01	6.11E-04	6.11E-03	6.11E-03
	Total			9.79E+01	6.69E-03	0.00E+00	5.78E+01		5.88E+01	9.79E-01	6.76E+01	9.79E+00	9.79E+01	9.79E+01
XXA	U-234+D	4.37E+01	8.57E+04	5.75E-02	4.02E+00	0.00E+00	2.01E+01	1.12E-02	2.01E+01	4.08E-02	2.05E+01	4.08E-01	4.08E+00	2.09E+01
	U-235	1.46E+00	8.57E+04	1.15E+00	1.23E-01	0.00E+00	6.44E-01		6.57E-01	1.27E-02	7.71E-01	1.27E-01	1.27E+00	8.98E-01
	U-238+D	7.51E+00	8.57E+04	8.40E-01	6.37E-01	0.00E+00	3.32E+00		3.34E+00	1.48E-02	3.47E+00	1.48E-01	1.48E+00	3.62E+00
	Total			2.04E+00	4.78E+00	0.00E+00	2.41E+01	1.12E-02	2.41E+01	6.83E-02	2.47E+01	6.83E-01	6.83E+00	2.54E+01
XXB	U-234+D	2.54E+01	1.21E+04	2.72E-02	1.88E+00	0.00E+00	1.13E+01	6.47E-03	1.13E+01	1.92E-02	1.14E+01	1.92E-01	1.92E+00	1.16E+01
	U-235	8.40E-01	1.21E+04	5.33E-01	5.74E-02	0.00E+00	3.57E-01		3.63E-01	5.90E-03	4.16E-01	5.90E-02	5.90E-01	4.75E-01
	U-238+D	4.36E+00	1.21E+04	3.93E-01	2.98E-01	0.00E+00	1.85E+00		1.86E+00	6.91E-03	1.92E+00	6.91E-02	6.91E-01	1.99E+00
	Total			9.53E-01	2.24E+00	0.00E+00	1.35E+01	6.47E-03	1.35E+01	3.20E-02	1.38E+01	3.20E-01	3.20E+00	1.41E+01
XXC	U-234+D	2.54E+01	1.07E+03	1.82E-02	1.24E+00	0.00E+00	1.03E+01	6.40E-03	1.03E+01	1.27E-02	1.05E+01	1.27E-01	1.27E+00	1.06E+01
	U-235	8.40E-01	1.07E+03	3.52E-01	3.79E-02	0.00E+00	3.28E-01		3.32E-01	3.90E-03	3.67E-01	3.90E-02	3.90E-01	4.06E-01
	U-238+D	4.36E+00	1.07E+03	2.59E-01	1.97E-01	0.00E+00	1.70E+00		1.71E+00	4.56E-03	1.75E+00	4.56E-02	4.56E-01	1.79E+00
	Total			6.29E-01	1.48E+00	0.00E+00	1.24E+01	6.40E-03	1.24E+01	2.11E-02	1.26E+01	2.11E-01	2.11E+00	1.28E+01

Table N-1. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 100 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	8.97E+00	3.94E-03	0.00E+00	1.16E+00		1.25E+00	8.97E-02	2.05E+00	8.97E-01	8.97E+00	8.97E+00
	Th-228	1.83E+01	2.10E+07	4.88E+00	9.07E-02	0.00E+00	1.36E-02		6.33E-02	4.97E-02	5.11E-01	4.97E-01	4.97E+00	4.97E+00
	Th-232+D	1.83E+01	2.10E+07	2.55E+02	1.99E+01	0.00E+00	1.50E+01		1.78E+01	2.75E+00	4.26E+01	2.75E+01	2.75E+02	2.75E+02
	Total			2.69E+02	2.00E+01	0.00E+00	1.62E+01		1.91E+01	2.89E+00	4.51E+01	2.89E+01	2.89E+02	2.89E+02
XXIB	Ra-228	1.83E+01	6.84E+04	8.91E+00	3.92E-03	0.00E+00	1.16E+00		1.24E+00	8.91E-02	2.05E+00	8.91E-01	8.91E+00	8.91E+00
	Th-228	1.83E+01	2.99E+06	4.88E+00	9.07E-02	0.00E+00	1.36E-02		6.33E-02	4.97E-02	5.11E-01	4.97E-01	4.97E+00	4.97E+00
	Th-232+D	1.83E+01	2.99E+06	2.53E+02	1.99E+01	0.00E+00	1.50E+01		1.78E+01	2.73E+00	4.24E+01	2.73E+01	2.73E+02	2.73E+02
	Total			2.67E+02	2.00E+01	0.00E+00	1.62E+01		1.91E+01	2.87E+00	4.49E+01	2.87E+01	2.87E+02	2.87E+02
XXIC	Ra-228	1.83E+01	6.03E+03	8.77E+00	3.86E-03	0.00E+00	1.15E+00		1.24E+00	8.77E-02	2.03E+00	8.77E-01	8.77E+00	8.77E+00
	Th-228	1.83E+01	2.63E+05	4.88E+00	9.07E-02	0.00E+00	1.36E-02		6.33E-02	4.97E-02	5.11E-01	4.97E-01	4.97E+00	4.97E+00
	Th-232+D	1.83E+01	2.63E+05	2.49E+02	1.98E+01	0.00E+00	1.50E+01		1.77E+01	2.69E+00	4.19E+01	2.69E+01	2.69E+02	2.69E+02
	Total			2.63E+02	1.99E+01	0.00E+00	1.62E+01		1.90E+01	2.83E+00	4.44E+01	2.83E+01	2.83E+02	2.83E+02
XXII	U-234	1.71E+01	1.40E+02	1.08E-01	7.17E+00	0.00E+00	1.39E+02	2.32E-01	1.39E+02	7.51E-02	1.39E+02	7.51E-01	7.51E+00	1.05E+01
	U-235	8.01E-01	1.40E+02	2.88E+00	3.10E-01	0.00E+00	6.25E+00		6.29E+00	3.19E-02	6.57E+00	3.19E-01	3.19E+00	4.47E+00
	U-238+D	1.71E+01	1.40E+02	8.72E+00	6.61E+00	0.00E+00	1.33E+02		1.33E+02	1.53E-01	1.35E+02	1.53E+00	1.53E+01	2.15E+01
	Ra-226+D	3.16E+00	1.99E+03	7.93E+02	1.18E+00	0.00E+00	2.45E+03	6.77E+03	2.53E+03	7.57E+01	3.21E+03	7.57E+02	7.57E+03	1.06E+04
	Ra-228	1.92E+01	1.99E+03	2.46E+02	1.08E-01	0.00E+00	3.24E+01		3.48E+01	2.47E+00	5.70E+01	2.47E+01	2.47E+02	3.45E+02
	Th-228	1.92E+01	1.27E+04	1.37E+02	2.55E+00	0.00E+00	3.83E-01		1.78E+00	1.39E+00	1.43E+01	1.39E+01	1.39E+02	1.95E+02
	Th-232	1.92E+01	1.27E+04	6.86E+03	5.44E+02	0.00E+00	4.20E+02		4.94E+02	7.41E+01	1.16E+03	7.41E+02	7.41E+03	1.04E+04
Total			8.05E+03	5.62E+02	0.00E+00	3.18E+03	6.77E+03	3.34E+03	1.54E+02	4.72E+03	1.54E+03	1.54E+04	2.15E+04	

- (a) Based on 1,000 people/km²
- (b) Based on 10 people/km²
- (c) Based on 100 people/km²
- (d) Based on site specific data

Table N-2. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)						Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
				Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)						
I	Cs-137	1.91E+01	1.49E+05	2.19E+04	2.31E-01	0.00E+00	4.72E+02		6.91E+02	2.19E+02	2.66E+03	2.19E+03	2.19E+04	2.66E+03
	Total			2.19E+04	2.31E-01	0.00E+00	4.72E+02		6.91E+02	2.19E+02	2.66E+03	2.19E+03	2.19E+04	2.66E+03
II-1	Ra-226+D	5.43E+01	4.65E+05	1.33E+06	1.99E+03	0.00E+00	5.72E+06	2.59E+06	5.76E+06	3.92E+04	6.11E+06	3.92E+05	3.92E+06	3.92E+06
	Ra-228	2.69E+00	4.65E+05	3.79E+02	1.67E-01	0.00E+00	2.71E+01		3.09E+01	3.79E+00	6.50E+01	3.79E+01	3.79E+02	3.79E+02
	Th-228	2.69E+00	2.96E+05	2.03E+02	3.83E+00	0.00E+00	3.20E-01		2.39E+00	2.07E+00	2.10E+01	2.07E+01	2.07E+02	2.07E+02
	Th-230	5.40E+01	2.96E+05	2.91E+05	2.62E+04	0.00E+00	4.57E+05	5.95E+05	4.66E+05	9.12E+03	5.48E+05	9.12E+04	9.12E+05	9.12E+05
	Th-232+D	9.66E-01	2.96E+05	3.81E+04	2.76E+03	0.00E+00	1.33E+03		1.74E+03	4.08E+02	5.42E+03	4.08E+03	4.08E+04	4.08E+04
	U-234+D	7.07E+01	8.17E+04	1.15E+03	1.08E+04	0.00E+00	4.83E+04	2.41E+03	4.85E+04	1.43E+02	4.97E+04	1.43E+03	1.43E+04	1.43E+04
	U-235	1.14E+00	8.17E+04	1.47E+03	1.59E+02	0.00E+00	7.22E+02		7.38E+02	1.63E+01	8.85E+02	1.63E+02	1.63E+03	1.63E+03
	U-238+D	3.11E+01	8.17E+04	5.68E+03	4.31E+03	0.00E+00	1.96E+04		1.97E+04	1.00E+02	2.06E+04	1.00E+03	1.00E+04	1.00E+04
Total				1.67E+06	4.62E+04	0.00E+00	6.24E+06	3.19E+06	6.29E+06	4.90E+04	6.73E+06	4.90E+05	4.90E+06	4.90E+06
II-2	U-234+D	2.52E+02	8.60E+04	5.16E+03	1.08E+05	0.00E+00	4.83E+04	2.41E+03	4.95E+04	1.15E+03	5.98E+04	1.15E+04	1.15E+05	1.15E+05
	U-235	4.08E+00	8.60E+04	1.00E+04	1.59E+03	0.00E+00	7.22E+02		8.38E+02	1.16E+02	1.88E+03	1.16E+03	1.16E+04	1.16E+04
	U-238+D	1.11E+02	8.60E+04	2.70E+04	4.31E+04	0.00E+00	1.96E+04		2.03E+04	7.02E+02	2.66E+04	7.02E+03	7.02E+04	7.02E+04
	Total			4.22E+04	1.52E+05	0.00E+00	6.87E+04	2.41E+03	7.06E+04	1.97E+03	8.83E+04	1.97E+04	1.97E+05	1.97E+05
III	Cs-137	9.89E+00	2.00E+06	9.80E+03	1.03E-01	0.00E+00	1.98E+02		2.96E+02	9.80E+01	1.18E+03	9.80E+02	9.80E+03	1.18E+03
	Total			9.80E+03	1.03E-01	0.00E+00	1.98E+02		2.96E+02	9.80E+01	1.18E+03	9.80E+02	9.80E+03	1.18E+03
IV	U-234+D	3.24E+02	1.48E+04	6.02E+01	2.03E+03	0.00E+00	5.04E+03	3.18E+02	5.06E+03	2.40E+01	5.28E+03	2.40E+02	2.40E+03	5.52E+03
	U-235	1.52E+01	1.48E+04	7.38E+02	8.69E+01	0.00E+00	2.21E+02		2.29E+02	8.25E+00	3.03E+02	8.25E+01	8.25E+02	3.86E+02
	U-238+D	3.24E+02	1.48E+04	1.83E+03	1.85E+03	0.00E+00	4.70E+03		4.74E+03	3.68E+01	5.07E+03	3.68E+02	3.68E+03	5.44E+03
	Total			2.63E+03	3.96E+03	0.00E+00	9.96E+03	3.18E+02	1.00E+04	6.91E+01	1.07E+04	6.91E+02	6.91E+03	1.13E+04
V	Cs-137	1.07E+03	2.39E+04	6.01E+05	6.33E+00	0.00E+00	1.31E+04		1.91E+04	6.02E+03	7.32E+04	6.02E+04	6.02E+05	7.32E+04
	Total			6.01E+05	6.33E+00	0.00E+00	1.31E+04		1.91E+04	6.02E+03	7.32E+04	6.02E+04	6.02E+05	7.32E+04
VI	Cs-137	8.63E+01	2.07E+05	3.29E+04	3.36E-01	0.00E+00	6.68E+02		9.98E+02	3.29E+02	3.96E+03	3.29E+03	3.29E+04	1.06E+04
	U-234	1.22E+03	3.31E+04	1.54E+04	3.10E+05	0.00E+00	1.47E+05	7.35E+03	1.50E+05	3.33E+03	1.80E+05	3.33E+04	3.33E+05	2.47E+05
	U-235	5.75E+01	3.31E+04	8.63E+04	1.33E+04	0.00E+00	6.41E+03		7.40E+03	9.96E+02	1.64E+04	9.96E+03	9.96E+04	3.63E+04
	U-238+D	1.22E+03	3.31E+04	1.83E+05	2.83E+05	0.00E+00	1.36E+05		1.41E+05	4.66E+03	1.83E+05	4.66E+04	4.66E+05	2.76E+05
	Total			3.18E+05	6.07E+05	0.00E+00	2.90E+05	7.35E+03	3.00E+05	9.32E+03	3.83E+05	9.32E+04	9.32E+05	5.70E+05

Table N-2. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
 FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)						Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
				Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)						
VII	Pu-239	5.06E+01	1.65E+09	5.58E+03	3.95E+06	0.00E+00	7.24E+04		1.12E+05	3.96E+04	4.68E+05	3.96E+05	3.96E+06	1.12E+05
	Cs-137	8.95E-01	8.42E+08	2.07E+04	1.94E-01	0.00E+00	4.36E+02		6.43E+02	2.07E+02	2.51E+03	2.07E+03	2.07E+04	6.43E+02
	Am-241	8.44E+00	5.71E+09	3.13E+04	3.40E+05	0.00E+00	3.55E+04		3.92E+04	3.71E+03	7.26E+04	3.71E+04	3.71E+05	3.92E+04
	Total			5.76E+04	4.29E+06	0.00E+00	1.08E+05		1.52E+05	4.35E+04	5.43E+05	4.35E+05	4.35E+06	1.52E+05
IX	Pu-239	9.47E+00	2.39E+05	1.01E+01	7.75E+03	0.00E+00	1.23E+02		2.00E+02	7.76E+01	8.99E+02	7.76E+02	7.76E+03	1.68E+03
	Am-241	1.58E+00	2.67E+06	5.87E+01	6.86E+02	0.00E+00	6.03E+01		6.77E+01	7.45E+00	1.35E+02	7.45E+01	7.45E+02	2.09E+02
	Total			6.88E+01	8.44E+03	0.00E+00	1.83E+02		2.68E+02	8.51E+01	1.03E+03	8.51E+02	8.51E+03	1.88E+03
X	Tc-99	8.16E+03	6.21E+00	1.18E-05	4.19E-05	1.38E+03	4.77E+01		1.43E+03	1.38E+03	1.43E+03	1.38E+03	1.38E+03	1.43E+03
	U-234+D	2.80E+02	5.76E+02	2.05E-01	2.35E+00	8.60E+03	8.70E+01	5.14E+01	8.69E+03	8.61E+03	8.70E+03	8.61E+03	8.66E+03	8.70E+03
	U-238+D	2.80E+02	5.76E+02	2.81E+00	2.13E+00	7.96E+03	7.77E+01		8.04E+03	7.96E+03	8.04E+03	7.96E+03	7.97E+03	8.04E+03
	Total			3.02E+00	4.48E+00	1.80E+04	2.12E+02	5.14E+01	1.82E+04	1.80E+04	1.82E+04	1.80E+04	1.80E+04	1.82E+04
XII	Pu-239	1.27E+03	1.25E+04	2.20E+00	1.23E+03	0.00E+00	1.03E+03		1.04E+03	1.23E+01	1.15E+03	1.23E+02	1.23E+03	1.23E+03
	Am-241	2.12E+02	4.33E+04	3.36E+01	2.96E+02	0.00E+00	6.44E+02		6.47E+02	3.29E+00	6.77E+02	3.29E+01	3.29E+02	3.29E+02
	Total			3.58E+01	1.52E+03	0.00E+00	1.67E+03		1.68E+03	1.56E+01	1.83E+03	1.56E+02	1.56E+03	1.56E+03
XIII	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XVIA	Co-60	3.63E+01	4.29E+05	1.86E+01	1.21E-04	0.00E+00	1.79E-02		2.04E-01	1.86E-01	1.88E+00	1.86E+00	1.86E+01	3.75E+00
	Cs-137+D	2.89E+01	8.59E+05	1.97E+01	1.16E-04	0.00E+00	6.70E-01		8.67E-01	1.97E-01	2.64E+00	1.97E+00	1.97E+01	4.61E+00
	Total			3.84E+01	2.37E-04	0.00E+00	6.88E-01		1.07E+00	3.84E-01	4.52E+00	3.84E+00	3.84E+01	8.36E+00
XVIB	Co-60	3.63E+01	6.09E+04	1.85E+01	1.20E-04	0.00E+00	1.79E-02		2.03E-01	1.85E-01	1.87E+00	1.85E+00	1.85E+01	3.72E+00
	Cs-137+D	2.89E+01	1.22E+05	1.93E+01	1.14E-04	0.00E+00	6.68E-01		8.61E-01	1.93E-01	2.60E+00	1.93E+00	1.93E+01	4.53E+00
	Total			3.78E+01	2.34E-04	0.00E+00	6.86E-01		1.06E+00	3.78E-01	4.47E+00	3.78E+00	3.78E+01	8.25E+00

Table N-2. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	1.82E+01	1.18E-04	0.00E+00	1.79E-02		2.00E-01	1.82E-01	1.84E+00	1.82E+00	1.82E+01	3.66E+00
	Cs-137+D	2.89E+01	1.07E+04	1.85E+01	1.09E-04	0.00E+00	6.63E-01		8.48E-01	1.85E-01	2.51E+00	1.85E+00	1.85E+01	4.36E+00
	Total			3.67E+01	2.27E-04	0.00E+00	6.81E-01		1.05E+00	3.67E-01	4.35E+00	3.67E+00	3.67E+01	8.02E+00
XVIII A	Cs-137+D	3.54E+02	8.59E+05	1.14E+02	6.72E-04	0.00E+00	3.87E+00		5.01E+00	1.14E+00	1.53E+01	1.14E+01	1.14E+02	1.14E+02
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	1.63E-02	0.00E+00	7.85E+01		7.85E+01	1.63E-04	7.85E+01	1.63E-03	1.63E-02	1.63E-02
	Total			1.14E+02	1.70E-02	0.00E+00	8.24E+01		8.35E+01	1.14E+00	9.38E+01	1.14E+01	1.14E+02	1.14E+02
XVIII B	Cs-137+D	3.54E+02	1.22E+05	1.12E+02	6.59E-04	0.00E+00	3.86E+00		4.97E+00	1.12E+00	1.50E+01	1.12E+01	1.12E+02	1.12E+02
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	1.08E-02	0.00E+00	6.97E+01		6.97E+01	1.08E-04	6.97E+01	1.08E-03	1.08E-02	1.08E-02
	Total			1.12E+02	1.14E-02	0.00E+00	7.35E+01		7.46E+01	1.12E+00	8.47E+01	1.12E+01	1.12E+02	1.12E+02
XVIII C	Cs-137+D	3.54E+02	3.22E+04	1.07E+02	6.31E-04	0.00E+00	3.83E+00		4.89E+00	1.07E+00	1.45E+01	1.07E+01	1.07E+02	1.07E+02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	6.11E-03	1.71E-06	5.57E+01		5.57E+01	6.28E-05	5.57E+01	6.13E-04	6.11E-03	6.11E-03
	Total			1.07E+02	6.74E-03	1.71E-06	5.95E+01		6.06E+01	1.07E+00	7.02E+01	1.07E+01	1.07E+02	1.07E+02
XXA	U-234+D	4.37E+01	8.57E+04	1.91E+00	1.32E+01	0.00E+00	1.63E+02	9.84E+00	1.63E+02	2.50E-01	1.65E+02	2.50E+00	2.50E+01	1.68E+02
	U-235	1.46E+00	8.57E+04	3.72E+00	4.01E-01	0.00E+00	5.00E+00		5.04E+00	4.12E-02	5.42E+00	4.12E-01	4.12E+00	5.83E+00
	U-238+D	7.51E+00	8.57E+04	2.73E+00	2.07E+00	0.00E+00	2.58E+01		2.59E+01	4.80E-02	2.63E+01	4.80E-01	4.80E+00	2.68E+01
	Total			8.36E+00	1.57E+01	0.00E+00	1.94E+02	9.84E+00	1.94E+02	3.39E-01	1.97E+02	3.39E+00	3.39E+01	2.01E+02
XXB	U-234+D	2.54E+01	1.21E+04	5.01E-01	3.39E+00	0.00E+00	6.83E+01	5.49E+00	6.84E+01	9.38E-02	6.93E+01	9.38E-01	9.38E+00	7.02E+01
	U-235	8.40E-01	1.21E+04	9.41E-01	1.01E-01	0.00E+00	2.07E+00		2.08E+00	1.04E-02	2.17E+00	1.04E-01	1.04E+00	2.28E+00
	U-238+D	4.36E+00	1.21E+04	6.94E-01	5.26E-01	0.00E+00	1.07E+01		1.07E+01	1.22E-02	1.08E+01	1.22E-01	1.22E+00	1.10E+01
	Total			2.14E+00	4.02E+00	0.00E+00	8.11E+01	5.49E+00	8.12E+01	1.16E-01	8.23E+01	1.16E+00	1.16E+01	8.35E+01
XXC	U-234+D	2.54E+01	1.07E+03	1.69E-01	1.49E+00	0.00E+00	3.86E+01	5.02E+00	3.87E+01	6.68E-02	3.93E+01	6.68E-01	6.68E+00	4.00E+01
	U-235	8.40E-01	1.07E+03	4.14E-01	4.46E-02	0.00E+00	1.16E+00		1.16E+00	4.58E-03	1.20E+00	4.58E-02	4.58E-01	1.25E+00
	U-238+D	4.36E+00	1.07E+03	3.05E-01	2.31E-01	0.00E+00	6.01E+00		6.01E+00	5.36E-03	6.06E+00	5.36E-02	5.36E-01	6.11E+00
	Total			8.88E-01	1.77E+00	0.00E+00	4.58E+01	5.02E+00	4.59E+01	7.67E-02	4.66E+01	7.67E-01	7.67E+00	4.73E+01

Table N-2. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)					Indoor Radon Inhalation (a)		Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
				Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)		
XXIA	Ra-228	1.83E+01	4.82E+05	8.97E+00	3.94E-03	0.00E+00	1.16E+00			1.25E+00	8.97E-02	2.05E+00	8.97E-01	8.97E+00	8.97E+00	
	Th-228	1.83E+01	2.10E+07	4.88E+00	9.07E-02	0.00E+00	1.36E-02			6.33E-02	4.97E-02	5.11E-01	4.97E-01	4.97E+00	4.97E+00	
	Th-232+D	1.83E+01	2.10E+07	2.79E+03	2.01E+02	0.00E+00	1.61E+02			1.91E+02	2.99E+01	4.60E+02	2.99E+02	2.99E+03	2.99E+03	
	Total			2.80E+03	2.01E+02	0.00E+00	1.62E+02			1.92E+02	3.00E+01	4.63E+02	3.00E+02	3.00E+03	3.00E+03	
XXIB	Ra-228	1.83E+01	6.84E+04	8.91E+00	3.92E-03	0.00E+00	1.16E+00			1.24E+00	8.91E-02	2.05E+00	8.91E-01	8.91E+00	8.91E+00	
	Th-228	1.83E+01	2.99E+06	4.88E+00	9.07E-02	0.00E+00	1.36E-02			6.33E-02	4.97E-02	5.11E-01	4.97E-01	4.97E+00	4.97E+00	
	Th-232+D	1.83E+01	2.99E+06	2.74E+03	1.99E+02	0.00E+00	1.61E+02			1.90E+02	2.94E+01	4.55E+02	2.94E+02	2.94E+03	2.94E+03	
	Total			2.76E+03	1.99E+02	0.00E+00	1.62E+02			1.91E+02	2.96E+01	4.58E+02	2.96E+02	2.96E+03	2.96E+03	
XXIC	Ra-228	1.83E+01	6.03E+03	8.77E+00	3.86E-03	0.00E+00	1.15E+00			1.24E+00	8.77E-02	2.03E+00	8.77E-01	8.77E+00	8.77E+00	
	Th-228	1.83E+01	2.63E+05	4.88E+00	9.07E-02	0.00E+00	1.36E-02			6.33E-02	4.97E-02	5.11E-01	4.97E-01	4.97E+00	4.97E+00	
	Th-232+D	1.83E+01	2.63E+05	2.65E+03	1.94E+02	0.00E+00	1.60E+02			1.88E+02	2.84E+01	4.44E+02	2.84E+02	2.84E+03	2.84E+03	
	Total			2.66E+03	1.94E+02	0.00E+00	1.61E+02			1.89E+02	2.85E+01	4.46E+02	2.85E+02	2.85E+03	2.85E+03	
XXII	U-234	1.71E+01	1.40E+02	7.49E-01	7.34E+00	2.54E+04	2.72E+02	1.53E+02		2.57E+04	2.54E+04	2.57E+04	2.55E+04	2.56E+04	2.57E+04	
	U-235	8.01E-01	1.40E+02	2.90E+00	3.13E-01	1.13E+03	1.14E+01			1.14E+03	1.13E+03	1.14E+03	1.13E+03	1.13E+03	1.14E+03	
	U-238+D	1.71E+01	1.40E+02	8.80E+00	6.67E+00	2.41E+04	2.43E+02			2.43E+04	2.41E+04	2.43E+04	2.41E+04	2.41E+04	2.41E+04	
	Ra-226+D	3.16E+00	1.99E+03	2.46E+03	3.66E+00	0.00E+00	2.60E+04	5.39E+04		2.65E+04	5.63E+02	3.16E+04	5.63E+03	5.63E+04	7.89E+04	
	Ra-228	1.92E+01	1.99E+03	2.46E+02	1.08E-01	0.00E+00	3.24E+01			3.48E+01	2.47E+00	5.70E+01	2.47E+01	2.47E+02	3.45E+02	
	Th-228	1.92E+01	1.27E+04	1.37E+02	2.55E+00	0.00E+00	3.83E-01			1.78E+00	1.39E+00	1.43E+01	1.39E+01	1.39E+02	1.95E+02	
	Th-232	1.92E+01	1.27E+04	6.02E+04	4.41E+03	0.00E+00	4.33E+03			4.97E+03	6.46E+02	1.08E+04	6.46E+03	6.46E+04	9.04E+04	
Total			6.30E+04	4.43E+03	5.07E+04	3.08E+04	5.40E+04		8.27E+04	5.19E+04	9.37E+04	6.28E+04	1.72E+05	2.21E+05		

- (a) Based on 1,000 people/km²
- (b) Based on 10 people/km²
- (c) Based on 100 people/km²
- (d) Based on site specific data

Table N-3. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	2.19E+04	2.31E-01	0.00E+00	4.72E+02		6.91E+02	2.19E+02	2.66E+03	2.19E+03	2.19E+04	2.66E+03
	Total			2.19E+04	2.31E-01	0.00E+00	4.72E+02		6.91E+02	2.19E+02	2.66E+03	2.19E+03	2.19E+04	2.66E+03
II-1	Ra-226+D	5.43E+01	4.65E+05	3.05E+06	4.57E+03	0.00E+00	5.72E+06	7.22E+06	5.82E+06	1.03E+05	6.75E+06	1.03E+06	1.03E+07	1.03E+07
	Ra-228	2.69E+00	4.65E+05	3.79E+02	1.67E-01	0.00E+00	2.71E+01		3.09E+01	3.79E+00	6.50E+01	3.79E+01	3.79E+02	3.79E+02
	Th-228	2.69E+00	2.96E+05	2.03E+02	3.83E+00	0.00E+00	3.20E-01		2.39E+00	2.07E+00	2.10E+01	2.07E+01	2.07E+02	2.07E+02
	Th-230	5.40E+01	2.96E+05	4.89E+06	1.22E+05	0.00E+00	1.61E+07	2.29E+07	1.63E+07	2.79E+05	1.89E+07	2.79E+06	2.79E+07	2.79E+07
	Th-232+D	9.66E-01	2.96E+05	1.76E+05	1.27E+04	0.00E+00	1.15E+04		1.34E+04	1.89E+03	3.04E+04	1.89E+04	1.89E+05	1.89E+05
	U-234+D	7.07E+01	8.17E+04	6.84E+04	2.14E+04	0.00E+00	8.72E+05	1.07E+06	8.84E+05	1.16E+04	9.88E+05	1.16E+05	1.16E+06	1.16E+06
	U-235	1.14E+00	8.17E+04	2.73E+03	2.94E+02	0.00E+00	4.32E+03		4.35E+03	3.02E+01	4.62E+03	3.02E+02	3.02E+03	3.02E+03
	U-238+D	3.11E+01	8.17E+04	1.05E+04	8.00E+03	0.00E+00	1.17E+05		1.18E+05	1.85E+02	1.19E+05	1.85E+03	1.85E+04	1.85E+04
Total			8.20E+06	1.69E+05	0.00E+00	2.28E+07	3.12E+07	2.32E+07	3.95E+05	2.67E+07	3.95E+06	3.95E+07	3.95E+07	
II-2	U-234+D	2.52E+02	8.60E+04	2.83E+05	2.14E+05	0.00E+00	8.72E+05	1.07E+06	8.88E+05	1.56E+04	1.03E+06	1.56E+05	1.56E+06	1.56E+06
	U-235	4.08E+00	8.60E+04	1.86E+04	2.94E+03	0.00E+00	4.32E+03		4.54E+03	2.15E+02	6.47E+03	2.15E+03	2.15E+04	2.15E+04
	U-238+D	1.11E+02	8.60E+04	5.01E+04	8.00E+04	0.00E+00	1.17E+05		1.19E+05	1.30E+03	1.30E+05	1.30E+04	1.30E+05	1.30E+05
	Total			3.52E+05	2.97E+05	0.00E+00	9.94E+05	1.07E+06	1.01E+06	1.71E+04	1.17E+06	1.71E+05	1.71E+06	1.71E+06
III	Cs-137	9.89E+00	2.00E+06	9.80E+03	1.03E-01	0.00E+00	1.98E+02		2.96E+02	9.80E+01	1.18E+03	9.80E+02	9.80E+03	1.18E+03
	Total			9.80E+03	1.03E-01	0.00E+00	1.98E+02		2.96E+02	9.80E+01	1.18E+03	9.80E+02	9.80E+03	1.18E+03
IV	U-234+D	3.24E+02	1.48E+04	8.97E+01	2.05E+03	0.00E+00	1.27E+04	7.06E+04	1.34E+04	7.27E+02	2.00E+04	7.27E+03	7.27E+04	2.73E+04
	U-235	1.52E+01	1.48E+04	7.42E+02	8.73E+01	0.00E+00	3.82E+02		3.90E+02	8.29E+00	4.65E+02	8.29E+01	8.29E+02	5.48E+02
	U-238+D	3.24E+02	1.48E+04	1.84E+03	1.86E+03	0.00E+00	8.13E+03		8.17E+03	3.70E+01	8.50E+03	3.70E+02	3.70E+03	8.87E+03
	Total			2.67E+03	4.00E+03	0.00E+00	2.12E+04	7.06E+04	2.20E+04	7.73E+02	2.90E+04	7.73E+03	7.73E+04	3.67E+04
V	Cs-137	1.07E+03	2.39E+04	6.01E+05	6.33E+00	0.00E+00	1.31E+04		1.91E+04	6.02E+03	7.32E+04	6.02E+04	6.02E+05	7.32E+04
	Total			6.01E+05	6.33E+00	0.00E+00	1.31E+04		1.91E+04	6.02E+03	7.32E+04	6.02E+04	6.02E+05	7.32E+04
VI	Cs-137	8.63E+01	2.07E+05	3.29E+04	3.36E-01	0.00E+00	6.68E+02		9.98E+02	3.29E+02	3.96E+03	3.29E+03	3.29E+04	1.06E+04
	U-234	1.22E+03	3.31E+04	8.02E+05	6.01E+05	0.00E+00	2.62E+06	3.24E+06	2.66E+06	4.65E+04	3.08E+06	4.65E+05	4.65E+06	4.01E+06
	U-235	5.75E+01	3.31E+04	1.56E+05	2.41E+04	0.00E+00	3.77E+04		3.95E+04	1.80E+03	5.57E+04	1.80E+04	1.80E+05	9.17E+04
	U-238+D	1.22E+03	3.31E+04	3.31E+05	5.12E+05	0.00E+00	8.00E+05		8.09E+05	8.43E+03	8.85E+05	8.43E+04	8.43E+05	1.05E+06
	Total			1.32E+06	1.14E+06	0.00E+00	3.45E+06	3.24E+06	3.51E+06	5.70E+04	4.02E+06	5.70E+05	5.70E+06	5.16E+06

Table N-3. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)						Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
				Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)						
VII	Pu-239	5.06E+01	1.65E+09	4.91E+04	3.48E+07	0.00E+00	6.38E+05		9.86E+05	3.48E+05	4.12E+06	3.48E+06	3.48E+07	9.86E+05
	Cs-137	8.95E-01	8.42E+08	2.07E+04	1.94E-01	0.00E+00	4.36E+02		6.43E+02	2.07E+02	2.51E+03	2.07E+03	2.07E+04	6.43E+02
	Am-241	8.44E+00	5.71E+09	3.92E+04	4.26E+05	0.00E+00	4.44E+04		4.91E+04	4.65E+03	9.09E+04	4.65E+04	4.65E+05	4.91E+04
	Total			1.09E+05	3.52E+07	0.00E+00	6.83E+05		1.04E+06	3.53E+05	4.21E+06	3.53E+06	3.53E+07	1.04E+06
IX	Pu-239	9.47E+00	2.39E+05	6.95E+01	5.32E+04	0.00E+00	1.03E+03		1.57E+03	5.33E+02	6.36E+03	5.33E+03	5.33E+04	1.17E+04
	Am-241	1.58E+00	2.67E+06	7.34E+01	8.58E+02	0.00E+00	7.55E+01		8.48E+01	9.32E+00	1.69E+02	9.32E+01	9.32E+02	2.62E+02
	Total			1.43E+02	5.41E+04	0.00E+00	1.11E+03		1.65E+03	5.42E+02	6.53E+03	5.42E+03	5.42E+04	1.19E+04
X	Tc-99	8.16E+03	6.21E+00	1.18E-05	4.19E-05	1.38E+03	4.77E+01		1.43E+03	1.38E+03	1.43E+03	1.38E+03	1.38E+03	1.43E+03
	U-234+D	2.80E+02	5.76E+02	4.74E-01	2.39E+00	9.94E+03	1.88E+02	3.66E+03	1.02E+04	9.97E+03	1.05E+04	1.03E+04	1.36E+04	1.05E+04
	U-238+D	2.80E+02	5.76E+02	2.81E+00	2.13E+00	9.14E+03	7.77E+01		9.22E+03	9.14E+03	9.22E+03	9.14E+03	9.14E+03	9.22E+03
	Total			3.29E+00	4.52E+00	2.05E+04	3.14E+02	3.66E+03	2.08E+04	2.05E+04	2.11E+04	2.08E+04	2.41E+04	2.11E+04
XII	Pu-239	1.27E+03	1.25E+04	2.24E+00	1.25E+03	0.00E+00	2.01E+03		2.02E+03	1.25E+01	2.13E+03	1.25E+02	1.25E+03	1.25E+03
	Am-241	2.12E+02	4.33E+04	3.58E+01	3.15E+02	0.00E+00	7.72E+02		7.75E+02	3.51E+00	8.07E+02	3.51E+01	3.51E+02	3.51E+02
	Total			3.80E+01	1.56E+03	0.00E+00	2.78E+03		2.79E+03	1.60E+01	2.94E+03	1.60E+02	1.60E+03	1.60E+03
XIII	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XVIA	Co-60	3.63E+01	4.29E+05	1.86E+01	1.21E-04	0.00E+00	1.79E-02		2.04E-01	1.86E-01	1.88E+00	1.86E+00	1.86E+01	3.75E+00
	Cs-137+D	2.89E+01	8.59E+05	1.97E+01	1.16E-04	0.00E+00	6.70E-01		8.67E-01	1.97E-01	2.64E+00	1.97E+00	1.97E+01	4.61E+00
	Total			3.84E+01	2.37E-04	0.00E+00	6.88E-01		1.07E+00	3.84E-01	4.52E+00	3.84E+00	3.84E+01	8.36E+00
XVIB	Co-60	3.63E+01	6.09E+04	1.85E+01	1.20E-04	0.00E+00	1.79E-02		2.03E-01	1.85E-01	1.87E+00	1.85E+00	1.85E+01	3.72E+00
	Cs-137+D	2.89E+01	1.22E+05	1.93E+01	1.14E-04	0.00E+00	6.68E-01		8.61E-01	1.93E-01	2.60E+00	1.93E+00	1.93E+01	4.53E+00
	Total			3.78E+01	2.34E-04	0.00E+00	6.86E-01		1.06E+00	3.78E-01	4.47E+00	3.78E+00	3.78E+01	8.25E+00

Table N-3. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	1.82E+01	1.18E-04	0.00E+00	1.79E-02		2.00E-01	1.82E-01	1.84E+00	1.82E+00	1.82E+01	3.66E+00
	Cs-137+D	2.89E+01	1.07E+04	1.85E+01	1.09E-04	0.00E+00	6.63E-01		8.48E-01	1.85E-01	2.51E+00	1.85E+00	1.85E+01	4.36E+00
	Total			3.67E+01	2.27E-04	0.00E+00	6.81E-01		1.05E+00	3.67E-01	4.35E+00	3.67E+00	3.67E+01	8.02E+00
XVIII A	Cs-137+D	3.54E+02	8.59E+05	1.14E+02	6.72E-04	0.00E+00	3.87E+00		5.01E+00	1.14E+00	1.53E+01	1.14E+01	1.14E+02	1.14E+02
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	1.63E-02	0.00E+00	7.85E+01		7.85E+01	1.63E-04	7.85E+01	1.63E-03	1.63E-02	1.63E-02
	Total			1.14E+02	1.70E-02	0.00E+00	8.24E+01		8.35E+01	1.14E+00	9.38E+01	1.14E+01	1.14E+02	1.14E+02
XVIII B	Cs-137+D	3.54E+02	1.22E+05	1.12E+02	6.59E-04	0.00E+00	3.86E+00		4.97E+00	1.12E+00	1.50E+01	1.12E+01	1.12E+02	1.12E+02
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	1.08E-02	9.16E-29	6.97E+01		6.97E+01	1.08E-04	6.97E+01	1.08E-03	1.08E-02	1.08E-02
	Total			1.12E+02	1.14E-02	9.16E-29	7.35E+01		7.46E+01	1.12E+00	8.47E+01	1.12E+01	1.12E+02	1.12E+02
XVIII C	Cs-137+D	3.54E+02	3.22E+04	1.07E+02	6.31E-04	0.00E+00	3.83E+00		4.89E+00	1.07E+00	1.45E+01	1.07E+01	1.07E+02	1.07E+02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	6.11E-03	1.71E-06	5.57E+01		5.57E+01	6.28E-05	5.57E+01	6.13E-04	6.11E-03	6.11E-03
	Total			1.07E+02	6.74E-03	1.71E-06	5.95E+01		6.06E+01	1.07E+00	7.02E+01	1.07E+01	1.07E+02	1.07E+02
XXA	U-234+D	4.37E+01	8.57E+04	5.82E+01	1.61E+01	0.00E+00	1.44E+03	3.57E+03	1.47E+03	3.64E+01	1.80E+03	3.64E+02	3.64E+03	2.17E+03
	U-235	1.46E+00	8.57E+04	3.83E+00	4.12E-01	0.00E+00	1.12E+01		1.12E+01	4.24E-02	1.16E+01	4.24E-01	4.24E+00	1.20E+01
	U-238+D	7.51E+00	8.57E+04	2.81E+00	2.13E+00	0.00E+00	5.76E+01		5.76E+01	4.94E-02	5.81E+01	4.94E-01	4.94E+00	5.86E+01
	Total			6.48E+01	1.86E+01	0.00E+00	1.51E+03	3.57E+03	1.54E+03	3.65E+01	1.87E+03	3.65E+02	3.65E+03	2.24E+03
XXB	U-234+D	2.54E+01	1.21E+04	7.83E+00	3.93E+00	0.00E+00	3.40E+02	1.46E+03	3.54E+02	1.47E+01	4.87E+02	1.47E+02	1.47E+03	6.33E+02
	U-235	8.40E-01	1.21E+04	9.42E-01	1.01E-01	0.00E+00	2.75E+00		2.76E+00	1.04E-02	2.86E+00	1.04E-01	1.04E+00	2.96E+00
	U-238+D	4.36E+00	1.21E+04	6.94E-01	5.26E-01	0.00E+00	1.43E+01		1.43E+01	1.22E-02	1.44E+01	1.22E-01	1.22E+00	1.45E+01
	Total			9.47E+00	4.56E+00	0.00E+00	3.57E+02	1.46E+03	3.72E+02	1.47E+01	5.04E+02	1.47E+02	1.47E+03	6.51E+02
XXC	U-234+D	2.54E+01	1.07E+03	1.49E+00	1.68E+00	7.83E+02	1.20E+02	7.98E+02	9.10E+02	7.91E+02	9.82E+02	8.63E+02	1.58E+03	1.06E+03
	U-235	8.40E-01	1.07E+03	4.14E-01	4.46E-02	2.25E+01	1.21E+00		2.37E+01	2.25E+01	2.38E+01	2.25E+01	2.30E+01	2.38E+01
	U-238+D	4.36E+00	1.07E+03	3.05E-01	2.31E-01	1.17E+02	6.27E+00		1.23E+02	1.17E+02	1.23E+02	1.17E+02	1.17E+02	1.23E+02
	Total			2.21E+00	1.96E+00	9.22E+02	1.27E+02	7.98E+02	1.06E+03	9.30E+02	1.13E+03	1.00E+03	1.72E+03	1.21E+03

Table N-3. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	8.97E+00	3.94E-03	0.00E+00	1.16E+00		1.25E+00	8.97E-02	2.05E+00	8.97E-01	8.97E+00	8.97E+00
	Th-228	1.83E+01	2.10E+07	4.88E+00	9.07E-02	0.00E+00	1.36E-02		6.33E-02	4.97E-02	5.11E-01	4.97E-01	4.97E+00	4.97E+00
	Th-232+D	1.83E+01	2.10E+07	2.64E+04	1.89E+03	0.00E+00	1.60E+03		1.89E+03	2.83E+02	4.43E+03	2.83E+03	2.83E+04	2.83E+04
	Total			2.64E+04	1.89E+03	0.00E+00	1.61E+03		1.89E+03	2.83E+02	4.44E+03	2.83E+03	2.83E+04	2.83E+04
XXIB	Ra-228	1.83E+01	6.84E+04	8.91E+00	3.92E-03	0.00E+00	1.16E+00		1.24E+00	8.91E-02	2.05E+00	8.91E-01	8.91E+00	8.91E+00
	Th-228	1.83E+01	2.99E+06	4.88E+00	9.07E-02	0.00E+00	1.36E-02		6.33E-02	4.97E-02	5.11E-01	4.97E-01	4.97E+00	4.97E+00
	Th-232+D	1.83E+01	2.99E+06	2.39E+04	1.72E+03	0.00E+00	1.58E+03		1.83E+03	2.56E+02	4.14E+03	2.56E+03	2.56E+04	2.56E+04
	Total			2.39E+04	1.72E+03	0.00E+00	1.58E+03		1.83E+03	2.56E+02	4.14E+03	2.56E+03	2.56E+04	2.56E+04
XXIC	Ra-228	1.83E+01	6.03E+03	8.77E+00	3.86E-03	0.00E+00	1.15E+00		1.24E+00	8.77E-02	2.03E+00	8.77E-01	8.77E+00	8.77E+00
	Th-228	1.83E+01	2.63E+05	4.88E+00	9.07E-02	0.00E+00	1.36E-02		6.33E-02	4.97E-02	5.11E-01	4.97E-01	4.97E+00	4.97E+00
	Th-232+D	1.83E+01	2.63E+05	1.93E+04	1.41E+03	0.00E+00	1.52E+03		1.73E+03	2.07E+02	3.59E+03	2.07E+03	2.07E+04	2.07E+04
	Total			1.93E+04	1.41E+03	0.00E+00	1.52E+03		1.73E+03	2.07E+02	3.59E+03	2.07E+03	2.07E+04	2.07E+04
XXII	U-234	1.71E+01	1.40E+02	2.16E+00	7.52E+00	2.68E+04	6.61E+02	1.29E+04	2.76E+04	2.69E+04	2.87E+04	2.81E+04	3.97E+04	4.49E+04
	U-235	8.01E-01	1.40E+02	2.90E+00	3.13E-01	1.18E+03	1.14E+01		1.20E+03	1.19E+03	1.20E+03	1.19E+03	1.19E+03	1.19E+03
	U-238+D	1.71E+01	1.40E+02	8.80E+00	6.67E+00	2.52E+04	2.43E+02		2.55E+04	2.53E+04	2.55E+04	2.53E+04	2.53E+04	2.53E+04
	Ra-226+D	3.16E+00	1.99E+03	2.51E+03	3.74E+00	2.26E+04	2.60E+04	1.30E+05	4.99E+04	2.39E+04	6.18E+04	3.58E+04	1.55E+05	2.08E+05
	Ra-228	1.92E+01	1.99E+03	2.46E+02	1.08E-01	0.00E+00	3.24E+01		3.48E+01	2.47E+00	5.70E+01	2.47E+01	2.47E+02	3.45E+02
	Th-228	1.92E+01	1.27E+04	1.37E+02	2.55E+00	0.00E+00	3.83E-01		1.78E+00	1.39E+00	1.43E+01	1.39E+01	1.39E+02	1.95E+02
	Th-232	1.92E+01	1.27E+04	1.48E+05	1.08E+04	0.00E+00	3.03E+04		3.19E+04	1.58E+03	4.62E+04	1.58E+04	1.58E+05	2.22E+05
Total			1.51E+05	1.08E+04	7.58E+04	5.72E+04	1.43E+05	1.36E+05	7.88E+04	1.63E+05	1.06E+05	3.80E+05	5.01E+05	

- (a) Based on 1,000 people/km²
- (b) Based on 10 people/km²
- (c) Based on 100 people/km²
- (d) Based on site specific data

Table N-4. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 100 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	7.89E+00	1.27E-04	0.00E+00	2.69E-01		3.48E-01	7.89E-02	1.06E+00	7.89E-01	7.89E+00	1.06E+00
	Total			7.89E+00	1.27E-04	0.00E+00	2.69E-01		3.48E-01	7.89E-02	1.06E+00	7.89E-01	7.89E+00	1.06E+00
II-1	Ra-226+D	5.43E+01	4.65E+05	6.95E+01	5.80E-02	0.00E+00	3.94E+01	9.72E+01	4.10E+01	1.67E+00	5.60E+01	1.67E+01	1.67E+02	1.67E+02
	Ra-228	2.69E+00	4.65E+05	1.43E-01	3.70E-05	0.00E+00	5.59E-03		7.03E-03	1.43E-03	1.99E-02	1.43E-02	1.43E-01	1.43E-01
	Th-228	2.69E+00	2.96E+05	8.87E-02	1.19E-03	0.00E+00	9.84E-05		9.98E-04	8.99E-04	9.09E-03	8.99E-03	8.99E-02	8.99E-02
	Th-230	5.40E+01	2.96E+05	1.50E+00	1.54E-01	0.00E+00	5.51E-01	2.11E+00	5.88E-01	3.76E-02	9.27E-01	3.76E-01	3.76E+00	3.76E+00
	Th-232+D	9.66E-01	2.96E+05	1.58E+00	1.69E-02	0.00E+00	2.34E-02		3.94E-02	1.59E-02	1.83E-01	1.59E-01	1.59E+00	1.59E+00
	U-234+D	7.07E+01	8.17E+04	8.68E-04	1.58E-01	0.00E+00	8.40E-01	8.31E-04	8.42E-01	1.60E-03	8.56E-01	1.60E-02	1.60E-01	1.60E-01
	U-235	1.14E+00	8.17E+04	5.72E-02	2.38E-03	0.00E+00	1.44E-02		1.49E-02	5.96E-04	2.03E-02	5.96E-03	5.96E-02	5.96E-02
	U-238+D	3.11E+01	8.17E+04	3.35E-01	6.19E-02	0.00E+00	5.14E-01		5.18E-01	3.97E-03	5.53E-01	3.97E-02	3.97E-01	3.97E-01
Total			7.32E+01	4.53E-01	0.00E+00	4.13E+01	9.93E+01	4.31E+01	1.73E+00	5.86E+01	1.73E+01	1.73E+02	1.73E+02	
II-2	U-234+D	2.52E+02	8.60E+04	4.42E-03	1.58E+00	0.00E+00	8.40E-01	8.31E-04	8.56E-01	1.58E-02	9.99E-01	1.58E-01	1.58E+00	1.58E+00
	U-235	4.08E+00	8.60E+04	3.89E-01	2.38E-02	0.00E+00	1.44E-02		1.85E-02	4.13E-03	5.57E-02	4.13E-02	4.13E-01	4.13E-01
	U-238+D	1.11E+02	8.60E+04	1.59E+00	6.19E-01	0.00E+00	5.14E-01		5.36E-01	2.21E-02	7.35E-01	2.21E-01	2.21E+00	2.21E+00
	Total			1.99E+00	2.22E+00	0.00E+00	1.37E+00	8.31E-04	1.41E+00	4.21E-02	1.79E+00	4.21E-01	4.21E+00	4.21E+00
III	Cs-137	9.89E+00	2.00E+06	3.47E+00	5.58E-05	0.00E+00	1.12E-01		1.47E-01	3.47E-02	4.59E-01	3.47E-01	3.47E+00	4.59E-01
	Total			3.47E+00	5.58E-05	0.00E+00	1.12E-01		1.47E-01	3.47E-02	4.59E-01	3.47E-01	3.47E+00	4.59E-01
IV	U-234+D	3.24E+02	1.48E+04	3.34E-04	8.74E-02	0.00E+00	1.19E-01	1.21E-04	1.20E-01	8.78E-04	1.28E-01	8.78E-03	8.78E-02	1.37E-01
	U-235	1.52E+01	1.48E+04	8.42E-02	3.82E-03	0.00E+00	5.93E-03		6.81E-03	8.80E-04	1.47E-02	8.80E-03	8.80E-02	2.35E-02
	U-238+D	3.24E+02	1.48E+04	3.17E-01	7.80E-02	0.00E+00	1.66E-01		1.70E-01	3.95E-03	2.06E-01	3.95E-02	3.95E-01	2.45E-01
	Total			4.02E-01	1.69E-01	0.00E+00	2.91E-01	1.21E-04	2.97E-01	5.71E-03	3.49E-01	5.71E-02	5.71E-01	4.06E-01
V	Cs-137	1.07E+03	2.39E+04	2.17E+02	3.49E-03	0.00E+00	7.46E+00		9.63E+00	2.17E+00	2.92E+01	2.17E+01	2.17E+02	2.92E+01
	Total			2.17E+02	3.49E-03	0.00E+00	7.46E+00		9.63E+00	2.17E+00	2.92E+01	2.17E+01	2.17E+02	2.92E+01
VI	Cs-137	8.63E+01	2.07E+05	1.16E+01	1.81E-04	0.00E+00	3.80E-01		4.96E-01	1.16E-01	1.54E+00	1.16E+00	1.16E+01	3.87E+00
	U-234	1.22E+03	3.31E+04	1.33E-02	4.61E+00	0.00E+00	2.57E+00	2.54E-03	2.61E+00	4.62E-02	3.03E+00	4.62E-01	4.62E+00	3.95E+00
	U-235	5.75E+01	3.31E+04	3.39E+00	2.02E-01	0.00E+00	1.28E-01		1.64E-01	3.59E-02	4.87E-01	3.59E-01	3.59E+00	1.20E+00
	U-238+D	1.22E+03	3.31E+04	1.09E+01	4.11E+00	0.00E+00	3.57E+00		3.72E+00	1.50E-01	5.07E+00	1.50E+00	1.50E+01	8.08E+00
	Total			2.59E+01	8.92E+00	0.00E+00	6.64E+00	2.54E-03	6.99E+00	3.49E-01	1.01E+01	3.49E+00	3.49E+01	1.71E+01

Table N-4. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 100 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	9.14E-03	2.18E+01	0.00E+00	5.38E-01		7.56E-01	2.18E-01	2.72E+00	2.18E+00	2.18E+01	7.56E-01
	Cs-137	8.95E-01	8.42E+08	7.30E+00	1.04E-04	0.00E+00	2.48E-01		3.21E-01	7.30E-02	9.78E-01	7.30E-01	7.30E+00	3.21E-01
	Am-241	8.44E+00	5.71E+09	5.31E-01	4.66E+00	0.00E+00	4.79E-01		5.31E-01	5.19E-02	9.99E-01	5.19E-01	5.19E+00	5.31E-01
	Total			7.84E+00	2.65E+01	0.00E+00	1.27E+00		1.61E+00	3.43E-01	4.70E+00	3.43E+00	3.43E+01	1.61E+00
IX	Pu-239	9.47E+00	2.39E+05	1.70E-05	4.40E-02	0.00E+00	9.16E-04		1.36E-03	4.40E-04	5.32E-03	4.40E-03	4.40E-02	9.72E-03
	Am-241	1.58E+00	2.67E+06	9.97E-04	9.42E-03	0.00E+00	8.15E-04		9.19E-04	1.04E-04	1.86E-03	1.04E-03	1.04E-02	2.90E-03
	Total			1.01E-03	5.34E-02	0.00E+00	1.73E-03		2.28E-03	5.44E-04	7.17E-03	5.44E-03	5.44E-02	1.26E-02
X	Tc-99	8.16E+03	6.21E+00	4.06E-09	1.61E-08	1.49E+00	5.14E-02		1.54E+00	1.49E+00	1.54E+00	1.49E+00	1.49E+00	1.54E+00
	U-234+D	2.80E+02	5.76E+02	2.15E-06	2.47E-04	0.00E+00	8.64E-03	2.59E-05	8.64E-03	2.75E-06	8.67E-03	2.75E-05	2.75E-04	8.67E-03
	U-238+D	2.80E+02	5.76E+02	1.20E-03	2.21E-04	0.00E+00	1.20E-02		1.20E-02	1.42E-05	1.22E-02	1.42E-04	1.42E-03	1.22E-02
	Total			1.20E-03	4.68E-04	1.49E+00	7.21E-02	2.59E-05	1.57E+00	1.49E+00	1.57E+00	1.49E+00	1.50E+00	1.57E+00
XII	Pu-239	1.27E+03	1.25E+04	1.23E-05	2.31E-02	0.00E+00	1.02E-02		1.04E-02	2.31E-04	1.25E-02	2.31E-03	2.31E-02	2.31E-02
	Am-241	2.12E+02	4.33E+04	7.98E-04	5.68E-03	0.00E+00	9.27E-03		9.33E-03	6.48E-05	9.92E-03	6.48E-04	6.48E-03	6.48E-03
	Total			8.10E-04	2.88E-02	0.00E+00	1.94E-02		1.97E-02	2.96E-04	2.24E-02	2.96E-03	2.96E-02	2.96E-02
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XVIA	Co-60	3.63E+01	4.29E+05	7.56E-03	5.55E-08	0.00E+00	1.30E-05		8.86E-05	7.56E-05	7.69E-04	7.56E-04	7.56E-03	1.52E-03
	Cs-137+D	2.89E+01	8.59E+05	6.97E-03	6.30E-08	0.00E+00	3.81E-04		4.51E-04	6.97E-05	1.08E-03	6.97E-04	6.97E-03	1.78E-03
	Total			1.45E-02	1.18E-07	0.00E+00	3.94E-04		5.40E-04	1.45E-04	1.85E-03	1.45E-03	1.45E-02	3.30E-03
XVIB	Co-60	3.63E+01	6.09E+04	7.51E-03	5.51E-08	0.00E+00	1.30E-05		8.81E-05	7.51E-05	7.64E-04	7.51E-04	7.51E-03	1.51E-03
	Cs-137+D	2.89E+01	1.22E+05	6.87E-03	6.20E-08	0.00E+00	3.80E-04		4.49E-04	6.87E-05	1.07E-03	6.87E-04	6.87E-03	1.75E-03
	Total			1.44E-02	1.17E-07	0.00E+00	3.93E-04		5.37E-04	1.44E-04	1.83E-03	1.44E-03	1.44E-02	3.27E-03

Table N-4. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 100 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	7.39E-03	5.42E-08	0.00E+00	1.30E-05		8.69E-05	7.39E-05	7.52E-04	7.39E-04	7.39E-03	1.49E-03
	Cs-137+D	2.89E+01	1.07E+04	6.64E-03	6.00E-08	0.00E+00	3.78E-04		4.44E-04	6.64E-05	1.04E-03	6.64E-04	6.64E-03	1.71E-03
	Total			1.40E-02	1.14E-07	0.00E+00	3.91E-04		5.31E-04	1.40E-04	1.79E-03	1.40E-03	1.40E-02	3.20E-03
XVIII A	Cs-137+D	3.54E+02	8.59E+05	4.03E-02	3.64E-07	0.00E+00	2.20E-03		2.60E-03	4.03E-04	6.23E-03	4.03E-03	4.03E-02	4.03E-02
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	8.55E-07	0.00E+00	2.90E-02		2.90E-02	8.55E-09	2.90E-02	8.55E-08	8.55E-07	8.55E-07
	Total			4.03E-02	1.22E-06	0.00E+00	3.12E-02		3.16E-02	4.03E-04	3.53E-02	4.03E-03	4.03E-02	4.03E-02
XVIII B	Cs-137+D	3.54E+02	1.22E+05	3.97E-02	3.58E-07	0.00E+00	2.19E-03		2.59E-03	3.97E-04	6.16E-03	3.97E-03	3.97E-02	3.97E-02
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	5.73E-07	0.00E+00	2.63E-02		2.63E-02	5.73E-09	2.63E-02	5.73E-08	5.73E-07	5.73E-07
	Total			3.97E-02	9.31E-07	0.00E+00	2.85E-02		2.89E-02	3.97E-04	3.25E-02	3.97E-03	3.97E-02	3.97E-02
XVIII C	Cs-137+D	3.54E+02	3.22E+04	3.84E-02	3.46E-07	0.00E+00	2.18E-03		2.57E-03	3.84E-04	6.02E-03	3.84E-03	3.84E-02	3.84E-02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	3.27E-07	0.00E+00	2.16E-02		2.16E-02	3.27E-09	2.16E-02	3.27E-08	3.27E-07	3.27E-07
	Total			3.84E-02	6.73E-07	0.00E+00	2.38E-02		2.42E-02	3.84E-04	2.77E-02	3.84E-03	3.84E-02	3.84E-02
XXA	U-234+D	4.37E+01	8.57E+04	2.47E-06	4.31E-04	0.00E+00	3.43E-03	3.46E-06	3.44E-03	4.37E-06	3.48E-03	4.37E-05	4.37E-04	3.52E-03
	U-235	1.46E+00	8.57E+04	3.22E-04	1.34E-05	0.00E+00	1.21E-04		1.24E-04	3.35E-06	1.54E-04	3.35E-05	3.35E-04	1.88E-04
	U-238+D	7.51E+00	8.57E+04	3.58E-04	6.61E-05	0.00E+00	8.21E-04		8.26E-04	4.24E-06	8.64E-04	4.24E-05	4.24E-04	9.06E-04
	Total			6.82E-04	5.10E-04	0.00E+00	4.37E-03	3.46E-06	4.39E-03	1.20E-05	4.49E-03	1.20E-04	1.20E-03	4.61E-03
XXB	U-234+D	2.54E+01	1.21E+04	1.23E-06	2.02E-04	0.00E+00	1.92E-03	2.01E-06	1.92E-03	2.05E-06	1.94E-03	2.05E-05	2.05E-04	1.96E-03
	U-235	8.40E-01	1.21E+04	1.50E-04	6.21E-06	0.00E+00	6.71E-05		6.86E-05	1.56E-06	8.26E-05	1.56E-05	1.56E-04	9.82E-05
	U-238+D	4.36E+00	1.21E+04	1.67E-04	3.09E-05	0.00E+00	4.58E-04		4.60E-04	1.98E-06	4.78E-04	1.98E-05	1.98E-04	4.98E-04
	Total			3.18E-04	2.39E-04	0.00E+00	2.45E-03	2.01E-06	2.45E-03	5.60E-06	2.50E-03	5.60E-05	5.60E-04	2.56E-03
XXC	U-234+D	2.54E+01	1.07E+03	9.00E-07	1.33E-04	0.00E+00	1.76E-03	1.99E-06	1.77E-03	1.36E-06	1.78E-03	1.36E-05	1.36E-04	1.79E-03
	U-235	8.40E-01	1.07E+03	9.87E-05	4.10E-06	0.00E+00	6.16E-05		6.26E-05	1.03E-06	7.19E-05	1.03E-05	1.03E-04	8.21E-05
	U-238+D	4.36E+00	1.07E+03	1.11E-04	2.04E-05	0.00E+00	4.21E-04		4.22E-04	1.31E-06	4.34E-04	1.31E-05	1.31E-04	4.47E-04
	Total			2.10E-04	1.58E-04	0.00E+00	2.25E-03	1.99E-06	2.25E-03	3.70E-06	2.28E-03	3.70E-05	3.70E-04	2.32E-03

Table N-4. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 100 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	3.39E-03	8.72E-07	0.00E+00	2.38E-04		2.72E-04	3.39E-05	5.78E-04	3.39E-04	3.39E-03	3.39E-03
	Th-228	1.83E+01	2.10E+07	2.13E-03	2.83E-05	0.00E+00	4.20E-06		2.58E-05	2.16E-05	2.20E-04	2.16E-04	2.16E-03	2.16E-03
	Th-232+D	1.83E+01	2.10E+07	1.06E-01	1.12E-03	0.00E+00	2.79E-03		3.86E-03	1.07E-03	1.35E-02	1.07E-02	1.07E-01	1.07E-01
	Total			1.11E-01	1.15E-03	0.00E+00	3.03E-03		4.15E-03	1.13E-03	1.43E-02	1.13E-02	1.13E-01	1.13E-01
XXIB	Ra-228	1.83E+01	6.84E+04	3.37E-03	8.66E-07	0.00E+00	2.38E-04		2.72E-04	3.37E-05	5.75E-04	3.37E-04	3.37E-03	3.37E-03
	Th-228	1.83E+01	2.99E+06	2.13E-03	2.83E-05	0.00E+00	4.20E-06		2.58E-05	2.16E-05	2.20E-04	2.16E-04	2.16E-03	2.16E-03
	Th-232+D	1.83E+01	2.99E+06	1.05E-01	1.11E-03	0.00E+00	2.78E-03		3.84E-03	1.06E-03	1.34E-02	1.06E-02	1.06E-01	1.06E-01
	Total			1.11E-01	1.14E-03	0.00E+00	3.02E-03		4.14E-03	1.12E-03	1.42E-02	1.12E-02	1.12E-01	1.12E-01
XXIC	Ra-228	1.83E+01	6.03E+03	3.32E-03	8.53E-07	0.00E+00	2.37E-04		2.71E-04	3.32E-05	5.69E-04	3.32E-04	3.32E-03	3.32E-03
	Th-228	1.83E+01	2.63E+05	2.13E-03	2.83E-05	0.00E+00	4.20E-06		2.58E-05	2.16E-05	2.20E-04	2.16E-04	2.16E-03	2.16E-03
	Th-232+D	1.83E+01	2.63E+05	1.03E-01	1.10E-03	0.00E+00	2.78E-03		3.82E-03	1.04E-03	1.32E-02	1.04E-02	1.04E-01	1.04E-01
	Total			1.09E-01	1.13E-03	0.00E+00	3.02E-03		4.12E-03	1.10E-03	1.40E-02	1.10E-02	1.10E-01	1.10E-01
XXII	U-234	1.71E+01	1.40E+02	6.49E-06	7.69E-04	0.00E+00	2.37E-02	7.21E-05	2.37E-02	8.48E-06	2.38E-02	8.48E-05	8.48E-04	1.19E-03
	U-235	8.01E-01	1.40E+02	8.09E-04	3.36E-05	0.00E+00	1.17E-03		1.18E-03	8.42E-06	1.26E-03	8.42E-05	8.42E-04	1.18E-03
	U-238+D	1.71E+01	1.40E+02	3.72E-03	6.86E-04	0.00E+00	3.29E-02		3.30E-02	4.40E-05	3.34E-02	4.40E-04	4.40E-03	6.17E-03
	Ra-226+D	3.16E+00	1.99E+03	3.25E-01	2.70E-04	0.00E+00	3.75E-01	2.10E+00	4.00E-01	2.43E-02	6.18E-01	2.43E-01	2.43E+00	3.40E+00
	Ra-228	1.92E+01	1.99E+03	9.32E-02	2.40E-05	0.00E+00	6.67E-03		7.60E-03	9.32E-04	1.60E-02	9.32E-03	9.32E-02	1.31E-01
	Th-228	1.92E+01	1.27E+04	5.99E-02	7.94E-04	0.00E+00	1.18E-04		7.25E-04	6.07E-04	6.19E-03	6.07E-03	6.07E-02	8.49E-02
	Th-232	1.92E+01	1.27E+04	2.84E+00	3.02E-02	0.00E+00	7.77E-02		1.06E-01	2.87E-02	3.65E-01	2.87E-01	2.87E+00	4.02E+00
Total			3.33E+00	3.28E-02	0.00E+00	5.18E-01	2.10E+00	5.72E-01	5.46E-02	1.06E+00	5.46E-01	5.46E+00	7.65E+00	

- (a) Based on 1,000 people/km²
- (b) Based on 10 people/km²
- (c) Based on 100 people/km²
- (d) Based on site specific data

Table N-5. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	8.58E+00	1.38E-04	0.00E+00	2.98E-01		3.84E-01	8.58E-02	1.16E+00	8.58E-01	8.58E+00	1.16E+00
	Total			8.58E+00	1.38E-04	0.00E+00	2.98E-01		3.84E-01	8.58E-02	1.16E+00	8.58E-01	8.58E+00	1.16E+00
II-1	Ra-226+D	5.43E+01	4.65E+05	5.45E+02	4.55E-01	0.00E+00	3.23E+02	8.04E+02	3.37E+02	1.35E+01	4.58E+02	1.35E+02	1.35E+03	1.35E+03
	Ra-228	2.69E+00	4.65E+05	1.43E-01	3.70E-05	0.00E+00	5.59E-03		7.03E-03	1.43E-03	1.99E-02	1.43E-02	1.43E-01	1.43E-01
	Th-228	2.69E+00	2.96E+05	8.87E-02	1.19E-03	0.00E+00	9.84E-05		9.98E-04	8.99E-04	9.09E-03	8.99E-03	8.99E-02	8.99E-02
	Th-230	5.40E+01	2.96E+05	1.19E+02	1.49E+00	0.00E+00	6.98E+01	1.85E+02	7.28E+01	3.05E+00	1.00E+02	3.05E+01	3.05E+02	3.05E+02
	Th-232+D	9.66E-01	2.96E+05	1.58E+01	1.68E-01	0.00E+00	2.50E-01		4.09E-01	1.60E-01	1.85E+00	1.60E+00	1.60E+01	1.60E+01
	U-234+D	7.07E+01	8.17E+04	4.14E-01	1.15E+00	0.00E+00	8.21E+00	7.48E-01	8.24E+00	2.31E-02	8.45E+00	2.31E-01	2.31E+00	2.31E+00
	U-235	1.14E+00	8.17E+04	4.14E-01	1.72E-02	0.00E+00	1.36E-01		1.40E-01	4.31E-03	1.79E-01	4.31E-02	4.31E-01	4.31E-01
	U-238+D	3.11E+01	8.17E+04	2.42E+00	4.48E-01	0.00E+00	4.85E+00		4.88E+00	2.87E-02	5.14E+00	2.87E-01	2.87E+00	2.87E+00
Total			6.83E+02	3.72E+00	0.00E+00	4.07E+02	9.90E+02	4.23E+02	1.68E+01	5.74E+02	1.68E+02	1.68E+03	1.68E+03	
II-2	U-234+D	2.52E+02	8.60E+04	1.72E+00	1.15E+01	0.00E+00	8.21E+00	7.48E-01	8.35E+00	1.39E-01	9.61E+00	1.39E+00	1.39E+01	1.39E+01
	U-235	4.08E+00	8.60E+04	2.82E+00	1.72E-01	0.00E+00	1.36E-01		1.65E-01	2.99E-02	4.34E-01	2.99E-01	2.99E+00	2.99E+00
	U-238+D	1.11E+02	8.60E+04	1.15E+01	4.48E+00	0.00E+00	4.85E+00		5.01E+00	1.60E-01	6.45E+00	1.60E+00	1.60E+01	1.60E+01
	Total			1.61E+01	1.61E+01	0.00E+00	1.32E+01	7.48E-01	1.35E+01	3.29E-01	1.65E+01	3.29E+00	3.29E+01	3.29E+01
III	Cs-137	9.89E+00	2.00E+06	3.84E+00	6.18E-05	0.00E+00	1.25E-01		1.63E-01	3.84E-02	5.09E-01	3.84E-01	3.84E+00	5.09E-01
	Total			3.84E+00	6.18E-05	0.00E+00	1.25E-01		1.63E-01	3.84E-02	5.09E-01	3.84E-01	3.84E+00	5.09E-01
IV	U-234+D	3.24E+02	1.48E+04	1.48E-02	2.16E-01	0.00E+00	8.58E-01	9.86E-02	8.61E-01	3.30E-03	8.91E-01	3.30E-02	3.30E-01	9.24E-01
	U-235	1.52E+01	1.48E+04	2.07E-01	9.40E-03	0.00E+00	4.14E-02		4.36E-02	2.17E-03	6.31E-02	2.17E-02	2.17E-01	8.48E-02
	U-238+D	3.24E+02	1.48E+04	7.81E-01	1.92E-01	0.00E+00	1.16E+00		1.17E+00	9.73E-03	1.26E+00	9.73E-02	9.73E-01	1.36E+00
	Total			1.00E+00	4.17E-01	0.00E+00	2.06E+00	9.86E-02	2.08E+00	1.52E-02	2.21E+00	1.52E-01	1.52E+00	2.36E+00
V	Cs-137	1.07E+03	2.39E+04	2.36E+02	3.79E-03	0.00E+00	8.25E+00		1.06E+01	2.36E+00	3.18E+01	2.36E+01	2.36E+02	3.18E+01
	Total			2.36E+02	3.79E-03	0.00E+00	8.25E+00		1.06E+01	2.36E+00	3.18E+01	2.36E+01	2.36E+02	3.18E+01
VI	Cs-137	8.63E+01	2.07E+05	1.29E+01	2.01E-04	0.00E+00	4.22E-01		5.51E-01	1.29E-01	1.71E+00	1.29E+00	1.29E+01	4.29E+00
	U-234	1.22E+03	3.31E+04	5.13E+00	3.31E+01	0.00E+00	2.50E+01	2.28E+00	2.54E+01	4.05E-01	2.91E+01	4.05E+00	4.05E+01	3.72E+01
	U-235	5.75E+01	3.31E+04	2.42E+01	1.44E+00	0.00E+00	1.20E+00		1.46E+00	2.57E-01	3.77E+00	2.57E+00	2.57E+01	8.90E+00
	U-238+D	1.22E+03	3.31E+04	7.80E+01	2.94E+01	0.00E+00	3.36E+01		3.47E+01	1.07E+00	4.44E+01	1.07E+01	1.07E+02	6.59E+01
	Total			1.20E+02	6.39E+01	0.00E+00	6.03E+01	2.28E+00	6.21E+01	1.86E+00	7.89E+01	1.86E+01	1.86E+02	1.16E+02

Table N-5. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)						Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
				Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)						
VII	Pu-239	5.06E+01	1.65E+09	9.02E-02	2.15E+02	0.00E+00	5.31E+00		7.47E+00	2.15E+00	2.68E+01	2.15E+01	2.15E+02	7.47E+00
	Cs-137	8.95E-01	8.42E+08	8.11E+00	1.16E-04	0.00E+00	2.76E-01		3.57E-01	8.11E-02	1.09E+00	8.11E-01	8.11E+00	3.57E-01
	Am-241	8.44E+00	5.71E+09	2.86E+00	2.52E+01	0.00E+00	2.59E+00		2.87E+00	2.80E-01	5.39E+00	2.80E+00	2.80E+01	2.87E+00
	Total			1.11E+01	2.40E+02	0.00E+00	8.18E+00		1.07E+01	2.51E+00	3.33E+01	2.51E+01	2.51E+02	1.07E+01
IX	Pu-239	9.47E+00	2.39E+05	1.64E-04	4.22E-01	0.00E+00	9.00E-03		1.32E-02	4.23E-03	5.13E-02	4.23E-02	4.23E-01	9.35E-02
	Am-241	1.58E+00	2.67E+06	5.37E-03	5.08E-02	0.00E+00	4.40E-03		4.96E-03	5.61E-04	1.00E-02	5.61E-03	5.61E-02	1.56E-02
	Total			5.54E-03	4.73E-01	0.00E+00	1.34E-02		1.82E-02	4.79E-03	6.13E-02	4.79E-02	4.79E-01	1.09E-01
X	Tc-99	8.16E+03	6.21E+00	4.06E-09	1.61E-08	1.49E+00	5.14E-02		1.54E+00	1.49E+00	1.54E+00	1.49E+00	1.49E+00	1.54E+00
	U-234+D	2.80E+02	5.76E+02	7.16E-05	2.50E-04	1.46E+00	1.47E-02	1.60E-02	1.47E+00	1.46E+00	1.47E+00	1.46E+00	1.47E+00	1.47E+00
	U-238+D	2.80E+02	5.76E+02	1.20E-03	2.21E-04	1.97E+00	1.92E-02		1.99E+00	1.97E+00	1.99E+00	1.97E+00	1.97E+00	1.99E+00
	Total			1.27E-03	4.71E-04	4.92E+00	8.54E-02	1.60E-02	5.01E+00	4.92E+00	5.01E+00	4.92E+00	4.94E+00	5.01E+00
XII	Pu-239	1.27E+03	1.25E+04	3.56E-05	6.69E-02	0.00E+00	7.53E-02		7.59E-02	6.69E-04	8.19E-02	6.69E-03	6.69E-02	6.69E-02
	Am-241	2.12E+02	4.33E+04	3.07E-03	2.19E-02	0.00E+00	4.70E-02		4.72E-02	2.50E-04	4.95E-02	2.50E-03	2.50E-02	2.50E-02
	Total			3.11E-03	8.88E-02	0.00E+00	1.22E-01		1.23E-01	9.19E-04	1.31E-01	9.19E-03	9.19E-02	9.19E-02
XIII	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XVIA	Co-60	3.63E+01	4.29E+05	7.56E-03	5.55E-08	0.00E+00	1.30E-05		8.86E-05	7.56E-05	7.69E-04	7.56E-04	7.56E-03	1.52E-03
	Cs-137+D	2.89E+01	8.59E+05	7.72E-03	6.97E-08	0.00E+00	4.23E-04		5.01E-04	7.72E-05	1.20E-03	7.72E-04	7.72E-03	1.97E-03
	Total			1.53E-02	1.25E-07	0.00E+00	4.37E-04		5.89E-04	1.53E-04	1.96E-03	1.53E-03	1.53E-02	3.49E-03
XVIB	Co-60	3.63E+01	6.09E+04	7.51E-03	5.51E-08	0.00E+00	1.30E-05		8.81E-05	7.51E-05	7.64E-04	7.51E-04	7.51E-03	1.51E-03
	Cs-137+D	2.89E+01	1.22E+05	7.57E-03	6.83E-08	0.00E+00	4.22E-04		4.98E-04	7.57E-05	1.18E-03	7.57E-04	7.57E-03	1.94E-03
	Total			1.51E-02	1.23E-07	0.00E+00	4.35E-04		5.86E-04	1.51E-04	1.94E-03	1.51E-03	1.51E-02	3.45E-03

Table N-5. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	7.39E-03	5.42E-08	0.00E+00	1.30E-05		8.69E-05	7.39E-05	7.52E-04	7.39E-04	7.39E-03	1.49E-03
	Cs-137+D	2.89E+01	1.07E+04	7.25E-03	6.54E-08	0.00E+00	4.19E-04		4.91E-04	7.25E-05	1.14E-03	7.25E-04	7.25E-03	1.87E-03
	Total			1.46E-02	1.20E-07	0.00E+00	4.32E-04		5.78E-04	1.46E-04	1.90E-03	1.46E-03	1.46E-02	3.36E-03
XVIII A	Cs-137+D	3.54E+02	8.59E+05	4.46E-02	4.03E-07	0.00E+00	2.44E-03		2.89E-03	4.46E-04	6.90E-03	4.46E-03	4.46E-02	4.46E-02
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	8.73E-07	0.00E+00	3.12E-02		3.12E-02	8.73E-09	3.12E-02	8.73E-08	8.73E-07	8.73E-07
	Total			4.46E-02	1.28E-06	0.00E+00	3.37E-02		3.41E-02	4.46E-04	3.81E-02	4.46E-03	4.46E-02	4.46E-02
XVIII B	Cs-137+D	3.54E+02	1.22E+05	4.37E-02	3.95E-07	0.00E+00	2.44E-03		2.87E-03	4.37E-04	6.81E-03	4.37E-03	4.37E-02	4.37E-02
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	5.75E-07	0.00E+00	2.77E-02		2.77E-02	5.75E-09	2.77E-02	5.75E-08	5.75E-07	5.75E-07
	Total			4.37E-02	9.69E-07	0.00E+00	3.02E-02		3.06E-02	4.37E-04	3.45E-02	4.37E-03	4.37E-02	4.37E-02
XVIII C	Cs-137+D	3.54E+02	3.22E+04	4.18E-02	3.78E-07	0.00E+00	2.42E-03		2.84E-03	4.18E-04	6.60E-03	4.18E-03	4.18E-02	4.18E-02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	3.27E-07	6.80E-10	2.22E-02		2.22E-02	3.95E-09	2.22E-02	3.33E-08	3.27E-07	3.27E-07
	Total			4.18E-02	7.04E-07	6.80E-10	2.46E-02		2.50E-02	4.18E-04	2.88E-02	4.18E-03	4.18E-02	4.18E-02
XXA	U-234+D	4.37E+01	8.57E+04	7.13E-04	1.41E-03	0.00E+00	2.77E-02	3.06E-03	2.78E-02	5.18E-05	2.82E-02	5.18E-04	5.18E-03	2.87E-02
	U-235	1.46E+00	8.57E+04	1.04E-03	4.34E-05	0.00E+00	9.39E-04		9.50E-04	1.09E-05	1.05E-03	1.09E-04	1.09E-03	1.16E-03
	U-238+D	7.51E+00	8.57E+04	1.16E-03	2.15E-04	0.00E+00	6.38E-03		6.40E-03	1.38E-05	6.52E-03	1.38E-04	1.38E-03	6.66E-03
	Total			2.92E-03	1.67E-03	0.00E+00	3.50E-02	3.06E-03	3.51E-02	7.64E-05	3.58E-02	7.64E-04	7.64E-03	3.66E-02
XXB	U-234+D	2.54E+01	1.21E+04	1.88E-04	3.60E-04	0.00E+00	1.16E-02	1.71E-03	1.16E-02	2.25E-05	1.18E-02	2.25E-04	2.25E-03	1.21E-02
	U-235	8.40E-01	1.21E+04	2.64E-04	1.10E-05	0.00E+00	3.88E-04		3.91E-04	2.75E-06	4.16E-04	2.75E-05	2.75E-04	4.43E-04
	U-238+D	4.36E+00	1.21E+04	2.96E-04	5.46E-05	0.00E+00	2.65E-03		2.65E-03	3.51E-06	2.69E-03	3.51E-05	3.51E-04	2.72E-03
	Total			7.48E-04	4.26E-04	0.00E+00	1.46E-02	1.71E-03	1.47E-02	2.88E-05	1.49E-02	2.88E-04	2.88E-03	1.52E-02
XXC	U-234+D	2.54E+01	1.07E+03	6.16E-05	1.58E-04	0.00E+00	6.56E-03	1.56E-03	6.58E-03	1.78E-05	6.74E-03	1.78E-04	1.78E-03	6.91E-03
	U-235	8.40E-01	1.07E+03	1.16E-04	4.82E-06	0.00E+00	2.17E-04		2.19E-04	1.21E-06	2.29E-04	1.21E-05	1.21E-04	2.42E-04
	U-238+D	4.36E+00	1.07E+03	1.30E-04	2.40E-05	0.00E+00	1.48E-03		1.49E-03	1.54E-06	1.50E-03	1.54E-05	1.54E-04	1.52E-03
	Total			3.08E-04	1.87E-04	0.00E+00	8.26E-03	1.56E-03	8.28E-03	2.05E-05	8.47E-03	2.05E-04	2.05E-03	8.67E-03

Table N-5. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	3.39E-03	8.72E-07	0.00E+00	2.38E-04		2.72E-04	3.39E-05	5.78E-04	3.39E-04	3.39E-03	3.39E-03
	Th-228	1.83E+01	2.10E+07	2.13E-03	2.83E-05	0.00E+00	4.20E-06		2.58E-05	2.16E-05	2.20E-04	2.16E-04	2.16E-03	2.16E-03
	Th-232+D	1.83E+01	2.10E+07	1.16E+00	1.21E-02	0.00E+00	3.01E-02		4.18E-02	1.17E-02	1.47E-01	1.17E-01	1.17E+00	1.17E+00
	Total			1.16E+00	1.22E-02	0.00E+00	3.04E-02		4.21E-02	1.18E-02	1.48E-01	1.18E-01	1.18E+00	1.18E+00
XXIB	Ra-228	1.83E+01	6.84E+04	3.37E-03	8.66E-07	0.00E+00	2.38E-04		2.72E-04	3.37E-05	5.75E-04	3.37E-04	3.37E-03	3.37E-03
	Th-228	1.83E+01	2.99E+06	2.13E-03	2.83E-05	0.00E+00	4.20E-06		2.58E-05	2.16E-05	2.20E-04	2.16E-04	2.16E-03	2.16E-03
	Th-232+D	1.83E+01	2.99E+06	1.14E+00	1.20E-02	0.00E+00	3.00E-02		4.15E-02	1.15E-02	1.45E-01	1.15E-01	1.15E+00	1.15E+00
	Total			1.14E+00	1.20E-02	0.00E+00	3.03E-02		4.18E-02	1.16E-02	1.46E-01	1.16E-01	1.16E+00	1.16E+00
XXIC	Ra-228	1.83E+01	6.03E+03	3.32E-03	8.53E-07	0.00E+00	2.37E-04		2.71E-04	3.32E-05	5.69E-04	3.32E-04	3.32E-03	3.32E-03
	Th-228	1.83E+01	2.63E+05	2.13E-03	2.83E-05	0.00E+00	4.20E-06		2.58E-05	2.16E-05	2.20E-04	2.16E-04	2.16E-03	2.16E-03
	Th-232+D	1.83E+01	2.63E+05	1.10E+00	1.16E-02	0.00E+00	2.99E-02		4.09E-02	1.11E-02	1.41E-01	1.11E-01	1.11E+00	1.11E+00
	Total			1.10E+00	1.16E-02	0.00E+00	3.01E-02		4.12E-02	1.11E-02	1.42E-01	1.11E-01	1.11E+00	1.11E+00
XXII	U-234	1.71E+01	1.40E+02	2.69E-04	7.82E-04	4.33E+00	4.61E-02	4.76E-02	4.37E+00	4.33E+00	4.38E+00	4.33E+00	4.38E+00	4.40E+00
	U-235	8.01E-01	1.40E+02	8.15E-04	3.39E-05	2.12E-01	2.14E-03		2.14E-01	2.12E-01	2.14E-01	2.12E-01	2.13E-01	2.13E-01
	U-238+D	1.71E+01	1.40E+02	3.75E-03	6.92E-04	5.95E+00	6.00E-02		6.01E+00	5.95E+00	6.02E+00	5.96E+00	5.96E+00	5.96E+00
	Ra-226+D	3.16E+00	1.99E+03	1.01E+00	8.36E-04	0.00E+00	2.50E+00	1.67E+01	2.68E+00	1.77E-01	4.27E+00	1.77E+00	1.77E+01	2.48E+01
	Ra-228	1.92E+01	1.99E+03	9.32E-02	2.40E-05	0.00E+00	6.67E-03		7.60E-03	9.32E-04	1.60E-02	9.32E-03	9.32E-02	1.31E-01
	Th-228	1.92E+01	1.27E+04	5.99E-02	7.94E-04	0.00E+00	1.18E-04		7.25E-04	6.07E-04	6.19E-03	6.07E-03	6.07E-02	8.49E-02
	Th-232	1.92E+01	1.27E+04	2.50E+01	2.63E-01	0.00E+00	8.09E-01		1.06E+00	2.52E-01	3.33E+00	2.52E+00	2.52E+01	3.53E+01
Total			2.61E+01	2.66E-01	1.05E+01	3.42E+00	1.68E+01	1.43E+01	1.09E+01	1.82E+01	1.48E+01	5.37E+01	7.09E+01	

- (a) Based on 1,000 people/km²
- (b) Based on 10 people/km²
- (c) Based on 100 people/km²
- (d) Based on site specific data

Table N-6. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	8.58E+00	1.38E-04	0.00E+00	2.98E-01		3.84E-01	8.58E-02	1.16E+00	8.58E-01	8.58E+00	1.16E+00
	Total			8.58E+00	1.38E-04	0.00E+00	2.98E-01		3.84E-01	8.58E-02	1.16E+00	8.58E-01	8.58E+00	1.16E+00
II-1	Ra-226+D	5.43E+01	4.65E+05	1.25E+03	1.04E+00	0.00E+00	8.74E+02	2.24E+03	9.09E+02	3.49E+01	1.22E+03	3.49E+02	3.49E+03	3.49E+03
	Ra-228	2.69E+00	4.65E+05	1.43E-01	3.70E-05	0.00E+00	5.59E-03		7.03E-03	1.43E-03	1.99E-02	1.43E-02	1.43E-01	1.43E-01
	Th-228	2.69E+00	2.96E+05	8.87E-02	1.19E-03	0.00E+00	9.84E-05		9.98E-04	8.99E-04	9.09E-03	8.99E-03	8.99E-02	8.99E-02
	Th-230	5.40E+01	2.96E+05	2.00E+03	7.87E+00	0.00E+00	2.46E+03	7.11E+03	2.55E+03	9.12E+01	3.37E+03	9.12E+02	9.12E+03	9.12E+03
	Th-232+D	9.66E-01	2.96E+05	7.30E+01	7.74E-01	0.00E+00	2.15E+00		2.89E+00	7.38E-01	9.53E+00	7.38E+00	7.38E+01	7.38E+01
	U-234+D	7.07E+01	8.17E+04	2.80E+01	2.22E+00	0.00E+00	1.38E+02	3.31E+02	1.42E+02	3.61E+00	1.74E+02	3.61E+01	3.61E+02	3.61E+02
	U-235	1.14E+00	8.17E+04	7.67E-01	3.18E-02	0.00E+00	8.11E-01		8.19E-01	7.99E-03	8.91E-01	7.99E-02	7.99E-01	7.99E-01
	U-238+D	3.11E+01	8.17E+04	4.49E+00	8.30E-01	0.00E+00	2.90E+01		2.91E+01	5.32E-02	2.96E+01	5.32E-01	5.32E+00	5.32E+00
Total			3.36E+03	1.28E+01	0.00E+00	3.50E+03	9.68E+03		3.63E+03	1.31E+02	4.81E+03	1.31E+03	1.31E+04	1.31E+04
II-2	U-234+D	2.52E+02	8.60E+04	1.15E+02	2.22E+01	0.00E+00	1.38E+02	3.31E+02	1.43E+02	4.69E+00	1.85E+02	4.69E+01	4.69E+02	4.69E+02
	U-235	4.08E+00	8.60E+04	5.22E+00	3.18E-01	0.00E+00	8.11E-01		8.67E-01	5.54E-02	1.37E+00	5.54E-01	5.54E+00	5.54E+00
	U-238+D	1.11E+02	8.60E+04	2.14E+01	8.30E+00	0.00E+00	2.90E+01		2.93E+01	2.96E-01	3.20E+01	2.96E+00	2.96E+01	2.96E+01
	Total			1.42E+02	3.08E+01	0.00E+00	1.68E+02	3.31E+02	1.73E+02	5.04E+00	2.18E+02	5.04E+01	5.04E+02	5.04E+02
III	Cs-137	9.89E+00	2.00E+06	3.84E+00	6.18E-05	0.00E+00	1.25E-01		1.63E-01	3.84E-02	5.09E-01	3.84E-01	3.84E+00	5.09E-01
	Total			3.84E+00	6.18E-05	0.00E+00	1.25E-01		1.63E-01	3.84E-02	5.09E-01	3.84E-01	3.84E+00	5.09E-01
IV	U-234+D	3.24E+02	1.48E+04	2.68E-02	2.18E-01	0.00E+00	2.09E+00	2.19E+01	2.31E+00	2.22E-01	4.31E+00	2.22E+00	2.22E+01	6.53E+00
	U-235	1.52E+01	1.48E+04	2.08E-01	9.45E-03	0.00E+00	7.17E-02		7.39E-02	2.18E-03	9.35E-02	2.18E-02	2.18E-01	1.15E-01
	U-238+D	3.24E+02	1.48E+04	7.86E-01	1.93E-01	0.00E+00	2.01E+00		2.02E+00	9.79E-03	2.11E+00	9.79E-02	9.79E-01	2.21E+00
	Total			1.02E+00	4.21E-01	0.00E+00	4.17E+00	2.19E+01	4.41E+00	2.34E-01	6.51E+00	2.34E+00	2.34E+01	8.85E+00
V	Cs-137	1.07E+03	2.39E+04	2.36E+02	3.79E-03	0.00E+00	8.25E+00		1.06E+01	2.36E+00	3.18E+01	2.36E+01	2.36E+02	3.18E+01
	Total			2.36E+02	3.79E-03	0.00E+00	8.25E+00		1.06E+01	2.36E+00	3.18E+01	2.36E+01	2.36E+02	3.18E+01
VI	Cs-137	8.63E+01	2.07E+05	1.29E+01	2.01E-04	0.00E+00	4.22E-01		5.51E-01	1.29E-01	1.71E+00	1.29E+00	1.29E+01	4.29E+00
	U-234	1.22E+03	3.31E+04	3.27E+02	6.24E+01	0.00E+00	4.14E+02	1.01E+03	4.28E+02	1.40E+01	5.54E+02	1.40E+02	1.40E+03	8.33E+02
	U-235	5.75E+01	3.31E+04	4.38E+01	2.61E+00	0.00E+00	7.07E+00		7.54E+00	4.64E-01	1.17E+01	4.64E+00	4.64E+01	2.10E+01
	U-238+D	1.22E+03	3.31E+04	1.41E+02	5.31E+01	0.00E+00	1.98E+02		2.00E+02	1.94E+00	2.17E+02	1.94E+01	1.94E+02	2.56E+02
	Total			5.24E+02	1.18E+02	0.00E+00	6.20E+02	1.01E+03	6.36E+02	1.65E+01	7.85E+02	1.65E+02	1.65E+03	1.11E+03

Table N-6. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)						Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
				Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)						
VII	Pu-239	5.06E+01	1.65E+09	7.94E-01	1.89E+03	0.00E+00	4.68E+01		6.58E+01	1.89E+01	2.36E+02	1.89E+02	1.89E+03	6.58E+01
	Cs-137	8.95E-01	8.42E+08	8.11E+00	1.16E-04	0.00E+00	2.76E-01		3.57E-01	8.11E-02	1.09E+00	8.11E-01	8.11E+00	3.57E-01
	Am-241	8.44E+00	5.71E+09	3.59E+00	3.15E+01	0.00E+00	3.24E+00		3.59E+00	3.51E-01	6.75E+00	3.51E+00	3.51E+01	3.59E+00
	Total			1.25E+01	1.93E+03	0.00E+00	5.04E+01		6.97E+01	1.94E+01	2.44E+02	1.94E+02	1.94E+03	6.97E+01
IX	Pu-239	9.47E+00	2.39E+05	1.12E-03	2.90E+00	0.00E+00	7.59E-02		1.05E-01	2.90E-02	3.66E-01	2.90E-01	2.90E+00	6.56E-01
	Am-241	1.58E+00	2.67E+06	6.72E-03	6.35E-02	0.00E+00	5.51E-03		6.21E-03	7.02E-04	1.25E-02	7.02E-03	7.02E-02	1.96E-02
	Total			7.84E-03	2.96E+00	0.00E+00	8.14E-02		1.11E-01	2.97E-02	3.78E-01	2.97E-01	2.97E+00	6.75E-01
X	Tc-99	8.16E+03	6.21E+00	4.06E-09	1.61E-08	1.49E+00	5.14E-02		1.54E+00	1.49E+00	1.54E+00	1.49E+00	1.49E+00	1.54E+00
	U-234+D	2.80E+02	5.76E+02	1.82E-04	2.52E-04	1.68E+00	3.02E-02	1.14E+00	1.72E+00	1.69E+00	1.83E+00	1.80E+00	2.82E+00	1.83E+00
	U-238+D	2.80E+02	5.76E+02	1.20E-03	2.21E-04	2.26E+00	1.92E-02		2.28E+00	2.26E+00	2.28E+00	2.26E+00	2.26E+00	2.28E+00
	Total			1.38E-03	4.73E-04	5.43E+00	1.01E-01	1.14E+00	5.55E+00	5.45E+00	5.65E+00	5.55E+00	6.57E+00	5.65E+00
XII	Pu-239	1.27E+03	1.25E+04	3.61E-05	6.80E-02	0.00E+00	1.47E-01		1.48E-01	6.80E-04	1.54E-01	6.80E-03	6.80E-02	6.80E-02
	Am-241	2.12E+02	4.33E+04	3.27E-03	2.33E-02	0.00E+00	5.63E-02		5.65E-02	2.66E-04	5.89E-02	2.66E-03	2.66E-02	2.66E-02
	Total			3.31E-03	9.13E-02	0.00E+00	2.03E-01		2.04E-01	9.46E-04	2.13E-01	9.46E-03	9.46E-02	9.46E-02
XIII A	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIII B	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIII C	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XVIA	Co-60	3.63E+01	4.29E+05	7.56E-03	5.55E-08	0.00E+00	1.30E-05		8.86E-05	7.56E-05	7.69E-04	7.56E-04	7.56E-03	1.52E-03
	Cs-137+D	2.89E+01	8.59E+05	7.72E-03	6.97E-08	0.00E+00	4.23E-04		5.01E-04	7.72E-05	1.20E-03	7.72E-04	7.72E-03	1.97E-03
	Total			1.53E-02	1.25E-07	0.00E+00	4.37E-04		5.89E-04	1.53E-04	1.96E-03	1.53E-03	1.53E-02	3.49E-03
XVIB	Co-60	3.63E+01	6.09E+04	7.51E-03	5.51E-08	0.00E+00	1.30E-05		8.81E-05	7.51E-05	7.64E-04	7.51E-04	7.51E-03	1.51E-03
	Cs-137+D	2.89E+01	1.22E+05	7.57E-03	6.83E-08	0.00E+00	4.22E-04		4.98E-04	7.57E-05	1.18E-03	7.57E-04	7.57E-03	1.94E-03
	Total			1.51E-02	1.23E-07	0.00E+00	4.35E-04		5.86E-04	1.51E-04	1.94E-03	1.51E-03	1.51E-02	3.45E-03

Table N-6. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	7.39E-03	5.42E-08	0.00E+00	1.30E-05		8.69E-05	7.39E-05	7.52E-04	7.39E-04	7.39E-03	1.49E-03
	Cs-137+D	2.89E+01	1.07E+04	7.25E-03	6.54E-08	0.00E+00	4.19E-04		4.91E-04	7.25E-05	1.14E-03	7.25E-04	7.25E-03	1.87E-03
	Total			1.46E-02	1.20E-07	0.00E+00	4.32E-04		5.78E-04	1.46E-04	1.90E-03	1.46E-03	1.46E-02	3.36E-03
XVIII A	Cs-137+D	3.54E+02	8.59E+05	4.46E-02	4.03E-07	0.00E+00	2.44E-03		2.89E-03	4.46E-04	6.90E-03	4.46E-03	4.46E-02	4.46E-02
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	8.73E-07	0.00E+00	3.12E-02		3.12E-02	8.73E-09	3.12E-02	8.73E-08	8.73E-07	8.73E-07
	Total			4.46E-02	1.28E-06	0.00E+00	3.37E-02		3.41E-02	4.46E-04	3.81E-02	4.46E-03	4.46E-02	4.46E-02
XVIII B	Cs-137+D	3.54E+02	1.22E+05	4.37E-02	3.95E-07	0.00E+00	2.44E-03		2.87E-03	4.37E-04	6.81E-03	4.37E-03	4.37E-02	4.37E-02
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	5.75E-07	3.64E-32	2.77E-02		2.77E-02	5.75E-09	2.77E-02	5.75E-08	5.75E-07	5.75E-07
	Total			4.37E-02	9.69E-07	3.64E-32	3.02E-02		3.06E-02	4.37E-04	3.45E-02	4.37E-03	4.37E-02	4.37E-02
XVIII C	Cs-137+D	3.54E+02	3.22E+04	4.18E-02	3.78E-07	0.00E+00	2.42E-03		2.84E-03	4.18E-04	6.60E-03	4.18E-03	4.18E-02	4.18E-02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	3.27E-07	6.80E-10	2.22E-02		2.22E-02	3.95E-09	2.22E-02	3.33E-08	3.27E-07	3.27E-07
	Total			4.18E-02	7.04E-07	6.80E-10	2.46E-02		2.50E-02	4.18E-04	2.88E-02	4.18E-03	4.18E-02	4.18E-02
XXA	U-234+D	4.37E+01	8.57E+04	2.38E-02	1.60E-03	0.00E+00	2.26E-01	1.11E+00	2.37E-01	1.13E-02	3.39E-01	1.13E-01	1.13E+00	4.52E-01
	U-235	1.46E+00	8.57E+04	1.08E-03	4.46E-05	0.00E+00	2.10E-03		2.11E-03	1.12E-05	2.21E-03	1.12E-04	1.12E-03	2.32E-03
	U-238+D	7.51E+00	8.57E+04	1.20E-03	2.21E-04	0.00E+00	1.42E-02		1.42E-02	1.42E-05	1.44E-02	1.42E-04	1.42E-03	1.45E-02
	Total			2.60E-02	1.86E-03	0.00E+00	2.42E-01	1.11E+00	2.53E-01	1.14E-02	3.56E-01	1.14E-01	1.14E+00	4.69E-01
XXB	U-234+D	2.54E+01	1.21E+04	3.19E-03	3.91E-04	0.00E+00	5.35E-02	4.52E-01	5.80E-02	4.56E-03	9.91E-02	4.56E-02	4.56E-01	1.45E-01
	U-235	8.40E-01	1.21E+04	2.64E-04	1.10E-05	0.00E+00	5.17E-04		5.19E-04	2.75E-06	5.44E-04	2.75E-05	2.75E-04	5.72E-04
	U-238+D	4.36E+00	1.21E+04	2.96E-04	5.46E-05	0.00E+00	3.53E-03		3.53E-03	3.51E-06	3.56E-03	3.51E-05	3.51E-04	3.60E-03
	Total			3.75E-03	4.57E-04	0.00E+00	5.75E-02	4.52E-01	6.21E-02	4.56E-03	1.03E-01	4.56E-02	4.56E-01	1.49E-01
XXC	U-234+D	2.54E+01	1.07E+03	6.02E-04	1.69E-04	1.32E-01	1.90E-02	2.48E-01	1.53E-01	1.34E-01	1.76E-01	1.57E-01	3.80E-01	2.00E-01
	U-235	8.40E-01	1.07E+03	1.16E-04	4.82E-06	4.22E-03	2.27E-04		4.45E-03	4.23E-03	4.46E-03	4.24E-03	4.35E-03	4.48E-03
	U-238+D	4.36E+00	1.07E+03	1.30E-04	2.40E-05	2.89E-02	1.55E-03		3.04E-02	2.89E-02	3.04E-02	2.89E-02	2.90E-02	3.04E-02
	Total			8.48E-04	1.98E-04	1.65E-01	2.07E-02	2.48E-01	1.88E-01	1.67E-01	2.10E-01	1.90E-01	4.14E-01	2.35E-01

Table N-6. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	3.39E-03	8.72E-07	0.00E+00	2.38E-04		2.72E-04	3.39E-05	5.78E-04	3.39E-04	3.39E-03	3.39E-03
	Th-228	1.83E+01	2.10E+07	2.13E-03	2.83E-05	0.00E+00	4.20E-06		2.58E-05	2.16E-05	2.20E-04	2.16E-04	2.16E-03	2.16E-03
	Th-232+D	1.83E+01	2.10E+07	1.10E+01	1.15E-01	0.00E+00	3.00E-01		4.11E-01	1.11E-01	1.41E+00	1.11E+00	1.11E+01	1.11E+01
	Total			1.10E+01	1.15E-01	0.00E+00	3.00E-01		4.11E-01	1.11E-01	1.41E+00	1.11E+00	1.11E+01	1.11E+01
XXIB	Ra-228	1.83E+01	6.84E+04	3.37E-03	8.66E-07	0.00E+00	2.38E-04		2.72E-04	3.37E-05	5.75E-04	3.37E-04	3.37E-03	3.37E-03
	Th-228	1.83E+01	2.99E+06	2.13E-03	2.83E-05	0.00E+00	4.20E-06		2.58E-05	2.16E-05	2.20E-04	2.16E-04	2.16E-03	2.16E-03
	Th-232+D	1.83E+01	2.99E+06	9.91E+00	1.04E-01	0.00E+00	2.95E-01		3.95E-01	1.00E-01	1.30E+00	1.00E+00	1.00E+01	1.00E+01
	Total			9.91E+00	1.04E-01	0.00E+00	2.95E-01		3.96E-01	1.00E-01	1.30E+00	1.00E+00	1.00E+01	1.00E+01
XXIC	Ra-228	1.83E+01	6.03E+03	3.32E-03	8.53E-07	0.00E+00	2.37E-04		2.71E-04	3.32E-05	5.69E-04	3.32E-04	3.32E-03	3.32E-03
	Th-228	1.83E+01	2.63E+05	2.13E-03	2.83E-05	0.00E+00	4.20E-06		2.58E-05	2.16E-05	2.20E-04	2.16E-04	2.16E-03	2.16E-03
	Th-232+D	1.83E+01	2.63E+05	8.02E+00	8.44E-02	0.00E+00	2.84E-01		3.65E-01	8.10E-02	1.09E+00	8.10E-01	8.10E+00	8.10E+00
	Total			8.02E+00	8.44E-02	0.00E+00	2.84E-01		3.65E-01	8.11E-02	1.09E+00	8.11E-01	8.11E+00	8.11E+00
XXII	U-234	1.71E+01	1.40E+02	8.48E-04	7.92E-04	4.55E+00	1.06E-01	4.01E+00	4.70E+00	4.59E+00	5.06E+00	4.95E+00	8.57E+00	1.02E+01
	U-235	8.01E-01	1.40E+02	8.15E-04	3.39E-05	2.22E-01	2.14E-03		2.25E-01	2.22E-01	2.25E-01	2.23E-01	2.23E-01	2.24E-01
	U-238+D	1.71E+01	1.40E+02	3.75E-03	6.92E-04	6.24E+00	6.00E-02		6.30E+00	6.24E+00	6.30E+00	6.24E+00	6.25E+00	6.25E+00
	Ra-226+D	3.16E+00	1.99E+03	1.03E+00	8.56E-04	3.77E+00	3.97E+00	4.02E+01	8.15E+00	4.18E+00	1.19E+01	7.90E+00	4.50E+01	6.16E+01
	Ra-228	1.92E+01	1.99E+03	9.32E-02	2.40E-05	0.00E+00	6.67E-03		7.60E-03	9.32E-04	1.60E-02	9.32E-03	9.32E-02	1.31E-01
	Th-228	1.92E+01	1.27E+04	5.99E-02	7.94E-04	0.00E+00	1.18E-04		7.25E-04	6.07E-04	6.19E-03	6.07E-03	6.07E-02	8.49E-02
	Th-232	1.92E+01	1.27E+04	6.13E+01	6.45E-01	0.00E+00	5.67E+00		6.29E+00	6.19E-01	1.19E+01	6.19E+00	6.19E+01	8.67E+01
Total			6.25E+01	6.48E-01	1.48E+01	9.82E+00	4.43E+01	2.57E+01	1.59E+01	3.53E+01	2.55E+01	1.22E+02	1.65E+02	

- (a) Based on 1,000 people/km²
- (b) Based on 10 people/km²
- (c) Based on 100 people/km²
- (d) Based on site specific data

Table N-7. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 100 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	2.28E-01	3.67E-06	0.00E+00	7.78E-03		1.01E-02	2.28E-03	3.06E-02	2.28E-02	2.28E-01	3.06E-02
	Total													
II-1	Ra-226+D	5.43E+01	4.65E+05	4.04E-01	3.37E-04	0.00E+00	2.29E-01	5.65E-01	2.39E-01	9.69E-03	3.26E-01	9.69E-02	9.69E-01	9.69E-01
	Ra-228	2.69E+00	4.65E+05	1.68E-02	4.33E-06	0.00E+00	6.56E-04		8.24E-04	1.68E-04	2.34E-03	1.68E-03	1.68E-02	1.68E-02
	Th-228	2.69E+00	2.96E+05	1.04E-02	1.40E-04	0.00E+00	1.15E-05		1.17E-04	1.05E-04	1.07E-03	1.05E-03	1.05E-02	1.05E-02
	Th-230	5.40E+01	2.96E+05	8.77E-03	9.03E-04	0.00E+00	3.22E-03	1.23E-02	3.44E-03	2.20E-04	5.42E-03	2.20E-03	2.20E-02	2.20E-02
	Th-232+D	9.66E-01	2.96E+05	5.15E-01	5.51E-03	0.00E+00	7.66E-03		1.29E-02	5.21E-03	5.97E-02	5.21E-02	5.21E-01	5.21E-01
	U-234+D	7.07E+01	8.17E+04	3.87E-06	7.05E-04	0.00E+00	3.75E-03	3.71E-06	3.76E-03	7.13E-06	3.82E-03	7.13E-05	7.13E-04	7.13E-04
	U-235	1.14E+00	8.17E+04	1.58E-02	6.56E-04	0.00E+00	3.96E-03		4.13E-03	1.65E-04	5.61E-03	1.65E-03	1.65E-02	1.65E-02
	U-238+D	3.11E+01	8.17E+04	3.40E-03	6.29E-04	0.00E+00	5.22E-03		5.26E-03	4.03E-05	5.62E-03	4.03E-04	4.03E-03	4.03E-03
Total														
II-2	U-234+D	2.52E+02	8.60E+04	1.97E-05	7.05E-03	0.00E+00	3.75E-03	3.71E-06	3.82E-03	7.07E-05	4.46E-03	7.07E-04	7.07E-03	7.07E-03
	U-235	4.08E+00	8.60E+04	1.08E-01	6.56E-03	0.00E+00	3.96E-03		5.11E-03	1.14E-03	1.54E-02	1.14E-02	1.14E-01	1.14E-01
	U-238+D	1.11E+02	8.60E+04	1.62E-02	6.29E-03	0.00E+00	5.22E-03		5.45E-03	2.25E-04	7.47E-03	2.25E-03	2.25E-02	2.25E-02
	Total													
III	Cs-137	9.89E+00	2.00E+06	2.42E-01	3.90E-06	0.00E+00	7.86E-03		1.03E-02	2.42E-03	3.21E-02	2.42E-02	2.42E-01	3.21E-02
	Total													
IV	U-234+D	3.24E+02	1.48E+04	1.01E-05	2.65E-03	0.00E+00	3.62E-03	3.67E-06	3.64E-03	2.66E-05	3.88E-03	2.66E-04	2.66E-03	4.15E-03
	U-235	1.52E+01	1.48E+04	5.43E-02	2.46E-03	0.00E+00	3.82E-03		4.39E-03	5.68E-04	9.50E-03	5.68E-03	5.68E-02	1.52E-02
	U-238+D	3.24E+02	1.48E+04	9.62E-03	2.36E-03	0.00E+00	5.03E-03		5.15E-03	1.20E-04	6.23E-03	1.20E-03	1.20E-02	7.43E-03
	Total													
V	Cs-137	1.07E+03	2.39E+04	2.26E-01	3.64E-06	0.00E+00	7.77E-03		1.00E-02	2.26E-03	3.04E-02	2.26E-02	2.26E-01	3.04E-02
	Total													
VI	Cs-137	8.63E+01	2.07E+05	2.41E-01	3.76E-06	0.00E+00	7.87E-03		1.03E-02	2.41E-03	3.19E-02	2.41E-02	2.41E-01	8.01E-02
	U-234	1.22E+03	3.31E+04	1.94E-05	6.74E-03	0.00E+00	3.75E-03	3.71E-06	3.82E-03	6.76E-05	4.43E-03	6.76E-04	6.76E-03	5.78E-03
	U-235	5.75E+01	3.31E+04	1.05E-01	6.27E-03	0.00E+00	3.96E-03		5.08E-03	1.11E-03	1.51E-02	1.11E-02	1.11E-01	3.74E-02
	U-238+D	1.22E+03	3.31E+04	1.60E-02	6.01E-03	0.00E+00	5.22E-03		5.44E-03	2.20E-04	7.42E-03	2.20E-03	2.20E-02	1.18E-02
	Total													

Table N-7. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 100 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	5.13E-06	1.22E-02	0.00E+00	3.02E-04		4.25E-04	1.23E-04	1.53E-03	1.23E-03	1.23E-02	4.25E-04
	Cs-137	8.95E-01	8.42E+08	2.32E-01	3.31E-06	0.00E+00	7.87E-03		1.02E-02	2.32E-03	3.10E-02	2.32E-02	2.32E-01	1.02E-02
	Am-241	8.44E+00	5.71E+09	1.79E-03	1.57E-02	0.00E+00	1.61E-03		1.79E-03	1.75E-04	3.36E-03	1.75E-03	1.75E-02	1.79E-03
	Total													
IX	Pu-239	9.47E+00	2.39E+05	5.63E-06	1.45E-02	0.00E+00	3.02E-04		4.48E-04	1.45E-04	1.76E-03	1.45E-03	1.45E-02	3.21E-03
	Am-241	1.58E+00	2.67E+06	1.97E-03	1.87E-02	0.00E+00	1.61E-03		1.82E-03	2.06E-04	3.68E-03	2.06E-03	2.06E-02	5.74E-03
	Total													
X	Tc-99	8.16E+03	6.21E+00	1.91E-11	7.57E-11	7.01E-03	2.41E-04		7.25E-03	7.01E-03	7.25E-03	7.01E-03	7.01E-03	7.25E-03
	U-234+D	2.80E+02	5.76E+02	2.94E-07	3.38E-05	0.00E+00	1.18E-03	3.54E-06	1.18E-03	3.77E-07	1.19E-03	3.77E-06	3.77E-05	1.19E-03
	U-238+D	2.80E+02	5.76E+02	1.64E-04	3.02E-05	0.00E+00	1.64E-03		1.65E-03	1.94E-06	1.66E-03	1.94E-05	1.94E-04	1.66E-03
	Total													
XII	Pu-239	1.27E+03	1.25E+04	3.43E-07	6.45E-04	0.00E+00	2.84E-04		2.90E-04	6.45E-06	3.48E-04	6.45E-05	6.45E-04	6.45E-04
	Am-241	2.12E+02	4.33E+04	1.34E-04	9.51E-04	0.00E+00	1.55E-03		1.56E-03	1.09E-05	1.66E-03	1.09E-04	1.09E-03	1.09E-03
	Total													
XIII A	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XIII B	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XIII C	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XVIA	Co-60	3.63E+01	4.29E+05	1.24E-01	9.11E-07	0.00E+00	2.14E-04		1.46E-03	1.24E-03	1.26E-02	1.24E-02	1.24E-01	2.50E-02
	Cs-137+D	2.89E+01	8.59E+05	1.44E-01	1.30E-06	0.00E+00	7.86E-03		9.30E-03	1.44E-03	2.22E-02	1.44E-02	1.44E-01	3.66E-02
	Total													
XVIB	Co-60	3.63E+01	6.09E+04	1.23E-01	9.04E-07	0.00E+00	2.14E-04		1.45E-03	1.23E-03	1.25E-02	1.23E-02	1.23E-01	2.49E-02
	Cs-137+D	2.89E+01	1.22E+05	1.42E-01	1.28E-06	0.00E+00	7.84E-03		9.26E-03	1.42E-03	2.20E-02	1.42E-02	1.42E-01	3.62E-02
	Total													

Table N-7. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 100 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	1.21E-01	8.90E-07	0.00E+00	2.13E-04		1.43E-03	1.21E-03	1.23E-02	1.21E-02	1.21E-01	2.45E-02
	Cs-137+D	2.89E+01	1.07E+04	1.37E-01	1.24E-06	0.00E+00	7.79E-03		9.16E-03	1.37E-03	2.15E-02	1.37E-02	1.37E-01	3.52E-02
	Total													
XVIII A	Cs-137+D	3.54E+02	8.59E+05	1.44E-01	1.30E-06	0.00E+00	7.86E-03		9.30E-03	1.44E-03	2.22E-02	1.44E-02	1.44E-01	1.44E-01
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	3.05E-06	0.00E+00	1.04E-01		1.04E-01	3.05E-08	1.04E-01	3.05E-07	3.05E-06	3.05E-06
	Total													
XVIII B	Cs-137+D	3.54E+02	1.22E+05	1.42E-01	1.28E-06	0.00E+00	7.84E-03		9.26E-03	1.42E-03	2.20E-02	1.42E-02	1.42E-01	1.42E-01
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	2.05E-06	0.00E+00	9.40E-02		9.40E-02	2.05E-08	9.40E-02	2.05E-07	2.05E-06	2.05E-06
	Total													
XVIII C	Cs-137+D	3.54E+02	3.22E+04	1.37E-01	1.24E-06	0.00E+00	7.79E-03		9.16E-03	1.37E-03	2.15E-02	1.37E-02	1.37E-01	1.37E-01
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	1.17E-06	0.00E+00	7.73E-02		7.73E-02	1.17E-08	7.73E-02	1.17E-07	1.17E-06	1.17E-06
	Total													
XXA	U-234+D	4.37E+01	8.57E+04	2.64E-06	4.60E-04	0.00E+00	3.67E-03	3.70E-06	3.67E-03	4.66E-06	3.71E-03	4.66E-05	4.66E-04	3.76E-03
	U-235	1.46E+00	8.57E+04	1.03E-02	4.28E-04	0.00E+00	3.87E-03		3.98E-03	1.07E-04	4.95E-03	1.07E-03	1.07E-02	6.02E-03
	U-238+D	7.51E+00	8.57E+04	2.23E-03	4.11E-04	0.00E+00	5.10E-03		5.13E-03	2.64E-05	5.37E-03	2.64E-04	2.64E-03	5.63E-03
	Total													
XXB	U-234+D	2.54E+01	1.21E+04	2.25E-06	3.71E-04	0.00E+00	3.53E-03	3.68E-06	3.53E-03	3.77E-06	3.56E-03	3.77E-05	3.77E-04	3.60E-03
	U-235	8.40E-01	1.21E+04	8.31E-03	3.45E-04	0.00E+00	3.73E-03		3.81E-03	8.66E-05	4.59E-03	8.66E-04	8.66E-03	5.46E-03
	U-238+D	4.36E+00	1.21E+04	1.79E-03	3.31E-04	0.00E+00	4.91E-03		4.93E-03	2.12E-05	5.12E-03	2.12E-04	2.12E-03	5.33E-03
	Total													
XXC	U-234+D	2.54E+01	1.07E+03	1.65E-06	2.45E-04	0.00E+00	3.24E-03	3.65E-06	3.24E-03	2.50E-06	3.26E-03	2.50E-05	2.50E-04	3.29E-03
	U-235	8.40E-01	1.07E+03	5.49E-03	2.28E-04	0.00E+00	3.42E-03		3.48E-03	5.71E-05	3.99E-03	5.71E-04	5.71E-03	4.56E-03
	U-238+D	4.36E+00	1.07E+03	1.18E-03	2.18E-04	0.00E+00	4.50E-03		4.52E-03	1.40E-05	4.64E-03	1.40E-04	1.40E-03	4.78E-03
	Total													

Table N-7. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 100 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	3.36E-03	8.63E-07	0.00E+00	2.36E-04		2.70E-04	3.36E-05	5.72E-04	3.36E-04	3.36E-03	3.36E-03
	Th-228	1.83E+01	2.10E+07	2.11E-03	2.80E-05	0.00E+00	4.15E-06		2.56E-05	2.14E-05	2.18E-04	2.14E-04	2.14E-03	2.14E-03
	Th-232+D	1.83E+01	2.10E+07	1.05E-01	1.11E-03	0.00E+00	2.76E-03		3.82E-03	1.06E-03	1.33E-02	1.06E-02	1.06E-01	1.06E-01
	Total													
XXIB	Ra-228	1.83E+01	6.84E+04	3.34E-03	8.57E-07	0.00E+00	2.36E-04		2.69E-04	3.34E-05	5.69E-04	3.34E-04	3.34E-03	3.34E-03
	Th-228	1.83E+01	2.99E+06	2.11E-03	2.80E-05	0.00E+00	4.15E-06		2.56E-05	2.14E-05	2.18E-04	2.14E-04	2.14E-03	2.14E-03
	Th-232+D	1.83E+01	2.99E+06	1.04E-01	1.10E-03	0.00E+00	2.76E-03		3.81E-03	1.05E-03	1.33E-02	1.05E-02	1.05E-01	1.05E-01
	Total													
XXIC	Ra-228	1.83E+01	6.03E+03	3.29E-03	8.44E-07	0.00E+00	2.35E-04		2.68E-04	3.29E-05	5.64E-04	3.29E-04	3.29E-03	3.29E-03
	Th-228	1.83E+01	2.63E+05	2.11E-03	2.80E-05	0.00E+00	4.15E-06		2.56E-05	2.14E-05	2.18E-04	2.14E-04	2.14E-03	2.14E-03
	Th-232+D	1.83E+01	2.63E+05	1.02E-01	1.09E-03	0.00E+00	2.75E-03		3.78E-03	1.03E-03	1.31E-02	1.03E-02	1.03E-01	1.03E-01
	Total													
XXII	U-234	1.71E+01	1.40E+02	3.21E-07	3.81E-05	0.00E+00	1.17E-03	3.57E-06	1.17E-03	4.20E-07	1.18E-03	4.20E-06	4.20E-05	5.87E-05
	U-235	8.01E-01	1.40E+02	8.53E-04	3.54E-05	0.00E+00	1.24E-03		1.25E-03	8.88E-06	1.33E-03	8.88E-05	8.88E-04	1.24E-03
	U-238+D	1.71E+01	1.40E+02	1.84E-04	3.40E-05	0.00E+00	1.63E-03		1.63E-03	2.18E-06	1.65E-03	2.18E-05	2.18E-04	3.05E-04
	Ra-226+D	3.16E+00	1.99E+03	8.69E-02	7.22E-05	0.00E+00	1.00E-01	5.62E-01	1.07E-01	6.49E-03	1.65E-01	6.49E-02	6.49E-01	9.09E-01
	Ra-228	1.92E+01	1.99E+03	4.11E-03	1.06E-06	0.00E+00	2.94E-04		3.35E-04	4.11E-05	7.05E-04	4.11E-04	4.11E-03	5.75E-03
	Th-228	1.92E+01	1.27E+04	2.64E-03	3.50E-05	0.00E+00	5.19E-06		3.19E-05	2.67E-05	2.72E-04	2.67E-04	2.67E-03	3.74E-03
	Th-232	1.92E+01	1.27E+04	1.25E-01	1.33E-03	0.00E+00	3.42E-03		4.69E-03	1.27E-03	1.61E-02	1.27E-02	1.27E-01	1.77E-01
Total														

- (a) Based on 1,000 people/km²
- (b) Based on 10 people/km²
- (c) Based on 100 people/km²
- (d) Based on site specific data

Table N-8. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	2.48E-01	3.99E-06	0.00E+00	8.61E-03		1.11E-02	2.48E-03	3.34E-02	2.48E-02	2.48E-01	3.34E-02
	Total													
II-1	Ra-226+D	5.43E+01	4.65E+05	3.17E+00	2.64E-03	0.00E+00	1.88E+00	4.68E+00	1.96E+00	7.85E-02	2.67E+00	7.85E-01	7.85E+00	7.85E+00
	Ra-228	2.69E+00	4.65E+05	1.68E-02	4.33E-06	0.00E+00	6.56E-04		8.24E-04	1.68E-04	2.34E-03	1.68E-03	1.68E-02	1.68E-02
	Th-228	2.69E+00	2.96E+05	1.04E-02	1.40E-04	0.00E+00	1.15E-05		1.17E-04	1.05E-04	1.07E-03	1.05E-03	1.05E-02	1.05E-02
	Th-230	5.40E+01	2.96E+05	6.96E-01	8.70E-03	0.00E+00	4.08E-01	1.08E+00	4.26E-01	1.79E-02	5.86E-01	1.79E-01	1.79E+00	1.79E+00
	Th-232+D	9.66E-01	2.96E+05	5.16E+00	5.47E-02	0.00E+00	8.15E-02		1.34E-01	5.22E-02	6.03E-01	5.22E-01	5.22E+00	5.22E+00
	U-234+D	7.07E+01	8.17E+04	1.85E-03	5.12E-03	0.00E+00	3.67E-02	3.34E-03	3.68E-02	1.03E-04	3.77E-02	1.03E-03	1.03E-02	1.03E-02
	U-235	1.14E+00	8.17E+04	1.14E-01	4.75E-03	0.00E+00	3.74E-02		3.86E-02	1.19E-03	4.93E-02	1.19E-02	1.19E-01	1.19E-01
	U-238+D	3.11E+01	8.17E+04	2.46E-02	4.55E-03	0.00E+00	4.93E-02		4.96E-02	2.92E-04	5.22E-02	2.92E-03	2.92E-02	2.92E-02
Total														
II-2	U-234+D	2.52E+02	8.60E+04	7.66E-03	5.12E-02	0.00E+00	3.67E-02	3.34E-03	3.73E-02	6.22E-04	4.29E-02	6.22E-03	6.22E-02	6.22E-02
	U-235	4.08E+00	8.60E+04	7.78E-01	4.75E-02	0.00E+00	3.74E-02		4.57E-02	8.26E-03	1.20E-01	8.26E-02	8.26E-01	8.26E-01
	U-238+D	1.11E+02	8.60E+04	1.17E-01	4.55E-02	0.00E+00	4.93E-02		5.09E-02	1.63E-03	6.55E-02	1.63E-02	1.63E-01	1.63E-01
	Total													
III	Cs-137	9.89E+00	2.00E+06	2.68E-01	4.32E-06	0.00E+00	8.73E-03		1.14E-02	2.68E-03	3.56E-02	2.68E-02	2.68E-01	3.56E-02
	Total													
IV	U-234+D	3.24E+02	1.48E+04	4.49E-04	6.55E-03	0.00E+00	2.60E-02	2.99E-03	2.61E-02	9.99E-05	2.70E-02	9.99E-04	9.99E-03	2.80E-02
	U-235	1.52E+01	1.48E+04	1.34E-01	6.06E-03	0.00E+00	2.67E-02		2.81E-02	1.40E-03	4.07E-02	1.40E-02	1.40E-01	5.47E-02
	U-238+D	3.24E+02	1.48E+04	2.37E-02	5.81E-03	0.00E+00	3.52E-02		3.55E-02	2.95E-04	3.82E-02	2.95E-03	2.95E-02	4.11E-02
	Total													
V	Cs-137	1.07E+03	2.39E+04	2.45E-01	3.95E-06	0.00E+00	8.60E-03		1.11E-02	2.45E-03	3.31E-02	2.45E-02	2.45E-01	3.31E-02
	Total													
VI	Cs-137	8.63E+01	2.07E+05	2.67E-01	4.17E-06	0.00E+00	8.75E-03		1.14E-02	2.67E-03	3.55E-02	2.67E-02	2.67E-01	8.89E-02
	U-234	1.22E+03	3.31E+04	7.50E-03	4.84E-02	0.00E+00	3.66E-02	3.34E-03	3.72E-02	5.92E-04	4.25E-02	5.92E-03	5.92E-02	5.43E-02
	U-235	5.75E+01	3.31E+04	7.52E-01	4.48E-02	0.00E+00	3.73E-02		4.53E-02	7.97E-03	1.17E-01	7.97E-02	7.97E-01	2.76E-01
	U-238+D	1.22E+03	3.31E+04	1.14E-01	4.30E-02	0.00E+00	4.92E-02		5.07E-02	1.57E-03	6.49E-02	1.57E-02	1.57E-01	9.63E-02
	Total													

Table N-8. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	5.07E-05	1.21E-01	0.00E+00	2.99E-03		4.19E-03	1.21E-03	1.51E-02	1.21E-02	1.21E-01	4.19E-03
	Cs-137	8.95E-01	8.42E+08	2.58E-01	3.68E-06	0.00E+00	8.75E-03		1.13E-02	2.58E-03	3.45E-02	2.58E-02	2.58E-01	1.13E-02
	Am-241	8.44E+00	5.71E+09	9.65E-03	8.47E-02	0.00E+00	8.71E-03		9.65E-03	9.44E-04	1.81E-02	9.44E-03	9.44E-02	9.65E-03
	Total													
IX	Pu-239	9.47E+00	2.39E+05	5.40E-05	1.39E-01	0.00E+00	2.97E-03		4.36E-03	1.39E-03	1.69E-02	1.39E-02	1.39E-01	3.09E-02
	Am-241	1.58E+00	2.67E+06	1.06E-02	1.01E-01	0.00E+00	8.70E-03		9.82E-03	1.11E-03	1.98E-02	1.11E-02	1.11E-01	3.09E-02
	Total													
X	Tc-99	8.16E+03	6.21E+00	1.91E-11	7.57E-11	7.01E-03	2.41E-04		7.25E-03	7.01E-03	7.25E-03	7.01E-03	7.01E-03	7.25E-03
	U-234+D	2.80E+02	5.76E+02	9.79E-06	3.42E-05	1.99E-01	2.02E-03	2.18E-03	2.01E-01	1.99E-01	2.02E-01	2.00E-01	2.02E-01	2.02E-01
	U-238+D	2.80E+02	5.76E+02	1.64E-04	3.03E-05	2.69E-01	2.63E-03		2.72E-01	2.69E-01	2.72E-01	2.69E-01	2.69E-01	2.72E-01
	Total													
XII	Pu-239	1.27E+03	1.25E+04	9.94E-07	1.87E-03	0.00E+00	2.10E-03		2.12E-03	1.87E-05	2.29E-03	1.87E-04	1.87E-03	1.87E-03
	Am-241	2.12E+02	4.33E+04	5.15E-04	3.66E-03	0.00E+00	7.87E-03		7.91E-03	4.18E-05	8.29E-03	4.18E-04	4.18E-03	4.18E-03
	Total													
XIII A	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XIII B	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XIII C	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XVIA	Co-60	3.63E+01	4.29E+05	1.24E-01	9.11E-07	0.00E+00	2.14E-04		1.46E-03	1.24E-03	1.26E-02	1.24E-02	1.24E-01	2.50E-02
	Cs-137+D	2.89E+01	8.59E+05	1.59E-01	1.44E-06	0.00E+00	8.73E-03		1.03E-02	1.59E-03	2.47E-02	1.59E-02	1.59E-01	4.06E-02
	Total													
XVIB	Co-60	3.63E+01	6.09E+04	1.23E-01	9.04E-07	0.00E+00	2.14E-04		1.45E-03	1.23E-03	1.25E-02	1.23E-02	1.23E-01	2.49E-02
	Cs-137+D	2.89E+01	1.22E+05	1.56E-01	1.41E-06	0.00E+00	8.70E-03		1.03E-02	1.56E-03	2.43E-02	1.56E-02	1.56E-01	3.99E-02
	Total													

Table N-8. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	1.21E-01	8.90E-07	0.00E+00	2.13E-04		1.43E-03	1.21E-03	1.23E-02	1.21E-02	1.21E-01	2.45E-02
	Cs-137+D	2.89E+01	1.07E+04	1.49E-01	1.35E-06	0.00E+00	8.64E-03		1.01E-02	1.49E-03	2.36E-02	1.49E-02	1.49E-01	3.85E-02
	Total													
XVIII A	Cs-137+D	3.54E+02	8.59E+05	1.59E-01	1.44E-06	0.00E+00	8.73E-03		1.03E-02	1.59E-03	2.47E-02	1.59E-02	1.59E-01	1.59E-01
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	3.12E-06	0.00E+00	1.12E-01		1.12E-01	3.12E-08	1.12E-01	3.12E-07	3.12E-06	3.12E-06
	Total													
XVIII B	Cs-137+D	3.54E+02	1.22E+05	1.56E-01	1.41E-06	0.00E+00	8.70E-03		1.03E-02	1.56E-03	2.43E-02	1.56E-02	1.56E-01	1.56E-01
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	2.05E-06	0.00E+00	9.90E-02		9.90E-02	2.05E-08	9.90E-02	2.05E-07	2.05E-06	2.05E-06
	Total													
XVIII C	Cs-137+D	3.54E+02	3.22E+04	1.49E-01	1.35E-06	0.00E+00	8.64E-03		1.01E-02	1.49E-03	2.36E-02	1.49E-02	1.49E-01	1.49E-01
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	1.17E-06	2.43E-09	7.91E-02		7.91E-02	1.41E-08	7.91E-02	1.19E-07	1.17E-06	1.17E-06
	Total													
XXA	U-234+D	4.37E+01	8.57E+04	7.62E-04	1.50E-03	0.00E+00	2.96E-02	3.26E-03	2.97E-02	5.53E-05	3.02E-02	5.53E-04	5.53E-03	3.07E-02
	U-235	1.46E+00	8.57E+04	3.35E-02	1.39E-03	0.00E+00	3.01E-02		3.05E-02	3.49E-04	3.36E-02	3.49E-03	3.49E-02	3.71E-02
	U-238+D	7.51E+00	8.57E+04	7.22E-03	1.33E-03	0.00E+00	3.96E-02		3.97E-02	8.56E-05	4.05E-02	8.56E-04	8.56E-03	4.14E-02
	Total													
XXB	U-234+D	2.54E+01	1.21E+04	3.44E-04	6.61E-04	0.00E+00	2.13E-02	3.13E-03	2.13E-02	4.14E-05	2.17E-02	4.14E-04	4.14E-03	2.21E-02
	U-235	8.40E-01	1.21E+04	1.47E-02	6.10E-04	0.00E+00	2.16E-02		2.17E-02	1.53E-04	2.31E-02	1.53E-03	1.53E-02	2.46E-02
	U-238+D	4.36E+00	1.21E+04	3.17E-03	5.85E-04	0.00E+00	2.84E-02		2.84E-02	3.75E-05	2.88E-02	3.75E-04	3.75E-03	2.91E-02
	Total													
XXC	U-234+D	2.54E+01	1.07E+03	1.13E-04	2.91E-04	0.00E+00	1.20E-02	2.86E-03	1.21E-02	3.26E-05	1.24E-02	3.26E-04	3.26E-03	1.27E-02
	U-235	8.40E-01	1.07E+03	6.45E-03	2.68E-04	0.00E+00	1.21E-02		1.21E-02	6.72E-05	1.27E-02	6.72E-04	6.72E-03	1.34E-02
	U-238+D	4.36E+00	1.07E+03	1.39E-03	2.57E-04	0.00E+00	1.59E-02		1.59E-02	1.65E-05	1.61E-02	1.65E-04	1.65E-03	1.62E-02
	Total													

Table N-8. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	3.36E-03	8.63E-07	0.00E+00	2.36E-04		2.70E-04	3.36E-05	5.72E-04	3.36E-04	3.36E-03	3.36E-03
	Th-228	1.83E+01	2.10E+07	2.11E-03	2.80E-05	0.00E+00	4.15E-06		2.56E-05	2.14E-05	2.18E-04	2.14E-04	2.14E-03	2.14E-03
	Th-232+D	1.83E+01	2.10E+07	1.15E+00	1.20E-02	0.00E+00	2.98E-02		4.14E-02	1.16E-02	1.46E-01	1.16E-01	1.16E+00	1.16E+00
	Total													
XXIB	Ra-228	1.83E+01	6.84E+04	3.34E-03	8.57E-07	0.00E+00	2.36E-04		2.69E-04	3.34E-05	5.69E-04	3.34E-04	3.34E-03	3.34E-03
	Th-228	1.83E+01	2.99E+06	2.11E-03	2.80E-05	0.00E+00	4.15E-06		2.56E-05	2.14E-05	2.18E-04	2.14E-04	2.14E-03	2.14E-03
	Th-232+D	1.83E+01	2.99E+06	1.13E+00	1.18E-02	0.00E+00	2.97E-02		4.11E-02	1.14E-02	1.44E-01	1.14E-01	1.14E+00	1.14E+00
	Total													
XXIC	Ra-228	1.83E+01	6.03E+03	3.29E-03	8.44E-07	0.00E+00	2.35E-04		2.68E-04	3.29E-05	5.64E-04	3.29E-04	3.29E-03	3.29E-03
	Th-228	1.83E+01	2.63E+05	2.11E-03	2.80E-05	0.00E+00	4.15E-06		2.56E-05	2.14E-05	2.18E-04	2.14E-04	2.14E-03	2.14E-03
	Th-232+D	1.83E+01	2.63E+05	1.09E+00	1.14E-02	0.00E+00	2.96E-02		4.05E-02	1.10E-02	1.39E-01	1.10E-01	1.10E+00	1.10E+00
	Total													
XXII	U-234	1.71E+01	1.40E+02	1.33E-05	3.87E-05	2.14E-01	2.28E-03	2.35E-03	2.17E-01	2.14E-01	2.17E-01	2.14E-01	2.17E-01	2.18E-01
	U-235	8.01E-01	1.40E+02	8.60E-04	3.57E-05	2.24E-01	2.26E-03		2.26E-01	2.24E-01	2.26E-01	2.24E-01	2.25E-01	2.25E-01
	U-238+D	1.71E+01	1.40E+02	1.86E-04	3.42E-05	2.95E-01	2.97E-03		2.98E-01	2.95E-01	2.98E-01	2.95E-01	2.95E-01	2.95E-01
	Ra-226+D	3.16E+00	1.99E+03	2.69E-01	2.24E-04	0.00E+00	6.68E-01	4.47E+00	7.16E-01	4.74E-02	1.14E+00	4.74E-01	4.74E+00	6.64E+00
	Ra-228	1.92E+01	1.99E+03	4.11E-03	1.06E-06	0.00E+00	2.94E-04		3.35E-04	4.11E-05	7.05E-04	4.11E-04	4.11E-03	5.75E-03
	Th-228	1.92E+01	1.27E+04	2.64E-03	3.50E-05	0.00E+00	5.19E-06		3.19E-05	2.67E-05	2.72E-04	2.67E-04	2.67E-03	3.74E-03
	Th-232	1.92E+01	1.27E+04	1.10E+00	1.16E-02	0.00E+00	3.56E-02		4.67E-02	1.11E-02	1.47E-01	1.11E-01	1.11E+00	1.56E+00
Total														

- (a) Based on 1,000 people/km²
- (b) Based on 10 people/km²
- (c) Based on 100 people/km²
- (d) Based on site specific data

Table N-9. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	2.48E-01	3.99E-06	0.00E+00	8.61E-03		1.11E-02	2.48E-03	3.34E-02	2.48E-02	2.48E-01	3.34E-02
	Total													
II-1	Ra-226+D	5.43E+01	4.65E+05	7.27E+00	6.07E-03	0.00E+00	5.08E+00	1.30E+01	5.29E+00	2.03E-01	7.11E+00	2.03E+00	2.03E+01	2.03E+01
	Ra-228	2.69E+00	4.65E+05	1.68E-02	4.33E-06	0.00E+00	6.56E-04		8.24E-04	1.68E-04	2.34E-03	1.68E-03	1.68E-02	1.68E-02
	Th-228	2.69E+00	2.96E+05	1.04E-02	1.40E-04	0.00E+00	1.15E-05		1.17E-04	1.05E-04	1.07E-03	1.05E-03	1.05E-02	1.05E-02
	Th-230	5.40E+01	2.96E+05	1.17E+01	4.60E-02	0.00E+00	1.44E+01	4.16E+01	1.49E+01	5.33E-01	1.97E+01	5.33E+00	5.33E+01	5.33E+01
	Th-232+D	9.66E-01	2.96E+05	2.39E+01	2.53E-01	0.00E+00	7.04E-01		9.45E-01	2.41E-01	3.12E+00	2.41E+00	2.41E+01	2.41E+01
	U-234+D	7.07E+01	8.17E+04	1.25E-01	9.92E-03	0.00E+00	6.17E-01	1.48E+00	6.33E-01	1.61E-02	7.78E-01	1.61E-01	1.61E+00	1.61E+00
	U-235	1.14E+00	8.17E+04	2.12E-01	8.80E-03	0.00E+00	2.24E-01		2.26E-01	2.21E-03	2.46E-01	2.21E-02	2.21E-01	2.21E-01
	U-238+D	3.11E+01	8.17E+04	4.56E-02	8.43E-03	0.00E+00	2.95E-01		2.96E-01	5.41E-04	3.00E-01	5.41E-03	5.41E-02	5.41E-02
Total														
II-2	U-234+D	2.52E+02	8.60E+04	5.15E-01	9.92E-02	0.00E+00	6.17E-01	1.48E+00	6.38E-01	2.09E-02	8.26E-01	2.09E-01	2.09E+00	2.09E+00
	U-235	4.08E+00	8.60E+04	1.44E+00	8.80E-02	0.00E+00	2.24E-01		2.39E-01	1.53E-02	3.77E-01	1.53E-01	1.53E+00	1.53E+00
	U-238+D	1.11E+02	8.60E+04	2.17E-01	8.43E-02	0.00E+00	2.95E-01		2.98E-01	3.01E-03	3.25E-01	3.01E-02	3.01E-01	3.01E-01
	Total													
III	Cs-137	9.89E+00	2.00E+06	2.68E-01	4.32E-06	0.00E+00	8.73E-03		1.14E-02	2.68E-03	3.56E-02	2.68E-02	2.68E-01	3.56E-02
	Total													
IV	U-234+D	3.24E+02	1.48E+04	8.12E-04	6.61E-03	0.00E+00	6.34E-02	6.64E-01	7.01E-02	6.72E-03	1.31E-01	6.72E-02	6.72E-01	1.98E-01
	U-235	1.52E+01	1.48E+04	1.34E-01	6.10E-03	0.00E+00	4.63E-02		4.77E-02	1.41E-03	6.03E-02	1.41E-02	1.41E-01	7.44E-02
	U-238+D	3.24E+02	1.48E+04	2.38E-02	5.85E-03	0.00E+00	6.09E-02		6.12E-02	2.97E-04	6.39E-02	2.97E-03	2.97E-02	6.68E-02
	Total													
V	Cs-137	1.07E+03	2.39E+04	2.45E-01	3.95E-06	0.00E+00	8.60E-03		1.11E-02	2.45E-03	3.31E-02	2.45E-02	2.45E-01	3.31E-02
	Total													
VI	Cs-137	8.63E+01	2.07E+05	2.67E-01	4.17E-06	0.00E+00	8.75E-03		1.14E-02	2.67E-03	3.55E-02	2.67E-02	2.67E-01	8.89E-02
	U-234	1.22E+03	3.31E+04	4.78E-01	9.13E-02	0.00E+00	6.06E-01	1.47E+00	6.26E-01	2.04E-02	8.10E-01	2.04E-01	2.04E+00	1.22E+00
	U-235	5.75E+01	3.31E+04	1.36E+00	8.10E-02	0.00E+00	2.20E-01		2.34E-01	1.44E-02	3.64E-01	1.44E-01	1.44E+00	6.52E-01
	U-238+D	1.22E+03	3.31E+04	2.06E-01	7.77E-02	0.00E+00	2.89E-01		2.92E-01	2.84E-03	3.18E-01	2.84E-02	2.84E-01	3.74E-01
	Total													

Table N-9. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	4.46E-04	1.06E+00	0.00E+00	2.63E-02		3.70E-02	1.06E-02	1.33E-01	1.06E-01	1.06E+00	3.70E-02
	Cs-137	8.95E-01	8.42E+08	2.58E-01	3.68E-06	0.00E+00	8.75E-03		1.13E-02	2.58E-03	3.45E-02	2.58E-02	2.58E-01	1.13E-02
	Am-241	8.44E+00	5.71E+09	1.21E-02	1.06E-01	0.00E+00	1.09E-02		1.21E-02	1.18E-03	2.27E-02	1.18E-02	1.18E-01	1.21E-02
	Total													
IX	Pu-239	9.47E+00	2.39E+05	3.71E-04	9.57E-01	0.00E+00	2.51E-02		3.46E-02	9.57E-03	1.21E-01	9.57E-02	9.57E-01	2.16E-01
	Am-241	1.58E+00	2.67E+06	1.33E-02	1.26E-01	0.00E+00	1.09E-02		1.23E-02	1.39E-03	2.48E-02	1.39E-02	1.39E-01	3.87E-02
	Total													
X	Tc-99	8.16E+03	6.21E+00	1.91E-11	7.57E-11	7.01E-03	2.41E-04		7.25E-03	7.01E-03	7.25E-03	7.01E-03	7.01E-03	7.25E-03
	U-234+D	2.80E+02	5.76E+02	2.49E-05	3.45E-05	2.30E-01	4.13E-03	1.55E-01	2.36E-01	2.32E-01	2.50E-01	2.46E-01	3.86E-01	2.50E-01
	U-238+D	2.80E+02	5.76E+02	1.64E-04	3.03E-05	3.09E-01	2.63E-03		3.12E-01	3.09E-01	3.12E-01	3.09E-01	3.09E-01	3.12E-01
	Total													
XII	Pu-239	1.27E+03	1.25E+04	1.01E-06	1.90E-03	0.00E+00	4.11E-03		4.13E-03	1.90E-05	4.30E-03	1.90E-04	1.90E-03	1.90E-03
	Am-241	2.12E+02	4.33E+04	5.48E-04	3.90E-03	0.00E+00	9.43E-03		9.47E-03	4.45E-05	9.87E-03	4.45E-04	4.45E-03	4.45E-03
	Total													
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XVIA	Co-60	3.63E+01	4.29E+05	1.24E-01	9.11E-07	0.00E+00	2.14E-04		1.46E-03	1.24E-03	1.26E-02	1.24E-02	1.24E-01	2.50E-02
	Cs-137+D	2.89E+01	8.59E+05	1.59E-01	1.44E-06	0.00E+00	8.73E-03		1.03E-02	1.59E-03	2.47E-02	1.59E-02	1.59E-01	4.06E-02
	Total													
XVIB	Co-60	3.63E+01	6.09E+04	1.23E-01	9.04E-07	0.00E+00	2.14E-04		1.45E-03	1.23E-03	1.25E-02	1.23E-02	1.23E-01	2.49E-02
	Cs-137+D	2.89E+01	1.22E+05	1.56E-01	1.41E-06	0.00E+00	8.70E-03		1.03E-02	1.56E-03	2.43E-02	1.56E-02	1.56E-01	3.99E-02
	Total													

Table N-9. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	1.21E-01	8.90E-07	0.00E+00	2.13E-04		1.43E-03	1.21E-03	1.23E-02	1.21E-02	1.21E-01	2.45E-02
	Cs-137+D	2.89E+01	1.07E+04	1.49E-01	1.35E-06	0.00E+00	8.64E-03		1.01E-02	1.49E-03	2.36E-02	1.49E-02	1.49E-01	3.85E-02
	Total													
XVIII A	Cs-137+D	3.54E+02	8.59E+05	1.59E-01	1.44E-06	0.00E+00	8.73E-03		1.03E-02	1.59E-03	2.47E-02	1.59E-02	1.59E-01	1.59E-01
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	3.12E-06	0.00E+00	1.12E-01		1.12E-01	3.12E-08	1.12E-01	3.12E-07	3.12E-06	3.12E-06
	Total													
XVIII B	Cs-137+D	3.54E+02	1.22E+05	1.56E-01	1.41E-06	0.00E+00	8.70E-03		1.03E-02	1.56E-03	2.43E-02	1.56E-02	1.56E-01	1.56E-01
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	2.05E-06	1.30E-31	9.90E-02		9.90E-02	2.05E-08	9.90E-02	2.05E-07	2.05E-06	2.05E-06
	Total													
XVIII C	Cs-137+D	3.54E+02	3.22E+04	1.49E-01	1.35E-06	0.00E+00	8.64E-03		1.01E-02	1.49E-03	2.36E-02	1.49E-02	1.49E-01	1.49E-01
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	1.17E-06	2.43E-09	7.91E-02		7.91E-02	1.41E-08	7.91E-02	1.19E-07	1.17E-06	1.17E-06
	Total													
XXA	U-234+D	4.37E+01	8.57E+04	2.54E-02	1.71E-03	0.00E+00	2.41E-01	1.18E+00	2.53E-01	1.21E-02	3.62E-01	1.21E-01	1.21E+00	4.83E-01
	U-235	1.46E+00	8.57E+04	3.45E-02	1.43E-03	0.00E+00	6.72E-02		6.75E-02	3.59E-04	7.07E-02	3.59E-03	3.59E-02	7.43E-02
	U-238+D	7.51E+00	8.57E+04	7.44E-03	1.37E-03	0.00E+00	8.84E-02		8.85E-02	8.81E-05	8.93E-02	8.81E-04	8.81E-03	9.02E-02
	Total													
XXB	U-234+D	2.54E+01	1.21E+04	5.86E-03	7.18E-04	0.00E+00	9.81E-02	8.30E-01	1.06E-01	8.36E-03	1.82E-01	8.36E-02	8.36E-01	2.65E-01
	U-235	8.40E-01	1.21E+04	1.47E-02	6.10E-04	0.00E+00	2.87E-02		2.89E-02	1.53E-04	3.02E-02	1.53E-03	1.53E-02	3.18E-02
	U-238+D	4.36E+00	1.21E+04	3.17E-03	5.85E-04	0.00E+00	3.78E-02		3.78E-02	3.75E-05	3.82E-02	3.75E-04	3.75E-03	3.85E-02
	Total													
XXC	U-234+D	2.54E+01	1.07E+03	1.10E-03	3.10E-04	2.42E-01	3.48E-02	4.55E-01	2.81E-01	2.46E-01	3.22E-01	2.87E-01	6.98E-01	3.68E-01
	U-235	8.40E-01	1.07E+03	6.45E-03	2.68E-04	2.35E-01	1.26E-02		2.47E-01	2.35E-01	2.48E-01	2.35E-01	2.41E-01	2.49E-01
	U-238+D	4.36E+00	1.07E+03	1.39E-03	2.57E-04	3.09E-01	1.66E-02		3.26E-01	3.09E-01	3.26E-01	3.09E-01	3.11E-01	3.26E-01
	Total													

Table N-9. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	3.36E-03	8.63E-07	0.00E+00	2.36E-04		2.70E-04	3.36E-05	5.72E-04	3.36E-04	3.36E-03	3.36E-03
	Th-228	1.83E+01	2.10E+07	2.11E-03	2.80E-05	0.00E+00	4.15E-06		2.56E-05	2.14E-05	2.18E-04	2.14E-04	2.14E-03	2.14E-03
	Th-232+D	1.83E+01	2.10E+07	1.08E+01	1.14E-01	0.00E+00	2.97E-01		4.07E-01	1.10E-01	1.39E+00	1.10E+00	1.10E+01	1.10E+01
	Total													
XXIB	Ra-228	1.83E+01	6.84E+04	3.34E-03	8.57E-07	0.00E+00	2.36E-04		2.69E-04	3.34E-05	5.69E-04	3.34E-04	3.34E-03	3.34E-03
	Th-228	1.83E+01	2.99E+06	2.11E-03	2.80E-05	0.00E+00	4.15E-06		2.56E-05	2.14E-05	2.18E-04	2.14E-04	2.14E-03	2.14E-03
	Th-232+D	1.83E+01	2.99E+06	9.81E+00	1.03E-01	0.00E+00	2.92E-01		3.91E-01	9.91E-02	1.28E+00	9.91E-01	9.91E+00	9.91E+00
	Total													
XXIC	Ra-228	1.83E+01	6.03E+03	3.29E-03	8.44E-07	0.00E+00	2.35E-04		2.68E-04	3.29E-05	5.64E-04	3.29E-04	3.29E-03	3.29E-03
	Th-228	1.83E+01	2.63E+05	2.11E-03	2.80E-05	0.00E+00	4.15E-06		2.56E-05	2.14E-05	2.18E-04	2.14E-04	2.14E-03	2.14E-03
	Th-232+D	1.83E+01	2.63E+05	7.94E+00	8.35E-02	0.00E+00	2.81E-01		3.61E-01	8.02E-02	1.08E+00	8.02E-01	8.02E+00	8.02E+00
	Total													
XXII	U-234	1.71E+01	1.40E+02	4.20E-05	3.92E-05	2.25E-01	5.23E-03	1.99E-01	2.33E-01	2.27E-01	2.50E-01	2.45E-01	4.24E-01	5.04E-01
	U-235	8.01E-01	1.40E+02	8.60E-04	3.57E-05	2.35E-01	2.26E-03		2.37E-01	2.35E-01	2.37E-01	2.35E-01	2.36E-01	2.36E-01
	U-238+D	1.71E+01	1.40E+02	1.86E-04	3.42E-05	3.09E-01	2.97E-03		3.12E-01	3.09E-01	3.12E-01	3.09E-01	3.09E-01	3.09E-01
	Ra-226+D	3.16E+00	1.99E+03	2.76E-01	2.29E-04	1.01E+00	1.06E+00	1.08E+01	2.18E+00	1.12E+00	3.17E+00	2.11E+00	1.20E+01	1.65E+01
	Ra-228	1.92E+01	1.99E+03	4.11E-03	1.06E-06	0.00E+00	2.94E-04		3.35E-04	4.11E-05	7.05E-04	4.11E-04	4.11E-03	5.75E-03
	Th-228	1.92E+01	1.27E+04	2.64E-03	3.50E-05	0.00E+00	5.19E-06		3.19E-05	2.67E-05	2.72E-04	2.67E-04	2.67E-03	3.74E-03
	Th-232	1.92E+01	1.27E+04	2.70E+00	2.84E-02	0.00E+00	2.50E-01		2.77E-01	2.73E-02	5.23E-01	2.73E-01	2.73E+00	3.82E+00
Total														

- (a) Based on 1,000 people/km²
- (b) Based on 10 people/km²
- (c) Based on 100 people/km²
- (d) Based on site specific data

Table N-10. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 100 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	5.19E+00	8.19E-05	0.00E+00	1.80E-01		2.32E-01	5.19E-02	6.99E-01	5.19E-01	5.19E+00	6.99E-01
	Total			5.19E+00	8.19E-05	0.00E+00	1.80E-01		2.32E-01	5.19E-02	6.99E-01	5.19E-01	5.19E+00	6.99E-01
II-1	Ra-226+D	5.43E+01	4.65E+05	4.56E+01	5.05E-02	0.00E+00	2.97E+01	9.22E+01	3.10E+01	1.38E+00	4.34E+01	1.38E+01	1.38E+02	1.38E+02
	Ra-228	2.69E+00	4.65E+05	9.41E-02	3.17E-05	0.00E+00	3.77E-03		4.71E-03	9.41E-04	1.32E-02	9.41E-03	9.41E-02	9.41E-02
	Th-228	2.69E+00	2.96E+05	5.85E-02	1.13E-03	0.00E+00	5.92E-05		6.55E-04	5.96E-04	6.02E-03	5.96E-03	5.96E-02	5.96E-02
	Th-230	5.40E+01	2.96E+05	9.84E-01	1.40E-01	0.00E+00	4.12E-01	2.00E+00	4.43E-01	3.12E-02	7.24E-01	3.12E-01	3.12E+00	3.12E+00
	Th-232+D	9.66E-01	2.96E+05	1.04E+00	1.58E-02	0.00E+00	1.57E-02		2.62E-02	1.05E-02	1.21E-01	1.05E-01	1.05E+00	1.05E+00
	U-234+D	7.07E+01	8.17E+04	5.37E-04	1.50E-01	0.00E+00	5.17E-01	7.88E-04	5.18E-01	1.51E-03	5.32E-01	1.51E-02	1.51E-01	1.51E-01
	U-235	1.14E+00	8.17E+04	3.70E-02	2.25E-03	0.00E+00	8.83E-03		9.22E-03	3.93E-04	1.28E-02	3.93E-03	3.93E-02	3.93E-02
	U-238+D	3.11E+01	8.17E+04	2.19E-01	5.87E-02	0.00E+00	3.13E-01		3.16E-01	2.78E-03	3.41E-01	2.78E-02	2.78E-01	2.78E-01
	Total			4.80E+01	4.18E-01	0.00E+00	3.09E+01	9.42E+01	3.24E+01	1.43E+00	4.52E+01	1.43E+01	1.43E+02	1.43E+02
II-2	U-234+D	2.52E+02	8.60E+04	2.67E-03	1.50E+00	0.00E+00	5.17E-01	7.88E-04	5.32E-01	1.50E-02	6.67E-01	1.50E-01	1.50E+00	1.50E+00
	U-235	4.08E+00	8.60E+04	2.52E-01	2.25E-02	0.00E+00	8.83E-03		1.16E-02	2.75E-03	3.63E-02	2.75E-02	2.75E-01	2.75E-01
	U-238+D	1.11E+02	8.60E+04	1.04E+00	5.87E-01	0.00E+00	3.13E-01		3.30E-01	1.63E-02	4.76E-01	1.63E-01	1.63E+00	1.63E+00
	Total			1.30E+00	2.11E+00	0.00E+00	8.39E-01	7.88E-04	8.73E-01	3.41E-02	1.18E+00	3.41E-01	3.41E+00	3.41E+00
III	Cs-137	9.89E+00	2.00E+06	2.28E+00	3.60E-05	0.00E+00	7.52E-02		9.80E-02	2.28E-02	3.03E-01	2.28E-01	2.28E+00	3.03E-01
	Total			2.28E+00	3.60E-05	0.00E+00	7.52E-02		9.80E-02	2.28E-02	3.03E-01	2.28E-01	2.28E+00	3.03E-01
IV	U-234+D	3.24E+02	1.48E+04	2.03E-04	8.30E-02	0.00E+00	7.34E-02	1.15E-04	7.43E-02	8.33E-04	8.18E-02	8.33E-03	8.33E-02	9.01E-02
	U-235	1.52E+01	1.48E+04	5.45E-02	3.62E-03	0.00E+00	3.64E-03		4.23E-03	5.81E-04	9.45E-03	5.81E-03	5.81E-02	1.53E-02
	U-238+D	3.24E+02	1.48E+04	2.07E-01	7.40E-02	0.00E+00	1.01E-01		1.04E-01	2.81E-03	1.30E-01	2.81E-02	2.81E-01	1.58E-01
	Total			2.62E-01	1.61E-01	0.00E+00	1.78E-01	1.15E-04	1.83E-01	4.23E-03	2.21E-01	4.23E-02	4.23E-01	2.63E-01
V	Cs-137	1.07E+03	2.39E+04	1.43E+02	2.25E-03	0.00E+00	4.99E+00		6.42E+00	1.43E+00	1.93E+01	1.43E+01	1.43E+02	1.93E+01
	Total			1.43E+02	2.25E-03	0.00E+00	4.99E+00		6.42E+00	1.43E+00	1.93E+01	1.43E+01	1.43E+02	1.93E+01
VI	Cs-137	8.63E+01	2.07E+05	7.65E+00	1.17E-04	0.00E+00	2.54E-01		3.31E-01	7.65E-02	1.02E+00	7.65E-01	7.65E+00	2.55E+00
	U-234	1.22E+03	3.31E+04	8.02E-03	4.38E+00	0.00E+00	1.58E+00	2.41E-03	1.62E+00	4.39E-02	2.02E+00	4.39E-01	4.39E+00	2.89E+00
	U-235	5.75E+01	3.31E+04	2.19E+00	1.92E-01	0.00E+00	7.85E-02		1.02E-01	2.38E-02	3.17E-01	2.38E-01	2.38E+00	7.94E-01
	U-238+D	1.22E+03	3.31E+04	7.13E+00	3.90E+00	0.00E+00	2.18E+00		2.29E+00	1.10E-01	3.28E+00	1.10E+00	1.10E+01	5.49E+00
	Total			1.70E+01	8.47E+00	0.00E+00	4.09E+00	2.41E-03	4.34E+00	2.55E-01	6.63E+00	2.55E+00	2.55E+01	1.17E+01

Table N-10. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 100 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	5.01E-03	1.98E+01	0.00E+00	4.49E-01		6.47E-01	1.98E-01	2.43E+00	1.98E+00	1.98E+01	6.47E-01
	Cs-137	8.95E-01	8.42E+08	4.80E+00	6.73E-05	0.00E+00	1.66E-01		2.14E-01	4.80E-02	6.46E-01	4.80E-01	4.80E+00	2.14E-01
	Am-241	8.44E+00	5.71E+09	3.25E-01	4.02E+00	0.00E+00	3.99E-01		4.43E-01	4.34E-02	8.33E-01	4.34E-01	4.34E+00	4.43E-01
	Total			5.13E+00	2.38E+01	0.00E+00	1.01E+00		1.30E+00	2.90E-01	3.91E+00	2.90E+00	2.90E+01	1.30E+00
IX	Pu-239	9.47E+00	2.39E+05	9.35E-06	4.00E-02	0.00E+00	7.65E-04		1.16E-03	4.00E-04	4.76E-03	4.00E-03	4.00E-02	8.76E-03
	Am-241	1.58E+00	2.67E+06	6.10E-04	8.12E-03	0.00E+00	6.79E-04		7.66E-04	8.73E-05	1.55E-03	8.73E-04	8.73E-03	2.42E-03
	Total			6.20E-04	4.81E-02	0.00E+00	1.44E-03		1.93E-03	4.87E-04	6.31E-03	4.87E-03	4.87E-02	1.12E-02
X	Tc-99	8.16E+03	6.21E+00	2.58E-09	1.39E-08	9.81E-01	3.38E-02		1.01E+00	9.81E-01	1.01E+00	9.81E-01	9.81E-01	1.01E+00
	U-234+D	2.80E+02	5.76E+02	1.36E-06	2.35E-04	0.00E+00	5.31E-03	2.46E-05	5.32E-03	2.61E-06	5.34E-03	2.61E-05	2.61E-04	5.34E-03
	U-238+D	2.80E+02	5.76E+02	7.81E-04	2.09E-04	0.00E+00	7.34E-03		7.35E-03	9.91E-06	7.43E-03	9.91E-05	9.91E-04	7.43E-03
	Total			7.83E-04	4.44E-04	9.81E-01	4.64E-02	2.46E-05	1.03E+00	9.81E-01	1.03E+00	9.81E-01	9.82E-01	1.03E+00
XII	Pu-239	1.27E+03	1.25E+04	6.73E-06	2.10E-02	0.00E+00	8.49E-03		8.70E-03	2.10E-04	1.06E-02	2.10E-03	2.10E-02	2.10E-02
	Am-241	2.12E+02	4.33E+04	4.88E-04	4.89E-03	0.00E+00	7.72E-03		7.78E-03	5.38E-05	8.26E-03	5.38E-04	5.38E-03	5.38E-03
	Total			4.95E-04	2.58E-02	0.00E+00	1.62E-02		1.65E-02	2.63E-04	1.88E-02	2.63E-03	2.63E-02	2.63E-02
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XVIA	Co-60	3.63E+01	4.29E+05	4.98E-03	4.35E-08	0.00E+00	8.58E-06		5.84E-05	4.98E-05	5.07E-04	4.98E-04	4.98E-03	1.01E-03
	Cs-137+D	2.89E+01	8.59E+05	4.59E-03	4.06E-08	0.00E+00	2.55E-04		3.01E-04	4.59E-05	7.14E-04	4.59E-04	4.59E-03	1.17E-03
	Total			9.57E-03	8.41E-08	0.00E+00	2.63E-04		3.59E-04	9.57E-05	1.22E-03	9.57E-04	9.57E-03	2.18E-03
XVIB	Co-60	3.63E+01	6.09E+04	4.95E-03	4.32E-08	0.00E+00	8.57E-06		5.80E-05	4.95E-05	5.03E-04	4.95E-04	4.95E-03	9.98E-04
	Cs-137+D	2.89E+01	1.22E+05	4.52E-03	4.00E-08	0.00E+00	2.54E-04		2.99E-04	4.52E-05	7.06E-04	4.52E-04	4.52E-03	1.16E-03
	Total			9.47E-03	8.32E-08	0.00E+00	2.63E-04		3.57E-04	9.47E-05	1.21E-03	9.47E-04	9.47E-03	2.16E-03

Table N-10. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 100 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	4.87E-03	4.26E-08	0.00E+00	8.55E-06		5.72E-05	4.87E-05	4.95E-04	4.87E-04	4.87E-03	9.82E-04
	Cs-137+D	2.89E+01	1.07E+04	4.37E-03	3.87E-08	0.00E+00	2.53E-04		2.96E-04	4.37E-05	6.90E-04	4.37E-04	4.37E-03	1.13E-03
	Total			9.24E-03	8.12E-08	0.00E+00	2.61E-04		3.54E-04	9.24E-05	1.19E-03	9.24E-04	9.24E-03	2.11E-03
XVIII	Cs-137+D	3.54E+02	8.59E+05	2.65E-02	2.34E-07	0.00E+00	1.47E-03		1.74E-03	2.65E-04	4.12E-03	2.65E-03	2.65E-02	2.65E-02
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	7.74E-07	0.00E+00	2.29E-02		2.29E-02	7.74E-09	2.29E-02	7.74E-08	7.74E-07	7.74E-07
	Total			2.65E-02	1.01E-06	0.00E+00	2.44E-02		2.47E-02	2.65E-04	2.71E-02	2.65E-03	2.65E-02	2.65E-02
XVIII	Cs-137+D	3.54E+02	1.22E+05	2.61E-02	2.31E-07	0.00E+00	1.47E-03		1.73E-03	2.61E-04	4.08E-03	2.61E-03	2.61E-02	2.61E-02
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	5.18E-07	0.00E+00	2.08E-02		2.08E-02	5.18E-09	2.08E-02	5.18E-08	5.18E-07	5.18E-07
	Total			2.61E-02	7.49E-07	0.00E+00	2.23E-02		2.25E-02	2.61E-04	2.49E-02	2.61E-03	2.61E-02	2.61E-02
XVIII	Cs-137+D	3.54E+02	3.22E+04	2.52E-02	2.23E-07	0.00E+00	1.46E-03		1.71E-03	2.52E-04	3.98E-03	2.52E-03	2.52E-02	2.52E-02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	2.95E-07	0.00E+00	1.71E-02		1.71E-02	2.95E-09	1.71E-02	2.95E-08	2.95E-07	2.95E-07
	Total			2.52E-02	5.19E-07	0.00E+00	1.86E-02		1.88E-02	2.52E-04	2.11E-02	2.52E-03	2.52E-02	2.52E-02
XXA	U-234+D	4.37E+01	8.57E+04	1.53E-06	4.09E-04	0.00E+00	2.11E-03	3.29E-06	2.11E-03	4.14E-06	2.15E-03	4.14E-05	4.14E-04	2.19E-03
	U-235	1.46E+00	8.57E+04	2.08E-04	1.27E-05	0.00E+00	7.43E-05		7.65E-05	2.21E-06	9.64E-05	2.21E-05	2.21E-04	1.19E-04
	U-238+D	7.51E+00	8.57E+04	2.34E-04	6.27E-05	0.00E+00	5.01E-04		5.04E-04	2.97E-06	5.31E-04	2.97E-05	2.97E-04	5.61E-04
	Total			4.44E-04	4.84E-04	0.00E+00	2.69E-03	3.29E-06	2.70E-03	9.31E-06	2.78E-03	9.31E-05	9.31E-04	2.87E-03
XXB	U-234+D	2.54E+01	1.21E+04	7.64E-07	1.92E-04	0.00E+00	1.18E-03	1.91E-06	1.18E-03	1.95E-06	1.20E-03	1.95E-05	1.95E-04	1.22E-03
	U-235	8.40E-01	1.21E+04	9.68E-05	5.89E-06	0.00E+00	4.12E-05		4.23E-05	1.03E-06	5.15E-05	1.03E-05	1.03E-04	6.18E-05
	U-238+D	4.36E+00	1.21E+04	1.09E-04	2.93E-05	0.00E+00	2.80E-04		2.81E-04	1.39E-06	2.93E-04	1.39E-05	1.39E-04	3.07E-04
	Total			2.07E-04	2.27E-04	0.00E+00	1.50E-03	1.91E-06	1.51E-03	4.36E-06	1.55E-03	4.36E-05	4.36E-04	1.59E-03
XXC	U-234+D	2.54E+01	1.07E+03	5.63E-07	1.27E-04	0.00E+00	1.09E-03	1.89E-06	1.09E-03	1.29E-06	1.10E-03	1.29E-05	1.29E-04	1.11E-03
	U-235	8.40E-01	1.07E+03	6.39E-05	3.89E-06	0.00E+00	3.79E-05		3.85E-05	6.78E-07	4.46E-05	6.78E-06	6.78E-05	5.14E-05
	U-238+D	4.36E+00	1.07E+03	7.23E-05	1.94E-05	0.00E+00	2.57E-04		2.58E-04	9.16E-07	2.66E-04	9.16E-06	9.16E-05	2.75E-04
	Total			1.37E-04	1.50E-04	0.00E+00	1.38E-03	1.89E-06	1.38E-03	2.89E-06	1.41E-03	2.89E-05	2.89E-04	1.44E-03

Table N-10. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 100 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	2.23E-03	7.47E-07	0.00E+00	1.61E-04		1.83E-04	2.23E-05	3.83E-04	2.23E-04	2.23E-03	2.23E-03
	Th-228	1.83E+01	2.10E+07	1.41E-03	2.67E-05	0.00E+00	2.52E-06		1.69E-05	1.43E-05	1.46E-04	1.43E-04	1.43E-03	1.43E-03
	Th-232+D	1.83E+01	2.10E+07	6.97E-02	1.05E-03	0.00E+00	1.87E-03		2.57E-03	7.07E-04	8.94E-03	7.07E-03	7.07E-02	7.07E-02
	Total			7.33E-02	1.08E-03	0.00E+00	2.03E-03		2.77E-03	7.44E-04	9.47E-03	7.44E-03	7.44E-02	7.44E-02
XXIB	Ra-228	1.83E+01	6.84E+04	2.21E-03	7.42E-07	0.00E+00	1.60E-04		1.83E-04	2.21E-05	3.82E-04	2.21E-04	2.21E-03	2.21E-03
	Th-228	1.83E+01	2.99E+06	1.41E-03	2.67E-05	0.00E+00	2.52E-06		1.69E-05	1.43E-05	1.46E-04	1.43E-04	1.43E-03	1.43E-03
	Th-232+D	1.83E+01	2.99E+06	6.92E-02	1.04E-03	0.00E+00	1.87E-03		2.57E-03	7.02E-04	8.89E-03	7.02E-03	7.02E-02	7.02E-02
	Total			7.28E-02	1.07E-03	0.00E+00	2.03E-03		2.77E-03	7.39E-04	9.41E-03	7.39E-03	7.39E-02	7.39E-02
XXIC	Ra-228	1.83E+01	6.03E+03	2.18E-03	7.31E-07	0.00E+00	1.60E-04		1.82E-04	2.18E-05	3.78E-04	2.18E-04	2.18E-03	2.18E-03
	Th-228	1.83E+01	2.63E+05	1.41E-03	2.67E-05	0.00E+00	2.52E-06		1.69E-05	1.43E-05	1.46E-04	1.43E-04	1.43E-03	1.43E-03
	Th-232+D	1.83E+01	2.63E+05	6.81E-02	1.03E-03	0.00E+00	1.86E-03		2.55E-03	6.91E-04	8.77E-03	6.91E-03	6.91E-02	6.91E-02
	Total			7.17E-02	1.06E-03	0.00E+00	2.02E-03		2.75E-03	7.27E-04	9.29E-03	7.27E-03	7.27E-02	7.27E-02
XXII	U-234	1.71E+01	1.40E+02	4.10E-06	7.30E-04	0.00E+00	1.46E-02	6.85E-05	1.46E-02	8.03E-06	1.46E-02	8.03E-05	8.03E-04	1.12E-03
	U-235	8.01E-01	1.40E+02	5.23E-04	3.19E-05	0.00E+00	7.22E-04		7.28E-04	5.55E-06	7.78E-04	5.55E-05	5.55E-04	7.77E-04
	U-238+D	1.71E+01	1.40E+02	2.43E-03	6.51E-04	0.00E+00	2.01E-02		2.01E-02	3.08E-05	2.04E-02	3.08E-04	3.08E-03	4.31E-03
	Ra-226+D	3.16E+00	1.99E+03	2.13E-01	2.35E-04	0.00E+00	2.83E-01	2.00E+00	3.05E-01	2.21E-02	5.04E-01	2.21E-01	2.21E+00	3.09E+00
	Ra-228	1.92E+01	1.99E+03	6.12E-02	2.05E-05	0.00E+00	4.50E-03		5.11E-03	6.12E-04	1.06E-02	6.12E-03	6.12E-02	8.57E-02
	Th-228	1.92E+01	1.27E+04	3.95E-02	7.50E-04	0.00E+00	7.09E-05		4.73E-04	4.02E-04	4.09E-03	4.02E-03	4.02E-02	5.63E-02
	Th-232	1.92E+01	1.27E+04	1.87E+00	2.83E-02	0.00E+00	5.21E-02		7.11E-02	1.90E-02	2.42E-01	1.90E-01	1.90E+00	2.66E+00
	Total			2.19E+00	3.07E-02	0.00E+00	3.75E-01	2.00E+00	4.17E-01	4.22E-02	7.96E-01	4.22E-01	4.22E+00	5.90E+00

- (a) Based on 1,000 people/km²
- (b) Based on 10 people/km²
- (c) Based on 100 people/km²
- (d) Based on site specific data

Table N-11. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	5.65E+00	8.90E-05	0.00E+00	1.99E-01		2.56E-01	5.65E-02	7.64E-01	5.65E-01	5.65E+00	7.64E-01
	Total			5.65E+00	8.90E-05	0.00E+00	1.99E-01		2.56E-01	5.65E-02	7.64E-01	5.65E-01	5.65E+00	7.64E-01
II-1	Ra-226+D	5.43E+01	4.65E+05	3.57E+02	3.96E-01	0.00E+00	2.44E+02	7.63E+02	2.55E+02	1.12E+01	3.56E+02	1.12E+02	1.12E+03	1.12E+03
	Ra-228	2.69E+00	4.65E+05	9.41E-02	3.17E-05	0.00E+00	3.77E-03		4.71E-03	9.41E-04	1.32E-02	9.41E-03	9.41E-02	9.41E-02
	Th-228	2.69E+00	2.96E+05	5.85E-02	1.13E-03	0.00E+00	5.92E-05		6.55E-04	5.96E-04	6.02E-03	5.96E-03	5.96E-02	5.96E-02
	Th-230	5.40E+01	2.96E+05	7.81E+01	1.34E+00	0.00E+00	5.25E+01	1.75E+02	5.51E+01	2.55E+00	7.80E+01	2.55E+01	2.55E+02	2.55E+02
	Th-232+D	9.66E-01	2.96E+05	1.04E+01	1.57E-01	0.00E+00	1.67E-01		2.73E-01	1.06E-01	1.22E+00	1.06E+00	1.06E+01	1.06E+01
	U-234+D	7.07E+01	8.17E+04	2.72E-01	1.09E+00	0.00E+00	5.09E+00	7.10E-01	5.11E+00	2.07E-02	5.30E+00	2.07E-01	2.07E+00	2.07E+00
	U-235	1.14E+00	8.17E+04	2.68E-01	1.63E-02	0.00E+00	8.33E-02		8.62E-02	2.84E-03	1.12E-01	2.84E-02	2.84E-01	2.84E-01
	U-238+D	3.11E+01	8.17E+04	1.58E+00	4.25E-01	0.00E+00	2.96E+00		2.98E+00	2.01E-02	3.16E+00	2.01E-01	2.01E+00	2.01E+00
	Total			4.48E+02	3.43E+00	0.00E+00	3.04E+02	9.40E+02	3.18E+02	1.39E+01	4.44E+02	1.39E+02	1.39E+03	1.39E+03
II-2	U-234+D	2.52E+02	8.60E+04	1.12E+00	1.09E+01	0.00E+00	5.09E+00	7.10E-01	5.22E+00	1.27E-01	6.36E+00	1.27E+00	1.27E+01	1.27E+01
	U-235	4.08E+00	8.60E+04	1.82E+00	1.63E-01	0.00E+00	8.33E-02		1.03E-01	1.99E-02	2.82E-01	1.99E-01	1.99E+00	1.99E+00
	U-238+D	1.11E+02	8.60E+04	7.53E+00	4.25E+00	0.00E+00	2.96E+00		3.08E+00	1.18E-01	4.14E+00	1.18E+00	1.18E+01	1.18E+01
	Total			1.05E+01	1.53E+01	0.00E+00	8.14E+00	7.10E-01	8.40E+00	2.65E-01	1.08E+01	2.65E+00	2.65E+01	2.65E+01
III	Cs-137	9.89E+00	2.00E+06	2.53E+00	3.99E-05	0.00E+00	8.35E-02		1.09E-01	2.53E-02	3.36E-01	2.53E-01	2.53E+00	3.36E-01
	Total			2.53E+00	3.99E-05	0.00E+00	8.35E-02		1.09E-01	2.53E-02	3.36E-01	2.53E-01	2.53E+00	3.36E-01
IV	U-234+D	3.24E+02	1.48E+04	9.68E-03	2.05E-01	0.00E+00	5.31E-01	9.36E-02	5.34E-01	3.08E-03	5.62E-01	3.08E-02	3.08E-01	5.92E-01
	U-235	1.52E+01	1.48E+04	1.34E-01	8.92E-03	0.00E+00	2.55E-02		2.69E-02	1.43E-03	3.98E-02	1.43E-02	1.43E-01	5.41E-02
	U-238+D	3.24E+02	1.48E+04	5.10E-01	1.82E-01	0.00E+00	7.09E-01		7.16E-01	6.93E-03	7.78E-01	6.93E-02	6.93E-01	8.47E-01
	Total			6.54E-01	3.96E-01	0.00E+00	1.27E+00	9.36E-02	1.28E+00	1.14E-02	1.38E+00	1.14E-01	1.14E+00	1.49E+00
V	Cs-137	1.07E+03	2.39E+04	1.55E+02	2.44E-03	0.00E+00	5.52E+00		7.07E+00	1.55E+00	2.10E+01	1.55E+01	1.55E+02	2.10E+01
	Total			1.55E+02	2.44E-03	0.00E+00	5.52E+00		7.07E+00	1.55E+00	2.10E+01	1.55E+01	1.55E+02	2.10E+01
VI	Cs-137	8.63E+01	2.07E+05	8.49E+00	1.30E-04	0.00E+00	2.82E-01		3.67E-01	8.49E-02	1.13E+00	8.49E-01	8.49E+00	2.83E+00
	U-234	1.22E+03	3.31E+04	3.36E+00	3.14E+01	0.00E+00	1.55E+01	2.17E+00	1.59E+01	3.69E-01	1.92E+01	3.69E+00	3.69E+01	2.66E+01
	U-235	5.75E+01	3.31E+04	1.57E+01	1.37E+00	0.00E+00	7.39E-01		9.10E-01	1.70E-01	2.44E+00	1.70E+00	1.70E+01	5.85E+00
	U-238+D	1.22E+03	3.31E+04	5.10E+01	2.79E+01	0.00E+00	2.05E+01		2.13E+01	7.89E-01	2.84E+01	7.89E+00	7.89E+01	4.42E+01
	Total			7.85E+01	6.07E+01	0.00E+00	3.71E+01	2.17E+00	3.85E+01	1.41E+00	5.12E+01	1.41E+01	1.41E+02	7.95E+01

Table N-11. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	4.95E-02	1.95E+02	0.00E+00	4.44E+00		6.39E+00	1.95E+00	2.40E+01	1.95E+01	1.95E+02	6.39E+00
	Cs-137	8.95E-01	8.42E+08	5.34E+00	7.48E-05	0.00E+00	1.84E-01		2.38E-01	5.34E-02	7.18E-01	5.34E-01	5.34E+00	2.38E-01
	Am-241	8.44E+00	5.71E+09	1.75E+00	2.17E+01	0.00E+00	2.15E+00		2.39E+00	2.34E-01	4.50E+00	2.34E+00	2.34E+01	2.39E+00
	Total			7.14E+00	2.17E+02	0.00E+00	6.77E+00		9.02E+00	2.24E+00	2.92E+01	2.24E+01	2.24E+02	9.02E+00
IX	Pu-239	9.47E+00	2.39E+05	8.98E-05	3.84E-01	0.00E+00	7.51E-03		1.13E-02	3.84E-03	4.59E-02	3.84E-02	3.84E-01	8.43E-02
	Am-241	1.58E+00	2.67E+06	3.29E-03	4.37E-02	0.00E+00	3.66E-03		4.13E-03	4.70E-04	8.36E-03	4.70E-03	4.70E-02	1.31E-02
	Total			3.38E-03	4.27E-01	0.00E+00	1.12E-02		1.55E-02	4.31E-03	5.42E-02	4.31E-02	4.31E-01	9.73E-02
X	Tc-99	8.16E+03	6.21E+00	2.58E-09	1.39E-08	9.81E-01	3.38E-02		1.01E+00	9.81E-01	1.01E+00	9.81E-01	9.81E-01	1.01E+00
	U-234+D	2.80E+02	5.76E+02	4.69E-05	2.37E-04	9.01E-01	9.20E-03	1.51E-02	9.11E-01	9.01E-01	9.12E-01	9.03E-01	9.17E-01	9.12E-01
	U-238+D	2.80E+02	5.76E+02	7.84E-04	2.10E-04	1.20E+00	1.17E-02		1.21E+00	1.20E+00	1.21E+00	1.20E+00	1.20E+00	1.21E+00
	Total			8.30E-04	4.47E-04	3.08E+00	5.47E-02	1.51E-02	3.14E+00	3.08E+00	3.14E+00	3.09E+00	3.10E+00	3.14E+00
XII	Pu-239	1.27E+03	1.25E+04	1.95E-05	6.07E-02	0.00E+00	6.28E-02		6.34E-02	6.08E-04	6.89E-02	6.08E-03	6.08E-02	6.08E-02
	Am-241	2.12E+02	4.33E+04	1.88E-03	1.88E-02	0.00E+00	3.91E-02		3.93E-02	2.07E-04	4.12E-02	2.07E-03	2.07E-02	2.07E-02
	Total			1.90E-03	7.96E-02	0.00E+00	1.02E-01		1.03E-01	8.15E-04	1.10E-01	8.15E-03	8.15E-02	8.15E-02
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XVIA	Co-60	3.63E+01	4.29E+05	4.98E-03	4.35E-08	0.00E+00	8.58E-06		5.84E-05	4.98E-05	5.07E-04	4.98E-04	4.98E-03	1.01E-03
	Cs-137+D	2.89E+01	8.59E+05	5.08E-03	4.50E-08	0.00E+00	2.83E-04		3.34E-04	5.08E-05	7.92E-04	5.08E-04	5.08E-03	1.30E-03
	Total			1.01E-02	8.85E-08	0.00E+00	2.92E-04		3.92E-04	1.01E-04	1.30E-03	1.01E-03	1.01E-02	2.31E-03
XVIB	Co-60	3.63E+01	6.09E+04	4.95E-03	4.32E-08	0.00E+00	8.57E-06		5.80E-05	4.95E-05	5.03E-04	4.95E-04	4.95E-03	9.98E-04
	Cs-137+D	2.89E+01	1.22E+05	4.98E-03	4.41E-08	0.00E+00	2.82E-04		3.32E-04	4.98E-05	7.80E-04	4.98E-04	4.98E-03	1.28E-03
	Total			9.93E-03	8.73E-08	0.00E+00	2.91E-04		3.90E-04	9.93E-05	1.28E-03	9.93E-04	9.93E-03	2.28E-03

Table N-11. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	4.87E-03	4.26E-08	0.00E+00	8.55E-06		5.72E-05	4.87E-05	4.95E-04	4.87E-04	4.87E-03	9.82E-04
	Cs-137+D	2.89E+01	1.07E+04	4.77E-03	4.22E-08	0.00E+00	2.80E-04		3.28E-04	4.77E-05	7.57E-04	4.77E-04	4.77E-03	1.23E-03
	Total			9.64E-03	8.47E-08	0.00E+00	2.89E-04		3.85E-04	9.64E-05	1.25E-03	9.64E-04	9.64E-03	2.22E-03
XVIII	Cs-137+D	3.54E+02	8.59E+05	2.94E-02	2.60E-07	0.00E+00	1.63E-03		1.93E-03	2.94E-04	4.57E-03	2.94E-03	2.94E-02	2.94E-02
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	7.90E-07	0.00E+00	2.47E-02		2.47E-02	7.90E-09	2.47E-02	7.90E-08	7.90E-07	7.90E-07
	Total			2.94E-02	1.05E-06	0.00E+00	2.63E-02		2.66E-02	2.94E-04	2.92E-02	2.94E-03	2.94E-02	2.94E-02
XVIII	Cs-137+D	3.54E+02	1.22E+05	2.88E-02	2.54E-07	0.00E+00	1.63E-03		1.92E-03	2.88E-04	4.51E-03	2.88E-03	2.88E-02	2.88E-02
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	5.20E-07	0.00E+00	2.19E-02		2.19E-02	5.20E-09	2.19E-02	5.20E-08	5.20E-07	5.20E-07
	Total			2.88E-02	7.74E-07	0.00E+00	2.35E-02		2.38E-02	2.88E-04	2.64E-02	2.88E-03	2.88E-02	2.88E-02
XVIII	Cs-137+D	3.54E+02	3.22E+04	2.75E-02	2.44E-07	0.00E+00	1.62E-03		1.89E-03	2.75E-04	4.37E-03	2.75E-03	2.75E-02	2.75E-02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	2.95E-07	5.37E-10	1.75E-02		1.75E-02	3.49E-09	1.75E-02	3.01E-08	2.96E-07	2.96E-07
	Total			2.75E-02	5.39E-07	5.37E-10	1.91E-02		1.94E-02	2.75E-04	2.19E-02	2.75E-03	2.75E-02	2.75E-02
XXA	U-234+D	4.37E+01	8.57E+04	4.67E-04	1.34E-03	0.00E+00	1.72E-02	2.90E-03	1.72E-02	4.70E-05	1.77E-02	4.70E-04	4.70E-03	1.81E-02
	U-235	1.46E+00	8.57E+04	6.76E-04	4.11E-05	0.00E+00	5.78E-04		5.85E-04	7.17E-06	6.49E-04	7.17E-05	7.17E-04	7.21E-04
	U-238+D	7.51E+00	8.57E+04	7.60E-04	2.04E-04	0.00E+00	3.89E-03		3.90E-03	9.64E-06	3.99E-03	9.64E-05	9.64E-04	4.09E-03
	Total			1.90E-03	1.58E-03	0.00E+00	2.17E-02	2.90E-03	2.17E-02	6.38E-05	2.23E-02	6.38E-04	6.38E-03	2.29E-02
XXB	U-234+D	2.54E+01	1.21E+04	1.23E-04	3.42E-04	0.00E+00	7.21E-03	1.62E-03	7.23E-03	2.08E-05	7.42E-03	2.08E-04	2.08E-03	7.63E-03
	U-235	8.40E-01	1.21E+04	1.71E-04	1.04E-05	0.00E+00	2.39E-04		2.40E-04	1.81E-06	2.57E-04	1.81E-05	1.81E-04	2.75E-04
	U-238+D	4.36E+00	1.21E+04	1.93E-04	5.18E-05	0.00E+00	1.62E-03		1.62E-03	2.45E-06	1.64E-03	2.45E-05	2.45E-04	1.67E-03
	Total			4.87E-04	4.04E-04	0.00E+00	9.07E-03	1.62E-03	9.09E-03	2.51E-05	9.32E-03	2.51E-04	2.51E-03	9.57E-03
XXC	U-234+D	2.54E+01	1.07E+03	4.04E-05	1.50E-04	0.00E+00	4.08E-03	1.48E-03	4.10E-03	1.67E-05	4.25E-03	1.67E-04	1.67E-03	4.41E-03
	U-235	8.40E-01	1.07E+03	7.51E-05	4.57E-06	0.00E+00	1.34E-04		1.34E-04	7.97E-07	1.42E-04	7.97E-06	7.97E-05	1.50E-04
	U-238+D	4.36E+00	1.07E+03	8.50E-05	2.28E-05	0.00E+00	9.06E-04		9.07E-04	1.08E-06	9.17E-04	1.08E-05	1.08E-04	9.28E-04
	Total			2.00E-04	1.78E-04	0.00E+00	5.12E-03	1.48E-03	5.14E-03	1.86E-05	5.31E-03	1.86E-04	1.86E-03	5.49E-03

Table N-11. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	2.23E-03	7.47E-07	0.00E+00	1.61E-04		1.83E-04	2.23E-05	3.83E-04	2.23E-04	2.23E-03	2.23E-03
	Th-228	1.83E+01	2.10E+07	1.41E-03	2.67E-05	0.00E+00	2.52E-06		1.69E-05	1.43E-05	1.46E-04	1.43E-04	1.43E-03	1.43E-03
	Th-232+D	1.83E+01	2.10E+07	7.62E-01	1.14E-02	0.00E+00	2.02E-02		2.79E-02	7.73E-03	9.75E-02	7.73E-02	7.73E-01	7.73E-01
	Total			7.66E-01	1.14E-02	0.00E+00	2.04E-02		2.81E-02	7.77E-03	9.81E-02	7.77E-02	7.77E-01	7.77E-01
XXIB	Ra-228	1.83E+01	6.84E+04	2.21E-03	7.42E-07	0.00E+00	1.60E-04		1.83E-04	2.21E-05	3.82E-04	2.21E-04	2.21E-03	2.21E-03
	Th-228	1.83E+01	2.99E+06	1.41E-03	2.67E-05	0.00E+00	2.52E-06		1.69E-05	1.43E-05	1.46E-04	1.43E-04	1.43E-03	1.43E-03
	Th-232+D	1.83E+01	2.99E+06	7.50E-01	1.12E-02	0.00E+00	2.01E-02		2.77E-02	7.61E-03	9.62E-02	7.61E-02	7.61E-01	7.61E-01
	Total			7.53E-01	1.12E-02	0.00E+00	2.03E-02		2.79E-02	7.64E-03	9.67E-02	7.64E-02	7.64E-01	7.64E-01
XXIC	Ra-228	1.83E+01	6.03E+03	2.18E-03	7.31E-07	0.00E+00	1.60E-04		1.82E-04	2.18E-05	3.78E-04	2.18E-04	2.18E-03	2.18E-03
	Th-228	1.83E+01	2.63E+05	1.41E-03	2.67E-05	0.00E+00	2.52E-06		1.69E-05	1.43E-05	1.46E-04	1.43E-04	1.43E-03	1.43E-03
	Th-232+D	1.83E+01	2.63E+05	7.23E-01	1.08E-02	0.00E+00	2.00E-02		2.73E-02	7.33E-03	9.34E-02	7.33E-02	7.33E-01	7.33E-01
	Total			7.26E-01	1.09E-02	0.00E+00	2.02E-02		2.75E-02	7.37E-03	9.39E-02	7.37E-02	7.37E-01	7.37E-01
XXII	U-234	1.71E+01	1.40E+02	1.76E-04	7.42E-04	2.67E+00	2.88E-02	4.51E-02	2.70E+00	2.67E+00	2.70E+00	2.67E+00	2.71E+00	2.73E+00
	U-235	8.01E-01	1.40E+02	5.28E-04	3.21E-05	1.31E-01	1.32E-03		1.32E-01	1.31E-01	1.32E-01	1.31E-01	1.31E-01	1.31E-01
	U-238+D	1.71E+01	1.40E+02	2.45E-03	6.56E-04	3.63E+00	3.66E-02		3.67E+00	3.63E+00	3.67E+00	3.63E+00	3.64E+00	3.64E+00
	Ra-226+D	3.16E+00	1.99E+03	6.61E-01	7.28E-04	0.00E+00	1.88E+00	1.59E+01	2.05E+00	1.65E-01	3.54E+00	1.65E+00	1.65E+01	2.32E+01
	Ra-228	1.92E+01	1.99E+03	6.12E-02	2.05E-05	0.00E+00	4.50E-03		5.11E-03	6.12E-04	1.06E-02	6.12E-03	6.12E-02	8.57E-02
	Th-228	1.92E+01	1.27E+04	3.95E-02	7.50E-04	0.00E+00	7.09E-05		4.73E-04	4.02E-04	4.09E-03	4.02E-03	4.02E-02	5.63E-02
	Th-232	1.92E+01	1.27E+04	1.64E+01	2.46E-01	0.00E+00	5.42E-01		7.09E-01	1.67E-01	2.21E+00	1.67E+00	1.67E+01	2.34E+01
	Total			1.72E+01	2.49E-01	6.43E+00	2.50E+00	1.59E+01	9.26E+00	6.76E+00	1.23E+01	9.77E+00	3.98E+01	5.32E+01

- (a) Based on 1,000 people/km
- (b) Based on 10 people/km²
- (c) Based on 100 people/km²
- (d) Based on site specific d

Table N-12. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	5.65E+00	8.90E-05	0.00E+00	1.99E-01		2.56E-01	5.65E-02	7.64E-01	5.65E-01	5.65E+00	7.64E-01
	Total			5.65E+00	8.90E-05	0.00E+00	1.99E-01		2.56E-01	5.65E-02	7.64E-01	5.65E-01	5.65E+00	7.64E-01
II-1	Ra-226+D	5.43E+01	4.65E+05	8.21E+02	9.09E-01	0.00E+00	6.58E+02	2.13E+03	6.88E+02	2.95E+01	9.53E+02	2.95E+02	2.95E+03	2.95E+03
	Ra-228	2.69E+00	4.65E+05	9.41E-02	3.17E-05	0.00E+00	3.77E-03		4.71E-03	9.41E-04	1.32E-02	9.41E-03	9.41E-02	9.41E-02
	Th-228	2.69E+00	2.96E+05	5.85E-02	1.13E-03	0.00E+00	5.92E-05		6.55E-04	5.96E-04	6.02E-03	5.96E-03	5.96E-02	5.96E-02
	Th-230	5.40E+01	2.96E+05	1.31E+03	7.07E+00	0.00E+00	1.85E+03	6.74E+03	1.93E+03	8.06E+01	2.66E+03	8.06E+02	8.06E+03	8.06E+03
	Th-232+D	9.66E-01	2.96E+05	4.81E+01	7.26E-01	0.00E+00	1.44E+00		1.93E+00	4.88E-01	6.32E+00	4.88E+00	4.88E+01	4.88E+01
	U-234+D	7.07E+01	8.17E+04	1.83E+01	2.10E+00	0.00E+00	9.76E+01	3.14E+02	1.01E+02	3.35E+00	1.31E+02	3.35E+01	3.35E+02	3.35E+02
	U-235	1.14E+00	8.17E+04	4.96E-01	3.02E-02	0.00E+00	4.99E-01		5.04E-01	5.26E-03	5.51E-01	5.26E-02	5.26E-01	5.26E-01
	U-238+D	3.11E+01	8.17E+04	2.93E+00	7.88E-01	0.00E+00	1.77E+01		1.78E+01	3.72E-02	1.81E+01	3.72E-01	3.72E+00	3.72E+00
Total			2.20E+03	1.16E+01	0.00E+00	2.63E+03	9.19E+03	2.74E+03	1.14E+02	3.77E+03	1.14E+03	1.14E+04	1.14E+04	
II-2	U-234+D	2.52E+02	8.60E+04	7.56E+01	2.10E+01	0.00E+00	9.76E+01	3.14E+02	1.02E+02	4.11E+00	1.39E+02	4.11E+01	4.11E+02	4.11E+02
	U-235	4.08E+00	8.60E+04	3.38E+00	3.02E-01	0.00E+00	4.99E-01		5.36E-01	3.68E-02	8.67E-01	3.68E-01	3.68E+00	3.68E+00
	U-238+D	1.11E+02	8.60E+04	1.40E+01	7.88E+00	0.00E+00	1.77E+01		1.79E+01	2.18E-01	1.99E+01	2.18E+00	2.18E+01	2.18E+01
	Total			9.30E+01	2.92E+01	0.00E+00	1.16E+02	3.14E+02	1.20E+02	4.36E+00	1.59E+02	4.36E+01	4.36E+02	4.36E+02
III	Cs-137	9.89E+00	2.00E+06	2.53E+00	3.99E-05	0.00E+00	8.35E-02		1.09E-01	2.53E-02	3.36E-01	2.53E-01	2.53E+00	3.36E-01
	Total			2.53E+00	3.99E-05	0.00E+00	8.35E-02		1.09E-01	2.53E-02	3.36E-01	2.53E-01	2.53E+00	3.36E-01
IV	U-234+D	3.24E+02	1.48E+04	1.75E-02	2.07E-01	0.00E+00	1.38E+00	2.08E+01	1.59E+00	2.10E-01	3.48E+00	2.10E+00	2.10E+01	5.58E+00
	U-235	1.52E+01	1.48E+04	1.35E-01	8.97E-03	0.00E+00	4.41E-02		4.55E-02	1.44E-03	5.85E-02	1.44E-02	1.44E-01	7.28E-02
	U-238+D	3.24E+02	1.48E+04	5.13E-01	1.83E-01	0.00E+00	1.23E+00		1.23E+00	6.97E-03	1.30E+00	6.97E-02	6.97E-01	1.37E+00
	Total			6.66E-01	3.99E-01	0.00E+00	2.65E+00	2.08E+01	2.87E+00	2.19E-01	4.84E+00	2.19E+00	2.19E+01	7.02E+00
V	Cs-137	1.07E+03	2.39E+04	1.55E+02	2.44E-03	0.00E+00	5.52E+00		7.07E+00	1.55E+00	2.10E+01	1.55E+01	1.55E+02	2.10E+01
	Total			1.55E+02	2.44E-03	0.00E+00	5.52E+00		7.07E+00	1.55E+00	2.10E+01	1.55E+01	1.55E+02	2.10E+01
VI	Cs-137	8.63E+01	2.07E+05	8.49E+00	1.30E-04	0.00E+00	2.82E-01		3.67E-01	8.49E-02	1.13E+00	8.49E-01	8.49E+00	2.83E+00
	U-234	1.22E+03	3.31E+04	2.14E+02	5.91E+01	0.00E+00	2.93E+02	9.56E+02	3.05E+02	1.23E+01	4.16E+02	1.23E+02	1.23E+03	6.61E+02
	U-235	5.75E+01	3.31E+04	2.83E+01	2.48E+00	0.00E+00	4.35E+00		4.66E+00	3.08E-01	7.43E+00	3.08E+00	3.08E+01	1.36E+01
	U-238+D	1.22E+03	3.31E+04	9.22E+01	5.04E+01	0.00E+00	1.21E+02		1.22E+02	1.43E+00	1.35E+02	1.43E+01	1.43E+02	1.63E+02
	Total			3.43E+02	1.12E+02	0.00E+00	4.18E+02	9.56E+02	4.32E+02	1.41E+01	5.59E+02	1.41E+02	1.41E+03	8.41E+02

Table N-12. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	4.35E-01	1.72E+03	0.00E+00	3.91E+01		5.63E+01	1.72E+01	2.11E+02	1.72E+02	1.72E+03	5.63E+01
	Cs-137	8.95E-01	8.42E+08	5.34E+00	7.48E-05	0.00E+00	1.84E-01		2.38E-01	5.34E-02	7.18E-01	5.34E-01	5.34E+00	2.38E-01
	Am-241	8.44E+00	5.71E+09	2.20E+00	2.72E+01	0.00E+00	2.70E+00		2.99E+00	2.93E-01	5.63E+00	2.93E+00	2.93E+01	2.99E+00
	Total			7.97E+00	1.75E+03	0.00E+00	4.20E+01		5.95E+01	1.76E+01	2.17E+02	1.76E+02	1.76E+03	5.95E+01
IX	Pu-239	9.47E+00	2.39E+05	6.16E-04	2.63E+00	0.00E+00	6.34E-02		8.97E-02	2.63E-02	3.27E-01	2.63E-01	2.63E+00	5.90E-01
	Am-241	1.58E+00	2.67E+06	4.11E-03	5.47E-02	0.00E+00	4.59E-03		5.17E-03	5.88E-04	1.05E-02	5.88E-03	5.88E-02	1.64E-02
	Total			4.73E-03	2.69E+00	0.00E+00	6.80E-02		9.49E-02	2.69E-02	3.37E-01	2.69E-01	2.69E+00	6.06E-01
X	Tc-99	8.16E+03	6.21E+00	2.58E-09	1.39E-08	9.81E-01	3.38E-02		1.01E+00	9.81E-01	1.01E+00	9.81E-01	9.81E-01	1.01E+00
	U-234+D	2.80E+02	5.76E+02	1.19E-04	2.39E-04	1.04E+00	2.08E-02	1.08E+00	1.07E+00	1.05E+00	1.17E+00	1.15E+00	2.12E+00	1.17E+00
	U-238+D	2.80E+02	5.76E+02	7.84E-04	2.10E-04	1.38E+00	1.17E-02		1.39E+00	1.38E+00	1.39E+00	1.38E+00	1.38E+00	1.39E+00
	Total			9.03E-04	4.49E-04	3.40E+00	6.63E-02	1.08E+00	3.48E+00	3.41E+00	3.57E+00	3.51E+00	4.48E+00	3.57E+00
XII	Pu-239	1.27E+03	1.25E+04	1.98E-05	6.17E-02	0.00E+00	1.23E-01		1.23E-01	6.17E-04	1.29E-01	6.17E-03	6.17E-02	6.17E-02
	Am-241	2.12E+02	4.33E+04	2.00E-03	2.01E-02	0.00E+00	4.69E-02		4.71E-02	2.21E-04	4.91E-02	2.21E-03	2.21E-02	2.21E-02
	Total			2.02E-03	8.18E-02	0.00E+00	1.70E-01		1.71E-01	8.38E-04	1.78E-01	8.38E-03	8.38E-02	8.38E-02
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XVIA	Co-60	3.63E+01	4.29E+05	4.98E-03	4.35E-08	0.00E+00	8.58E-06		5.84E-05	4.98E-05	5.07E-04	4.98E-04	4.98E-03	1.01E-03
	Cs-137+D	2.89E+01	8.59E+05	5.08E-03	4.50E-08	0.00E+00	2.83E-04		3.34E-04	5.08E-05	7.92E-04	5.08E-04	5.08E-03	1.30E-03
	Total			1.01E-02	8.85E-08	0.00E+00	2.92E-04		3.92E-04	1.01E-04	1.30E-03	1.01E-03	1.01E-02	2.31E-03
XVIB	Co-60	3.63E+01	6.09E+04	4.95E-03	4.32E-08	0.00E+00	8.57E-06		5.80E-05	4.95E-05	5.03E-04	4.95E-04	4.95E-03	9.98E-04
	Cs-137+D	2.89E+01	1.22E+05	4.98E-03	4.41E-08	0.00E+00	2.82E-04		3.32E-04	4.98E-05	7.80E-04	4.98E-04	4.98E-03	1.28E-03
	Total			9.93E-03	8.73E-08	0.00E+00	2.91E-04		3.90E-04	9.93E-05	1.28E-03	9.93E-04	9.93E-03	2.28E-03

Table N-12. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	4.87E-03	4.26E-08	0.00E+00	8.55E-06		5.72E-05	4.87E-05	4.95E-04	4.87E-04	4.87E-03	9.82E-04
	Cs-137+D	2.89E+01	1.07E+04	4.77E-03	4.22E-08	0.00E+00	2.80E-04		3.28E-04	4.77E-05	7.57E-04	4.77E-04	4.77E-03	1.23E-03
	Total			9.64E-03	8.47E-08	0.00E+00	2.89E-04		3.85E-04	9.64E-05	1.25E-03	9.64E-04	9.64E-03	2.22E-03
XVIII	Cs-137+D	3.54E+02	8.59E+05	2.94E-02	2.60E-07	0.00E+00	1.63E-03		1.93E-03	2.94E-04	4.57E-03	2.94E-03	2.94E-02	2.94E-02
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	7.90E-07	0.00E+00	2.47E-02		2.47E-02	7.90E-09	2.47E-02	7.90E-08	7.90E-07	7.90E-07
	Total			2.94E-02	1.05E-06	0.00E+00	2.63E-02		2.66E-02	2.94E-04	2.92E-02	2.94E-03	2.94E-02	2.94E-02
XVIII	Cs-137+D	3.54E+02	1.22E+05	2.88E-02	2.54E-07	0.00E+00	1.63E-03		1.92E-03	2.88E-04	4.51E-03	2.88E-03	2.88E-02	2.88E-02
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	5.20E-07	2.88E-32	2.19E-02		2.19E-02	5.20E-09	2.19E-02	5.20E-08	5.20E-07	5.20E-07
	Total			2.88E-02	7.74E-07	2.88E-32	2.35E-02		2.38E-02	2.88E-04	2.64E-02	2.88E-03	2.88E-02	2.88E-02
XVIII	Cs-137+D	3.54E+02	3.22E+04	2.75E-02	2.44E-07	0.00E+00	1.62E-03		1.89E-03	2.75E-04	4.37E-03	2.75E-03	2.75E-02	2.75E-02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	2.95E-07	5.37E-10	1.75E-02		1.75E-02	3.49E-09	1.75E-02	3.01E-08	2.96E-07	2.96E-07
	Total			2.75E-02	5.39E-07	5.37E-10	1.91E-02		1.94E-02	2.75E-04	2.19E-02	2.75E-03	2.75E-02	2.75E-02
XXA	U-234+D	4.37E+01	8.57E+04	1.56E-02	1.51E-03	0.00E+00	1.62E-01	1.05E+00	1.73E-01	1.07E-02	2.69E-01	1.07E-01	1.07E+00	3.76E-01
	U-235	1.46E+00	8.57E+04	6.96E-04	4.24E-05	0.00E+00	1.29E-03		1.30E-03	7.38E-06	1.36E-03	7.38E-05	7.38E-04	1.44E-03
	U-238+D	7.51E+00	8.57E+04	7.82E-04	2.10E-04	0.00E+00	8.69E-03		8.70E-03	9.92E-06	8.79E-03	9.92E-05	9.92E-04	8.88E-03
	Total			1.71E-02	1.76E-03	0.00E+00	1.72E-01	1.05E+00	1.83E-01	1.07E-02	2.79E-01	1.07E-01	1.07E+00	3.86E-01
XXB	U-234+D	2.54E+01	1.21E+04	2.09E-03	3.70E-04	0.00E+00	3.82E-02	4.29E-01	4.26E-02	4.32E-03	8.14E-02	4.32E-02	4.32E-01	1.25E-01
	U-235	8.40E-01	1.21E+04	1.71E-04	1.04E-05	0.00E+00	3.18E-04		3.19E-04	1.82E-06	3.36E-04	1.82E-05	1.82E-04	3.54E-04
	U-238+D	4.36E+00	1.21E+04	1.93E-04	5.18E-05	0.00E+00	2.15E-03		2.16E-03	2.45E-06	2.18E-03	2.45E-05	2.45E-04	2.20E-03
	Total			2.46E-03	4.32E-04	0.00E+00	4.07E-02	4.29E-01	4.50E-02	4.32E-03	8.39E-02	4.32E-02	4.32E-01	1.27E-01
XXC	U-234+D	2.54E+01	1.07E+03	3.95E-04	1.60E-04	8.22E-02	1.34E-02	2.35E-01	9.80E-02	8.46E-02	1.19E-01	1.06E-01	3.18E-01	1.43E-01
	U-235	8.40E-01	1.07E+03	7.51E-05	4.57E-06	2.60E-03	1.40E-04		2.74E-03	2.60E-03	2.74E-03	2.61E-03	2.68E-03	2.75E-03
	U-238+D	4.36E+00	1.07E+03	8.50E-05	2.28E-05	1.76E-02	9.46E-04		1.86E-02	1.76E-02	1.86E-02	1.76E-02	1.77E-02	1.86E-02
	Total			5.55E-04	1.87E-04	1.02E-01	1.45E-02	2.35E-01	1.19E-01	1.05E-01	1.40E-01	1.26E-01	3.38E-01	1.64E-01

Table N-12. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	2.23E-03	7.47E-07	0.00E+00	1.61E-04		1.83E-04	2.23E-05	3.83E-04	2.23E-04	2.23E-03	2.23E-03
	Th-228	1.83E+01	2.10E+07	1.41E-03	2.67E-05	0.00E+00	2.52E-06		1.69E-05	1.43E-05	1.46E-04	1.43E-04	1.43E-03	1.43E-03
	Th-232+D	1.83E+01	2.10E+07	7.21E+00	1.08E-01	0.00E+00	2.01E-01		2.74E-01	7.32E-02	9.33E-01	7.32E-01	7.32E+00	7.32E+00
	Total			7.22E+00	1.08E-01	0.00E+00	2.01E-01		2.75E-01	7.32E-02	9.34E-01	7.32E-01	7.32E+00	7.32E+00
XXIB	Ra-228	1.83E+01	6.84E+04	2.21E-03	7.42E-07	0.00E+00	1.60E-04		1.83E-04	2.21E-05	3.82E-04	2.21E-04	2.21E-03	2.21E-03
	Th-228	1.83E+01	2.99E+06	1.41E-03	2.67E-05	0.00E+00	2.52E-06		1.69E-05	1.43E-05	1.46E-04	1.43E-04	1.43E-03	1.43E-03
	Th-232+D	1.83E+01	2.99E+06	6.52E+00	9.76E-02	0.00E+00	1.98E-01		2.64E-01	6.62E-02	8.60E-01	6.62E-01	6.62E+00	6.62E+00
	Total			6.53E+00	9.76E-02	0.00E+00	1.98E-01		2.64E-01	6.62E-02	8.60E-01	6.62E-01	6.62E+00	6.62E+00
XXIC	Ra-228	1.83E+01	6.03E+03	2.18E-03	7.31E-07	0.00E+00	1.60E-04		1.82E-04	2.18E-05	3.78E-04	2.18E-04	2.18E-03	2.18E-03
	Th-228	1.83E+01	2.63E+05	1.41E-03	2.67E-05	0.00E+00	2.52E-06		1.69E-05	1.43E-05	1.46E-04	1.43E-04	1.43E-03	1.43E-03
	Th-232+D	1.83E+01	2.63E+05	5.28E+00	7.91E-02	0.00E+00	1.90E-01		2.44E-01	5.36E-02	7.26E-01	5.36E-01	5.36E+00	5.36E+00
	Total			5.28E+00	7.92E-02	0.00E+00	1.91E-01		2.44E-01	5.36E-02	7.27E-01	5.36E-01	5.36E+00	5.36E+00
XXII	U-234	1.71E+01	1.40E+02	5.56E-04	7.51E-04	2.81E+00	7.35E-02	3.81E+00	2.92E+00	2.84E+00	3.26E+00	3.19E+00	6.62E+00	8.14E+00
	U-235	8.01E-01	1.40E+02	5.28E-04	3.21E-05	1.37E-01	1.32E-03		1.38E-01	1.37E-01	1.38E-01	1.37E-01	1.37E-01	1.38E-01
	U-238+D	1.71E+01	1.40E+02	2.45E-03	6.56E-04	3.81E+00	3.66E-02		3.85E+00	3.81E+00	3.85E+00	3.81E+00	3.81E+00	3.81E+00
	Ra-226+D	3.16E+00	1.99E+03	6.76E-01	7.45E-04	2.77E+00	2.99E+00	3.82E+01	6.15E+00	3.16E+00	9.65E+00	6.66E+00	4.16E+01	5.72E+01
	Ra-228	1.92E+01	1.99E+03	6.12E-02	2.05E-05	0.00E+00	4.50E-03		5.11E-03	6.12E-04	1.06E-02	6.12E-03	6.12E-02	8.57E-02
	Th-228	1.92E+01	1.27E+04	3.95E-02	7.50E-04	0.00E+00	7.09E-05		4.73E-04	4.02E-04	4.09E-03	4.02E-03	4.02E-02	5.63E-02
	Th-232	1.92E+01	1.27E+04	4.03E+01	6.05E-01	0.00E+00	3.80E+00		4.21E+00	4.09E-01	7.89E+00	4.09E+00	4.09E+01	5.73E+01
	Total			4.11E+01	6.08E-01	9.52E+00	6.91E+00	4.20E+01	1.73E+01	1.04E+01	2.48E+01	1.79E+01	9.33E+01	1.27E+02

- (a) Based on 1,000 people/km
- (b) Based on 10 people/km²
- (c) Based on 100 people/km²
- (d) Based on site specific d

Table N-13. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 100 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	1.50E-01	2.37E-06	0.00E+00	5.20E-03		6.70E-03	1.50E-03	2.02E-02	1.50E-02	1.50E-01	2.02E-02
	Total													
II-1	Ra-226+D	5.43E+01	4.65E+05	2.65E-01	2.93E-04	0.00E+00	1.72E-01	5.36E-01	1.80E-01	8.01E-03	2.53E-01	8.01E-02	8.01E-01	8.01E-01
	Ra-228	2.69E+00	4.65E+05	1.10E-02	3.71E-06	0.00E+00	4.42E-04		5.52E-04	1.10E-04	1.55E-03	1.10E-03	1.10E-02	1.10E-02
	Th-228	2.69E+00	2.96E+05	6.86E-03	1.32E-04	0.00E+00	6.94E-06		7.68E-05	6.99E-05	7.06E-04	6.99E-04	6.99E-03	6.99E-03
	Th-230	5.40E+01	2.96E+05	5.75E-03	8.17E-04	0.00E+00	2.41E-03	1.17E-02	2.59E-03	1.83E-04	4.24E-03	1.83E-03	1.83E-02	1.83E-02
	Th-232+D	9.66E-01	2.96E+05	3.39E-01	5.17E-03	0.00E+00	5.13E-03		8.57E-03	3.44E-03	3.96E-02	3.44E-02	3.44E-01	3.44E-01
	U-234+D	7.07E+01	8.17E+04	2.40E-06	6.69E-04	0.00E+00	2.31E-03	3.52E-06	2.31E-03	6.75E-06	2.38E-03	6.75E-05	6.75E-04	6.75E-04
	U-235	1.14E+00	8.17E+04	1.02E-02	6.22E-04	0.00E+00	2.44E-03		2.55E-03	1.08E-04	3.52E-03	1.08E-03	1.08E-02	1.08E-02
	U-238+D	3.11E+01	8.17E+04	2.22E-03	5.97E-04	0.00E+00	3.19E-03		3.21E-03	2.82E-05	3.47E-03	2.82E-04	2.82E-03	2.82E-03
Total														
II-2	U-234+D	2.52E+02	8.60E+04	1.19E-05	6.69E-03	0.00E+00	2.31E-03	3.52E-06	2.37E-03	6.71E-05	2.98E-03	6.71E-04	6.71E-03	6.71E-03
	U-235	4.08E+00	8.60E+04	6.96E-02	6.22E-03	0.00E+00	2.44E-03		3.20E-03	7.58E-04	1.00E-02	7.58E-03	7.58E-02	7.58E-02
	U-238+D	1.11E+02	8.60E+04	1.06E-02	5.97E-03	0.00E+00	3.19E-03		3.35E-03	1.65E-04	4.84E-03	1.65E-03	1.65E-02	1.65E-02
	Total													
III	Cs-137	9.89E+00	2.00E+06	1.60E-01	2.52E-06	0.00E+00	5.26E-03		6.85E-03	1.60E-03	2.12E-02	1.60E-02	1.60E-01	2.12E-02
	Total													
IV	U-234+D	3.24E+02	1.48E+04	6.14E-06	2.51E-03	0.00E+00	2.23E-03	3.48E-06	2.25E-03	2.52E-05	2.48E-03	2.52E-04	2.52E-03	2.73E-03
	U-235	1.52E+01	1.48E+04	3.51E-02	2.34E-03	0.00E+00	2.35E-03		2.73E-03	3.75E-04	6.10E-03	3.75E-03	3.75E-02	9.85E-03
	U-238+D	3.24E+02	1.48E+04	6.29E-03	2.24E-03	0.00E+00	3.07E-03		3.16E-03	8.53E-05	3.92E-03	8.53E-04	8.53E-03	4.78E-03
	Total													
V	Cs-137	1.07E+03	2.39E+04	1.49E-01	2.35E-06	0.00E+00	5.19E-03		6.68E-03	1.49E-03	2.01E-02	1.49E-02	1.49E-01	2.01E-02
	Total													
VI	Cs-137	8.63E+01	2.07E+05	1.58E-01	2.42E-06	0.00E+00	5.26E-03		6.85E-03	1.58E-03	2.11E-02	1.58E-02	1.58E-01	5.28E-02
	U-234	1.22E+03	3.31E+04	1.17E-05	6.40E-03	0.00E+00	2.31E-03	3.52E-06	2.37E-03	6.41E-05	2.95E-03	6.41E-04	6.41E-03	4.23E-03
	U-235	5.75E+01	3.31E+04	6.81E-02	5.95E-03	0.00E+00	2.44E-03		3.18E-03	7.40E-04	9.84E-03	7.40E-03	7.40E-02	2.47E-02
	U-238+D	1.22E+03	3.31E+04	1.04E-02	5.71E-03	0.00E+00	3.18E-03		3.35E-03	1.61E-04	4.80E-03	1.61E-03	1.61E-02	8.02E-03
	Total													

Table N-13. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 100 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	2.82E-06	1.11E-02	0.00E+00	2.52E-04		3.64E-04	1.11E-04	1.37E-03	1.11E-03	1.11E-02	3.64E-04
	Cs-137	8.95E-01	8.42E+08	1.53E-01	2.14E-06	0.00E+00	5.26E-03		6.79E-03	1.53E-03	2.05E-02	1.53E-02	1.53E-01	6.79E-03
	Am-241	8.44E+00	5.71E+09	1.09E-03	1.35E-02	0.00E+00	1.34E-03		1.49E-03	1.46E-04	2.81E-03	1.46E-03	1.46E-02	1.49E-03
	Total													
IX	Pu-239	9.47E+00	2.39E+05	3.09E-06	1.32E-02	0.00E+00	2.52E-04		3.84E-04	1.32E-04	1.57E-03	1.32E-03	1.32E-02	2.89E-03
	Am-241	1.58E+00	2.67E+06	1.21E-03	1.61E-02	0.00E+00	1.34E-03		1.52E-03	1.73E-04	3.07E-03	1.73E-03	1.73E-02	4.80E-03
	Total													
X	Tc-99	8.16E+03	6.21E+00	1.21E-11	6.55E-11	4.61E-03	1.59E-04		4.76E-03	4.61E-03	4.76E-03	4.61E-03	4.61E-03	4.76E-03
	U-234+D	2.80E+02	5.76E+02	1.86E-07	3.21E-05	0.00E+00	7.27E-04	3.36E-06	7.27E-04	3.57E-07	7.31E-04	3.57E-06	3.57E-05	7.31E-04
	U-238+D	2.80E+02	5.76E+02	1.07E-04	2.86E-05	0.00E+00	1.00E-03		1.00E-03	1.36E-06	1.02E-03	1.36E-05	1.36E-04	1.02E-03
	Total													
XII	Pu-239	1.27E+03	1.25E+04	1.88E-07	5.85E-04	0.00E+00	2.37E-04		2.43E-04	5.86E-06	2.96E-04	5.86E-05	5.86E-04	5.86E-04
	Am-241	2.12E+02	4.33E+04	8.18E-05	8.20E-04	0.00E+00	1.29E-03		1.30E-03	9.01E-06	1.38E-03	9.01E-05	9.01E-04	9.01E-04
	Total													
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XVIA	Co-60	3.63E+01	4.29E+05	8.18E-02	7.15E-07	0.00E+00	1.41E-04		9.59E-04	8.18E-04	8.32E-03	8.18E-03	8.18E-02	1.65E-02
	Cs-137+D	2.89E+01	8.59E+05	9.47E-02	8.37E-07	0.00E+00	5.25E-03		6.20E-03	9.47E-04	1.47E-02	9.47E-03	9.47E-02	2.42E-02
	Total													
XVIB	Co-60	3.63E+01	6.09E+04	8.12E-02	7.10E-07	0.00E+00	1.41E-04		9.53E-04	8.12E-04	8.26E-03	8.12E-03	8.12E-02	1.64E-02
	Cs-137+D	2.89E+01	1.22E+05	9.32E-02	8.24E-07	0.00E+00	5.24E-03		6.17E-03	9.32E-04	1.46E-02	9.32E-03	9.32E-02	2.39E-02
	Total													

Table N-13. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 100 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	8.00E-02	6.99E-07	0.00E+00	1.40E-04		9.40E-04	8.00E-04	8.14E-03	8.00E-03	8.00E-02	1.61E-02
	Cs-137+D	2.89E+01	1.07E+04	9.02E-02	7.97E-07	0.00E+00	5.21E-03		6.11E-03	9.02E-04	1.42E-02	9.02E-03	9.02E-02	2.32E-02
	Total													
XVIII A	Cs-137+D	3.54E+02	8.59E+05	9.47E-02	8.37E-07	0.00E+00	5.25E-03		6.20E-03	9.47E-04	1.47E-02	9.47E-03	9.47E-02	9.47E-02
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	2.76E-06	0.00E+00	8.19E-02		8.19E-02	2.76E-08	8.19E-02	2.76E-07	2.76E-06	2.76E-06
	Total													
XVIII B	Cs-137+D	3.54E+02	1.22E+05	9.32E-02	8.24E-07	0.00E+00	5.24E-03		6.17E-03	9.32E-04	1.46E-02	9.32E-03	9.32E-02	9.32E-02
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	1.85E-06	0.00E+00	7.43E-02		7.43E-02	1.85E-08	7.43E-02	1.85E-07	1.85E-06	1.85E-06
	Total													
XVIII C	Cs-137+D	3.54E+02	3.22E+04	9.02E-02	7.97E-07	0.00E+00	5.21E-03		6.11E-03	9.02E-04	1.42E-02	9.02E-03	9.02E-02	9.02E-02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	1.06E-06	0.00E+00	6.10E-02		6.10E-02	1.06E-08	6.10E-02	1.06E-07	1.06E-06	1.06E-06
	Total													
XXA	U-234+D	4.37E+01	8.57E+04	1.64E-06	4.37E-04	0.00E+00	2.26E-03	3.51E-06	2.26E-03	4.42E-06	2.30E-03	4.42E-05	4.42E-04	2.34E-03
	U-235	1.46E+00	8.57E+04	6.67E-03	4.06E-04	0.00E+00	2.38E-03		2.45E-03	7.08E-05	3.09E-03	7.08E-04	7.08E-03	3.80E-03
	U-238+D	7.51E+00	8.57E+04	1.45E-03	3.90E-04	0.00E+00	3.11E-03		3.13E-03	1.84E-05	3.30E-03	1.84E-04	1.84E-03	3.48E-03
	Total													
XXB	U-234+D	2.54E+01	1.21E+04	1.40E-06	3.52E-04	0.00E+00	2.17E-03	3.50E-06	2.17E-03	3.57E-06	2.20E-03	3.57E-05	3.57E-04	2.24E-03
	U-235	8.40E-01	1.21E+04	5.38E-03	3.27E-04	0.00E+00	2.29E-03		2.35E-03	5.71E-05	2.86E-03	5.71E-04	5.71E-03	3.43E-03
	U-238+D	4.36E+00	1.21E+04	1.17E-03	3.14E-04	0.00E+00	2.99E-03		3.01E-03	1.49E-05	3.14E-03	1.49E-04	1.49E-03	3.29E-03
	Total													
XXC	U-234+D	2.54E+01	1.07E+03	1.03E-06	2.32E-04	0.00E+00	1.99E-03	3.46E-06	1.99E-03	2.37E-06	2.01E-03	2.37E-05	2.37E-04	2.04E-03
	U-235	8.40E-01	1.07E+03	3.55E-03	2.16E-04	0.00E+00	2.10E-03		2.14E-03	3.77E-05	2.48E-03	3.77E-04	3.77E-03	2.86E-03
	U-238+D	4.36E+00	1.07E+03	7.74E-04	2.07E-04	0.00E+00	2.75E-03		2.76E-03	9.81E-06	2.85E-03	9.81E-05	9.81E-04	2.94E-03
	Total													

Table N-13. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 100 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	2.21E-03	7.40E-07	0.00E+00	1.59E-04		1.81E-04	2.21E-05	3.80E-04	2.21E-04	2.21E-03	2.21E-03
	Th-228	1.83E+01	2.10E+07	1.39E-03	2.65E-05	0.00E+00	2.50E-06		1.67E-05	1.42E-05	1.44E-04	1.42E-04	1.42E-03	1.42E-03
	Th-232+D	1.83E+01	2.10E+07	6.90E-02	1.04E-03	0.00E+00	1.85E-03		2.55E-03	7.00E-04	8.85E-03	7.00E-03	7.00E-02	7.00E-02
	Total													
XXIB	Ra-228	1.83E+01	6.84E+04	2.19E-03	7.35E-07	0.00E+00	1.59E-04		1.81E-04	2.19E-05	3.78E-04	2.19E-04	2.19E-03	2.19E-03
	Th-228	1.83E+01	2.99E+06	1.39E-03	2.65E-05	0.00E+00	2.50E-06		1.67E-05	1.42E-05	1.44E-04	1.42E-04	1.42E-03	1.42E-03
	Th-232+D	1.83E+01	2.99E+06	6.85E-02	1.03E-03	0.00E+00	1.85E-03		2.54E-03	6.95E-04	8.80E-03	6.95E-03	6.95E-02	6.95E-02
	Total													
XXIC	Ra-228	1.83E+01	6.03E+03	2.16E-03	7.23E-07	0.00E+00	1.58E-04		1.80E-04	2.16E-05	3.74E-04	2.16E-04	2.16E-03	2.16E-03
	Th-228	1.83E+01	2.63E+05	1.39E-03	2.65E-05	0.00E+00	2.50E-06		1.67E-05	1.42E-05	1.44E-04	1.42E-04	1.42E-03	1.42E-03
	Th-232+D	1.83E+01	2.63E+05	6.74E-02	1.02E-03	0.00E+00	1.84E-03		2.53E-03	6.84E-04	8.68E-03	6.84E-03	6.84E-02	6.84E-02
	Total													
XXII	U-234	1.71E+01	1.40E+02	2.03E-07	3.61E-05	0.00E+00	7.21E-04	3.39E-06	7.21E-04	3.97E-07	7.25E-04	3.97E-06	3.97E-05	5.56E-05
	U-235	8.01E-01	1.40E+02	5.52E-04	3.36E-05	0.00E+00	7.62E-04		7.67E-04	5.86E-06	8.20E-04	5.86E-05	5.86E-04	8.20E-04
	U-238+D	1.71E+01	1.40E+02	1.20E-04	3.22E-05	0.00E+00	9.95E-04		9.97E-04	1.53E-06	1.01E-03	1.53E-05	1.53E-04	2.14E-04
	Ra-226+D	3.16E+00	1.99E+03	5.70E-02	6.28E-05	0.00E+00	7.56E-02	5.34E-01	8.15E-02	5.91E-03	1.35E-01	5.91E-02	5.91E-01	8.27E-01
	Ra-228	1.92E+01	1.99E+03	2.70E-03	9.04E-07	0.00E+00	1.98E-04		2.25E-04	2.70E-05	4.68E-04	2.70E-04	2.70E-03	3.78E-03
	Th-228	1.92E+01	1.27E+04	1.74E-03	3.30E-05	0.00E+00	3.12E-06		2.08E-05	1.77E-05	1.80E-04	1.77E-04	1.77E-03	2.48E-03
	Th-232	1.92E+01	1.27E+04	8.25E-02	1.25E-03	0.00E+00	2.29E-03		3.13E-03	8.38E-04	1.07E-02	8.38E-03	8.38E-02	1.17E-01
	Total													

- (a) Based on 1,000 people/km
- (b) Based on 10 people/km²
- (c) Based on 100 people/km²
- (d) Based on site specific d

Table N-14. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	1.63E-01	2.57E-06	0.00E+00	5.76E-03		7.39E-03	1.63E-03	2.21E-02	1.63E-02	1.63E-01	2.21E-02
	Total													
II-1	Ra-226+D	5.43E+01	4.65E+05	2.08E+00	2.30E-03	0.00E+00	1.42E+00	4.44E+00	1.48E+00	6.52E-02	2.07E+00	6.52E-01	6.52E+00	6.52E+00
	Ra-228	2.69E+00	4.65E+05	1.10E-02	3.71E-06	0.00E+00	4.42E-04		5.52E-04	1.10E-04	1.55E-03	1.10E-03	1.10E-02	1.10E-02
	Th-228	2.69E+00	2.96E+05	6.86E-03	1.32E-04	0.00E+00	6.94E-06		7.68E-05	6.99E-05	7.06E-04	6.99E-04	6.99E-03	6.99E-03
	Th-230	5.40E+01	2.96E+05	4.57E-01	7.85E-03	0.00E+00	3.07E-01	1.03E+00	3.22E-01	1.49E-02	4.56E-01	1.49E-01	1.49E+00	1.49E+00
	Th-232+D	9.66E-01	2.96E+05	3.40E+00	5.13E-02	0.00E+00	5.47E-02		8.91E-02	3.45E-02	4.00E-01	3.45E-01	3.45E+00	3.45E+00
	U-234+D	7.07E+01	8.17E+04	1.21E-03	4.86E-03	0.00E+00	2.27E-02	3.17E-03	2.28E-02	9.24E-05	2.37E-02	9.24E-04	9.24E-03	9.24E-03
	U-235	1.14E+00	8.17E+04	7.40E-02	4.50E-03	0.00E+00	2.30E-02		2.38E-02	7.85E-04	3.09E-02	7.85E-03	7.85E-02	7.85E-02
	U-238+D	3.11E+01	8.17E+04	1.61E-02	4.32E-03	0.00E+00	3.01E-02		3.03E-02	2.04E-04	3.21E-02	2.04E-03	2.04E-02	2.04E-02
Total														
II-2	U-234+D	2.52E+02	8.60E+04	5.02E-03	4.86E-02	0.00E+00	2.27E-02	3.17E-03	2.33E-02	5.68E-04	2.84E-02	5.68E-03	5.68E-02	5.68E-02
	U-235	4.08E+00	8.60E+04	5.04E-01	4.50E-02	0.00E+00	2.30E-02		2.85E-02	5.49E-03	7.79E-02	5.49E-02	5.49E-01	5.49E-01
	U-238+D	1.11E+02	8.60E+04	7.65E-02	4.32E-02	0.00E+00	3.01E-02		3.13E-02	1.20E-03	4.20E-02	1.20E-02	1.20E-01	1.20E-01
	Total													
III	Cs-137	9.89E+00	2.00E+06	1.77E-01	2.79E-06	0.00E+00	5.84E-03		7.61E-03	1.77E-03	2.35E-02	1.77E-02	1.77E-01	2.35E-02
	Total													
IV	U-234+D	3.24E+02	1.48E+04	2.93E-04	6.22E-03	0.00E+00	1.61E-02	2.84E-03	1.62E-02	9.35E-05	1.70E-02	9.35E-04	9.35E-03	1.80E-02
	U-235	1.52E+01	1.48E+04	8.65E-02	5.75E-03	0.00E+00	1.64E-02		1.74E-02	9.23E-04	2.57E-02	9.23E-03	9.23E-02	3.49E-02
	U-238+D	3.24E+02	1.48E+04	1.55E-02	5.52E-03	0.00E+00	2.15E-02		2.17E-02	2.10E-04	2.36E-02	2.10E-03	2.10E-02	2.57E-02
	Total													
V	Cs-137	1.07E+03	2.39E+04	1.62E-01	2.55E-06	0.00E+00	5.75E-03		7.36E-03	1.62E-03	2.19E-02	1.62E-02	1.62E-01	2.19E-02
	Total													
VI	Cs-137	8.63E+01	2.07E+05	1.76E-01	2.69E-06	0.00E+00	5.85E-03		7.61E-03	1.76E-03	2.34E-02	1.76E-02	1.76E-01	5.86E-02
	U-234	1.22E+03	3.31E+04	4.91E-03	4.59E-02	0.00E+00	2.27E-02	3.17E-03	2.32E-02	5.40E-04	2.81E-02	5.40E-03	5.40E-02	3.89E-02
	U-235	5.75E+01	3.31E+04	4.87E-01	4.25E-02	0.00E+00	2.30E-02		2.83E-02	5.29E-03	7.59E-02	5.29E-02	5.29E-01	1.82E-01
	U-238+D	1.22E+03	3.31E+04	7.45E-02	4.08E-02	0.00E+00	3.00E-02		3.12E-02	1.15E-03	4.15E-02	1.15E-02	1.15E-01	6.46E-02
	Total													

Table N-14. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	2.78E-05	1.10E-01	0.00E+00	2.49E-03		3.59E-03	1.10E-03	1.35E-02	1.10E-02	1.10E-01	3.59E-03
	Cs-137	8.95E-01	8.42E+08	1.70E-01	2.37E-06	0.00E+00	5.85E-03		7.55E-03	1.70E-03	2.28E-02	1.70E-02	1.70E-01	7.55E-03
	Am-241	8.44E+00	5.71E+09	5.90E-03	7.30E-02	0.00E+00	7.25E-03		8.04E-03	7.89E-04	1.51E-02	7.89E-03	7.89E-02	8.04E-03
	Total													
IX	Pu-239	9.47E+00	2.39E+05	2.96E-05	1.27E-01	0.00E+00	2.48E-03		3.75E-03	1.27E-03	1.51E-02	1.27E-02	1.27E-01	2.78E-02
	Am-241	1.58E+00	2.67E+06	6.51E-03	8.66E-02	0.00E+00	7.25E-03		8.18E-03	9.31E-04	1.66E-02	9.31E-03	9.31E-02	2.59E-02
	Total													
X	Tc-99	8.16E+03	6.21E+00	1.21E-11	6.55E-11	4.61E-03	1.59E-04		4.76E-03	4.61E-03	4.76E-03	4.61E-03	4.61E-03	4.76E-03
	U-234+D	2.80E+02	5.76E+02	6.42E-06	3.24E-05	1.23E-01	1.26E-03	2.07E-03	1.25E-01	1.23E-01	1.25E-01	1.23E-01	1.25E-01	1.25E-01
	U-238+D	2.80E+02	5.76E+02	1.07E-04	2.87E-05	1.64E-01	1.60E-03		1.66E-01	1.64E-01	1.66E-01	1.64E-01	1.64E-01	1.66E-01
	Total													
XII	Pu-239	1.27E+03	1.25E+04	5.45E-07	1.70E-03	0.00E+00	1.75E-03		1.77E-03	1.70E-05	1.92E-03	1.70E-04	1.70E-03	1.70E-03
	Am-241	2.12E+02	4.33E+04	3.15E-04	3.16E-03	0.00E+00	6.56E-03		6.59E-03	3.47E-05	6.90E-03	3.47E-04	3.47E-03	3.47E-03
	Total													
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XVIA	Co-60	3.63E+01	4.29E+05	8.18E-02	7.15E-07	0.00E+00	1.41E-04		9.59E-04	8.18E-04	8.32E-03	8.18E-03	8.18E-02	1.65E-02
	Cs-137+D	2.89E+01	8.59E+05	1.05E-01	9.27E-07	0.00E+00	5.84E-03		6.89E-03	1.05E-03	1.63E-02	1.05E-02	1.05E-01	2.68E-02
	Total													
XVIB	Co-60	3.63E+01	6.09E+04	8.12E-02	7.10E-07	0.00E+00	1.41E-04		9.53E-04	8.12E-04	8.26E-03	8.12E-03	8.12E-02	1.64E-02
	Cs-137+D	2.89E+01	1.22E+05	1.03E-01	9.09E-07	0.00E+00	5.82E-03		6.85E-03	1.03E-03	1.61E-02	1.03E-02	1.03E-01	2.64E-02
	Total													

Table N-14. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	8.00E-02	6.99E-07	0.00E+00	1.40E-04		9.40E-04	8.00E-04	8.14E-03	8.00E-03	8.00E-02	1.61E-02
	Cs-137+D	2.89E+01	1.07E+04	9.84E-02	8.70E-07	0.00E+00	5.77E-03		6.76E-03	9.84E-04	1.56E-02	9.84E-03	9.84E-02	2.54E-02
	Total													
XVIII A	Cs-137+D	3.54E+02	8.59E+05	1.05E-01	9.27E-07	0.00E+00	5.84E-03		6.89E-03	1.05E-03	1.63E-02	1.05E-02	1.05E-01	1.05E-01
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	2.82E-06	0.00E+00	8.81E-02		8.81E-02	2.82E-08	8.81E-02	2.82E-07	2.82E-06	2.82E-06
	Total													
XVIII B	Cs-137+D	3.54E+02	1.22E+05	1.03E-01	9.09E-07	0.00E+00	5.82E-03		6.85E-03	1.03E-03	1.61E-02	1.03E-02	1.03E-01	1.03E-01
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	1.86E-06	0.00E+00	7.82E-02		7.82E-02	1.86E-08	7.82E-02	1.86E-07	1.86E-06	1.86E-06
	Total													
XVIII C	Cs-137+D	3.54E+02	3.22E+04	9.84E-02	8.70E-07	0.00E+00	5.77E-03		6.76E-03	9.84E-04	1.56E-02	9.84E-03	9.84E-02	9.84E-02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	1.06E-06	1.92E-09	6.25E-02		6.25E-02	1.25E-08	6.25E-02	1.07E-07	1.06E-06	1.06E-06
	Total													
XXA	U-234+D	4.37E+01	8.57E+04	4.99E-04	1.43E-03	0.00E+00	1.84E-02	3.10E-03	1.84E-02	5.03E-05	1.89E-02	5.03E-04	5.03E-03	1.94E-02
	U-235	1.46E+00	8.57E+04	2.17E-02	1.32E-03	0.00E+00	1.85E-02		1.87E-02	2.30E-04	2.08E-02	2.30E-03	2.30E-02	2.31E-02
	U-238+D	7.51E+00	8.57E+04	4.72E-03	1.26E-03	0.00E+00	2.42E-02		2.42E-02	5.99E-05	2.48E-02	5.99E-04	5.99E-03	2.54E-02
	Total													
XXB	U-234+D	2.54E+01	1.21E+04	2.26E-04	6.28E-04	0.00E+00	1.32E-02	2.97E-03	1.33E-02	3.82E-05	1.36E-02	3.82E-04	3.82E-03	1.40E-02
	U-235	8.40E-01	1.21E+04	9.50E-03	5.78E-04	0.00E+00	1.33E-02		1.34E-02	1.01E-04	1.43E-02	1.01E-03	1.01E-02	1.53E-02
	U-238+D	4.36E+00	1.21E+04	2.07E-03	5.55E-04	0.00E+00	1.73E-02		1.73E-02	2.63E-05	1.76E-02	2.63E-04	2.63E-03	1.78E-02
	Total													
XXC	U-234+D	2.54E+01	1.07E+03	7.41E-05	2.76E-04	0.00E+00	7.49E-03	2.71E-03	7.52E-03	3.06E-05	7.79E-03	3.06E-04	3.06E-03	8.10E-03
	U-235	8.40E-01	1.07E+03	4.17E-03	2.54E-04	0.00E+00	7.42E-03		7.47E-03	4.43E-05	7.87E-03	4.43E-04	4.43E-03	8.31E-03
	U-238+D	4.36E+00	1.07E+03	9.10E-04	2.44E-04	0.00E+00	9.70E-03		9.71E-03	1.15E-05	9.82E-03	1.15E-04	1.15E-03	9.93E-03
	Total													

Table N-14. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	2.21E-03	7.40E-07	0.00E+00	1.59E-04		1.81E-04	2.21E-05	3.80E-04	2.21E-04	2.21E-03	2.21E-03
	Th-228	1.83E+01	2.10E+07	1.39E-03	2.65E-05	0.00E+00	2.50E-06		1.67E-05	1.42E-05	1.44E-04	1.42E-04	1.42E-03	1.42E-03
	Th-232+D	1.83E+01	2.10E+07	7.55E-01	1.13E-02	0.00E+00	2.00E-02		2.76E-02	7.66E-03	9.66E-02	7.66E-02	7.66E-01	7.66E-01
	Total													
XXIB	Ra-228	1.83E+01	6.84E+04	2.19E-03	7.35E-07	0.00E+00	1.59E-04		1.81E-04	2.19E-05	3.78E-04	2.19E-04	2.19E-03	2.19E-03
	Th-228	1.83E+01	2.99E+06	1.39E-03	2.65E-05	0.00E+00	2.50E-06		1.67E-05	1.42E-05	1.44E-04	1.42E-04	1.42E-03	1.42E-03
	Th-232+D	1.83E+01	2.99E+06	7.42E-01	1.11E-02	0.00E+00	1.99E-02		2.75E-02	7.53E-03	9.53E-02	7.53E-02	7.53E-01	7.53E-01
	Total													
XXIC	Ra-228	1.83E+01	6.03E+03	2.16E-03	7.23E-07	0.00E+00	1.58E-04		1.80E-04	2.16E-05	3.74E-04	2.16E-04	2.16E-03	2.16E-03
	Th-228	1.83E+01	2.63E+05	1.39E-03	2.65E-05	0.00E+00	2.50E-06		1.67E-05	1.42E-05	1.44E-04	1.42E-04	1.42E-03	1.42E-03
	Th-232+D	1.83E+01	2.63E+05	7.15E-01	1.07E-02	0.00E+00	1.98E-02		2.71E-02	7.26E-03	9.24E-02	7.26E-02	7.26E-01	7.26E-01
	Total													
XXII	U-234	1.71E+01	1.40E+02	8.72E-06	3.67E-05	1.32E-01	1.42E-03	2.23E-03	1.33E-01	1.32E-01	1.34E-01	1.32E-01	1.34E-01	1.35E-01
	U-235	8.01E-01	1.40E+02	5.57E-04	3.39E-05	1.38E-01	1.39E-03		1.39E-01	1.38E-01	1.39E-01	1.38E-01	1.38E-01	1.38E-01
	U-238+D	1.71E+01	1.40E+02	1.21E-04	3.25E-05	1.80E-01	1.81E-03		1.82E-01	1.80E-01	1.82E-01	1.80E-01	1.80E-01	1.80E-01
	Ra-226+D	3.16E+00	1.99E+03	1.77E-01	1.95E-04	0.00E+00	5.03E-01	4.25E+00	5.47E-01	4.42E-02	9.45E-01	4.42E-01	4.42E+00	6.19E+00
	Ra-228	1.92E+01	1.99E+03	2.70E-03	9.04E-07	0.00E+00	1.98E-04		2.25E-04	2.70E-05	4.68E-04	2.70E-04	2.70E-03	3.78E-03
	Th-228	1.92E+01	1.27E+04	1.74E-03	3.30E-05	0.00E+00	3.12E-06		2.08E-05	1.77E-05	1.80E-04	1.77E-04	1.77E-03	2.48E-03
	Th-232	1.92E+01	1.27E+04	7.24E-01	1.09E-02	0.00E+00	2.39E-02		3.12E-02	7.35E-03	9.74E-02	7.35E-02	7.35E-01	1.03E+00
	Total													

- (a) Based on 1,000 people/km
- (b) Based on 10 people/km²
- (c) Based on 100 people/km²
- (d) Based on site specific d

Table N-15. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	1.63E-01	2.57E-06	0.00E+00	5.76E-03		7.39E-03	1.63E-03	2.21E-02	1.63E-02	1.63E-01	2.21E-02
	Total													
II-1	Ra-226+D	5.43E+01	4.65E+05	4.77E+00	5.28E-03	0.00E+00	3.83E+00	1.24E+01	4.00E+00	1.71E-01	5.54E+00	1.71E+00	1.71E+01	1.71E+01
	Ra-228	2.69E+00	4.65E+05	1.10E-02	3.71E-06	0.00E+00	4.42E-04		5.52E-04	1.10E-04	1.55E-03	1.10E-03	1.10E-02	1.10E-02
	Th-228	2.69E+00	2.96E+05	6.86E-03	1.32E-04	0.00E+00	6.94E-06		7.68E-05	6.99E-05	7.06E-04	6.99E-04	6.99E-03	6.99E-03
	Th-230	5.40E+01	2.96E+05	7.68E+00	4.13E-02	0.00E+00	1.08E+01	3.94E+01	1.13E+01	4.72E-01	1.55E+01	4.72E+00	4.72E+01	4.72E+01
	Th-232+D	9.66E-01	2.96E+05	1.57E+01	2.37E-01	0.00E+00	4.72E-01		6.31E-01	1.59E-01	2.07E+00	1.59E+00	1.59E+01	1.59E+01
	U-234+D	7.07E+01	8.17E+04	8.18E-02	9.39E-03	0.00E+00	4.36E-01	1.40E+00	4.51E-01	1.49E-02	5.85E-01	1.49E-01	1.49E+00	1.49E+00
	U-235	1.14E+00	8.17E+04	1.37E-01	8.34E-03	0.00E+00	1.38E-01		1.39E-01	1.45E-03	1.52E-01	1.45E-02	1.45E-01	1.45E-01
	U-238+D	3.11E+01	8.17E+04	2.98E-02	8.00E-03	0.00E+00	1.80E-01		1.80E-01	3.78E-04	1.84E-01	3.78E-03	3.78E-02	3.78E-02
Total														
II-2	U-234+D	2.52E+02	8.60E+04	3.38E-01	9.39E-02	0.00E+00	4.36E-01	1.40E+00	4.54E-01	1.83E-02	6.19E-01	1.83E-01	1.83E+00	1.83E+00
	U-235	4.08E+00	8.60E+04	9.33E-01	8.34E-02	0.00E+00	1.38E-01		1.48E-01	1.02E-02	2.39E-01	1.02E-01	1.02E+00	1.02E+00
	U-238+D	1.11E+02	8.60E+04	1.42E-01	8.00E-02	0.00E+00	1.80E-01		1.82E-01	2.22E-03	2.02E-01	2.22E-02	2.22E-01	2.22E-01
	Total													
III	Cs-137	9.89E+00	2.00E+06	1.77E-01	2.79E-06	0.00E+00	5.84E-03		7.61E-03	1.77E-03	2.35E-02	1.77E-02	1.77E-01	2.35E-02
	Total													
IV	U-234+D	3.24E+02	1.48E+04	5.31E-04	6.28E-03	0.00E+00	4.17E-02	6.31E-01	4.81E-02	6.37E-03	1.05E-01	6.37E-02	6.37E-01	1.69E-01
	U-235	1.52E+01	1.48E+04	8.70E-02	5.79E-03	0.00E+00	2.84E-02		2.94E-02	9.28E-04	3.77E-02	9.28E-03	9.28E-02	4.70E-02
	U-238+D	3.24E+02	1.48E+04	1.56E-02	5.55E-03	0.00E+00	3.72E-02		3.74E-02	2.11E-04	3.93E-02	2.11E-03	2.11E-02	4.14E-02
	Total													
V	Cs-137	1.07E+03	2.39E+04	1.62E-01	2.55E-06	0.00E+00	5.75E-03		7.36E-03	1.62E-03	2.19E-02	1.62E-02	1.62E-01	2.19E-02
	Total													
VI	Cs-137	8.63E+01	2.07E+05	1.76E-01	2.69E-06	0.00E+00	5.85E-03		7.61E-03	1.76E-03	2.34E-02	1.76E-02	1.76E-01	5.86E-02
	U-234	1.22E+03	3.31E+04	3.13E-01	8.64E-02	0.00E+00	4.28E-01	1.40E+00	4.46E-01	1.80E-02	6.08E-01	1.80E-01	1.80E+00	9.67E-01
	U-235	5.75E+01	3.31E+04	8.80E-01	7.69E-02	0.00E+00	1.35E-01		1.45E-01	9.57E-03	2.31E-01	9.57E-02	9.57E-01	4.22E-01
	U-238+D	1.22E+03	3.31E+04	1.35E-01	7.37E-02	0.00E+00	1.76E-01		1.79E-01	2.08E-03	1.97E-01	2.08E-02	2.08E-01	2.39E-01
	Total													

Table N-15. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	2.45E-04	9.66E-01	0.00E+00	2.20E-02		3.16E-02	9.67E-03	1.19E-01	9.67E-02	9.67E-01	3.16E-02
	Cs-137	8.95E-01	8.42E+08	1.70E-01	2.37E-06	0.00E+00	5.85E-03		7.55E-03	1.70E-03	2.28E-02	1.70E-02	1.70E-01	7.55E-03
	Am-241	8.44E+00	5.71E+09	7.40E-03	9.14E-02	0.00E+00	9.09E-03		1.01E-02	9.88E-04	1.90E-02	9.88E-03	9.88E-02	1.01E-02
	Total													
IX	Pu-239	9.47E+00	2.39E+05	2.03E-04	8.69E-01	0.00E+00	2.09E-02		2.96E-02	8.69E-03	1.08E-01	8.69E-02	8.69E-01	1.95E-01
	Am-241	1.58E+00	2.67E+06	8.15E-03	1.08E-01	0.00E+00	9.08E-03		1.02E-02	1.16E-03	2.07E-02	1.16E-02	1.16E-01	3.24E-02
	Total													
X	Tc-99	8.16E+03	6.21E+00	1.21E-11	6.55E-11	4.61E-03	1.59E-04		4.76E-03	4.61E-03	4.76E-03	4.61E-03	4.61E-03	4.76E-03
	U-234+D	2.80E+02	5.76E+02	1.63E-05	3.27E-05	1.42E-01	2.85E-03	1.48E-01	1.47E-01	1.44E-01	1.60E-01	1.57E-01	2.90E-01	1.60E-01
	U-238+D	2.80E+02	5.76E+02	1.07E-04	2.87E-05	1.89E-01	1.60E-03		1.90E-01	1.89E-01	1.90E-01	1.89E-01	1.89E-01	1.90E-01
	Total													
XII	Pu-239	1.27E+03	1.25E+04	5.54E-07	1.72E-03	0.00E+00	3.43E-03		3.45E-03	1.72E-05	3.60E-03	1.72E-04	1.72E-03	1.72E-03
	Am-241	2.12E+02	4.33E+04	3.36E-04	3.36E-03	0.00E+00	7.85E-03		7.89E-03	3.70E-05	8.22E-03	3.70E-04	3.70E-03	3.70E-03
	Total													
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XVIA	Co-60	3.63E+01	4.29E+05	8.18E-02	7.15E-07	0.00E+00	1.41E-04		9.59E-04	8.18E-04	8.32E-03	8.18E-03	8.18E-02	1.65E-02
	Cs-137+D	2.89E+01	8.59E+05	1.05E-01	9.27E-07	0.00E+00	5.84E-03		6.89E-03	1.05E-03	1.63E-02	1.05E-02	1.05E-01	2.68E-02
	Total													
XVIB	Co-60	3.63E+01	6.09E+04	8.12E-02	7.10E-07	0.00E+00	1.41E-04		9.53E-04	8.12E-04	8.26E-03	8.12E-03	8.12E-02	1.64E-02
	Cs-137+D	2.89E+01	1.22E+05	1.03E-01	9.09E-07	0.00E+00	5.82E-03		6.85E-03	1.03E-03	1.61E-02	1.03E-02	1.03E-01	2.64E-02
	Total													

Table N-15. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	8.00E-02	6.99E-07	0.00E+00	1.40E-04		9.40E-04	8.00E-04	8.14E-03	8.00E-03	8.00E-02	1.61E-02
	Cs-137+D	2.89E+01	1.07E+04	9.84E-02	8.70E-07	0.00E+00	5.77E-03		6.76E-03	9.84E-04	1.56E-02	9.84E-03	9.84E-02	2.54E-02
	Total													
XVIII A	Cs-137+D	3.54E+02	8.59E+05	1.05E-01	9.27E-07	0.00E+00	5.84E-03		6.89E-03	1.05E-03	1.63E-02	1.05E-02	1.05E-01	1.05E-01
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	2.82E-06	0.00E+00	8.81E-02		8.81E-02	2.82E-08	8.81E-02	2.82E-07	2.82E-06	2.82E-06
	Total													
XVIII B	Cs-137+D	3.54E+02	1.22E+05	1.03E-01	9.09E-07	0.00E+00	5.82E-03		6.85E-03	1.03E-03	1.61E-02	1.03E-02	1.03E-01	1.03E-01
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	1.86E-06	1.03E-31	7.82E-02		7.82E-02	1.86E-08	7.82E-02	1.86E-07	1.86E-06	1.86E-06
	Total													
XVIII C	Cs-137+D	3.54E+02	3.22E+04	9.84E-02	8.70E-07	0.00E+00	5.77E-03		6.76E-03	9.84E-04	1.56E-02	9.84E-03	9.84E-02	9.84E-02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	1.06E-06	1.92E-09	6.25E-02		6.25E-02	1.25E-08	6.25E-02	1.07E-07	1.06E-06	1.06E-06
	Total													
XXA	U-234+D	4.37E+01	8.57E+04	1.67E-02	1.61E-03	0.00E+00	1.73E-01	1.12E+00	1.84E-01	1.14E-02	2.87E-01	1.14E-01	1.14E+00	4.01E-01
	U-235	1.46E+00	8.57E+04	2.23E-02	1.36E-03	0.00E+00	4.13E-02		4.15E-02	2.37E-04	4.37E-02	2.37E-03	2.37E-02	4.60E-02
	U-238+D	7.51E+00	8.57E+04	4.86E-03	1.30E-03	0.00E+00	5.40E-02		5.40E-02	6.16E-05	5.46E-02	6.16E-04	6.16E-03	5.52E-02
	Total													
XXB	U-234+D	2.54E+01	1.21E+04	3.84E-03	6.79E-04	0.00E+00	7.02E-02	7.88E-01	7.81E-02	7.92E-03	1.49E-01	7.92E-02	7.92E-01	2.29E-01
	U-235	8.40E-01	1.21E+04	9.51E-03	5.79E-04	0.00E+00	1.76E-02		1.77E-02	1.01E-04	1.87E-02	1.01E-03	1.01E-02	1.97E-02
	U-238+D	4.36E+00	1.21E+04	2.07E-03	5.55E-04	0.00E+00	2.31E-02		2.31E-02	2.63E-05	2.33E-02	2.63E-04	2.63E-03	2.36E-02
	Total													
XXC	U-234+D	2.54E+01	1.07E+03	7.24E-04	2.93E-04	1.51E-01	2.46E-02	4.31E-01	1.80E-01	1.55E-01	2.19E-01	1.94E-01	5.83E-01	2.62E-01
	U-235	8.40E-01	1.07E+03	4.17E-03	2.54E-04	1.44E-01	7.75E-03		1.52E-01	1.44E-01	1.52E-01	1.45E-01	1.49E-01	1.53E-01
	U-238+D	4.36E+00	1.07E+03	9.10E-04	2.44E-04	1.89E-01	1.01E-02		1.99E-01	1.89E-01	1.99E-01	1.89E-01	1.90E-01	1.99E-01
	Total													

Table N-15. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
 RESULTS INCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	2.21E-03	7.40E-07	0.00E+00	1.59E-04		1.81E-04	2.21E-05	3.80E-04	2.21E-04	2.21E-03	2.21E-03
	Th-228	1.83E+01	2.10E+07	1.39E-03	2.65E-05	0.00E+00	2.50E-06		1.67E-05	1.42E-05	1.44E-04	1.42E-04	1.42E-03	1.42E-03
	Th-232+D	1.83E+01	2.10E+07	7.14E+00	1.07E-01	0.00E+00	1.99E-01		2.72E-01	7.25E-02	9.24E-01	7.25E-01	7.25E+00	7.25E+00
	Total													
XXIB	Ra-228	1.83E+01	6.84E+04	2.19E-03	7.35E-07	0.00E+00	1.59E-04		1.81E-04	2.19E-05	3.78E-04	2.19E-04	2.19E-03	2.19E-03
	Th-228	1.83E+01	2.99E+06	1.39E-03	2.65E-05	0.00E+00	2.50E-06		1.67E-05	1.42E-05	1.44E-04	1.42E-04	1.42E-03	1.42E-03
	Th-232+D	1.83E+01	2.99E+06	6.46E+00	9.66E-02	0.00E+00	1.96E-01		2.61E-01	6.56E-02	8.51E-01	6.56E-01	6.56E+00	6.56E+00
	Total													
XXIC	Ra-228	1.83E+01	6.03E+03	2.16E-03	7.23E-07	0.00E+00	1.58E-04		1.80E-04	2.16E-05	3.74E-04	2.16E-04	2.16E-03	2.16E-03
	Th-228	1.83E+01	2.63E+05	1.39E-03	2.65E-05	0.00E+00	2.50E-06		1.67E-05	1.42E-05	1.44E-04	1.42E-04	1.42E-03	1.42E-03
	Th-232+D	1.83E+01	2.63E+05	5.23E+00	7.83E-02	0.00E+00	1.88E-01		2.42E-01	5.30E-02	7.19E-01	5.30E-01	5.30E+00	5.30E+00
	Total													
XXII	U-234	1.71E+01	1.40E+02	2.75E-05	3.72E-05	1.39E-01	3.64E-03	1.89E-01	1.44E-01	1.41E-01	1.61E-01	1.58E-01	3.28E-01	4.03E-01
	U-235	8.01E-01	1.40E+02	5.57E-04	3.39E-05	1.44E-01	1.39E-03		1.46E-01	1.44E-01	1.46E-01	1.44E-01	1.45E-01	1.45E-01
	U-238+D	1.71E+01	1.40E+02	1.21E-04	3.25E-05	1.89E-01	1.81E-03		1.90E-01	1.89E-01	1.90E-01	1.89E-01	1.89E-01	1.89E-01
	Ra-226+D	3.16E+00	1.99E+03	1.81E-01	1.99E-04	7.41E-01	7.99E-01	1.02E+01	1.64E+00	8.45E-01	2.58E+00	1.78E+00	1.11E+01	1.53E+01
	Ra-228	1.92E+01	1.99E+03	2.70E-03	9.04E-07	0.00E+00	1.98E-04		2.25E-04	2.70E-05	4.68E-04	2.70E-04	2.70E-03	3.78E-03
	Th-228	1.92E+01	1.27E+04	1.74E-03	3.30E-05	0.00E+00	3.12E-06		2.08E-05	1.77E-05	1.80E-04	1.77E-04	1.77E-03	2.48E-03
	Th-232	1.92E+01	1.27E+04	1.78E+00	2.66E-02	0.00E+00	1.67E-01		1.85E-01	1.80E-02	3.48E-01	1.80E-01	1.80E+00	2.53E+00
	Total													

(a) Based on 1,000 people/km
 (b) Based on 10 people/km²
 (c) Based on 100 people/km²
 (d) Based on site specific d

Table N-16. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
 FOR AN INTEGRATION PERIOD OF 100 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)				Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
				Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion							
I	Cs-137	1.91E+01	1.49E+05	2.01E+04	2.12E-01	0.00E+00	4.26E+02		6.27E+02	2.02E+02	2.44E+03	2.02E+03	2.02E+04	2.44E+03
	Total			2.01E+04	2.12E-01	0.00E+00	4.26E+02		6.27E+02	2.02E+02	2.44E+03	2.02E+03	2.02E+04	2.44E+03
II-1	Ra-226+D	5.43E+01	4.65E+05	1.70E+05	2.54E+02	0.00E+00	2.58E+05		2.59E+05	1.70E+03	2.74E+05	1.70E+04	1.70E+05	1.70E+05
	Ra-228	2.69E+00	4.65E+05	3.79E+02	1.67E-01	0.00E+00	2.71E+01		3.09E+01	3.79E+00	6.50E+01	3.79E+01	3.79E+02	3.79E+02
	Th-228	2.69E+00	2.96E+05	2.03E+02	3.83E+00	0.00E+00	3.20E-01		2.39E+00	2.07E+00	2.10E+01	2.07E+01	2.07E+02	2.07E+02
	Th-230	5.40E+01	2.96E+05	3.68E+03	2.85E+03	0.00E+00	3.65E+03		3.72E+03	6.53E+01	4.30E+03	6.53E+02	6.53E+03	6.53E+03
	Th-232+D	9.66E-01	2.96E+05	3.80E+03	2.99E+02	0.00E+00	1.26E+02		1.67E+02	4.10E+01	5.37E+02	4.10E+02	4.10E+03	4.10E+03
	U-234+D	7.07E+01	8.17E+04	2.10E+01	1.47E+03	0.00E+00	4.92E+03		4.94E+03	1.49E+01	5.07E+03	1.49E+02	1.49E+03	1.49E+03
	U-235	1.14E+00	8.17E+04	2.04E+02	2.19E+01	0.00E+00	7.65E+01		7.87E+01	2.26E+00	9.90E+01	2.26E+01	2.26E+02	2.26E+02
	U-238+D	3.11E+01	8.17E+04	7.86E+02	5.97E+02	0.00E+00	2.08E+03		2.09E+03	1.38E+01	2.22E+03	1.38E+02	1.38E+03	1.38E+03
	Total			1.79E+05	5.49E+03	0.00E+00	2.68E+05		2.70E+05	1.84E+03	2.87E+05	1.84E+04	1.84E+05	1.84E+05
II-2	U-234+D	2.52E+02	8.60E+04	1.44E+02	1.47E+04	0.00E+00	4.92E+03		5.07E+03	1.49E+02	6.41E+03	1.49E+03	1.49E+04	1.49E+04
	U-235	4.08E+00	8.60E+04	1.39E+03	2.19E+02	0.00E+00	7.65E+01		9.25E+01	1.61E+01	2.37E+02	1.61E+02	1.61E+03	1.61E+03
	U-238+D	1.11E+02	8.60E+04	3.74E+03	5.97E+03	0.00E+00	2.08E+03		2.18E+03	9.70E+01	3.05E+03	9.70E+02	9.70E+03	9.70E+03
	Total			5.27E+03	2.09E+04	0.00E+00	7.08E+03		7.34E+03	2.62E+02	9.69E+03	2.62E+03	2.62E+04	2.62E+04
III	Cs-137	9.89E+00	2.00E+06	8.85E+03	9.32E-02	0.00E+00	1.78E+02		2.66E+02	8.85E+01	1.06E+03	8.85E+02	8.85E+03	1.06E+03
	Total			8.85E+03	9.32E-02	0.00E+00	1.78E+02		2.66E+02	8.85E+01	1.06E+03	8.85E+02	8.85E+03	1.06E+03
IV	U-234+D	3.24E+02	1.48E+04	1.05E+01	8.15E+02	0.00E+00	6.99E+02		7.07E+02	8.25E+00	7.82E+02	8.25E+01	8.25E+02	8.64E+02
	U-235	1.52E+01	1.48E+04	3.00E+02	3.53E+01	0.00E+00	3.16E+01		3.49E+01	3.35E+00	6.51E+01	3.35E+01	3.35E+02	9.86E+01
	U-238+D	3.24E+02	1.48E+04	7.45E+02	7.51E+02	0.00E+00	6.72E+02		6.87E+02	1.50E+01	8.22E+02	1.50E+02	1.50E+03	9.71E+02
	Total			1.06E+03	1.60E+03	0.00E+00	1.40E+03		1.43E+03	2.66E+01	1.67E+03	2.66E+02	2.66E+03	1.93E+03
V	Cs-137	1.07E+03	2.39E+04	5.54E+05	5.83E+00	0.00E+00	1.18E+04		1.73E+04	5.54E+03	6.72E+04	5.54E+04	5.54E+05	6.72E+04
	Total			5.54E+05	5.83E+00	0.00E+00	1.18E+04		1.73E+04	5.54E+03	6.72E+04	5.54E+04	5.54E+05	6.72E+04
VI	Cs-137	8.63E+01	2.07E+05	2.97E+04	3.03E-01	0.00E+00	6.01E+02		8.98E+02	2.97E+02	3.57E+03	2.97E+03	2.97E+04	9.50E+03
	U-234	1.22E+03	3.31E+04	4.31E+02	4.30E+04	0.00E+00	1.50E+04		1.55E+04	4.34E+02	1.94E+04	4.34E+03	4.34E+04	2.80E+04
	U-235	5.75E+01	3.31E+04	1.21E+04	1.87E+03	0.00E+00	6.80E+02		8.19E+02	1.39E+02	2.07E+03	1.39E+03	1.39E+04	4.86E+03
	U-238+D	1.22E+03	3.31E+04	2.56E+04	3.96E+04	0.00E+00	1.44E+04		1.51E+04	6.52E+02	2.10E+04	6.52E+03	6.52E+04	3.40E+04
	Total			6.78E+04	8.45E+04	0.00E+00	3.07E+04		3.23E+04	1.52E+03	4.60E+04	1.52E+04	1.52E+05	7.64E+04

Table N-16. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 100 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)					Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
				Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion							
VII	Pu-239	5.06E+01	1.65E+09	5.66E+02	4.00E+05	0.00E+00	7.33E+03	1.13E+04	4.01E+03	4.74E+04	4.01E+04	4.01E+05	1.13E+04	
	Cs-137	8.95E-01	8.42E+08	1.86E+04	1.74E-01	0.00E+00	3.92E+02	5.79E+02	1.86E+02	2.26E+03	1.86E+03	1.86E+04	5.79E+02	
	Am-241	8.44E+00	5.71E+09	5.80E+03	6.30E+04	0.00E+00	6.57E+03	7.26E+03	6.88E+02	1.35E+04	6.88E+03	6.88E+04	7.26E+03	
	Total			2.50E+04	4.63E+05	0.00E+00	1.43E+04	1.92E+04	4.88E+03	6.31E+04	4.88E+04	4.88E+05	1.92E+04	
IX	Pu-239	9.47E+00	2.39E+05	1.06E+00	8.08E+02	0.00E+00	1.25E+01	2.06E+01	8.09E+00	9.33E+01	8.09E+01	8.09E+02	1.74E+02	
	Am-241	1.58E+00	2.67E+06	1.09E+01	1.27E+02	0.00E+00	1.12E+01	1.26E+01	1.38E+00	2.50E+01	1.38E+01	1.38E+02	3.88E+01	
	Total			1.20E+01	9.35E+02	0.00E+00	2.37E+01	3.31E+01	9.47E+00	1.18E+02	9.47E+01	9.47E+02	2.13E+02	
X	Tc-99	8.16E+03	6.21E+00	1.18E-05	4.19E-05	1.38E+03	4.77E+01	1.43E+03	1.38E+03	1.43E+03	1.38E+03	1.38E+03	1.43E+03	
	U-234+D	2.80E+02	5.76E+02	3.48E-02	2.31E+00	0.00E+00	5.06E+01	5.06E+01	2.34E-02	5.08E+01	2.34E-01	2.34E+00	5.08E+01	
	U-238+D	2.80E+02	5.76E+02	2.81E+00	2.13E+00	0.00E+00	4.86E+01	4.87E+01	4.93E-02	4.91E+01	4.93E-01	4.93E+00	4.91E+01	
	Total			2.84E+00	4.43E+00	1.38E+03	1.47E+02	1.53E+03	1.38E+03	1.53E+03	1.39E+03	1.39E+03	1.53E+03	
XII	Pu-239	1.27E+03	1.25E+04	7.60E-01	4.24E+02	0.00E+00	1.39E+02	1.43E+02	4.24E+00	1.81E+02	4.24E+01	4.24E+02	4.24E+02	
	Am-241	2.12E+02	4.33E+04	8.71E+00	7.68E+01	0.00E+00	1.27E+02	1.28E+02	8.55E-01	1.36E+02	8.55E+00	8.55E+01	8.55E+01	
	Total			9.47E+00	5.00E+02	0.00E+00	2.66E+02	2.71E+02	5.10E+00	3.17E+02	5.10E+01	5.10E+02	5.10E+02	
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
XVIA	Co-60	3.63E+01	4.29E+05	1.86E+01	1.21E-04	0.00E+00	1.79E-02	2.04E-01	1.86E-01	1.88E+00	1.86E+00	1.86E+01	3.75E+00	
	Cs-137+D	2.89E+01	8.59E+05	1.78E+01	1.05E-04	0.00E+00	6.03E-01	7.81E-01	1.78E-01	2.38E+00	1.78E+00	1.78E+01	4.17E+00	
	Total			3.64E+01	2.26E-04	0.00E+00	6.21E-01	9.86E-01	3.64E-01	4.27E+00	3.64E+00	3.64E+01	7.91E+00	
XVIB	Co-60	3.63E+01	6.09E+04	1.85E+01	1.20E-04	0.00E+00	1.79E-02	2.03E-01	1.85E-01	1.87E+00	1.85E+00	1.85E+01	3.72E+00	
	Cs-137+D	2.89E+01	1.22E+05	1.75E+01	1.04E-04	0.00E+00	6.02E-01	7.77E-01	1.75E-01	2.36E+00	1.75E+00	1.75E+01	4.11E+00	
	Total			3.60E+01	2.24E-04	0.00E+00	6.19E-01	9.80E-01	3.60E-01	4.22E+00	3.60E+00	3.60E+01	7.83E+00	

Table N-16. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 100 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	1.82E+01	1.18E-04	0.00E+00	1.79E-02		2.00E-01	1.82E-01	1.84E+00	1.82E+00	1.82E+01	3.66E+00
	Cs-137+D	2.89E+01	1.07E+04	1.70E+01	1.00E-04	0.00E+00	5.98E-01		7.68E-01	1.70E-01	2.29E+00	1.70E+00	1.70E+01	3.99E+00
	Total			3.52E+01	2.18E-04	0.00E+00	6.16E-01		9.68E-01	3.52E-01	4.13E+00	3.52E+00	3.52E+01	7.65E+00
XVIII A	Cs-137+D	3.54E+02	8.59E+05	1.03E+02	6.07E-04	0.00E+00	3.48E+00		4.51E+00	1.03E+00	1.38E+01	1.03E+01	1.03E+02	1.03E+02
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	1.60E-02	0.00E+00	7.30E+01		7.30E+01	1.60E-04	7.30E+01	1.60E-03	1.60E-02	1.60E-02
	Total			1.03E+02	1.66E-02	0.00E+00	7.65E+01		7.75E+01	1.03E+00	8.68E+01	1.03E+01	1.03E+02	1.03E+02
XVIII B	Cs-137+D	3.54E+02	1.22E+05	1.01E+02	5.98E-04	0.00E+00	3.47E+00		4.49E+00	1.01E+00	1.36E+01	1.01E+01	1.01E+02	1.01E+02
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	1.07E-02	0.00E+00	6.62E+01		6.62E+01	1.07E-04	6.62E+01	1.07E-03	1.07E-02	1.07E-02
	Total			1.01E+02	1.13E-02	0.00E+00	6.97E+01		7.07E+01	1.01E+00	7.98E+01	1.01E+01	1.01E+02	1.01E+02
XVIII C	Cs-137+D	3.54E+02	3.22E+04	9.79E+01	5.78E-04	0.00E+00	3.45E+00		4.43E+00	9.79E-01	1.32E+01	9.79E+00	9.79E+01	9.79E+01
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	6.11E-03	0.00E+00	5.44E+01		5.44E+01	6.11E-05	5.44E+01	6.11E-04	6.11E-03	6.11E-03
	Total			9.79E+01	6.69E-03	0.00E+00	5.78E+01		5.88E+01	9.79E-01	6.76E+01	9.79E+00	9.79E+01	9.79E+01
XXA	U-234+D	4.37E+01	8.57E+04	5.75E-02	4.02E+00	0.00E+00	2.01E+01		2.01E+01	4.07E-02	2.05E+01	4.07E-01	4.07E+00	2.09E+01
	U-235	1.46E+00	8.57E+04	1.15E+00	1.23E-01	0.00E+00	6.44E-01		6.57E-01	1.27E-02	7.71E-01	1.27E-01	1.27E+00	8.98E-01
	U-238+D	7.51E+00	8.57E+04	8.40E-01	6.37E-01	0.00E+00	3.32E+00		3.34E+00	1.48E-02	3.47E+00	1.48E-01	1.48E+00	3.62E+00
	Total			2.04E+00	4.78E+00	0.00E+00	2.41E+01		2.41E+01	6.82E-02	2.47E+01	6.82E-01	6.82E+00	2.54E+01
XXB	U-234+D	2.54E+01	1.21E+04	2.72E-02	1.88E+00	0.00E+00	1.13E+01		1.13E+01	1.91E-02	1.14E+01	1.91E-01	1.91E+00	1.16E+01
	U-235	8.40E-01	1.21E+04	5.33E-01	5.74E-02	0.00E+00	3.57E-01		3.63E-01	5.90E-03	4.16E-01	5.90E-02	5.90E-01	4.75E-01
	U-238+D	4.36E+00	1.21E+04	3.93E-01	2.98E-01	0.00E+00	1.85E+00		1.86E+00	6.91E-03	1.92E+00	6.91E-02	6.91E-01	1.99E+00
	Total			9.53E-01	2.24E+00	0.00E+00	1.35E+01		1.35E+01	3.19E-02	1.38E+01	3.19E-01	3.19E+00	1.41E+01
XXC	U-234+D	2.54E+01	1.07E+03	1.82E-02	1.24E+00	0.00E+00	1.03E+01		1.03E+01	1.26E-02	1.05E+01	1.26E-01	1.26E+00	1.06E+01
	U-235	8.40E-01	1.07E+03	3.52E-01	3.79E-02	0.00E+00	3.28E-01		3.32E-01	3.90E-03	3.67E-01	3.90E-02	3.90E-01	4.06E-01
	U-238+D	4.36E+00	1.07E+03	2.59E-01	1.97E-01	0.00E+00	1.70E+00		1.71E+00	4.56E-03	1.75E+00	4.56E-02	4.56E-01	1.79E+00
	Total			6.29E-01	1.48E+00	0.00E+00	1.24E+01		1.24E+01	2.11E-02	1.26E+01	2.11E-01	2.11E+00	1.28E+01

Table N-16. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 100 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	8.97E+00	3.94E-03	0.00E+00	1.16E+00		1.25E+00	8.97E-02	2.05E+00	8.97E-01	8.97E+00	8.97E+00
	Th-228	1.83E+01	2.10E+07	4.88E+00	9.07E-02	0.00E+00	1.36E-02		6.33E-02	4.97E-02	5.11E-01	4.97E-01	4.97E+00	4.97E+00
	Th-232+D	1.83E+01	2.10E+07	2.55E+02	1.99E+01	0.00E+00	1.50E+01		1.78E+01	2.75E+00	4.26E+01	2.75E+01	2.75E+02	2.75E+02
	Total			2.69E+02	2.00E+01	0.00E+00	1.62E+01		1.91E+01	2.89E+00	4.51E+01	2.89E+01	2.89E+02	2.89E+02
XXIB	Ra-228	1.83E+01	6.84E+04	8.91E+00	3.92E-03	0.00E+00	1.16E+00		1.24E+00	8.91E-02	2.05E+00	8.91E-01	8.91E+00	8.91E+00
	Th-228	1.83E+01	2.99E+06	4.88E+00	9.07E-02	0.00E+00	1.36E-02		6.33E-02	4.97E-02	5.11E-01	4.97E-01	4.97E+00	4.97E+00
	Th-232+D	1.83E+01	2.99E+06	2.53E+02	1.99E+01	0.00E+00	1.50E+01		1.78E+01	2.73E+00	4.24E+01	2.73E+01	2.73E+02	2.73E+02
	Total			2.67E+02	2.00E+01	0.00E+00	1.62E+01		1.91E+01	2.87E+00	4.49E+01	2.87E+01	2.87E+02	2.87E+02
XXIC	Ra-228	1.83E+01	6.03E+03	8.77E+00	3.86E-03	0.00E+00	1.15E+00		1.24E+00	8.77E-02	2.03E+00	8.77E-01	8.77E+00	8.77E+00
	Th-228	1.83E+01	2.63E+05	4.88E+00	9.07E-02	0.00E+00	1.36E-02		6.33E-02	4.97E-02	5.11E-01	4.97E-01	4.97E+00	4.97E+00
	Th-232+D	1.83E+01	2.63E+05	2.49E+02	1.98E+01	0.00E+00	1.50E+01		1.77E+01	2.69E+00	4.19E+01	2.69E+01	2.69E+02	2.69E+02
	Total			2.63E+02	1.99E+01	0.00E+00	1.62E+01		1.90E+01	2.83E+00	4.44E+01	2.83E+01	2.83E+02	2.83E+02
XXII	U-234	1.71E+01	1.40E+02	1.08E-01	7.17E+00	0.00E+00	1.39E+02		1.39E+02	7.28E-02	1.39E+02	7.28E-01	7.28E+00	1.02E+01
	U-235	8.01E-01	1.40E+02	2.88E+00	3.10E-01	0.00E+00	6.25E+00		6.29E+00	3.19E-02	6.57E+00	3.19E-01	3.19E+00	4.47E+00
	U-238+D	1.71E+01	1.40E+02	8.72E+00	6.61E+00	0.00E+00	1.33E+02		1.33E+02	1.53E-01	1.35E+02	1.53E+00	1.53E+01	2.15E+01
	Ra-226+D	3.16E+00	1.99E+03	7.93E+02	1.18E+00	0.00E+00	2.45E+03		2.46E+03	7.94E+00	2.53E+03	7.94E+01	7.94E+02	1.11E+03
	Ra-228	1.92E+01	1.99E+03	2.46E+02	1.08E-01	0.00E+00	3.24E+01		3.48E+01	2.47E+00	5.70E+01	2.47E+01	2.47E+02	3.45E+02
	Th-228	1.92E+01	1.27E+04	1.37E+02	2.55E+00	0.00E+00	3.83E-01		1.78E+00	1.39E+00	1.43E+01	1.39E+01	1.39E+02	1.95E+02
	Th-232	1.92E+01	1.27E+04	6.86E+03	5.44E+02	0.00E+00	4.20E+02		4.94E+02	7.41E+01	1.16E+03	7.41E+02	7.41E+03	1.04E+04
	Total			8.05E+03	5.62E+02	0.00E+00	3.18E+03		3.27E+03	8.61E+01	4.05E+03	8.61E+02	8.61E+03	1.21E+04

(a) Based on 1,000 people/km²

(b) Based on 10 people/km²

(c) Based on 100 people/km²

(d) Based on site specific data

Table N-17. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
 FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Population Doses (person-rem) Averted																				
				Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)										
I	Cs-137	1.91E+01	1.49E+05	2.19E+04	2.31E-01	0.00E+00	4.72E+02											6.91E+02	2.19E+02	2.66E+03	2.19E+03	2.19E+04	2.66E+03	
	Total			2.19E+04	2.31E-01	0.00E+00	4.72E+02												6.91E+02	2.19E+02	2.66E+03	2.19E+03	2.19E+04	2.66E+03
II-1	Ra-226+D	5.43E+01	4.65E+05	1.33E+06	1.99E+03	0.00E+00	5.72E+06												5.73E+06	1.33E+04	5.85E+06	1.33E+05	1.33E+06	1.33E+06
	Ra-228	2.69E+00	4.65E+05	3.79E+02	1.67E-01	0.00E+00	2.71E+01												3.09E+01	3.79E+00	6.50E+01	3.79E+01	3.79E+02	3.79E+02
	Th-228	2.69E+00	2.96E+05	2.03E+02	3.83E+00	0.00E+00	3.20E-01												2.39E+00	2.07E+00	2.10E+01	2.07E+01	2.07E+02	2.07E+02
	Th-230	5.40E+01	2.96E+05	2.91E+05	2.62E+04	0.00E+00	4.57E+05												4.60E+05	3.17E+03	4.88E+05	3.17E+04	3.17E+05	3.17E+05
	Th-232+D	9.66E-01	2.96E+05	3.81E+04	2.76E+03	0.00E+00	1.33E+03												1.74E+03	4.08E+02	5.42E+03	4.08E+03	4.08E+04	4.08E+04
	U-234+D	7.07E+01	8.17E+04	1.15E+03	1.08E+04	0.00E+00	4.83E+04												4.84E+04	1.19E+02	4.95E+04	1.19E+03	1.19E+04	1.19E+04
	U-235	1.14E+00	8.17E+04	1.47E+03	1.59E+02	0.00E+00	7.22E+02												7.38E+02	1.63E+01	8.85E+02	1.63E+02	1.63E+03	1.63E+03
	U-238+D	3.11E+01	8.17E+04	5.68E+03	4.31E+03	0.00E+00	1.96E+04												1.97E+04	1.00E+02	2.06E+04	1.00E+03	1.00E+04	1.00E+04
	Total			1.67E+06	4.62E+04	0.00E+00	6.24E+06												6.26E+06	1.71E+04	6.42E+06	1.71E+05	1.71E+06	1.71E+06
II-2	U-234+D	2.52E+02	8.60E+04	5.16E+03	1.08E+05	0.00E+00	4.83E+04												4.94E+04	1.13E+03	5.96E+04	1.13E+04	1.13E+05	1.13E+05
	U-235	4.08E+00	8.60E+04	1.00E+04	1.59E+03	0.00E+00	7.22E+02												8.38E+02	1.16E+02	1.88E+03	1.16E+03	1.16E+04	1.16E+04
	U-238+D	1.11E+02	8.60E+04	2.70E+04	4.31E+04	0.00E+00	1.96E+04												2.03E+04	7.02E+02	2.66E+04	7.02E+03	7.02E+04	7.02E+04
	Total			4.22E+04	1.52E+05	0.00E+00	6.87E+04												7.06E+04	1.94E+03	8.81E+04	1.94E+04	1.94E+05	1.94E+05
III	Cs-137	9.89E+00	2.00E+06	9.80E+03	1.03E-01	0.00E+00	1.98E+02												2.96E+02	9.80E+01	1.18E+03	9.80E+02	9.80E+03	1.18E+03
	Total			9.80E+03	1.03E-01	0.00E+00	1.98E+02												2.96E+02	9.80E+01	1.18E+03	9.80E+02	9.80E+03	1.18E+03
IV	U-234+D	3.24E+02	1.48E+04	6.02E+01	2.03E+03	0.00E+00	5.04E+03												5.06E+03	2.09E+01	5.25E+03	2.09E+02	2.09E+03	5.46E+03
	U-235	1.52E+01	1.48E+04	7.38E+02	8.69E+01	0.00E+00	2.21E+02												2.29E+02	8.25E+00	3.03E+02	8.25E+01	8.25E+02	3.86E+02
	U-238+D	3.24E+02	1.48E+04	1.83E+03	1.85E+03	0.00E+00	4.70E+03												4.74E+03	3.68E+01	5.07E+03	3.68E+02	3.68E+03	5.44E+03
	Total			2.63E+03	3.96E+03	0.00E+00	9.96E+03												1.00E+04	6.59E+01	1.06E+04	6.59E+02	6.59E+03	1.13E+04
V	Cs-137	1.07E+03	2.39E+04	6.01E+05	6.33E+00	0.00E+00	1.31E+04												1.91E+04	6.02E+03	7.32E+04	6.02E+04	6.02E+05	7.32E+04
	Total			6.01E+05	6.33E+00	0.00E+00	1.31E+04												1.91E+04	6.02E+03	7.32E+04	6.02E+04	6.02E+05	7.32E+04
VI	Cs-137	8.63E+01	2.07E+05	3.29E+04	3.36E-01	0.00E+00	6.68E+02												9.98E+02	3.29E+02	3.96E+03	3.29E+03	3.29E+04	1.06E+04
	U-234	1.22E+03	3.31E+04	1.54E+04	3.10E+05	0.00E+00	1.47E+05												1.50E+05	3.25E+03	1.80E+05	3.25E+04	3.25E+05	2.45E+05
	U-235	5.75E+01	3.31E+04	8.63E+04	1.33E+04	0.00E+00	6.41E+03												7.40E+03	9.96E+02	1.64E+04	9.96E+03	9.96E+04	3.63E+04
	U-238+D	1.22E+03	3.31E+04	1.83E+05	2.83E+05	0.00E+00	1.36E+05												1.41E+05	4.66E+03	1.83E+05	4.66E+04	4.66E+05	2.76E+05
	Total			3.18E+05	6.07E+05	0.00E+00	2.90E+05												3.00E+05	9.24E+03	3.83E+05	9.24E+04	9.24E+05	5.68E+05

Table N-17. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
 FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	5.58E+03	3.95E+06	0.00E+00	7.24E+04		1.12E+05	3.96E+04	4.68E+05	3.96E+05	3.96E+06	1.12E+05
	Cs-137	8.95E-01	8.42E+08	2.07E+04	1.94E-01	0.00E+00	4.36E+02		6.43E+02	2.07E+02	2.51E+03	2.07E+03	2.07E+04	6.43E+02
	Am-241	8.44E+00	5.71E+09	3.13E+04	3.40E+05	0.00E+00	3.55E+04		3.92E+04	3.71E+03	7.26E+04	3.71E+04	3.71E+05	3.92E+04
	Total			5.76E+04	4.29E+06	0.00E+00	1.08E+05		1.52E+05	4.35E+04	5.43E+05	4.35E+05	4.35E+06	1.52E+05
IX	Pu-239	9.47E+00	2.39E+05	1.01E+01	7.75E+03	0.00E+00	1.23E+02		2.00E+02	7.76E+01	8.99E+02	7.76E+02	7.76E+03	1.68E+03
	Am-241	1.58E+00	2.67E+06	5.87E+01	6.86E+02	0.00E+00	6.03E+01		6.77E+01	7.45E+00	1.35E+02	7.45E+01	7.45E+02	2.09E+02
	Total			6.88E+01	8.44E+03	0.00E+00	1.83E+02		2.68E+02	8.51E+01	1.03E+03	8.51E+02	8.51E+03	1.88E+03
X	Tc-99	8.16E+03	6.21E+00	1.18E-05	4.19E-05	1.38E+03	4.77E+01		1.43E+03	1.38E+03	1.43E+03	1.38E+03	1.38E+03	1.43E+03
	U-234+D	2.80E+02	5.76E+02	2.05E-01	2.35E+00	8.60E+03	8.70E+01		8.69E+03	8.60E+03	8.69E+03	8.60E+03	8.61E+03	8.69E+03
	U-238+D	2.80E+02	5.76E+02	2.81E+00	2.13E+00	7.96E+03	7.77E+01		8.04E+03	7.96E+03	8.04E+03	7.96E+03	7.97E+03	8.04E+03
	Total			3.02E+00	4.48E+00	1.80E+04	2.12E+02		1.82E+04	1.80E+04	1.82E+04	1.80E+04	1.80E+04	1.82E+04
XII	Pu-239	1.27E+03	1.25E+04	2.20E+00	1.23E+03	0.00E+00	1.03E+03		1.04E+03	1.23E+01	1.15E+03	1.23E+02	1.23E+03	1.23E+03
	Am-241	2.12E+02	4.33E+04	3.36E+01	2.96E+02	0.00E+00	6.44E+02		6.47E+02	3.29E+00	6.77E+02	3.29E+01	3.29E+02	3.29E+02
	Total			3.58E+01	1.52E+03	0.00E+00	1.67E+03		1.68E+03	1.56E+01	1.83E+03	1.56E+02	1.56E+03	1.56E+03
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XVIA	Co-60	3.63E+01	4.29E+05	1.86E+01	1.21E-04	0.00E+00	1.79E-02		2.04E-01	1.86E-01	1.88E+00	1.86E+00	1.86E+01	3.75E+00
	Cs-137+D	2.89E+01	8.59E+05	1.97E+01	1.16E-04	0.00E+00	6.70E-01		8.67E-01	1.97E-01	2.64E+00	1.97E+00	1.97E+01	4.61E+00
	Total			3.84E+01	2.37E-04	0.00E+00	6.88E-01		1.07E+00	3.84E-01	4.52E+00	3.84E+00	3.84E+01	8.36E+00
XVIB	Co-60	3.63E+01	6.09E+04	1.85E+01	1.20E-04	0.00E+00	1.79E-02		2.03E-01	1.85E-01	1.87E+00	1.85E+00	1.85E+01	3.72E+00
	Cs-137+D	2.89E+01	1.22E+05	1.93E+01	1.14E-04	0.00E+00	6.68E-01		8.61E-01	1.93E-01	2.60E+00	1.93E+00	1.93E+01	4.53E+00
	Total			3.78E+01	2.34E-04	0.00E+00	6.86E-01		1.06E+00	3.78E-01	4.47E+00	3.78E+00	3.78E+01	8.25E+00

Table N-17. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
 FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	1.82E+01	1.18E-04	0.00E+00	1.79E-02		2.00E-01	1.82E-01	1.84E+00	1.82E+00	1.82E+01	3.66E+00
	Cs-137+D	2.89E+01	1.07E+04	1.85E+01	1.09E-04	0.00E+00	6.63E-01		8.48E-01	1.85E-01	2.51E+00	1.85E+00	1.85E+01	4.36E+00
	Total			3.67E+01	2.27E-04	0.00E+00	6.81E-01		1.05E+00	3.67E-01	4.35E+00	3.67E+00	3.67E+01	8.02E+00
XVIII A	Cs-137+D	3.54E+02	8.59E+05	1.14E+02	6.72E-04	0.00E+00	3.87E+00		5.01E+00	1.14E+00	1.53E+01	1.14E+01	1.14E+02	1.14E+02
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	1.63E-02	0.00E+00	7.85E+01		7.85E+01	1.63E-04	7.85E+01	1.63E-03	1.63E-02	1.63E-02
	Total			1.14E+02	1.70E-02	0.00E+00	8.24E+01		8.35E+01	1.14E+00	9.38E+01	1.14E+01	1.14E+02	1.14E+02
XVIII B	Cs-137+D	3.54E+02	1.22E+05	1.12E+02	6.59E-04	0.00E+00	3.86E+00		4.97E+00	1.12E+00	1.50E+01	1.12E+01	1.12E+02	1.12E+02
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	1.08E-02	0.00E+00	6.97E+01		6.97E+01	1.08E-04	6.97E+01	1.08E-03	1.08E-02	1.08E-02
	Total			1.12E+02	1.14E-02	0.00E+00	7.35E+01		7.46E+01	1.12E+00	8.47E+01	1.12E+01	1.12E+02	1.12E+02
XVIII C	Cs-137+D	3.54E+02	3.22E+04	1.07E+02	6.31E-04	0.00E+00	3.83E+00		4.89E+00	1.07E+00	1.45E+01	1.07E+01	1.07E+02	1.07E+02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	6.11E-03	1.71E-06	5.57E+01		5.57E+01	6.28E-05	5.57E+01	6.13E-04	6.11E-03	6.11E-03
	Total			1.07E+02	6.74E-03	1.71E-06	5.95E+01		6.06E+01	1.07E+00	7.02E+01	1.07E+01	1.07E+02	1.07E+02
XXA	U-234+D	4.37E+01	8.57E+04	1.91E+00	1.32E+01	0.00E+00	1.63E+02		1.63E+02	1.51E-01	1.65E+02	1.51E+00	1.51E+01	1.66E+02
	U-235	1.46E+00	8.57E+04	3.72E+00	4.01E-01	0.00E+00	5.00E+00		5.04E+00	4.12E-02	5.42E+00	4.12E-01	4.12E+00	5.83E+00
	U-238+D	7.51E+00	8.57E+04	2.73E+00	2.07E+00	0.00E+00	2.58E+01		2.59E+01	4.80E-02	2.63E+01	4.80E-01	4.80E+00	2.68E+01
	Total			8.36E+00	1.57E+01	0.00E+00	1.94E+02		1.94E+02	2.41E-01	1.96E+02	2.41E+00	2.41E+01	1.99E+02
XXB	U-234+D	2.54E+01	1.21E+04	5.01E-01	3.39E+00	0.00E+00	6.83E+01		6.84E+01	3.89E-02	6.87E+01	3.89E-01	3.89E+00	6.91E+01
	U-235	8.40E-01	1.21E+04	9.41E-01	1.01E-01	0.00E+00	2.07E+00		2.08E+00	1.04E-02	2.17E+00	1.04E-01	1.04E+00	2.28E+00
	U-238+D	4.36E+00	1.21E+04	6.94E-01	5.26E-01	0.00E+00	1.07E+01		1.07E+01	1.22E-02	1.08E+01	1.22E-01	1.22E+00	1.10E+01
	Total			2.14E+00	4.02E+00	0.00E+00	8.11E+01		8.12E+01	6.15E-02	8.17E+01	6.15E-01	6.15E+00	8.24E+01
XXC	U-234+D	2.54E+01	1.07E+03	1.69E-01	1.49E+00	0.00E+00	3.86E+01		3.87E+01	1.66E-02	3.88E+01	1.66E-01	1.66E+00	3.90E+01
	U-235	8.40E-01	1.07E+03	4.14E-01	4.46E-02	0.00E+00	1.16E+00		1.16E+00	4.58E-03	1.20E+00	4.58E-02	4.58E-01	1.25E+00
	U-238+D	4.36E+00	1.07E+03	3.05E-01	2.31E-01	0.00E+00	6.01E+00		6.01E+00	5.36E-03	6.06E+00	5.36E-02	5.36E-01	6.11E+00
	Total			8.88E-01	1.77E+00	0.00E+00	4.58E+01		4.58E+01	2.65E-02	4.61E+01	2.65E-01	2.65E+00	4.63E+01

Table N-17. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	8.97E+00	3.94E-03	0.00E+00	1.16E+00		1.25E+00	8.97E-02	2.05E+00	8.97E-01	8.97E+00	8.97E+00
	Th-228	1.83E+01	2.10E+07	4.88E+00	9.07E-02	0.00E+00	1.36E-02		6.33E-02	4.97E-02	5.11E-01	4.97E-01	4.97E+00	4.97E+00
	Th-232+D	1.83E+01	2.10E+07	2.79E+03	2.01E+02	0.00E+00	1.61E+02		1.91E+02	2.99E+01	4.60E+02	2.99E+02	2.99E+03	2.99E+03
	Total			2.80E+03	2.01E+02	0.00E+00	1.62E+02		1.92E+02	3.00E+01	4.63E+02	3.00E+02	3.00E+03	3.00E+03
XXIB	Ra-228	1.83E+01	6.84E+04	8.91E+00	3.92E-03	0.00E+00	1.16E+00		1.24E+00	8.91E-02	2.05E+00	8.91E-01	8.91E+00	8.91E+00
	Th-228	1.83E+01	2.99E+06	4.88E+00	9.07E-02	0.00E+00	1.36E-02		6.33E-02	4.97E-02	5.11E-01	4.97E-01	4.97E+00	4.97E+00
	Th-232+D	1.83E+01	2.99E+06	2.74E+03	1.99E+02	0.00E+00	1.61E+02		1.90E+02	2.94E+01	4.55E+02	2.94E+02	2.94E+03	2.94E+03
	Total			2.76E+03	1.99E+02	0.00E+00	1.62E+02		1.91E+02	2.96E+01	4.58E+02	2.96E+02	2.96E+03	2.96E+03
XXIC	Ra-228	1.83E+01	6.03E+03	8.77E+00	3.86E-03	0.00E+00	1.15E+00		1.24E+00	8.77E-02	2.03E+00	8.77E-01	8.77E+00	8.77E+00
	Th-228	1.83E+01	2.63E+05	4.88E+00	9.07E-02	0.00E+00	1.36E-02		6.33E-02	4.97E-02	5.11E-01	4.97E-01	4.97E+00	4.97E+00
	Th-232+D	1.83E+01	2.63E+05	2.65E+03	1.94E+02	0.00E+00	1.60E+02		1.88E+02	2.84E+01	4.44E+02	2.84E+02	2.84E+03	2.84E+03
	Total			2.66E+03	1.94E+02	0.00E+00	1.61E+02		1.89E+02	2.85E+01	4.46E+02	2.85E+02	2.85E+03	2.85E+03
XXII	U-234	1.71E+01	1.40E+02	7.49E-01	7.34E+00	2.54E+04	2.72E+02		2.57E+04	2.54E+04	2.57E+04	2.54E+04	2.55E+04	2.55E+04
	U-235	8.01E-01	1.40E+02	2.90E+00	3.13E-01	1.13E+03	1.14E+01		1.14E+03	1.13E+03	1.14E+03	1.13E+03	1.13E+03	1.14E+03
	U-238+D	1.71E+01	1.40E+02	8.80E+00	6.67E+00	2.41E+04	2.43E+02		2.43E+04	2.41E+04	2.43E+04	2.41E+04	2.41E+04	2.41E+04
	Ra-226+D	3.16E+00	1.99E+03	2.46E+03	3.66E+00	0.00E+00	2.60E+04		2.60E+04	2.46E+01	2.62E+04	2.46E+02	2.46E+03	3.44E+03
	Ra-228	1.92E+01	1.99E+03	2.46E+02	1.08E-01	0.00E+00	3.24E+01		3.48E+01	2.47E+00	5.70E+01	2.47E+01	2.47E+02	3.45E+02
	Th-228	1.92E+01	1.27E+04	1.37E+02	2.55E+00	0.00E+00	3.83E-01		1.78E+00	1.39E+00	1.43E+01	1.39E+01	1.39E+02	1.95E+02
	Th-232	1.92E+01	1.27E+04	6.02E+04	4.41E+03	0.00E+00	4.33E+03		4.97E+03	6.46E+02	1.08E+04	6.46E+03	6.46E+04	9.04E+04
	Total			6.30E+04	4.43E+03	5.07E+04	3.08E+04		8.22E+04	5.13E+04	8.83E+04	5.74E+04	1.18E+05	1.45E+05

(a) Based on 1,000 people/km²

(b) Based on 10 people/km²

(c) Based on 100 people/km²

(d) Based on site specific data

Table N-18. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)		Dust Inhalation (a)		Ground Water Ingestion		Crop Ingestion		Indoor Radon Inhalation (a)		Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	2.19E+04	2.31E-01	0.00E+00	4.72E+02							6.91E+02	2.19E+02	2.66E+03	2.19E+03	2.19E+04	2.66E+03
	Total			2.19E+04	2.31E-01	0.00E+00	4.72E+02							6.91E+02	2.19E+02	2.66E+03	2.19E+03	2.19E+04	2.66E+03
II-1	Ra-226+D	5.43E+01	4.65E+05	3.05E+06	4.57E+03	0.00E+00	5.72E+06							5.75E+06	3.06E+04	6.02E+06	3.06E+05	3.06E+06	3.06E+06
	Ra-228	2.69E+00	4.65E+05	3.79E+02	1.67E-01	0.00E+00	2.71E+01							3.09E+01	3.79E+00	6.50E+01	3.79E+01	3.79E+02	3.79E+02
	Th-228	2.69E+00	2.96E+05	2.03E+02	3.83E+00	0.00E+00	3.20E-01							2.39E+00	2.07E+00	2.10E+01	2.07E+01	2.07E+02	2.07E+02
	Th-230	5.40E+01	2.96E+05	4.89E+06	1.22E+05	0.00E+00	1.61E+07							1.61E+07	5.01E+04	1.66E+07	5.01E+05	5.01E+06	5.01E+06
	Th-232+D	9.66E-01	2.96E+05	1.76E+05	1.27E+04	0.00E+00	1.15E+04							1.34E+04	1.89E+03	3.04E+04	1.89E+04	1.89E+05	1.89E+05
	U-234+D	7.07E+01	8.17E+04	6.84E+04	2.14E+04	0.00E+00	8.72E+05							8.73E+05	8.99E+02	8.81E+05	8.99E+03	8.99E+04	8.99E+04
	U-235	1.14E+00	8.17E+04	2.73E+03	2.94E+02	0.00E+00	4.32E+03							4.35E+03	3.02E+01	4.62E+03	3.02E+02	3.02E+03	3.02E+03
	U-238+D	3.11E+01	8.17E+04	1.05E+04	8.00E+03	0.00E+00	1.17E+05							1.18E+05	1.85E+02	1.19E+05	1.85E+03	1.85E+04	1.85E+04
	Total			8.20E+06	1.69E+05	0.00E+00	2.28E+07							2.29E+07	8.36E+04	2.36E+07	8.36E+05	8.36E+06	8.36E+06
	II-2	U-234+D	2.52E+02	8.60E+04	2.83E+05	2.14E+05	0.00E+00	8.72E+05							8.77E+05	4.97E+03	9.22E+05	4.97E+04	4.97E+05
U-235		4.08E+00	8.60E+04	1.86E+04	2.94E+03	0.00E+00	4.32E+03							4.54E+03	2.15E+02	6.47E+03	2.15E+03	2.15E+04	2.15E+04
U-238+D		1.11E+02	8.60E+04	5.01E+04	8.00E+04	0.00E+00	1.17E+05							1.19E+05	1.30E+03	1.30E+05	1.30E+04	1.30E+05	1.30E+05
Total				3.52E+05	2.97E+05	0.00E+00	9.94E+05							1.00E+06	6.49E+03	1.06E+06	6.49E+04	6.49E+05	6.49E+05
III	Cs-137	9.89E+00	2.00E+06	9.80E+03	1.03E-01	0.00E+00	1.98E+02							2.96E+02	9.80E+01	1.18E+03	9.80E+02	9.80E+03	1.18E+03
	Total			9.80E+03	1.03E-01	0.00E+00	1.98E+02							2.96E+02	9.80E+01	1.18E+03	9.80E+02	9.80E+03	1.18E+03
IV	U-234+D	3.24E+02	1.48E+04	8.97E+01	2.05E+03	0.00E+00	1.27E+04							1.27E+04	2.14E+01	1.29E+04	2.14E+02	2.14E+03	1.31E+04
	U-235	1.52E+01	1.48E+04	7.42E+02	8.73E+01	0.00E+00	3.82E+02							3.90E+02	8.29E+00	4.65E+02	8.29E+01	8.29E+02	5.48E+02
	U-238+D	3.24E+02	1.48E+04	1.84E+03	1.86E+03	0.00E+00	8.13E+03							8.17E+03	3.70E+01	8.50E+03	3.70E+02	3.70E+03	8.87E+03
	Total			2.67E+03	4.00E+03	0.00E+00	2.12E+04							2.13E+04	6.67E+01	2.19E+04	6.67E+02	6.67E+03	2.26E+04
V	Cs-137	1.07E+03	2.39E+04	6.01E+05	6.33E+00	0.00E+00	1.31E+04							1.91E+04	6.02E+03	7.32E+04	6.02E+04	6.02E+05	7.32E+04
	Total			6.01E+05	6.33E+00	0.00E+00	1.31E+04							1.91E+04	6.02E+03	7.32E+04	6.02E+04	6.02E+05	7.32E+04
VI	Cs-137	8.63E+01	2.07E+05	3.29E+04	3.36E-01	0.00E+00	6.68E+02							9.98E+02	3.29E+02	3.96E+03	3.29E+03	3.29E+04	1.06E+04
	U-234	1.22E+03	3.31E+04	8.02E+05	6.01E+05	0.00E+00	2.62E+06							2.63E+06	1.40E+04	2.76E+06	1.40E+05	1.40E+06	3.04E+06
	U-235	5.75E+01	3.31E+04	1.56E+05	2.41E+04	0.00E+00	3.77E+04							3.95E+04	1.80E+03	5.57E+04	1.80E+04	1.80E+05	9.17E+04
	U-238+D	1.22E+03	3.31E+04	3.31E+05	5.12E+05	0.00E+00	8.00E+05							8.09E+05	8.43E+03	8.85E+05	8.43E+04	8.43E+05	1.05E+06
	Total			1.32E+06	1.14E+06	0.00E+00	3.45E+06							3.48E+06	2.46E+04	3.70E+06	2.46E+05	2.46E+06	4.19E+06

Table N-18. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
 FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)		Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	4.91E+04	3.48E+07	0.00E+00	6.38E+05			9.86E+05	3.48E+05	4.12E+06	3.48E+06	3.48E+07	9.86E+05
	Cs-137	8.95E-01	8.42E+08	2.07E+04	1.94E-01	0.00E+00	4.36E+02			6.43E+02	2.07E+02	2.51E+03	2.07E+03	2.07E+04	6.43E+02
	Am-241	8.44E+00	5.71E+09	3.92E+04	4.26E+05	0.00E+00	4.44E+04			4.91E+04	4.65E+03	9.09E+04	4.65E+04	4.65E+05	4.91E+04
	Total			1.09E+05	3.52E+07	0.00E+00	6.83E+05			1.04E+06	3.53E+05	4.21E+06	3.53E+06	3.53E+07	1.04E+06
IX	Pu-239	9.47E+00	2.39E+05	6.95E+01	5.32E+04	0.00E+00	1.03E+03			1.57E+03	5.33E+02	6.36E+03	5.33E+03	5.33E+04	1.17E+04
	Am-241	1.58E+00	2.67E+06	7.34E+01	8.58E+02	0.00E+00	7.55E+01			8.48E+01	9.32E+00	1.69E+02	9.32E+01	9.32E+02	2.62E+02
	Total			1.43E+02	5.41E+04	0.00E+00	1.11E+03			1.65E+03	5.42E+02	6.53E+03	5.42E+03	5.42E+04	1.19E+04
X	Tc-99	8.16E+03	6.21E+00	1.18E-05	4.19E-05	1.38E+03	4.77E+01			1.43E+03	1.38E+03	1.43E+03	1.38E+03	1.38E+03	1.43E+03
	U-234+D	2.80E+02	5.76E+02	4.74E-01	2.39E+00	9.94E+03	1.88E+02			1.01E+04	9.94E+03	1.01E+04	9.94E+03	9.94E+03	1.01E+04
	U-238+D	2.80E+02	5.76E+02	2.81E+00	2.13E+00	9.14E+03	7.77E+01			9.22E+03	9.14E+03	9.22E+03	9.14E+03	9.14E+03	9.22E+03
	Total			3.29E+00	4.52E+00	2.05E+04	3.14E+02			2.08E+04	2.05E+04	2.08E+04	2.05E+04	2.05E+04	2.08E+04
XII	Pu-239	1.27E+03	1.25E+04	2.24E+00	1.25E+03	0.00E+00	2.01E+03			2.02E+03	1.25E+01	2.13E+03	1.25E+02	1.25E+03	1.25E+03
	Am-241	2.12E+02	4.33E+04	3.58E+01	3.15E+02	0.00E+00	7.72E+02			7.75E+02	3.51E+00	8.07E+02	3.51E+01	3.51E+02	3.51E+02
	Total			3.80E+01	1.56E+03	0.00E+00	2.78E+03			2.79E+03	1.60E+01	2.94E+03	1.60E+02	1.60E+03	1.60E+03
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XVIA	Co-60	3.63E+01	4.29E+05	1.86E+01	1.21E-04	0.00E+00	1.79E-02			2.04E-01	1.86E-01	1.88E+00	1.86E+00	1.86E+01	3.75E+00
	Cs-137+D	2.89E+01	8.59E+05	1.97E+01	1.16E-04	0.00E+00	6.70E-01			8.67E-01	1.97E-01	2.64E+00	1.97E+00	1.97E+01	4.61E+00
	Total			3.84E+01	2.37E-04	0.00E+00	6.88E-01			1.07E+00	3.84E-01	4.52E+00	3.84E+00	3.84E+01	8.36E+00
XVIB	Co-60	3.63E+01	6.09E+04	1.85E+01	1.20E-04	0.00E+00	1.79E-02			2.03E-01	1.85E-01	1.87E+00	1.85E+00	1.85E+01	3.72E+00
	Cs-137+D	2.89E+01	1.22E+05	1.93E+01	1.14E-04	0.00E+00	6.68E-01			8.61E-01	1.93E-01	2.60E+00	1.93E+00	1.93E+01	4.53E+00
	Total			3.78E+01	2.34E-04	0.00E+00	6.86E-01			1.06E+00	3.78E-01	4.47E+00	3.78E+00	3.78E+01	8.25E+00

Table N-18. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
 FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	1.82E+01	1.18E-04	0.00E+00	1.79E-02		2.00E-01	1.82E-01	1.84E+00	1.82E+00	1.82E+01	3.66E+00
	Cs-137+D	2.89E+01	1.07E+04	1.85E+01	1.09E-04	0.00E+00	6.63E-01		8.48E-01	1.85E-01	2.51E+00	1.85E+00	1.85E+01	4.36E+00
	Total			3.67E+01	2.27E-04	0.00E+00	6.81E-01		1.05E+00	3.67E-01	4.35E+00	3.67E+00	3.67E+01	8.02E+00
XVIII A	Cs-137+D	3.54E+02	8.59E+05	1.14E+02	6.72E-04	0.00E+00	3.87E+00		5.01E+00	1.14E+00	1.53E+01	1.14E+01	1.14E+02	1.14E+02
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	1.63E-02	0.00E+00	7.85E+01		7.85E+01	1.63E-04	7.85E+01	1.63E-03	1.63E-02	1.63E-02
	Total			1.14E+02	1.70E-02	0.00E+00	8.24E+01		8.35E+01	1.14E+00	9.38E+01	1.14E+01	1.14E+02	1.14E+02
XVIII B	Cs-137+D	3.54E+02	1.22E+05	1.12E+02	6.59E-04	0.00E+00	3.86E+00		4.97E+00	1.12E+00	1.50E+01	1.12E+01	1.12E+02	1.12E+02
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	1.08E-02	9.16E-29	6.97E+01		6.97E+01	1.08E-04	6.97E+01	1.08E-03	1.08E-02	1.08E-02
	Total			1.12E+02	1.14E-02	9.16E-29	7.35E+01		7.46E+01	1.12E+00	8.47E+01	1.12E+01	1.12E+02	1.12E+02
XVIII C	Cs-137+D	3.54E+02	3.22E+04	1.07E+02	6.31E-04	0.00E+00	3.83E+00		4.89E+00	1.07E+00	1.45E+01	1.07E+01	1.07E+02	1.07E+02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	6.11E-03	1.71E-06	5.57E+01		5.57E+01	6.28E-05	5.57E+01	6.13E-04	6.11E-03	6.11E-03
	Total			1.07E+02	6.74E-03	1.71E-06	5.95E+01		6.06E+01	1.07E+00	7.02E+01	1.07E+01	1.07E+02	1.07E+02
XXA	U-234+D	4.37E+01	8.57E+04	5.82E+01	1.61E+01	0.00E+00	1.44E+03		1.44E+03	7.42E-01	1.44E+03	7.42E+00	7.42E+01	1.45E+03
	U-235	1.46E+00	8.57E+04	3.83E+00	4.12E-01	0.00E+00	1.12E+01		1.12E+01	4.24E-02	1.16E+01	4.24E-01	4.24E+00	1.20E+01
	U-238+D	7.51E+00	8.57E+04	2.81E+00	2.13E+00	0.00E+00	5.76E+01		5.76E+01	4.94E-02	5.81E+01	4.94E-01	4.94E+00	5.86E+01
	Total			6.48E+01	1.86E+01	0.00E+00	1.51E+03		1.51E+03	8.34E-01	1.51E+03	8.34E+00	8.34E+01	1.52E+03
XXB	U-234+D	2.54E+01	1.21E+04	7.83E+00	3.93E+00	0.00E+00	3.40E+02		3.40E+02	1.18E-01	3.41E+02	1.18E+00	1.18E+01	3.42E+02
	U-235	8.40E-01	1.21E+04	9.42E-01	1.01E-01	0.00E+00	2.75E+00		2.76E+00	1.04E-02	2.86E+00	1.04E-01	1.04E+00	2.96E+00
	U-238+D	4.36E+00	1.21E+04	6.94E-01	5.26E-01	0.00E+00	1.43E+01		1.43E+01	1.22E-02	1.44E+01	1.22E-01	1.22E+00	1.45E+01
	Total			9.47E+00	4.56E+00	0.00E+00	3.57E+02		3.57E+02	1.40E-01	3.58E+02	1.40E+00	1.40E+01	3.60E+02
XXC	U-234+D	2.54E+01	1.07E+03	1.49E+00	1.68E+00	7.83E+02	1.20E+02		9.02E+02	7.83E+02	9.03E+02	7.83E+02	7.86E+02	9.03E+02
	U-235	8.40E-01	1.07E+03	4.14E-01	4.46E-02	2.25E+01	1.21E+00		2.37E+01	2.25E+01	2.38E+01	2.25E+01	2.30E+01	2.38E+01
	U-238+D	4.36E+00	1.07E+03	3.05E-01	2.31E-01	1.17E+02	6.27E+00		1.23E+02	1.17E+02	1.23E+02	1.17E+02	1.17E+02	1.23E+02
	Total			2.21E+00	1.96E+00	9.22E+02	1.27E+02		1.05E+03	9.22E+02	1.05E+03	9.22E+02	9.26E+02	1.05E+03

Table N-18. POPULATION DOSES (person-rem) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	8.97E+00	3.94E-03	0.00E+00	1.16E+00		1.25E+00	8.97E-02	2.05E+00	8.97E-01	8.97E+00	8.97E+00
	Th-228	1.83E+01	2.10E+07	4.88E+00	9.07E-02	0.00E+00	1.36E-02		6.33E-02	4.97E-02	5.11E-01	4.97E-01	4.97E+00	4.97E+00
	Th-232+D	1.83E+01	2.10E+07	2.64E+04	1.89E+03	0.00E+00	1.60E+03		1.89E+03	2.83E+02	4.43E+03	2.83E+03	2.83E+04	2.83E+04
	Total			2.64E+04	1.89E+03	0.00E+00	1.61E+03		1.89E+03	2.83E+02	4.44E+03	2.83E+03	2.83E+04	2.83E+04
XXIB	Ra-228	1.83E+01	6.84E+04	8.91E+00	3.92E-03	0.00E+00	1.16E+00		1.24E+00	8.91E-02	2.05E+00	8.91E-01	8.91E+00	8.91E+00
	Th-228	1.83E+01	2.99E+06	4.88E+00	9.07E-02	0.00E+00	1.36E-02		6.33E-02	4.97E-02	5.11E-01	4.97E-01	4.97E+00	4.97E+00
	Th-232+D	1.83E+01	2.99E+06	2.39E+04	1.72E+03	0.00E+00	1.58E+03		1.83E+03	2.56E+02	4.14E+03	2.56E+03	2.56E+04	2.56E+04
	Total			2.39E+04	1.72E+03	0.00E+00	1.58E+03		1.83E+03	2.56E+02	4.14E+03	2.56E+03	2.56E+04	2.56E+04
XXIC	Ra-228	1.83E+01	6.03E+03	8.77E+00	3.86E-03	0.00E+00	1.15E+00		1.24E+00	8.77E-02	2.03E+00	8.77E-01	8.77E+00	8.77E+00
	Th-228	1.83E+01	2.63E+05	4.88E+00	9.07E-02	0.00E+00	1.36E-02		6.33E-02	4.97E-02	5.11E-01	4.97E-01	4.97E+00	4.97E+00
	Th-232+D	1.83E+01	2.63E+05	1.93E+04	1.41E+03	0.00E+00	1.52E+03		1.73E+03	2.07E+02	3.59E+03	2.07E+03	2.07E+04	2.07E+04
	Total			1.93E+04	1.41E+03	0.00E+00	1.52E+03		1.73E+03	2.07E+02	3.59E+03	2.07E+03	2.07E+04	2.07E+04
XXII	U-234	1.71E+01	1.40E+02	2.16E+00	7.52E+00	2.68E+04	6.61E+02		2.74E+04	2.68E+04	2.74E+04	2.68E+04	2.68E+04	2.68E+04
	U-235	8.01E-01	1.40E+02	2.90E+00	3.13E-01	1.18E+03	1.14E+01		1.20E+03	1.19E+03	1.20E+03	1.19E+03	1.19E+03	1.19E+03
	U-238+D	1.71E+01	1.40E+02	8.80E+00	6.67E+00	2.52E+04	2.43E+02		2.55E+04	2.53E+04	2.55E+04	2.53E+04	2.53E+04	2.53E+04
	Ra-226+D	3.16E+00	1.99E+03	2.51E+03	3.74E+00	2.26E+04	2.60E+04		4.86E+04	2.26E+04	4.88E+04	2.28E+04	2.51E+04	2.61E+04
	Ra-228	1.92E+01	1.99E+03	2.46E+02	1.08E-01	0.00E+00	3.24E+01		3.48E+01	2.47E+00	5.70E+01	2.47E+01	2.47E+02	3.45E+02
	Th-228	1.92E+01	1.27E+04	1.37E+02	2.55E+00	0.00E+00	3.83E-01		1.78E+00	1.39E+00	1.43E+01	1.39E+01	1.39E+02	1.95E+02
	Th-232	1.92E+01	1.27E+04	1.48E+05	1.08E+04	0.00E+00	3.03E+04		3.19E+04	1.58E+03	4.62E+04	1.58E+04	1.58E+05	2.22E+05
	Total			1.51E+05	1.08E+04	7.58E+04	5.72E+04		1.35E+05	7.74E+04	1.49E+05	9.19E+04	2.37E+05	3.02E+05

(a) Based on 1,000 people/km²

(b) Based on 10 people/km²

(c) Based on 100 people/km²

(d) Based on site specific data

Table N-19. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
 FOR AN INTEGRATION PERIOD OF 100 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)					Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
				Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion							
I	Cs-137	1.91E+01	1.49E+05	7.89E+00	1.27E-04	0.00E+00	2.69E-01	3.48E-01	7.89E-02	1.06E+00	7.89E-01	7.89E+00	1.06E+00	
	Total			7.89E+00	1.27E-04	0.00E+00	2.69E-01	3.48E-01	7.89E-02	1.06E+00	7.89E-01	7.89E+00	1.06E+00	
II-1	Ra-226+D	5.43E+01	4.65E+05	6.95E+01	5.80E-02	0.00E+00	3.94E+01	4.01E+01	6.95E-01	4.63E+01	6.95E+00	6.95E+01	6.95E+01	
	Ra-228	2.69E+00	4.65E+05	1.43E-01	3.70E-05	0.00E+00	5.59E-03	7.03E-03	1.43E-03	1.99E-02	1.43E-02	1.43E-01	1.43E-01	
	Th-228	2.69E+00	2.96E+05	8.87E-02	1.19E-03	0.00E+00	9.84E-05	9.98E-04	8.99E-04	9.09E-03	8.99E-03	8.99E-02	8.99E-02	
	Th-230	5.40E+01	2.96E+05	1.50E+00	1.54E-01	0.00E+00	5.51E-01	5.67E-01	1.65E-02	7.16E-01	1.65E-01	1.65E+00	1.65E+00	
	Th-232+D	9.66E-01	2.96E+05	1.58E+00	1.69E-02	0.00E+00	2.34E-02	3.94E-02	1.59E-02	1.83E-01	1.59E-01	1.59E+00	1.59E+00	
	U-234+D	7.07E+01	8.17E+04	8.68E-04	1.58E-01	0.00E+00	8.40E-01	8.42E-01	1.59E-03	8.56E-01	1.59E-02	1.59E-01	1.59E-01	
	U-235	1.14E+00	8.17E+04	5.72E-02	2.38E-03	0.00E+00	1.44E-02	1.49E-02	5.96E-04	2.03E-02	5.96E-03	5.96E-02	5.96E-02	
	U-238+D	3.11E+01	8.17E+04	3.35E-01	6.19E-02	0.00E+00	5.14E-01	5.18E-01	3.97E-03	5.53E-01	3.97E-02	3.97E-01	3.97E-01	
	Total			7.32E+01	4.53E-01	0.00E+00	4.13E+01	4.21E+01	7.36E-01	4.87E+01	7.36E+00	7.36E+01	7.36E+01	
	II-2	U-234+D	2.52E+02	8.60E+04	4.42E-03	1.58E+00	0.00E+00	8.40E-01	8.56E-01	1.58E-02	9.99E-01	1.58E-01	1.58E+00	1.58E+00
U-235		4.08E+00	8.60E+04	3.89E-01	2.38E-02	0.00E+00	1.44E-02	1.85E-02	4.13E-03	5.57E-02	4.13E-02	4.13E-01	4.13E-01	
U-238+D		1.11E+02	8.60E+04	1.59E+00	6.19E-01	0.00E+00	5.14E-01	5.36E-01	2.21E-02	7.35E-01	2.21E-01	2.21E+00	2.21E+00	
Total				1.99E+00	2.22E+00	0.00E+00	1.37E+00	1.41E+00	4.21E-02	1.79E+00	4.21E-01	4.21E+00	4.21E+00	
III	Cs-137	9.89E+00	2.00E+06	3.47E+00	5.58E-05	0.00E+00	1.12E-01	1.47E-01	3.47E-02	4.59E-01	3.47E-01	3.47E+00	4.59E-01	
	Total			3.47E+00	5.58E-05	0.00E+00	1.12E-01	1.47E-01	3.47E-02	4.59E-01	3.47E-01	3.47E+00	4.59E-01	
IV	U-234+D	3.24E+02	1.48E+04	3.34E-04	8.74E-02	0.00E+00	1.19E-01	1.20E-01	8.77E-04	1.28E-01	8.77E-03	8.77E-02	1.37E-01	
	U-235	1.52E+01	1.48E+04	8.42E-02	3.82E-03	0.00E+00	5.93E-03	6.81E-03	8.80E-04	1.47E-02	8.80E-03	8.80E-02	2.35E-02	
	U-238+D	3.24E+02	1.48E+04	3.17E-01	7.80E-02	0.00E+00	1.66E-01	1.70E-01	3.95E-03	2.06E-01	3.95E-02	3.95E-01	2.45E-01	
	Total			4.02E-01	1.69E-01	0.00E+00	2.91E-01	2.97E-01	5.71E-03	3.49E-01	5.71E-02	5.71E-01	4.06E-01	
V	Cs-137	1.07E+03	2.39E+04	2.17E+02	3.49E-03	0.00E+00	7.46E+00	9.63E+00	2.17E+00	2.92E+01	2.17E+01	2.17E+02	2.92E+01	
	Total			2.17E+02	3.49E-03	0.00E+00	7.46E+00	9.63E+00	2.17E+00	2.92E+01	2.17E+01	2.17E+02	2.92E+01	
VI	Cs-137	8.63E+01	2.07E+05	1.16E+01	1.81E-04	0.00E+00	3.80E-01	4.96E-01	1.16E-01	1.54E+00	1.16E+00	1.16E+01	3.87E+00	
	U-234	1.22E+03	3.31E+04	1.33E-02	4.61E+00	0.00E+00	2.57E+00	2.61E+00	4.62E-02	3.03E+00	4.62E-01	4.62E+00	3.95E+00	
	U-235	5.75E+01	3.31E+04	3.39E+00	2.02E-01	0.00E+00	1.28E-01	1.64E-01	3.59E-02	4.87E-01	3.59E-01	3.59E+00	1.20E+00	
	U-238+D	1.22E+03	3.31E+04	1.09E+01	4.11E+00	0.00E+00	3.57E+00	3.72E+00	1.50E-01	5.07E+00	1.50E+00	1.50E+01	8.08E+00	
	Total			2.59E+01	8.92E+00	0.00E+00	6.64E+00	6.99E+00	3.49E-01	1.01E+01	3.49E+00	3.49E+01	1.71E+01	

Table N-19. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 100 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)		Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	9.14E-03	2.18E+01	0.00E+00	5.38E-01			7.56E-01	2.18E-01	2.72E+00	2.18E+00	2.18E+01	7.56E-01
	Cs-137	8.95E-01	8.42E+08	7.30E+00	1.04E-04	0.00E+00	2.48E-01			3.21E-01	7.30E-02	9.78E-01	7.30E-01	7.30E+00	3.21E-01
	Am-241	8.44E+00	5.71E+09	5.31E-01	4.66E+00	0.00E+00	4.79E-01			5.31E-01	5.19E-02	9.99E-01	5.19E-01	5.19E+00	5.31E-01
	Total			7.84E+00	2.65E+01	0.00E+00	1.27E+00			1.61E+00	3.43E-01	4.70E+00	3.43E+00	3.43E+01	1.61E+00
IX	Pu-239	9.47E+00	2.39E+05	1.70E-05	4.40E-02	0.00E+00	9.16E-04			1.36E-03	4.40E-04	5.32E-03	4.40E-03	4.40E-02	9.72E-03
	Am-241	1.58E+00	2.67E+06	9.97E-04	9.42E-03	0.00E+00	8.15E-04			9.19E-04	1.04E-04	1.86E-03	1.04E-03	1.04E-02	2.90E-03
	Total			1.01E-03	5.34E-02	0.00E+00	1.73E-03			2.28E-03	5.44E-04	7.17E-03	5.44E-03	5.44E-02	1.26E-02
X	Tc-99	8.16E+03	6.21E+00	4.06E-09	1.61E-08	1.49E+00	5.14E-02			1.54E+00	1.49E+00	1.54E+00	1.49E+00	1.49E+00	1.54E+00
	U-234+D	2.80E+02	5.76E+02	2.15E-06	2.47E-04	0.00E+00	8.64E-03			8.64E-03	2.49E-06	8.67E-03	2.49E-05	2.49E-04	8.67E-03
	U-238+D	2.80E+02	5.76E+02	1.20E-03	2.21E-04	0.00E+00	1.20E-02			1.20E-02	1.42E-05	1.22E-02	1.42E-04	1.42E-03	1.22E-02
	Total			1.20E-03	4.68E-04	1.49E+00	7.21E-02			1.57E+00	1.49E+00	1.57E+00	1.49E+00	1.50E+00	1.57E+00
XII	Pu-239	1.27E+03	1.25E+04	1.23E-05	2.31E-02	0.00E+00	1.02E-02			1.04E-02	2.31E-04	1.25E-02	2.31E-03	2.31E-02	2.31E-02
	Am-241	2.12E+02	4.33E+04	7.98E-04	5.68E-03	0.00E+00	9.27E-03			9.33E-03	6.48E-05	9.92E-03	6.48E-04	6.48E-03	6.48E-03
	Total			8.10E-04	2.88E-02	0.00E+00	1.94E-02			1.97E-02	2.96E-04	2.24E-02	2.96E-03	2.96E-02	2.96E-02
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XVIA	Co-60	3.63E+01	4.29E+05	7.56E-03	5.55E-08	0.00E+00	1.30E-05			8.86E-05	7.56E-05	7.69E-04	7.56E-04	7.56E-03	1.52E-03
	Cs-137+D	2.89E+01	8.59E+05	6.97E-03	6.30E-08	0.00E+00	3.81E-04			4.51E-04	6.97E-05	1.08E-03	6.97E-04	6.97E-03	1.78E-03
	Total			1.45E-02	1.18E-07	0.00E+00	3.94E-04			5.40E-04	1.45E-04	1.85E-03	1.45E-03	1.45E-02	3.30E-03
XVIB	Co-60	3.63E+01	6.09E+04	7.51E-03	5.51E-08	0.00E+00	1.30E-05			8.81E-05	7.51E-05	7.64E-04	7.51E-04	7.51E-03	1.51E-03
	Cs-137+D	2.89E+01	1.22E+05	6.87E-03	6.20E-08	0.00E+00	3.80E-04			4.49E-04	6.87E-05	1.07E-03	6.87E-04	6.87E-03	1.75E-03
	Total			1.44E-02	1.17E-07	0.00E+00	3.93E-04			5.37E-04	1.44E-04	1.83E-03	1.44E-03	1.44E-02	3.27E-03

Table N-19. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
 FOR AN INTEGRATION PERIOD OF 100 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	7.39E-03	5.42E-08	0.00E+00	1.30E-05		8.69E-05	7.39E-05	7.52E-04	7.39E-04	7.39E-03	1.49E-03
	Cs-137+D	2.89E+01	1.07E+04	6.64E-03	6.00E-08	0.00E+00	3.78E-04		4.44E-04	6.64E-05	1.04E-03	6.64E-04	6.64E-03	1.71E-03
	Total			1.40E-02	1.14E-07	0.00E+00	3.91E-04		5.31E-04	1.40E-04	1.79E-03	1.40E-03	1.40E-02	3.20E-03
XVIII A	Cs-137+D	3.54E+02	8.59E+05	4.03E-02	3.64E-07	0.00E+00	2.20E-03		2.60E-03	4.03E-04	6.23E-03	4.03E-03	4.03E-02	4.03E-02
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	8.55E-07	0.00E+00	2.90E-02		2.90E-02	8.55E-09	2.90E-02	8.55E-08	8.55E-07	8.55E-07
	Total			4.03E-02	1.22E-06	0.00E+00	3.12E-02		3.16E-02	4.03E-04	3.53E-02	4.03E-03	4.03E-02	4.03E-02
XVIII B	Cs-137+D	3.54E+02	1.22E+05	3.97E-02	3.58E-07	0.00E+00	2.19E-03		2.59E-03	3.97E-04	6.16E-03	3.97E-03	3.97E-02	3.97E-02
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	5.73E-07	0.00E+00	2.63E-02		2.63E-02	5.73E-09	2.63E-02	5.73E-08	5.73E-07	5.73E-07
	Total			3.97E-02	9.31E-07	0.00E+00	2.85E-02		2.89E-02	3.97E-04	3.25E-02	3.97E-03	3.97E-02	3.97E-02
XVIII C	Cs-137+D	3.54E+02	3.22E+04	3.84E-02	3.46E-07	0.00E+00	2.18E-03		2.57E-03	3.84E-04	6.02E-03	3.84E-03	3.84E-02	3.84E-02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	3.27E-07	0.00E+00	2.16E-02		2.16E-02	3.27E-09	2.16E-02	3.27E-08	3.27E-07	3.27E-07
	Total			3.84E-02	6.73E-07	0.00E+00	2.38E-02		2.42E-02	3.84E-04	2.77E-02	3.84E-03	3.84E-02	3.84E-02
XXA	U-234+D	4.37E+01	8.57E+04	2.47E-06	4.31E-04	0.00E+00	3.43E-03		3.44E-03	4.33E-06	3.48E-03	4.33E-05	4.33E-04	3.52E-03
	U-235	1.46E+00	8.57E+04	3.22E-04	1.34E-05	0.00E+00	1.21E-04		1.24E-04	3.35E-06	1.54E-04	3.35E-05	3.35E-04	1.88E-04
	U-238+D	7.51E+00	8.57E+04	3.58E-04	6.61E-05	0.00E+00	8.21E-04		8.26E-04	4.24E-06	8.64E-04	4.24E-05	4.24E-04	9.06E-04
	Total			6.82E-04	5.10E-04	0.00E+00	4.37E-03		4.39E-03	1.19E-05	4.49E-03	1.19E-04	1.19E-03	4.61E-03
XXB	U-234+D	2.54E+01	1.21E+04	1.23E-06	2.02E-04	0.00E+00	1.92E-03		1.92E-03	2.03E-06	1.94E-03	2.03E-05	2.03E-04	1.96E-03
	U-235	8.40E-01	1.21E+04	1.50E-04	6.21E-06	0.00E+00	6.71E-05		6.86E-05	1.56E-06	8.26E-05	1.56E-05	1.56E-04	9.82E-05
	U-238+D	4.36E+00	1.21E+04	1.67E-04	3.09E-05	0.00E+00	4.58E-04		4.60E-04	1.98E-06	4.78E-04	1.98E-05	1.98E-04	4.98E-04
	Total			3.18E-04	2.39E-04	0.00E+00	2.45E-03		2.45E-03	5.58E-06	2.50E-03	5.58E-05	5.58E-04	2.56E-03
XXC	U-234+D	2.54E+01	1.07E+03	9.00E-07	1.33E-04	0.00E+00	1.76E-03		1.77E-03	1.34E-06	1.78E-03	1.34E-05	1.34E-04	1.79E-03
	U-235	8.40E-01	1.07E+03	9.87E-05	4.10E-06	0.00E+00	6.16E-05		6.26E-05	1.03E-06	7.19E-05	1.03E-05	1.03E-04	8.21E-05
	U-238+D	4.36E+00	1.07E+03	1.11E-04	2.04E-05	0.00E+00	4.21E-04		4.22E-04	1.31E-06	4.34E-04	1.31E-05	1.31E-04	4.47E-04
	Total			2.10E-04	1.58E-04	0.00E+00	2.25E-03		2.25E-03	3.68E-06	2.28E-03	3.68E-05	3.68E-04	2.32E-03

Table N-19. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 100 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	3.39E-03	8.72E-07	0.00E+00	2.38E-04		2.72E-04	3.39E-05	5.78E-04	3.39E-04	3.39E-03	3.39E-03
	Th-228	1.83E+01	2.10E+07	2.13E-03	2.83E-05	0.00E+00	4.20E-06		2.58E-05	2.16E-05	2.20E-04	2.16E-04	2.16E-03	2.16E-03
	Th-232+D	1.83E+01	2.10E+07	1.06E-01	1.12E-03	0.00E+00	2.79E-03		3.86E-03	1.07E-03	1.35E-02	1.07E-02	1.07E-01	1.07E-01
	Total			1.11E-01	1.15E-03	0.00E+00	3.03E-03		4.15E-03	1.13E-03	1.43E-02	1.13E-02	1.13E-01	1.13E-01
XXIB	Ra-228	1.83E+01	6.84E+04	3.37E-03	8.66E-07	0.00E+00	2.38E-04		2.72E-04	3.37E-05	5.75E-04	3.37E-04	3.37E-03	3.37E-03
	Th-228	1.83E+01	2.99E+06	2.13E-03	2.83E-05	0.00E+00	4.20E-06		2.58E-05	2.16E-05	2.20E-04	2.16E-04	2.16E-03	2.16E-03
	Th-232+D	1.83E+01	2.99E+06	1.05E-01	1.11E-03	0.00E+00	2.78E-03		3.84E-03	1.06E-03	1.34E-02	1.06E-02	1.06E-01	1.06E-01
	Total			1.11E-01	1.14E-03	0.00E+00	3.02E-03		4.14E-03	1.12E-03	1.42E-02	1.12E-02	1.12E-01	1.12E-01
XXIC	Ra-228	1.83E+01	6.03E+03	3.32E-03	8.53E-07	0.00E+00	2.37E-04		2.71E-04	3.32E-05	5.69E-04	3.32E-04	3.32E-03	3.32E-03
	Th-228	1.83E+01	2.63E+05	2.13E-03	2.83E-05	0.00E+00	4.20E-06		2.58E-05	2.16E-05	2.20E-04	2.16E-04	2.16E-03	2.16E-03
	Th-232+D	1.83E+01	2.63E+05	1.03E-01	1.10E-03	0.00E+00	2.78E-03		3.82E-03	1.04E-03	1.32E-02	1.04E-02	1.04E-01	1.04E-01
	Total			1.09E-01	1.13E-03	0.00E+00	3.02E-03		4.12E-03	1.10E-03	1.40E-02	1.10E-02	1.10E-01	1.10E-01
XXII	U-234	1.71E+01	1.40E+02	6.49E-06	7.69E-04	0.00E+00	2.37E-02		2.37E-02	7.75E-06	2.38E-02	7.75E-05	7.75E-04	1.09E-03
	U-235	8.01E-01	1.40E+02	8.09E-04	3.36E-05	0.00E+00	1.17E-03		1.18E-03	8.42E-06	1.26E-03	8.42E-05	8.42E-04	1.18E-03
	U-238+D	1.71E+01	1.40E+02	3.72E-03	6.86E-04	0.00E+00	3.29E-02		3.30E-02	4.40E-05	3.34E-02	4.40E-04	4.40E-03	6.17E-03
	Ra-226+D	3.16E+00	1.99E+03	3.25E-01	2.70E-04	0.00E+00	3.75E-01		3.78E-01	3.25E-03	4.08E-01	3.25E-02	3.25E-01	4.56E-01
	Ra-228	1.92E+01	1.99E+03	9.32E-02	2.40E-05	0.00E+00	6.67E-03		7.60E-03	9.32E-04	1.60E-02	9.32E-03	9.32E-02	1.31E-01
	Th-228	1.92E+01	1.27E+04	5.99E-02	7.94E-04	0.00E+00	1.18E-04		7.25E-04	6.07E-04	6.19E-03	6.07E-03	6.07E-02	8.49E-02
	Th-232	1.92E+01	1.27E+04	2.84E+00	3.02E-02	0.00E+00	7.77E-02		1.06E-01	2.87E-02	3.65E-01	2.87E-01	2.87E+00	4.02E+00
	Total			3.33E+00	3.28E-02	0.00E+00	5.18E-01		5.51E-01	3.36E-02	8.54E-01	3.36E-01	3.36E+00	4.70E+00

(a) Based on 1,000 people/km²

(b) Based on 10 people/km²

(c) Based on 100 people/km²

(d) Based on site specific data

Table N-20. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
 FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)		Dust Inhalation (a)		Ground Water Ingestion		Crop Ingestion		Indoor Radon Inhalation (a)		Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	8.58E+00	1.38E-04	0.00E+00	2.98E-01							3.84E-01	8.58E-02	1.16E+00	8.58E-01	8.58E+00	1.16E+00
	Total			8.58E+00	1.38E-04	0.00E+00	2.98E-01							3.84E-01	8.58E-02	1.16E+00	8.58E-01	8.58E+00	1.16E+00
II-1	Ra-226+D	5.43E+01	4.65E+05	5.45E+02	4.55E-01	0.00E+00	3.23E+02							3.29E+02	5.46E+00	3.78E+02	5.46E+01	5.46E+02	5.46E+02
	Ra-228	2.69E+00	4.65E+05	1.43E-01	3.70E-05	0.00E+00	5.59E-03							7.03E-03	1.43E-03	1.99E-02	1.43E-02	1.43E-01	1.43E-01
	Th-228	2.69E+00	2.96E+05	8.87E-02	1.19E-03	0.00E+00	9.84E-05							9.98E-04	8.99E-04	9.09E-03	8.99E-03	8.99E-02	8.99E-02
	Th-230	5.40E+01	2.96E+05	1.19E+02	1.49E+00	0.00E+00	6.98E+01							7.10E+01	1.21E+00	8.18E+01	1.21E+01	1.21E+02	1.21E+02
	Th-232+D	9.66E-01	2.96E+05	1.58E+01	1.68E-01	0.00E+00	2.50E-01							4.09E-01	1.60E-01	1.85E+00	1.60E+00	1.60E+01	1.60E+01
	U-234+D	7.07E+01	8.17E+04	4.14E-01	1.15E+00	0.00E+00	8.21E+00							8.23E+00	1.56E-02	8.37E+00	1.56E-01	1.56E+00	1.56E+00
	U-235	1.14E+00	8.17E+04	4.14E-01	1.72E-02	0.00E+00	1.36E-01							1.40E-01	4.31E-03	1.79E-01	4.31E-02	4.31E-01	4.31E-01
	U-238+D	3.11E+01	8.17E+04	2.42E+00	4.48E-01	0.00E+00	4.85E+00							4.88E+00	2.87E-02	5.14E+00	2.87E-01	2.87E+00	2.87E+00
	Total			6.83E+02	3.72E+00	0.00E+00	4.07E+02							4.14E+02	6.87E+00	4.75E+02	6.87E+01	6.87E+02	6.87E+02
	II-2	U-234+D	2.52E+02	8.60E+04	1.72E+00	1.15E+01	0.00E+00	8.21E+00							8.35E+00	1.32E-01	9.53E+00	1.32E+00	1.32E+01
U-235		4.08E+00	8.60E+04	2.82E+00	1.72E-01	0.00E+00	1.36E-01							1.65E-01	2.99E-02	4.34E-01	2.99E-01	2.99E+00	2.99E+00
U-238+D		1.11E+02	8.60E+04	1.15E+01	4.48E+00	0.00E+00	4.85E+00							5.01E+00	1.60E-01	6.45E+00	1.60E+00	1.60E+01	1.60E+01
Total				1.61E+01	1.61E+01	0.00E+00	1.32E+01							1.35E+01	3.22E-01	1.64E+01	3.22E+00	3.22E+01	3.22E+01
III	Cs-137	9.89E+00	2.00E+06	3.84E+00	6.18E-05	0.00E+00	1.25E-01							1.63E-01	3.84E-02	5.09E-01	3.84E-01	3.84E+00	5.09E-01
	Total			3.84E+00	6.18E-05	0.00E+00	1.25E-01							1.63E-01	3.84E-02	5.09E-01	3.84E-01	3.84E+00	5.09E-01
IV	U-234+D	3.24E+02	1.48E+04	1.48E-02	2.16E-01	0.00E+00	8.58E-01							8.60E-01	2.31E-03	8.81E-01	2.31E-02	2.31E-01	9.04E-01
	U-235	1.52E+01	1.48E+04	2.07E-01	9.40E-03	0.00E+00	4.14E-02							4.36E-02	2.17E-03	6.31E-02	2.17E-02	2.17E-01	8.48E-02
	U-238+D	3.24E+02	1.48E+04	7.81E-01	1.92E-01	0.00E+00	1.16E+00							1.17E+00	9.73E-03	1.26E+00	9.73E-02	9.73E-01	1.36E+00
	Total			1.00E+00	4.17E-01	0.00E+00	2.06E+00							2.08E+00	1.42E-02	2.20E+00	1.42E-01	1.42E+00	2.34E+00
V	Cs-137	1.07E+03	2.39E+04	2.36E+02	3.79E-03	0.00E+00	8.25E+00							1.06E+01	2.36E+00	3.18E+01	2.36E+01	2.36E+02	3.18E+01
	Total			2.36E+02	3.79E-03	0.00E+00	8.25E+00							1.06E+01	2.36E+00	3.18E+01	2.36E+01	2.36E+02	3.18E+01
VI	Cs-137	8.63E+01	2.07E+05	1.29E+01	2.01E-04	0.00E+00	4.22E-01							5.51E-01	1.29E-01	1.71E+00	1.29E+00	1.29E+01	4.29E+00
	U-234	1.22E+03	3.31E+04	5.13E+00	3.31E+01	0.00E+00	2.50E+01							2.54E+01	3.82E-01	2.88E+01	3.82E+00	3.82E+01	3.65E+01
	U-235	5.75E+01	3.31E+04	2.42E+01	1.44E+00	0.00E+00	1.20E+00							1.46E+00	2.57E-01	3.77E+00	2.57E+00	2.57E+01	8.90E+00
	U-238+D	1.22E+03	3.31E+04	7.80E+01	2.94E+01	0.00E+00	3.36E+01							3.47E+01	1.07E+00	4.44E+01	1.07E+01	1.07E+02	6.59E+01
	Total			1.20E+02	6.39E+01	0.00E+00	6.03E+01							6.21E+01	1.84E+00	7.87E+01	1.84E+01	1.84E+02	1.16E+02

Table N-20. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)		Dust Inhalation (a)		Ground Water Ingestion		Crop Ingestion		Indoor Radon Inhalation (a)		Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	9.02E-02	2.15E+02	0.00E+00	5.31E+00							7.47E+00	2.15E+00	2.68E+01	2.15E+01	2.15E+02	7.47E+00
	Cs-137	8.95E-01	8.42E+08	8.11E+00	1.16E-04	0.00E+00	2.76E-01							3.57E-01	8.11E-02	1.09E+00	8.11E-01	8.11E+00	3.57E-01
	Am-241	8.44E+00	5.71E+09	2.86E+00	2.52E+01	0.00E+00	2.59E+00							2.87E+00	2.80E-01	5.39E+00	2.80E+00	2.80E+01	2.87E+00
	Total			1.11E+01	2.40E+02	0.00E+00	8.18E+00							1.07E+01	2.51E+00	3.33E+01	2.51E+01	2.51E+02	1.07E+01
IX	Pu-239	9.47E+00	2.39E+05	1.64E-04	4.22E-01	0.00E+00	9.00E-03							1.32E-02	4.23E-03	5.13E-02	4.23E-02	4.23E-01	9.35E-02
	Am-241	1.58E+00	2.67E+06	5.37E-03	5.08E-02	0.00E+00	4.40E-03							4.96E-03	5.61E-04	1.00E-02	5.61E-03	5.61E-02	1.56E-02
	Total			5.54E-03	4.73E-01	0.00E+00	1.34E-02							1.82E-02	4.79E-03	6.13E-02	4.79E-02	4.79E-01	1.09E-01
X	Tc-99	8.16E+03	6.21E+00	4.06E-09	1.61E-08	1.49E+00	5.14E-02							1.54E+00	1.49E+00	1.54E+00	1.49E+00	1.49E+00	1.54E+00
	U-234+D	2.80E+02	5.76E+02	7.16E-05	2.50E-04	1.46E+00	1.47E-02							1.47E+00	1.46E+00	1.47E+00	1.46E+00	1.46E+00	1.47E+00
	U-238+D	2.80E+02	5.76E+02	1.20E-03	2.21E-04	1.97E+00	1.92E-02							1.99E+00	1.97E+00	1.99E+00	1.97E+00	1.97E+00	1.99E+00
	Total			1.27E-03	4.71E-04	4.92E+00	8.54E-02							5.00E+00	4.92E+00	5.01E+00	4.92E+00	4.92E+00	5.01E+00
XII	Pu-239	1.27E+03	1.25E+04	3.56E-05	6.69E-02	0.00E+00	7.53E-02							7.59E-02	6.69E-04	8.19E-02	6.69E-03	6.69E-02	6.69E-02
	Am-241	2.12E+02	4.33E+04	3.07E-03	2.19E-02	0.00E+00	4.70E-02							4.72E-02	2.50E-04	4.95E-02	2.50E-03	2.50E-02	2.50E-02
	Total			3.11E-03	8.88E-02	0.00E+00	1.22E-01							1.23E-01	9.19E-04	1.31E-01	9.19E-03	9.19E-02	9.19E-02
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XVIA	Co-60	3.63E+01	4.29E+05	7.56E-03	5.55E-08	0.00E+00	1.30E-05							8.86E-05	7.56E-05	7.69E-04	7.56E-04	7.56E-03	1.52E-03
	Cs-137+D	2.89E+01	8.59E+05	7.72E-03	6.97E-08	0.00E+00	4.23E-04							5.01E-04	7.72E-05	1.20E-03	7.72E-04	7.72E-03	1.97E-03
	Total			1.53E-02	1.25E-07	0.00E+00	4.37E-04							5.89E-04	1.53E-04	1.96E-03	1.53E-03	1.53E-02	3.49E-03
XVIB	Co-60	3.63E+01	6.09E+04	7.51E-03	5.51E-08	0.00E+00	1.30E-05							8.81E-05	7.51E-05	7.64E-04	7.51E-04	7.51E-03	1.51E-03
	Cs-137+D	2.89E+01	1.22E+05	7.57E-03	6.83E-08	0.00E+00	4.22E-04							4.98E-04	7.57E-05	1.18E-03	7.57E-04	7.57E-03	1.94E-03
	Total			1.51E-02	1.23E-07	0.00E+00	4.35E-04							5.86E-04	1.51E-04	1.94E-03	1.51E-03	1.51E-02	3.45E-03

Table N-20. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
 FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	7.39E-03	5.42E-08	0.00E+00	1.30E-05		8.69E-05	7.39E-05	7.52E-04	7.39E-04	7.39E-03	1.49E-03
	Cs-137+D	2.89E+01	1.07E+04	7.25E-03	6.54E-08	0.00E+00	4.19E-04		4.91E-04	7.25E-05	1.14E-03	7.25E-04	7.25E-03	1.87E-03
	Total			1.46E-02	1.20E-07	0.00E+00	4.32E-04		5.78E-04	1.46E-04	1.90E-03	1.46E-03	1.46E-02	3.36E-03
XVIII A	Cs-137+D	3.54E+02	8.59E+05	4.46E-02	4.03E-07	0.00E+00	2.44E-03		2.89E-03	4.46E-04	6.90E-03	4.46E-03	4.46E-02	4.46E-02
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	8.73E-07	0.00E+00	3.12E-02		3.12E-02	8.73E-09	3.12E-02	8.73E-08	8.73E-07	8.73E-07
	Total			4.46E-02	1.28E-06	0.00E+00	3.37E-02		3.41E-02	4.46E-04	3.81E-02	4.46E-03	4.46E-02	4.46E-02
XVIII B	Cs-137+D	3.54E+02	1.22E+05	4.37E-02	3.95E-07	0.00E+00	2.44E-03		2.87E-03	4.37E-04	6.81E-03	4.37E-03	4.37E-02	4.37E-02
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	5.75E-07	0.00E+00	2.77E-02		2.77E-02	5.75E-09	2.77E-02	5.75E-08	5.75E-07	5.75E-07
	Total			4.37E-02	9.69E-07	0.00E+00	3.02E-02		3.06E-02	4.37E-04	3.45E-02	4.37E-03	4.37E-02	4.37E-02
XVIII C	Cs-137+D	3.54E+02	3.22E+04	4.18E-02	3.78E-07	0.00E+00	2.42E-03		2.84E-03	4.18E-04	6.60E-03	4.18E-03	4.18E-02	4.18E-02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	3.27E-07	6.80E-10	2.22E-02		2.22E-02	3.95E-09	2.22E-02	3.33E-08	3.27E-07	3.27E-07
	Total			4.18E-02	7.04E-07	6.80E-10	2.46E-02		2.50E-02	4.18E-04	2.88E-02	4.18E-03	4.18E-02	4.18E-02
XXA	U-234+D	4.37E+01	8.57E+04	7.13E-04	1.41E-03	0.00E+00	2.77E-02		2.77E-02	2.12E-05	2.79E-02	2.12E-04	2.12E-03	2.81E-02
	U-235	1.46E+00	8.57E+04	1.04E-03	4.34E-05	0.00E+00	9.39E-04		9.50E-04	1.09E-05	1.05E-03	1.09E-04	1.09E-03	1.16E-03
	U-238+D	7.51E+00	8.57E+04	1.16E-03	2.15E-04	0.00E+00	6.38E-03		6.40E-03	1.38E-05	6.52E-03	1.38E-04	1.38E-03	6.66E-03
	Total			2.92E-03	1.67E-03	0.00E+00	3.50E-02		3.51E-02	4.59E-05	3.55E-02	4.59E-04	4.59E-03	3.59E-02
XXB	U-234+D	2.54E+01	1.21E+04	1.88E-04	3.60E-04	0.00E+00	1.16E-02		1.16E-02	5.48E-06	1.17E-02	5.48E-05	5.48E-04	1.17E-02
	U-235	8.40E-01	1.21E+04	2.64E-04	1.10E-05	0.00E+00	3.88E-04		3.91E-04	2.75E-06	4.16E-04	2.75E-05	2.75E-04	4.43E-04
	U-238+D	4.36E+00	1.21E+04	2.96E-04	5.46E-05	0.00E+00	2.65E-03		2.65E-03	3.51E-06	2.69E-03	3.51E-05	3.51E-04	2.72E-03
	Total			7.48E-04	4.26E-04	0.00E+00	1.46E-02		1.47E-02	1.17E-05	1.48E-02	1.17E-04	1.17E-03	1.49E-02
XXC	U-234+D	2.54E+01	1.07E+03	6.16E-05	1.58E-04	0.00E+00	6.56E-03		6.56E-03	2.20E-06	6.58E-03	2.20E-05	2.20E-04	6.60E-03
	U-235	8.40E-01	1.07E+03	1.16E-04	4.82E-06	0.00E+00	2.17E-04		2.19E-04	1.21E-06	2.29E-04	1.21E-05	1.21E-04	2.42E-04
	U-238+D	4.36E+00	1.07E+03	1.30E-04	2.40E-05	0.00E+00	1.48E-03		1.49E-03	1.54E-06	1.50E-03	1.54E-05	1.54E-04	1.52E-03
	Total			3.08E-04	1.87E-04	0.00E+00	8.26E-03		8.26E-03	4.95E-06	8.31E-03	4.95E-05	4.95E-04	8.36E-03

Table N-20. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
 FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	3.39E-03	8.72E-07	0.00E+00	2.38E-04		2.72E-04	3.39E-05	5.78E-04	3.39E-04	3.39E-03	3.39E-03
	Th-228	1.83E+01	2.10E+07	2.13E-03	2.83E-05	0.00E+00	4.20E-06		2.58E-05	2.16E-05	2.20E-04	2.16E-04	2.16E-03	2.16E-03
	Th-232+D	1.83E+01	2.10E+07	1.16E+00	1.21E-02	0.00E+00	3.01E-02		4.18E-02	1.17E-02	1.47E-01	1.17E-01	1.17E+00	1.17E+00
	Total			1.16E+00	1.22E-02	0.00E+00	3.04E-02		4.21E-02	1.18E-02	1.48E-01	1.18E-01	1.18E+00	1.18E+00
XXIB	Ra-228	1.83E+01	6.84E+04	3.37E-03	8.66E-07	0.00E+00	2.38E-04		2.72E-04	3.37E-05	5.75E-04	3.37E-04	3.37E-03	3.37E-03
	Th-228	1.83E+01	2.99E+06	2.13E-03	2.83E-05	0.00E+00	4.20E-06		2.58E-05	2.16E-05	2.20E-04	2.16E-04	2.16E-03	2.16E-03
	Th-232+D	1.83E+01	2.99E+06	1.14E+00	1.20E-02	0.00E+00	3.00E-02		4.15E-02	1.15E-02	1.45E-01	1.15E-01	1.15E+00	1.15E+00
	Total			1.14E+00	1.20E-02	0.00E+00	3.03E-02		4.18E-02	1.16E-02	1.46E-01	1.16E-01	1.16E+00	1.16E+00
XXIC	Ra-228	1.83E+01	6.03E+03	3.32E-03	8.53E-07	0.00E+00	2.37E-04		2.71E-04	3.32E-05	5.69E-04	3.32E-04	3.32E-03	3.32E-03
	Th-228	1.83E+01	2.63E+05	2.13E-03	2.83E-05	0.00E+00	4.20E-06		2.58E-05	2.16E-05	2.20E-04	2.16E-04	2.16E-03	2.16E-03
	Th-232+D	1.83E+01	2.63E+05	1.10E+00	1.16E-02	0.00E+00	2.99E-02		4.09E-02	1.11E-02	1.41E-01	1.11E-01	1.11E+00	1.11E+00
	Total			1.10E+00	1.16E-02	0.00E+00	3.01E-02		4.12E-02	1.11E-02	1.42E-01	1.11E-01	1.11E+00	1.11E+00
XXII	U-234	1.71E+01	1.40E+02	2.69E-04	7.82E-04	4.33E+00	4.61E-02		4.37E+00	4.33E+00	4.37E+00	4.33E+00	4.33E+00	4.33E+00
	U-235	8.01E-01	1.40E+02	8.15E-04	3.39E-05	2.12E-01	2.14E-03		2.14E-01	2.12E-01	2.14E-01	2.12E-01	2.13E-01	2.13E-01
	U-238+D	1.71E+01	1.40E+02	3.75E-03	6.92E-04	5.95E+00	6.00E-02		6.01E+00	5.95E+00	6.02E+00	5.96E+00	5.96E+00	5.96E+00
	Ra-226+D	3.16E+00	1.99E+03	1.01E+00	8.36E-04	0.00E+00	2.50E+00		2.51E+00	1.01E-02	2.60E+00	1.01E-01	1.01E+00	1.41E+00
	Ra-228	1.92E+01	1.99E+03	9.32E-02	2.40E-05	0.00E+00	6.67E-03		7.60E-03	9.32E-04	1.60E-02	9.32E-03	9.32E-02	1.31E-01
	Th-228	1.92E+01	1.27E+04	5.99E-02	7.94E-04	0.00E+00	1.18E-04		7.25E-04	6.07E-04	6.19E-03	6.07E-03	6.07E-02	8.49E-02
	Th-232	1.92E+01	1.27E+04	2.50E+01	2.63E-01	0.00E+00	8.09E-01		1.06E+00	2.52E-01	3.33E+00	2.52E+00	2.52E+01	3.53E+01
	Total			2.61E+01	2.66E-01	1.05E+01	3.42E+00		1.42E+01	1.08E+01	1.66E+01	1.31E+01	3.69E+01	4.74E+01

(a) Based on 1,000 people/km²

(b) Based on 10 people/km²

(c) Based on 100 people/km²

(d) Based on site specific data

Table N-21. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	8.58E+00	1.38E-04	0.00E+00	2.98E-01		3.84E-01	8.58E-02	1.16E+00	8.58E-01	8.58E+00	1.16E+00
	Total			8.58E+00	1.38E-04	0.00E+00	2.98E-01		3.84E-01	8.58E-02	1.16E+00	8.58E-01	8.58E+00	1.16E+00
II-1	Ra-226+D	5.43E+01	4.65E+05	1.25E+03	1.04E+00	0.00E+00	8.74E+02		8.87E+02	1.25E+01	9.99E+02	1.25E+02	1.25E+03	1.25E+03
	Ra-228	2.69E+00	4.65E+05	1.43E-01	3.70E-05	0.00E+00	5.59E-03		7.03E-03	1.43E-03	1.99E-02	1.43E-02	1.43E-01	1.43E-01
	Th-228	2.69E+00	2.96E+05	8.87E-02	1.19E-03	0.00E+00	9.84E-05		9.98E-04	8.99E-04	9.09E-03	8.99E-03	8.99E-02	8.99E-02
	Th-230	5.40E+01	2.96E+05	2.00E+03	7.87E+00	0.00E+00	2.46E+03		2.48E+03	2.01E+01	2.66E+03	2.01E+02	2.01E+03	2.01E+03
	Th-232+D	9.66E-01	2.96E+05	7.30E+01	7.74E-01	0.00E+00	2.15E+00		2.89E+00	7.38E-01	9.53E+00	7.38E+00	7.38E+01	7.38E+01
	U-234+D	7.07E+01	8.17E+04	2.80E+01	2.22E+00	0.00E+00	1.38E+02		1.39E+02	3.02E-01	1.41E+02	3.02E+00	3.02E+01	3.02E+01
	U-235	1.14E+00	8.17E+04	7.67E-01	3.18E-02	0.00E+00	8.11E-01		8.19E-01	7.99E-03	8.91E-01	7.99E-02	7.99E-01	7.99E-01
	U-238+D	3.11E+01	8.17E+04	4.49E+00	8.30E-01	0.00E+00	2.90E+01		2.91E+01	5.32E-02	2.96E+01	5.32E-01	5.32E+00	5.32E+00
	Total			3.36E+03	1.28E+01	0.00E+00	3.50E+03		3.53E+03	3.37E+01	3.84E+03	3.37E+02	3.37E+03	3.37E+03
II-2	U-234+D	2.52E+02	8.60E+04	1.15E+02	2.22E+01	0.00E+00	1.38E+02		1.40E+02	1.38E+00	1.52E+02	1.38E+01	1.38E+02	1.38E+02
	U-235	4.08E+00	8.60E+04	5.22E+00	3.18E-01	0.00E+00	8.11E-01		8.67E-01	5.54E-02	1.37E+00	5.54E-01	5.54E+00	5.54E+00
	U-238+D	1.11E+02	8.60E+04	2.14E+01	8.30E+00	0.00E+00	2.90E+01		2.93E+01	2.96E-01	3.20E+01	2.96E+00	2.96E+01	2.96E+01
	Total			1.42E+02	3.08E+01	0.00E+00	1.68E+02		1.70E+02	1.73E+00	1.85E+02	1.73E+01	1.73E+02	1.73E+02
III	Cs-137	9.89E+00	2.00E+06	3.84E+00	6.18E-05	0.00E+00	1.25E-01		1.63E-01	3.84E-02	5.09E-01	3.84E-01	3.84E+00	5.09E-01
	Total			3.84E+00	6.18E-05	0.00E+00	1.25E-01		1.63E-01	3.84E-02	5.09E-01	3.84E-01	3.84E+00	5.09E-01
IV	U-234+D	3.24E+02	1.48E+04	2.68E-02	2.18E-01	0.00E+00	2.09E+00		2.10E+00	2.45E-03	2.12E+00	2.45E-02	2.45E-01	2.14E+00
	U-235	1.52E+01	1.48E+04	2.08E-01	9.45E-03	0.00E+00	7.17E-02		7.39E-02	2.18E-03	9.35E-02	2.18E-02	2.18E-01	1.15E-01
	U-238+D	3.24E+02	1.48E+04	7.86E-01	1.93E-01	0.00E+00	2.01E+00		2.02E+00	9.79E-03	2.11E+00	9.79E-02	9.79E-01	2.21E+00
	Total			1.02E+00	4.21E-01	0.00E+00	4.17E+00		4.19E+00	1.44E-02	4.32E+00	1.44E-01	1.44E+00	4.46E+00
V	Cs-137	1.07E+03	2.39E+04	2.36E+02	3.79E-03	0.00E+00	8.25E+00		1.06E+01	2.36E+00	3.18E+01	2.36E+01	2.36E+02	3.18E+01
	Total			2.36E+02	3.79E-03	0.00E+00	8.25E+00		1.06E+01	2.36E+00	3.18E+01	2.36E+01	2.36E+02	3.18E+01
VI	Cs-137	8.63E+01	2.07E+05	1.29E+01	2.01E-04	0.00E+00	4.22E-01		5.51E-01	1.29E-01	1.71E+00	1.29E+00	1.29E+01	4.29E+00
	U-234	1.22E+03	3.31E+04	3.27E+02	6.24E+01	0.00E+00	4.14E+02		4.18E+02	3.89E+00	4.53E+02	3.89E+01	3.89E+02	5.31E+02
	U-235	5.75E+01	3.31E+04	4.38E+01	2.61E+00	0.00E+00	7.07E+00		7.54E+00	4.64E-01	1.17E+01	4.64E+00	4.64E+01	2.10E+01
	U-238+D	1.22E+03	3.31E+04	1.41E+02	5.31E+01	0.00E+00	1.98E+02		2.00E+02	1.94E+00	2.17E+02	1.94E+01	1.94E+02	2.56E+02
	Total			5.24E+02	1.18E+02	0.00E+00	6.20E+02		6.26E+02	6.43E+00	6.84E+02	6.43E+01	6.43E+02	8.13E+02

Table N-21. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)					Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
				Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion							
VII	Pu-239	5.06E+01	1.65E+09	7.94E-01	1.89E+03	0.00E+00	4.68E+01	6.58E+01	1.89E+01	2.36E+02	1.89E+02	1.89E+03	6.58E+01	
	Cs-137	8.95E-01	8.42E+08	8.11E+00	1.16E-04	0.00E+00	2.76E-01	3.57E-01	8.11E-02	1.09E+00	8.11E-01	8.11E+00	3.57E-01	
	Am-241	8.44E+00	5.71E+09	3.59E+00	3.15E+01	0.00E+00	3.24E+00	3.59E+00	3.51E-01	6.75E+00	3.51E+00	3.51E+01	3.59E+00	
	Total			1.25E+01	1.93E+03	0.00E+00	5.04E+01	6.97E+01	1.94E+01	2.44E+02	1.94E+02	1.94E+03	6.97E+01	
IX	Pu-239	9.47E+00	2.39E+05	1.12E-03	2.90E+00	0.00E+00	7.59E-02	1.05E-01	2.90E-02	3.66E-01	2.90E-01	2.90E+00	6.56E-01	
	Am-241	1.58E+00	2.67E+06	6.72E-03	6.35E-02	0.00E+00	5.51E-03	6.21E-03	7.02E-04	1.25E-02	7.02E-03	7.02E-02	1.96E-02	
	Total			7.84E-03	2.96E+00	0.00E+00	8.14E-02	1.11E-01	2.97E-02	3.78E-01	2.97E-01	2.97E+00	6.75E-01	
X	Tc-99	8.16E+03	6.21E+00	4.06E-09	1.61E-08	1.49E+00	5.14E-02	1.54E+00	1.49E+00	1.54E+00	1.49E+00	1.49E+00	1.54E+00	
	U-234+D	2.80E+02	5.76E+02	1.82E-04	2.52E-04	1.68E+00	3.02E-02	1.71E+00	1.68E+00	1.71E+00	1.68E+00	1.68E+00	1.71E+00	
	U-238+D	2.80E+02	5.76E+02	1.20E-03	2.21E-04	2.26E+00	1.92E-02	2.28E+00	2.26E+00	2.28E+00	2.26E+00	2.26E+00	2.28E+00	
	Total			1.38E-03	4.73E-04	5.43E+00	1.01E-01	5.54E+00	5.43E+00	5.54E+00	5.43E+00	5.44E+00	5.54E+00	
XII	Pu-239	1.27E+03	1.25E+04	3.61E-05	6.80E-02	0.00E+00	1.47E-01	1.48E-01	6.80E-04	1.54E-01	6.80E-03	6.80E-02	6.80E-02	
	Am-241	2.12E+02	4.33E+04	3.27E-03	2.33E-02	0.00E+00	5.63E-02	5.65E-02	2.66E-04	5.89E-02	2.66E-03	2.66E-02	2.66E-02	
	Total			3.31E-03	9.13E-02	0.00E+00	2.03E-01	2.04E-01	9.46E-04	2.13E-01	9.46E-03	9.46E-02	9.46E-02	
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
XVIA	Co-60	3.63E+01	4.29E+05	7.56E-03	5.55E-08	0.00E+00	1.30E-05	8.86E-05	7.56E-05	7.69E-04	7.56E-04	7.56E-03	1.52E-03	
	Cs-137+D	2.89E+01	8.59E+05	7.72E-03	6.97E-08	0.00E+00	4.23E-04	5.01E-04	7.72E-05	1.20E-03	7.72E-04	7.72E-03	1.97E-03	
	Total			1.53E-02	1.25E-07	0.00E+00	4.37E-04	5.89E-04	1.53E-04	1.96E-03	1.53E-03	1.53E-02	3.49E-03	
XVIB	Co-60	3.63E+01	6.09E+04	7.51E-03	5.51E-08	0.00E+00	1.30E-05	8.81E-05	7.51E-05	7.64E-04	7.51E-04	7.51E-03	1.51E-03	
	Cs-137+D	2.89E+01	1.22E+05	7.57E-03	6.83E-08	0.00E+00	4.22E-04	4.98E-04	7.57E-05	1.18E-03	7.57E-04	7.57E-03	1.94E-03	
	Total			1.51E-02	1.23E-07	0.00E+00	4.35E-04	5.86E-04	1.51E-04	1.94E-03	1.51E-03	1.51E-02	3.45E-03	

Table N-21. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	7.39E-03	5.42E-08	0.00E+00	1.30E-05		8.69E-05	7.39E-05	7.52E-04	7.39E-04	7.39E-03	1.49E-03
	Cs-137+D	2.89E+01	1.07E+04	7.25E-03	6.54E-08	0.00E+00	4.19E-04		4.91E-04	7.25E-05	1.14E-03	7.25E-04	7.25E-03	1.87E-03
	Total			1.46E-02	1.20E-07	0.00E+00	4.32E-04		5.78E-04	1.46E-04	1.90E-03	1.46E-03	1.46E-02	3.36E-03
XVIII A	Cs-137+D	3.54E+02	8.59E+05	4.46E-02	4.03E-07	0.00E+00	2.44E-03		2.89E-03	4.46E-04	6.90E-03	4.46E-03	4.46E-02	4.46E-02
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	8.73E-07	0.00E+00	3.12E-02		3.12E-02	8.73E-09	3.12E-02	8.73E-08	8.73E-07	8.73E-07
	Total			4.46E-02	1.28E-06	0.00E+00	3.37E-02		3.41E-02	4.46E-04	3.81E-02	4.46E-03	4.46E-02	4.46E-02
XVIII B	Cs-137+D	3.54E+02	1.22E+05	4.37E-02	3.95E-07	0.00E+00	2.44E-03		2.87E-03	4.37E-04	6.81E-03	4.37E-03	4.37E-02	4.37E-02
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	5.75E-07	3.64E-32	2.77E-02		2.77E-02	5.75E-09	2.77E-02	5.75E-08	5.75E-07	5.75E-07
	Total			4.37E-02	9.69E-07	3.64E-32	3.02E-02		3.06E-02	4.37E-04	3.45E-02	4.37E-03	4.37E-02	4.37E-02
XVIII C	Cs-137+D	3.54E+02	3.22E+04	4.18E-02	3.78E-07	0.00E+00	2.42E-03		2.84E-03	4.18E-04	6.60E-03	4.18E-03	4.18E-02	4.18E-02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	3.27E-07	6.80E-10	2.22E-02		2.22E-02	3.95E-09	2.22E-02	3.33E-08	3.27E-07	3.27E-07
	Total			4.18E-02	7.04E-07	6.80E-10	2.46E-02		2.50E-02	4.18E-04	2.88E-02	4.18E-03	4.18E-02	4.18E-02
XXA	U-234+D	4.37E+01	8.57E+04	2.38E-02	1.60E-03	0.00E+00	2.26E-01		2.26E-01	2.54E-04	2.28E-01	2.54E-03	2.54E-02	2.31E-01
	U-235	1.46E+00	8.57E+04	1.08E-03	4.46E-05	0.00E+00	2.10E-03		2.11E-03	1.12E-05	2.21E-03	1.12E-04	1.12E-03	2.32E-03
	U-238+D	7.51E+00	8.57E+04	1.20E-03	2.21E-04	0.00E+00	1.42E-02		1.42E-02	1.42E-05	1.44E-02	1.42E-04	1.42E-03	1.45E-02
	Total			2.60E-02	1.86E-03	0.00E+00	2.42E-01		2.42E-01	2.79E-04	2.45E-01	2.79E-03	2.79E-02	2.48E-01
XXB	U-234+D	2.54E+01	1.21E+04	3.19E-03	3.91E-04	0.00E+00	5.35E-02		5.35E-02	3.58E-05	5.38E-02	3.58E-04	3.58E-03	5.42E-02
	U-235	8.40E-01	1.21E+04	2.64E-04	1.10E-05	0.00E+00	5.17E-04		5.19E-04	2.75E-06	5.44E-04	2.75E-05	2.75E-04	5.72E-04
	U-238+D	4.36E+00	1.21E+04	2.96E-04	5.46E-05	0.00E+00	3.53E-03		3.53E-03	3.51E-06	3.56E-03	3.51E-05	3.51E-04	3.60E-03
	Total			3.75E-03	4.57E-04	0.00E+00	5.75E-02		5.76E-02	4.21E-05	5.79E-02	4.21E-04	4.21E-03	5.84E-02
XXC	U-234+D	2.54E+01	1.07E+03	6.02E-04	1.69E-04	1.32E-01	1.90E-02		1.51E-01	1.32E-01	1.51E-01	1.32E-01	1.32E-01	1.51E-01
	U-235	8.40E-01	1.07E+03	1.16E-04	4.82E-06	4.22E-03	2.27E-04		4.45E-03	4.23E-03	4.46E-03	4.24E-03	4.35E-03	4.48E-03
	U-238+D	4.36E+00	1.07E+03	1.30E-04	2.40E-05	2.89E-02	1.55E-03		3.04E-02	2.89E-02	3.04E-02	2.89E-02	2.90E-02	3.04E-02
	Total			8.48E-04	1.98E-04	1.65E-01	2.07E-02		1.86E-01	1.65E-01	1.86E-01	1.65E-01	1.66E-01	1.86E-01

Table N-21. POPULATION HEALTH IMPACTS (total cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	3.39E-03	8.72E-07	0.00E+00	2.38E-04		2.72E-04	3.39E-05	5.78E-04	3.39E-04	3.39E-03	3.39E-03
	Th-228	1.83E+01	2.10E+07	2.13E-03	2.83E-05	0.00E+00	4.20E-06		2.58E-05	2.16E-05	2.20E-04	2.16E-04	2.16E-03	2.16E-03
	Th-232+D	1.83E+01	2.10E+07	1.10E+01	1.15E-01	0.00E+00	3.00E-01		4.11E-01	1.11E-01	1.41E+00	1.11E+00	1.11E+01	1.11E+01
	Total			1.10E+01	1.15E-01	0.00E+00	3.00E-01		4.11E-01	1.11E-01	1.41E+00	1.11E+00	1.11E+01	1.11E+01
XXIB	Ra-228	1.83E+01	6.84E+04	3.37E-03	8.66E-07	0.00E+00	2.38E-04		2.72E-04	3.37E-05	5.75E-04	3.37E-04	3.37E-03	3.37E-03
	Th-228	1.83E+01	2.99E+06	2.13E-03	2.83E-05	0.00E+00	4.20E-06		2.58E-05	2.16E-05	2.20E-04	2.16E-04	2.16E-03	2.16E-03
	Th-232+D	1.83E+01	2.99E+06	9.91E+00	1.04E-01	0.00E+00	2.95E-01		3.95E-01	1.00E-01	1.30E+00	1.00E+00	1.00E+01	1.00E+01
	Total			9.91E+00	1.04E-01	0.00E+00	2.95E-01		3.96E-01	1.00E-01	1.30E+00	1.00E+00	1.00E+01	1.00E+01
XXIC	Ra-228	1.83E+01	6.03E+03	3.32E-03	8.53E-07	0.00E+00	2.37E-04		2.71E-04	3.32E-05	5.69E-04	3.32E-04	3.32E-03	3.32E-03
	Th-228	1.83E+01	2.63E+05	2.13E-03	2.83E-05	0.00E+00	4.20E-06		2.58E-05	2.16E-05	2.20E-04	2.16E-04	2.16E-03	2.16E-03
	Th-232+D	1.83E+01	2.63E+05	8.02E+00	8.44E-02	0.00E+00	2.84E-01		3.65E-01	8.10E-02	1.09E+00	8.10E-01	8.10E+00	8.10E+00
	Total			8.02E+00	8.44E-02	0.00E+00	2.84E-01		3.65E-01	8.11E-02	1.09E+00	8.11E-01	8.11E+00	8.11E+00
XXII	U-234	1.71E+01	1.40E+02	8.48E-04	7.92E-04	4.55E+00	1.06E-01		4.66E+00	4.55E+00	4.66E+00	4.55E+00	4.55E+00	4.55E+00
	U-235	8.01E-01	1.40E+02	8.15E-04	3.39E-05	2.22E-01	2.14E-03		2.25E-01	2.22E-01	2.25E-01	2.23E-01	2.23E-01	2.24E-01
	U-238+D	1.71E+01	1.40E+02	3.75E-03	6.92E-04	6.24E+00	6.00E-02		6.30E+00	6.24E+00	6.30E+00	6.24E+00	6.25E+00	6.25E+00
	Ra-226+D	3.16E+00	1.99E+03	1.03E+00	8.56E-04	3.77E+00	3.97E+00		7.75E+00	3.78E+00	7.84E+00	3.87E+00	4.80E+00	5.22E+00
	Ra-228	1.92E+01	1.99E+03	9.32E-02	2.40E-05	0.00E+00	6.67E-03		7.60E-03	9.32E-04	1.60E-02	9.32E-03	9.32E-02	1.31E-01
	Th-228	1.92E+01	1.27E+04	5.99E-02	7.94E-04	0.00E+00	1.18E-04		7.25E-04	6.07E-04	6.19E-03	6.07E-03	6.07E-02	8.49E-02
	Th-232	1.92E+01	1.27E+04	6.13E+01	6.45E-01	0.00E+00	5.67E+00		6.29E+00	6.19E-01	1.19E+01	6.19E+00	6.19E+01	8.67E+01
	Total			6.25E+01	6.48E-01	1.48E+01	9.82E+00		2.52E+01	1.54E+01	3.09E+01	2.11E+01	7.79E+01	1.03E+02

(a) Based on 1,000 people/km²

(b) Based on 10 people/km²

(c) Based on 100 people/km²

(d) Based on site specific data

Table N-22. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 100 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	2.28E-01	3.67E-06	0.00E+00	7.78E-03		1.01E-02	2.28E-03	3.06E-02	2.28E-02	2.28E-01	3.06E-02
	Total													
II-1	Ra-226+D	5.43E+01	4.65E+05	4.04E-01	3.37E-04	0.00E+00	2.29E-01		2.33E-01	4.04E-03	2.69E-01	4.04E-02	4.04E-01	4.04E-01
	Ra-228	2.69E+00	4.65E+05	1.68E-02	4.33E-06	0.00E+00	6.56E-04		8.24E-04	1.68E-04	2.34E-03	1.68E-03	1.68E-02	1.68E-02
	Th-228	2.69E+00	2.96E+05	1.04E-02	1.40E-04	0.00E+00	1.15E-05		1.17E-04	1.05E-04	1.07E-03	1.05E-03	1.05E-02	1.05E-02
	Th-230	5.40E+01	2.96E+05	8.77E-03	9.03E-04	0.00E+00	3.22E-03		3.32E-03	9.67E-05	4.19E-03	9.67E-04	9.67E-03	9.67E-03
	Th-232+D	9.66E-01	2.96E+05	5.15E-01	5.51E-03	0.00E+00	7.66E-03		1.29E-02	5.21E-03	5.97E-02	5.21E-02	5.21E-01	5.21E-01
	U-234+D	7.07E+01	8.17E+04	3.87E-06	7.05E-04	0.00E+00	3.75E-03		3.76E-03	7.09E-06	3.82E-03	7.09E-05	7.09E-04	7.09E-04
	U-235	1.14E+00	8.17E+04	1.58E-02	6.56E-04	0.00E+00	3.96E-03		4.13E-03	1.65E-04	5.61E-03	1.65E-03	1.65E-02	1.65E-02
	U-238+D	3.11E+01	8.17E+04	3.40E-03	6.29E-04	0.00E+00	5.22E-03		5.26E-03	4.03E-05	5.62E-03	4.03E-04	4.03E-03	4.03E-03
	Total													
II-2	U-234+D	2.52E+02	8.60E+04	1.97E-05	7.05E-03	0.00E+00	3.75E-03		3.82E-03	7.07E-05	4.46E-03	7.07E-04	7.07E-03	7.07E-03
	U-235	4.08E+00	8.60E+04	1.08E-01	6.56E-03	0.00E+00	3.96E-03		5.11E-03	1.14E-03	1.54E-02	1.14E-02	1.14E-01	1.14E-01
	U-238+D	1.11E+02	8.60E+04	1.62E-02	6.29E-03	0.00E+00	5.22E-03		5.45E-03	2.25E-04	7.47E-03	2.25E-03	2.25E-02	2.25E-02
	Total													
III	Cs-137	9.89E+00	2.00E+06	2.42E-01	3.90E-06	0.00E+00	7.86E-03		1.03E-02	2.42E-03	3.21E-02	2.42E-02	2.42E-01	3.21E-02
	Total													
IV	U-234+D	3.24E+02	1.48E+04	1.01E-05	2.65E-03	0.00E+00	3.62E-03		3.64E-03	2.66E-05	3.88E-03	2.66E-04	2.66E-03	4.15E-03
	U-235	1.52E+01	1.48E+04	5.43E-02	2.46E-03	0.00E+00	3.82E-03		4.39E-03	5.68E-04	9.50E-03	5.68E-03	5.68E-02	1.52E-02
	U-238+D	3.24E+02	1.48E+04	9.62E-03	2.36E-03	0.00E+00	5.03E-03		5.15E-03	1.20E-04	6.23E-03	1.20E-03	1.20E-02	7.43E-03
	Total													
V	Cs-137	1.07E+03	2.39E+04	2.26E-01	3.64E-06	0.00E+00	7.77E-03		1.00E-02	2.26E-03	3.04E-02	2.26E-02	2.26E-01	3.04E-02
	Total													
VI	Cs-137	8.63E+01	2.07E+05	2.41E-01	3.76E-06	0.00E+00	7.87E-03		1.03E-02	2.41E-03	3.19E-02	2.41E-02	2.41E-01	8.01E-02
	U-234	1.22E+03	3.31E+04	1.94E-05	6.74E-03	0.00E+00	3.75E-03		3.82E-03	6.76E-05	4.43E-03	6.76E-04	6.76E-03	5.78E-03
	U-235	5.75E+01	3.31E+04	1.05E-01	6.27E-03	0.00E+00	3.96E-03		5.08E-03	1.11E-03	1.51E-02	1.11E-02	1.11E-01	3.74E-02
	U-238+D	1.22E+03	3.31E+04	1.60E-02	6.01E-03	0.00E+00	5.22E-03		5.44E-03	2.20E-04	7.42E-03	2.20E-03	2.20E-02	1.18E-02
	Total													

Table N-22. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 100 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)		Dust Inhalation (a)		Ground Water Ingestion		Crop Ingestion		Indoor Radon Inhalation (a)		Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	5.13E-06	1.22E-02	0.00E+00	3.02E-04							4.25E-04	1.23E-04	1.53E-03	1.23E-03	1.23E-02	4.25E-04
	Cs-137	8.95E-01	8.42E+08	2.32E-01	3.31E-06	0.00E+00	7.87E-03							1.02E-02	2.32E-03	3.10E-02	2.32E-02	2.32E-01	1.02E-02
	Am-241	8.44E+00	5.71E+09	1.79E-03	1.57E-02	0.00E+00	1.61E-03							1.79E-03	1.75E-04	3.36E-03	1.75E-03	1.75E-02	1.79E-03
	Total																		
IX	Pu-239	9.47E+00	2.39E+05	5.63E-06	1.45E-02	0.00E+00	3.02E-04							4.48E-04	1.45E-04	1.76E-03	1.45E-03	1.45E-02	3.21E-03
	Am-241	1.58E+00	2.67E+06	1.97E-03	1.87E-02	0.00E+00	1.61E-03							1.82E-03	2.06E-04	3.68E-03	2.06E-03	2.06E-02	5.74E-03
	Total																		
X	Tc-99	8.16E+03	6.21E+00	1.91E-11	7.57E-11	7.01E-03	2.41E-04							7.25E-03	7.01E-03	7.25E-03	7.01E-03	7.01E-03	7.25E-03
	U-234+D	2.80E+02	5.76E+02	2.94E-07	3.38E-05	0.00E+00	1.18E-03							1.18E-03	3.41E-07	1.19E-03	3.41E-06	3.41E-05	1.19E-03
	U-238+D	2.80E+02	5.76E+02	1.64E-04	3.02E-05	0.00E+00	1.64E-03							1.65E-03	1.94E-06	1.66E-03	1.94E-05	1.94E-04	1.66E-03
	Total																		
XII	Pu-239	1.27E+03	1.25E+04	3.43E-07	6.45E-04	0.00E+00	2.84E-04							2.90E-04	6.45E-06	3.48E-04	6.45E-05	6.45E-04	6.45E-04
	Am-241	2.12E+02	4.33E+04	1.34E-04	9.51E-04	0.00E+00	1.55E-03							1.56E-03	1.09E-05	1.66E-03	1.09E-04	1.09E-03	1.09E-03
	Total																		
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total																		
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total																		
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total																		
XVIA	Co-60	3.63E+01	4.29E+05	1.24E-01	9.11E-07	0.00E+00	2.14E-04							1.46E-03	1.24E-03	1.26E-02	1.24E-02	1.24E-01	2.50E-02
	Cs-137+D	2.89E+01	8.59E+05	1.44E-01	1.30E-06	0.00E+00	7.86E-03							9.30E-03	1.44E-03	2.22E-02	1.44E-02	1.44E-01	3.66E-02
	Total																		
XVIB	Co-60	3.63E+01	6.09E+04	1.23E-01	9.04E-07	0.00E+00	2.14E-04							1.45E-03	1.23E-03	1.25E-02	1.23E-02	1.23E-01	2.49E-02
	Cs-137+D	2.89E+01	1.22E+05	1.42E-01	1.28E-06	0.00E+00	7.84E-03							9.26E-03	1.42E-03	2.20E-02	1.42E-02	1.42E-01	3.62E-02
	Total																		

Table N-22. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 100 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	1.21E-01	8.90E-07	0.00E+00	2.13E-04		1.43E-03	1.21E-03	1.23E-02	1.21E-02	1.21E-01	2.45E-02
	Cs-137+D	2.89E+01	1.07E+04	1.37E-01	1.24E-06	0.00E+00	7.79E-03		9.16E-03	1.37E-03	2.15E-02	1.37E-02	1.37E-01	3.52E-02
	Total													
XVIII A	Cs-137+D	3.54E+02	8.59E+05	1.44E-01	1.30E-06	0.00E+00	7.86E-03		9.30E-03	1.44E-03	2.22E-02	1.44E-02	1.44E-01	1.44E-01
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	3.05E-06	0.00E+00	1.04E-01		1.04E-01	3.05E-08	1.04E-01	3.05E-07	3.05E-06	3.05E-06
	Total													
XVIII B	Cs-137+D	3.54E+02	1.22E+05	1.42E-01	1.28E-06	0.00E+00	7.84E-03		9.26E-03	1.42E-03	2.20E-02	1.42E-02	1.42E-01	1.42E-01
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	2.05E-06	0.00E+00	9.40E-02		9.40E-02	2.05E-08	9.40E-02	2.05E-07	2.05E-06	2.05E-06
	Total													
XVIII C	Cs-137+D	3.54E+02	3.22E+04	1.37E-01	1.24E-06	0.00E+00	7.79E-03		9.16E-03	1.37E-03	2.15E-02	1.37E-02	1.37E-01	1.37E-01
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	1.17E-06	0.00E+00	7.73E-02		7.73E-02	1.17E-08	7.73E-02	1.17E-07	1.17E-06	1.17E-06
	Total													
XXA	U-234+D	4.37E+01	8.57E+04	2.64E-06	4.60E-04	0.00E+00	3.67E-03		3.67E-03	4.63E-06	3.71E-03	4.63E-05	4.63E-04	3.76E-03
	U-235	1.46E+00	8.57E+04	1.03E-02	4.28E-04	0.00E+00	3.87E-03		3.98E-03	1.07E-04	4.95E-03	1.07E-03	1.07E-02	6.02E-03
	U-238+D	7.51E+00	8.57E+04	2.23E-03	4.11E-04	0.00E+00	5.10E-03		5.13E-03	2.64E-05	5.37E-03	2.64E-04	2.64E-03	5.63E-03
	Total													
XXB	U-234+D	2.54E+01	1.21E+04	2.25E-06	3.71E-04	0.00E+00	3.53E-03		3.53E-03	3.73E-06	3.56E-03	3.73E-05	3.73E-04	3.60E-03
	U-235	8.40E-01	1.21E+04	8.31E-03	3.45E-04	0.00E+00	3.73E-03		3.81E-03	8.66E-05	4.59E-03	8.66E-04	8.66E-03	5.46E-03
	U-238+D	4.36E+00	1.21E+04	1.79E-03	3.31E-04	0.00E+00	4.91E-03		4.93E-03	2.12E-05	5.12E-03	2.12E-04	2.12E-03	5.33E-03
	Total													
XXC	U-234+D	2.54E+01	1.07E+03	1.65E-06	2.45E-04	0.00E+00	3.24E-03		3.24E-03	2.46E-06	3.26E-03	2.46E-05	2.46E-04	3.29E-03
	U-235	8.40E-01	1.07E+03	5.49E-03	2.28E-04	0.00E+00	3.42E-03		3.48E-03	5.71E-05	3.99E-03	5.71E-04	5.71E-03	4.56E-03
	U-238+D	4.36E+00	1.07E+03	1.18E-03	2.18E-04	0.00E+00	4.50E-03		4.52E-03	1.40E-05	4.64E-03	1.40E-04	1.40E-03	4.78E-03
	Total													

Table N-22. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 100 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	3.36E-03	8.63E-07	0.00E+00	2.36E-04		2.70E-04	3.36E-05	5.72E-04	3.36E-04	3.36E-03	3.36E-03
	Th-228	1.83E+01	2.10E+07	2.11E-03	2.80E-05	0.00E+00	4.15E-06		2.56E-05	2.14E-05	2.18E-04	2.14E-04	2.14E-03	2.14E-03
	Th-232+D	1.83E+01	2.10E+07	1.05E-01	1.11E-03	0.00E+00	2.76E-03		3.82E-03	1.06E-03	1.33E-02	1.06E-02	1.06E-01	1.06E-01
	Total													
XXIB	Ra-228	1.83E+01	6.84E+04	3.34E-03	8.57E-07	0.00E+00	2.36E-04		2.69E-04	3.34E-05	5.69E-04	3.34E-04	3.34E-03	3.34E-03
	Th-228	1.83E+01	2.99E+06	2.11E-03	2.80E-05	0.00E+00	4.15E-06		2.56E-05	2.14E-05	2.18E-04	2.14E-04	2.14E-03	2.14E-03
	Th-232+D	1.83E+01	2.99E+06	1.04E-01	1.10E-03	0.00E+00	2.76E-03		3.81E-03	1.05E-03	1.33E-02	1.05E-02	1.05E-01	1.05E-01
	Total													
XXIC	Ra-228	1.83E+01	6.03E+03	3.29E-03	8.44E-07	0.00E+00	2.35E-04		2.68E-04	3.29E-05	5.64E-04	3.29E-04	3.29E-03	3.29E-03
	Th-228	1.83E+01	2.63E+05	2.11E-03	2.80E-05	0.00E+00	4.15E-06		2.56E-05	2.14E-05	2.18E-04	2.14E-04	2.14E-03	2.14E-03
	Th-232+D	1.83E+01	2.63E+05	1.02E-01	1.09E-03	0.00E+00	2.75E-03		3.78E-03	1.03E-03	1.31E-02	1.03E-02	1.03E-01	1.03E-01
	Total													
XXII	U-234	1.71E+01	1.40E+02	3.21E-07	3.81E-05	0.00E+00	1.17E-03		1.17E-03	3.84E-07	1.18E-03	3.84E-06	3.84E-05	5.37E-05
	U-235	8.01E-01	1.40E+02	8.53E-04	3.54E-05	0.00E+00	1.24E-03		1.25E-03	8.88E-06	1.33E-03	8.88E-05	8.88E-04	1.24E-03
	U-238+D	1.71E+01	1.40E+02	1.84E-04	3.40E-05	0.00E+00	1.63E-03		1.63E-03	2.18E-06	1.65E-03	2.18E-05	2.18E-04	3.05E-04
	Ra-226+D	3.16E+00	1.99E+03	8.69E-02	7.22E-05	0.00E+00	1.00E-01		1.01E-01	8.70E-04	1.09E-01	8.70E-03	8.70E-02	1.22E-01
	Ra-228	1.92E+01	1.99E+03	4.11E-03	1.06E-06	0.00E+00	2.94E-04		3.35E-04	4.11E-05	7.05E-04	4.11E-04	4.11E-03	5.75E-03
	Th-228	1.92E+01	1.27E+04	2.64E-03	3.50E-05	0.00E+00	5.19E-06		3.19E-05	2.67E-05	2.72E-04	2.67E-04	2.67E-03	3.74E-03
	Th-232	1.92E+01	1.27E+04	1.25E-01	1.33E-03	0.00E+00	3.42E-03		4.69E-03	1.27E-03	1.61E-02	1.27E-02	1.27E-01	1.77E-01
	Total													

(a) Based on 1,000 people/km²

(b) Based on 10 people/km²

(c) Based on 100 people/km²

(d) Based on site specific data

Table N-23. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)		Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	2.48E-01	3.99E-06	0.00E+00	8.61E-03			1.11E-02	2.48E-03	3.34E-02	2.48E-02	2.48E-01	3.34E-02
	Total														
II-1	Ra-226+D	5.43E+01	4.65E+05	3.17E+00	2.64E-03	0.00E+00	1.88E+00			1.91E+00	3.17E-02	2.20E+00	3.17E-01	3.17E+00	3.17E+00
	Ra-228	2.69E+00	4.65E+05	1.68E-02	4.33E-06	0.00E+00	6.56E-04			8.24E-04	1.68E-04	2.34E-03	1.68E-03	1.68E-02	1.68E-02
	Th-228	2.69E+00	2.96E+05	1.04E-02	1.40E-04	0.00E+00	1.15E-05			1.17E-04	1.05E-04	1.07E-03	1.05E-03	1.05E-02	1.05E-02
	Th-230	5.40E+01	2.96E+05	6.96E-01	8.70E-03	0.00E+00	4.08E-01			4.15E-01	7.05E-03	4.78E-01	7.05E-02	7.05E-01	7.05E-01
	Th-232+D	9.66E-01	2.96E+05	5.16E+00	5.47E-02	0.00E+00	8.15E-02			1.34E-01	5.22E-02	6.03E-01	5.22E-01	5.22E+00	5.22E+00
	U-234+D	7.07E+01	8.17E+04	1.85E-03	5.12E-03	0.00E+00	3.67E-02			3.67E-02	6.97E-05	3.74E-02	6.97E-04	6.97E-03	6.97E-03
	U-235	1.14E+00	8.17E+04	1.14E-01	4.75E-03	0.00E+00	3.74E-02			3.86E-02	1.19E-03	4.93E-02	1.19E-02	1.19E-01	1.19E-01
	U-238+D	3.11E+01	8.17E+04	2.46E-02	4.55E-03	0.00E+00	4.93E-02			4.96E-02	2.92E-04	5.22E-02	2.92E-03	2.92E-02	2.92E-02
	Total														
	II-2	U-234+D	2.52E+02	8.60E+04	7.66E-03	5.12E-02	0.00E+00	3.67E-02			3.73E-02	5.89E-04	4.26E-02	5.89E-03	5.89E-02
U-235		4.08E+00	8.60E+04	7.78E-01	4.75E-02	0.00E+00	3.74E-02			4.57E-02	8.26E-03	1.20E-01	8.26E-02	8.26E-01	8.26E-01
U-238+D		1.11E+02	8.60E+04	1.17E-01	4.55E-02	0.00E+00	4.93E-02			5.09E-02	1.63E-03	6.55E-02	1.63E-02	1.63E-01	1.63E-01
Total															
III	Cs-137	9.89E+00	2.00E+06	2.68E-01	4.32E-06	0.00E+00	8.73E-03			1.14E-02	2.68E-03	3.56E-02	2.68E-02	2.68E-01	3.56E-02
	Total														
IV	U-234+D	3.24E+02	1.48E+04	4.49E-04	6.55E-03	0.00E+00	2.60E-02			2.61E-02	7.00E-05	2.67E-02	7.00E-04	7.00E-03	2.74E-02
	U-235	1.52E+01	1.48E+04	1.34E-01	6.06E-03	0.00E+00	2.67E-02			2.81E-02	1.40E-03	4.07E-02	1.40E-02	1.40E-01	5.47E-02
	U-238+D	3.24E+02	1.48E+04	2.37E-02	5.81E-03	0.00E+00	3.52E-02			3.55E-02	2.95E-04	3.82E-02	2.95E-03	2.95E-02	4.11E-02
	Total														
V	Cs-137	1.07E+03	2.39E+04	2.45E-01	3.95E-06	0.00E+00	8.60E-03			1.11E-02	2.45E-03	3.31E-02	2.45E-02	2.45E-01	3.31E-02
	Total														
VI	Cs-137	8.63E+01	2.07E+05	2.67E-01	4.17E-06	0.00E+00	8.75E-03			1.14E-02	2.67E-03	3.55E-02	2.67E-02	2.67E-01	8.89E-02
	U-234	1.22E+03	3.31E+04	7.50E-03	4.84E-02	0.00E+00	3.66E-02			3.71E-02	5.59E-04	4.22E-02	5.59E-03	5.59E-02	5.33E-02
	U-235	5.75E+01	3.31E+04	7.52E-01	4.48E-02	0.00E+00	3.73E-02			4.53E-02	7.97E-03	1.17E-01	7.97E-02	7.97E-01	2.76E-01
	U-238+D	1.22E+03	3.31E+04	1.14E-01	4.30E-02	0.00E+00	4.92E-02			5.07E-02	1.57E-03	6.49E-02	1.57E-02	1.57E-01	9.63E-02
	Total														

Table N-23. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)				Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
				Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion							
VII	Pu-239	5.06E+01	1.65E+09	5.07E-05	1.21E-01	0.00E+00	2.99E-03	4.19E-03	1.21E-03	1.51E-02	1.21E-02	1.21E-01	4.19E-03	
	Cs-137	8.95E-01	8.42E+08	2.58E-01	3.68E-06	0.00E+00	8.75E-03	1.13E-02	2.58E-03	3.45E-02	2.58E-02	2.58E-01	1.13E-02	
	Am-241	8.44E+00	5.71E+09	9.65E-03	8.47E-02	0.00E+00	8.71E-03	9.65E-03	9.44E-04	1.81E-02	9.44E-03	9.44E-02	9.65E-03	
	Total													
IX	Pu-239	9.47E+00	2.39E+05	5.40E-05	1.39E-01	0.00E+00	2.97E-03	4.36E-03	1.39E-03	1.69E-02	1.39E-02	1.39E-01	3.09E-02	
	Am-241	1.58E+00	2.67E+06	1.06E-02	1.01E-01	0.00E+00	8.70E-03	9.82E-03	1.11E-03	1.98E-02	1.11E-02	1.11E-01	3.09E-02	
	Total													
X	Tc-99	8.16E+03	6.21E+00	1.91E-11	7.57E-11	7.01E-03	2.41E-04	7.25E-03	7.01E-03	7.25E-03	7.01E-03	7.01E-03	7.25E-03	
	U-234+D	2.80E+02	5.76E+02	9.79E-06	3.42E-05	1.99E-01	2.02E-03	2.01E-01	1.99E-01	2.01E-01	1.99E-01	1.99E-01	2.01E-01	
	U-238+D	2.80E+02	5.76E+02	1.64E-04	3.03E-05	2.69E-01	2.63E-03	2.72E-01	2.69E-01	2.72E-01	2.69E-01	2.69E-01	2.72E-01	
	Total													
XII	Pu-239	1.27E+03	1.25E+04	9.94E-07	1.87E-03	0.00E+00	2.10E-03	2.12E-03	1.87E-05	2.29E-03	1.87E-04	1.87E-03	1.87E-03	
	Am-241	2.12E+02	4.33E+04	5.15E-04	3.66E-03	0.00E+00	7.87E-03	7.91E-03	4.18E-05	8.29E-03	4.18E-04	4.18E-03	4.18E-03	
	Total													
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	Total													
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	Total													
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	Total													
XVIA	Co-60	3.63E+01	4.29E+05	1.24E-01	9.11E-07	0.00E+00	2.14E-04	1.46E-03	1.24E-03	1.26E-02	1.24E-02	1.24E-01	2.50E-02	
	Cs-137+D	2.89E+01	8.59E+05	1.59E-01	1.44E-06	0.00E+00	8.73E-03	1.03E-02	1.59E-03	2.47E-02	1.59E-02	1.59E-01	4.06E-02	
	Total													
XVIB	Co-60	3.63E+01	6.09E+04	1.23E-01	9.04E-07	0.00E+00	2.14E-04	1.45E-03	1.23E-03	1.25E-02	1.23E-02	1.23E-01	2.49E-02	
	Cs-137+D	2.89E+01	1.22E+05	1.56E-01	1.41E-06	0.00E+00	8.70E-03	1.03E-02	1.56E-03	2.43E-02	1.56E-02	1.56E-01	3.99E-02	
	Total													

Table N-23. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)		Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	1.21E-01	8.90E-07	0.00E+00	2.13E-04			1.43E-03	1.21E-03	1.23E-02	1.21E-02	1.21E-01	2.45E-02
	Cs-137+D	2.89E+01	1.07E+04	1.49E-01	1.35E-06	0.00E+00	8.64E-03			1.01E-02	1.49E-03	2.36E-02	1.49E-02	1.49E-01	3.85E-02
	Total														
XVIII A	Cs-137+D	3.54E+02	8.59E+05	1.59E-01	1.44E-06	0.00E+00	8.73E-03			1.03E-02	1.59E-03	2.47E-02	1.59E-02	1.59E-01	1.59E-01
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	3.12E-06	0.00E+00	1.12E-01			1.12E-01	3.12E-08	1.12E-01	3.12E-07	3.12E-06	3.12E-06
	Total														
XVIII B	Cs-137+D	3.54E+02	1.22E+05	1.56E-01	1.41E-06	0.00E+00	8.70E-03			1.03E-02	1.56E-03	2.43E-02	1.56E-02	1.56E-01	1.56E-01
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	2.05E-06	0.00E+00	9.90E-02			9.90E-02	2.05E-08	9.90E-02	2.05E-07	2.05E-06	2.05E-06
	Total														
XVIII C	Cs-137+D	3.54E+02	3.22E+04	1.49E-01	1.35E-06	0.00E+00	8.64E-03			1.01E-02	1.49E-03	2.36E-02	1.49E-02	1.49E-01	1.49E-01
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	1.17E-06	2.43E-09	7.91E-02			7.91E-02	1.41E-08	7.91E-02	1.19E-07	1.17E-06	1.17E-06
	Total														
XXA	U-234+D	4.37E+01	8.57E+04	7.62E-04	1.50E-03	0.00E+00	2.96E-02			2.96E-02	2.27E-05	2.98E-02	2.27E-04	2.27E-03	3.01E-02
	U-235	1.46E+00	8.57E+04	3.35E-02	1.39E-03	0.00E+00	3.01E-02			3.05E-02	3.49E-04	3.36E-02	3.49E-03	3.49E-02	3.71E-02
	U-238+D	7.51E+00	8.57E+04	7.22E-03	1.33E-03	0.00E+00	3.96E-02			3.97E-02	8.56E-05	4.05E-02	8.56E-04	8.56E-03	4.14E-02
	Total														
XXB	U-234+D	2.54E+01	1.21E+04	3.44E-04	6.61E-04	0.00E+00	2.13E-02			2.13E-02	1.01E-05	2.14E-02	1.01E-04	1.01E-03	2.15E-02
	U-235	8.40E-01	1.21E+04	1.47E-02	6.10E-04	0.00E+00	2.16E-02			2.17E-02	1.53E-04	2.31E-02	1.53E-03	1.53E-02	2.46E-02
	U-238+D	4.36E+00	1.21E+04	3.17E-03	5.85E-04	0.00E+00	2.84E-02			2.84E-02	3.75E-05	2.88E-02	3.75E-04	3.75E-03	2.91E-02
	Total														
XXC	U-234+D	2.54E+01	1.07E+03	1.13E-04	2.91E-04	0.00E+00	1.20E-02			1.20E-02	4.04E-06	1.21E-02	4.04E-05	4.04E-04	1.21E-02
	U-235	8.40E-01	1.07E+03	6.45E-03	2.68E-04	0.00E+00	1.21E-02			1.21E-02	6.72E-05	1.27E-02	6.72E-04	6.72E-03	1.34E-02
	U-238+D	4.36E+00	1.07E+03	1.39E-03	2.57E-04	0.00E+00	1.59E-02			1.59E-02	1.65E-05	1.61E-02	1.65E-04	1.65E-03	1.62E-02
	Total														

Table N-23. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	3.36E-03	8.63E-07	0.00E+00	2.36E-04		2.70E-04	3.36E-05	5.72E-04	3.36E-04	3.36E-03	3.36E-03
	Th-228	1.83E+01	2.10E+07	2.11E-03	2.80E-05	0.00E+00	4.15E-06		2.56E-05	2.14E-05	2.18E-04	2.14E-04	2.14E-03	2.14E-03
	Th-232+D	1.83E+01	2.10E+07	1.15E+00	1.20E-02	0.00E+00	2.98E-02		4.14E-02	1.16E-02	1.46E-01	1.16E-01	1.16E+00	1.16E+00
	Total													
XXIB	Ra-228	1.83E+01	6.84E+04	3.34E-03	8.57E-07	0.00E+00	2.36E-04		2.69E-04	3.34E-05	5.69E-04	3.34E-04	3.34E-03	3.34E-03
	Th-228	1.83E+01	2.99E+06	2.11E-03	2.80E-05	0.00E+00	4.15E-06		2.56E-05	2.14E-05	2.18E-04	2.14E-04	2.14E-03	2.14E-03
	Th-232+D	1.83E+01	2.99E+06	1.13E+00	1.18E-02	0.00E+00	2.97E-02		4.11E-02	1.14E-02	1.44E-01	1.14E-01	1.14E+00	1.14E+00
	Total													
XXIC	Ra-228	1.83E+01	6.03E+03	3.29E-03	8.44E-07	0.00E+00	2.35E-04		2.68E-04	3.29E-05	5.64E-04	3.29E-04	3.29E-03	3.29E-03
	Th-228	1.83E+01	2.63E+05	2.11E-03	2.80E-05	0.00E+00	4.15E-06		2.56E-05	2.14E-05	2.18E-04	2.14E-04	2.14E-03	2.14E-03
	Th-232+D	1.83E+01	2.63E+05	1.09E+00	1.14E-02	0.00E+00	2.96E-02		4.05E-02	1.10E-02	1.39E-01	1.10E-01	1.10E+00	1.10E+00
	Total													
XXII	U-234	1.71E+01	1.40E+02	1.33E-05	3.87E-05	2.14E-01	2.28E-03		2.16E-01	2.14E-01	2.16E-01	2.14E-01	2.14E-01	2.14E-01
	U-235	8.01E-01	1.40E+02	8.60E-04	3.57E-05	2.24E-01	2.26E-03		2.26E-01	2.24E-01	2.26E-01	2.24E-01	2.25E-01	2.25E-01
	U-238+D	1.71E+01	1.40E+02	1.86E-04	3.42E-05	2.95E-01	2.97E-03		2.98E-01	2.95E-01	2.98E-01	2.95E-01	2.95E-01	2.95E-01
	Ra-226+D	3.16E+00	1.99E+03	2.69E-01	2.24E-04	0.00E+00	6.68E-01		6.71E-01	2.70E-03	6.95E-01	2.70E-02	2.70E-01	3.77E-01
	Ra-228	1.92E+01	1.99E+03	4.11E-03	1.06E-06	0.00E+00	2.94E-04		3.35E-04	4.11E-05	7.05E-04	4.11E-04	4.11E-03	5.75E-03
	Th-228	1.92E+01	1.27E+04	2.64E-03	3.50E-05	0.00E+00	5.19E-06		3.19E-05	2.67E-05	2.72E-04	2.67E-04	2.67E-03	3.74E-03
	Th-232	1.92E+01	1.27E+04	1.10E+00	1.16E-02	0.00E+00	3.56E-02		4.67E-02	1.11E-02	1.47E-01	1.11E-01	1.11E+00	1.56E+00
	Total													

(a) Based on 1,000 people/km²

(b) Based on 10 people/km²

(c) Based on 100 people/km²

(d) Based on site specific data

Table N-24. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	2.48E-01	3.99E-06	0.00E+00	8.61E-03		1.11E-02	2.48E-03	3.34E-02	2.48E-02	2.48E-01	3.34E-02
	Total													
II-1	Ra-226+D	5.43E+01	4.65E+05	7.27E+00	6.07E-03	0.00E+00	5.08E+00		5.16E+00	7.28E-02	5.81E+00	7.28E-01	7.28E+00	7.28E+00
	Ra-228	2.69E+00	4.65E+05	1.68E-02	4.33E-06	0.00E+00	6.56E-04		8.24E-04	1.68E-04	2.34E-03	1.68E-03	1.68E-02	1.68E-02
	Th-228	2.69E+00	2.96E+05	1.04E-02	1.40E-04	0.00E+00	1.15E-05		1.17E-04	1.05E-04	1.07E-03	1.05E-03	1.05E-02	1.05E-02
	Th-230	5.40E+01	2.96E+05	1.17E+01	4.60E-02	0.00E+00	1.44E+01		1.45E+01	1.18E-01	1.55E+01	1.18E+00	1.18E+01	1.18E+01
	Th-232+D	9.66E-01	2.96E+05	2.39E+01	2.53E-01	0.00E+00	7.04E-01		9.45E-01	2.41E-01	3.12E+00	2.41E+00	2.41E+01	2.41E+01
	U-234+D	7.07E+01	8.17E+04	1.25E-01	9.92E-03	0.00E+00	6.17E-01		6.18E-01	1.35E-03	6.31E-01	1.35E-02	1.35E-01	1.35E-01
	U-235	1.14E+00	8.17E+04	2.12E-01	8.80E-03	0.00E+00	2.24E-01		2.26E-01	2.21E-03	2.46E-01	2.21E-02	2.21E-01	2.21E-01
	U-238+D	3.11E+01	8.17E+04	4.56E-02	8.43E-03	0.00E+00	2.95E-01		2.96E-01	5.41E-04	3.00E-01	5.41E-03	5.41E-02	5.41E-02
	Total													
II-2	U-234+D	2.52E+02	8.60E+04	5.15E-01	9.92E-02	0.00E+00	6.17E-01		6.23E-01	6.14E-03	6.78E-01	6.14E-02	6.14E-01	6.14E-01
	U-235	4.08E+00	8.60E+04	1.44E+00	8.80E-02	0.00E+00	2.24E-01		2.39E-01	1.53E-02	3.77E-01	1.53E-01	1.53E+00	1.53E+00
	U-238+D	1.11E+02	8.60E+04	2.17E-01	8.43E-02	0.00E+00	2.95E-01		2.98E-01	3.01E-03	3.25E-01	3.01E-02	3.01E-01	3.01E-01
Total														
III	Cs-137	9.89E+00	2.00E+06	2.68E-01	4.32E-06	0.00E+00	8.73E-03		1.14E-02	2.68E-03	3.56E-02	2.68E-02	2.68E-01	3.56E-02
	Total													
IV	U-234+D	3.24E+02	1.48E+04	8.12E-04	6.61E-03	0.00E+00	6.34E-02		6.35E-02	7.42E-05	6.42E-02	7.42E-04	7.42E-03	6.49E-02
	U-235	1.52E+01	1.48E+04	1.34E-01	6.10E-03	0.00E+00	4.63E-02		4.77E-02	1.41E-03	6.03E-02	1.41E-02	1.41E-01	7.44E-02
	U-238+D	3.24E+02	1.48E+04	2.38E-02	5.85E-03	0.00E+00	6.09E-02		6.12E-02	2.97E-04	6.39E-02	2.97E-03	2.97E-02	6.68E-02
	Total													
V	Cs-137	1.07E+03	2.39E+04	2.45E-01	3.95E-06	0.00E+00	8.60E-03		1.11E-02	2.45E-03	3.31E-02	2.45E-02	2.45E-01	3.31E-02
	Total													
VI	Cs-137	8.63E+01	2.07E+05	2.67E-01	4.17E-06	0.00E+00	8.75E-03		1.14E-02	2.67E-03	3.55E-02	2.67E-02	2.67E-01	8.89E-02
	U-234	1.22E+03	3.31E+04	4.78E-01	9.13E-02	0.00E+00	6.06E-01		6.12E-01	5.69E-03	6.63E-01	5.69E-02	5.69E-01	7.77E-01
	U-235	5.75E+01	3.31E+04	1.36E+00	8.10E-02	0.00E+00	2.20E-01		2.34E-01	1.44E-02	3.64E-01	1.44E-01	1.44E+00	6.52E-01
	U-238+D	1.22E+03	3.31E+04	2.06E-01	7.77E-02	0.00E+00	2.89E-01		2.92E-01	2.84E-03	3.18E-01	2.84E-02	2.84E-01	3.74E-01
	Total													

Table N-24. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)		Dust Inhalation (a)		Ground Water Ingestion		Crop Ingestion		Indoor Radon Inhalation (a)		Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	4.46E-04	1.06E+00	0.00E+00	2.63E-02							3.70E-02	1.06E-02	1.33E-01	1.06E-01	1.06E+00	3.70E-02
	Cs-137	8.95E-01	8.42E+08	2.58E-01	3.68E-06	0.00E+00	8.75E-03							1.13E-02	2.58E-03	3.45E-02	2.58E-02	2.58E-01	1.13E-02
	Am-241	8.44E+00	5.71E+09	1.21E-02	1.06E-01	0.00E+00	1.09E-02							1.21E-02	1.18E-03	2.27E-02	1.18E-02	1.18E-01	1.21E-02
	Total																		
IX	Pu-239	9.47E+00	2.39E+05	3.71E-04	9.57E-01	0.00E+00	2.51E-02							3.46E-02	9.57E-03	1.21E-01	9.57E-02	9.57E-01	2.16E-01
	Am-241	1.58E+00	2.67E+06	1.33E-02	1.26E-01	0.00E+00	1.09E-02							1.23E-02	1.39E-03	2.48E-02	1.39E-02	1.39E-01	3.87E-02
	Total																		
X	Tc-99	8.16E+03	6.21E+00	1.91E-11	7.57E-11	7.01E-03	2.41E-04							7.25E-03	7.01E-03	7.25E-03	7.01E-03	7.01E-03	7.25E-03
	U-234+D	2.80E+02	5.76E+02	2.49E-05	3.45E-05	2.30E-01	4.13E-03							2.34E-01	2.30E-01	2.34E-01	2.30E-01	2.30E-01	2.34E-01
	U-238+D	2.80E+02	5.76E+02	1.64E-04	3.03E-05	3.09E-01	2.63E-03							3.12E-01	3.09E-01	3.12E-01	3.09E-01	3.09E-01	3.12E-01
	Total																		
XII	Pu-239	1.27E+03	1.25E+04	1.01E-06	1.90E-03	0.00E+00	4.11E-03							4.13E-03	1.90E-05	4.30E-03	1.90E-04	1.90E-03	1.90E-03
	Am-241	2.12E+02	4.33E+04	5.48E-04	3.90E-03	0.00E+00	9.43E-03							9.47E-03	4.45E-05	9.87E-03	4.45E-04	4.45E-03	4.45E-03
	Total																		
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total																		
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total																		
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total																		
XVIA	Co-60	3.63E+01	4.29E+05	1.24E-01	9.11E-07	0.00E+00	2.14E-04							1.46E-03	1.24E-03	1.26E-02	1.24E-02	1.24E-01	2.50E-02
	Cs-137+D	2.89E+01	8.59E+05	1.59E-01	1.44E-06	0.00E+00	8.73E-03							1.03E-02	1.59E-03	2.47E-02	1.59E-02	1.59E-01	4.06E-02
	Total																		
XVIB	Co-60	3.63E+01	6.09E+04	1.23E-01	9.04E-07	0.00E+00	2.14E-04							1.45E-03	1.23E-03	1.25E-02	1.23E-02	1.23E-01	2.49E-02
	Cs-137+D	2.89E+01	1.22E+05	1.56E-01	1.41E-06	0.00E+00	8.70E-03							1.03E-02	1.56E-03	2.43E-02	1.56E-02	1.56E-01	3.99E-02
	Total																		

Table N-24. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	1.21E-01	8.90E-07	0.00E+00	2.13E-04		1.43E-03	1.21E-03	1.23E-02	1.21E-02	1.21E-01	2.45E-02
	Cs-137+D	2.89E+01	1.07E+04	1.49E-01	1.35E-06	0.00E+00	8.64E-03		1.01E-02	1.49E-03	2.36E-02	1.49E-02	1.49E-01	3.85E-02
	Total													
XVIII A	Cs-137+D	3.54E+02	8.59E+05	1.59E-01	1.44E-06	0.00E+00	8.73E-03		1.03E-02	1.59E-03	2.47E-02	1.59E-02	1.59E-01	1.59E-01
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	3.12E-06	0.00E+00	1.12E-01		1.12E-01	3.12E-08	1.12E-01	3.12E-07	3.12E-06	3.12E-06
	Total													
XVIII B	Cs-137+D	3.54E+02	1.22E+05	1.56E-01	1.41E-06	0.00E+00	8.70E-03		1.03E-02	1.56E-03	2.43E-02	1.56E-02	1.56E-01	1.56E-01
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	2.05E-06	1.30E-31	9.90E-02		9.90E-02	2.05E-08	9.90E-02	2.05E-07	2.05E-06	2.05E-06
	Total													
XVIII C	Cs-137+D	3.54E+02	3.22E+04	1.49E-01	1.35E-06	0.00E+00	8.64E-03		1.01E-02	1.49E-03	2.36E-02	1.49E-02	1.49E-01	1.49E-01
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	1.17E-06	2.43E-09	7.91E-02		7.91E-02	1.41E-08	7.91E-02	1.19E-07	1.17E-06	1.17E-06
	Total													
XXA	U-234+D	4.37E+01	8.57E+04	2.54E-02	1.71E-03	0.00E+00	2.41E-01		2.41E-01	2.71E-04	2.44E-01	2.71E-03	2.71E-02	2.47E-01
	U-235	1.46E+00	8.57E+04	3.45E-02	1.43E-03	0.00E+00	6.72E-02		6.75E-02	3.59E-04	7.07E-02	3.59E-03	3.59E-02	7.43E-02
	U-238+D	7.51E+00	8.57E+04	7.44E-03	1.37E-03	0.00E+00	8.84E-02		8.85E-02	8.81E-05	8.93E-02	8.81E-04	8.81E-03	9.02E-02
	Total													
XXB	U-234+D	2.54E+01	1.21E+04	5.86E-03	7.18E-04	0.00E+00	9.81E-02		9.82E-02	6.58E-05	9.88E-02	6.58E-04	6.58E-03	9.94E-02
	U-235	8.40E-01	1.21E+04	1.47E-02	6.10E-04	0.00E+00	2.87E-02		2.89E-02	1.53E-04	3.02E-02	1.53E-03	1.53E-02	3.18E-02
	U-238+D	4.36E+00	1.21E+04	3.17E-03	5.85E-04	0.00E+00	3.78E-02		3.78E-02	3.75E-05	3.82E-02	3.75E-04	3.75E-03	3.85E-02
	Total													
XXC	U-234+D	2.54E+01	1.07E+03	1.10E-03	3.10E-04	2.42E-01	3.48E-02		2.77E-01	2.42E-01	2.77E-01	2.42E-01	2.43E-01	2.77E-01
	U-235	8.40E-01	1.07E+03	6.45E-03	2.68E-04	2.35E-01	1.26E-02		2.47E-01	2.35E-01	2.48E-01	2.35E-01	2.41E-01	2.49E-01
	U-238+D	4.36E+00	1.07E+03	1.39E-03	2.57E-04	3.09E-01	1.66E-02		3.26E-01	3.09E-01	3.26E-01	3.09E-01	3.11E-01	3.26E-01
	Total													

Table N-24. NORMALIZED POPULATION HEALTH IMPACTS (total cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	3.36E-03	8.63E-07	0.00E+00	2.36E-04		2.70E-04	3.36E-05	5.72E-04	3.36E-04	3.36E-03	3.36E-03
	Th-228	1.83E+01	2.10E+07	2.11E-03	2.80E-05	0.00E+00	4.15E-06		2.56E-05	2.14E-05	2.18E-04	2.14E-04	2.14E-03	2.14E-03
	Th-232+D	1.83E+01	2.10E+07	1.08E+01	1.14E-01	0.00E+00	2.97E-01		4.07E-01	1.10E-01	1.39E+00	1.10E+00	1.10E+01	1.10E+01
	Total													
XXIB	Ra-228	1.83E+01	6.84E+04	3.34E-03	8.57E-07	0.00E+00	2.36E-04		2.69E-04	3.34E-05	5.69E-04	3.34E-04	3.34E-03	3.34E-03
	Th-228	1.83E+01	2.99E+06	2.11E-03	2.80E-05	0.00E+00	4.15E-06		2.56E-05	2.14E-05	2.18E-04	2.14E-04	2.14E-03	2.14E-03
	Th-232+D	1.83E+01	2.99E+06	9.81E+00	1.03E-01	0.00E+00	2.92E-01		3.91E-01	9.91E-02	1.28E+00	9.91E-01	9.91E+00	9.91E+00
	Total													
XXIC	Ra-228	1.83E+01	6.03E+03	3.29E-03	8.44E-07	0.00E+00	2.35E-04		2.68E-04	3.29E-05	5.64E-04	3.29E-04	3.29E-03	3.29E-03
	Th-228	1.83E+01	2.63E+05	2.11E-03	2.80E-05	0.00E+00	4.15E-06		2.56E-05	2.14E-05	2.18E-04	2.14E-04	2.14E-03	2.14E-03
	Th-232+D	1.83E+01	2.63E+05	7.94E+00	8.35E-02	0.00E+00	2.81E-01		3.61E-01	8.02E-02	1.08E+00	8.02E-01	8.02E+00	8.02E+00
	Total													
XXII	U-234	1.71E+01	1.40E+02	4.20E-05	3.92E-05	2.25E-01	5.23E-03		2.31E-01	2.25E-01	2.31E-01	2.25E-01	2.25E-01	2.25E-01
	U-235	8.01E-01	1.40E+02	8.60E-04	3.57E-05	2.35E-01	2.26E-03		2.37E-01	2.35E-01	2.37E-01	2.35E-01	2.36E-01	2.36E-01
	U-238+D	1.71E+01	1.40E+02	1.86E-04	3.42E-05	3.09E-01	2.97E-03		3.12E-01	3.09E-01	3.12E-01	3.09E-01	3.09E-01	3.09E-01
	Ra-226+D	3.16E+00	1.99E+03	2.76E-01	2.29E-04	1.01E+00	1.06E+00		2.07E+00	1.01E+00	2.10E+00	1.04E+00	1.28E+00	1.39E+00
	Ra-228	1.92E+01	1.99E+03	4.11E-03	1.06E-06	0.00E+00	2.94E-04		3.35E-04	4.11E-05	7.05E-04	4.11E-04	4.11E-03	5.75E-03
	Th-228	1.92E+01	1.27E+04	2.64E-03	3.50E-05	0.00E+00	5.19E-06		3.19E-05	2.67E-05	2.72E-04	2.67E-04	2.67E-03	3.74E-03
	Th-232	1.92E+01	1.27E+04	2.70E+00	2.84E-02	0.00E+00	2.50E-01		2.77E-01	2.73E-02	5.23E-01	2.73E-01	2.73E+00	3.82E+00
	Total													

(a) Based on 1,000 people/km²

(b) Based on 10 people/km²

(c) Based on 100 people/km²

(d) Based on site specific data

Table N-25. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 100 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	5.19E+00	8.19E-05	0.00E+00	1.80E-01		2.32E-01	5.19E-02	6.99E-01	5.19E-01	5.19E+00	6.99E-01
	Total			5.19E+00	8.19E-05	0.00E+00	1.80E-01		2.32E-01	5.19E-02	6.99E-01	5.19E-01	5.19E+00	6.99E-01
II-1	Ra-226+D	5.43E+01	4.65E+05	4.56E+01	5.05E-02	0.00E+00	2.97E+01		3.01E+01	4.56E-01	3.42E+01	4.56E+00	4.56E+01	4.56E+01
	Ra-228	2.69E+00	4.65E+05	9.41E-02	3.17E-05	0.00E+00	3.77E-03		4.71E-03	9.41E-04	1.32E-02	9.41E-03	9.41E-02	9.41E-02
	Th-228	2.69E+00	2.96E+05	5.85E-02	1.13E-03	0.00E+00	5.92E-05		6.55E-04	5.96E-04	6.02E-03	5.96E-03	5.96E-02	5.96E-02
	Th-230	5.40E+01	2.96E+05	9.84E-01	1.40E-01	0.00E+00	4.12E-01		4.23E-01	1.12E-02	5.24E-01	1.12E-01	1.12E+00	1.12E+00
	Th-232+D	9.66E-01	2.96E+05	1.04E+00	1.58E-02	0.00E+00	1.57E-02		2.62E-02	1.05E-02	1.21E-01	1.05E-01	1.05E+00	1.05E+00
	U-234+D	7.07E+01	8.17E+04	5.37E-04	1.50E-01	0.00E+00	5.17E-01		5.18E-01	1.50E-03	5.32E-01	1.50E-02	1.50E-01	1.50E-01
	U-235	1.14E+00	8.17E+04	3.70E-02	2.25E-03	0.00E+00	8.83E-03		9.22E-03	3.93E-04	1.28E-02	3.93E-03	3.93E-02	3.93E-02
	U-238+D	3.11E+01	8.17E+04	2.19E-01	5.87E-02	0.00E+00	3.13E-01		3.16E-01	2.78E-03	3.41E-01	2.78E-02	2.78E-01	2.78E-01
	Total			4.80E+01	4.18E-01	0.00E+00	3.09E+01		3.14E+01	4.84E-01	3.58E+01	4.84E+00	4.84E+01	4.84E+01
II-2	U-234+D	2.52E+02	8.60E+04	2.67E-03	1.50E+00	0.00E+00	5.17E-01		5.32E-01	1.50E-02	6.67E-01	1.50E-01	1.50E+00	1.50E+00
	U-235	4.08E+00	8.60E+04	2.52E-01	2.25E-02	0.00E+00	8.83E-03		1.16E-02	2.75E-03	3.63E-02	2.75E-02	2.75E-01	2.75E-01
	U-238+D	1.11E+02	8.60E+04	1.04E+00	5.87E-01	0.00E+00	3.13E-01		3.30E-01	1.63E-02	4.76E-01	1.63E-01	1.63E+00	1.63E+00
	Total			1.30E+00	2.11E+00	0.00E+00	8.39E-01		8.73E-01	3.40E-02	1.18E+00	3.40E-01	3.40E+00	3.40E+00
III	Cs-137	9.89E+00	2.00E+06	2.28E+00	3.60E-05	0.00E+00	7.52E-02		9.80E-02	2.28E-02	3.03E-01	2.28E-01	2.28E+00	3.03E-01
	Total			2.28E+00	3.60E-05	0.00E+00	7.52E-02		9.80E-02	2.28E-02	3.03E-01	2.28E-01	2.28E+00	3.03E-01
IV	U-234+D	3.24E+02	1.48E+04	2.03E-04	8.30E-02	0.00E+00	7.34E-02		7.43E-02	8.32E-04	8.17E-02	8.32E-03	8.32E-02	9.01E-02
	U-235	1.52E+01	1.48E+04	5.45E-02	3.62E-03	0.00E+00	3.64E-03		4.23E-03	5.81E-04	9.45E-03	5.81E-03	5.81E-02	1.53E-02
	U-238+D	3.24E+02	1.48E+04	2.07E-01	7.40E-02	0.00E+00	1.01E-01		1.04E-01	2.81E-03	1.30E-01	2.81E-02	2.81E-01	1.58E-01
	Total			2.62E-01	1.61E-01	0.00E+00	1.78E-01		1.83E-01	4.23E-03	2.21E-01	4.23E-02	4.23E-01	2.63E-01
V	Cs-137	1.07E+03	2.39E+04	1.43E+02	2.25E-03	0.00E+00	4.99E+00		6.42E+00	1.43E+00	1.93E+01	1.43E+01	1.43E+02	1.93E+01
	Total			1.43E+02	2.25E-03	0.00E+00	4.99E+00		6.42E+00	1.43E+00	1.93E+01	1.43E+01	1.43E+02	1.93E+01
VI	Cs-137	8.63E+01	2.07E+05	7.65E+00	1.17E-04	0.00E+00	2.54E-01		3.31E-01	7.65E-02	1.02E+00	7.65E-01	7.65E+00	2.55E+00
	U-234	1.22E+03	3.31E+04	8.02E-03	4.38E+00	0.00E+00	1.58E+00		1.62E+00	4.38E-02	2.02E+00	4.38E-01	4.38E+00	2.89E+00
	U-235	5.75E+01	3.31E+04	2.19E+00	1.92E-01	0.00E+00	7.85E-02		1.02E-01	2.38E-02	3.17E-01	2.38E-01	2.38E+00	7.94E-01
	U-238+D	1.22E+03	3.31E+04	7.13E+00	3.90E+00	0.00E+00	2.18E+00		2.29E+00	1.10E-01	3.28E+00	1.10E+00	1.10E+01	5.49E+00
	Total			1.70E+01	8.47E+00	0.00E+00	4.09E+00		4.34E+00	2.55E-01	6.63E+00	2.55E+00	2.55E+01	1.17E+01

Table N-25. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 100 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	5.01E-03	1.98E+01	0.00E+00	4.49E-01		6.47E-01	1.98E-01	2.43E+00	1.98E+00	1.98E+01	6.47E-01
	Cs-137	8.95E-01	8.42E+08	4.80E+00	6.73E-05	0.00E+00	1.66E-01		2.14E-01	4.80E-02	6.46E-01	4.80E-01	4.80E+00	2.14E-01
	Am-241	8.44E+00	5.71E+09	3.25E-01	4.02E+00	0.00E+00	3.99E-01		4.43E-01	4.34E-02	8.33E-01	4.34E-01	4.34E+00	4.43E-01
	Total			5.13E+00	2.38E+01	0.00E+00	1.01E+00		1.30E+00	2.90E-01	3.91E+00	2.90E+00	2.90E+01	1.30E+00
IX	Pu-239	9.47E+00	2.39E+05	9.35E-06	4.00E-02	0.00E+00	7.65E-04		1.16E-03	4.00E-04	4.76E-03	4.00E-03	4.00E-02	8.76E-03
	Am-241	1.58E+00	2.67E+06	6.10E-04	8.12E-03	0.00E+00	6.79E-04		7.66E-04	8.73E-05	1.55E-03	8.73E-04	8.73E-03	2.42E-03
	Total			6.20E-04	4.81E-02	0.00E+00	1.44E-03		1.93E-03	4.87E-04	6.31E-03	4.87E-03	4.87E-02	1.12E-02
X	Tc-99	8.16E+03	6.21E+00	2.58E-09	1.39E-08	9.81E-01	3.38E-02		1.01E+00	9.81E-01	1.01E+00	9.81E-01	9.81E-01	1.01E+00
	U-234+D	2.80E+02	5.76E+02	1.36E-06	2.35E-04	0.00E+00	5.31E-03		5.32E-03	2.36E-06	5.34E-03	2.36E-05	2.36E-04	5.34E-03
	U-238+D	2.80E+02	5.76E+02	7.81E-04	2.09E-04	0.00E+00	7.34E-03		7.35E-03	9.91E-06	7.43E-03	9.91E-05	9.91E-04	7.43E-03
	Total			7.83E-04	4.44E-04	9.81E-01	4.64E-02		1.03E+00	9.81E-01	1.03E+00	9.81E-01	9.82E-01	1.03E+00
XII	Pu-239	1.27E+03	1.25E+04	6.73E-06	2.10E-02	0.00E+00	8.49E-03		8.70E-03	2.10E-04	1.06E-02	2.10E-03	2.10E-02	2.10E-02
	Am-241	2.12E+02	4.33E+04	4.88E-04	4.89E-03	0.00E+00	7.72E-03		7.78E-03	5.38E-05	8.26E-03	5.38E-04	5.38E-03	5.38E-03
	Total			4.95E-04	2.58E-02	0.00E+00	1.62E-02		1.65E-02	2.63E-04	1.88E-02	2.63E-03	2.63E-02	2.63E-02
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XVIA	Co-60	3.63E+01	4.29E+05	4.98E-03	4.35E-08	0.00E+00	8.58E-06		5.84E-05	4.98E-05	5.07E-04	4.98E-04	4.98E-03	1.01E-03
	Cs-137+D	2.89E+01	8.59E+05	4.59E-03	4.06E-08	0.00E+00	2.55E-04		3.01E-04	4.59E-05	7.14E-04	4.59E-04	4.59E-03	1.17E-03
	Total			9.57E-03	8.41E-08	0.00E+00	2.63E-04		3.59E-04	9.57E-05	1.22E-03	9.57E-04	9.57E-03	2.18E-03
XVIB	Co-60	3.63E+01	6.09E+04	4.95E-03	4.32E-08	0.00E+00	8.57E-06		5.80E-05	4.95E-05	5.03E-04	4.95E-04	4.95E-03	9.98E-04
	Cs-137+D	2.89E+01	1.22E+05	4.52E-03	4.00E-08	0.00E+00	2.54E-04		2.99E-04	4.52E-05	7.06E-04	4.52E-04	4.52E-03	1.16E-03
	Total			9.47E-03	8.32E-08	0.00E+00	2.63E-04		3.57E-04	9.47E-05	1.21E-03	9.47E-04	9.47E-03	2.16E-03

Table N-25. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 100 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	4.87E-03	4.26E-08	0.00E+00	8.55E-06		5.72E-05	4.87E-05	4.95E-04	4.87E-04	4.87E-03	9.82E-04
	Cs-137+D	2.89E+01	1.07E+04	4.37E-03	3.87E-08	0.00E+00	2.53E-04		2.96E-04	4.37E-05	6.90E-04	4.37E-04	4.37E-03	1.13E-03
	Total			9.24E-03	8.12E-08	0.00E+00	2.61E-04		3.54E-04	9.24E-05	1.19E-03	9.24E-04	9.24E-03	2.11E-03
XVIII A	Cs-137+D	3.54E+02	8.59E+05	2.65E-02	2.34E-07	0.00E+00	1.47E-03		1.74E-03	2.65E-04	4.12E-03	2.65E-03	2.65E-02	2.65E-02
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	7.74E-07	0.00E+00	2.29E-02		2.29E-02	7.74E-09	2.29E-02	7.74E-08	7.74E-07	7.74E-07
	Total			2.65E-02	1.01E-06	0.00E+00	2.44E-02		2.47E-02	2.65E-04	2.71E-02	2.65E-03	2.65E-02	2.65E-02
XVIII B	Cs-137+D	3.54E+02	1.22E+05	2.61E-02	2.31E-07	0.00E+00	1.47E-03		1.73E-03	2.61E-04	4.08E-03	2.61E-03	2.61E-02	2.61E-02
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	5.18E-07	0.00E+00	2.08E-02		2.08E-02	5.18E-09	2.08E-02	5.18E-08	5.18E-07	5.18E-07
	Total			2.61E-02	7.49E-07	0.00E+00	2.23E-02		2.25E-02	2.61E-04	2.49E-02	2.61E-03	2.61E-02	2.61E-02
XVIII C	Cs-137+D	3.54E+02	3.22E+04	2.52E-02	2.23E-07	0.00E+00	1.46E-03		1.71E-03	2.52E-04	3.98E-03	2.52E-03	2.52E-02	2.52E-02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	2.95E-07	0.00E+00	1.71E-02		1.71E-02	2.95E-09	1.71E-02	2.95E-08	2.95E-07	2.95E-07
	Total			2.52E-02	5.19E-07	0.00E+00	1.86E-02		1.88E-02	2.52E-04	2.11E-02	2.52E-03	2.52E-02	2.52E-02
XXA	U-234+D	4.37E+01	8.57E+04	1.53E-06	4.09E-04	0.00E+00	2.11E-03		2.11E-03	4.10E-06	2.15E-03	4.10E-05	4.10E-04	2.19E-03
	U-235	1.46E+00	8.57E+04	2.08E-04	1.27E-05	0.00E+00	7.43E-05		7.65E-05	2.21E-06	9.64E-05	2.21E-05	2.21E-04	1.19E-04
	U-238+D	7.51E+00	8.57E+04	2.34E-04	6.27E-05	0.00E+00	5.01E-04		5.04E-04	2.97E-06	5.31E-04	2.97E-05	2.97E-04	5.61E-04
	Total			4.44E-04	4.84E-04	0.00E+00	2.69E-03		2.70E-03	9.28E-06	2.78E-03	9.28E-05	9.28E-04	2.87E-03
XXB	U-234+D	2.54E+01	1.21E+04	7.64E-07	1.92E-04	0.00E+00	1.18E-03		1.18E-03	1.93E-06	1.20E-03	1.93E-05	1.93E-04	1.22E-03
	U-235	8.40E-01	1.21E+04	9.68E-05	5.89E-06	0.00E+00	4.12E-05		4.23E-05	1.03E-06	5.15E-05	1.03E-05	1.03E-04	6.18E-05
	U-238+D	4.36E+00	1.21E+04	1.09E-04	2.93E-05	0.00E+00	2.80E-04		2.81E-04	1.39E-06	2.93E-04	1.39E-05	1.39E-04	3.07E-04
	Total			2.07E-04	2.27E-04	0.00E+00	1.50E-03		1.51E-03	4.34E-06	1.55E-03	4.34E-05	4.34E-04	1.59E-03
XXC	U-234+D	2.54E+01	1.07E+03	5.63E-07	1.27E-04	0.00E+00	1.09E-03		1.09E-03	1.27E-06	1.10E-03	1.27E-05	1.27E-04	1.11E-03
	U-235	8.40E-01	1.07E+03	6.39E-05	3.89E-06	0.00E+00	3.79E-05		3.85E-05	6.78E-07	4.46E-05	6.78E-06	6.78E-05	5.14E-05
	U-238+D	4.36E+00	1.07E+03	7.23E-05	1.94E-05	0.00E+00	2.57E-04		2.58E-04	9.16E-07	2.66E-04	9.16E-06	9.16E-05	2.75E-04
	Total			1.37E-04	1.50E-04	0.00E+00	1.38E-03		1.38E-03	2.87E-06	1.41E-03	2.87E-05	2.87E-04	1.44E-03

Table N-25. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 100 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	2.23E-03	7.47E-07	0.00E+00	1.61E-04		1.83E-04	2.23E-05	3.83E-04	2.23E-04	2.23E-03	2.23E-03
	Th-228	1.83E+01	2.10E+07	1.41E-03	2.67E-05	0.00E+00	2.52E-06		1.69E-05	1.43E-05	1.46E-04	1.43E-04	1.43E-03	1.43E-03
	Th-232+D	1.83E+01	2.10E+07	6.97E-02	1.05E-03	0.00E+00	1.87E-03		2.57E-03	7.07E-04	8.94E-03	7.07E-03	7.07E-02	7.07E-02
	Total			7.33E-02	1.08E-03	0.00E+00	2.03E-03		2.77E-03	7.44E-04	9.47E-03	7.44E-03	7.44E-02	7.44E-02
XXIB	Ra-228	1.83E+01	6.84E+04	2.21E-03	7.42E-07	0.00E+00	1.60E-04		1.83E-04	2.21E-05	3.82E-04	2.21E-04	2.21E-03	2.21E-03
	Th-228	1.83E+01	2.99E+06	1.41E-03	2.67E-05	0.00E+00	2.52E-06		1.69E-05	1.43E-05	1.46E-04	1.43E-04	1.43E-03	1.43E-03
	Th-232+D	1.83E+01	2.99E+06	6.92E-02	1.04E-03	0.00E+00	1.87E-03		2.57E-03	7.02E-04	8.89E-03	7.02E-03	7.02E-02	7.02E-02
	Total			7.28E-02	1.07E-03	0.00E+00	2.03E-03		2.77E-03	7.39E-04	9.41E-03	7.39E-03	7.39E-02	7.39E-02
XXIC	Ra-228	1.83E+01	6.03E+03	2.18E-03	7.31E-07	0.00E+00	1.60E-04		1.82E-04	2.18E-05	3.78E-04	2.18E-04	2.18E-03	2.18E-03
	Th-228	1.83E+01	2.63E+05	1.41E-03	2.67E-05	0.00E+00	2.52E-06		1.69E-05	1.43E-05	1.46E-04	1.43E-04	1.43E-03	1.43E-03
	Th-232+D	1.83E+01	2.63E+05	6.81E-02	1.03E-03	0.00E+00	1.86E-03		2.55E-03	6.91E-04	8.77E-03	6.91E-03	6.91E-02	6.91E-02
	Total			7.17E-02	1.06E-03	0.00E+00	2.02E-03		2.75E-03	7.27E-04	9.29E-03	7.27E-03	7.27E-02	7.27E-02
XXII	U-234	1.71E+01	1.40E+02	4.10E-06	7.30E-04	0.00E+00	1.46E-02		1.46E-02	7.34E-06	1.46E-02	7.34E-05	7.34E-04	1.03E-03
	U-235	8.01E-01	1.40E+02	5.23E-04	3.19E-05	0.00E+00	7.22E-04		7.28E-04	5.55E-06	7.78E-04	5.55E-05	5.55E-04	7.77E-04
	U-238+D	1.71E+01	1.40E+02	2.43E-03	6.51E-04	0.00E+00	2.01E-02		2.01E-02	3.08E-05	2.04E-02	3.08E-04	3.08E-03	4.31E-03
	Ra-226+D	3.16E+00	1.99E+03	2.13E-01	2.35E-04	0.00E+00	2.83E-01		2.85E-01	2.13E-03	3.04E-01	2.13E-02	2.13E-01	2.99E-01
	Ra-228	1.92E+01	1.99E+03	6.12E-02	2.05E-05	0.00E+00	4.50E-03		5.11E-03	6.12E-04	1.06E-02	6.12E-03	6.12E-02	8.57E-02
	Th-228	1.92E+01	1.27E+04	3.95E-02	7.50E-04	0.00E+00	7.09E-05		4.73E-04	4.02E-04	4.09E-03	4.02E-03	4.02E-02	5.63E-02
	Th-232	1.92E+01	1.27E+04	1.87E+00	2.83E-02	0.00E+00	5.21E-02		7.11E-02	1.90E-02	2.42E-01	1.90E-01	1.90E+00	2.66E+00
Total			2.19E+00	3.07E-02	0.00E+00	3.75E-01		3.97E-01	2.22E-02	5.97E-01	2.22E-01	2.22E+00	3.11E+00	

(a) Based on 1,000 people/km²

(b) Based on 10 people/km²

(c) Based on 100 people/km²

(d) Based on site specific data

Table N-26. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	5.65E+00	8.90E-05	0.00E+00	1.99E-01		2.56E-01	5.65E-02	7.64E-01	5.65E-01	5.65E+00	7.64E-01
	Total			5.65E+00	8.90E-05	0.00E+00	1.99E-01		2.56E-01	5.65E-02	7.64E-01	5.65E-01	5.65E+00	7.64E-01
II-1	Ra-226+D	5.43E+01	4.65E+05	3.57E+02	3.96E-01	0.00E+00	2.44E+02		2.47E+02	3.58E+00	2.79E+02	3.58E+01	3.58E+02	3.58E+02
	Ra-228	2.69E+00	4.65E+05	9.41E-02	3.17E-05	0.00E+00	3.77E-03		4.71E-03	9.41E-04	1.32E-02	9.41E-03	9.41E-02	9.41E-02
	Th-228	2.69E+00	2.96E+05	5.85E-02	1.13E-03	0.00E+00	5.92E-05		6.55E-04	5.96E-04	6.02E-03	5.96E-03	5.96E-02	5.96E-02
	Th-230	5.40E+01	2.96E+05	7.81E+01	1.34E+00	0.00E+00	5.25E+01		5.33E+01	7.94E-01	6.04E+01	7.94E+00	7.94E+01	7.94E+01
	Th-232+D	9.66E-01	2.96E+05	1.04E+01	1.57E-01	0.00E+00	1.67E-01		2.73E-01	1.06E-01	1.22E+00	1.06E+00	1.06E+01	1.06E+01
	U-234+D	7.07E+01	8.17E+04	2.72E-01	1.09E+00	0.00E+00	5.09E+00		5.11E+00	1.36E-02	5.23E+00	1.36E-01	1.36E+00	1.36E+00
	U-235	1.14E+00	8.17E+04	2.68E-01	1.63E-02	0.00E+00	8.33E-02		8.62E-02	2.84E-03	1.12E-01	2.84E-02	2.84E-01	2.84E-01
	U-238+D	3.11E+01	8.17E+04	1.58E+00	4.25E-01	0.00E+00	2.96E+00		2.98E+00	2.01E-02	3.16E+00	2.01E-01	2.01E+00	2.01E+00
	Total			4.48E+02	3.43E+00	0.00E+00	3.04E+02		3.09E+02	4.52E+00	3.50E+02	4.52E+01	4.52E+02	4.52E+02
II-2	U-234+D	2.52E+02	8.60E+04	1.12E+00	1.09E+01	0.00E+00	5.09E+00		5.21E+00	1.20E-01	6.29E+00	1.20E+00	1.20E+01	1.20E+01
	U-235	4.08E+00	8.60E+04	1.82E+00	1.63E-01	0.00E+00	8.33E-02		1.03E-01	1.99E-02	2.82E-01	1.99E-01	1.99E+00	1.99E+00
	U-238+D	1.11E+02	8.60E+04	7.53E+00	4.25E+00	0.00E+00	2.96E+00		3.08E+00	1.18E-01	4.14E+00	1.18E+00	1.18E+01	1.18E+01
	Total			1.05E+01	1.53E+01	0.00E+00	8.14E+00		8.39E+00	2.58E-01	1.07E+01	2.58E+00	2.58E+01	2.58E+01
III	Cs-137	9.89E+00	2.00E+06	2.53E+00	3.99E-05	0.00E+00	8.35E-02		1.09E-01	2.53E-02	3.36E-01	2.53E-01	2.53E+00	3.36E-01
	Total			2.53E+00	3.99E-05	0.00E+00	8.35E-02		1.09E-01	2.53E-02	3.36E-01	2.53E-01	2.53E+00	3.36E-01
IV	U-234+D	3.24E+02	1.48E+04	9.68E-03	2.05E-01	0.00E+00	5.31E-01		5.33E-01	2.15E-03	5.52E-01	2.15E-02	2.15E-01	5.74E-01
	U-235	1.52E+01	1.48E+04	1.34E-01	8.92E-03	0.00E+00	2.55E-02		2.69E-02	1.43E-03	3.98E-02	1.43E-02	1.43E-01	5.41E-02
	U-238+D	3.24E+02	1.48E+04	5.10E-01	1.82E-01	0.00E+00	7.09E-01		7.16E-01	6.93E-03	7.78E-01	6.93E-02	6.93E-01	8.47E-01
	Total			6.54E-01	3.96E-01	0.00E+00	1.27E+00		1.28E+00	1.05E-02	1.37E+00	1.05E-01	1.05E+00	1.48E+00
V	Cs-137	1.07E+03	2.39E+04	1.55E+02	2.44E-03	0.00E+00	5.52E+00		7.07E+00	1.55E+00	2.10E+01	1.55E+01	1.55E+02	2.10E+01
	Total			1.55E+02	2.44E-03	0.00E+00	5.52E+00		7.07E+00	1.55E+00	2.10E+01	1.55E+01	1.55E+02	2.10E+01
VI	Cs-137	8.63E+01	2.07E+05	8.49E+00	1.30E-04	0.00E+00	2.82E-01		3.67E-01	8.49E-02	1.13E+00	8.49E-01	8.49E+00	2.83E+00
	U-234	1.22E+03	3.31E+04	3.36E+00	3.14E+01	0.00E+00	1.55E+01		1.59E+01	3.48E-01	1.90E+01	3.48E+00	3.48E+01	2.59E+01
	U-235	5.75E+01	3.31E+04	1.57E+01	1.37E+00	0.00E+00	7.39E-01		9.10E-01	1.70E-01	2.44E+00	1.70E+00	1.70E+01	5.85E+00
	U-238+D	1.22E+03	3.31E+04	5.10E+01	2.79E+01	0.00E+00	2.05E+01		2.13E+01	7.89E-01	2.84E+01	7.89E+00	7.89E+01	4.42E+01
	Total			7.85E+01	6.07E+01	0.00E+00	3.71E+01		3.84E+01	1.39E+00	5.10E+01	1.39E+01	1.39E+02	7.88E+01

Table N-26. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	4.95E-02	1.95E+02	0.00E+00	4.44E+00		6.39E+00	1.95E+00	2.40E+01	1.95E+01	1.95E+02	6.39E+00
	Cs-137	8.95E-01	8.42E+08	5.34E+00	7.48E-05	0.00E+00	1.84E-01		2.38E-01	5.34E-02	7.18E-01	5.34E-01	5.34E+00	2.38E-01
	Am-241	8.44E+00	5.71E+09	1.75E+00	2.17E+01	0.00E+00	2.15E+00		2.39E+00	2.34E-01	4.50E+00	2.34E+00	2.34E+01	2.39E+00
	Total			7.14E+00	2.17E+02	0.00E+00	6.77E+00		9.02E+00	2.24E+00	2.92E+01	2.24E+01	2.24E+02	9.02E+00
IX	Pu-239	9.47E+00	2.39E+05	8.98E-05	3.84E-01	0.00E+00	7.51E-03		1.13E-02	3.84E-03	4.59E-02	3.84E-02	3.84E-01	8.43E-02
	Am-241	1.58E+00	2.67E+06	3.29E-03	4.37E-02	0.00E+00	3.66E-03		4.13E-03	4.70E-04	8.36E-03	4.70E-03	4.70E-02	1.31E-02
	Total			3.38E-03	4.27E-01	0.00E+00	1.12E-02		1.55E-02	4.31E-03	5.42E-02	4.31E-02	4.31E-01	9.73E-02
X	Tc-99	8.16E+03	6.21E+00	2.58E-09	1.39E-08	9.81E-01	3.38E-02		1.01E+00	9.81E-01	1.01E+00	9.81E-01	9.81E-01	1.01E+00
	U-234+D	2.80E+02	5.76E+02	4.69E-05	2.37E-04	9.01E-01	9.20E-03		9.10E-01	9.01E-01	9.10E-01	9.01E-01	9.01E-01	9.10E-01
	U-238+D	2.80E+02	5.76E+02	7.84E-04	2.10E-04	1.20E+00	1.17E-02		1.21E+00	1.20E+00	1.21E+00	1.20E+00	1.20E+00	1.21E+00
	Total			8.30E-04	4.47E-04	3.08E+00	5.47E-02		3.14E+00	3.08E+00	3.14E+00	3.08E+00	3.08E+00	3.14E+00
XII	Pu-239	1.27E+03	1.25E+04	1.95E-05	6.07E-02	0.00E+00	6.28E-02		6.34E-02	6.08E-04	6.89E-02	6.08E-03	6.08E-02	6.08E-02
	Am-241	2.12E+02	4.33E+04	1.88E-03	1.88E-02	0.00E+00	3.91E-02		3.93E-02	2.07E-04	4.12E-02	2.07E-03	2.07E-02	2.07E-02
	Total			1.90E-03	7.96E-02	0.00E+00	1.02E-01		1.03E-01	8.15E-04	1.10E-01	8.15E-03	8.15E-02	8.15E-02
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XVIA	Co-60	3.63E+01	4.29E+05	4.98E-03	4.35E-08	0.00E+00	8.58E-06		5.84E-05	4.98E-05	5.07E-04	4.98E-04	4.98E-03	1.01E-03
	Cs-137+D	2.89E+01	8.59E+05	5.08E-03	4.50E-08	0.00E+00	2.83E-04		3.34E-04	5.08E-05	7.92E-04	5.08E-04	5.08E-03	1.30E-03
	Total			1.01E-02	8.85E-08	0.00E+00	2.92E-04		3.92E-04	1.01E-04	1.30E-03	1.01E-03	1.01E-02	2.31E-03
XVIB	Co-60	3.63E+01	6.09E+04	4.95E-03	4.32E-08	0.00E+00	8.57E-06		5.80E-05	4.95E-05	5.03E-04	4.95E-04	4.95E-03	9.98E-04
	Cs-137+D	2.89E+01	1.22E+05	4.98E-03	4.41E-08	0.00E+00	2.82E-04		3.32E-04	4.98E-05	7.80E-04	4.98E-04	4.98E-03	1.28E-03
	Total			9.93E-03	8.73E-08	0.00E+00	2.91E-04		3.90E-04	9.93E-05	1.28E-03	9.93E-04	9.93E-03	2.28E-03

Table N-26. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	4.87E-03	4.26E-08	0.00E+00	8.55E-06		5.72E-05	4.87E-05	4.95E-04	4.87E-04	4.87E-03	9.82E-04
	Cs-137+D	2.89E+01	1.07E+04	4.77E-03	4.22E-08	0.00E+00	2.80E-04		3.28E-04	4.77E-05	7.57E-04	4.77E-04	4.77E-03	1.23E-03
	Total			9.64E-03	8.47E-08	0.00E+00	2.89E-04		3.85E-04	9.64E-05	1.25E-03	9.64E-04	9.64E-03	2.22E-03
XVIII A	Cs-137+D	3.54E+02	8.59E+05	2.94E-02	2.60E-07	0.00E+00	1.63E-03		1.93E-03	2.94E-04	4.57E-03	2.94E-03	2.94E-02	2.94E-02
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	7.90E-07	0.00E+00	2.47E-02		2.47E-02	7.90E-09	2.47E-02	7.90E-08	7.90E-07	7.90E-07
	Total			2.94E-02	1.05E-06	0.00E+00	2.63E-02		2.66E-02	2.94E-04	2.92E-02	2.94E-03	2.94E-02	2.94E-02
XVIII B	Cs-137+D	3.54E+02	1.22E+05	2.88E-02	2.54E-07	0.00E+00	1.63E-03		1.92E-03	2.88E-04	4.51E-03	2.88E-03	2.88E-02	2.88E-02
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	5.20E-07	0.00E+00	2.19E-02		2.19E-02	5.20E-09	2.19E-02	5.20E-08	5.20E-07	5.20E-07
	Total			2.88E-02	7.74E-07	0.00E+00	2.35E-02		2.38E-02	2.88E-04	2.64E-02	2.88E-03	2.88E-02	2.88E-02
XVIII C	Cs-137+D	3.54E+02	3.22E+04	2.75E-02	2.44E-07	0.00E+00	1.62E-03		1.89E-03	2.75E-04	4.37E-03	2.75E-03	2.75E-02	2.75E-02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	2.95E-07	5.37E-10	1.75E-02		1.75E-02	3.49E-09	1.75E-02	3.01E-08	2.96E-07	2.96E-07
	Total			2.75E-02	5.39E-07	5.37E-10	1.91E-02		1.94E-02	2.75E-04	2.19E-02	2.75E-03	2.75E-02	2.75E-02
XXA	U-234+D	4.37E+01	8.57E+04	4.67E-04	1.34E-03	0.00E+00	1.72E-02		1.72E-02	1.80E-05	1.74E-02	1.80E-04	1.80E-03	1.75E-02
	U-235	1.46E+00	8.57E+04	6.76E-04	4.11E-05	0.00E+00	5.78E-04		5.85E-04	7.17E-06	6.49E-04	7.17E-05	7.17E-04	7.21E-04
	U-238+D	7.51E+00	8.57E+04	7.60E-04	2.04E-04	0.00E+00	3.89E-03		3.90E-03	9.64E-06	3.99E-03	9.64E-05	9.64E-04	4.09E-03
	Total			1.90E-03	1.58E-03	0.00E+00	2.17E-02		2.17E-02	3.49E-05	2.20E-02	3.49E-04	3.49E-03	2.24E-02
XXB	U-234+D	2.54E+01	1.21E+04	1.23E-04	3.42E-04	0.00E+00	7.21E-03		7.21E-03	4.65E-06	7.26E-03	4.65E-05	4.65E-04	7.30E-03
	U-235	8.40E-01	1.21E+04	1.71E-04	1.04E-05	0.00E+00	2.39E-04		2.40E-04	1.81E-06	2.57E-04	1.81E-05	1.81E-04	2.75E-04
	U-238+D	4.36E+00	1.21E+04	1.93E-04	5.18E-05	0.00E+00	1.62E-03		1.62E-03	2.45E-06	1.64E-03	2.45E-05	2.45E-04	1.67E-03
	Total			4.87E-04	4.04E-04	0.00E+00	9.07E-03		9.08E-03	8.92E-06	9.16E-03	8.92E-05	8.92E-04	9.24E-03
XXC	U-234+D	2.54E+01	1.07E+03	4.04E-05	1.50E-04	0.00E+00	4.08E-03		4.08E-03	1.91E-06	4.10E-03	1.91E-05	1.91E-04	4.12E-03
	U-235	8.40E-01	1.07E+03	7.51E-05	4.57E-06	0.00E+00	1.34E-04		1.34E-04	7.97E-07	1.42E-04	7.97E-06	7.97E-05	1.50E-04
	U-238+D	4.36E+00	1.07E+03	8.50E-05	2.28E-05	0.00E+00	9.06E-04		9.07E-04	1.08E-06	9.17E-04	1.08E-05	1.08E-04	9.28E-04
	Total			2.00E-04	1.78E-04	0.00E+00	5.12E-03		5.12E-03	3.78E-06	5.16E-03	3.78E-05	3.78E-04	5.19E-03

Table N-26. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	2.23E-03	7.47E-07	0.00E+00	1.61E-04		1.83E-04	2.23E-05	3.83E-04	2.23E-04	2.23E-03	2.23E-03
	Th-228	1.83E+01	2.10E+07	1.41E-03	2.67E-05	0.00E+00	2.52E-06		1.69E-05	1.43E-05	1.46E-04	1.43E-04	1.43E-03	1.43E-03
	Th-232+D	1.83E+01	2.10E+07	7.62E-01	1.14E-02	0.00E+00	2.02E-02		2.79E-02	7.73E-03	9.75E-02	7.73E-02	7.73E-01	7.73E-01
	Total			7.66E-01	1.14E-02	0.00E+00	2.04E-02		2.81E-02	7.77E-03	9.81E-02	7.77E-02	7.77E-01	7.77E-01
XXIB	Ra-228	1.83E+01	6.84E+04	2.21E-03	7.42E-07	0.00E+00	1.60E-04		1.83E-04	2.21E-05	3.82E-04	2.21E-04	2.21E-03	2.21E-03
	Th-228	1.83E+01	2.99E+06	1.41E-03	2.67E-05	0.00E+00	2.52E-06		1.69E-05	1.43E-05	1.46E-04	1.43E-04	1.43E-03	1.43E-03
	Th-232+D	1.83E+01	2.99E+06	7.50E-01	1.12E-02	0.00E+00	2.01E-02		2.77E-02	7.61E-03	9.62E-02	7.61E-02	7.61E-01	7.61E-01
	Total			7.53E-01	1.12E-02	0.00E+00	2.03E-02		2.79E-02	7.64E-03	9.67E-02	7.64E-02	7.64E-01	7.64E-01
XXIC	Ra-228	1.83E+01	6.03E+03	2.18E-03	7.31E-07	0.00E+00	1.60E-04		1.82E-04	2.18E-05	3.78E-04	2.18E-04	2.18E-03	2.18E-03
	Th-228	1.83E+01	2.63E+05	1.41E-03	2.67E-05	0.00E+00	2.52E-06		1.69E-05	1.43E-05	1.46E-04	1.43E-04	1.43E-03	1.43E-03
	Th-232+D	1.83E+01	2.63E+05	7.23E-01	1.08E-02	0.00E+00	2.00E-02		2.73E-02	7.33E-03	9.34E-02	7.33E-02	7.33E-01	7.33E-01
	Total			7.26E-01	1.09E-02	0.00E+00	2.02E-02		2.75E-02	7.37E-03	9.39E-02	7.37E-02	7.37E-01	7.37E-01
XXII	U-234	1.71E+01	1.40E+02	1.76E-04	7.42E-04	2.67E+00	2.88E-02		2.70E+00	2.67E+00	2.70E+00	2.67E+00	2.67E+00	2.67E+00
	U-235	8.01E-01	1.40E+02	5.28E-04	3.21E-05	1.31E-01	1.32E-03		1.32E-01	1.31E-01	1.32E-01	1.31E-01	1.31E-01	1.31E-01
	U-238+D	1.71E+01	1.40E+02	2.45E-03	6.56E-04	3.63E+00	3.66E-02		3.67E+00	3.63E+00	3.67E+00	3.63E+00	3.64E+00	3.64E+00
	Ra-226+D	3.16E+00	1.99E+03	6.61E-01	7.28E-04	0.00E+00	1.88E+00		1.89E+00	6.61E-03	1.95E+00	6.61E-02	6.61E-01	9.26E-01
	Ra-228	1.92E+01	1.99E+03	6.12E-02	2.05E-05	0.00E+00	4.50E-03		5.11E-03	6.12E-04	1.06E-02	6.12E-03	6.12E-02	8.57E-02
	Th-228	1.92E+01	1.27E+04	3.95E-02	7.50E-04	0.00E+00	7.09E-05		4.73E-04	4.02E-04	4.09E-03	4.02E-03	4.02E-02	5.63E-02
	Th-232	1.92E+01	1.27E+04	1.64E+01	2.46E-01	0.00E+00	5.42E-01		7.09E-01	1.67E-01	2.21E+00	1.67E+00	1.67E+01	2.34E+01
Total			1.72E+01	2.49E-01	6.43E+00	2.50E+00		9.10E+00	6.60E+00	1.07E+01	8.18E+00	2.39E+01	3.09E+01	

(a) Based on 1,000 people/km²

(b) Based on 10 people/km²

(c) Based on 100 people/km²

(d) Based on site specific data

Table N-27. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	5.65E+00	8.90E-05	0.00E+00	1.99E-01		2.56E-01	5.65E-02	7.64E-01	5.65E-01	5.65E+00	7.64E-01
	Total			5.65E+00	8.90E-05	0.00E+00	1.99E-01		2.56E-01	5.65E-02	7.64E-01	5.65E-01	5.65E+00	7.64E-01
II-1	Ra-226+D	5.43E+01	4.65E+05	8.21E+02	9.09E-01	0.00E+00	6.58E+02		6.67E+02	8.21E+00	7.41E+02	8.21E+01	8.21E+02	8.21E+02
	Ra-228	2.69E+00	4.65E+05	9.41E-02	3.17E-05	0.00E+00	3.77E-03		4.71E-03	9.41E-04	1.32E-02	9.41E-03	9.41E-02	9.41E-02
	Th-228	2.69E+00	2.96E+05	5.85E-02	1.13E-03	0.00E+00	5.92E-05		6.55E-04	5.96E-04	6.02E-03	5.96E-03	5.96E-02	5.96E-02
	Th-230	5.40E+01	2.96E+05	1.31E+03	7.07E+00	0.00E+00	1.85E+03		1.86E+03	1.32E+01	1.98E+03	1.32E+02	1.32E+03	1.32E+03
	Th-232+D	9.66E-01	2.96E+05	4.81E+01	7.26E-01	0.00E+00	1.44E+00		1.93E+00	4.88E-01	6.32E+00	4.88E+00	4.88E+01	4.88E+01
	U-234+D	7.07E+01	8.17E+04	1.83E+01	2.10E+00	0.00E+00	9.76E+01		9.78E+01	2.04E-01	9.97E+01	2.04E+00	2.04E+01	2.04E+01
	U-235	1.14E+00	8.17E+04	4.96E-01	3.02E-02	0.00E+00	4.99E-01		5.04E-01	5.26E-03	5.51E-01	5.26E-02	5.26E-01	5.26E-01
	U-238+D	3.11E+01	8.17E+04	2.93E+00	7.88E-01	0.00E+00	1.77E+01		1.78E+01	3.72E-02	1.81E+01	3.72E-01	3.72E+00	3.72E+00
	Total			2.20E+03	1.16E+01	0.00E+00	2.63E+03		2.65E+03	2.22E+01	2.85E+03	2.22E+02	2.22E+03	2.22E+03
II-2	U-234+D	2.52E+02	8.60E+04	7.56E+01	2.10E+01	0.00E+00	9.76E+01		9.86E+01	9.67E-01	1.07E+02	9.67E+00	9.67E+01	9.67E+01
	U-235	4.08E+00	8.60E+04	3.38E+00	3.02E-01	0.00E+00	4.99E-01		5.36E-01	3.68E-02	8.67E-01	3.68E-01	3.68E+00	3.68E+00
	U-238+D	1.11E+02	8.60E+04	1.40E+01	7.88E+00	0.00E+00	1.77E+01		1.79E+01	2.18E-01	1.99E+01	2.18E+00	2.18E+01	2.18E+01
	Total			9.30E+01	2.92E+01	0.00E+00	1.16E+02		1.17E+02	1.22E+00	1.28E+02	1.22E+01	1.22E+02	1.22E+02
III	Cs-137	9.89E+00	2.00E+06	2.53E+00	3.99E-05	0.00E+00	8.35E-02		1.09E-01	2.53E-02	3.36E-01	2.53E-01	2.53E+00	3.36E-01
	Total			2.53E+00	3.99E-05	0.00E+00	8.35E-02		1.09E-01	2.53E-02	3.36E-01	2.53E-01	2.53E+00	3.36E-01
IV	U-234+D	3.24E+02	1.48E+04	1.75E-02	2.07E-01	0.00E+00	1.38E+00		1.38E+00	2.25E-03	1.40E+00	2.25E-02	2.25E-01	1.42E+00
	U-235	1.52E+01	1.48E+04	1.35E-01	8.97E-03	0.00E+00	4.41E-02		4.55E-02	1.44E-03	5.85E-02	1.44E-02	1.44E-01	7.28E-02
	U-238+D	3.24E+02	1.48E+04	5.13E-01	1.83E-01	0.00E+00	1.23E+00		1.23E+00	6.97E-03	1.30E+00	6.97E-02	6.97E-01	1.37E+00
	Total			6.66E-01	3.99E-01	0.00E+00	2.65E+00		2.66E+00	1.06E-02	2.75E+00	1.06E-01	1.06E+00	2.86E+00
V	Cs-137	1.07E+03	2.39E+04	1.55E+02	2.44E-03	0.00E+00	5.52E+00		7.07E+00	1.55E+00	2.10E+01	1.55E+01	1.55E+02	2.10E+01
	Total			1.55E+02	2.44E-03	0.00E+00	5.52E+00		7.07E+00	1.55E+00	2.10E+01	1.55E+01	1.55E+02	2.10E+01
VI	Cs-137	8.63E+01	2.07E+05	8.49E+00	1.30E-04	0.00E+00	2.82E-01		3.67E-01	8.49E-02	1.13E+00	8.49E-01	8.49E+00	2.83E+00
	U-234	1.22E+03	3.31E+04	2.14E+02	5.91E+01	0.00E+00	2.93E+02		2.95E+02	2.73E+00	3.20E+02	2.73E+01	2.73E+02	3.75E+02
	U-235	5.75E+01	3.31E+04	2.83E+01	2.48E+00	0.00E+00	4.35E+00		4.66E+00	3.08E-01	7.43E+00	3.08E+00	3.08E+01	1.36E+01
	U-238+D	1.22E+03	3.31E+04	9.22E+01	5.04E+01	0.00E+00	1.21E+02		1.22E+02	1.43E+00	1.35E+02	1.43E+01	1.43E+02	1.63E+02
	Total			3.43E+02	1.12E+02	0.00E+00	4.18E+02		4.23E+02	4.55E+00	4.64E+02	4.55E+01	4.55E+02	5.55E+02

Table N-27. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	4.35E-01	1.72E+03	0.00E+00	3.91E+01		5.63E+01	1.72E+01	2.11E+02	1.72E+02	1.72E+03	5.63E+01
	Cs-137	8.95E-01	8.42E+08	5.34E+00	7.48E-05	0.00E+00	1.84E-01		2.38E-01	5.34E-02	7.18E-01	5.34E-01	5.34E+00	2.38E-01
	Am-241	8.44E+00	5.71E+09	2.20E+00	2.72E+01	0.00E+00	2.70E+00		2.99E+00	2.93E-01	5.63E+00	2.93E+00	2.93E+01	2.99E+00
	Total			7.97E+00	1.75E+03	0.00E+00	4.20E+01		5.95E+01	1.76E+01	2.17E+02	1.76E+02	1.76E+03	5.95E+01
IX	Pu-239	9.47E+00	2.39E+05	6.16E-04	2.63E+00	0.00E+00	6.34E-02		8.97E-02	2.63E-02	3.27E-01	2.63E-01	2.63E+00	5.90E-01
	Am-241	1.58E+00	2.67E+06	4.11E-03	5.47E-02	0.00E+00	4.59E-03		5.17E-03	5.88E-04	1.05E-02	5.88E-03	5.88E-02	1.64E-02
	Total			4.73E-03	2.69E+00	0.00E+00	6.80E-02		9.49E-02	2.69E-02	3.37E-01	2.69E-01	2.69E+00	6.06E-01
X	Tc-99	8.16E+03	6.21E+00	2.58E-09	1.39E-08	9.81E-01	3.38E-02		1.01E+00	9.81E-01	1.01E+00	9.81E-01	9.81E-01	1.01E+00
	U-234+D	2.80E+02	5.76E+02	1.19E-04	2.39E-04	1.04E+00	2.08E-02		1.06E+00	1.04E+00	1.06E+00	1.04E+00	1.04E+00	1.06E+00
	U-238+D	2.80E+02	5.76E+02	7.84E-04	2.10E-04	1.38E+00	1.17E-02		1.39E+00	1.38E+00	1.39E+00	1.38E+00	1.38E+00	1.39E+00
	Total			9.03E-04	4.49E-04	3.40E+00	6.63E-02		3.47E+00	3.40E+00	3.47E+00	3.40E+00	3.40E+00	3.47E+00
XII	Pu-239	1.27E+03	1.25E+04	1.98E-05	6.17E-02	0.00E+00	1.23E-01		1.23E-01	6.17E-04	1.29E-01	6.17E-03	6.17E-02	6.17E-02
	Am-241	2.12E+02	4.33E+04	2.00E-03	2.01E-02	0.00E+00	4.69E-02		4.71E-02	2.21E-04	4.91E-02	2.21E-03	2.21E-02	2.21E-02
	Total			2.02E-03	8.18E-02	0.00E+00	1.70E-01		1.71E-01	8.38E-04	1.78E-01	8.38E-03	8.38E-02	8.38E-02
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total			0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
XVIA	Co-60	3.63E+01	4.29E+05	4.98E-03	4.35E-08	0.00E+00	8.58E-06		5.84E-05	4.98E-05	5.07E-04	4.98E-04	4.98E-03	1.01E-03
	Cs-137+D	2.89E+01	8.59E+05	5.08E-03	4.50E-08	0.00E+00	2.83E-04		3.34E-04	5.08E-05	7.92E-04	5.08E-04	5.08E-03	1.30E-03
	Total			1.01E-02	8.85E-08	0.00E+00	2.92E-04		3.92E-04	1.01E-04	1.30E-03	1.01E-03	1.01E-02	2.31E-03
XVIB	Co-60	3.63E+01	6.09E+04	4.95E-03	4.32E-08	0.00E+00	8.57E-06		5.80E-05	4.95E-05	5.03E-04	4.95E-04	4.95E-03	9.98E-04
	Cs-137+D	2.89E+01	1.22E+05	4.98E-03	4.41E-08	0.00E+00	2.82E-04		3.32E-04	4.98E-05	7.80E-04	4.98E-04	4.98E-03	1.28E-03
	Total			9.93E-03	8.73E-08	0.00E+00	2.91E-04		3.90E-04	9.93E-05	1.28E-03	9.93E-04	9.93E-03	2.28E-03

Table N-27. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	4.87E-03	4.26E-08	0.00E+00	8.55E-06		5.72E-05	4.87E-05	4.95E-04	4.87E-04	4.87E-03	9.82E-04
	Cs-137+D	2.89E+01	1.07E+04	4.77E-03	4.22E-08	0.00E+00	2.80E-04		3.28E-04	4.77E-05	7.57E-04	4.77E-04	4.77E-03	1.23E-03
	Total			9.64E-03	8.47E-08	0.00E+00	2.89E-04		3.85E-04	9.64E-05	1.25E-03	9.64E-04	9.64E-03	2.22E-03
XVIII A	Cs-137+D	3.54E+02	8.59E+05	2.94E-02	2.60E-07	0.00E+00	1.63E-03		1.93E-03	2.94E-04	4.57E-03	2.94E-03	2.94E-02	2.94E-02
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	7.90E-07	0.00E+00	2.47E-02		2.47E-02	7.90E-09	2.47E-02	7.90E-08	7.90E-07	7.90E-07
	Total			2.94E-02	1.05E-06	0.00E+00	2.63E-02		2.66E-02	2.94E-04	2.92E-02	2.94E-03	2.94E-02	2.94E-02
XVIII B	Cs-137+D	3.54E+02	1.22E+05	2.88E-02	2.54E-07	0.00E+00	1.63E-03		1.92E-03	2.88E-04	4.51E-03	2.88E-03	2.88E-02	2.88E-02
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	5.20E-07	2.88E-32	2.19E-02		2.19E-02	5.20E-09	2.19E-02	5.20E-08	5.20E-07	5.20E-07
	Total			2.88E-02	7.74E-07	2.88E-32	2.35E-02		2.38E-02	2.88E-04	2.64E-02	2.88E-03	2.88E-02	2.88E-02
XVIII C	Cs-137+D	3.54E+02	3.22E+04	2.75E-02	2.44E-07	0.00E+00	1.62E-03		1.89E-03	2.75E-04	4.37E-03	2.75E-03	2.75E-02	2.75E-02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	2.95E-07	5.37E-10	1.75E-02		1.75E-02	3.49E-09	1.75E-02	3.01E-08	2.96E-07	2.96E-07
	Total			2.75E-02	5.39E-07	5.37E-10	1.91E-02		1.94E-02	2.75E-04	2.19E-02	2.75E-03	2.75E-02	2.75E-02
XXA	U-234+D	4.37E+01	8.57E+04	1.56E-02	1.51E-03	0.00E+00	1.62E-01		1.62E-01	1.71E-04	1.64E-01	1.71E-03	1.71E-02	1.65E-01
	U-235	1.46E+00	8.57E+04	6.96E-04	4.24E-05	0.00E+00	1.29E-03		1.30E-03	7.38E-06	1.36E-03	7.38E-05	7.38E-04	1.44E-03
	U-238+D	7.51E+00	8.57E+04	7.82E-04	2.10E-04	0.00E+00	8.69E-03		8.70E-03	9.92E-06	8.79E-03	9.92E-05	9.92E-04	8.88E-03
	Total			1.71E-02	1.76E-03	0.00E+00	1.72E-01		1.72E-01	1.88E-04	1.74E-01	1.88E-03	1.88E-02	1.76E-01
XXB	U-234+D	2.54E+01	1.21E+04	2.09E-03	3.70E-04	0.00E+00	3.82E-02		3.83E-02	2.46E-05	3.85E-02	2.46E-04	2.46E-03	3.87E-02
	U-235	8.40E-01	1.21E+04	1.71E-04	1.04E-05	0.00E+00	3.18E-04		3.19E-04	1.82E-06	3.36E-04	1.82E-05	1.82E-04	3.54E-04
	U-238+D	4.36E+00	1.21E+04	1.93E-04	5.18E-05	0.00E+00	2.15E-03		2.16E-03	2.45E-06	2.18E-03	2.45E-05	2.45E-04	2.20E-03
	Total			2.46E-03	4.32E-04	0.00E+00	4.07E-02		4.07E-02	2.89E-05	4.10E-02	2.89E-04	2.89E-03	4.13E-02
XXC	U-234+D	2.54E+01	1.07E+03	3.95E-04	1.60E-04	8.22E-02	1.34E-02		9.56E-02	8.22E-02	9.57E-02	8.23E-02	8.28E-02	9.57E-02
	U-235	8.40E-01	1.07E+03	7.51E-05	4.57E-06	2.60E-03	1.40E-04		2.74E-03	2.60E-03	2.74E-03	2.61E-03	2.68E-03	2.75E-03
	U-238+D	4.36E+00	1.07E+03	8.50E-05	2.28E-05	1.76E-02	9.46E-04		1.86E-02	1.76E-02	1.86E-02	1.76E-02	1.77E-02	1.86E-02
	Total			5.55E-04	1.87E-04	1.02E-01	1.45E-02		1.17E-01	1.02E-01	1.17E-01	1.03E-01	1.03E-01	1.17E-01

Table N-27. POPULATION HEALTH IMPACTS (fatal cancers) AVERTED AT A 1E-4 CLEANUP GOAL
FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)												
				Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)	
XXIA	Ra-228	1.83E+01	4.82E+05	2.23E-03	7.47E-07	0.00E+00	1.61E-04			1.83E-04	2.23E-05	3.83E-04	2.23E-04	2.23E-03	2.23E-03
	Th-228	1.83E+01	2.10E+07	1.41E-03	2.67E-05	0.00E+00	2.52E-06			1.69E-05	1.43E-05	1.46E-04	1.43E-04	1.43E-03	1.43E-03
	Th-232+D	1.83E+01	2.10E+07	7.21E+00	1.08E-01	0.00E+00	2.01E-01			2.74E-01	7.32E-02	9.33E-01	7.32E-01	7.32E+00	7.32E+00
	Total			7.22E+00	1.08E-01	0.00E+00	2.01E-01			2.75E-01	7.32E-02	9.34E-01	7.32E-01	7.32E+00	7.32E+00
XXIB	Ra-228	1.83E+01	6.84E+04	2.21E-03	7.42E-07	0.00E+00	1.60E-04			1.83E-04	2.21E-05	3.82E-04	2.21E-04	2.21E-03	2.21E-03
	Th-228	1.83E+01	2.99E+06	1.41E-03	2.67E-05	0.00E+00	2.52E-06			1.69E-05	1.43E-05	1.46E-04	1.43E-04	1.43E-03	1.43E-03
	Th-232+D	1.83E+01	2.99E+06	6.52E+00	9.76E-02	0.00E+00	1.98E-01			2.64E-01	6.62E-02	8.60E-01	6.62E-01	6.62E+00	6.62E+00
	Total			6.53E+00	9.76E-02	0.00E+00	1.98E-01			2.64E-01	6.62E-02	8.60E-01	6.62E-01	6.62E+00	6.62E+00
XXIC	Ra-228	1.83E+01	6.03E+03	2.18E-03	7.31E-07	0.00E+00	1.60E-04			1.82E-04	2.18E-05	3.78E-04	2.18E-04	2.18E-03	2.18E-03
	Th-228	1.83E+01	2.63E+05	1.41E-03	2.67E-05	0.00E+00	2.52E-06			1.69E-05	1.43E-05	1.46E-04	1.43E-04	1.43E-03	1.43E-03
	Th-232+D	1.83E+01	2.63E+05	5.28E+00	7.91E-02	0.00E+00	1.90E-01			2.44E-01	5.36E-02	7.26E-01	5.36E-01	5.36E+00	5.36E+00
	Total			5.28E+00	7.92E-02	0.00E+00	1.91E-01			2.44E-01	5.36E-02	7.27E-01	5.36E-01	5.36E+00	5.36E+00
XXII	U-234	1.71E+01	1.40E+02	5.56E-04	7.51E-04	2.81E+00	7.35E-02			2.88E+00	2.81E+00	2.88E+00	2.81E+00	2.81E+00	2.81E+00
	U-235	8.01E-01	1.40E+02	5.28E-04	3.21E-05	1.37E-01	1.32E-03			1.38E-01	1.37E-01	1.38E-01	1.37E-01	1.37E-01	1.38E-01
	U-238+D	1.71E+01	1.40E+02	2.45E-03	6.56E-04	3.81E+00	3.66E-02			3.85E+00	3.81E+00	3.85E+00	3.81E+00	3.81E+00	3.81E+00
	Ra-226+D	3.16E+00	1.99E+03	6.76E-01	7.45E-04	2.77E+00	2.99E+00			5.77E+00	2.78E+00	5.83E+00	2.84E+00	3.45E+00	3.72E+00
	Ra-228	1.92E+01	1.99E+03	6.12E-02	2.05E-05	0.00E+00	4.50E-03			5.11E-03	6.12E-04	1.06E-02	6.12E-03	6.12E-02	8.57E-02
	Th-228	1.92E+01	1.27E+04	3.95E-02	7.50E-04	0.00E+00	7.09E-05			4.73E-04	4.02E-04	4.09E-03	4.02E-03	4.02E-02	5.63E-02
	Th-232	1.92E+01	1.27E+04	4.03E+01	6.05E-01	0.00E+00	3.80E+00			4.21E+00	4.09E-01	7.89E+00	4.09E+00	4.09E+01	5.73E+01
	Total			4.11E+01	6.08E-01	9.52E+00	6.91E+00			1.68E+01	9.94E+00	2.06E+01	1.37E+01	5.13E+01	6.79E+01

- (a) Based on 1,000 people/km²
- (b) Based on 10 people/km²
- (c) Based on 100 people/km²
- (d) Based on site specific data

Table N-28. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 100 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	1.50E-01	2.37E-06	0.00E+00	5.20E-03		6.70E-03	1.50E-03	2.02E-02	1.50E-02	1.50E-01	2.02E-02
	Total													
II-1	Ra-226+D	5.43E+01	4.65E+05	2.65E-01	2.93E-04	0.00E+00	1.72E-01		1.75E-01	2.65E-03	1.99E-01	2.65E-02	2.65E-01	2.65E-01
	Ra-228	2.69E+00	4.65E+05	1.10E-02	3.71E-06	0.00E+00	4.42E-04		5.52E-04	1.10E-04	1.55E-03	1.10E-03	1.10E-02	1.10E-02
	Th-228	2.69E+00	2.96E+05	6.86E-03	1.32E-04	0.00E+00	6.94E-06		7.68E-05	6.99E-05	7.06E-04	6.99E-04	6.99E-03	6.99E-03
	Th-230	5.40E+01	2.96E+05	5.75E-03	8.17E-04	0.00E+00	2.41E-03		2.48E-03	6.57E-05	3.07E-03	6.57E-04	6.57E-03	6.57E-03
	Th-232+D	9.66E-01	2.96E+05	3.39E-01	5.17E-03	0.00E+00	5.13E-03		8.57E-03	3.44E-03	3.96E-02	3.44E-02	3.44E-01	3.44E-01
	U-234+D	7.07E+01	8.17E+04	2.40E-06	6.69E-04	0.00E+00	2.31E-03		2.31E-03	6.72E-06	2.37E-03	6.72E-05	6.72E-04	6.72E-04
	U-235	1.14E+00	8.17E+04	1.02E-02	6.22E-04	0.00E+00	2.44E-03		2.55E-03	1.08E-04	3.52E-03	1.08E-03	1.08E-02	1.08E-02
	U-238+D	3.11E+01	8.17E+04	2.22E-03	5.97E-04	0.00E+00	3.19E-03		3.21E-03	2.82E-05	3.47E-03	2.82E-04	2.82E-03	2.82E-03
	Total													
II-2	U-234+D	2.52E+02	8.60E+04	1.19E-05	6.69E-03	0.00E+00	2.31E-03		2.37E-03	6.71E-05	2.98E-03	6.71E-04	6.71E-03	6.71E-03
	U-235	4.08E+00	8.60E+04	6.96E-02	6.22E-03	0.00E+00	2.44E-03		3.20E-03	7.58E-04	1.00E-02	7.58E-03	7.58E-02	7.58E-02
	U-238+D	1.11E+02	8.60E+04	1.06E-02	5.97E-03	0.00E+00	3.19E-03		3.35E-03	1.65E-04	4.84E-03	1.65E-03	1.65E-02	1.65E-02
	Total													
III	Cs-137	9.89E+00	2.00E+06	1.60E-01	2.52E-06	0.00E+00	5.26E-03		6.85E-03	1.60E-03	2.12E-02	1.60E-02	1.60E-01	2.12E-02
	Total													
IV	U-234+D	3.24E+02	1.48E+04	6.14E-06	2.51E-03	0.00E+00	2.23E-03		2.25E-03	2.52E-05	2.48E-03	2.52E-04	2.52E-03	2.73E-03
	U-235	1.52E+01	1.48E+04	3.51E-02	2.34E-03	0.00E+00	2.35E-03		2.73E-03	3.75E-04	6.10E-03	3.75E-03	3.75E-02	9.85E-03
	U-238+D	3.24E+02	1.48E+04	6.29E-03	2.24E-03	0.00E+00	3.07E-03		3.16E-03	8.53E-05	3.92E-03	8.53E-04	8.53E-03	4.78E-03
	Total													
V	Cs-137	1.07E+03	2.39E+04	1.49E-01	2.35E-06	0.00E+00	5.19E-03		6.68E-03	1.49E-03	2.01E-02	1.49E-02	1.49E-01	2.01E-02
	Total													
VI	Cs-137	8.63E+01	2.07E+05	1.58E-01	2.42E-06	0.00E+00	5.26E-03		6.85E-03	1.58E-03	2.11E-02	1.58E-02	1.58E-01	5.28E-02
	U-234	1.22E+03	3.31E+04	1.17E-05	6.40E-03	0.00E+00	2.31E-03		2.37E-03	6.41E-05	2.95E-03	6.41E-04	6.41E-03	4.23E-03
	U-235	5.75E+01	3.31E+04	6.81E-02	5.95E-03	0.00E+00	2.44E-03		3.18E-03	7.40E-04	9.84E-03	7.40E-03	7.40E-02	2.47E-02
	U-238+D	1.22E+03	3.31E+04	1.04E-02	5.71E-03	0.00E+00	3.18E-03		3.35E-03	1.61E-04	4.80E-03	1.61E-03	1.61E-02	8.02E-03
	Total													

Table N-28. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 100 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	2.82E-06	1.11E-02	0.00E+00	2.52E-04		3.64E-04	1.11E-04	1.37E-03	1.11E-03	1.11E-02	3.64E-04
	Cs-137	8.95E-01	8.42E+08	1.53E-01	2.14E-06	0.00E+00	5.26E-03		6.79E-03	1.53E-03	2.05E-02	1.53E-02	1.53E-01	6.79E-03
	Am-241	8.44E+00	5.71E+09	1.09E-03	1.35E-02	0.00E+00	1.34E-03		1.49E-03	1.46E-04	2.81E-03	1.46E-03	1.46E-02	1.49E-03
	Total													
IX	Pu-239	9.47E+00	2.39E+05	3.09E-06	1.32E-02	0.00E+00	2.52E-04		3.84E-04	1.32E-04	1.57E-03	1.32E-03	1.32E-02	2.89E-03
	Am-241	1.58E+00	2.67E+06	1.21E-03	1.61E-02	0.00E+00	1.34E-03		1.52E-03	1.73E-04	3.07E-03	1.73E-03	1.73E-02	4.80E-03
	Total													
X	Tc-99	8.16E+03	6.21E+00	1.21E-11	6.55E-11	4.61E-03	1.59E-04		4.76E-03	4.61E-03	4.76E-03	4.61E-03	4.61E-03	4.76E-03
	U-234+D	2.80E+02	5.76E+02	1.86E-07	3.21E-05	0.00E+00	7.27E-04		7.27E-04	3.23E-07	7.30E-04	3.23E-06	3.23E-05	7.30E-04
	U-238+D	2.80E+02	5.76E+02	1.07E-04	2.86E-05	0.00E+00	1.00E-03		1.00E-03	1.36E-06	1.02E-03	1.36E-05	1.36E-04	1.02E-03
	Total													
XII	Pu-239	1.27E+03	1.25E+04	1.88E-07	5.85E-04	0.00E+00	2.37E-04		2.43E-04	5.86E-06	2.96E-04	5.86E-05	5.86E-04	5.86E-04
	Am-241	2.12E+02	4.33E+04	8.18E-05	8.20E-04	0.00E+00	1.29E-03		1.30E-03	9.01E-06	1.38E-03	9.01E-05	9.01E-04	9.01E-04
	Total													
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XVIA	Co-60	3.63E+01	4.29E+05	8.18E-02	7.15E-07	0.00E+00	1.41E-04		9.59E-04	8.18E-04	8.32E-03	8.18E-03	8.18E-02	1.65E-02
	Cs-137+D	2.89E+01	8.59E+05	9.47E-02	8.37E-07	0.00E+00	5.25E-03		6.20E-03	9.47E-04	1.47E-02	9.47E-03	9.47E-02	2.42E-02
	Total													
XVIB	Co-60	3.63E+01	6.09E+04	8.12E-02	7.10E-07	0.00E+00	1.41E-04		9.53E-04	8.12E-04	8.26E-03	8.12E-03	8.12E-02	1.64E-02
	Cs-137+D	2.89E+01	1.22E+05	9.32E-02	8.24E-07	0.00E+00	5.24E-03		6.17E-03	9.32E-04	1.46E-02	9.32E-03	9.32E-02	2.39E-02
	Total													

Table N-28. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 100 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	8.00E-02	6.99E-07	0.00E+00	1.40E-04		9.40E-04	8.00E-04	8.14E-03	8.00E-03	8.00E-02	1.61E-02
	Cs-137+D	2.89E+01	1.07E+04	9.02E-02	7.97E-07	0.00E+00	5.21E-03		6.11E-03	9.02E-04	1.42E-02	9.02E-03	9.02E-02	2.32E-02
	Total													
XVIII A	Cs-137+D	3.54E+02	8.59E+05	9.47E-02	8.37E-07	0.00E+00	5.25E-03		6.20E-03	9.47E-04	1.47E-02	9.47E-03	9.47E-02	9.47E-02
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	2.76E-06	0.00E+00	8.19E-02		8.19E-02	2.76E-08	8.19E-02	2.76E-07	2.76E-06	2.76E-06
	Total													
XVIII B	Cs-137+D	3.54E+02	1.22E+05	9.32E-02	8.24E-07	0.00E+00	5.24E-03		6.17E-03	9.32E-04	1.46E-02	9.32E-03	9.32E-02	9.32E-02
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	1.85E-06	0.00E+00	7.43E-02		7.43E-02	1.85E-08	7.43E-02	1.85E-07	1.85E-06	1.85E-06
	Total													
XVIII C	Cs-137+D	3.54E+02	3.22E+04	9.02E-02	7.97E-07	0.00E+00	5.21E-03		6.11E-03	9.02E-04	1.42E-02	9.02E-03	9.02E-02	9.02E-02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	1.06E-06	0.00E+00	6.10E-02		6.10E-02	1.06E-08	6.10E-02	1.06E-07	1.06E-06	1.06E-06
	Total													
XXA	U-234+D	4.37E+01	8.57E+04	1.64E-06	4.37E-04	0.00E+00	2.26E-03		2.26E-03	4.39E-06	2.30E-03	4.39E-05	4.39E-04	2.34E-03
	U-235	1.46E+00	8.57E+04	6.67E-03	4.06E-04	0.00E+00	2.38E-03		2.45E-03	7.08E-05	3.09E-03	7.08E-04	7.08E-03	3.80E-03
	U-238+D	7.51E+00	8.57E+04	1.45E-03	3.90E-04	0.00E+00	3.11E-03		3.13E-03	1.84E-05	3.30E-03	1.84E-04	1.84E-03	3.48E-03
	Total													
XXB	U-234+D	2.54E+01	1.21E+04	1.40E-06	3.52E-04	0.00E+00	2.17E-03		2.17E-03	3.54E-06	2.20E-03	3.54E-05	3.54E-04	2.24E-03
	U-235	8.40E-01	1.21E+04	5.38E-03	3.27E-04	0.00E+00	2.29E-03		2.35E-03	5.71E-05	2.86E-03	5.71E-04	5.71E-03	3.43E-03
	U-238+D	4.36E+00	1.21E+04	1.17E-03	3.14E-04	0.00E+00	2.99E-03		3.01E-03	1.49E-05	3.14E-03	1.49E-04	1.49E-03	3.29E-03
	Total													
XXC	U-234+D	2.54E+01	1.07E+03	1.03E-06	2.32E-04	0.00E+00	1.99E-03		1.99E-03	2.33E-06	2.01E-03	2.33E-05	2.33E-04	2.04E-03
	U-235	8.40E-01	1.07E+03	3.55E-03	2.16E-04	0.00E+00	2.10E-03		2.14E-03	3.77E-05	2.48E-03	3.77E-04	3.77E-03	2.86E-03
	U-238+D	4.36E+00	1.07E+03	7.74E-04	2.07E-04	0.00E+00	2.75E-03		2.76E-03	9.81E-06	2.85E-03	9.81E-05	9.81E-04	2.94E-03
	Total													

Table N-28. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 100 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	2.21E-03	7.40E-07	0.00E+00	1.59E-04		1.81E-04	2.21E-05	3.80E-04	2.21E-04	2.21E-03	2.21E-03
	Th-228	1.83E+01	2.10E+07	1.39E-03	2.65E-05	0.00E+00	2.50E-06		1.67E-05	1.42E-05	1.44E-04	1.42E-04	1.42E-03	1.42E-03
	Th-232+D	1.83E+01	2.10E+07	6.90E-02	1.04E-03	0.00E+00	1.85E-03		2.55E-03	7.00E-04	8.85E-03	7.00E-03	7.00E-02	7.00E-02
	Total													
XXIB	Ra-228	1.83E+01	6.84E+04	2.19E-03	7.35E-07	0.00E+00	1.59E-04		1.81E-04	2.19E-05	3.78E-04	2.19E-04	2.19E-03	2.19E-03
	Th-228	1.83E+01	2.99E+06	1.39E-03	2.65E-05	0.00E+00	2.50E-06		1.67E-05	1.42E-05	1.44E-04	1.42E-04	1.42E-03	1.42E-03
	Th-232+D	1.83E+01	2.99E+06	6.85E-02	1.03E-03	0.00E+00	1.85E-03		2.54E-03	6.95E-04	8.80E-03	6.95E-03	6.95E-02	6.95E-02
	Total													
XXIC	Ra-228	1.83E+01	6.03E+03	2.16E-03	7.23E-07	0.00E+00	1.58E-04		1.80E-04	2.16E-05	3.74E-04	2.16E-04	2.16E-03	2.16E-03
	Th-228	1.83E+01	2.63E+05	1.39E-03	2.65E-05	0.00E+00	2.50E-06		1.67E-05	1.42E-05	1.44E-04	1.42E-04	1.42E-03	1.42E-03
	Th-232+D	1.83E+01	2.63E+05	6.74E-02	1.02E-03	0.00E+00	1.84E-03		2.53E-03	6.84E-04	8.68E-03	6.84E-03	6.84E-02	6.84E-02
	Total													
XXII	U-234	1.71E+01	1.40E+02	2.03E-07	3.61E-05	0.00E+00	7.21E-04		7.21E-04	3.64E-07	7.25E-04	3.64E-06	3.64E-05	5.09E-05
	U-235	8.01E-01	1.40E+02	5.52E-04	3.36E-05	0.00E+00	7.62E-04		7.67E-04	5.86E-06	8.20E-04	5.86E-05	5.86E-04	8.20E-04
	U-238+D	1.71E+01	1.40E+02	1.20E-04	3.22E-05	0.00E+00	9.95E-04		9.97E-04	1.53E-06	1.01E-03	1.53E-05	1.53E-04	2.14E-04
	Ra-226+D	3.16E+00	1.99E+03	5.70E-02	6.28E-05	0.00E+00	7.56E-02		7.61E-02	5.71E-04	8.13E-02	5.71E-03	5.71E-02	7.99E-02
	Ra-228	1.92E+01	1.99E+03	2.70E-03	9.04E-07	0.00E+00	1.98E-04		2.25E-04	2.70E-05	4.68E-04	2.70E-04	2.70E-03	3.78E-03
	Th-228	1.92E+01	1.27E+04	1.74E-03	3.30E-05	0.00E+00	3.12E-06		2.08E-05	1.77E-05	1.80E-04	1.77E-04	1.77E-03	2.48E-03
	Th-232	1.92E+01	1.27E+04	8.25E-02	1.25E-03	0.00E+00	2.29E-03		3.13E-03	8.38E-04	1.07E-02	8.38E-03	8.38E-02	1.17E-01
	Total													

- (a) Based on 1,000 people/km²
- (b) Based on 10 people/km²
- (c) Based on 100 people/km²
- (d) Based on site specific data

Table N-29. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	1.63E-01	2.57E-06	0.00E+00	5.76E-03		7.39E-03	1.63E-03	2.21E-02	1.63E-02	1.63E-01	2.21E-02
	Total													
II-1	Ra-226+D	5.43E+01	4.65E+05	2.08E+00	2.30E-03	0.00E+00	1.42E+00		1.44E+00	2.08E-02	1.62E+00	2.08E-01	2.08E+00	2.08E+00
	Ra-228	2.69E+00	4.65E+05	1.10E-02	3.71E-06	0.00E+00	4.42E-04		5.52E-04	1.10E-04	1.55E-03	1.10E-03	1.10E-02	1.10E-02
	Th-228	2.69E+00	2.96E+05	6.86E-03	1.32E-04	0.00E+00	6.94E-06		7.68E-05	6.99E-05	7.06E-04	6.99E-04	6.99E-03	6.99E-03
	Th-230	5.40E+01	2.96E+05	4.57E-01	7.85E-03	0.00E+00	3.07E-01		3.12E-01	4.64E-03	3.53E-01	4.64E-02	4.64E-01	4.64E-01
	Th-232+D	9.66E-01	2.96E+05	3.40E+00	5.13E-02	0.00E+00	5.47E-02		8.91E-02	3.45E-02	4.00E-01	3.45E-01	3.45E+00	3.45E+00
	U-234+D	7.07E+01	8.17E+04	1.21E-03	4.86E-03	0.00E+00	2.27E-02		2.28E-02	6.07E-05	2.33E-02	6.07E-04	6.07E-03	6.07E-03
	U-235	1.14E+00	8.17E+04	7.40E-02	4.50E-03	0.00E+00	2.30E-02		2.38E-02	7.85E-04	3.09E-02	7.85E-03	7.85E-02	7.85E-02
	U-238+D	3.11E+01	8.17E+04	1.61E-02	4.32E-03	0.00E+00	3.01E-02		3.03E-02	2.04E-04	3.21E-02	2.04E-03	2.04E-02	2.04E-02
	Total													
	II-2	U-234+D	2.52E+02	8.60E+04	5.02E-03	4.86E-02	0.00E+00	2.27E-02		2.33E-02	5.36E-04	2.81E-02	5.36E-03	5.36E-02
U-235		4.08E+00	8.60E+04	5.04E-01	4.50E-02	0.00E+00	2.30E-02		2.85E-02	5.49E-03	7.79E-02	5.49E-02	5.49E-01	5.49E-01
U-238+D		1.11E+02	8.60E+04	7.65E-02	4.32E-02	0.00E+00	3.01E-02		3.13E-02	1.20E-03	4.20E-02	1.20E-02	1.20E-01	1.20E-01
Total														
III	Cs-137	9.89E+00	2.00E+06	1.77E-01	2.79E-06	0.00E+00	5.84E-03		7.61E-03	1.77E-03	2.35E-02	1.77E-02	1.77E-01	2.35E-02
	Total													
IV	U-234+D	3.24E+02	1.48E+04	2.93E-04	6.22E-03	0.00E+00	1.61E-02		1.62E-02	6.51E-05	1.67E-02	6.51E-04	6.51E-03	1.74E-02
	U-235	1.52E+01	1.48E+04	8.65E-02	5.75E-03	0.00E+00	1.64E-02		1.74E-02	9.23E-04	2.57E-02	9.23E-03	9.23E-02	3.49E-02
	U-238+D	3.24E+02	1.48E+04	1.55E-02	5.52E-03	0.00E+00	2.15E-02		2.17E-02	2.10E-04	2.36E-02	2.10E-03	2.10E-02	2.57E-02
	Total													
V	Cs-137	1.07E+03	2.39E+04	1.62E-01	2.55E-06	0.00E+00	5.75E-03		7.36E-03	1.62E-03	2.19E-02	1.62E-02	1.62E-01	2.19E-02
	Total													
VI	Cs-137	8.63E+01	2.07E+05	1.76E-01	2.69E-06	0.00E+00	5.85E-03		7.61E-03	1.76E-03	2.34E-02	1.76E-02	1.76E-01	5.86E-02
	U-234	1.22E+03	3.31E+04	4.91E-03	4.59E-02	0.00E+00	2.27E-02		2.32E-02	5.08E-04	2.78E-02	5.08E-03	5.08E-02	3.79E-02
	U-235	5.75E+01	3.31E+04	4.87E-01	4.25E-02	0.00E+00	2.30E-02		2.83E-02	5.29E-03	7.59E-02	5.29E-02	5.29E-01	1.82E-01
	U-238+D	1.22E+03	3.31E+04	7.45E-02	4.08E-02	0.00E+00	3.00E-02		3.12E-02	1.15E-03	4.15E-02	1.15E-02	1.15E-01	6.46E-02
	Total													

Table N-29. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	2.78E-05	1.10E-01	0.00E+00	2.49E-03		3.59E-03	1.10E-03	1.35E-02	1.10E-02	1.10E-01	3.59E-03
	Cs-137	8.95E-01	8.42E+08	1.70E-01	2.37E-06	0.00E+00	5.85E-03		7.55E-03	1.70E-03	2.28E-02	1.70E-02	1.70E-01	7.55E-03
	Am-241	8.44E+00	5.71E+09	5.90E-03	7.30E-02	0.00E+00	7.25E-03		8.04E-03	7.89E-04	1.51E-02	7.89E-03	7.89E-02	8.04E-03
	Total													
IX	Pu-239	9.47E+00	2.39E+05	2.96E-05	1.27E-01	0.00E+00	2.48E-03		3.75E-03	1.27E-03	1.51E-02	1.27E-02	1.27E-01	2.78E-02
	Am-241	1.58E+00	2.67E+06	6.51E-03	8.66E-02	0.00E+00	7.25E-03		8.18E-03	9.31E-04	1.66E-02	9.31E-03	9.31E-02	2.59E-02
	Total													
X	Tc-99	8.16E+03	6.21E+00	1.21E-11	6.55E-11	4.61E-03	1.59E-04		4.76E-03	4.61E-03	4.76E-03	4.61E-03	4.61E-03	4.76E-03
	U-234+D	2.80E+02	5.76E+02	6.42E-06	3.24E-05	1.23E-01	1.26E-03		1.25E-01	1.23E-01	1.25E-01	1.23E-01	1.23E-01	1.25E-01
	U-238+D	2.80E+02	5.76E+02	1.07E-04	2.87E-05	1.64E-01	1.60E-03		1.66E-01	1.64E-01	1.66E-01	1.64E-01	1.64E-01	1.66E-01
	Total													
XII	Pu-239	1.27E+03	1.25E+04	5.45E-07	1.70E-03	0.00E+00	1.75E-03		1.77E-03	1.70E-05	1.92E-03	1.70E-04	1.70E-03	1.70E-03
	Am-241	2.12E+02	4.33E+04	3.15E-04	3.16E-03	0.00E+00	6.56E-03		6.59E-03	3.47E-05	6.90E-03	3.47E-04	3.47E-03	3.47E-03
	Total													
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XVIA	Co-60	3.63E+01	4.29E+05	8.18E-02	7.15E-07	0.00E+00	1.41E-04		9.59E-04	8.18E-04	8.32E-03	8.18E-03	8.18E-02	1.65E-02
	Cs-137+D	2.89E+01	8.59E+05	1.05E-01	9.27E-07	0.00E+00	5.84E-03		6.89E-03	1.05E-03	1.63E-02	1.05E-02	1.05E-01	2.68E-02
	Total													
XVIB	Co-60	3.63E+01	6.09E+04	8.12E-02	7.10E-07	0.00E+00	1.41E-04		9.53E-04	8.12E-04	8.26E-03	8.12E-03	8.12E-02	1.64E-02
	Cs-137+D	2.89E+01	1.22E+05	1.03E-01	9.09E-07	0.00E+00	5.82E-03		6.85E-03	1.03E-03	1.61E-02	1.03E-02	1.03E-01	2.64E-02
	Total													

Table N-29. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	8.00E-02	6.99E-07	0.00E+00	1.40E-04		9.40E-04	8.00E-04	8.14E-03	8.00E-03	8.00E-02	1.61E-02
	Cs-137+D	2.89E+01	1.07E+04	9.84E-02	8.70E-07	0.00E+00	5.77E-03		6.76E-03	9.84E-04	1.56E-02	9.84E-03	9.84E-02	2.54E-02
	Total													
XVIII A	Cs-137+D	3.54E+02	8.59E+05	1.05E-01	9.27E-07	0.00E+00	5.84E-03		6.89E-03	1.05E-03	1.63E-02	1.05E-02	1.05E-01	1.05E-01
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	2.82E-06	0.00E+00	8.81E-02		8.81E-02	2.82E-08	8.81E-02	2.82E-07	2.82E-06	2.82E-06
	Total													
XVIII B	Cs-137+D	3.54E+02	1.22E+05	1.03E-01	9.09E-07	0.00E+00	5.82E-03		6.85E-03	1.03E-03	1.61E-02	1.03E-02	1.03E-01	1.03E-01
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	1.86E-06	0.00E+00	7.82E-02		7.82E-02	1.86E-08	7.82E-02	1.86E-07	1.86E-06	1.86E-06
	Total													
XVIII C	Cs-137+D	3.54E+02	3.22E+04	9.84E-02	8.70E-07	0.00E+00	5.77E-03		6.76E-03	9.84E-04	1.56E-02	9.84E-03	9.84E-02	9.84E-02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	1.06E-06	1.92E-09	6.25E-02		6.25E-02	1.25E-08	6.25E-02	1.07E-07	1.06E-06	1.06E-06
	Total													
XXA	U-234+D	4.37E+01	8.57E+04	4.99E-04	1.43E-03	0.00E+00	1.84E-02		1.84E-02	1.93E-05	1.86E-02	1.93E-04	1.93E-03	1.87E-02
	U-235	1.46E+00	8.57E+04	2.17E-02	1.32E-03	0.00E+00	1.85E-02		1.87E-02	2.30E-04	2.08E-02	2.30E-03	2.30E-02	2.31E-02
	U-238+D	7.51E+00	8.57E+04	4.72E-03	1.26E-03	0.00E+00	2.42E-02		2.42E-02	5.99E-05	2.48E-02	5.99E-04	5.99E-03	2.54E-02
	Total													
XXB	U-234+D	2.54E+01	1.21E+04	2.26E-04	6.28E-04	0.00E+00	1.32E-02		1.32E-02	8.53E-06	1.33E-02	8.53E-05	8.53E-04	1.34E-02
	U-235	8.40E-01	1.21E+04	9.50E-03	5.78E-04	0.00E+00	1.33E-02		1.34E-02	1.01E-04	1.43E-02	1.01E-03	1.01E-02	1.53E-02
	U-238+D	4.36E+00	1.21E+04	2.07E-03	5.55E-04	0.00E+00	1.73E-02		1.73E-02	2.63E-05	1.76E-02	2.63E-04	2.63E-03	1.78E-02
	Total													
XXC	U-234+D	2.54E+01	1.07E+03	7.41E-05	2.76E-04	0.00E+00	7.49E-03		7.49E-03	3.50E-06	7.52E-03	3.50E-05	3.50E-04	7.56E-03
	U-235	8.40E-01	1.07E+03	4.17E-03	2.54E-04	0.00E+00	7.42E-03		7.47E-03	4.43E-05	7.87E-03	4.43E-04	4.43E-03	8.31E-03
	U-238+D	4.36E+00	1.07E+03	9.10E-04	2.44E-04	0.00E+00	9.70E-03		9.71E-03	1.15E-05	9.82E-03	1.15E-04	1.15E-03	9.93E-03
	Total													

Table N-29. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 1,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	2.21E-03	7.40E-07	0.00E+00	1.59E-04		1.81E-04	2.21E-05	3.80E-04	2.21E-04	2.21E-03	2.21E-03
	Th-228	1.83E+01	2.10E+07	1.39E-03	2.65E-05	0.00E+00	2.50E-06		1.67E-05	1.42E-05	1.44E-04	1.42E-04	1.42E-03	1.42E-03
	Th-232+D	1.83E+01	2.10E+07	7.55E-01	1.13E-02	0.00E+00	2.00E-02		2.76E-02	7.66E-03	9.66E-02	7.66E-02	7.66E-01	7.66E-01
	Total													
XXIB	Ra-228	1.83E+01	6.84E+04	2.19E-03	7.35E-07	0.00E+00	1.59E-04		1.81E-04	2.19E-05	3.78E-04	2.19E-04	2.19E-03	2.19E-03
	Th-228	1.83E+01	2.99E+06	1.39E-03	2.65E-05	0.00E+00	2.50E-06		1.67E-05	1.42E-05	1.44E-04	1.42E-04	1.42E-03	1.42E-03
	Th-232+D	1.83E+01	2.99E+06	7.42E-01	1.11E-02	0.00E+00	1.99E-02		2.75E-02	7.53E-03	9.53E-02	7.53E-02	7.53E-01	7.53E-01
	Total													
XXIC	Ra-228	1.83E+01	6.03E+03	2.16E-03	7.23E-07	0.00E+00	1.58E-04		1.80E-04	2.16E-05	3.74E-04	2.16E-04	2.16E-03	2.16E-03
	Th-228	1.83E+01	2.63E+05	1.39E-03	2.65E-05	0.00E+00	2.50E-06		1.67E-05	1.42E-05	1.44E-04	1.42E-04	1.42E-03	1.42E-03
	Th-232+D	1.83E+01	2.63E+05	7.15E-01	1.07E-02	0.00E+00	1.98E-02		2.71E-02	7.26E-03	9.24E-02	7.26E-02	7.26E-01	7.26E-01
	Total													
XXII	U-234	1.71E+01	1.40E+02	8.72E-06	3.67E-05	1.32E-01	1.42E-03		1.33E-01	1.32E-01	1.33E-01	1.32E-01	1.32E-01	1.32E-01
	U-235	8.01E-01	1.40E+02	5.57E-04	3.39E-05	1.38E-01	1.39E-03		1.39E-01	1.38E-01	1.39E-01	1.38E-01	1.38E-01	1.38E-01
	U-238+D	1.71E+01	1.40E+02	1.21E-04	3.25E-05	1.80E-01	1.81E-03		1.82E-01	1.80E-01	1.82E-01	1.80E-01	1.80E-01	1.80E-01
	Ra-226+D	3.16E+00	1.99E+03	1.77E-01	1.95E-04	0.00E+00	5.03E-01		5.05E-01	1.77E-03	5.21E-01	1.77E-02	1.77E-01	2.48E-01
	Ra-228	1.92E+01	1.99E+03	2.70E-03	9.04E-07	0.00E+00	1.98E-04		2.25E-04	2.70E-05	4.68E-04	2.70E-04	2.70E-03	3.78E-03
	Th-228	1.92E+01	1.27E+04	1.74E-03	3.30E-05	0.00E+00	3.12E-06		2.08E-05	1.77E-05	1.80E-04	1.77E-04	1.77E-03	2.48E-03
	Th-232	1.92E+01	1.27E+04	7.24E-01	1.09E-02	0.00E+00	2.39E-02		3.12E-02	7.35E-03	9.74E-02	7.35E-02	7.35E-01	1.03E+00
Total														

- (a) Based on 1,000 people/km²
- (b) Based on 10 people/km²
- (c) Based on 100 people/km²
- (d) Based on site specific data

Table N-30. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
I	Cs-137	1.91E+01	1.49E+05	1.63E-01	2.57E-06	0.00E+00	5.76E-03		7.39E-03	1.63E-03	2.21E-02	1.63E-02	1.63E-01	2.21E-02
	Total													
II-1	Ra-226+D	5.43E+01	4.65E+05	4.77E+00	5.28E-03	0.00E+00	3.83E+00		3.88E+00	4.78E-02	4.31E+00	4.78E-01	4.78E+00	4.78E+00
	Ra-228	2.69E+00	4.65E+05	1.10E-02	3.71E-06	0.00E+00	4.42E-04		5.52E-04	1.10E-04	1.55E-03	1.10E-03	1.10E-02	1.10E-02
	Th-228	2.69E+00	2.96E+05	6.86E-03	1.32E-04	0.00E+00	6.94E-06		7.68E-05	6.99E-05	7.06E-04	6.99E-04	6.99E-03	6.99E-03
	Th-230	5.40E+01	2.96E+05	7.68E+00	4.13E-02	0.00E+00	1.08E+01		1.09E+01	7.72E-02	1.16E+01	7.72E-01	7.72E+00	7.72E+00
	Th-232+D	9.66E-01	2.96E+05	1.57E+01	2.37E-01	0.00E+00	4.72E-01		6.31E-01	1.59E-01	2.07E+00	1.59E+00	1.59E+01	1.59E+01
	U-234+D	7.07E+01	8.17E+04	8.18E-02	9.39E-03	0.00E+00	4.36E-01		4.37E-01	9.12E-04	4.45E-01	9.12E-03	9.12E-02	9.12E-02
	U-235	1.14E+00	8.17E+04	1.37E-01	8.34E-03	0.00E+00	1.38E-01		1.39E-01	1.45E-03	1.52E-01	1.45E-02	1.45E-01	1.45E-01
	U-238+D	3.11E+01	8.17E+04	2.98E-02	8.00E-03	0.00E+00	1.80E-01		1.80E-01	3.78E-04	1.84E-01	3.78E-03	3.78E-02	3.78E-02
	Total													
II-2	U-234+D	2.52E+02	8.60E+04	3.38E-01	9.39E-02	0.00E+00	4.36E-01		4.40E-01	4.32E-03	4.79E-01	4.32E-02	4.32E-01	4.32E-01
	U-235	4.08E+00	8.60E+04	9.33E-01	8.34E-02	0.00E+00	1.38E-01		1.48E-01	1.02E-02	2.39E-01	1.02E-01	1.02E+00	1.02E+00
	U-238+D	1.11E+02	8.60E+04	1.42E-01	8.00E-02	0.00E+00	1.80E-01		1.82E-01	2.22E-03	2.02E-01	2.22E-02	2.22E-01	2.22E-01
	Total													
III	Cs-137	9.89E+00	2.00E+06	1.77E-01	2.79E-06	0.00E+00	5.84E-03		7.61E-03	1.77E-03	2.35E-02	1.77E-02	1.77E-01	2.35E-02
	Total													
IV	U-234+D	3.24E+02	1.48E+04	5.31E-04	6.28E-03	0.00E+00	4.17E-02		4.18E-02	6.81E-05	4.24E-02	6.81E-04	6.81E-03	4.31E-02
	U-235	1.52E+01	1.48E+04	8.70E-02	5.79E-03	0.00E+00	2.84E-02		2.94E-02	9.28E-04	3.77E-02	9.28E-03	9.28E-02	4.70E-02
	U-238+D	3.24E+02	1.48E+04	1.56E-02	5.55E-03	0.00E+00	3.72E-02		3.74E-02	2.11E-04	3.93E-02	2.11E-03	2.11E-02	4.14E-02
	Total													
V	Cs-137	1.07E+03	2.39E+04	1.62E-01	2.55E-06	0.00E+00	5.75E-03		7.36E-03	1.62E-03	2.19E-02	1.62E-02	1.62E-01	2.19E-02
	Total													
VI	Cs-137	8.63E+01	2.07E+05	1.76E-01	2.69E-06	0.00E+00	5.85E-03		7.61E-03	1.76E-03	2.34E-02	1.76E-02	1.76E-01	5.86E-02
	U-234	1.22E+03	3.31E+04	3.13E-01	8.64E-02	0.00E+00	4.28E-01		4.32E-01	4.00E-03	4.68E-01	4.00E-02	4.00E-01	5.48E-01
	U-235	5.75E+01	3.31E+04	8.80E-01	7.69E-02	0.00E+00	1.35E-01		1.45E-01	9.57E-03	2.31E-01	9.57E-02	9.57E-01	4.22E-01
	U-238+D	1.22E+03	3.31E+04	1.35E-01	7.37E-02	0.00E+00	1.76E-01		1.79E-01	2.08E-03	1.97E-01	2.08E-02	2.08E-01	2.39E-01
	Total													

Table N-30. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
VII	Pu-239	5.06E+01	1.65E+09	2.45E-04	9.66E-01	0.00E+00	2.20E-02		3.16E-02	9.67E-03	1.19E-01	9.67E-02	9.67E-01	3.16E-02
	Cs-137	8.95E-01	8.42E+08	1.70E-01	2.37E-06	0.00E+00	5.85E-03		7.55E-03	1.70E-03	2.28E-02	1.70E-02	1.70E-01	7.55E-03
	Am-241	8.44E+00	5.71E+09	7.40E-03	9.14E-02	0.00E+00	9.09E-03		1.01E-02	9.88E-04	1.90E-02	9.88E-03	9.88E-02	1.01E-02
	Total													
IX	Pu-239	9.47E+00	2.39E+05	2.03E-04	8.69E-01	0.00E+00	2.09E-02		2.96E-02	8.69E-03	1.08E-01	8.69E-02	8.69E-01	1.95E-01
	Am-241	1.58E+00	2.67E+06	8.15E-03	1.08E-01	0.00E+00	9.08E-03		1.02E-02	1.16E-03	2.07E-02	1.16E-02	1.16E-01	3.24E-02
	Total													
X	Tc-99	8.16E+03	6.21E+00	1.21E-11	6.55E-11	4.61E-03	1.59E-04		4.76E-03	4.61E-03	4.76E-03	4.61E-03	4.61E-03	4.76E-03
	U-234+D	2.80E+02	5.76E+02	1.63E-05	3.27E-05	1.42E-01	2.85E-03		1.45E-01	1.42E-01	1.45E-01	1.42E-01	1.42E-01	1.45E-01
	U-238+D	2.80E+02	5.76E+02	1.07E-04	2.87E-05	1.89E-01	1.60E-03		1.90E-01	1.89E-01	1.90E-01	1.89E-01	1.89E-01	1.90E-01
	Total													
XII	Pu-239	1.27E+03	1.25E+04	5.54E-07	1.72E-03	0.00E+00	3.43E-03		3.45E-03	1.72E-05	3.60E-03	1.72E-04	1.72E-03	1.72E-03
	Am-241	2.12E+02	4.33E+04	3.36E-04	3.36E-03	0.00E+00	7.85E-03		7.89E-03	3.70E-05	8.22E-03	3.70E-04	3.70E-03	3.70E-03
	Total													
XIIIA	U-234	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	8.57E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XIIIB	U-234	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.21E+04	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XIIIC	U-234	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-235	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	U-238+D	0.00E+00	1.07E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total													
XVIA	Co-60	3.63E+01	4.29E+05	8.18E-02	7.15E-07	0.00E+00	1.41E-04		9.59E-04	8.18E-04	8.32E-03	8.18E-03	8.18E-02	1.65E-02
	Cs-137+D	2.89E+01	8.59E+05	1.05E-01	9.27E-07	0.00E+00	5.84E-03		6.89E-03	1.05E-03	1.63E-02	1.05E-02	1.05E-01	2.68E-02
	Total													
XVIB	Co-60	3.63E+01	6.09E+04	8.12E-02	7.10E-07	0.00E+00	1.41E-04		9.53E-04	8.12E-04	8.26E-03	8.12E-03	8.12E-02	1.64E-02
	Cs-137+D	2.89E+01	1.22E+05	1.03E-01	9.09E-07	0.00E+00	5.82E-03		6.85E-03	1.03E-03	1.61E-02	1.03E-02	1.03E-01	2.64E-02
	Total													

Table N-30. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XVIC	Co-60	3.63E+01	5.37E+03	8.00E-02	6.99E-07	0.00E+00	1.40E-04		9.40E-04	8.00E-04	8.14E-03	8.00E-03	8.00E-02	1.61E-02
	Cs-137+D	2.89E+01	1.07E+04	9.84E-02	8.70E-07	0.00E+00	5.77E-03		6.76E-03	9.84E-04	1.56E-02	9.84E-03	9.84E-02	2.54E-02
	Total													
XVIII A	Cs-137+D	3.54E+02	8.59E+05	1.05E-01	9.27E-07	0.00E+00	5.84E-03		6.89E-03	1.05E-03	1.63E-02	1.05E-02	1.05E-01	1.05E-01
	Sr-90+D	3.54E+02	2.04E+04	0.00E+00	2.82E-06	0.00E+00	8.81E-02		8.81E-02	2.82E-08	8.81E-02	2.82E-07	2.82E-06	2.82E-06
	Total													
XVIII B	Cs-137+D	3.54E+02	1.22E+05	1.03E-01	9.09E-07	0.00E+00	5.82E-03		6.85E-03	1.03E-03	1.61E-02	1.03E-02	1.03E-01	1.03E-01
	Sr-90+D	3.54E+02	2.88E+03	0.00E+00	1.86E-06	1.03E-31	7.82E-02		7.82E-02	1.86E-08	7.82E-02	1.86E-07	1.86E-06	1.86E-06
	Total													
XVIII C	Cs-137+D	3.54E+02	3.22E+04	9.84E-02	8.70E-07	0.00E+00	5.77E-03		6.76E-03	9.84E-04	1.56E-02	9.84E-03	9.84E-02	9.84E-02
	Sr-90+D	3.54E+02	7.60E+02	0.00E+00	1.06E-06	1.92E-09	6.25E-02		6.25E-02	1.25E-08	6.25E-02	1.07E-07	1.06E-06	1.06E-06
	Total													
XXA	U-234+D	4.37E+01	8.57E+04	1.67E-02	1.61E-03	0.00E+00	1.73E-01		1.73E-01	1.83E-04	1.75E-01	1.83E-03	1.83E-02	1.77E-01
	U-235	1.46E+00	8.57E+04	2.23E-02	1.36E-03	0.00E+00	4.13E-02		4.15E-02	2.37E-04	4.37E-02	2.37E-03	2.37E-02	4.60E-02
	U-238+D	7.51E+00	8.57E+04	4.86E-03	1.30E-03	0.00E+00	5.40E-02		5.40E-02	6.16E-05	5.46E-02	6.16E-04	6.16E-03	5.52E-02
	Total													
XXB	U-234+D	2.54E+01	1.21E+04	3.84E-03	6.79E-04	0.00E+00	7.02E-02		7.02E-02	4.52E-05	7.06E-02	4.52E-04	4.52E-03	7.11E-02
	U-235	8.40E-01	1.21E+04	9.51E-03	5.79E-04	0.00E+00	1.76E-02		1.77E-02	1.01E-04	1.87E-02	1.01E-03	1.01E-02	1.97E-02
	U-238+D	4.36E+00	1.21E+04	2.07E-03	5.55E-04	0.00E+00	2.31E-02		2.31E-02	2.63E-05	2.33E-02	2.63E-04	2.63E-03	2.36E-02
	Total													
XXC	U-234+D	2.54E+01	1.07E+03	7.24E-04	2.93E-04	1.51E-01	2.46E-02		1.75E-01	1.51E-01	1.76E-01	1.51E-01	1.52E-01	1.76E-01
	U-235	8.40E-01	1.07E+03	4.17E-03	2.54E-04	1.44E-01	7.75E-03		1.52E-01	1.44E-01	1.52E-01	1.45E-01	1.49E-01	1.53E-01
	U-238+D	4.36E+00	1.07E+03	9.10E-04	2.44E-04	1.89E-01	1.01E-02		1.99E-01	1.89E-01	1.99E-01	1.89E-01	1.90E-01	1.99E-01
	Total													

Table N-30. NORMALIZED POPULATION HEALTH IMPACTS (fatal cancers per Ci)
 AVERTED AT A 1E-4 CLEANUP GOAL FOR AN INTEGRATION PERIOD OF 10,000 YEARS:
 RESULTS EXCLUDE INHALATION OF INDOOR RADON

Reference Site #	Radionuclide	Typical Concentration (pCi/g)	Ground Water Travel Time (years)	Direct Radiation (a)	Dust Inhalation (a)	Ground Water Ingestion	Crop Ingestion	Indoor Radon Inhalation (a)	Rural With Agriculture (b)	Rural Without Agriculture (b)	Intermediary With Agriculture (c)	Intermediary Without Agriculture (c)	Suburban Without Agriculture (a)	Site Specific (d)
XXIA	Ra-228	1.83E+01	4.82E+05	2.21E-03	7.40E-07	0.00E+00	1.59E-04		1.81E-04	2.21E-05	3.80E-04	2.21E-04	2.21E-03	2.21E-03
	Th-228	1.83E+01	2.10E+07	1.39E-03	2.65E-05	0.00E+00	2.50E-06		1.67E-05	1.42E-05	1.44E-04	1.42E-04	1.42E-03	1.42E-03
	Th-232+D	1.83E+01	2.10E+07	7.14E+00	1.07E-01	0.00E+00	1.99E-01		2.72E-01	7.25E-02	9.24E-01	7.25E-01	7.25E+00	7.25E+00
	Total													
XXIB	Ra-228	1.83E+01	6.84E+04	2.19E-03	7.35E-07	0.00E+00	1.59E-04		1.81E-04	2.19E-05	3.78E-04	2.19E-04	2.19E-03	2.19E-03
	Th-228	1.83E+01	2.99E+06	1.39E-03	2.65E-05	0.00E+00	2.50E-06		1.67E-05	1.42E-05	1.44E-04	1.42E-04	1.42E-03	1.42E-03
	Th-232+D	1.83E+01	2.99E+06	6.46E+00	9.66E-02	0.00E+00	1.96E-01		2.61E-01	6.56E-02	8.51E-01	6.56E-01	6.56E+00	6.56E+00
	Total													
XXIC	Ra-228	1.83E+01	6.03E+03	2.16E-03	7.23E-07	0.00E+00	1.58E-04		1.80E-04	2.16E-05	3.74E-04	2.16E-04	2.16E-03	2.16E-03
	Th-228	1.83E+01	2.63E+05	1.39E-03	2.65E-05	0.00E+00	2.50E-06		1.67E-05	1.42E-05	1.44E-04	1.42E-04	1.42E-03	1.42E-03
	Th-232+D	1.83E+01	2.63E+05	5.23E+00	7.83E-02	0.00E+00	1.88E-01		2.42E-01	5.30E-02	7.19E-01	5.30E-01	5.30E+00	5.30E+00
	Total													
XXII	U-234	1.71E+01	1.40E+02	2.75E-05	3.72E-05	1.39E-01	3.64E-03		1.43E-01	1.39E-01	1.43E-01	1.39E-01	1.39E-01	1.39E-01
	U-235	8.01E-01	1.40E+02	5.57E-04	3.39E-05	1.44E-01	1.39E-03		1.46E-01	1.44E-01	1.46E-01	1.44E-01	1.45E-01	1.45E-01
	U-238+D	1.71E+01	1.40E+02	1.21E-04	3.25E-05	1.89E-01	1.81E-03		1.90E-01	1.89E-01	1.90E-01	1.89E-01	1.89E-01	1.89E-01
	Ra-226+D	3.16E+00	1.99E+03	1.81E-01	1.99E-04	7.41E-01	7.99E-01		1.54E+00	7.43E-01	1.56E+00	7.59E-01	9.22E-01	9.94E-01
	Ra-228	1.92E+01	1.99E+03	2.70E-03	9.04E-07	0.00E+00	1.98E-04		2.25E-04	2.70E-05	4.68E-04	2.70E-04	2.70E-03	3.78E-03
	Th-228	1.92E+01	1.27E+04	1.74E-03	3.30E-05	0.00E+00	3.12E-06		2.08E-05	1.77E-05	1.80E-04	1.77E-04	1.77E-03	2.48E-03
	Th-232	1.92E+01	1.27E+04	1.78E+00	2.66E-02	0.00E+00	1.67E-01		1.85E-01	1.80E-02	3.48E-01	1.80E-01	1.80E+00	2.53E+00
	Total													

- (a) Based on 1,000 people/km²
- (b) Based on 10 people/km²
- (c) Based on 100 people/km²
- (d) Based on site specific data

APPENDIX O

BACKGROUND RADIATION AND LOWER LIMITS OF DETECTION

Table O-1. Uranium Decay Series*

Radioisotope	Historical name	Half-life**	Major radiation energies (MeV) and intensities***		
			α	β	γ
U-238	Uranium I	4.51 x 10 ⁹ y	4.15 (25%)	---	---
↓			4.20 (75%)		
Th-234	Uranium XI	24.1 d	---	0.103 (21%)	0.063 (4%)
↓				0.193 (79%)	0.093 (4%)
Pa-234m [†]	Uranium X2	1.17 m	---	2.29 (98%)	0.765 (0.3%)
↓					1.001 (0.6%)
U-234	Uranium II	2.47 x 10 ⁵ y	4.72 (28%)	---	0.53 (0.2%)
↓			4.77 (72%)		
Th-230	Ionium	8.0 x 10 ⁴ y	4.62 (24%)	---	0.068 (0.6%)
↓			4.68 (76%)		0.142 (0.07%)
Ra-226	Radium	1602 y	4.60 (6%)	---	0.186 (4%)
↓			4.78 (95%)		
Rn-222	Radon	3.82 d	5.49 (100%)	---	0.510 (0.07%)
↓	(gas)				
Po-218 [†]	Radium A	3.05 m	6.00 (~100%)	0.33 (~0.02%)	---
↓					
Pb-214	Radium B	26.8 m	---	0.65 (50%)	0.295 (19%)
↓				0.71 (40%)	0.352 (36%)
↓				0.98 (6%)	
Bi-214 [†]	Radium C	19.7 m	5.45 (0.012%)	1.0 (23%)	0.609 (47%)
↓			5.51 (0.008%)	1.51 (40%)	1.120 (17%)
↓				3.26 (19%)	1.764 (17%)
Po-214	Radium C'	164 μ s	7.69 (100%)	---	0.799 (0.014%)
↓					
Pb-210	Radium D	21 y	---	0.016 (85%)	0.047 (4%)
↓				0.061 (15%)	
Bi-210	Radium E	5.01 d	4.65 (0.00007%)	1.161 (~100%)	---
↓			4.69 (0.00005%)		
Po-210	Radium F	138.4 d	5.305 (100%)	---	0.803 (0.0011%)
↓					
Pb-206	Radium G	Stable	---	---	---

* Source: Lederer and Shirley (1978) and Shleien and Terpilak (1984).

** Half-life given in seconds (s), minutes (m), days (d), or years (y).

*** Intensities refer to percentage of disintegrations of the nuclide itself, not to the parent of the series.

[†] Approximately 0.13% of all Pa-234m β particle emissions form an intermediate radioisotope, Pa-234 (6.75 hrs β -emitter), before decaying to U-234. For Po-218, 0.02% decays through At-218 (~2 sec α -emitter) before forming Bi-214. For Bi-214, 0.02% decays through Tl-210 (1.3 m: β -emitter) to Pb-210.

Table O-2. Actinium Decay Series*

Radioisotope	Historical name	Half-life**	Major radiation energies (MeV) and intensities***			
			α	β	γ	
U-235	Actinouranium	7.1 x 10 ⁸ y	4.37 (18%)	---	0.143 (11%)	
↓			4.40 (57%)		0.185 (54%)	
↓			4.58 (8%)		0.204 (5%)	
Th-231	Uranium Y	25.5 h	---	0.140 (45%)	0.026 (2%)	
↓				0.220 (15%)	0.084 (10%)	
↓				0.305 (40%)		
Pa-231	Protactinium	3.25 x 10 ⁴ y	4.95 (22%)	---	0.027 (6%)	
↓			5.01 (24%)		0.29 (6%)	
↓			5.02 (23%)			
Ac-227 [†]	Actinium	21.6 y	4.86 (0.18%)	0.043 (~99%)	0.70 (0.08%)	
↓			4.95 (1.2%)			
Th-227			Radioactinium			18.2 d
↓	5.98 (24%)	0.237 (15%)				
↓	6.04 (23%)	0.31 (8%)				
Ra-223	Actinium X	11.43 d	5.61 (26%)	---	0.149 (10%)	
↓			5.71 (54%)	0.270 (13%)		
↓			5.75 (9%)	0.33 (6%)		
Rn-219	Actinon (gas)	4.0 s	6.42 (8%)	---	0.272 (9%)	
↓			6.55 (11%)			0.401 (5%)
↓			6.82 (81%)			
Po-214 [†]	Actinium A	1.78 ms	7.38 (~100%)	0.74 (~0.0002%)	---	
↓	Actinium B	36.1 m	---	0.29 (1.4%)	0.405 (3.4%)	
↓			0.56 (9.4%)	0.427 (1.8%)		
↓			1.39 (87.5%)	0.832 (3.4%)		
Bi-211 [†]	Actinium C	2.15 m	6.28 (16%)	0.60 (0.28%)	0.351 (14%)	
↓			6.62 (84%)			
Tl-207	Actinium C''	4.79 m	---	1.44 (99.8%)	0.897 (0.16%)	
↓	Actinium D	Stable	---	---	---	
Pb-207						

* Source: Lederer and Shirley (1978) and Shleien and Terpilak (1984).

** Half-life given in seconds (s), minutes (m), days (d), or years (y).

*** Intensities refer to percentage of disintegrations of the nuclide itself, not to the parent of the series.

† Approximately 1.4% of all Ac-227 emissions form an intermediate radioisotope, Fr-223 (22 mβ-emitter), before decaying to Ra-223. For Po-215, 0.00023% decays through At-215 (~ 0.1 msecα-emitter), before forming Bi-211. For Bi-211, 0.28% decays through Po-211 (0.52 sec: β-emitter) to Pb-207.

Table O-3. Thorium Decay Series*

Radioisotope	Historical name	Half-life**	Major radiation energies (MeV) and intensities***		
			α	β	γ
Th-232 ↓	Thorium	1.41 x 10 ¹⁰ y	3.95 (24%) 4.20 (75%)	---	---
Ra-228 ↓	Mesothorium I	6.7 y	---	0.005 (100%)	---
Ac-228 ↓ ↓	Mesothorium II	6.13 h	---	1.18 (35%) 1.75 (12%) 2.09 (12%)	0.34 (15%) 0.908 (25%) 0.96 (20%)
Th-228 ↓	Radiothorium	1.910 y	5.34 (28%) 5.43 (71%)	---	0.084 (1.6%) 0.214 (0.3%)
Ra-224 ↓	Thorium X	3.64 d	5.45 (6%) 5.68 (94%)	---	0.241 (3.7%)
Rn-220 ↓	Thoron (gas)	55 s	6.29 (100%)	---	0.55 (0.07%)
Po-216 ↓	Thorium A	0.15 s	6.78 (100%)	---	---
Pb-212 ↓	Thorium B	10.64 h	---	0.346 (81%) 0.586 (14%)	0.239 (47%) 0.300 (3.2%)
Bi-212 [†] ↓ ↓ (64%) (36%) ↓ ↓	Thorium C	60.6 m	6.05 (25%) 6.09 (10%)	1.55 (5%) 2.26 (55%) 0.98 (6%)	0.040 (2%) 0.727 (7%) 1.620 (1.8%)
Po-212 ↓ ↓ ↓ ↓ ↓	Thorium C'	304 ns	8.78 (100%)	---	---
↓ Tl-208 ↓ ↓ ↓ ↓ ↓ ↓	Thorium C''	3.01 m	---	1.28 (25%) 1.52 (21%) 1.80 (50%)	0.511 (23%) 0.583 (86%) 0.860 (12%) 2.614 (100%)
Pb-208	Thorium D	Stable	---	---	---

* Source: Lederer and Shirley (1978) and Shleien and Terpilak (1984).

** Half-life given in seconds (s), minutes (m), hours (h), days (d), or years (y).

*** Intensities refer to percentage of disintegrations of the nuclide itself, not to the parent of the series.

† Percentages in brackets are branching fractions.

Table O-4. Ubiquitous Manmade Radioisotopes*

Radioisotope	Name (Origin) [†]	Half-life**	Major radiation energies (MeV) and intensities***		
			α	β	γ
H-3	Tritium (NE, NF)	12.3 y	---	0.0186 (100%)	---
C-14	Carbon (NE, FF)	5730 y	---	0.156 (100%)	---
Mn-54	Manganese (NE, NF)	303 d	---	---	0.835 (100%)
Fe-55	Iron (NE, NF)	2.6 y	---	---	0.23 (0.004%)
Co-60	Cobalt (NE, NF)	5.26 y	---	1.48 (0.12%) 0.314 (99%)	1.17 (100%) 1.33 (100%)
Zn-65	Zinc (NE, NF)	245 d	---	β+: 0.327 (1.4%)	0.511 (3.4%) 1.12 (49%)
Sr-90/Y-90	Strontium/ Yttrium (NE, NF)	28 y (Sr) 64 h (Y)	---	0.546 (100% Sr) 2.27 (100% Y)	---
Ru-106/Rh-106	Ruthenium/ Rhodium (NE, NF)	368 d (Ru) 30 s (Rh)	---	0.039 (100% Ru) 3.54 (79% Rh)	0.512 (21%) 0.622 (11%) 1.05 (1.5%)
Sb-125/Te-125m	Antimony/ Tellurium (NE, NF)	2.77 y (Sb) 58 d (Te)	---	0.61 (14% Sb)	0.153 (62% Te) 0.270 (25% Te) 0.427 (10% Sb) 0.599 (24% Sb) 0.634 (11% Sb)
I-129	Iodine (NF)	1.7 x 10 ⁷ y	---	0.150 (100%)	0.040 (9%)
Cs-134	Cesium (NE, NF)	2.05 y	---	0.662 (100%)	0.57 (23%) 0.61 (98%) 0.796 (99%)
Cs-137/Ba-137m	Cesium/ Barium (NE, NF)	30 y (Cs) 2.55 m (Ba)	---	0.514 (95% Cs) 1.176 (5% Cs)	0.662 (89% Ba)
Ce-144/Pr-144	Cerium/ Praseodymium (NE, NF)	284 d (Ce) 17.3 m (Pr)	---	0.31 (76% Ce) 2.99 (98% Pr)	0.134 (11% Ce) 0.695 (1.5% Pr)

Table O-4. Ubiquitous Manmade Radionuclides* (cont.)

Radioisotope	Name (Origin) [†]	Half-life**	Major radiation energies (MeV) and intensities***		
			α	β	γ
Pu-238	Plutonium (SNAP, NE)	87 y	5.50 (72%) 5.46 (28%)	---	0.145 (2%)
Pu-239	Plutonium (NE, NF)	2.439 x 10 ⁴ y	5.155 (73%) 5.143 (15%) 5.105 (12%)	---	0.039 (0.007%) 0.052 (0.020%) 0.129 (0.005%) 0.375 (0.0012%)
Pu-240	Plutonium (NE, NF)	6580 y	5.168 (76%) 5.124 (24%)	---	---
Pu-241/Am-241	Plutonium/ Americium (NE, NF)	14.4 y (Pu) 458 y (Am)	5.388 (1.6% Am) 5.443 (13% Am) 5.486 (85% Am)	0.0208 (100% Pu)	0.026 (2.5% Am) 0.059 (36% Am)

* Source: Lederer and Shirley (1978) and NCRP (1976).

** Half-life given in minutes (m), hours (h), days (d), or years (y).

*** Intensities refer to percentage of disintegrations of the nuclide itself.

† "NE" = Nuclear explosions; "NF" = Nuclear facilities; "SNAP" = SNAP-9a (System for Nuclear Auxiliary Power) which was a satellite which dispersed 1 kg of Pu-238 in the earth's atmosphere when it burned up upon re-entry; and "FF" = Fossil fuel power plants and other industries.

Table O-5. Background Soil Concentrations of Selected Man-Made and Naturally Occurring Radionuclides at U.S. DOE Sites

Nuclide	Typical Values and Ranges (in parentheses) of Background Concentrations of Radionuclides in Soil (in pCi/g) at the Following DOE Sites:											
	Hanford	Savannah River	Rocky Flats	Weldon Spring	INEL	Brookhaven	Los Alamos	Sandia	Nevada Test Site	Fernald	Lawrence Livermore	Oak Ridge Reservation
Am-241	--	--	0.019 (0.01-0.28)	--	<0.01	--	--	--	--	--	0.14 (<0.01-1)	--
C-14	--	--	--	--	--	--	--	--	--	--	NA	--
Cs-137	0.5 (<0.01-1.8)	-- (0.3-3.5)	1.4 (0.91-1.9)	--	--	-- (0.1-0.44)	1.09 (<0.01-1.4)	0.27 (0.02-0.96)	0.72 (0.13-7.03)	-- (0.02-0.48)	0.12 (0.027-0.9)	-- (0.08-4.1)
H-3	--	--	--	--	--	--	7.2	-- (<1.7-4.3 ml)	--	--	110 (0.02-20,000)	--
I-129	--	--	--	--	--	--	--	--	--	--	NA	--
Pu-238	--	-- (<0.03-0.094)	--	--	<0.03	--	<0.03	<0.03	--	--	0.29 (<0.03-1.23)	-- (<0.03-0.046)
Pu-239	<0.03	-- (<0.03-0.12)	0.04 (<0.03-0.06)	--	0.075 (<0.03-?)	--	<0.03 (<0.03-0.052)	-- (<0.03-0.052)	0.047 (<0.03-0.42)	--	1.8 (0.037-8.7)	-- (0.03-0.17)
Ra-226	--	--	0.94 (0.81-1.1)	-- (0.31-1.4)	-- (0.64-1.6)	-- (0.3-0.6)	-- (0.2-2.7)	-- (0.2-2.7)	-- (0.89-2.0)	-- (0.59-2.5)	0.62 (<0.15-1.2)	-- (0.55-1.4)
Sr-90	<1.0	--	<1.0	--	--	--	<1.0	<1.0	--	<1.0	NA	<1.0
Tc-99	--	--	--	--	--	--	--	--	--	--	NA	--
Th-230	--	--	--	-- (0.33-1.2)	--	--	--	--	--	--	--	-- (0.092-0.76)
Th-232	--	--	-- (0.10-3.1)	-- (0.32-1.3)	1.3 (0.42-1.9)	-- (0.5-0.8)	-- (0.48-1.8)	-- (0.48-1.8)	0.92 (0.19-2.07)	-- (0.33-1.5)	-- (0.2-1.5)	-- (0.23-1.5)
U-234	--	--	1.1 (0.94-1.3)	--	--	--	0.9 (0.44-1.3)	0.9 (0.4-1.6)	--	-- (?-2.1)	0.96 (0.05-9.3)	-- (0.16-0.95)
U-235	--	--	0.05 (0.02-0.83)	--	--	--	--	--	--	-- (0.04-0.11)	0.32 (<0.03-6.7)	-- (<0.03-0.19)
U-238	1 (0.1-1.9)	-- (0.13-1.1)	1.2 (1.0-1.4)	-- (0.33-1.7)	1.5 (0.66-2.2)	-- (0.62-1.6)	0.9 (0.44-1.3)	0.9 (0.4-1.6)	1.0 (0.29-2.58)	-- (0.68-2.2)	5.1 (0.05-170)	-- (0.97-1.4)

Table O-6

Minimum Detectable Concentrations for Laboratory Soil Analyses

Nuclide	MDA (pCi/g)	Aliquot Volume (g)	Count Time (min)	Method ^(a)	Detector Type ^(b)	Cost	Background (pCi/g) ^(c)	
							Typical	Range
Ac-227+D	0.02	500	180	1	GS	\$75	0.007	0.001 - 0.03
Ag-108m+D	0.005	500	180	1	GS	\$75	0	NA
Ag-110m+D	0.01	500	180	1	GS	\$75	0	NA
Am-241	0.01	500	180	1	GS	\$75	0.009	0.003 - 0.015
Am-243+D	0.03	2	400	2,3,4,5,6,8	AS	\$150	0	NA
Bi-207	0.007	500	180	1	GS	\$75	0	NA
C-14	1.0	5	20	3,9	LS	\$150	0.25	0.01 - 2.5
Cd-109	0.1	500	180	1	GS	\$75	0	NA
Ce-144+D	0.03	500	180	1	GS	\$75	0	NA
Cl-36	0.7	2	30	2,3,5	GFP	\$150	0	NA
Cm-243	0.03	2	400	2,3,4,5,6,8	AS	\$150	0	NA
Cm-244	0.03	2	400	2,3,4,5,6,8	AS	\$150	0	NA
Cm-248	0.03	2	400	2,3,4,5,6,8	AS	\$150	0	NA
Co-57	0.004	500	180	1	GS	\$75	0	NA
Co-60	0.01	500	180	1	GS	\$75	0	NA
Cs-134	0.007	500	180	1	GS	\$75	0	NA
Cs-135	1.0	5	20	2,3,5	LS	\$150	0	NA
Cs-137+D	0.01	500	180	1	GS	\$75	0.7	0.1 - 3.5
Eu-152	0.02	500	180	1	GS	\$75	0	NA
Eu-154	0.007	500	180	1	GS	\$75	0	NA
Eu-155	0.02	500	180	1	GS	\$75	0	NA
Fe-55	1.0	500	180	1	GS	\$75	0	NA

Table O-6 (cont.)
Minimum Detectable Concentrations for Laboratory Soil Analyses

Nuclide	MDA (pCi/g)	Aliquot Volume (g)	Count Time (min)	Method ^(a)	Detector Type ^(b)	Cost	Background (pCi/g) ^(c)	
							Typical	Range
Gd-153	0.01	500	180	1	GS	\$75	0	NA
H-3	0.02	5	20	9	LS	\$75	7	0.8 - 20
I-129	2.0	5	100	3,4,5,6,7	GFP	\$150	3E-05	1E-05 - 9E-05
K-40	0.1	500	180	1	GS	\$75	10	3 - 20
Mn-54	0.05	500	180	1	GS	\$75	0	NA
Na-22	0.02	500	180	1	GS	\$75	0	NA
Nb-94	0.01	500	180	1	GS	\$75	0	NA
Ni-59	1.0	500	180	1	GS	\$75	0.25	0.01 - 2.5
Ni-63	2.0	5	20	2,3,5	LS	\$150	0	NA
Np-237+D	0.03	2	400	2,3,4,5,6,8	AS	\$150	0	NA
Pa-231	0.03	2	400	2,3,4,5,6,8	AS	\$150	0.007	0.001 - 0.03
Pb-210+D	2.0	5	100	2,3,5	GFP	\$150	1.0	0.23 - 4.2
Pm-147	1.0	5	20	2,3,4,5	LS	\$150	0	NA
Pu-238	0.03	2	400	2,3,4,5,6,8	AS	\$150	0.001	5E-04 - 2E-03
Pu-239	0.03	2	400	2,3,4,5,6,8	AS	\$150	0.025	0.009 - 0.04
Pu-240	0.03	2	400	2,3,4,5,6,8	AS	\$150	0.025	0.009 - 0.04
Pu-241+D	1.0	5	20	2,3,4,5,6	LS	\$150	0	NA
Pu-242	0.03	2	400	2,3,4,5,6,8	AS	\$150	0	NA
Pu-244+D	0.03	2	400	2,3,4,5,6,8	AS	\$150	0	NA
Ra-226+D	0.15	500	180	1	GS	\$75	1.0	0.23 - 4.2
Ra-228+D	0.05	500	180	1	GS	\$75	0.87	0.10 - 3.4
Ru-106+D	0.07	500	180	1	GS	\$75	0	NA

Table O-6 (cont.)
Minimum Detectable Concentrations for Laboratory Soil Analyses

Nuclide	MDA (pCi/g)	Aliquot Volume (g)	Count Time (min)	Method ^(a)	Detector Type ^(b)	Cost	Background (pCi/g) ^(c)	
							Typical	Range
Sb-125+D	0.02	500	180	1	GS	\$75	0	NA
Sm-147	0.02	2	400	2,3,4,5,6,8	AS	\$150	0	NA
Sm-151	1.0	5	20	2,3,4,5,6	LS	\$150	0	NA
Sr-90+D	1.0	5	100	2,3,5	GFP	\$150	0.7	0.2 - 4.0
Tc-99	1.0	5	20	2,3,6	LS	\$150	0	NA
Th-228+D	0.05	2	400	2,3,4,5,6,8	AS	\$150	0.87	0.10 - 3.4
Th-229+D	0.03	2	400	2,3,4,5,6,8	AS	\$150	0	NA
Th-230	0.05	2	400	2,3,4,5,6,8	AS	\$150	0.96	0.12 - 3.8
Th-232	0.05	2	400	2,3,4,5,6,8	AS	\$150	0.87	0.10 - 3.4
Tl-204	1.0	5	100	2,3,5	GFP	\$150	0	NA
U-232	0.03	2	400	2,3,4,5,6,8	AS	\$150	0	NA
U-233	0.03	2	400	2,3,4,5,6,8	AS	\$150	0	NA
U-234	0.03	2	400	2,3,4,5,6,8	AS	\$150	0.96	0.12 - 3.8
U-235+D	0.03	2	400	2,3,4,5,6,8	AS	\$150	0.007	0.001 - 0.03
U-236	0.03	2	400	2,3,4,5,6,8	AS	\$150	0.01	0.005 - 0.02
U-238+D	0.03	2	400	2,3,4,5,6,8	AS	\$150	0.96	0.12 - 3.8
Zn-65	0.03	500	180	1	GS	\$75	0	NA

- (a) Radiochemistry methods include: 1-Direct Measurement, 2-Sample Digestion, 3-Addition of Tracer or Carrier, 4-Ion-exchange Column Separation, 5-Precipitation, 6-Solvent Extraction, 7-Leaching, 8-Electroplating, 9-Distillation. Based on *EERF Radiochemistry Procedures Manual*, EPA 520/5-84-006, 1984.
- (b) Detectors include: AS Alpha Spectrometry, GS Gamma Spectroscopy, LS Liquid Scintillation Counter, GFP Gas Flow Proportional Counter.
- (c) Based primarily on data from Report No. 94, *Exposure of the Population in the United States and Canada from Natural Background Radiation*, National Council on Radiation Protection and Measurements, 1987.

Table O-7

Estimated Minimum Detectable Concentrations for Field Surveys of Contaminated Soils

Nuclide	Average Gamma Energy (keV)*	Photons per Disintegration	Detector Efficiency	RESRAD Calculated Dose Rate (mrem/yr)	MDC (pCi/g)
Ac-227+D	147.29	2.41	1	2.85E+00	31
Ag-108m+D	488.97	3.32	1	1.15E+01	8
Ag-110m+D	856.69	3.19	1	2.00E+01	4
Am-241	31.74	1.02	0	4.88E-02	NR†
Am-243+D	89.93	2.53	1	1.12E+00	79
Au-195	71.57	1.10	1	1.73E-01	506
C-14	0	0	0	0.00E+00	NR
Cd-109	24.86	1.05	0	1.21E-02	NR
Ce-144+D	129.33	0.28	1	3.25E-01	270
Cl-36	100.99	<0.01	1	1.06E-03	NR
Cm-243	99.2	1.35	1	7.52E-01	117
Cm-244	16.94	0.10	0	1.36E-03	NR
Cm-248	44.00	<0.01	0	6.34E-06	NR
Co-57	76.92	1.63	1	5.23E-01	168
Co-60	1252.54	2.00	1	2.35E+01	4
Cs-134	697.69	2.23	1	1.12E+01	8
Cs-135	0	0	0	0.00E+00	NR
Cs-137+D	621.87	0.91	1	5.20E+00	17
Eu-152	497.01	2.30	1	1.03E+01	9
Eu-154	658.18	1.86	1	1.14E+01	8
Eu-155	72.22	0.84	1	1.72E-01	510
Fe-55	5.97	0.28	0	4.62E-06	NR

Table O-7 (cont.)

Estimated Minimum Detectable Concentrations for Field Surveys of Contaminated Soils

Nuclide	Average Gamma Energy (keV)	Photons per Disintegration	Detector Efficiency	RESRAD Calculated Dose Rate (mrem/yr)	MDC (pCi/g)
Gd-153	59.54	1.75	1	2.21E-01	NR
H-3	0	0	0	0.00E+00	NR
I-129	29.20	0.84	0	3.31E-02	NR
K-40	1341.06	0.12	1	1.22E+00	72
Mn-54	834.80	1.00	1	1.60E+01	5
Na-22	783.42	2.80	1	1.60E+01	5
Nb-94	786.85	2.00	1	1.47E+01	6
Ni-59	7.01	0.34	0	5.59E-06	NR
Ni-63	0	0	0	0.00E+00	NR
Np-237+D	105.82	2.25	1	1.67E+00	53
Pa-231	54.32	0.92	1	2.28E-01	NR
Pb-210+D	17.38	0.28	0	4.58E-03	NR
Pm-147	86.42	<0.01	1	1.53E-05	NR
Pu-238	16.24	0.11	0	1.37E-03	NR
Pu-239	17.17	0.04	0	7.54E-04	NR
Pu-240	16.27	0.11	0	1.31E-03	NR
Pu-241+D	38.36	<0.01	0	1.96E-05	NR
Pu-242	16.29	0.09	0	1.09E-03	NR
Pu-244+D	619.48	0.52	1	2.32E+00	38
Ra-226+D	688.82	2.33	1	1.60E+01	5
Ra-228+D	575.66	1.62	1	8.46E+00	10
Ru-106+D	592.08	0.34	1	1.41E+00	62

Table O-7 (cont.)

Estimated Minimum Detectable Concentrations for Field Surveys of Contaminated Soils

Nuclide	Average Gamma Energy (keV)	Photons per Disintegration	Detector Efficiency	RESRAD Calculated Dose Rate (mrem/yr)	MDC (pCi/g)
Sb-125+D	261.7	1.64	1	2.92E+00	30
Sm-147	0	0	0	0.00E+00	NR
Sm-151	9.67	<0.01	0	5.66E-07	NR
Sr-90+D	15.56	<0.01	1	0.00E+00	NR
Tc-99	0	0	0	0.00E+00	NR
Th-228+D	689.46	2.25	1	1.38E+01	6
Th-229+D	116.83	2.86	1	2.27E+00	39
Th-230	18.09	0.09	0	2.02E-03	NR
Th-232	16.19	0.08	0	1.23E-03	NR
Tl-204	72.43	0.01	1	2.28E-03	NR
U-232	16.92	0.13	0	2.03E-03	NR
U-233	18.83	0.07	0	1.38E-03	NR
U-234	16.16	0.11	0	1.42E-03	NR
U-235+D	83.70	2.15	1	9.21E-01	95
U-236	15.77	0.10	0	1.19E-03	NR
U-238+D	80.32	0.31	1	1.31E-01	670
Zn-65	665.16	0.88	1	3.85E+00	23

Note: See text for a discussion of the method and assumptions used to estimate the MDCs for field surveys. Different survey methods and instruments may result in lower MDCs for specific radionuclides than those reported in this table.

* The average gamma energy is weighted based on the relative abundance of the photon emissions.

† NR = No response expected from the selected detector due to absent, low abundance (<0.01 photons per disintegration), or weak gamma emissions (<70 keV).

References

Friedlander, G., J. Kennedy, E. Macias, and J. Miller, Nuclear and Radiochemistry, John Wiley & Sons, Inc., New York, 1981.

Lederer, C.M., and V.S. Shirley (Eds.), Table of Isotopes, 8th Ed., John Wiley & Sons, Inc., New York, 1978.

National Council on Radiation Protection and Measurements, "Environmental Radiation Measurements," NCRP Report No. 50, National Council on Radiation Protection and Measurements, Bethesda, MD, 1976.

National Council on Radiation Protection and Measurements, "Exposure of the Population in the United States and Canada from Natural Background Radiation," NCRP Report No. 94, National Council on Radiation Protection and Measurements, Bethesda, MD, 1987.

Shleien, B., and M.S. Terpilak (Eds.), The Health Physics and Radiological Health Handbook, 7th Printing, Nucleon LECTERN Associates, Inc., Olney, MD, 1987.

U.S. Environmental Protection Agency, "Prescribed Procedures for Measurement of Radioactivity in Drinking Water," EPA 600/4-80-032, Environmental Monitoring and Support Laboratory, Cincinnati, OH, 1980.

U.S. Environmental Protection Agency, "EERF Radiochemistry Procedures Manual," EPA 520/5-84-006, Eastern Environmental Radiation Facility (Renamed National Air and Radiation Environmental Laboratory in 1989), Montgomery, AL, 1984.

U.S. Environmental Protection Agency, "Guidance for Data Useability in Risk Assessment (Part B)," Publication 9285.7-09B, Office of Emergency and Remedial Response, Washington, DC, 1992.