ANL/EVS-14/11

POST-REMEDIATION RADIOLOGICAL DOSE ASSESSMENT

LINDE SITE
TONAWANDA, NEW YORK

JUNE 2014

U.S. Army Corps of Engineers
Formerly Utilized Sites Remedial Action Program

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POST-REMEDIATION RADIOLOGICAL DOSE ASSESSMENT

LINDE SITE

TONAWANDA, NEW YORK

Prepared by:

Sunita Kamboj and Lisa A. Durham

Environmental Science Division, Argonne National Laboratory

Prepared for:

U.S. Army Corps of Engineers, Formerly Utilized Sites Remedial Action Program

JUNE 2014

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GENERAL ACRONYMS AND ABBREVIATIONS

AC	Actinium
ALARA	as low as reasonably achievable
ARAR	applicable or relevant and appropriate requirement
CFR	*Code of Federal Regulations*
COC	contaminant of concern
EPA	U.S. Environmental Protection Agency
FGR	Federal Guidance Report
FSSP	Final Status Survey Plan
FUSRAP	Formerly Utilized Sites Remedial Action Program
NRC	U.S. Nuclear Regulatory Commission
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MED	Manhattan Engineer District
Pa	Protactinium
Pb-210	Lead-210
Ra-226	Radium-226
ROD	Record of Decision
SOR	sum of the ratios
TEDE	total effective dose equivalent
Th-230	Thorium-230
U-234	Uranium-234
U-235	Uranium-235
U-238	Uranium-238
UMTRCA	Uranium Mill Tailings Radiation Control Act
USACE	U.S. Army Corps of Engineers
U_{total}	Total Uranium

UNITS OF MEASURE

cm^3	cubic centimeter(s)
d	day(s)
g	gram(s)
kg	kilogram(s)
L	liter(s)
m	meter(s)
m^2	square meter(s)
m^3	cubic meter(s)
mol	mole(s)
mrem	millirem(s)
pCi	picocurie(s)
s	second(s)
yr	year(s)

METRIC CONVERSION CHART

To Convert to Metric			To Convert from Metric		
If You Know	Multiply By	To Get	If You Know	Multiply By	To Get
Length					
inches	2.54	centimeters	centimeters	0.3937	inches
feet	30.48	centimeters	centimeters	0.0328	feet
feet	0.3048	meters	meters	3.281	feet
yards	0.9144	meters	meters	1.0936	yards
miles	1.60934	kilometers	kilometers	0.6214	miles
Area					
square inches	6.4516	square centimeters	square centimeters	0.155	square inches
square feet	0.092903	square meters	square meters	10.7639	square feet
square yards	0.8361	square meters	square meters	1.196	square yards
acres	0.40469	hectares	hectares	2.471	acres
square miles	2.58999	square kilometers	square kilometers	0.3861	square miles
Volume					
fluid ounces	29.574	milliliters	milliliters	0.0338	fluid ounces
gallons	3.7854	liters	liters	0.26417	gallons
gallons	0.00378	cubic meters	cubic meters	264.55	gallons
cubic inches	16.3870	cubic centimeters	cubic centimeters	0.061023	cubic inches
cubic feet	0.028317	cubic meters	cubic meters	35.315	cubic feet
cubic yards	0.76455	cubic meters	cubic meters	1.308	cubic yards
Weight					
ounces	28,349,523	micrograms	micrograms	3.527396E-08	ounces
ounces	28.3495	grams	grams	0.03527	ounces
pounds	0.4536	kilograms	kilograms	2.2046	pounds
Radiation					
picocurie	0.037	Becquerel	Becquerel	27.027027	Picocuries
curie	3.70E+10	Becquerel	Becquerel	2.703E-11	Curies
Rem	0.01	sievert	sievert	100	rem

POST-REMEDIATION RADIOLOGICAL DOSE ASSESSMENT
LINDE SITE, TONAWANDA, NEW YORK

1 INTRODUCTION

A post-remediation radiological dose assessment was conducted for the Formerly Utilized Sites Remedial Action Program (FUSRAP) Linde Site by using the measured residual concentrations of the radionuclides of concern following the completion of the soils remedial action. The site's FUSRAP-related contaminants of concern (COCs) are radionuclides associated with uranium processing activities conducted by the Manhattan Engineer District (MED) in support of the Nation's early atomic energy and weapons program and include radium-226 (Ra-226), thorium-230 (Th-230), and total uranium (U_{total}). Remedial actions to address Linde Site soils and structures were conducted in accordance with the *Record of Decision for the Linde Site, Tonawanda, New York* (ROD) (USACE 2000a). In the ROD, the U.S. Army Corps of Engineers (USACE) determined that the cleanup standards found in Title 40, Part 192 of the *Code of Federal Regulations* (40 CFR Part 192), the standards for cleanup of uranium mill sites designated under the Uranium Mill Tailings Radiation Control Act (UMTRCA), and the Nuclear Regulatory Commission (NRC) standards for decommissioning of licensed uranium and thorium mills, found in 10 CFR Part 40, Appendix A, Criterion 6(6), are Applicable or Relevant and Appropriate Requirements (ARARs) for cleanup of MED-related contamination at the Linde Site. The major elements of this remedy will involve excavation of the soils with COCs above soil cleanup levels and placement of clean materials to meet the other criteria of 40 CFR Part 192.

Compliance with these standards required the USACE to remove MED-related soils with residual radionuclide concentrations averaged over a 100-square meter (m^2) area that exceeded unity for the sum of the ratios (SOR) of these radionuclide concentrations to the associated concentration limits, above background, of 554 pCi/g of U_{total}, 5 pCi/g of Ra-226, and 14 pCi/g of Th-230 for surface cleanups; and 3,021 pCi/g of U_{total}, 15 pCi/g of Ra-226, and 44 pCi/g of Th-230 for subsurface cleanups. In addition, prior to promulgation of the amendment to 10 CFR Part 40, Appendix A, Criterion 6(6), in June 1999, the USACE committed to remediate the Linde Site soils to ensure that no concentration of U_{total} exceeded 600 pCi/g above background.

In June 1999, regulations amending 10 CFR Part 40, Appendix A, Criterion 6(6) were promulgated to address areas contaminated with other radionuclides in addition to radium; the amended 10 CFR Part 40, Appendix A, Criterion 6(6) requires that radioactive contamination, considering all radionuclides including radium, remaining after remediation, will not result in a total effective dose equivalent (TEDE) to the average member of the critical group exceeding the benchmark dose after cleanup to the 40 CFR Part 192 standards of soils contaminated with radium only. This benchmark dose is used to establish allowable soil concentration levels for the various radionuclides present other than radium to be used in the SOR calculation. The USACE established the benchmark doses and associated radionuclide concentration limits for surface cleanups as

well as subsurface cleanups for a commercial/industrial exposure scenario. A benchmark dose of 8.8 mrem/yr was derived for surface cleanups, and a benchmark dose of 4.1 mrem/yr was derived for subsurface cleanups (based on a cover depth of 6 inches) for a commercial/industrial worker scenario.

The USACE also completed the remediation of the Linde Building 14 Operable Unit located on the Linde site. The selected remedy required the demolition of Building 14 and removal of the building demolition debris from the site. The USACE determined that the soil cleanup standards would be the same as those implemented for the Linde Site soils (USACE 2003). The utility tunnel located beneath Building 14 was relocated to allow removal of contamination within and around the tunnel structure. Soils beneath and around the building were remediated to ensure the soil cleanup standards were met.

The effectiveness of the remedial actions performed at the site was evaluated through implementation of Final Status Survey Plans (FSSPs) (Shaw 2003, 2005; Cabrera 2010). Elements found in NUREG-1575, *Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)* (EPA 2000), provided guidance for FSSP design and execution. The results of sampling and analytical testing performed in accordance with the FSSPs indicate that radiological contaminants are below specified limits. The residual radionuclide concentrations averaged over 100-m^2 areas met the ROD SOR threshold limits, above background, for surface and subsurface cleanups. All reported residual concentrations of U_{total} were less than 600 pCi/g.

A post-remediation radiological dose assessment was performed to determine the potential radiation doses under two scenarios, a commercial/industrial worker and a construction worker, consistent with the scenarios evaluated for the Linde Site and documented in the *Technical Memorandum: Linde Site Radiological Assessment Tonawanda, New York* (USACE 2000b).

2 APPROACH

The USACE conducted a soils remedial action at the Linde Site during July 1999 through May 2013. As outlined in the ROD (USACE 2000a), the remedial action required the removal and off-site disposal of MED-related soils with residual radionuclide concentrations averaged over a 100-m^2 area that exceeded unity for the SOR of the radionuclide concentrations to the associated concentration limits, above background. Table 1 gives the concentrations limits for the COCs. Also, the remedial action included the removal and off-site disposal of MED-related soils to ensure that no concentration of U_{total} exceeding 600 pCi/g above background remained in site soils.

The post-remediation radiological dose assessment consisted of defining a site-wide source term of the residual concentration in soil of the three COCs—Ra-226, Th-230, and U_{total}. The site-wide source term was established by calculating average activity concentrations of the COC results of the *in situ* systematic Class 1 and Class 2

final status survey samples. There were 1,528 *in situ* systematic final status survey samples from remaining unexcavated areas and excavated areas (prior to backfilling) that were used to calculate a site-wide average. A number of Class 2 *in situ* final status survey samples were excavated as part of a Class 1 survey unit; they were not used in the development of the source term since they no longer are representative of current site conditions. Several Class 1 units encroached on previously excavated Class 1 units, which resulted in replacement of older *in situ* final status survey samples with newer samples. Final status survey radionuclide activity concentrations with negative laboratory results were assigned values of zero prior to calculating the site-wide averages. The COC site-wide average activity concentrations and average background values are provided in Table 2.

For the site-wide source term, the average COC activity concentrations were all less than the average site background values. The source terms used in the post-remediation radiological dose assessment were the actual average COC activity concentrations as listed in Table 2; average background values were not subtracted. The area of the impacted zone for the source term was conservatively assumed to be 10,000 m^2

The RESRAD computer code (Version 6.5) was used to perform the post-remediation radiological dose assessment for the commercial/industrial worker scenario and the construction worker scenario (Yu et al. 2001). In general, the parameter values (including the site-specific and default values) for the commercial/industrial scenario and construction worker post-remediation radiological dose assessment were consistent with those used in the *Technical Memorandum: Linde Site Radiological Assessment, Tonawanda, New York* (USACE 2000b). Table 3 gives the input parameters for the commercial/industrial worker scenario and construction worker scenario.

3 RESULTS

The results of the dose assessments are provided in Table 4 for the commercial/industrial worker scenario and in Table 5 for the construction worker scenario. Appendices A and B provide the summary results from the RESRAD runs for the commercial/industrial worker scenario and construction worker scenario, respectively. The estimated annual radiation dose rate for the commercial/industrial worker is 2.03 mrem/yr and 0.50 mrem/yr for the construction worker, which meets the benchmark dose of 8.8 mrem/yr derived for surface cleanups and a benchmark dose of 4.1 mrem/yr derived for subsurface cleanups.

The maximum dose would occur at some time in the future for both scenarios (see Tables 4 and 5), predominantly from Th-230. For the commercial/industrial worker scenario, the majority of the radiation dose (96.6%) is from the external gamma exposure pathway. For the construction worker scenario, the majority of the radiation dose (86%) is also from the external gamma exposure pathway. Additional pathways contributing to this radiation dose include incidental soil ingestion (13%) and dust inhalation (< 1.0%).

On the basis of this post-remediation radiological dose assessment, it can be concluded that the Linde Site has been remediated consistent with the requirements identified in the ROD and all other supporting documentation. In addition, remedial actions have been completed in accordance with ALARA (As Low as Reasonably Achievable) considerations. The site-wide source term of the residual concentration in soil of the three COCs—Ra-226, Th-230 and U_{total}—were all less than their average background activity concentrations. The low residual concentrations of FUSRAP-related radionuclides at the site are comparable to ambient (background) levels and in accordance with site-specific ARARs.

4 REFERENCES

Cabrera (Cabrera Services, Inc.), 2010, *Final Status Survey Plan, Linde FUSRAP Site Remediation*, Tonawanda, June.

EPA (U.S. Environmental Protection Agency), 2000, *Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)*, EPA 402-R-97-016, Rev. 1, Aug.

EPA, 2011, *Exposure Factors Handbook*, EPA/600/R-090/052F.

Shaw (Shaw Environmental, Inc.), 2003, *Final Status Survey Plan for Building 14, Linde FUSRAP Site, Tonawanda, New York*, Oct.

Shaw, 2005, *Final Status Survey Plan Linde FUSRAP Site, Tonawanda, New York*, Dec.

USACE (U.S. Army Corps of Engineers), 2000a, *Record of Decision for the Linde Site, Tonawanda, New York*, March.

USACE, 2000b, *Technical Memorandum: Linde Site Radiological Assessment, Tonawanda, New York*, Feb.

USACE, 2003, *Record of Decision for the Building 14 Operable Unit Linde Site, Tonawanda, New York*, April.

USACE, 2006, *Record of Decision for the Groundwater Operable Unit Linde Site, Tonawanda, New York*, Dec.

Yu, C., et al., 2001, *User's Manual for RESRAD Version 6*, ANL/EAD-4, Argonne National Laboratory, Argonne, Ill., July.

Table 1 Site-Specific Soil Cleanup Goals and Average Background Activity Concentrations (pCi/g) for the Linde Site

	Surface[b]	Subsurface[b]	Background[c]
Ra-226[a]	5	15	1.1
Th-230	14	44	1.4
Total U[d]	554	3,021	6.1[d]

[a] Ra-226 criteria include Pb-210 contribution to dose.

[b] These cleanup goals represent residual radionuclide concentrations averaged over a 100-m^2 area that exceeds unity for the SOR of these radionuclide concentrations to the associated concentration limits, above background, of 554 pCi/g of U_{total}, 5 pCi/g of Ra-226, and 14 pCi/g of Th-230 for surface cleanups; and 3,021 pCi/g of U_{total}, 15 pCi/g of Ra-226, and 44 pCi/g of Th-230 for subsurface cleanups.

[c] Source for the average background activity concentrations: *Record of Decision for the Linde Site, Tonawanda, New York* (USACE 2000a).

[d] Total uranium background is the sum of the background values for uranium-234 (U-234), uranium-235 (U-235), and uranium-238 (U-238).

Table 2 Residual Radionuclide Site-Wide Average Concentrations

Radionuclide	Average Activity Concentration (pCi/g)	Average Activity Concentration Above Background (pCi/g)
Ra-226	0.97	<Bkg
Th-230	1.31	<Bkg
Total U	3.00	<Bkg

Table 3 RESRAD Input Parameters for the Commercial/Industrial Worker and Construction Worker Scenarios

RESRAD Input Parameter	RESRAD Default	Commercial/ Industrial	Construction	Note
Dose factor library	FGR 12	FGR 12	FGR 12	RESRAD default
Cut-off half-life (180 d or 30 d)	180	180	180	RESRAD default
Number of points (32, 64, 128, 256, 512, and 1,024)	32	32	32	RESRAD default
Linear spacing/log spacing	Log spacing	Log spacing	Log spacing	RESRAD default
Maximum no. of points for dose	17	17	17	RESRAD default
Maximum no. of points for risk	257	257	257	RESRAD default
Use line draw character (yes/no)	Yes	Yes	Yes	RESRAD default
Find peak pathway dose (yes/no)	Yes	Yes	Yes	RESRAD default
Calculation Parameters				
Basic radiation dose limit (mrem/yr)	25	25	25	RESRAD default
Times for calculation (yr)	1, 3, 10, 30, 100, 300,1000	1, 3, 10, 30, 100, 300, 1000, 10000	1, 3, 10, 30, 100, 300, 1000, 10000	Increased the time horizon of calculation to 10000 years
Source				
Nuclide concentrations (pCi/g)				
Ra-226	0	0.965	0.965	Site average
Th-230	0	1.31	1.31	Site average
U-234	0	1.466	1.466	Site average
U-235	0	0.067	0.067	Site average
U-238	0	1.466	1.466	Site average

Table 3 RESRAD Input Parameters for the Commercial/Industrial Worker and Construction Worker Scenarios (Cont.)

RESRAD Input Parameter	RESRAD Default	Commercial/ Industrial	Construction	Note
Transport Factors				
Distribution coefficient for all zones (cm^3/g)				
Pb	100	550	550	Decay progeny of Ra-226
Ra	70	9,100	9,100	USACE (2000b)
Th	60,000	5,800	5,800	USACE (2000b)
U	50	10	10	USACE (2000b)
Ac	20	2,400	2,400	Decay progeny of U-235
Pa	50	2,700	2,700	Decay progeny of U-235
Number of unsaturated zones	1	1	1	RESRAD default
Time since placement of material (yr)	0	0	0	RESRAD default
Groundwater concentration (pCi/L)	0	0	0	RESRAD default
Leach rate (1/yr)	0	0	0	RESRAD default
Solubility limit (mol/L)	0	0	0	RESRAD default
Use plant/soil ration (check box)	No	No	No	RESRAD default
Impacted Zone Parameters				
Area of impacted zone (m^2)[a]	10,000	10,000	10,000	RESRAD default
Thickness of impacted zone (m)	2	2	2	Changed to RESRAD default of 2 m from 3 m used in USACE (2000b). It is expected that after cleanup the depth of contamination will not exceed 2 m.
Length parallel to aquifer flow (m)	100	100	100	RESRAD default

Table 3 RESRAD Input Parameters for the Commercial/Industrial Worker and Construction Worker Scenarios (Cont.)

RESRAD Input Parameter	RESRAD Default	Commercial/ Industrial	Construction	Note
Does the initial contamination penetrate the water table?	No	No	No	RESRAD default
Cover and Impacted Zone Hydrological Data				
Cover depth (m)	0	0	0	Only one run with RESRAD default of 0 m instead of 0/0.15 m used in USACE (2000b)
Density of primary impacted zone (g/cm^3)	1.5	1.5	1.5	RESRAD default
Impacted zone erosion rate (m/yr)	1.00E-03	0	0	USACE (2000b)
Impacted zone total porosity	0.4	0.45	0.45	USACE (2000b)
Impacted zone field capacity	0.2	0.2	0.2	RESRAD default
Impacted zone hydraulic conductivity (m/yr)	10	123	123	USACE (2000b)
Impacted zone b parameter	5.3	5.3	5.3	RESRAD default
Evapotranspiration coefficient	0.5	0.46	0.46	USACE (2000b)
Wind speed (m/s)	2	2	2	RESRAD default
Precipitation rate (m/yr)	1	1.23	1.23	USACE (2000b)
Irrigation rate (m/yr)	0.2	0.2	0.2	Contaminated water is not used for irrigation (USACE 2006)
Irrigation mode (overhead/ditch)	Overhead	Overhead	Overhead	Contaminated water is not used for irrigation (USACE 2006)
Runoff coefficient	0.2	0.25	0.25	USACE (2000b)

Table 3 RESRAD Input Parameters for the Commercial/Industrial Worker and Construction Worker Scenarios (Cont.)

RESRAD Input Parameter	RESRAD Default	Commercial/ Industrial	Construction	Note
Occupancy, Inhalation, and External Gamma Parameters				
Inhalation rate (m^3/yr)	8,400	8,400	8,400	USACE (2000b) and EPA (2011)
Mass loading for inhalation (g/m^3)	1.00E-04	1.00E-04	2.00E-04	RESRAD default USACE (2000b)
Exposure duration (yr)	30	25	9	USACE (2000b)
Indoor dust filtration factor	0.4	0.4	NU	RESRAD default
External gamma shielding factor	0.7	0.7	NU	RESRAD default
Indoor time fraction	0.5	0.2	0	USACE (2000b)
Outdoor time fraction	0.25	0.03	0.037	USACE (2000b)
Shape of impacted zone (circular/noncircular)	Circular	Circular	Circular	RESRAD default
Ingestion Pathway Dietary and Nondietary Data				
Soil ingestion (g/yr)	36.5	18.25	175.2	USACE (2000b)
Depth of soil mixing layer (m)	0.15	0	0	USACE (2000b)

[a] The 10,000 m^2 area of the impacted zone was selected to be representative of a site-wide area and is a conservative increase in comparison to the 2,000 m^2 area that was used in USACE (2000b).

Source: The parameter values are RESRAD defaults or selected from USACE (2000b), and USACE (2006), as noted in the table. The areas of the impacted zones and the nuclide concentrations in the impacted zones were developed for the specific post-remediation source terms. NU indicates that the parameter was not used in the dose assessment.

Table 4 Post-Remediation Radiological Dose Assessment: Estimated Maximum Dose Rates for the Commercial/Industrial Worker Scenario[a]

Pathway	Dose Rates (mrem/yr)
External gamma exposure	1.98
Dust inhalation (without radon)	6.48×10^{-3}
Soil ingestion	4.21×10^{-2}
Total	2.03

[a] Maximum dose rate will occur 2,756 years in the future.

[b]Maximum dose rate of 1.94 mrem/yr will occur in a 1,000 year evaluation period.

Table 5 Post-Remediation Radiological Dose Assessment: Estimated Maximum Dose Rates for the Construction Worker Scenario[a]

Pathway	Dose Rates (mrem/yr)
External gamma exposure	0.43
Dust inhalation (without radon)	4.36×10^{-3}
Soil ingestion	6.51×10^{-2}
Total	0.50

[a] Maximum dose rate will occur 2,732 years in the future.

[b]Maximum dose rate of 0.48 mrem/yr will occur in a 1,000 year evaluation period.

APPENDIX A:

RESRAD Summary Report for the Commercial/Industrial Worker Scenario

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1RESRAD, Version 6.5      T« Limit = 180 days        06/18/2014  10:54  Page   1
 Summary : Linde Site Industrial/Commercial
 File    : C:\RESRAD_FAMILY\RESRAD\6.5\LINDE-INDUSTRIAL-10000-TIMEFRACTION_03-INH8400.RAD
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 Total Dose Components
      Time = 0.000E+00 ..................................   12
      Time = 1.000E+00 ..................................   13
      Time = 3.000E+00 ..................................   14
      Time = 1.000E+01 ..................................   15
      Time = 3.000E+01 ..................................   16
      Time = 1.000E+02 ..................................   17
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 File    : C:\RESRAD_FAMILY\RESRAD\6.5\LINDE-INDUSTRIAL-10000-TIMEFRACTION_03-INH8400.RAD
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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 12 & FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(2)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(3)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(4)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(5)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(6)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(7)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(8)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(12)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(13)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1(14)

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 A-1  ³ Po-214   (Source: FGR 12)                                ³ 5.138E-04 ³ 5.138E-04 ³ DCF1( 15)
 A-1  ³ Po-215   (Source: FGR 12)                                ³ 1.016E-03 ³ 1.016E-03 ³ DCF1( 16)
 A-1  ³ Po-218   (Source: FGR 12)                                ³ 5.642E-05 ³ 5.642E-05 ³ DCF1( 17)
 A-1  ³ Ra-223   (Source: FGR 12)                                ³ 6.034E-01 ³ 6.034E-01 ³ DCF1( 18)
 A-1  ³ Ra-226   (Source: FGR 12)                                ³ 3.176E-02 ³ 3.176E-02 ³ DCF1( 19)
 A-1  ³ Rn-219   (Source: FGR 12)                                ³ 3.083E-01 ³ 3.083E-01 ³ DCF1( 20)
 A-1  ³ Rn-222   (Source: FGR 12)                                ³ 2.354E-03 ³ 2.354E-03 ³ DCF1( 21)
 A-1  ³ Th-227   (Source: FGR 12)                                ³ 5.212E-01 ³ 5.212E-01 ³ DCF1( 22)
 A-1  ³ Th-230   (Source: FGR 12)                                ³ 1.209E-03 ³ 1.209E-03 ³ DCF1( 23)
 A-1  ³ Th-231   (Source: FGR 12)                                ³ 3.643E-02 ³ 3.643E-02 ³ DCF1( 24)
 A-1  ³ Th-234   (Source: FGR 12)                                ³ 2.410E-02 ³ 2.410E-02 ³ DCF1( 25)
 A-1  ³ Tl-207   (Source: FGR 12)                                ³ 1.980E-02 ³ 1.980E-02 ³ DCF1( 26)
 A-1  ³ Tl-210   (Source: no data)                               ³ 0.000E+00 ³-2.000E+00 ³ DCF1( 27)
 A-1  ³ U-234    (Source: FGR 12)                                ³ 4.017E-04 ³ 4.017E-04 ³ DCF1( 28)
 A-1  ³ U-235    (Source: FGR 12)                                ³ 7.211E-01 ³ 7.211E-01 ³ DCF1( 29)
 A-1  ³ U-238    (Source: FGR 12)                                ³ 1.031E-04 ³ 1.031E-04 ³ DCF1( 30)
      ³                                                          ³           ³           ³
 B-1  ³ Dose conversion factors for inhalation, mrem/pCi:        ³           ³           ³
 B-1  ³ Ac-227+D                                                 ³ 6.724E+00 ³ 6.700E+00 ³ DCF2(  1)
 B-1  ³ Pa-231                                                   ³ 1.280E+00 ³ 1.280E+00 ³ DCF2(  2)
 B-1  ³ Pb-210+D                                                 ³ 2.320E-02 ³ 1.360E-02 ³ DCF2(  3)
 B-1  ³ Ra-226+D                                                 ³ 8.594E-03 ³ 8.580E-03 ³ DCF2(  4)
 B-1  ³ Th-230                                                   ³ 3.260E-01 ³ 3.260E-01 ³ DCF2(  5)
 B-1  ³ U-234                                                    ³ 1.320E-01 ³ 1.320E-01 ³ DCF2(  6)
 B-1  ³ U-235+D                                                  ³ 1.230E-01 ³ 1.230E-01 ³ DCF2(  7)
 B-1  ³ U-238                                                    ³ 1.180E-01 ³ 1.180E-01 ³ DCF2(  8)
 B-1  ³ U-238+D                                                  ³ 1.180E-01 ³ 1.180E-01 ³ DCF2(  9)
      ³                                                          ³           ³           ³
 D-1  ³ Dose conversion factors for ingestion, mrem/pCi:         ³           ³           ³
 D-1  ³ Ac-227+D                                                 ³ 1.480E-02 ³ 1.410E-02 ³ DCF3(  1)
 D-1  ³ Pa-231                                                   ³ 1.060E-02 ³ 1.060E-02 ³ DCF3(  2)
 D-1  ³ Pb-210+D                                                 ³ 7.276E-03 ³ 5.370E-03 ³ DCF3(  3)
 D-1  ³ Ra-226+D                                                 ³ 1.321E-03 ³ 1.320E-03 ³ DCF3(  4)
 D-1  ³ Th-230                                                   ³ 5.480E-04 ³ 5.480E-04 ³ DCF3(  5)
 D-1  ³ U-234                                                    ³ 2.830E-04 ³ 2.830E-04 ³ DCF3(  6)
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                    Dose Conversion Factor (and Related) Parameter Summary (continued)
                                      Dose Library: FGR 12 & FGR 11
0     ³                                                          ³  Current  ³   Base    ³  Parameter
 Menu ³                      Parameter                           ³   Value#  ³   Case*   ³    Name
 ÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄ
 D-1  ³ U-235+D                                                  ³ 2.673E-04 ³ 2.660E-04 ³ DCF3(  7)
 D-1  ³ U-238                                                    ³ 2.550E-04 ³ 2.550E-04 ³ DCF3(  8)
 D-1  ³ U-238+D                                                  ³ 2.687E-04 ³ 2.550E-04 ³ DCF3(  9)
      ³                                                          ³           ³           ³
 D-34 ³ Food transfer factors:                                   ³           ³           ³
 D-34 ³ Ac-227+D  , plant/soil concentration ratio, dimensionless   ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  1,1)
 D-34 ³ Ac-227+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,2)
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 D-34 ³ Ac-227+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,3)
 D-34 ³                                                             ³           ³           ³
 D-34 ³ Pa-231    , plant/soil concentration ratio, dimensionless   ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  2,1)
 D-34 ³ Pa-231    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 5.000E-03 ³ 5.000E-03 ³ RTF(  2,2)
 D-34 ³ Pa-231    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  2,3)
 D-34 ³                                                             ³           ³           ³
 D-34 ³ Pb-210+D  , plant/soil concentration ratio, dimensionless   ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  3,1)
 D-34 ³ Pb-210+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 8.000E-04 ³ 8.000E-04 ³ RTF(  3,2)
 D-34 ³ Pb-210+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 3.000E-04 ³ 3.000E-04 ³ RTF(  3,3)
 D-34 ³                                                             ³           ³           ³
 D-34 ³ Ra-226+D  , plant/soil concentration ratio, dimensionless   ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  4,1)
 D-34 ³ Ra-226+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,2)
 D-34 ³ Ra-226+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,3)
 D-34 ³                                                             ³           ³           ³
 D-34 ³ Th-230    , plant/soil concentration ratio, dimensionless   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,1)
 D-34 ³ Th-230    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  5,2)
 D-34 ³ Th-230    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  5,3)
 D-34 ³                                                             ³           ³           ³
 D-34 ³ U-234     , plant/soil concentration ratio, dimensionless   ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  6,1)
 D-34 ³ U-234     , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 3.400E-04 ³ 3.400E-04 ³ RTF(  6,2)
 D-34 ³ U-234     , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 6.000E-04 ³ 6.000E-04 ³ RTF(  6,3)
 D-34 ³                                                             ³           ³           ³
 D-34 ³ U-235+D   , plant/soil concentration ratio, dimensionless   ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  7,1)
 D-34 ³ U-235+D   , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 3.400E-04 ³ 3.400E-04 ³ RTF(  7,2)
 D-34 ³ U-235+D   , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 6.000E-04 ³ 6.000E-04 ³ RTF(  7,3)
 D-34 ³                                                             ³           ³           ³
 D-34 ³ U-238     , plant/soil concentration ratio, dimensionless   ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  8,1)
 D-34 ³ U-238     , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 3.400E-04 ³ 3.400E-04 ³ RTF(  8,2)
 D-34 ³ U-238     , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 6.000E-04 ³ 6.000E-04 ³ RTF(  8,3)
 D-34 ³                                                             ³           ³           ³
 D-34 ³ U-238+D   , plant/soil concentration ratio, dimensionless   ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  9,1)
 D-34 ³ U-238+D   , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 3.400E-04 ³ 3.400E-04 ³ RTF(  9,2)
 D-34 ³ U-238+D   , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 6.000E-04 ³ 6.000E-04 ³ RTF(  9,3)
      ³                                                             ³           ³           ³
 D-5  ³ Bioaccumulation factors, fresh water, L/kg:                 ³           ³           ³
 D-5  ³ Ac-227+D  , fish                                            ³ 1.500E+01 ³ 1.500E+01 ³ BIOFAC(  1,1)
 D-5  ³ Ac-227+D  , crustacea and mollusks                          ³ 1.000E+03 ³ 1.000E+03 ³ BIOFAC(  1,2)
 D-5  ³                                                             ³           ³           ³
 D-5  ³ Pa-231    , fish                                            ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  2,1)
 D-5  ³ Pa-231    , crustacea and mollusks                          ³ 1.100E+02 ³ 1.100E+02 ³ BIOFAC(  2,2)
 D-5  ³                                                             ³           ³           ³
 D-5  ³ Pb-210+D  , fish                                            ³ 3.000E+02 ³ 3.000E+02 ³ BIOFAC(  3,1)
 D-5  ³ Pb-210+D  , crustacea and mollusks                          ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  3,2)
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                    Dose Conversion Factor (and Related) Parameter Summary (continued)
                                   Dose Library: FGR 12 & FGR 11
0     ³                                                            ³  Current  ³   Base    ³  Parameter
 Menu ³                          Parameter                         ³   Value#  ³   Case*   ³    Name
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D-5  ³ Ra-226+D  , fish                                                ³ 5.000E+01 ³ 5.000E+01 ³ BIOFAC(  4,1)
D-5  ³ Ra-226+D  , crustacea and mollusks                              ³ 2.500E+02 ³ 2.500E+02 ³ BIOFAC(  4,2)
D-5  ³                                                                 ³           ³           ³
D-5  ³ Th-230    , fish                                                ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  5,1)
D-5  ³ Th-230    , crustacea and mollusks                              ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  5,2)
D-5  ³                                                                 ³           ³           ³
D-5  ³ U-234     , fish                                                ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  6,1)
D-5  ³ U-234     , crustacea and mollusks                              ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC(  6,2)
D-5  ³                                                                 ³           ³           ³
D-5  ³ U-235+D   , fish                                                ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  7,1)
D-5  ³ U-235+D   , crustacea and mollusks                              ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC(  7,2)
D-5  ³                                                                 ³           ³           ³
D-5  ³ U-238     , fish                                                ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  8,1)
D-5  ³ U-238     , crustacea and mollusks                              ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC(  8,2)
D-5  ³                                                                 ³           ³           ³
D-5  ³ U-238+D   , fish                                                ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  9,1)
D-5  ³ U-238+D   , crustacea and mollusks                              ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC(  9,2)
ÍÍÍÍÍÏÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÏÍÍÍÍÍÍÍÍÍÍÍÏÍÍÍÍÍÍÍÍÍÍÍÍÏÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
#For DCF1(xxx) only, factors are for infinite depth & area.  See ETFG table in Ground Pathway of Detailed Report.
*Base Case means Default.Lib w/o Associate Nuclide contributions.
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                                                         Site-Specific Parameter Summary
0     ³                                             ³   User    ³            ³        Used by RESRAD          ³  Parameter
 Menu ³                      Parameter              ³   Input   ³  Default   ³ (If different from user input) ³    Name
ÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
 R011 ³ Area of contaminated zone (m**2)            ³ 1.000E+04 ³ 1.000E+04 ³             ---                ³ AREA
 R011 ³ Thickness of contaminated zone (m)          ³ 2.000E+00 ³ 2.000E+00 ³             ---                ³ THICK0
 R011 ³ Fraction of contamination that is submerged ³ 0.000E+00 ³ 0.000E+00 ³             ---                ³ SUBMFRACT
 R011 ³ Length parallel to aquifer flow (m)         ³ not used  ³ 1.000E+02 ³             ---                ³ LCZPAQ
 R011 ³ Basic radiation dose limit (mrem/yr)        ³ 2.500E+01 ³ 3.000E+01 ³             ---                ³ BRDL
 R011 ³ Time since placement of material (yr)       ³ 0.000E+00 ³ 0.000E+00 ³             ---                ³ TI
 R011 ³ Times for calculations (yr)                 ³ 1.000E+00 ³ 1.000E+00 ³             ---                ³ T( 2)
 R011 ³ Times for calculations (yr)                 ³ 3.000E+00 ³ 3.000E+00 ³             ---                ³ T( 3)
 R011 ³ Times for calculations (yr)                 ³ 1.000E+01 ³ 1.000E+01 ³             ---                ³ T( 4)
 R011 ³ Times for calculations (yr)                 ³ 3.000E+01 ³ 3.000E+01 ³             ---                ³ T( 5)
 R011 ³ Times for calculations (yr)                 ³ 1.000E+02 ³ 1.000E+02 ³             ---                ³ T( 6)
 R011 ³ Times for calculations (yr)                 ³ 3.000E+02 ³ 3.000E+02 ³             ---                ³ T( 7)
 R011 ³ Times for calculations (yr)                 ³ 1.000E+03 ³ 1.000E+03 ³             ---                ³ T( 8)
 R011 ³ Times for calculations (yr)                 ³ 1.000E+04 ³ 0.000E+00 ³             ---                ³ T( 9)
 R011 ³ Times for calculations (yr)                 ³ not used  ³ 0.000E+00 ³             ---                ³ T(10)
      ³                                             ³           ³           ³                                ³
 R012 ³ Initial principal radionuclide (pCi/g):  Ra-226  ³ 9.650E-01 ³ 0.000E+00 ³             ---           ³ S1(4)
 R012 ³ Initial principal radionuclide (pCi/g):  Th-230  ³ 1.310E+00 ³ 0.000E+00 ³             ---           ³ S1(5)
 R012 ³ Initial principal radionuclide (pCi/g):  U-234   ³ 1.466E+00 ³ 0.000E+00 ³             ---           ³ S1(6)
 R012 ³ Initial principal radionuclide (pCi/g):  U-235   ³ 6.700E-02 ³ 0.000E+00 ³             ---           ³ S1(7)
 R012 ³ Initial principal radionuclide (pCi/g):  U-238   ³ 1.466E+00 ³ 0.000E+00 ³             ---           ³ S1(8)
 R012 ³ Concentration in groundwater   (pCi/L):  Ra-226  ³ not used  ³ 0.000E+00 ³             ---           ³ W1( 4)
```

R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(8)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.230E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.600E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.230E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.500E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ

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Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ(1)

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 R015 ³ Unsat. zone 1, hydraulic conductivity (m/yr)     ³ not used  ³ 1.000E+01 ³           ---              ³ HCUZ(1)
      ³                                                  ³           ³           ³                            ³
 R016 ³ Distribution coefficients for Ra-226             ³           ³           ³                            ³
 R016 ³   Contaminated zone (cm**3/g)                    ³ 9.100E+03 ³ 7.000E+01 ³           ---              ³ DCNUCC( 4)
 R016 ³   Unsaturated zone 1 (cm**3/g)                   ³ not used  ³ 7.000E+01 ³           ---              ³ DCNUCU( 4,1)
 R016 ³   Saturated zone (cm**3/g)                       ³ not used  ³ 7.000E+01 ³           ---              ³ DCNUCS( 4)
 R016 ³   Leach rate (/yr)                               ³ 0.000E+00 ³ 0.000E+00 ³        2.220E-05           ³ ALEACH( 4)
 R016 ³   Solubility constant                            ³ 0.000E+00 ³ 0.000E+00 ³        not used            ³ SOLUBK( 4)
      ³                                                  ³           ³           ³                            ³
 R016 ³ Distribution coefficients for Th-230             ³           ³           ³                            ³
 R016 ³   Contaminated zone (cm**3/g)                    ³ 5.800E+03 ³ 6.000E+04 ³           ---              ³ DCNUCC( 5)
 R016 ³   Unsaturated zone 1 (cm**3/g)                   ³ not used  ³ 6.000E+04 ³           ---              ³ DCNUCU( 5,1)
 R016 ³   Saturated zone (cm**3/g)                       ³ not used  ³ 6.000E+04 ³           ---              ³ DCNUCS( 5)
 R016 ³   Leach rate (/yr)                               ³ 0.000E+00 ³ 0.000E+00 ³        3.483E-05           ³ ALEACH( 5)
 R016 ³   Solubility constant                            ³ 0.000E+00 ³ 0.000E+00 ³        not used            ³ SOLUBK( 5)
      ³                                                  ³           ³           ³                            ³
 R016 ³ Distribution coefficients for U-234              ³           ³           ³                            ³
 R016 ³   Contaminated zone (cm**3/g)                    ³ 1.000E+01 ³ 5.000E+01 ³           ---              ³ DCNUCC( 6)
 R016 ³   Unsaturated zone 1 (cm**3/g)                   ³ not used  ³ 5.000E+01 ³           ---              ³ DCNUCU( 6,1)
 R016 ³   Saturated zone (cm**3/g)                       ³ not used  ³ 5.000E+01 ³           ---              ³ DCNUCS( 6)
 R016 ³   Leach rate (/yr)                               ³ 0.000E+00 ³ 0.000E+00 ³        1.980E-02           ³ ALEACH( 6)
 R016 ³   Solubility constant                            ³ 0.000E+00 ³ 0.000E+00 ³        not used            ³ SOLUBK( 6)
      ³                                                  ³           ³           ³                            ³
 R016 ³ Distribution coefficients for U-235              ³           ³           ³                            ³
 R016 ³   Contaminated zone (cm**3/g)                    ³ 1.000E+01 ³ 5.000E+01 ³           ---              ³ DCNUCC( 7)
 R016 ³   Unsaturated zone 1 (cm**3/g)                   ³ not used  ³ 5.000E+01 ³           ---              ³ DCNUCU( 7,1)
 R016 ³   Saturated zone (cm**3/g)                       ³ not used  ³ 5.000E+01 ³           ---              ³ DCNUCS( 7)
 R016 ³   Leach rate (/yr)                               ³ 0.000E+00 ³ 0.000E+00 ³        1.980E-02           ³ ALEACH( 7)
 R016 ³   Solubility constant                            ³ 0.000E+00 ³ 0.000E+00 ³        not used            ³ SOLUBK( 7)
      ³                                                  ³           ³           ³                            ³
 R016 ³ Distribution coefficients for U-238              ³           ³           ³                            ³
 R016 ³   Contaminated zone (cm**3/g)                    ³ 1.000E+01 ³ 5.000E+01 ³           ---              ³ DCNUCC( 8)
 R016 ³   Unsaturated zone 1 (cm**3/g)                   ³ not used  ³ 5.000E+01 ³           ---              ³ DCNUCU( 8,1)
 R016 ³   Saturated zone (cm**3/g)                       ³ not used  ³ 5.000E+01 ³           ---              ³ DCNUCS( 8)
 R016 ³   Leach rate (/yr)                               ³ 0.000E+00 ³ 0.000E+00 ³        1.980E-02           ³ ALEACH( 8)
 R016 ³   Solubility constant                            ³ 0.000E+00 ³ 0.000E+00 ³        not used            ³ SOLUBK( 8)
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                                             Site-Specific Parameter Summary (continued)
0     ³                                                  ³   User    ³           ³       Used by RESRAD       ³  Parameter
 Menu ³                     Parameter                    ³   Input   ³  Default  ³ (If different from user input) ³    Name
 ÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄ
 R016 ³ Distribution coefficients for daughter Ac-227    ³           ³           ³                            ³
 R016 ³   Contaminated zone (cm**3/g)                    ³ 2.400E+03 ³ 2.000E+01 ³           ---              ³ DCNUCC( 1)
 R016 ³   Unsaturated zone 1 (cm**3/g)                   ³ not used  ³ 2.000E+01 ³           ---              ³ DCNUCU( 1,1)
 R016 ³   Saturated zone (cm**3/g)                       ³ not used  ³ 2.000E+01 ³           ---              ³ DCNUCS( 1)
 R016 ³   Leach rate (/yr)                               ³ 0.000E+00 ³ 0.000E+00 ³        8.418E-05           ³ ALEACH( 1)
 R016 ³   Solubility constant                            ³ 0.000E+00 ³ 0.000E+00 ³        not used            ³ SOLUBK( 1)
      ³                                                  ³           ³           ³                            ³
```

R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	2.700E+03	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.483E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	5.500E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.672E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	2.500E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	7.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	2.000E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.000E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)

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0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Ring 7	not used	0.000E+00	---	FRACA(7)
R017	Ring 8	not used	0.000E+00	---	FRACA(8)
R017	Ring 9	not used	0.000E+00	---	FRACA(9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	1.825E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	0.000E+00	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

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Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name

R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS

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TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

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Contaminated Zone Dimensions

Area:	10000.00 square meters
Thickness:	2.00 meters
Cover Depth:	0.00 meters

Initial Soil Concentrations, pCi/g

Ra-226	9.650E-01
Th-230	1.310E+00
U-234	1.466E+00
U-235	6.700E-02
U-238	1.466E+00

0

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 2.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	1.000E+04
TDOSE(t):	1.795E+00	1.795E+00	1.795E+00	1.796E+00	1.796E+00	1.800E+00	1.836E+00	1.940E+00	1.623E+00
M(t):	7.179E-02	7.180E-02	7.180E-02	7.183E-02	7.185E-02	7.202E-02	7.342E-02	7.761E-02	6.493E-02

0Maximum TDOSE(t): 2.025E+00 mrem/yr   at t =   2756 ñ 6 years
0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 2.756E+03 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Nuclide														
Ra-226	4.922E-01	0.2430	1.371E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.949E-03	0.0049
Th-230	1.484E+00	0.7326	6.328E-03	0.0031	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.217E-02	0.0159
U-234	7.487E-04	0.0004	3.223E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.624E-05	0.0000
U-235	1.959E-05	0.0000	6.915E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.887E-06	0.0000
U-238	1.063E-07	0.0000	4.621E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.308E-09	0.0000
Total	1.977E+00	0.9760	6.475E-03	0.0032	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.214E-02	0.0208

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 2.756E+03 years

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Nuclide														
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.023E-01	0.2480
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.522E+00	0.7516
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.681E-04	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.239E-05	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.091E-07	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.025E+00	1.0000

0*Sum of all water independent and dependent pathways.

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Nuclide														
Ra-226	1.726E+00	0.9615	1.351E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.802E-03	0.0032
Th-230	7.656E-04	0.0004	6.680E-03	0.0037	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.015E-03	0.0017
U-234	9.559E-05	0.0001	2.997E-03	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.724E-03	0.0010
U-235	8.136E-03	0.0045	1.277E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.448E-05	0.0000
U-238	3.532E-02	0.0197	2.680E-03	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.637E-03	0.0009
Total	1.770E+00	0.9861	1.262E-02	0.0070	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.225E-02	0.0068

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

0 Water Dependent Pathways

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.732E+00	0.9648
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.046E-02	0.0058
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.817E-03	0.0027
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.338E-03	0.0046
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.963E-02	0.0221
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.795E+00	1.0000

0*Sum of all water independent and dependent pathways.

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0 Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Ra-226	1.725E+00	0.9610	1.456E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.687E-03	0.0037
Th-230	1.780E-03	0.0010	6.680E-03	0.0037	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.018E-03	0.0017
U-234	9.372E-05	0.0001	2.939E-03	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.691E-03	0.0009
U-235	7.977E-03	0.0044	1.252E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.308E-05	0.0000
U-238	3.462E-02	0.0193	2.628E-03	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.605E-03	0.0009
Total	1.769E+00	0.9857	1.252E-02	0.0070	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.307E-02	0.0073

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

0 Water Dependent Pathways

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.732E+00	0.9648
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.148E-02	0.0064
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.723E-03	0.0026
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.175E-03	0.0046
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.886E-02	0.0216
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.795E+00	1.0000

0*Sum of all water independent and dependent pathways.

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	1.723E+00	0.9600	1.656E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.375E-03	0.0047
Th-230	3.808E-03	0.0021	6.680E-03	0.0037	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.027E-03	0.0017
U-234	9.014E-05	0.0001	2.825E-03	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.625E-03	0.0009
U-235	7.667E-03	0.0043	1.204E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.038E-05	0.0000
U-238	3.328E-02	0.0185	2.526E-03	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.543E-03	0.0009
Total	1.768E+00	0.9850	1.232E-02	0.0069	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.464E-02	0.0082

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.732E+00	0.9648
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.351E-02	0.0075
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.540E-03	0.0025
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.858E-03	0.0044
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.735E-02	0.0208
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.795E+00	1.0000

0*Sum of all water independent and dependent pathways.

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	1.718E+00	0.9567	2.262E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.350E-02	0.0075
Th-230	1.089E-02	0.0061	6.679E-03	0.0037	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.072E-03	0.0017
U-234	7.896E-05	0.0000	2.459E-03	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.415E-03	0.0008
U-235	6.676E-03	0.0037	1.052E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.180E-05	0.0000
U-238	2.897E-02	0.0161	2.199E-03	0.0012	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.343E-03	0.0007
Total	1.765E+00	0.9827	1.167E-02	0.0065	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.939E-02	0.0108

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

0 Water Dependent Pathways

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.732E+00	0.9644
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.064E-02	0.0115
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.953E-03	0.0022
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.843E-03	0.0038
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.251E-02	0.0181
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.796E+00	1.0000

0*Sum of all water independent and dependent pathways.

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

0 Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Ra-226	1.703E+00	0.9479	3.397E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.310E-02	0.0129
Th-230	3.099E-02	0.0173	6.676E-03	0.0037	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.290E-03	0.0018
U-234	5.673E-05	0.0000	1.656E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.526E-04	0.0005
U-235	4.497E-03	0.0025	7.245E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.333E-05	0.0000
U-238	1.950E-02	0.0109	1.480E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.039E-04	0.0005
Total	1.758E+00	0.9786	1.022E-02	0.0057	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.829E-02	0.0157

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

0 Water Dependent Pathways

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.726E+00	0.9610
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.095E-02	0.0228
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.665E-03	0.0015
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.613E-03	0.0026
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.188E-02	0.0122
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.796E+00	1.0000

0*Sum of all water independent and dependent pathways.

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Ra-226	1.650E+00	0.9162	4.445E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.209E-02	0.0178
Th-230	9.979E-02	0.0554	6.673E-03	0.0037	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.485E-03	0.0025
U-234	4.214E-05	0.0000	4.165E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.396E-04	0.0001
U-235	1.141E-03	0.0006	2.413E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.612E-05	0.0000
U-238	4.875E-03	0.0027	3.701E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.261E-04	0.0001
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Total	1.755E+00	0.9750	7.928E-03	0.0044	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.706E-02	0.0206

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.682E+00	0.9343
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.109E-01	0.0616
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.983E-04	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.181E-03	0.0007
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.471E-03	0.0030
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.800E+00	1.0000

0*Sum of all water independent and dependent pathways.

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Ra-226	1.506E+00	0.8205	4.194E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.044E-02	0.0166
Th-230	2.835E-01	0.1545	6.666E-03	0.0036	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.155E-03	0.0044
U-234	1.215E-04	0.0001	1.126E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.215E-06	0.0000
U-235	4.603E-05	0.0000	9.034E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.609E-06	0.0000
U-238	9.288E-05	0.0001	7.055E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.310E-06	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	1.790E+00	0.9751	7.112E-03	0.0039	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.862E-02	0.0210

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

0 Water Dependent Pathways

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.537E+00	0.8373
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.984E-01	0.1625
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.410E-04	0.0001
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.267E-05	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.042E-04	0.0001
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.836E+00	1.0000

0*Sum of all water independent and dependent pathways.

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Summary : Linde Site Industrial/Commercial

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

0 Water Independent Pathways (Inhalation excludes radon)

0 Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Ra-226	1.095E+00	0.5643	3.049E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.213E-02	0.0114
Th-230	7.974E-01	0.4110	6.610E-03	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.847E-02	0.0095
U-234	3.895E-04	0.0002	3.365E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.071E-06	0.0000
U-235	2.318E-05	0.0000	8.184E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.968E-06	0.0000
U-238	5.348E-08	0.0000	4.888E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.255E-09	0.0000
Total	1.893E+00	0.9755	6.926E-03	0.0036	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.062E-02	0.0209

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

0 Water Dependent Pathways

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.117E+00	0.5759
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.224E-01	0.4239
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.019E-04	0.0002
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.834E-05	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.523E-08	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.940E+00	1.0000

0*Sum of all water independent and dependent pathways.

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Summary : Linde Site Industrial/Commercial

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+04 years
0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	1.817E-02	0.0112	5.059E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.673E-04	0.0002
Th-230	1.566E+00	0.9647	4.741E-03	0.0029	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.324E-02	0.0205
U-234	7.980E-04	0.0005	2.417E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.694E-05	0.0000
U-235	9.773E-06	0.0000	3.450E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.937E-06	0.0000
U-238	1.144E-07	0.0000	3.467E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.429E-09	0.0000
Total	1.585E+00	0.9764	4.752E-03	0.0029	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.362E-02	0.0207

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+04 years
0 Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.854E-02	0.0114
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.604E+00	0.9881
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.173E-04	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.616E-05	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.172E-07	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.623E+00	1.0000

0*Sum of all water independent and dependent pathways.
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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

0 Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	1.000E+04
Ra-226+D	Ra-226+D	1.000E+00	1.794E+00	1.793E+00	1.791E+00	1.786E+00	1.769E+00	1.714E+00	1.565E+00	1.138E+00	1.888E-02
Ra-226+D	Pb-210+D	1.000E+00	4.906E-04	1.451E-03	3.283E-03	8.844E-03	1.929E-02	2.920E-02	2.790E-02	2.028E-02	3.366E-04
Ra-226+D	äDSR(j)		1.794E+00	1.794E+00	1.795E+00	1.795E+00	1.789E+00	1.743E+00	1.593E+00	1.158E+00	1.921E-02
0Th-230	Th-230	1.000E+00	7.597E-03	7.596E-03	7.596E-03	7.593E-03	7.587E-03	7.564E-03	7.498E-03	7.271E-03	4.901E-03
Th-230	Ra-226+D	1.000E+00	3.886E-04	1.165E-03	2.718E-03	8.140E-03	2.353E-02	7.619E-02	2.168E-01	6.101E-01	1.198E+00
Th-230	Pb-210+D	1.000E+00	7.103E-08	4.927E-07	2.552E-06	2.125E-05	1.479E-04	9.378E-04	3.431E-03	1.046E-02	2.108E-02
Th-230	äDSR(j)		7.985E-03	8.762E-03	1.032E-02	1.575E-02	3.126E-02	8.469E-02	2.278E-01	6.278E-01	1.224E+00
0U-234	U-234	1.000E+00	3.286E-03	3.222E-03	3.096E-03	2.696E-03	1.814E-03	4.534E-04	8.634E-06	8.224E-12	0.000E+00
U-234	Th-230	1.000E+00	3.397E-08	1.010E-07	2.312E-07	6.481E-07	1.564E-06	2.973E-06	3.406E-06	3.312E-06	2.232E-06
U-234	Ra-226+D	1.000E+00	1.160E-09	8.075E-09	4.213E-08	3.599E-07	2.673E-06	1.973E-05	8.286E-05	2.663E-04	5.457E-04
U-234	Pb-210+D	1.000E+00	1.595E-13	2.366E-12	2.693E-11	6.539E-10	1.253E-08	2.112E-07	1.280E-06	4.556E-06	9.600E-06

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 U-234      äDSR(j)                3.286E-03 3.222E-03 3.097E-03 2.697E-03 1.818E-03 4.763E-04 9.618E-05 2.742E-04 5.575E-04
0U-235+D    U-235+D    1.000E+00  1.245E-01 1.220E-01 1.173E-01 1.021E-01 6.871E-02 1.718E-02 3.273E-04 3.124E-10 0.000E+00
 U-235+D    Pa-231     1.000E+00  1.000E-06 2.974E-06 6.805E-06 1.908E-05 4.602E-05 8.722E-05 9.899E-05 9.281E-05 3.912E-05
 U-235+D    Ac-227+D   1.000E+00  5.445E-08 3.756E-07 1.920E-06 1.526E-05 9.275E-05 3.679E-04 5.091E-04 4.794E-04 2.021E-04
 U-235+D    äDSR(j)                1.245E-01 1.220E-01 1.173E-01 1.021E-01 6.885E-02 1.763E-02 9.354E-04 5.722E-04 2.412E-04
0U-238      U-238      5.400E-05  1.569E-07 1.538E-07 1.478E-07 1.287E-07 8.660E-08 2.165E-08 4.125E-10 3.937E-16 0.000E+00
0U-238+D    U-238+D    9.999E-01  2.703E-02 2.650E-02 2.548E-02 2.218E-02 1.492E-02 3.732E-03 7.109E-05 6.785E-11 0.000E+00
 U-238+D    U-234      9.999E-01  4.642E-09 1.368E-08 3.071E-08 8.022E-08 1.568E-07 1.292E-07 7.358E-09 2.336E-14 0.000E+00
 U-238+D    Th-230     9.999E-01  3.199E-14 2.214E-13 1.141E-12 9.318E-12 6.088E-11 2.917E-10 4.810E-10 4.752E-10 3.203E-10
 U-238+D    Ra-226+D   9.999E-01  8.199E-16 1.219E-14 1.396E-13 3.455E-12 6.971E-11 1.347E-09 9.597E-09 3.651E-08 7.826E-08
 U-238+D    Pb-210+D   9.999E-01  9.028E-20 2.764E-18 6.778E-17 4.803E-15 2.585E-13 1.253E-11 1.437E-10 6.233E-10 1.377E-09
 U-238+D    äDSR(j)                2.703E-02 2.650E-02 2.548E-02 2.218E-02 1.492E-02 3.732E-03 7.111E-05 3.767E-08 7.996E-08
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 The DSR includes contributions from associated (half-life ó 180 days) daughters.
0
                                   Single Radionuclide Soil Guidelines G(i,t) in pCi/g
                                      Basic Radiation Dose Limit = 2.500E+01 mrem/yr
0Nuclide
   (i)    t= 0.000E+00   1.000E+00   3.000E+00   1.000E+01   3.000E+01   1.000E+02   3.000E+02   1.000E+03   1.000E+04
 ÄÄÄÄÄÄÄ     ÄÄÄÄÄÄÄÄÄÄ   ÄÄÄÄÄÄÄÄÄÄ   ÄÄÄÄÄÄÄÄÄÄ   ÄÄÄÄÄÄÄÄÄÄ   ÄÄÄÄÄÄÄÄÄÄ   ÄÄÄÄÄÄÄÄÄÄ   ÄÄÄÄÄÄÄÄÄÄ   ÄÄÄÄÄÄÄÄÄÄ   ÄÄÄÄÄÄÄÄÄÄ
 Ra-226      1.393E+01   1.393E+01   1.393E+01   1.393E+01   1.398E+01   1.434E+01   1.570E+01   2.159E+01   1.301E+03
 Th-230      3.131E+03   2.853E+03   2.423E+03   1.587E+03   7.997E+02   2.952E+02   1.098E+02   3.982E+01   2.042E+01
 U-234       7.608E+03   7.760E+03   8.073E+03   9.271E+03   1.375E+04   5.248E+04   2.599E+05   9.118E+04   4.484E+04
 U-235       2.009E+02   2.049E+02   2.132E+02   2.448E+02   3.631E+02   1.418E+03   2.673E+04   4.369E+04   1.037E+05
 U-238       9.247E+02   9.432E+02   9.813E+02   1.127E+03   1.675E+03   6.699E+03  *3.361E+05  *3.361E+05  *3.361E+05
 íííííííí    íííííííííí   íííííííííí   íííííííííí   íííííííííí   íííííííííí   íííííííííí   íííííííííí   íííííííííí   íííííííííí
 *At specific activity limit
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             Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
             and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
          at tmin = time of minimum single radionuclide soil guideline
      and at tmax = time of maximum total dose =    2756 ñ 6 years
0Nuclide  Initial         tmin       DSR(i,tmin) G(i,tmin) DSR(i,tmax) G(i,tmax)
   (i)    (pCi/g)       (years)                  (pCi/g)               (pCi/g)
 ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄ
 Ra-226  9.650E-01     5.58 ñ 0.01    1.795E+00  1.393E+01  5.205E-01  4.803E+01
 Th-230  1.310E+00     5677 ñ *       1.359E+00  1.839E+01  1.162E+00  2.152E+01
 U-234   1.466E+00     0.000E+00      3.286E-03  7.608E+03  5.240E-04  4.771E+04
 U-235   6.700E-02     0.000E+00      1.245E-01  2.009E+02  4.834E-04  5.171E+04
 U-238   1.466E+00     0.000E+00      2.703E-02  9.247E+02  7.440E-08 *3.361E+05
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 *At specific activity limit

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                                   Individual Nuclide Dose Summed Over All Pathways
```

Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	1.000E+04
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ra-226	Ra-226	1.000E+00	1.731E+00	1.730E+00	1.729E+00	1.723E+00	1.708E+00	1.654E+00	1.510E+00	1.098E+00	1.822E-02
Ra-226	Th-230	1.000E+00	5.090E-04	1.527E-03	3.561E-03	1.066E-02	3.082E-02	9.981E-02	2.841E-01	7.992E-01	1.570E+00
Ra-226	U-234	1.000E+00	1.701E-09	1.184E-08	6.176E-08	5.276E-07	3.919E-06	2.892E-05	1.215E-04	3.904E-04	8.000E-04
Ra-226	U-238	9.999E-01	1.202E-15	1.788E-14	2.046E-13	5.065E-12	1.022E-10	1.975E-09	1.407E-08	5.352E-08	1.147E-07
Ra-226	äDOSE(j)		1.732E+00	1.732E+00	1.732E+00	1.734E+00	1.738E+00	1.754E+00	1.794E+00	1.897E+00	1.589E+00
0Pb-210	Ra-226	1.000E+00	4.734E-04	1.400E-03	3.168E-03	8.534E-03	1.862E-02	2.818E-02	2.692E-02	1.957E-02	3.248E-04
Pb-210	Th-230	1.000E+00	9.305E-08	6.454E-07	3.343E-06	2.784E-05	1.938E-04	1.229E-03	4.494E-03	1.370E-02	2.762E-02
Pb-210	U-234	1.000E+00	2.338E-13	3.468E-12	3.948E-11	9.586E-10	1.837E-08	3.096E-07	1.877E-06	6.679E-06	1.407E-05
Pb-210	U-238	9.999E-01	1.324E-19	4.053E-18	9.937E-17	7.042E-15	3.790E-13	1.838E-11	2.107E-10	9.138E-10	2.018E-09
Pb-210	äDOSE(j)		4.735E-04	1.401E-03	3.171E-03	8.562E-03	1.881E-02	2.941E-02	3.142E-02	3.328E-02	2.796E-02
0Th-230	Th-230	1.000E+00	9.952E-03	9.951E-03	9.951E-03	9.947E-03	9.939E-03	9.908E-03	9.822E-03	9.525E-03	6.420E-03
Th-230	U-234	1.000E+00	4.980E-08	1.481E-07	3.389E-07	9.501E-07	2.293E-06	4.358E-06	4.994E-06	4.855E-06	3.273E-06
Th-230	U-238	9.999E-01	4.690E-14	3.246E-13	1.673E-12	1.366E-11	8.925E-11	4.277E-10	7.052E-10	6.966E-10	4.695E-10
Th-230	äDOSE(j)		9.952E-03	9.952E-03	9.951E-03	9.948E-03	9.941E-03	9.913E-03	9.827E-03	9.530E-03	6.423E-03
0U-234	U-234	1.000E+00	4.817E-03	4.723E-03	4.539E-03	3.952E-03	2.659E-03	6.647E-04	1.266E-05	1.206E-11	0.000E+00
U-234	U-238	9.999E-01	6.805E-09	2.006E-08	4.502E-08	1.176E-07	2.299E-07	1.894E-07	1.079E-08	3.424E-14	0.000E+00
U-234	äDOSE(j)		4.817E-03	4.723E-03	4.539E-03	3.952E-03	2.659E-03	6.649E-04	1.267E-05	1.209E-11	0.000E+00
0U-235	U-235	1.000E+00	8.338E-03	8.175E-03	7.857E-03	6.840E-03	4.603E-03	1.151E-03	2.193E-05	2.093E-11	0.000E+00
0Pa-231	U-235	1.000E+00	6.700E-08	1.992E-07	4.560E-07	1.278E-06	3.083E-06	5.844E-06	6.632E-06	6.218E-06	2.621E-06
0Ac-227	U-235	1.000E+00	3.648E-09	2.516E-08	1.286E-07	1.023E-06	6.215E-06	2.465E-05	3.411E-05	3.212E-05	1.354E-05
0U-238	U-238	5.400E-05	2.300E-07	2.254E-07	2.167E-07	1.886E-07	1.269E-07	3.174E-08	6.047E-10	5.772E-16	0.000E+00
U-238	U-238	9.999E-01	3.963E-02	3.886E-02	3.735E-02	3.251E-02	2.188E-02	5.470E-03	1.042E-04	9.947E-11	0.000E+00
U-238	äDOSE(j)		3.963E-02	3.886E-02	3.735E-02	3.251E-02	2.188E-02	5.470E-03	1.042E-04	9.947E-11	0.000E+00
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ

THF(i) is the thread fraction of the parent nuclide.

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Individual Nuclide Soil Concentration

Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	1.000E+04
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ra-226	Ra-226	1.000E+00	9.650E-01	9.646E-01	9.637E-01	9.606E-01	9.519E-01	9.220E-01	8.418E-01	6.120E-01	1.015E-02
Ra-226	Th-230	1.000E+00	0.000E+00	5.674E-04	1.701E-03	5.661E-03	1.690E-02	5.536E-02	1.581E-01	4.453E-01	8.750E-01
Ra-226	U-234	1.000E+00	0.000E+00	2.839E-09	2.521E-08	2.674E-07	2.120E-06	1.600E-05	6.758E-05	2.175E-04	4.459E-04
Ra-226	U-238	9.999E-01	0.000E+00	2.674E-15	7.078E-14	2.446E-12	5.445E-11	1.089E-09	7.823E-09	2.981E-08	6.394E-08
Ra-226	äS(j):		9.650E-01	9.651E-01	9.654E-01	9.663E-01	9.688E-01	9.774E-01	9.999E-01	1.057E+00	8.856E-01
0Pb-210	Ra-226	1.000E+00	0.000E+00	2.952E-02	8.581E-02	2.567E-01	5.779E-01	8.830E-01	8.441E-01	6.137E-01	1.018E-02
Pb-210	Th-230	1.000E+00	0.000E+00	8.727E-06	7.690E-05	7.950E-04	5.903E-03	3.825E-02	1.406E-01	4.292E-01	8.658E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.924E-11	7.693E-10	2.607E-08	5.511E-07	9.608E-06	5.872E-05	2.093E-04	4.412E-04
Pb-210	U-238	9.999E-01	0.000E+00	2.069E-17	1.629E-15	1.821E-13	1.119E-11	5.680E-10	6.587E-09	2.863E-08	6.327E-08
Pb-210	äS(j):		0.000E+00	2.953E-02	8.589E-02	2.575E-01	5.838E-01	9.212E-01	9.848E-01	1.043E+00	8.764E-01
0Th-230	Th-230	1.000E+00	1.310E+00	1.310E+00	1.310E+00	1.309E+00	1.308E+00	1.304E+00	1.293E+00	1.254E+00	8.451E-01
Th-230	U-234	1.000E+00	0.000E+00	1.307E-05	3.843E-05	1.197E-04	2.983E-04	5.727E-04	6.573E-04	6.391E-04	4.308E-04
Th-230	U-238	9.999E-01	0.000E+00	1.846E-11	1.618E-10	1.641E-09	1.144E-08	5.604E-08	9.281E-08	9.170E-08	6.180E-08

```
 Th-230  äS(j):              1.310E+00 1.310E+00 1.310E+00 1.310E+00 1.309E+00 1.305E+00 1.294E+00 1.254E+00 8.455E-01
0U-234   U-234   1.000E+00   1.466E+00 1.437E+00 1.381E+00 1.203E+00 8.093E-01 2.023E-01 3.852E-03 3.669E-09 0.000E+00
 U-234   U-238   9.999E-01   0.000E+00 4.074E-06 1.175E-05 3.409E-05 6.883E-05 5.735E-05 3.277E-06 1.042E-11 0.000E+00
 U-234   äS(j):              1.466E+00 1.437E+00 1.381E+00 1.203E+00 8.093E-01 2.023E-01 3.855E-03 3.679E-09 0.000E+00
0U-235   U-235   1.000E+00   6.700E-02 6.569E-02 6.314E-02 5.496E-02 3.699E-02 9.248E-03 1.762E-04 1.682E-10 0.000E+00
0Pa-231  U-235   1.000E+00   0.000E+00 1.404E-06 4.128E-06 1.285E-05 3.202E-05 6.132E-05 6.970E-05 6.535E-05 2.755E-05
0Ac-227  U-235   1.000E+00   0.000E+00 2.218E-08 1.929E-07 1.903E-06 1.234E-05 5.000E-05 6.943E-05 6.537E-05 2.756E-05
0U-238   U-238   5.400E-05   7.916E-05 7.761E-05 7.460E-05 6.494E-05 4.370E-05 1.093E-05 2.082E-07 1.987E-13 0.000E+00
 U-238   U-238   9.999E-01   1.466E+00 1.437E+00 1.381E+00 1.203E+00 8.093E-01 2.023E-01 3.855E-03 3.679E-09 0.000E+00
 U-238   äS(j):              1.466E+00 1.437E+00 1.381E+00 1.203E+00 8.093E-01 2.023E-01 3.855E-03 3.679E-09 0.000E+00
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 THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time =    1.81 seconds
```

APPENDIX B:

RESRAD Summary Report for the Construction Worker Scenario

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      Time = 0.000E+00 ...................................   12
      Time = 1.000E+00 ...................................   13
      Time = 3.000E+00 ...................................   14
      Time = 1.000E+01 ...................................   15
      Time = 3.000E+01 ...................................   16
      Time = 1.000E+02 ...................................   17
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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 12 & FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(2)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(3)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(4)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(5)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(6)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(7)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(8)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(12)

```
 A-1  ³ Po-210   (Source: FGR 12)                                  ³ 5.231E-05 ³ 5.231E-05 ³ DCF1( 13)
 A-1  ³ Po-211   (Source: FGR 12)                                  ³ 4.764E-02 ³ 4.764E-02 ³ DCF1( 14)
 A-1  ³ Po-214   (Source: FGR 12)                                  ³ 5.138E-04 ³ 5.138E-04 ³ DCF1( 15)
 A-1  ³ Po-215   (Source: FGR 12)                                  ³ 1.016E-03 ³ 1.016E-03 ³ DCF1( 16)
 A-1  ³ Po-218   (Source: FGR 12)                                  ³ 5.642E-05 ³ 5.642E-05 ³ DCF1( 17)
 A-1  ³ Ra-223   (Source: FGR 12)                                  ³ 6.034E-01 ³ 6.034E-01 ³ DCF1( 18)
 A-1  ³ Ra-226   (Source: FGR 12)                                  ³ 3.176E-02 ³ 3.176E-02 ³ DCF1( 19)
 A-1  ³ Rn-219   (Source: FGR 12)                                  ³ 3.083E-01 ³ 3.083E-01 ³ DCF1( 20)
 A-1  ³ Rn-222   (Source: FGR 12)                                  ³ 2.354E-03 ³ 2.354E-03 ³ DCF1( 21)
 A-1  ³ Th-227   (Source: FGR 12)                                  ³ 5.212E-01 ³ 5.212E-01 ³ DCF1( 22)
 A-1  ³ Th-230   (Source: FGR 12)                                  ³ 1.209E-03 ³ 1.209E-03 ³ DCF1( 23)
 A-1  ³ Th-231   (Source: FGR 12)                                  ³ 3.643E-02 ³ 3.643E-02 ³ DCF1( 24)
 A-1  ³ Th-234   (Source: FGR 12)                                  ³ 2.410E-02 ³ 2.410E-02 ³ DCF1( 25)
 A-1  ³ Tl-207   (Source: FGR 12)                                  ³ 1.980E-02 ³ 1.980E-02 ³ DCF1( 26)
 A-1  ³ Tl-210   (Source: no data)                                 ³ 0.000E+00 ³-2.000E+00 ³ DCF1( 27)
 A-1  ³ U-234    (Source: FGR 12)                                  ³ 4.017E-04 ³ 4.017E-04 ³ DCF1( 28)
 A-1  ³ U-235    (Source: FGR 12)                                  ³ 7.211E-01 ³ 7.211E-01 ³ DCF1( 29)
 A-1  ³ U-238    (Source: FGR 12)                                  ³ 1.031E-04 ³ 1.031E-04 ³ DCF1( 30)
      ³                                                            ³           ³           ³
 B-1  ³ Dose conversion factors for inhalation, mrem/pCi:          ³           ³           ³
 B-1  ³ Ac-227+D                                                   ³ 6.724E+00 ³ 6.700E+00 ³ DCF2(  1)
 B-1  ³ Pa-231                                                     ³ 1.280E+00 ³ 1.280E+00 ³ DCF2(  2)
 B-1  ³ Pb-210+D                                                   ³ 2.320E-02 ³ 1.360E-02 ³ DCF2(  3)
 B-1  ³ Ra-226+D                                                   ³ 8.594E-03 ³ 8.580E-03 ³ DCF2(  4)
 B-1  ³ Th-230                                                     ³ 3.260E-01 ³ 3.260E-01 ³ DCF2(  5)
 B-1  ³ U-234                                                      ³ 1.320E-01 ³ 1.320E-01 ³ DCF2(  6)
 B-1  ³ U-235+D                                                    ³ 1.230E-01 ³ 1.230E-01 ³ DCF2(  7)
 B-1  ³ U-238                                                      ³ 1.180E-01 ³ 1.180E-01 ³ DCF2(  8)
 B-1  ³ U-238+D                                                    ³ 1.180E-01 ³ 1.180E-01 ³ DCF2(  9)
      ³                                                            ³           ³           ³
 D-1  ³ Dose conversion factors for ingestion, mrem/pCi:           ³           ³           ³
 D-1  ³ Ac-227+D                                                   ³ 1.480E-02 ³ 1.410E-02 ³ DCF3(  1)
 D-1  ³ Pa-231                                                     ³ 1.060E-02 ³ 1.060E-02 ³ DCF3(  2)
 D-1  ³ Pb-210+D                                                   ³ 7.276E-03 ³ 5.370E-03 ³ DCF3(  3)
 D-1  ³ Ra-226+D                                                   ³ 1.321E-03 ³ 1.320E-03 ³ DCF3(  4)
 D-1  ³ Th-230                                                     ³ 5.480E-04 ³ 5.480E-04 ³ DCF3(  5)
 D-1  ³ U-234                                                      ³ 2.830E-04 ³ 2.830E-04 ³ DCF3(  6)
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                    Dose Conversion Factor (and Related) Parameter Summary (continued)
                                    Dose Library: FGR 12 & FGR 11
0     ³                                                            ³  Current  ³   Base    ³  Parameter
 Menu ³                         Parameter                          ³   Value#  ³   Case*   ³    Name
 ÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
 D-1  ³ U-235+D                                                    ³ 2.673E-04 ³ 2.660E-04 ³ DCF3(  7)
 D-1  ³ U-238                                                      ³ 2.550E-04 ³ 2.550E-04 ³ DCF3(  8)
 D-1  ³ U-238+D                                                    ³ 2.687E-04 ³ 2.550E-04 ³ DCF3(  9)
      ³                                                            ³           ³           ³
 D-34 ³ Food transfer factors:                                     ³           ³           ³
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 D-34 ³ Ac-227+D  , plant/soil concentration ratio, dimensionless   ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  1,1)
 D-34 ³ Ac-227+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,2)
 D-34 ³ Ac-227+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,3)
 D-34 ³                                                             ³           ³           ³
 D-34 ³ Pa-231    , plant/soil concentration ratio, dimensionless   ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  2,1)
 D-34 ³ Pa-231    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 5.000E-03 ³ 5.000E-03 ³ RTF(  2,2)
 D-34 ³ Pa-231    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  2,3)
 D-34 ³                                                             ³           ³           ³
 D-34 ³ Pb-210+D  , plant/soil concentration ratio, dimensionless   ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  3,1)
 D-34 ³ Pb-210+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 8.000E-04 ³ 8.000E-04 ³ RTF(  3,2)
 D-34 ³ Pb-210+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 3.000E-04 ³ 3.000E-04 ³ RTF(  3,3)
 D-34 ³                                                             ³           ³           ³
 D-34 ³ Ra-226+D  , plant/soil concentration ratio, dimensionless   ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  4,1)
 D-34 ³ Ra-226+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,2)
 D-34 ³ Ra-226+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,3)
 D-34 ³                                                             ³           ³           ³
 D-34 ³ Th-230    , plant/soil concentration ratio, dimensionless   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,1)
 D-34 ³ Th-230    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  5,2)
 D-34 ³ Th-230    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  5,3)
 D-34 ³                                                             ³           ³           ³
 D-34 ³ U-234     , plant/soil concentration ratio, dimensionless   ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  6,1)
 D-34 ³ U-234     , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 3.400E-04 ³ 3.400E-04 ³ RTF(  6,2)
 D-34 ³ U-234     , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 6.000E-04 ³ 6.000E-04 ³ RTF(  6,3)
 D-34 ³                                                             ³           ³           ³
 D-34 ³ U-235+D   , plant/soil concentration ratio, dimensionless   ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  7,1)
 D-34 ³ U-235+D   , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 3.400E-04 ³ 3.400E-04 ³ RTF(  7,2)
 D-34 ³ U-235+D   , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 6.000E-04 ³ 6.000E-04 ³ RTF(  7,3)
 D-34 ³                                                             ³           ³           ³
 D-34 ³ U-238     , plant/soil concentration ratio, dimensionless   ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  8,1)
 D-34 ³ U-238     , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 3.400E-04 ³ 3.400E-04 ³ RTF(  8,2)
 D-34 ³ U-238     , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 6.000E-04 ³ 6.000E-04 ³ RTF(  8,3)
 D-34 ³                                                             ³           ³           ³
 D-34 ³ U-238+D   , plant/soil concentration ratio, dimensionless   ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  9,1)
 D-34 ³ U-238+D   , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 3.400E-04 ³ 3.400E-04 ³ RTF(  9,2)
 D-34 ³ U-238+D   , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 6.000E-04 ³ 6.000E-04 ³ RTF(  9,3)
      ³                                                             ³           ³           ³
 D-5  ³ Bioaccumulation factors, fresh water, L/kg:                 ³           ³           ³
 D-5  ³ Ac-227+D  , fish                                            ³ 1.500E+01 ³ 1.500E+01 ³ BIOFAC(  1,1)
 D-5  ³ Ac-227+D  , crustacea and mollusks                          ³ 1.000E+03 ³ 1.000E+03 ³ BIOFAC(  1,2)
 D-5  ³                                                             ³           ³           ³
 D-5  ³ Pa-231    , fish                                            ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  2,1)
 D-5  ³ Pa-231    , crustacea and mollusks                          ³ 1.100E+02 ³ 1.100E+02 ³ BIOFAC(  2,2)
 D-5  ³                                                             ³           ³           ³
 D-5  ³ Pb-210+D  , fish                                            ³ 3.000E+02 ³ 3.000E+02 ³ BIOFAC(  3,1)
 D-5  ³ Pb-210+D  , crustacea and mollusks                          ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  3,2)
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                                  Dose Library: FGR 12 & FGR 11
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0     ³                                                                  ³  Current  ³   Base    ³  Parameter
 Menu ³                            Parameter                             ³   Value#  ³   Case*   ³    Name
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 D-5  ³ Ra-226+D  , fish                                                 ³ 5.000E+01 ³ 5.000E+01 ³ BIOFAC(  4,1)
 D-5  ³ Ra-226+D  , crustacea and mollusks                               ³ 2.500E+02 ³ 2.500E+02 ³ BIOFAC(  4,2)
 D-5  ³                                                                  ³           ³           ³
 D-5  ³ Th-230    , fish                                                 ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  5,1)
 D-5  ³ Th-230    , crustacea and mollusks                               ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  5,2)
 D-5  ³                                                                  ³           ³           ³
 D-5  ³ U-234     , fish                                                 ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  6,1)
 D-5  ³ U-234     , crustacea and mollusks                               ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC(  6,2)
 D-5  ³                                                                  ³           ³           ³
 D-5  ³ U-235+D   , fish                                                 ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  7,1)
 D-5  ³ U-235+D   , crustacea and mollusks                               ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC(  7,2)
 D-5  ³                                                                  ³           ³           ³
 D-5  ³ U-238     , fish                                                 ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  8,1)
 D-5  ³ U-238     , crustacea and mollusks                               ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC(  8,2)
 D-5  ³                                                                  ³           ³           ³
 D-5  ³ U-238+D   , fish                                                 ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  9,1)
 D-5  ³ U-238+D   , crustacea and mollusks                               ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC(  9,2)
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 #For DCF1(xxx) only, factors are for infinite depth & area.  See ETFG table in Ground Pathway of Detailed Report.
 *Base Case means Default.Lib w/o Associate Nuclide contributions.
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                                                        Site-Specific Parameter Summary
0     ³                                                        ³   User    ³           ³          Used by RESRAD           ³  Parameter
 Menu ³                       Parameter                        ³   Input   ³  Default  ³ (If different from user input) ³    Name
 ÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
 R011 ³ Area of contaminated zone (m**2)                       ³ 1.000E+04 ³ 1.000E+04 ³              ---               ³ AREA
 R011 ³ Thickness of contaminated zone (m)                     ³ 2.000E+00 ³ 2.000E+00 ³              ---               ³ THICK0
 R011 ³ Fraction of contamination that is submerged            ³ 0.000E+00 ³ 0.000E+00 ³              ---               ³ SUBMFRACT
 R011 ³ Length parallel to aquifer flow (m)                    ³ not used  ³ 1.000E+02 ³              ---               ³ LCZPAQ
 R011 ³ Basic radiation dose limit (mrem/yr)                   ³ 2.500E+01 ³ 3.000E+01 ³              ---               ³ BRDL
 R011 ³ Time since placement of material (yr)                  ³ 0.000E+00 ³ 0.000E+00 ³              ---               ³ TI
 R011 ³ Times for calculations (yr)                            ³ 1.000E+00 ³ 1.000E+00 ³              ---               ³ T( 2)
 R011 ³ Times for calculations (yr)                            ³ 3.000E+00 ³ 3.000E+00 ³              ---               ³ T( 3)
 R011 ³ Times for calculations (yr)                            ³ 1.000E+01 ³ 1.000E+01 ³              ---               ³ T( 4)
 R011 ³ Times for calculations (yr)                            ³ 3.000E+01 ³ 3.000E+01 ³              ---               ³ T( 5)
 R011 ³ Times for calculations (yr)                            ³ 1.000E+02 ³ 1.000E+02 ³              ---               ³ T( 6)
 R011 ³ Times for calculations (yr)                            ³ 3.000E+02 ³ 3.000E+02 ³              ---               ³ T( 7)
 R011 ³ Times for calculations (yr)                            ³ 1.000E+03 ³ 1.000E+03 ³              ---               ³ T( 8)
 R011 ³ Times for calculations (yr)                            ³ 1.000E+04 ³ 0.000E+00 ³              ---               ³ T( 9)
 R011 ³ Times for calculations (yr)                            ³ not used  ³ 0.000E+00 ³              ---               ³ T(10)
      ³                                                        ³           ³           ³                                ³
 R012 ³ Initial principal radionuclide (pCi/g):  Ra-226        ³ 9.650E-01 ³ 0.000E+00 ³              ---               ³ S1(4)
 R012 ³ Initial principal radionuclide (pCi/g):  Th-230        ³ 1.310E+00 ³ 0.000E+00 ³              ---               ³ S1(5)
 R012 ³ Initial principal radionuclide (pCi/g):  U-234         ³ 1.466E+00 ³ 0.000E+00 ³              ---               ³ S1(6)
 R012 ³ Initial principal radionuclide (pCi/g):  U-235         ³ 6.700E-02 ³ 0.000E+00 ³              ---               ³ S1(7)
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 R012 ³ Initial principal radionuclide (pCi/g):  U-238   ³ 1.466E+00 ³ 0.000E+00 ³            ---            ³ S1(8)
 R012 ³ Concentration in groundwater   (pCi/L):  Ra-226  ³ not used  ³ 0.000E+00 ³            ---            ³ W1( 4)
 R012 ³ Concentration in groundwater   (pCi/L):  Th-230  ³ not used  ³ 0.000E+00 ³            ---            ³ W1( 5)
 R012 ³ Concentration in groundwater   (pCi/L):  U-234   ³ not used  ³ 0.000E+00 ³            ---            ³ W1( 6)
 R012 ³ Concentration in groundwater   (pCi/L):  U-235   ³ not used  ³ 0.000E+00 ³            ---            ³ W1( 7)
 R012 ³ Concentration in groundwater   (pCi/L):  U-238   ³ not used  ³ 0.000E+00 ³            ---            ³ W1( 8)
      ³                                                  ³           ³           ³                           ³
 R013 ³ Cover depth (m)                                  ³ 0.000E+00 ³ 0.000E+00 ³            ---            ³ COVER0
 R013 ³ Density of cover material (g/cm**3)              ³ not used  ³ 1.500E+00 ³            ---            ³ DENSCV
 R013 ³ Cover depth erosion rate (m/yr)                  ³ not used  ³ 1.000E-03 ³            ---            ³ VCV
 R013 ³ Density of contaminated zone (g/cm**3)           ³ 1.500E+00 ³ 1.500E+00 ³            ---            ³ DENSCZ
 R013 ³ Contaminated zone erosion rate (m/yr)            ³ 0.000E+00 ³ 1.000E-03 ³            ---            ³ VCZ
 R013 ³ Contaminated zone total porosity                 ³ 4.500E-01 ³ 4.000E-01 ³            ---            ³ TPCZ
 R013 ³ Contaminated zone field capacity                 ³ 2.000E-01 ³ 2.000E-01 ³            ---            ³ FCCZ
 R013 ³ Contaminated zone hydraulic conductivity (m/yr)  ³ 1.230E+02 ³ 1.000E+01 ³            ---            ³ HCCZ
 R013 ³ Contaminated zone b parameter                    ³ 5.300E+00 ³ 5.300E+00 ³            ---            ³ BCZ
 R013 ³ Average annual wind speed (m/sec)                ³ 2.000E+00 ³ 2.000E+00 ³            ---            ³ WIND
 R013 ³ Humidity in air (g/m**3)                         ³ not used  ³ 8.000E+00 ³            ---            ³ HUMID
 R013 ³ Evapotranspiration coefficient                   ³ 4.600E-01 ³ 5.000E-01 ³            ---            ³ EVAPTR
 R013 ³ Precipitation (m/yr)                             ³ 1.230E+00 ³ 1.000E+00 ³            ---            ³ PRECIP
 R013 ³ Irrigation (m/yr)                                ³ 2.000E-01 ³ 2.000E-01 ³            ---            ³ RI
 R013 ³ Irrigation mode                                  ³ overhead  ³ overhead  ³            ---            ³ IDITCH
 R013 ³ Runoff coefficient                               ³ 2.500E-01 ³ 2.000E-01 ³            ---            ³ RUNOFF
 R013 ³ Watershed area for nearby stream or pond (m**2)  ³ not used  ³ 1.000E+06 ³            ---            ³ WAREA
 R013 ³ Accuracy for water/soil computations             ³ not used  ³ 1.000E-03 ³            ---            ³ EPS
      ³                                                  ³           ³           ³                           ³
 R014 ³ Density of saturated zone (g/cm**3)              ³ not used  ³ 1.500E+00 ³            ---            ³ DENSAQ
 R014 ³ Saturated zone total porosity                    ³ not used  ³ 4.000E-01 ³            ---            ³ TPSZ
 R014 ³ Saturated zone effective porosity                ³ not used  ³ 2.000E-01 ³            ---            ³ EPSZ
 R014 ³ Saturated zone field capacity                    ³ not used  ³ 2.000E-01 ³            ---            ³ FCSZ
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                                     Site-Specific Parameter Summary (continued)
0     ³                                                  ³   User    ³           ³        Used by RESRAD         ³  Parameter
 Menu ³                    Parameter                     ³   Input   ³  Default  ³ (If different from user input) ³    Name
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 R014 ³ Saturated zone hydraulic conductivity (m/yr)     ³ not used  ³ 1.000E+02 ³            ---            ³ HCSZ
 R014 ³ Saturated zone hydraulic gradient                ³ not used  ³ 2.000E-02 ³            ---            ³ HGWT
 R014 ³ Saturated zone b parameter                       ³ not used  ³ 5.300E+00 ³            ---            ³ BSZ
 R014 ³ Water table drop rate (m/yr)                     ³ not used  ³ 1.000E-03 ³            ---            ³ VWT
 R014 ³ Well pump intake depth (m below water table)     ³ not used  ³ 1.000E+01 ³            ---            ³ DWIBWT
 R014 ³ Model: Nondispersion (ND) or Mass-Balance (MB)   ³ not used  ³ ND        ³            ---            ³ MODEL
 R014 ³ Well pumping rate (m**3/yr)                      ³ not used  ³ 2.500E+02 ³            ---            ³ UW
      ³                                                  ³           ³           ³                           ³
 R015 ³ Number of unsaturated zone strata                ³ not used  ³ 1         ³            ---            ³ NS
 R015 ³ Unsat. zone 1, thickness (m)                     ³ not used  ³ 4.000E+00 ³            ---            ³ H(1)
 R015 ³ Unsat. zone 1, soil density (g/cm**3)            ³ not used  ³ 1.500E+00 ³            ---            ³ DENSUZ(1)
 R015 ³ Unsat. zone 1, total porosity                    ³ not used  ³ 4.000E-01 ³            ---            ³ TPUZ(1)
 R015 ³ Unsat. zone 1, effective porosity                ³ not used  ³ 2.000E-01 ³            ---            ³ EPUZ(1)
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 R015 ³ Unsat. zone 1, field capacity                ³ not used  ³ 2.000E-01 ³          ---               ³ FCUZ(1)
 R015 ³ Unsat. zone 1, soil-specific b parameter     ³ not used  ³ 5.300E+00 ³          ---               ³ BUZ(1)
 R015 ³ Unsat. zone 1, hydraulic conductivity (m/yr) ³ not used  ³ 1.000E+01 ³          ---               ³ HCUZ(1)
      ³                                              ³           ³           ³                            ³
 R016 ³ Distribution coefficients for Ra-226         ³           ³           ³                            ³
 R016 ³   Contaminated zone (cm**3/g)                ³ 9.100E+03 ³ 7.000E+01 ³          ---               ³ DCNUCC( 4)
 R016 ³   Unsaturated zone 1 (cm**3/g)               ³ not used  ³ 7.000E+01 ³          ---               ³ DCNUCU( 4,1)
 R016 ³   Saturated zone (cm**3/g)                   ³ not used  ³ 7.000E+01 ³          ---               ³ DCNUCS( 4)
 R016 ³   Leach rate (/yr)                           ³ 0.000E+00 ³ 0.000E+00 ³       2.220E-05            ³ ALEACH( 4)
 R016 ³   Solubility constant                        ³ 0.000E+00 ³ 0.000E+00 ³       not used             ³ SOLUBK( 4)
      ³                                              ³           ³           ³                            ³
 R016 ³ Distribution coefficients for Th-230         ³           ³           ³                            ³
 R016 ³   Contaminated zone (cm**3/g)                ³ 5.800E+03 ³ 6.000E+04 ³          ---               ³ DCNUCC( 5)
 R016 ³   Unsaturated zone 1 (cm**3/g)               ³ not used  ³ 6.000E+04 ³          ---               ³ DCNUCU( 5,1)
 R016 ³   Saturated zone (cm**3/g)                   ³ not used  ³ 6.000E+04 ³          ---               ³ DCNUCS( 5)
 R016 ³   Leach rate (/yr)                           ³ 0.000E+00 ³ 0.000E+00 ³       3.483E-05            ³ ALEACH( 5)
 R016 ³   Solubility constant                        ³ 0.000E+00 ³ 0.000E+00 ³       not used             ³ SOLUBK( 5)
      ³                                              ³           ³           ³                            ³
 R016 ³ Distribution coefficients for U-234          ³           ³           ³                            ³
 R016 ³   Contaminated zone (cm**3/g)                ³ 1.000E+01 ³ 5.000E+01 ³          ---               ³ DCNUCC( 6)
 R016 ³   Unsaturated zone 1 (cm**3/g)               ³ not used  ³ 5.000E+01 ³          ---               ³ DCNUCU( 6,1)
 R016 ³   Saturated zone (cm**3/g)                   ³ not used  ³ 5.000E+01 ³          ---               ³ DCNUCS( 6)
 R016 ³   Leach rate (/yr)                           ³ 0.000E+00 ³ 0.000E+00 ³       1.980E-02            ³ ALEACH( 6)
 R016 ³   Solubility constant                        ³ 0.000E+00 ³ 0.000E+00 ³       not used             ³ SOLUBK( 6)
      ³                                              ³           ³           ³                            ³
 R016 ³ Distribution coefficients for U-235          ³           ³           ³                            ³
 R016 ³   Contaminated zone (cm**3/g)                ³ 1.000E+01 ³ 5.000E+01 ³          ---               ³ DCNUCC( 7)
 R016 ³   Unsaturated zone 1 (cm**3/g)               ³ not used  ³ 5.000E+01 ³          ---               ³ DCNUCU( 7,1)
 R016 ³   Saturated zone (cm**3/g)                   ³ not used  ³ 5.000E+01 ³          ---               ³ DCNUCS( 7)
 R016 ³   Leach rate (/yr)                           ³ 0.000E+00 ³ 0.000E+00 ³       1.980E-02            ³ ALEACH( 7)
 R016 ³   Solubility constant                        ³ 0.000E+00 ³ 0.000E+00 ³       not used             ³ SOLUBK( 7)
      ³                                              ³           ³           ³                            ³
 R016 ³ Distribution coefficients for U-238          ³           ³           ³                            ³
 R016 ³   Contaminated zone (cm**3/g)                ³ 1.000E+01 ³ 5.000E+01 ³          ---               ³ DCNUCC( 8)
 R016 ³   Unsaturated zone 1 (cm**3/g)               ³ not used  ³ 5.000E+01 ³          ---               ³ DCNUCU( 8,1)
 R016 ³   Saturated zone (cm**3/g)                   ³ not used  ³ 5.000E+01 ³          ---               ³ DCNUCS( 8)
 R016 ³   Leach rate (/yr)                           ³ 0.000E+00 ³ 0.000E+00 ³       1.980E-02            ³ ALEACH( 8)
 R016 ³   Solubility constant                        ³ 0.000E+00 ³ 0.000E+00 ³       not used             ³ SOLUBK( 8)
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                                          Site-Specific Parameter Summary (continued)
0     ³                                              ³   User    ³           ³        Used by RESRAD          ³  Parameter
 Menu ³                    Parameter                 ³   Input   ³  Default  ³ (If different from user input) ³    Name
 ÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
 R016 ³ Distribution coefficients for daughter Ac-227 ³          ³           ³                            ³
 R016 ³   Contaminated zone (cm**3/g)                ³ 2.400E+03 ³ 2.000E+01 ³          ---               ³ DCNUCC( 1)
 R016 ³   Unsaturated zone 1 (cm**3/g)               ³ not used  ³ 2.000E+01 ³          ---               ³ DCNUCU( 1,1)
 R016 ³   Saturated zone (cm**3/g)                   ³ not used  ³ 2.000E+01 ³          ---               ³ DCNUCS( 1)
 R016 ³   Leach rate (/yr)                           ³ 0.000E+00 ³ 0.000E+00 ³       8.418E-05            ³ ALEACH( 1)
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 R016 ³   Solubility constant                           ³ 0.000E+00 ³ 0.000E+00 ³          not used            ³ SOLUBK( 1)
      ³                                                 ³           ³           ³                              ³
 R016 ³ Distribution coefficients for daughter Pa-231   ³           ³           ³                              ³
 R016 ³   Contaminated zone (cm**3/g)                   ³ 2.700E+03 ³ 5.000E+01 ³            ---               ³ DCNUCC( 2)
 R016 ³   Unsaturated zone 1 (cm**3/g)                  ³ not used  ³ 5.000E+01 ³            ---               ³ DCNUCU( 2,1)
 R016 ³   Saturated zone (cm**3/g)                      ³ not used  ³ 5.000E+01 ³            ---               ³ DCNUCS( 2)
 R016 ³   Leach rate (/yr)                              ³ 0.000E+00 ³ 0.000E+00 ³          7.483E-05           ³ ALEACH( 2)
 R016 ³   Solubility constant                           ³ 0.000E+00 ³ 0.000E+00 ³          not used            ³ SOLUBK( 2)
      ³                                                 ³           ³           ³                              ³
 R016 ³ Distribution coefficients for daughter Pb-210   ³           ³           ³                              ³
 R016 ³   Contaminated zone (cm**3/g)                   ³ 5.500E+02 ³ 1.000E+02 ³            ---               ³ DCNUCC( 3)
 R016 ³   Unsaturated zone 1 (cm**3/g)                  ³ not used  ³ 1.000E+02 ³            ---               ³ DCNUCU( 3,1)
 R016 ³   Saturated zone (cm**3/g)                      ³ not used  ³ 1.000E+02 ³            ---               ³ DCNUCS( 3)
 R016 ³   Leach rate (/yr)                              ³ 0.000E+00 ³ 0.000E+00 ³          3.672E-04           ³ ALEACH( 3)
 R016 ³   Solubility constant                           ³ 0.000E+00 ³ 0.000E+00 ³          not used            ³ SOLUBK( 3)
      ³                                                 ³           ³           ³                              ³
 R017 ³ Inhalation rate (m**3/yr)                       ³ 8.400E+03 ³ 8.400E+03 ³            ---               ³ INHALR
 R017 ³ Mass loading for inhalation (g/m**3)            ³ 2.000E-04 ³ 1.000E-04 ³            ---               ³ MLINH
 R017 ³ Exposure duration                               ³ 9.000E+00 ³ 3.000E+01 ³            ---               ³ ED
 R017 ³ Shielding factor, inhalation                    ³ 4.000E-01 ³ 4.000E-01 ³            ---               ³ SHF3
 R017 ³ Shielding factor, external gamma                ³ 7.000E-01 ³ 7.000E-01 ³            ---               ³ SHF1
 R017 ³ Fraction of time spent indoors                  ³ 0.000E+00 ³ 5.000E-01 ³            ---               ³ FIND
 R017 ³ Fraction of time spent outdoors (on site)       ³ 3.700E-02 ³ 2.500E-01 ³            ---               ³ FOTD
 R017 ³ Shape factor flag, external gamma               ³ 1.000E+00 ³ 1.000E+00 ³   >0 shows circular AREA.    ³ FS
 R017 ³ Radii of shape factor array (used if FS = -1):  ³           ³           ³                              ³
 R017 ³   Outer annular radius (m), ring  1:            ³ not used  ³ 5.000E+01 ³            ---               ³ RAD_SHAPE( 1)
 R017 ³   Outer annular radius (m), ring  2:            ³ not used  ³ 7.071E+01 ³            ---               ³ RAD_SHAPE( 2)
 R017 ³   Outer annular radius (m), ring  3:            ³ not used  ³ 0.000E+00 ³            ---               ³ RAD_SHAPE( 3)
 R017 ³   Outer annular radius (m), ring  4:            ³ not used  ³ 0.000E+00 ³            ---               ³ RAD_SHAPE( 4)
 R017 ³   Outer annular radius (m), ring  5:            ³ not used  ³ 0.000E+00 ³            ---               ³ RAD_SHAPE( 5)
 R017 ³   Outer annular radius (m), ring  6:            ³ not used  ³ 0.000E+00 ³            ---               ³ RAD_SHAPE( 6)
 R017 ³   Outer annular radius (m), ring  7:            ³ not used  ³ 0.000E+00 ³            ---               ³ RAD_SHAPE( 7)
 R017 ³   Outer annular radius (m), ring  8:            ³ not used  ³ 0.000E+00 ³            ---               ³ RAD_SHAPE( 8)
 R017 ³   Outer annular radius (m), ring  9:            ³ not used  ³ 0.000E+00 ³            ---               ³ RAD_SHAPE( 9)
 R017 ³   Outer annular radius (m), ring 10:            ³ not used  ³ 0.000E+00 ³            ---               ³ RAD_SHAPE(10)
 R017 ³   Outer annular radius (m), ring 11:            ³ not used  ³ 0.000E+00 ³            ---               ³ RAD_SHAPE(11)
 R017 ³   Outer annular radius (m), ring 12:            ³ not used  ³ 0.000E+00 ³            ---               ³ RAD_SHAPE(12)
      ³                                                 ³           ³           ³                              ³
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                                          Site-Specific Parameter Summary (continued)
0     ³                                                 ³   User    ³           ³        Used by RESRAD        ³  Parameter
 Menu ³                    Parameter                    ³   Input   ³  Default  ³ (If different from user input) ³    Name
 ÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
 R017 ³ Fractions of annular areas within AREA:         ³           ³           ³                              ³
 R017 ³   Ring  1                                       ³ not used  ³ 1.000E+00 ³            ---               ³ FRACA( 1)
 R017 ³   Ring  2                                       ³ not used  ³ 2.732E-01 ³            ---               ³ FRACA( 2)
 R017 ³   Ring  3                                       ³ not used  ³ 0.000E+00 ³            ---               ³ FRACA( 3)
 R017 ³   Ring  4                                       ³ not used  ³ 0.000E+00 ³            ---               ³ FRACA( 4)
```

R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
R017	Ring 7	not used	0.000E+00	---	FRACA(7)
R017	Ring 8	not used	0.000E+00	---	FRACA(8)
R017	Ring 9	not used	0.000E+00	---	FRACA(9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	1.752E+02	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	0.000E+00	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

0		User		Used by RESRAD	Parameter

Menu	Parameter	Input	Default	(If different from user input)	Name
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)

```
     ³                                                   ³           ³           ³                                 ³
 TITL ³ Number of graphical time points                  ³     32    ³    ---    ³              ---                ³ NPTS
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                                          Site-Specific Parameter Summary (continued)
0     ³                                                  ³   User    ³           ³         Used by RESRAD          ³  Parameter
 Menu ³                      Parameter                   ³   Input   ³  Default  ³ (If different from user input) ³    Name
 ÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
 TITL ³ Maximum number of integration points for dose    ³     17    ³    ---    ³              ---                ³ LYMAX
 TITL ³ Maximum number of integration points for risk    ³    257    ³    ---    ³              ---                ³ KYMAX
 ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                     Summary of Pathway Selections

                    Pathway              ³   User Selection
          ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
             1 -- external gamma         ³       active
             2 -- inhalation (w/o radon) ³       active
             3 -- plant ingestion        ³     suppressed
             4 -- meat ingestion         ³     suppressed
             5 -- milk ingestion         ³     suppressed
             6 -- aquatic foods          ³     suppressed
             7 -- drinking water         ³     suppressed
             8 -- soil ingestion         ³       active
             9 -- radon                  ³     suppressed
             Find peak pathway doses     ³       active
          ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÏÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
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      Contaminated Zone Dimensions            Initial Soil Concentrations, pCi/g
      ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ            ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
        Area:  10000.00 square meters                Ra-226     9.650E-01
   Thickness:      2.00 meters                       Th-230     1.310E+00
 Cover Depth:      0.00 meters                       U-234      1.466E+00
                                                     U-235      6.700E-02
                                                     U-238      1.466E+00

0
                                          Total Dose TDOSE(t), mrem/yr
                                    Basic Radiation Dose Limit = 2.500E+01 mrem/yr
                    Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)
                    ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
    t (years):  0.000E+00  1.000E+00  3.000E+00  1.000E+01  3.000E+01  1.000E+02  3.000E+02  1.000E+03  1.000E+04
     TDOSE(t):  4.126E-01  4.137E-01  4.157E-01  4.218E-01  4.331E-01  4.446E-01  4.540E-01  4.793E-01  4.001E-01
         M(t):  1.650E-02  1.655E-02  1.663E-02  1.687E-02  1.733E-02  1.779E-02  1.816E-02  1.917E-02  1.600E-02
0Maximum TDOSE(t):  4.996E-01 mrem/yr   at t =    2732 ñ 5 years
```

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.732E+03 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Nuclide														
Ra-226	1.083E-01	0.2167	9.321E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.553E-02	0.0311
Th-230	3.217E-01	0.6440	4.260E-03	0.0085	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.951E-02	0.0991
U-234	1.623E-04	0.0003	2.170E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.500E-05	0.0001
U-235	4.273E-06	0.0000	4.663E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.113E-06	0.0000
U-238	2.304E-08	0.0000	3.111E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.551E-09	0.0000
Total	4.302E-01	0.8610	4.360E-03	0.0087	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.508E-02	0.1303

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 2.732E+03 years

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Nuclide														
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.239E-01	0.2480
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.755E-01	0.7516
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.895E-04	0.0004
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.805E-05	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.691E-08	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.996E-01	1.0000

0*Sum of all water independent and dependent pathways.

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	3.756E-01	0.9102	9.088E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.961E-03	0.0217
Th-230	1.666E-04	0.0004	4.494E-03	0.0109	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.656E-03	0.0113
U-234	2.080E-05	0.0001	2.016E-03	0.0049	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.663E-03	0.0065
U-235	1.771E-03	0.0043	8.588E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.150E-04	0.0003
U-238	7.686E-03	0.0186	1.803E-03	0.0044	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.528E-03	0.0061
Total	3.852E-01	0.9336	8.490E-03	0.0206	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.892E-02	0.0459

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.846E-01	0.9321
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.317E-03	0.0226
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.700E-03	0.0114
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.972E-03	0.0048
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.202E-02	0.0291
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.126E-01	1.0000

0*Sum of all water independent and dependent pathways.

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Summary : Linde Site Industrial/Commercial
File : C:\RESRAD_FAMILY\RESRAD\6.5\LINDE-CONSTRUCTION-10000-INH8400.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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Ra-226	3.754E-01	0.9074	9.793E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.033E-02	0.0250
Th-230	3.874E-04	0.0009	4.494E-03	0.0109	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.662E-03	0.0113
U-234	2.040E-05	0.0000	1.977E-03	0.0048	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.611E-03	0.0063
U-235	1.736E-03	0.0042	8.422E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.129E-04	0.0003
U-238	7.536E-03	0.0182	1.768E-03	0.0043	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.479E-03	0.0060
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	3.851E-01	0.9308	8.421E-03	0.0204	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.019E-02	0.0488

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.858E-01	0.9326
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.543E-03	0.0231
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.608E-03	0.0111
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.933E-03	0.0047
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.178E-02	0.0285
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.137E-01	1.0000

0*Sum of all water independent and dependent pathways.

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Summary : Linde Site Industrial/Commercial
File : C:\RESRAD_FAMILY\RESRAD\6.5\LINDE-CONSTRUCTION-10000-INH8400.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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Ra-226	3.751E-01	0.9022	1.114E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.293E-02	0.0311
Th-230	8.287E-04	0.0020	4.494E-03	0.0108	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.675E-03	0.0112
U-234	1.962E-05	0.0000	1.900E-03	0.0046	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.509E-03	0.0060
U-235	1.669E-03	0.0040	8.100E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.087E-04	0.0003
U-238	7.243E-03	0.0174	1.699E-03	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.383E-03	0.0057
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	3.848E-01	0.9257	8.285E-03	0.0199	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.261E-02	0.0544

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years
0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.881E-01	0.9336
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.997E-03	0.0240
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.429E-03	0.0107
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.858E-03	0.0045
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.132E-02	0.0272
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.157E-01	1.0000

0*Sum of all water independent and dependent pathways.
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Summary : Linde Site Industrial/Commercial
File : C:\RESRAD_FAMILY\RESRAD\6.5\LINDE-CONSTRUCTION-10000-INH8400.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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Ra-226	3.739E-01	0.8864	1.522E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.084E-02	0.0494
Th-230	2.370E-03	0.0056	4.493E-03	0.0107	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.743E-03	0.0112
U-234	1.719E-05	0.0000	1.655E-03	0.0039	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.185E-03	0.0052
U-235	1.453E-03	0.0034	7.077E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.544E-05	0.0002
U-238	6.305E-03	0.0149	1.479E-03	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.074E-03	0.0049
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	3.841E-01	0.9104	7.850E-03	0.0186	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.994E-02	0.0710

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.949E-01	0.9361
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.161E-02	0.0275
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.857E-03	0.0091
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.619E-03	0.0038
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.859E-03	0.0234
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.218E-01	1.0000

0*Sum of all water independent and dependent pathways.

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Summary : Linde Site Industrial/Commercial
File : C:\RESRAD_FAMILY\RESRAD\6.5\LINDE-CONSTRUCTION-10000-INH8400.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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Ra-226	3.706E-01	0.8556	2.285E-04	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.567E-02	0.0824
Th-230	6.744E-03	0.0156	4.491E-03	0.0104	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.081E-03	0.0117
U-234	1.235E-05	0.0000	1.114E-03	0.0026	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.471E-03	0.0034
U-235	9.787E-04	0.0023	4.874E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.691E-05	0.0002
U-238	4.243E-03	0.0098	9.955E-04	0.0023	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.396E-03	0.0032
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Total	3.826E-01	0.8833	6.878E-03	0.0159	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.369E-02	0.1009

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.065E-01	0.9385
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.632E-02	0.0377
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.598E-03	0.0060
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.094E-03	0.0025
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.635E-03	0.0153
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.331E-01	1.0000

0*Sum of all water independent and dependent pathways.

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Summary : Linde Site Industrial/Commercial
File : C:\RESRAD_FAMILY\RESRAD\6.5\LINDE-CONSTRUCTION-10000-INH8400.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Ra-226	3.590E-01	0.8075	2.990E-04	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.956E-02	0.1115
Th-230	2.172E-02	0.0488	4.489E-03	0.0101	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.926E-03	0.0156
U-234	9.171E-06	0.0000	2.802E-04	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.701E-04	0.0008
U-235	2.484E-04	0.0006	1.623E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.490E-05	0.0001
U-238	1.061E-03	0.0024	2.490E-04	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.491E-04	0.0008
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Total	3.821E-01	0.8593	5.333E-03	0.0120	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.723E-02	0.1287

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years
0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.089E-01	0.9196
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.313E-02	0.0745
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.595E-04	0.0015
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.895E-04	0.0007
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.659E-03	0.0037
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.446E-01	1.0000

0*Sum of all water independent and dependent pathways.
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Summary : Linde Site Industrial/Commercial
File : C:\RESRAD_FAMILY\RESRAD\6.5\LINDE-CONSTRUCTION-10000-INH8400.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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Ra-226	3.278E-01	0.7220	2.821E-04	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.701E-02	0.1036
Th-230	6.171E-02	0.1359	4.484E-03	0.0099	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.259E-02	0.0277
U-234	2.645E-05	0.0001	7.573E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.269E-05	0.0000
U-235	1.002E-05	0.0000	6.078E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.175E-05	0.0000
U-238	2.022E-05	0.0000	4.746E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.656E-06	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	3.896E-01	0.8581	4.785E-03	0.0105	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.964E-02	0.1314

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

0 Water Dependent Pathways

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.751E-01	0.8262
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.879E-02	0.1736
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.671E-05	0.0001
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.785E-05	0.0001
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.162E-05	0.0001
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.540E-01	1.0000

0*Sum of all water independent and dependent pathways.

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Summary : Linde Site Industrial/Commercial
File : C:\RESRAD_FAMILY\RESRAD\6.5\LINDE-CONSTRUCTION-10000-INH8400.RAD

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

0 Water Independent Pathways (Inhalation excludes radon)

0 Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Ra-226	2.383E-01	0.4972	2.051E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.418E-02	0.0713
Th-230	1.735E-01	0.3621	4.446E-03	0.0093	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.852E-02	0.0595
U-234	8.477E-05	0.0002	2.263E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.401E-05	0.0000
U-235	5.046E-06	0.0000	5.506E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.076E-05	0.0000
U-238	1.164E-08	0.0000	3.288E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.939E-09	0.0000
Total	4.119E-01	0.8594	4.659E-03	0.0097	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.273E-02	0.1309

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

0 Water Dependent Pathways

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.727E-01	0.5689
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.065E-01	0.4308
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.010E-04	0.0002
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.131E-05	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.391E-08	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.793E-01	1.0000

0*Sum of all water independent and dependent pathways.

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+04 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	3.954E-03	0.0099	3.404E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.672E-04	0.0014
Th-230	3.408E-01	0.8519	3.190E-03	0.0080	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.133E-02	0.1283
U-234	1.737E-04	0.0004	1.626E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.616E-05	0.0001
U-235	2.127E-06	0.0000	2.321E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.536E-06	0.0000
U-238	2.491E-08	0.0000	2.333E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.751E-09	0.0000
Total	3.450E-01	0.8622	3.197E-03	0.0080	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.193E-02	0.1298

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+04 years
0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.525E-03	0.0113
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.953E-01	0.9882
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.015E-04	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.984E-06	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.889E-08	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.001E-01	1.0000

0*Sum of all water independent and dependent pathways.
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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

0 Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	1.000E+04
Ra-226+D	Ra-226+D	1.000E+00	3.978E-01	3.977E-01	3.973E-01	3.960E-01	3.924E-01	3.801E-01	3.470E-01	2.523E-01	4.186E-03
Ra-226+D	Pb-210+D	1.000E+00	7.324E-04	2.166E-03	4.901E-03	1.320E-02	2.880E-02	4.360E-02	4.165E-02	3.028E-02	5.025E-04
Ra-226+D	äDSR(j)		3.986E-01	3.998E-01	4.022E-01	4.092E-01	4.212E-01	4.237E-01	3.887E-01	2.826E-01	4.689E-03
0Th-230	Th-230	1.000E+00	7.026E-03	7.025E-03	7.025E-03	7.023E-03	7.017E-03	6.995E-03	6.934E-03	6.724E-03	4.532E-03
Th-230	Ra-226+D	1.000E+00	8.618E-05	2.585E-04	6.028E-04	1.805E-03	5.218E-03	1.690E-02	4.809E-02	1.353E-01	2.658E-01
Th-230	Pb-210+D	1.000E+00	1.060E-07	7.356E-07	3.810E-06	3.173E-05	2.208E-04	1.400E-03	5.122E-03	1.561E-02	3.148E-02
Th-230	äDSR(j)		7.112E-03	7.285E-03	7.632E-03	8.860E-03	1.246E-02	2.529E-02	6.015E-02	1.576E-01	3.018E-01
0U-234	U-234	1.000E+00	3.206E-03	3.143E-03	3.021E-03	2.630E-03	1.770E-03	4.424E-04	8.424E-06	8.024E-12	0.000E+00
U-234	Th-230	1.000E+00	3.142E-08	9.342E-08	2.138E-07	5.994E-07	1.447E-06	2.749E-06	3.150E-06	3.063E-06	2.065E-06

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 U-234      Ra-226+D   1.000E+00  2.573E-10 1.791E-09 9.344E-09 7.982E-08 5.929E-07 4.375E-06 1.838E-05 5.906E-05 1.210E-04
 U-234      Pb-210+D   1.000E+00  2.381E-13 3.532E-12 4.021E-11 9.762E-10 1.871E-08 3.153E-07 1.912E-06 6.802E-06 1.433E-05
 U-234      äDSR(j)               3.206E-03 3.143E-03 3.021E-03 2.631E-03 1.772E-03 4.498E-04 3.186E-05 6.893E-05 1.374E-04
0U-235+D    U-235+D    1.000E+00  2.943E-02 2.885E-02 2.773E-02 2.414E-02 1.625E-02 4.062E-03 7.739E-05 7.386E-11 0.000E+00
 U-235+D    Pa-231     1.000E+00  9.338E-07 2.777E-06 6.354E-06 1.781E-05 4.297E-05 8.144E-05 9.243E-05 8.666E-05 3.653E-05
 U-235+D    Ac-227+D   1.000E+00  2.629E-08 1.813E-07 9.270E-07 7.368E-06 4.478E-05 1.776E-04 2.458E-04 2.314E-04 9.756E-05
 U-235+D    äDSR(j)               2.943E-02 2.885E-02 2.774E-02 2.417E-02 1.633E-02 4.321E-03 4.156E-04 3.181E-04 1.341E-04
0U-238      U-238      5.400E-05  1.550E-07 1.519E-07 1.460E-07 1.271E-07 8.556E-08 2.139E-08 4.076E-10 3.890E-16 0.000E+00
0U-238+D    U-238+D    9.999E-01  8.198E-03 8.037E-03 7.725E-03 6.725E-03 4.526E-03 1.131E-03 2.156E-05 2.057E-11 0.000E+00
 U-238+D    U-234      9.999E-01  4.529E-09 1.335E-08 2.996E-08 7.827E-08 1.530E-07 1.261E-07 7.179E-09 2.279E-14 0.000E+00
 U-238+D    Th-230     9.999E-01  2.959E-14 2.048E-13 1.055E-12 8.618E-12 5.631E-11 2.698E-10 4.449E-10 4.395E-10 2.962E-10
 U-238+D    Ra-226+D   9.999E-01  1.818E-16 2.704E-15 3.095E-14 7.663E-13 1.546E-11 2.988E-10 2.128E-09 8.096E-09 1.736E-08
 U-238+D    Pb-210+D   9.999E-01  1.348E-19 4.127E-18 1.012E-16 7.172E-15 3.860E-13 1.871E-11 2.146E-10 9.306E-10 2.056E-09
 U-238+D    äDSR(j)               8.198E-03 8.037E-03 7.725E-03 6.725E-03 4.526E-03 1.132E-03 2.157E-05 9.487E-09 1.971E-08
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 The DSR includes contributions from associated (half-life ó 180 days) daughters.
0
                                 Single Radionuclide Soil Guidelines G(i,t) in pCi/g
                                    Basic Radiation Dose Limit = 2.500E+01 mrem/yr
0Nuclide
   (i)    t= 0.000E+00   1.000E+00   3.000E+00   1.000E+01   3.000E+01   1.000E+02   3.000E+02   1.000E+03   1.000E+04
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 Ra-226      6.272E+01   6.253E+01   6.216E+01   6.109E+01   5.935E+01   5.900E+01   6.432E+01   8.847E+01   5.332E+03
 Th-230      3.515E+03   3.432E+03   3.276E+03   2.822E+03   2.007E+03   9.884E+02   4.157E+02   1.586E+02   8.284E+01
 U-234       7.798E+03   7.953E+03   8.274E+03   9.503E+03   1.411E+04   5.557E+04   7.846E+05   3.627E+05   1.819E+05
 U-235       8.495E+02   8.664E+02   9.013E+02   1.034E+03   1.531E+03   5.786E+03   6.015E+04   7.859E+04   1.864E+05
 U-238       3.050E+03   3.111E+03   3.236E+03   3.717E+03   5.524E+03   2.209E+04  *3.361E+05  *3.361E+05  *3.361E+05
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             Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
             and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
          at tmin = time of minimum single radionuclide soil guideline
      and at tmax = time of maximum total dose =    2732 ñ 5 years
0Nuclide  Initial         tmin       DSR(i,tmin) G(i,tmin) DSR(i,tmax) G(i,tmax)
   (i)    (pCi/g)       (years)                  (pCi/g)               (pCi/g)
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 Ra-226  9.650E-01     63.9 ñ 0.1     4.265E-01  5.862E+01  1.284E-01  1.947E+02
 Th-230  1.310E+00     5653 ñ *       3.354E-01  7.454E+01  2.867E-01  8.721E+01
 U-234   1.466E+00     0.000E+00      3.206E-03  7.798E+03  1.293E-04  1.934E+05
 U-235   6.700E-02     0.000E+00      2.943E-02  8.495E+02  2.694E-04  9.281E+04
 U-238   1.466E+00     0.000E+00      8.198E-03  3.050E+03  1.835E-08 *3.361E+05
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 *At specific activity limit

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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	1.000E+04
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Ra-226	Ra-226	1.000E+00	3.839E-01	3.837E-01	3.834E-01	3.822E-01	3.787E-01	3.668E-01	3.349E-01	2.435E-01	4.040E-03
Ra-226	Th-230	1.000E+00	1.129E-04	3.386E-04	7.897E-04	2.365E-03	6.836E-03	2.214E-02	6.300E-02	1.773E-01	3.482E-01
Ra-226	U-234	1.000E+00	3.772E-10	2.625E-09	1.370E-08	1.170E-07	8.691E-07	6.413E-06	2.694E-05	8.658E-05	1.774E-04
Ra-226	U-238	9.999E-01	2.666E-16	3.965E-15	4.538E-14	1.123E-12	2.267E-11	4.381E-10	3.120E-09	1.187E-08	2.544E-08
Ra-226	äDOSE(j)		3.840E-01	3.841E-01	3.842E-01	3.845E-01	3.855E-01	3.890E-01	3.979E-01	4.208E-01	3.524E-01
0Pb-210	Ra-226	1.000E+00	7.068E-04	2.091E-03	4.729E-03	1.274E-02	2.779E-02	4.208E-02	4.019E-02	2.922E-02	4.849E-04
Pb-210	Th-230	1.000E+00	1.389E-07	9.636E-07	4.991E-06	4.156E-05	2.893E-04	1.834E-03	6.710E-03	2.045E-02	4.124E-02
Pb-210	U-234	1.000E+00	3.490E-13	5.178E-12	5.894E-11	1.431E-09	2.742E-08	4.623E-07	2.803E-06	9.972E-06	2.101E-05
Pb-210	U-238	9.999E-01	1.976E-19	6.051E-18	1.484E-16	1.051E-14	5.659E-13	2.744E-11	3.146E-10	1.364E-09	3.014E-09
Pb-210	äDOSE(j)		7.069E-04	2.092E-03	4.734E-03	1.278E-02	2.808E-02	4.391E-02	4.691E-02	4.969E-02	4.174E-02
0Th-230	Th-230	1.000E+00	9.204E-03	9.203E-03	9.203E-03	9.200E-03	9.192E-03	9.164E-03	9.084E-03	8.809E-03	5.937E-03
Th-230	U-234	1.000E+00	4.605E-08	1.370E-07	3.134E-07	8.787E-07	2.121E-06	4.030E-06	4.618E-06	4.490E-06	3.027E-06
Th-230	U-238	9.999E-01	4.338E-14	3.002E-13	1.547E-12	1.263E-11	8.255E-11	3.955E-10	6.522E-10	6.442E-10	4.342E-10
Th-230	äDOSE(j)		9.204E-03	9.204E-03	9.203E-03	9.201E-03	9.194E-03	9.168E-03	9.088E-03	8.814E-03	5.940E-03
0U-234	U-234	1.000E+00	4.700E-03	4.608E-03	4.429E-03	3.856E-03	2.595E-03	6.486E-04	1.235E-05	1.176E-11	0.000E+00
U-234	U-238	9.999E-01	6.640E-09	1.957E-08	4.392E-08	1.147E-07	2.243E-07	1.848E-07	1.052E-08	3.341E-14	0.000E+00
U-234	äDOSE(j)		4.700E-03	4.608E-03	4.429E-03	3.856E-03	2.595E-03	6.488E-04	1.236E-05	1.180E-11	0.000E+00
0U-235	U-235	1.000E+00	1.972E-03	1.933E-03	1.858E-03	1.617E-03	1.089E-03	2.721E-04	5.185E-06	4.949E-12	0.000E+00
0Pa-231	U-235	1.000E+00	6.256E-08	1.860E-07	4.258E-07	1.193E-06	2.879E-06	5.457E-06	6.193E-06	5.806E-06	2.447E-06
0Ac-227	U-235	1.000E+00	1.761E-09	1.215E-08	6.211E-08	4.937E-07	3.000E-06	1.190E-05	1.647E-05	1.551E-05	6.536E-06
0U-238	U-238	5.400E-05	2.272E-07	2.228E-07	2.141E-07	1.864E-07	1.254E-07	3.136E-08	5.975E-10	5.703E-16	0.000E+00
U-238	U-238	9.999E-01	1.202E-02	1.178E-02	1.132E-02	9.859E-03	6.634E-03	1.659E-03	3.160E-05	3.016E-11	0.000E+00
U-238	äDOSE(j)		1.202E-02	1.178E-02	1.132E-02	9.859E-03	6.635E-03	1.659E-03	3.160E-05	3.016E-11	0.000E+00
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THF(i) is the thread fraction of the parent nuclide.

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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	1.000E+04
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ra-226	Ra-226	1.000E+00	9.650E-01	9.646E-01	9.637E-01	9.606E-01	9.519E-01	9.220E-01	8.418E-01	6.120E-01	1.015E-02
Ra-226	Th-230	1.000E+00	0.000E+00	5.674E-04	1.701E-03	5.661E-03	1.690E-02	5.536E-02	1.581E-01	4.453E-01	8.750E-01
Ra-226	U-234	1.000E+00	0.000E+00	2.839E-09	2.521E-08	2.674E-07	2.120E-06	1.600E-05	6.758E-05	2.175E-04	4.459E-04
Ra-226	U-238	9.999E-01	0.000E+00	2.674E-15	7.078E-14	2.446E-12	5.445E-11	1.089E-09	7.823E-09	2.981E-08	6.394E-08
Ra-226	äS(j):		9.650E-01	9.651E-01	9.654E-01	9.663E-01	9.688E-01	9.774E-01	9.999E-01	1.057E+00	8.856E-01
0Pb-210	Ra-226	1.000E+00	0.000E+00	2.952E-02	8.581E-02	2.567E-01	5.779E-01	8.830E-01	8.441E-01	6.137E-01	1.018E-02
Pb-210	Th-230	1.000E+00	0.000E+00	8.727E-06	7.690E-05	7.950E-04	5.903E-03	3.825E-02	1.406E-01	4.292E-01	8.658E-01
Pb-210	U-234	1.000E+00	0.000E+00	2.924E-11	7.693E-10	2.607E-08	5.511E-07	9.608E-06	5.872E-05	2.093E-04	4.412E-04
Pb-210	U-238	9.999E-01	0.000E+00	2.069E-17	1.629E-15	1.821E-13	1.119E-11	5.680E-10	6.587E-09	2.863E-08	6.327E-08
Pb-210	äS(j):		0.000E+00	2.953E-02	8.589E-02	2.575E-01	5.838E-01	9.212E-01	9.848E-01	1.043E+00	8.764E-01
0Th-230	Th-230	1.000E+00	1.310E+00	1.310E+00	1.310E+00	1.309E+00	1.308E+00	1.304E+00	1.293E+00	1.254E+00	8.451E-01

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 Th-230  U-234   1.000E+00    0.000E+00 1.307E-05 3.843E-05 1.197E-04 2.983E-04 5.727E-04 6.573E-04 6.391E-04 4.308E-04
 Th-230  U-238   9.999E-01    0.000E+00 1.846E-11 1.618E-10 1.641E-09 1.144E-08 5.604E-08 9.281E-08 9.170E-08 6.180E-08
 Th-230  äS(j):               1.310E+00 1.310E+00 1.310E+00 1.310E+00 1.309E+00 1.305E+00 1.294E+00 1.254E+00 8.455E-01
0U-234   U-234   1.000E+00    1.466E+00 1.437E+00 1.381E+00 1.203E+00 8.093E-01 2.023E-01 3.852E-03 3.669E-09 0.000E+00
 U-234   U-238   9.999E-01    0.000E+00 4.074E-06 1.175E-05 3.409E-05 6.883E-05 5.735E-05 3.277E-06 1.042E-11 0.000E+00
 U-234   äS(j):               1.466E+00 1.437E+00 1.381E+00 1.203E+00 8.093E-01 2.023E-01 3.855E-03 3.679E-09 0.000E+00
0U-235   U-235   1.000E+00    6.700E-02 6.569E-02 6.314E-02 5.496E-02 3.699E-02 9.248E-03 1.762E-04 1.682E-10 0.000E+00
0Pa-231  U-235   1.000E+00    0.000E+00 1.404E-06 4.128E-06 1.285E-05 3.202E-05 6.132E-05 6.970E-05 6.535E-05 2.755E-05
0Ac-227  U-235   1.000E+00    0.000E+00 2.218E-08 1.929E-07 1.903E-06 1.234E-05 5.000E-05 6.943E-05 6.537E-05 2.756E-05
0U-238   U-238   5.400E-05    7.916E-05 7.761E-05 7.460E-05 6.494E-05 4.370E-05 1.093E-05 2.082E-07 1.987E-13 0.000E+00
 U-238   U-238   9.999E-01    1.466E+00 1.437E+00 1.381E+00 1.203E+00 8.093E-01 2.023E-01 3.855E-03 3.679E-09 0.000E+00
 U-238   äS(j):               1.466E+00 1.437E+00 1.381E+00 1.203E+00 8.093E-01 2.023E-01 3.855E-03 3.679E-09 0.000E+00
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 THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time =    1.34 seconds
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Environmental Science Division
Argonne National Laboratory
9700 South Cass Avenue, Bldg. *#
Argonne, IL 60439

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