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Dear BCT Members:

SUBJECT: ADDENDUM TO THE FIVE-YEAR REVIEW, EVALUATION OF RADIOLOGICAL REMEDIAL GOALS FOR SOIL, HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CA

Recommendations in Section 7 of the 2019 Five-Year Review for the former Hunters Point Naval Shipyard (HPNS) include a long-term protectiveness evaluation of the soil radiological remedial goals. This letter summarizes the results from an evaluation of these soil goals and provides responses to regulatory agency and community comments on the draft evaluation prepared in September 2019.

The full technical evaluation, calculations, and explanations for calculation inputs are attached. This evaluation completes the 5-Year Review recommendation to evaluate soil radiological remedial goals.

EVALUATION SUMMARY

The Navy has completed radiological remedial actions at HPNS in accordance with removal actions and records of decision for different areas of the base. The remedial goals in these documents are consistent and summarized below[1] (Table 1).

TABLE 1 – Hunters Point Radiological Remedial Goals

Radionuclide of Concern[1]	**Soil Remediation Goals (pCi/g)**	
	Outdoor Worker	**Residential**
Americium (Am)-241 (^{241}Am)	5.67	1.36
Cesium (Cs)-137 (^{137}Cs)	0.113	0.113
Cobalt (Co)-60 (^{60}Co)	0.0602	0.0361
Europium (Eu)-152 (^{152}Eu)	0.13	0.13
Eu-154 (^{154}Eu)	0.23	0.23
Plutonium (Pu)-239 (^{239}Pu)	14.0	2.59
Radium (Ra)-226 (^{226}Ra)	1.0	1.0
Strontium (Sr)-90 (^{90}Sr)	10.8	0.331
Thorium (Th)-232 (^{232}Th)	2.7	1.69
Tritium, H-3 (^{3}H)	4.23	2.28
Uranium (U)-235+D (^{235}U)	0.398	0.195

[1] Not all of the radionuclides of concern are included in all of the documents/areas.

The Navy uses RESRAD-ONSITE (RESRAD) to estimate risk and dose from radiation exposure. RESRAD is the industry standard computer model used for radiation exposure evaluations and is used by the Navy to evaluate the soil radiation remedial goals for protectiveness.

To verify protectiveness of the radiation remedial goals, the estimated dose from each radiological constituent is converted to a risk value that is then compared to the risk management range as described in National Contingency Plan (NCP). Risk values that fall within this range are considered protective.

RESRAD EVALUATION

As part of the 2019 Five-Year Review recommendations for HPNS, remedial goals were evaluated for protectiveness using current standards and methods. The Navy has completed its review using RESRAD and summarized results below (Table 2).

TABLE 2 – RESRAD Evaluation of Radiological Remedial Goals

Radionuclide of Concern	Total Dose (mrem/year)	Total Risk
^{241}Am	**0.09**	**7.3E-07**
^{60}Co	**0.27**	**1.7E-06**
^{137}Cs	**0.18**	**3.2E-06**
^{152}Eu	**0.44**	**5.6E-06**
^{154}Eu	**0.84**	**7.6E-06**
^{3}H	**0.01**	**1.2E-08**
^{239}Pu	**0.13**	**6.0E-07**
^{226}Ra	**5.3**	**1.2E-04**
^{90}Sr	**0.01**	**8.4E-08**
^{232}Th	**11.5**	**2.7E-04**
^{235}U	**0.08**	**1.6E-06**

For the evaluation, the residential scenario was used to calculate dose and risk. The residential scenario is the most conservative of future land uses and indicates that all other land uses are also protective. For this evaluation, it was also assumed that surface soils are contaminated uniformly at residential remedial goal levels. These assumptions are conservative, represent maximum dose and risk values, and are used for evaluation purposes only. Since the site is not uniformly contaminated, the actual doses and risks from exposure to radionuclides in HPNS soils are expected to be considerably less than these maximum values.

For soil radiation remedial goals, the RESRAD evaluation performed by the Navy indicates that all radiological remedial goals for soil meet current protectiveness standards and fall within the NCP risk management range. The technical write-up and calculations are included in Enclosure 1.

PRG EVALUATION

In response to a request from the US Environmental Protection Agency (EPA), the remedial goals were also evaluated using the current version of EPA's Preliminary Remedial Goal (PRG) calculator. This evaluation is summarized below (Table 2) and calculations are included in Enclosure 2.

TABLE 3 - EPA PRG Evaluation of Radiological Remedial Goals

Radionuclide of Concern	Total Risk
^{241}Am	6.0E-07
^{60}Co	1.1E-06
^{137}Cs	2.0E-06
^{152}Eu	3.4E-06
^{154}Eu	4.9E-06
^{3}H	9.6E-06
^{239}Pu	6.7E-07
^{226}Ra	7.9E-05
^{90}Sr	7.9E-08
^{232}Th	1.7E-04
^{235}U	1.0E-06

Consistent with the RESRAD evaluation, all radiological remedial goals are within the NCP risk management range. Since the site is not uniformly contaminated, the actual risks from exposure to radionuclides in HPNS soils are expected to be considerably less than these maximum values.

CONCLUSION

This evaluation fulfills the 5-Year Review recommendation to evaluate the long-term protectiveness of the soil radiological remediation goals. Using RESRAD and the PRG Calculator to estimate the maximum radiation dose and risk to residents from exposures to Hunters Point soils has verified that the soil radiation remediation goals are expected to be protective for all future land users.

The Navy will continue to evaluate risk during remedial investigations to verify that combined risks due to site-related contamination (i.e., radiation, volatile organic compounds, metals, etc.) achieve appropriate protectiveness standards.

Sincerely,

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By direction of the Director

Enclosures: (next page)

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Enclosures: 1. Estimated Excess Cancer Risks and Dose Equivalent Rates from Resident Exposures to Radionuclide-Containing Soils Report, Hunters Point Naval Shipyard, San Francisco, CA (7 August 2019)
2. Response to Comments

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ENCLOSURE 1

Hunters Point Naval Shipyard
Estimated Excess Cancer Risks and Dose Equivalent Rates from Resident Exposures to Radionuclide-Containing Soils Report

Prepared under:
Contract No. N44255-14-D-9013
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August 7, 2019

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1 Introduction

This report describes the calculation of estimated excess cancer risks and dose equivalent rates resulting from potential, future resident exposures to soils containing radionuclides at the former Hunters Point Naval Shipyard (HPNS) in San Francisco, California. HPNS was placed on the National Priorities List in 1989 and the Department of the Navy (DON) has been undertaking response actions under its Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) authority in each parcel. These actions are conducted to ensure radionuclide-specific radioactivity concentrations in residual soil do not exceed the remediation goals (RGs) stated in the 2006 Action Memorandum (AM) (NAVFAC, 2006). The RGs presented in Table 1 were intended to be the most conservative available and are to be added to site- and radionuclide-specific background. They were derived considering the 1991 Environmental Protection Agency (EPA) decay-corrected preliminary remediation goals (PRG) (EPA, 1991), past action memoranda, an agreement with EPA for radium (Ra)-226 (^{226}Ra) and the 2004 Historical Radiological Assessment (HRA).

Table 1. Current Soil Remediation Goals from 2006 HPNS Action Memorandum

Radionuclide of Concern	Soil Remediation Goals (pCi/g)	
	Outdoor Worker	Residential [1]
Americium (Am)-241 (^{241}Am)	5.67	1.36
Cesium (Cs)-137 (^{137}Cs)	0.113	0.113
Cobalt (Co)-60 (^{60}Co)	0.0602	0.0361
Europium (Eu)-152 (^{152}Eu)	0.13	0.13
Eu-154 (^{154}Eu)	0.23	0.23
Plutonium (Pu)-239 (^{239}Pu)	14.0	2.59
Radium (Ra)-226 (^{226}Ra)	1.0 [2]	1.0 [2]
Strontium (Sr)-90 (^{90}Sr)	10.8	0.331
Thorium (Th)-232 (^{232}Th)	2.7	1.69
Tritium, H-3 (^{3}H)	4.23	2.28
Uranium (U)-235+D (^{235}U)	0.398	0.195

[1] The residential remediation goals are used in this report to calculate doses and risks and are more protective than the outdoor worker RGs.
[2] The current soil RG for ^{226}Ra is 1.0 pCi/g above background based on an agreement with the EPA.

In support of the current five-year review, the Navy's intent is to evaluate the protectiveness of the current soil RGs for future residents. Under CERCLA, cleanup goals are considered protective if excess cancer risks from site exposures remain within the 10^{-4} to 10^{-6} range. The Navy uses the industry standard model RESRAD-ONSITE to estimate radiation doses and risks from exposure to soils. The EPA has requested that the Navy also use EPA's PRG Calculator to estimate the risks from resident exposures to HPNS soils. Both models were used, and resultant doses and risks included, in this report.

RESRAD-ONSITE, Version 7.2 (http://resrad.evs.anl.gov/codes/resrad-onsite/) is a downloadable computer code, designed and maintained by Argonne National Laboratory. It is considered the industry standard for estimating the dose equivalent and related risk to human health and the environment resulting from exposure to radioactively-contaminated soils.

The PRG Calculator (https://epa-prgs.ornl.gov/cgi-bin/radionuclides/rprg_search) is an online tool to calculate screening levels for use during site scoping or to calculate PRGs based on site-specific information from the baseline risk assessment.

Section 2 provides an overview of the concepts of radioactive decay and the ingrowth of radioactive daughters (progeny) from parent radionuclides. Section 3 and Section 4 describe the use of each model, and the resultant doses and risks, using assumptions about the nature of the radionuclides in HPNS soils and about future resident exposures to those soils. Additional information about the input concentrations used, the radioactive decay and progeny ingrowth for each radionuclide of concern (ROC), and the model outputs are included in appendices.

2 Radionuclide Decay and Progeny Ingrowth

The term radionuclide refers to any nuclide that is unstable and undergoes radioactive decay. Radioactive decay is the spontaneous transformation of the unstable nuclide (parent) into one or more nuclides (daughters or progenies) with an accompanying release of energy or particles. "Radioactivity" or, in short, "activity" (*A*), is the rate of radioactive decay, i.e., the number of nucleus transformations per unit time, and is directly proportional to the number of unstable nuclei in a source[1]. The units of activity are curies (Ci) or becquerels (Bq). One Bq represents one disintegration (decay or transformation) per second (dps), and 1 Ci = 3.7E+10 Bq. One Ci involves a large number of transformations; therefore, a smaller unit, pCi, is often used, which is equivalent to 1E-12 Ci. Activity concentration of a radionuclide is defined as the activity (in Ci or Bq) per mass or volume of environmental media (e.g., pCi/g, pCi/L).

For a given radionuclide, the rate of decay is characterized as the half-life ($T_{1/2}$) and is the average time for half of the initial radionuclide activity (in picocuries, pCi) to decay. The production of these progenies is referred to as "ingrowth." Progenies can either be stable or radioactive. If the progeny is radioactive, decay will continue until a stable nuclide is reached. A series of sequential radioactive progeny form a decay chain. For the ROCs listed in Table 1:

- The parent radionuclides ^{60}Co, ^{154}Eu and ^{3}H have no radioactive progeny.
- The parent radionuclides ^{137}Cs and ^{90}Sr have one radioactive progeny each.
- The parent radionuclides ^{241}Am, ^{152}Eu, ^{239}Pu, ^{226}Ra, ^{232}Th and ^{235}U form decay chains.

Progeny with half-lives that are short relative to that of their parent will increase in activity until they reach secular equilibrium with the parent. In secular equilibrium, the activity of the progeny equals that of the parent, or some fraction of the parent activity based on the associated branching fraction for that mode of radioactive decay. Within the first 1,000 years of parent ROC decay, the following observations are made from the decay plots in Appendix B:

- ^{241}Am and ^{152}Eu do not reach secular equilibrium with any progeny.
- ^{137m}Ba reaches secular equilibrium nearly immediately with its parent ^{137}Cs. Since ^{137}Cs only decays to ^{137m}Ba 94.4% of the time (the branching fraction for this decay), the maximum ^{137m}Ba activity can only reach 94.4% of the ^{137}Cs activity. The remaining 5.6% of ^{137}Cs decays are to the stable progeny ^{137}Ba.
- ^{90}Sr and its progeny ^{90}Y reach secular equilibrium nearly immediately.
- ^{235m}U is the only progeny to reach secular equilibrium with its parent ^{239}Pu.
- ^{231}Th is the only progeny to reach secular equilibrium with its parent ^{235}U.
- All the progenies reach secular equilibrium with the parent ^{226}Ra according to their branching fractions.

[1] Radioactive decay is a statistically random process so this is only true if the number of radioactive atoms in the source is large.

- All progenies reach secular equilibrium with the parent ^{232}Th according to their branching fractions.

2.1 Decay and Ingrowth in RESRAD-ONSITE

RESRAD-ONSITE handles progenies from the radioactive transformation (decay) of parent radionuclides differently based on whether their half-life ($T_{1/2}$) is above or below a selected threshold called the *Cut-off Half Life*. Radionuclides having $T_{1/2}$ > cut-off are called principal radionuclides and the default cut-off value is 180 days. The progenies of any principal radionuclide down to, but not including, the next principal radionuclide in its decay chain are called associate radionuclides. RESRAD-ONSITE automatically assigns all associate radionuclides an activity concentration equal to its parent's concentration.

2.2 Decay and Ingrowth in PRG Calculator

The PRG Calculator currently does not model the ingrowth of progenies nor does it allow for a radionuclide decay chain to both be in secular equilibrium and continue decay throughout the exposure period. Users have three output options to handle progenies:

- Use a default option that places progenies in full secular equilibrium with their parents according to their branching fractions and neglects the decay of any radionuclide throughout the exposure period (Output Option 1 - *Assumes secular equilibrium throughout chain [no decay]*), or
- Manually enter radionuclide activities according to their state of secular equilibrium in order to capture decay for each radionuclide throughout the exposure period (Output Option 2 - *Does not assume secular equilibrium, provide results for progeny throughout chain [with decay]*), or
- Neglect progeny activities and use only parent activities in in order to capture decay for each radionuclide throughout the exposure period (Output Option 3 - *Does not assume secular equilibrium, no progeny included [with decay]*).

Output Options 1 and 2 fail to adequately model the time-dependent activities of the parents and progenies by neglecting the ingrowth of progenies as the parent decays. Output Option 3 provides the most accurate representation of parent activities and risks when the parent had no progeny, or no progeny will reach secular equilibrium with it. The use of each option is discussed in Section 4.1.

3 Calculation of Dose and Risk Using RESRAD-ONSITE and PRG Calculator

This section summarizes the user-provided inputs and changes to default parameter values needed to calculate the site-specific doses and risks from soil exposures presented in Table 2.

3.1 Use of RESRAD-ONSITE

RESRAD-ONSITE 7.2 was modified to reflect the soil exposure pathways and conditions anticipated during reuse of HPNS by residents. These modifications are presented in Table 2 and described below:

- As described in Section 2.1, users cannot input soil concentrations for radionuclides with half-lives shorter than the *Cut-off Half Life* value and their associated doses and risks are included with those or their parent. To provide as much detail as possible, the *Cut-off Half Life* value was reduced to the minimum value of 10 minutes. Source concentrations were entered for the

parent ROCs (Table 1) only and RESRAD-ONSITE then considers decay and ingrowth to determine the maximum dose and risk within a 1000-year period.

- By default, RESRAD-ONSITE integrates the doses to receptors over the exposure period starting at each calculation time. Risks are instantaneous at each calculation time by default so the option to integrate risk was selected and 257 points used for the integration during a 30-year exposure period.
- Deed restrictions will be implemented to restrict the growth of plants in HPNS soils that are intended for consumption. Residents are therefore not anticipated to consume plants, meats, milk, aquatic foods or drinking water produced on HPNS and these pathways were turned off.
- Input soil concentrations are presented in Table 6 in Appendix A.
- For the ^{232}Th decay chain, the maximum (peak) dose and risk are from external exposure to the progeny rather than to the parent. As such, enough time is required for the ingrowth of the progeny to adequately assess their contribution to resident doses and risks. This period is found to be about 89 years by running the model once to find the time of maximum dose in the *Summary Report* and then adding this as an additional calculation time. The model is run again to obtain the peak risk at 89 years from the *Health Risk Report*.
- HPNS soil contamination is localized in impacted areas. Historically, localized has been defined as up to 3 acres (12,140 m^2) based on past radiological investigations, the size of the radium dial disposal area in IR-02, and the size of the interstitial debris area (NAVFAC, 2001). Soil impacted by ^{232}Th was limited to three former building sites over an area totaling 484 m^2 (NAVSEA, 2004).
- Residents are assumed to spend 16.416 hours indoors and 1.752 hours outdoors during each day onsite. The occupancy factors were therefore adjusted accordingly to 0.684 indoor fraction and 0.073 outdoor fraction.

Table 2. Site-Specific Values Used in RESRAD-ONSITE

Command Button	Parameter	Default Value	Site-specific Value
Change Title	Cut-off Half Life	180 days	10 minutes
	Maximum number of Points for Risk Integration	1	257
	Find peak pathway doses	Unchecked	Checked
	Time integrated probabilistic risk	Unchecked	Checked
Set Pathways	Plant Ingestion	On	Off
	Meat Ingestion	On	Off
	Milk Ingestion	On	Off
	Aquatic Foods	On	Off
	Drinking Water	On	Off
Modify Data >> Soil Concentrations	Nuclide Concentration (pCi/g)	None	See Table 6 in Appendix A
Modify Data >> Calculation Times	Times for Calculation (years)	1, 3, 10, 30, 100, 300, 1000	Add 88.9
Modify Data >> Contaminated Zone	Area of contaminated zone (m^2)	10,000	12,140 for all ROC except ^{232}Th; 484 for ^{232}Th
Modify Data >> Occupancy	Indoor time fraction	0.500	0.684
	Outdoor time fraction	0.250	0.073

3.2 Resultant Dose and Risk from RESRAD-ONSITE

The dose equivalent rates (dose) and excess radiological cancer risks using RESRAD-ONSITE are presented in Table 3. Conservatively, these results assume resident exposure to uniform soil concentrations at the remedial goal levels throughout the exposure period.

The Total Dose and Total Risk reported from RESRAD-ONSITE were obtained from the output reports as follows:

- Total Doses are obtained from the RESRAD-ONSITE *Summary Report, Total Dose Contributions TDOSE (i,p,t) for Individual Radionuclides (i) and Pathways (p)* tables*, All Pathways* column in the following files included in Appendix C:
  - HPNS RESRAD Onsite_All ROC but Th U_10 min cut_12140 m2_Occ only_4Jun19_dose.pdf
  - HPNS RESRAD Onsite_Th only_10 min cut_484 m2_Occ only_4Jun19_dose.pdf
  - HPNS RESRAD Onsite_U only_10 min cut_12140 m2_Occ only_4Jun19_dose.pdf
- Total Risks are obtained from the RESRAD-ONSITE *Health Risk Report*, *Excess Cancer Risk CNRS(i,p,t)*** for Individual Radionuclides (i) and Pathways (p)* tables, and *All Pathways* column in the following files included in Appendix C.
  - HPNS RESRAD Onsite_All ROC but Th U_10 min cut_12140 m2_Occ only_4Jun19_risk.pdf
  - HPNS RESRAD Onsite_Th only_10 min cut_484 m2_Occ only_4Jun19_risk.pdf
  - HPNS RESRAD Onsite_U only_10 min cut_12140 m2_Occ only_4Jun19_risk.pdf

Table 3. Estimated Resident Dose and Excess Cancer Risks from RESRAD-ONSITE

Parent ROC	Contributing Progeny	Time of Maximum Dose and Risk (years)	Total Dose (mrem/yr) [5]	Total Risk [5]
^{241}Am		0	0.085	**7.34E-07**
^{60}Co		0	0.27	**1.74E-06**
^{137}Cs	^{137m}Ba	0	0.18	**3.22E-06**
^{152}Eu		0	0.44	5.57E-06
	^{152}Gd			1.01E-22
Total ^{152}Eu				***5.57E-06***
^{154}Eu		0	0.84	**7.88E-06**
^{3}H		0	0.012	**1.16E-08**
^{239}Pu		0	0.13	5.99E-07
	^{235m}U			2.27E-14
	^{235}U			3.26E-13
	^{231}Th			1.53E-14
	^{231}Pa			1.77E-17
	^{227}Ac			6.41E-19
	^{227}Th			1.03E-17
	^{223}Fr+D			4.37E-20
	^{223}Ra+D			1.64E-17
	^{211}Pb+D			1.13E-17
Total ^{239}Pu				***5.99E-07***

Table 3 (continued). Estimated Resident Dose and Excess Cancer Risks from RESRAD-ONSITE

Parent ROC	Contributing Progeny	Time of Maximum Dose and Risk (years)	Total Dose (mrem/yr)	Total Risk
^{226}Ra		0	5.3	8.28E-07
	^{222}Rn+D			2.48E-08
	^{214}Pb			1.48E-05
	^{214}Bi+D			1.08E-04
	^{210}Pb+D			3.39E-07
	^{210}Bi+D			1.79E-08
	^{210}Po			5.92E-07
Total ^{226}Ra				***1.25E-04***
^{90}Sr		0	0.0081	1.43E-08
	^{90}Y			6.95E-08
Total ^{90}Sr				***8.38E-08***
^{232}Th		88.9	11.5	1.79E-07
	^{228}Ra			1.03E-06
	^{228}Ac			9.64E-05
	^{228}Th			4.76E-07
	^{224}Ra+D			1.21E-06
	^{212}Pb			1.23E-05
	^{212}Bi+D			1.63E-04
Total ^{232}Th				***2.75E-04***
^{235}U		0	0.077	1.64E-06
	^{231}Th			7.66E-08
	^{231}Pa			1.33E-10
	^{227}Ac			6.13E-12
	^{227}Th			9.92E-11
	^{223}Fr+D			4.19E-13
	^{223}Ra+D			1.58E-10
	^{211}Pb+D			1.09E-10
Total ^{235}U				***1.72E-06***

As shown in Table 3, the resultant RESRAD-ONSITE risks for individual radionuclides or radionuclide decay chains are protective for residential exposures to site soils that are uniformly contaminated at the remedial goal levels. Since the site is not uniformly contaminated, the actual risks are expected to be considerably less than these maximum values.

4 Calculation of Dose and Risk Using PRG Calculator

4.1 Use of PRG Calculator

The PRG Calculator was modified to reflect the soil exposure pathways and conditions anticipated during reuse of HPNS by residents. These modifications are presented in Table 4 and described below:

- The 'Resident Soil' scenario has been selected because it is consistent with the anticipated reuse of portions of HPNS and is the most conservative scenario evaluated, i.e., other potential land uses will also be protective under this evaluation.
- The *Site Info Type* used was 'site-specific' using 'database hierarchy default' *Isotope Info Type* for all ROCs except ^{137}Cs, ^{239}Pu, ^{90}Sr and ^{235}U. The 'user-provided' option was used for these ROCs to enable adjustments to their progeny half-lives.
- The chosen *Source and decay output option* varied by ROC but consisted of three sets of calculator use. For ease of input, and to adequately capture the branching fractions of the decay chains, Output Option 1 was used for ^{226}Ra and for ^{232}Th. Both ROCs have sufficiently long half-lives relative to the 26-year exposure period that the decrease in activities that are neglected by this option are minimal. Output Option 2 was used for ^{137}Cs, ^{239}Pu, ^{90}Sr and ^{235}U to adjust the half-lives of their progenies. A single progeny for each ROC reaches secular equilibrium with their parent nearly immediately relative to the 26-year exposure period. If Output Option 2 is used as-is, the progenies activities and risks are underestimated because they rapidly decay without replenishment from ingrowth. By adjusting their half-lives to match their parents' half-life, their activities and risks are overestimated by neglecting their actual decay, however, this assumption was used to capture conservative estimates of risk. Output Option 3 was used for the remaining ROCs because there was no relevant progeny to be considered.
- Input soil concentrations are presented in Table 6 in Appendix A.
- The *Site area for ACF* was selected as the maximum (1,000,000 m^2) based on EPA Region 9 input concerning the size of all contiguous soil parcels on HPNS (an estimated 420 acres).
- The *clean soil thicknesses* for both GSF_o and GSF_b wereconservatively selected as 0 cm (no cover layer) since this was not part of the documented remedy on HPNS.
- The *City (Climatic Zone)* was changed to San Francisco, CA to reflect local conditions.
- The *areal extent of the site or contamination, A_s*, was selected as 420 acres based on EPA Region 9 input.
- The *Toggle All* box was unchecked to deselect produce for inclusion in the risk estimates based on stated restrictions on the use of homegrown produce using HPNS soils.

Table 4. Site-Specific Parameters Used in PRG Calculator

Section	Parameter	Default Value	Site-Specific Value
Select Scenario		None	Resident
Select Media		None	Soil
Select Site Info Type		Defaults	Site-specific
Select Isotope Info Type		Database hierarchy defaults	User-provided for ^{137}Cs, ^{239}Pu, ^{90}Sr and ^{235}U. Defaults for remaining ROCs
Select Risk Output		No	Yes
Select Individual Isotopes		None	ROCs in Table 1
Source and decay output options		Assumes secular equilibrium throughout chain (no decay)	Assumes secular equilibrium throughout chain (no decay) used for ^{226}Ra and for ^{232}Th
			Does not assume secular equilibrium, provide results for progeny throughout chain (with decay) used for ^{137}Cs, ^{239}Pu, ^{90}Sr and ^{235}U
			Does not assume secular equilibrium, no progeny included (with decay) used for remaining ROCs
User-provided Inputs	Soil Concentration (pCi/g)	None	See Table 6 in Appendix A
	Radioactive Half-life (years)	Defaults	
Resident Exposure to Soil >> Equations and Parameters	Site area (m^2) for ACF	1,000,000	1,000,000
	Clean soil thickness (cm) for GSF_o	0	0
	Clean soil thickness (cm) for GSF_b	0	0
Resident Exposure to Soil >> Particulate Emission Factor Wind Driven	City (Climatic Zone)	Default (Minneapolis, MN)	San Francisco, CA
	Areal extent of site or contamination (acres)	0.5	420
Resident Exposure to Produce >> Select Produce Items to Include		Toggle All checked	Toggle All unchecked

4.2 Resultant Risk from PRG Calculator

The excess radiological cancer risks using the PRG Calculator are presented in Table 5. These results assume resident exposure to uniform soil concentrations at the remedial goal levels throughout the exposure period. Estimates of the dose equivalent rates using EPA calculators can be obtained by using their Dose Compliance Concentrations for Radionuclides (DCC) Calculator, available at https://epa-dccs.ornl.gov/cgi-bin/dose_search, in the same manner to the PRG Calculator.

The Total Risk reported from the PRG Calculator was obtained from the output reports as follows:

- For the ^{226}Ra and ^{232}Th decay chains, Total Risk for each ROC is in the *Site-Specific Resident Risk for Soil – Secular Equilibrium* section in the following file included in Appendix D:
  - Resident_rad_rprg_07MAY2019_All ROC_Sec eq no decay_420 ac 1M m2_no cover.pdf.
- For ^{137}Cs, ^{239}Pu, ^{90}Sr and ^{235}U, Total Risk is the sum of the parent and progeny risks for each ROC in the *Site-Specific Resident Risk for Soil – No secular equilibrium, progeny included (with decay)* section in the following file included in Appendix D:

    - Resident_rad_rprg_15MAY2019_Cs Pu Sr U_progeny HL adjust w decay_420 ac 1M m2_no cover.pdf.
- For ^{241}Am, ^{60}Co, ^{152}Eu, ^{154}Eu, and ^{3}H, is from the ROC only in the *Site-Specific Resident Risk for Soil – No secular equilibrium, no progeny (with decay)* section in the following file included in Appendix D:
    - Resident_rad_rprg_15MAY2019_Am Co Eu H_no progeny w decay_420 ac 1M m2_no cover.pdf.

Table 5. Estimated Excess Cancer Risks from PRG Calculator

Parent ROC	Contributing Progeny	Total Risk
^{241}Am		**5.95E-07**
^{60}Co		**1.09E-06**
^{137}Cs		4.46E-09
	^{137m}Ba	1.98E-06
Total ^{137}Cs		***1.98E-06***
^{152}Eu		**3.36E-06**
^{154}Eu		**4.87E-06**
^{3}H		**9.61E-06**
^{239}Pu		6.71E-07
	^{235m}U	4.78E-14
Total ^{239}Pu		***6.71E-07***
Total ^{226}Ra		***7.87E-05***
^{90}Sr		2.47E-08
	^{90}Y	5.40E-08
Total ^{90}Sr		***7.87E-08***
Total ^{232}Th		***1.72E-04***
^{235}U		9.61E-07
	^{231}Th	4.33E-08
Total ^{235}U		***1.00E-06***

As shown in Table 5, the resultant PRG Calculator risks for individual radionuclides or radionuclide decay chains are protective for residential exposures to site soils that are uniformly contaminated at the remedial goal levels. Since the site is not uniformly contaminated, the actual risks are expected to be considerably less than these maximum values.

5 Summary

This report describes the use of RESRAD-ONSITE and the PRG Calculator to estimate the doses and excess cancer risks to residents from exposures to HPNS soils uniformly contaminated at the residential remediation goal levels. The assumptions and methods used in this report are very conservative and the use of additional site-specific data and refined exposure scenarios would result in more realistic and lower dose and risk estimates. However, the current estimated risks remain within the 10^{-4} to 10^{-6} range using both models, indicating that remedial goals in the 2006 Action Memorandum are protective for future residential exposures.

6 References

Naval Facilities Engineering Command (NAVFAC), Southwest. 2006. *Final – Basewide Radiological Removal Action: Action Memorandum – Revision 2006, Hunters Point Shipyard, San Francisco, CA*. April.

Naval Facilities Engineering Command (NAVFAC), Southwest. 2001. *Final – Basewide Radiological Removal Action: Action Memorandum, Hunters Point Shipyard, San Francisco, CA*. November.

Naval Sea Systems Command (NAVSEA), Radiological Affairs support Office. 2004. *Hunters Point Shipyard – Final Historical Radiological Assessment: History of the Use of General Radioactive Materials, 1939-2003*.

Appendix A. Radionuclide of Concern Input Concentrations

Table 6 presents the input concentrations used in RESRAD-ONSITE and in the PRG Calculator to calculate resident doses and risks. The progeny concentrations are adjusted based on the branching fraction of its parent's decay and the state of equilibrium of the decay chain.

Table 6. Input Soil Concentrations

Parent ROC	Contributing Progeny [1]	Residential Soil RG (pCi/g)	Branching Fraction	Input Concentration (pCi/g)	
				RESRAD-ONSITE	PRG Calculator
^{241}Am	[1]	1.36	1	1.36	1.36
^{137}Cs		0.113	1	0.113	0.113
	^{137m}Ba [2]		0.9440		0.107 [3]
^{60}Co		0.0361	1	0.0361	0.0361
^{152}Eu	[1]	0.13	1	0.13	0.13
^{154}Eu		0.23	1	0.23	0.23
^{3}H		2.28	1	2.28	2.28
^{239}Pu		2.59	1	2.59	2.59
	^{235m}U [2]		0.9994		2.59
^{226}Ra	[4]	1.0	1	1.0	1.0
^{90}Sr		0.331	1	0.331	0.331
	^{90}Y [2]		0.9978		0.331
^{232}Th	[4]	1.69	1	1.69	1.69
^{235}U		0.195	1	0.195	0.195
	^{231}Th [2]		1		0.195

[1] The progeny of ^{241}Am and ^{152}Eu do not reach secular equilibrium with their parent and are not included in the modeling.

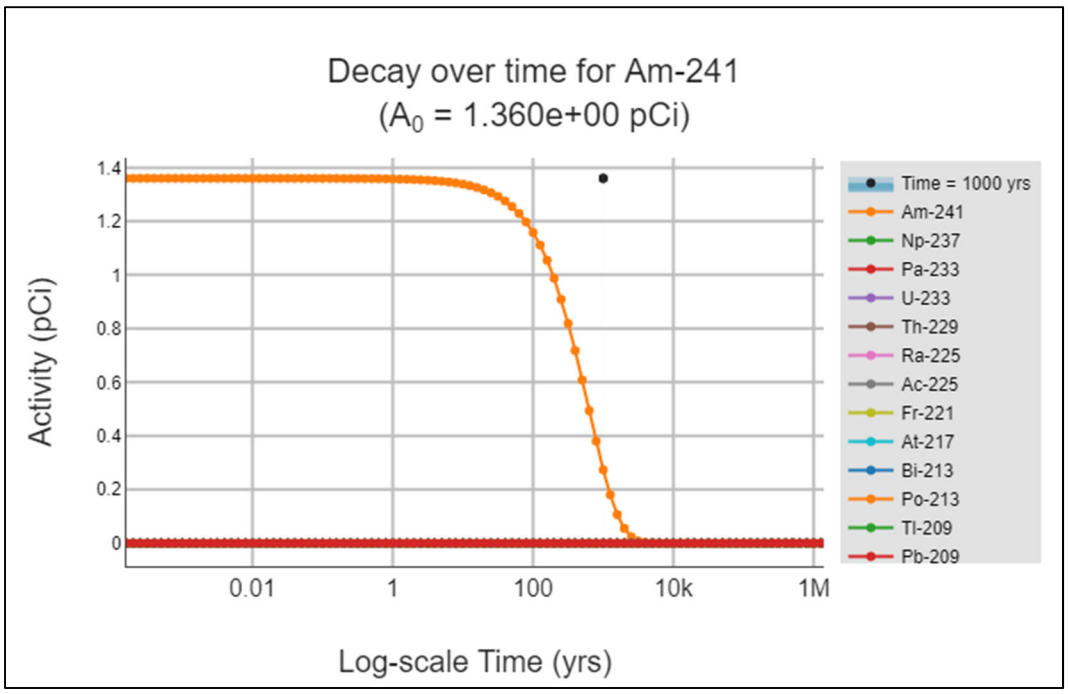
[2] These progeny half-lives are very short compared to those of their parents. Since the PRG Calculator does not model ingrowth, short-lived progeny that are initially present decay away rapidly without replenishment, resulting in an underestimation of their actual contribution to resident risks. Their half-lives are adjusted in the PRG Calculator to those of their parents to simulate their presence throughout the exposure period. This results in a risk overestimation but was chosen to remain conservative. In RESRAD-ONSITE, their ingrowth and decay are modeled automatically.

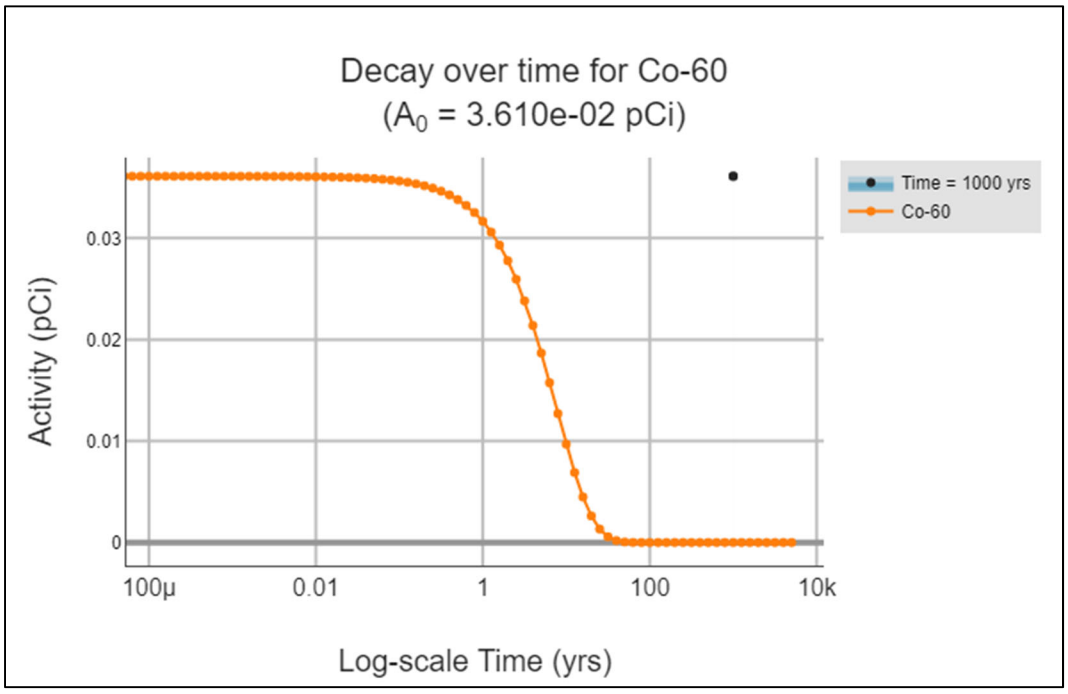
[3] The input concentration of ^{137m}Ba in the PRG Calculator is reduced by the branching fraction (0.113 x 0.944 = 0.107 pCi/g).

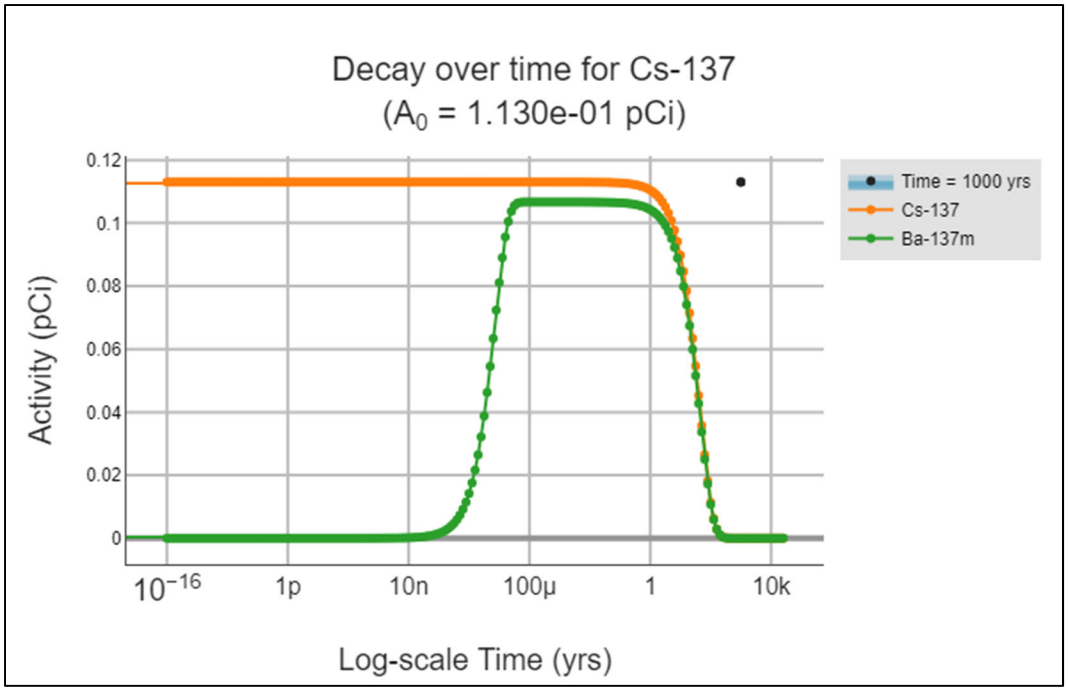
[4] Concentrations for the progenies of ^{226}Ra and ^{232}Th are included in the PRG Calculator by using the *Assumes secular equilibrium throughout chain (no decay)* output option. In RESRAD-ONSITE, their ingrowth and decay are modeled automatically.

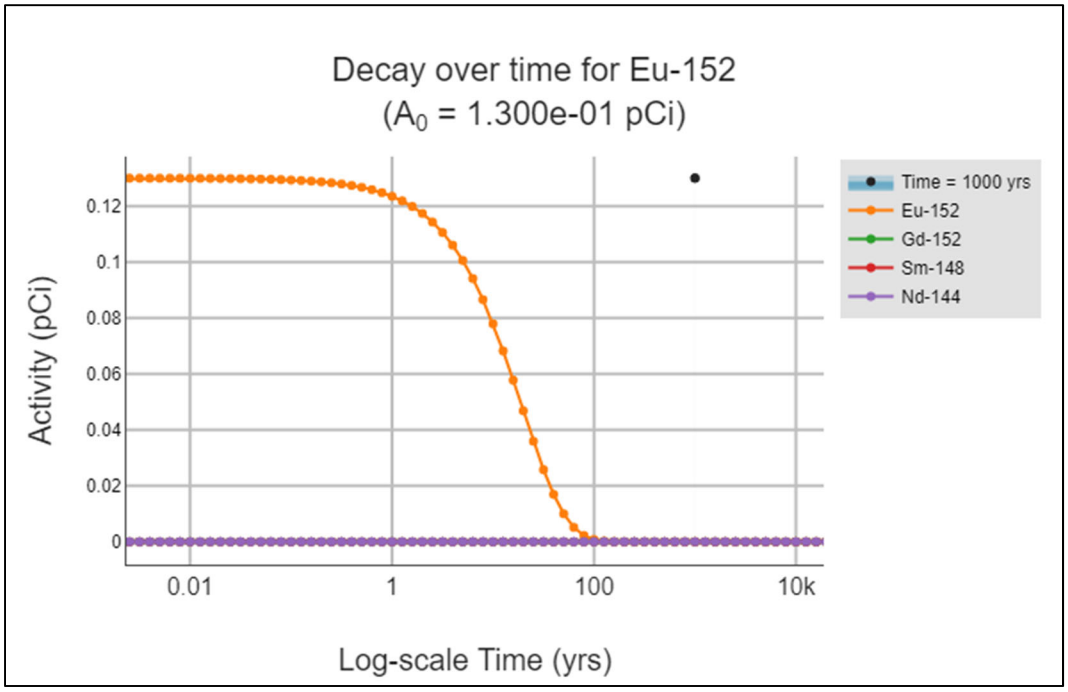
Appendix B. Radioactive Decay Plots

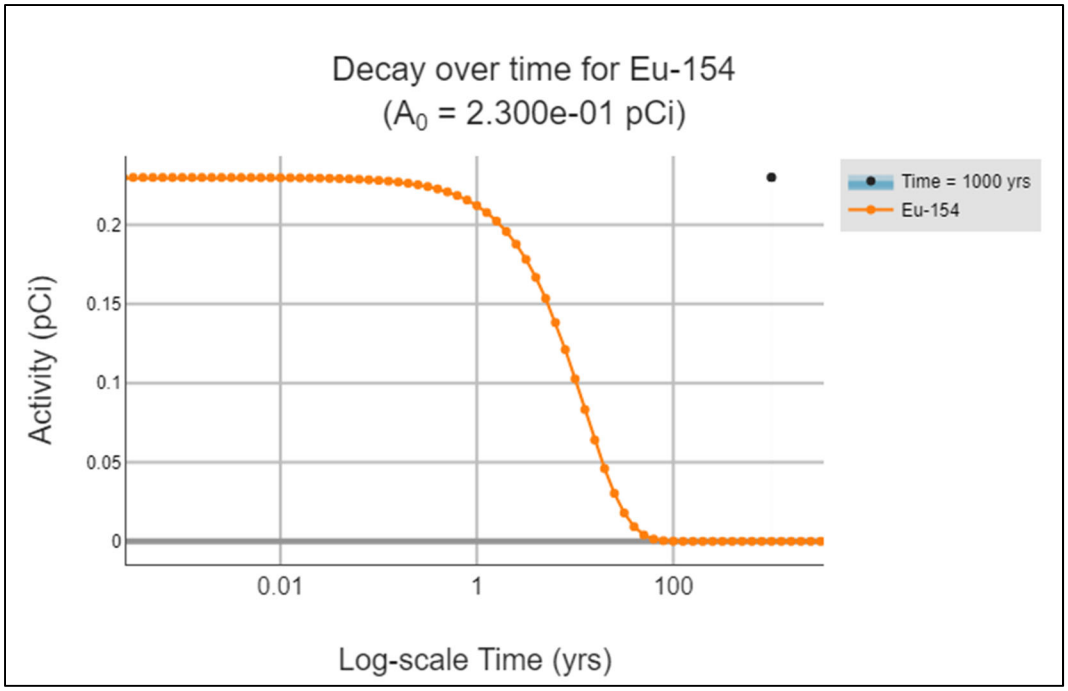
The following plots of radioactive decay for each parent ROC were generated using the Decay Chain Activity Projection Tool (https://rais.ornl.gov/cgi-bin/chain/chain.pl) developed by Oak Ridge National Laboratory (ORNL).

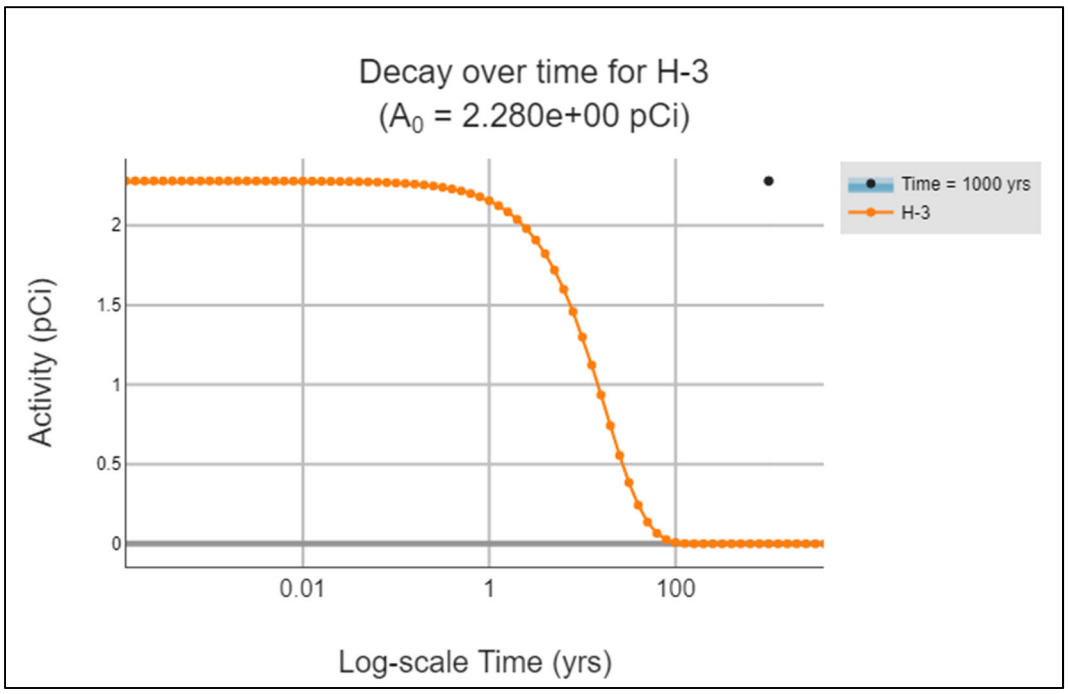


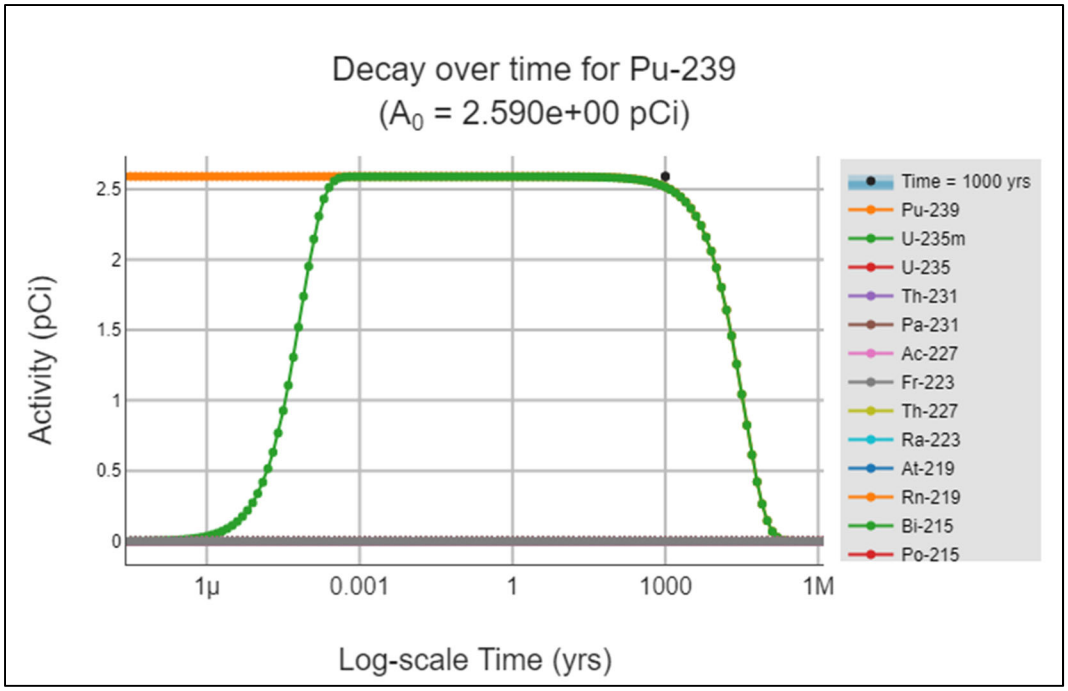


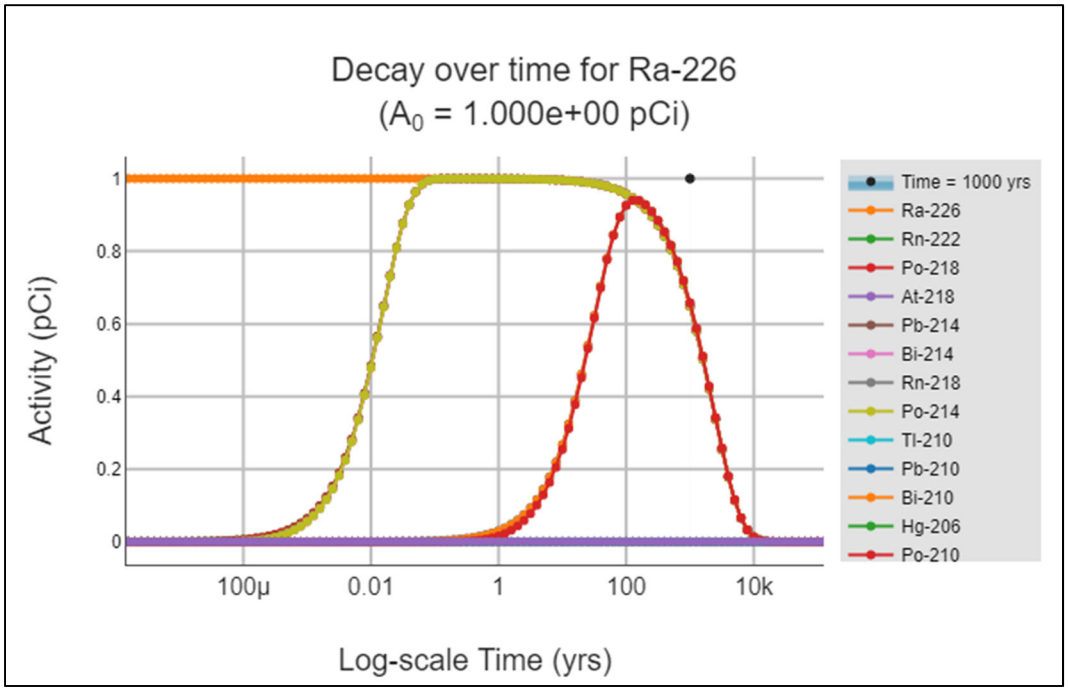

Decay over time for Cs-137
(A0 = 1.130e-01 pCi)
Activity (pCi)
0.12
0.1
0.08
0.06
0.04
0.02
0
10−16
1p
10n
100µ
1
10k
Log-scale Time (yrs)
Time = 1000 yrs
Cs-137
Ba-137m

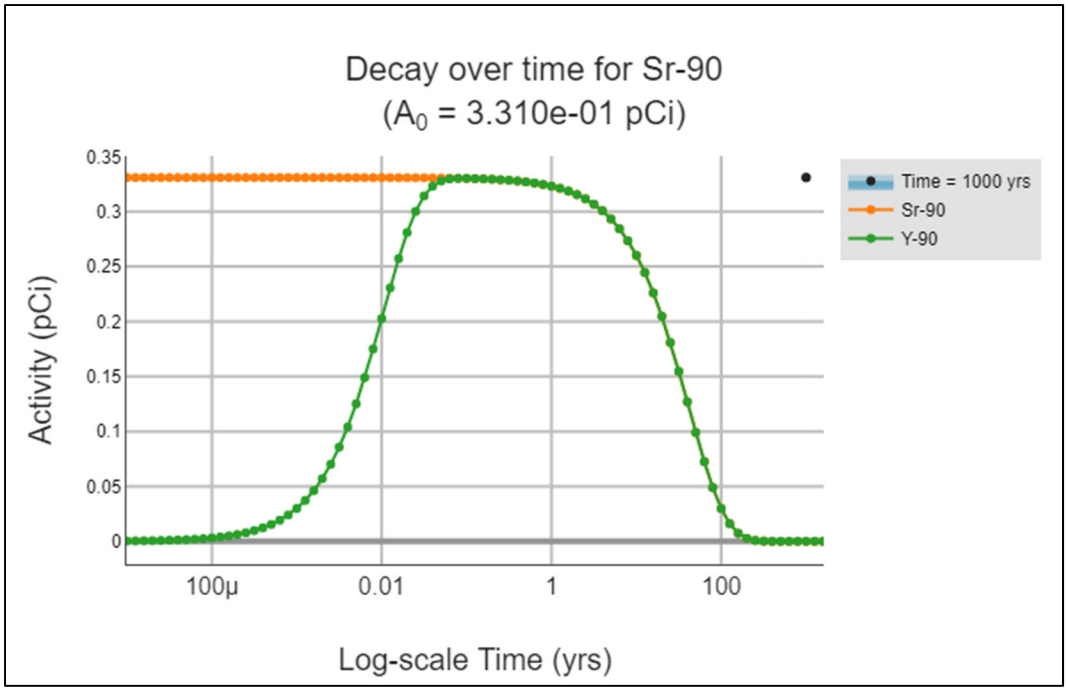

Decay over time for Eu-152
(A0 = 1.300e-01 pCi)
Activity (pCi)
0.12
0.1
0.08
0.06
0.04
0.02
0
0.01
1
100
10k
Log-scale Time (yrs)
Time = 1000 yrs
Eu-152
Gd-152
Sm-148
Nd-144

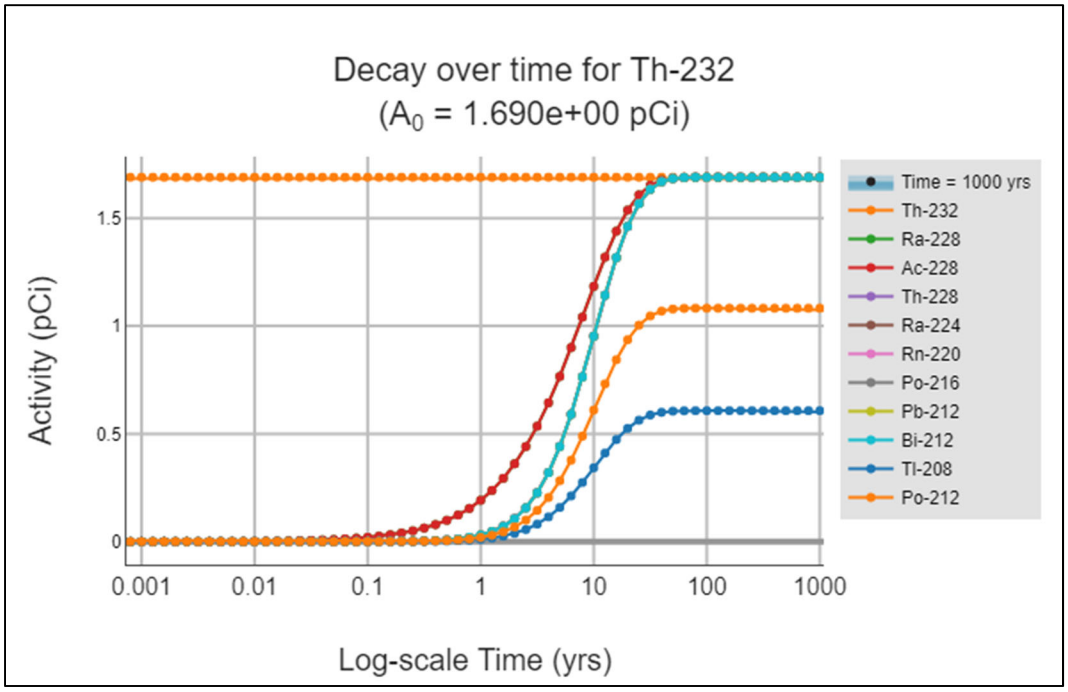

Decay over time for Eu-154
(A_0 = 2.300e-01 pCi)
Activity (pCi)
0.2
0.15
0.1
0.05
0
0.01
1
100
Log-scale Time (yrs)
Time = 1000 yrs
Eu-154

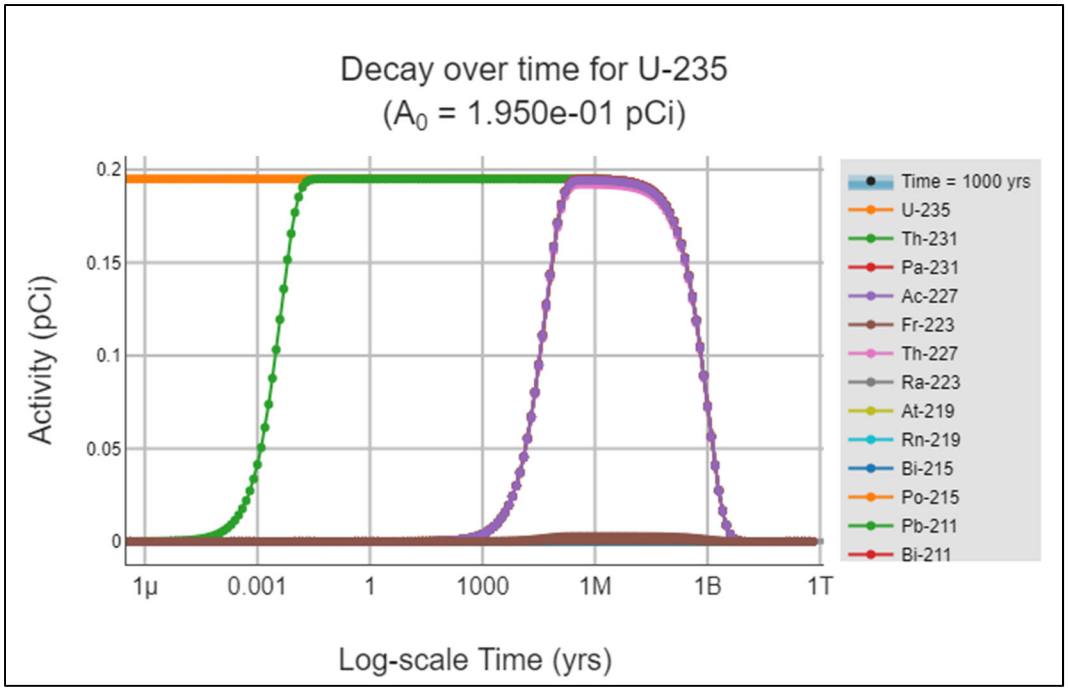

Decay over time for H-3
(A_0 = 2.280e+00 pCi)
Activity (pCi)
2
1.5
1
0.5
0
0.01
1
100
Log-scale Time (yrs)
Time = 1000 yrs
H-3


Decay over time for Pu-239
(A_0 = 2.590e+00 pCi)
Activity (pCi)
2.5
2
1.5
1
0.5
0
1µ
0.001
1
1000
1M
Log-scale Time (yrs)
Time = 1000 yrs
Pu-239
U-235m
U-235
Th-231
Pa-231
Ac-227
Fr-223
Th-227
Ra-223
At-219
Rn-219
Bi-215
Po-215


Decay over time for Ra-226
(A_0 = 1.000e+00 pCi)
Activity (pCi)
1
0.8
0.6
0.4
0.2
0
100µ
0.01
1
100
10k
Log-scale Time (yrs)
Time = 1000 yrs
Ra-226
Rn-222
Po-218
At-218
Pb-214
Bi-214
Rn-218
Po-214
Tl-210
Pb-210
Bi-210
Hg-206
Po-210


Decay over time for Sr-90
(A0 = 3.310e-01 pCi)
Activity (pCi)
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
100µ
0.01
1
100
Log-scale Time (yrs)
Time = 1000 yrs
Sr-90
Y-90


Decay over time for Th-232
(A0 = 1.690e+00 pCi)
Activity (pCi)
1.5
1
0.5
0
0.001
0.01
0.1
1
10
100
1000
Log-scale Time (yrs)
Time = 1000 yrs
Th-232
Ra-228
Ac-228
Th-228
Ra-224
Rn-220
Po-216
Pb-212
Bi-212
Tl-208
Po-212


Decay over time for U-235
(A_0 = 1.950e-01 pCi)
Activity (pCi)
0.2
0.15
0.1
0.05
0
1µ
0.001
1
1000
1M
1B
1T
Log-scale Time (yrs)
Time = 1000 yrs
U-235
Th-231
Pa-231
Ac-227
Fr-223
Th-227
Ra-223
At-219
Rn-219
Bi-215
Po-215
Pb-211
Bi-211

Appendix C. RESRAD-ONSITE Output Files

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.RAD

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Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.RAD

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: DOE STD-1196-2011 (Reference Person)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: DCFPAK3.02)	5.286E-02	5.286E-02	DCF1(1)
A-1	Ac-227 (Source: DCFPAK3.02)	2.615E-04	2.615E-04	DCF1(2)
A-1	Am-241 (Source: DCFPAK3.02)	3.717E-02	3.717E-02	DCF1(3)
A-1	At-217 (Source: DCFPAK3.02)	1.186E-03	1.186E-03	DCF1(4)
A-1	At-218 (Source: DCFPAK3.02)	5.567E-05	5.567E-05	DCF1(5)
A-1	At-219 (Source: DCFPAK3.02)	0.000E+00	0.000E+00	DCF1(6)
A-1	Ba-137m (Source: DCFPAK3.02)	3.381E+00	3.381E+00	DCF1(7)
A-1	Bi-210 (Source: DCFPAK3.02)	5.473E-03	5.473E-03	DCF1(8)
A-1	Bi-211 (Source: DCFPAK3.02)	2.410E-01	2.410E-01	DCF1(9)
A-1	Bi-213 (Source: DCFPAK3.02)	6.874E-01	6.874E-01	DCF1(10)
A-1	Bi-214 (Source: DCFPAK3.02)	9.135E+00	9.135E+00	DCF1(11)
A-1	Bi-215 (Source: DCFPAK3.02)	1.369E+00	1.369E+00	DCF1(12)
A-1	Co-60 (Source: DCFPAK3.02)	1.539E+01	1.539E+01	DCF1(13)
A-1	Cs-137 (Source: DCFPAK3.02)	8.686E-04	8.686E-04	DCF1(14)
A-1	Eu-152 (Source: DCFPAK3.02)	6.743E+00	6.743E+00	DCF1(15)
A-1	Eu-154 (Source: DCFPAK3.02)	7.285E+00	7.285E+00	DCF1(16)
A-1	Fr-221 (Source: DCFPAK3.02)	1.332E-01	1.332E-01	DCF1(17)
A-1	Fr-223 (Source: DCFPAK3.02)	1.758E-01	1.758E-01	DCF1(18)
A-1	Gd-152 (Source: DCFPAK3.02)	0.000E+00	0.000E+00	DCF1(19)
A-1	H-3 (Source: DCFPAK3.02)	0.000E+00	0.000E+00	DCF1(20)
A-1	Hg-206 (Source: DCFPAK3.02)	6.127E-01	6.127E-01	DCF1(21)
A-1	Nd-144 (Source: DCFPAK3.02)	0.000E+00	0.000E+00	DCF1(22)
A-1	Np-237 (Source: DCFPAK3.02)	6.706E-02	6.706E-02	DCF1(23)
A-1	Pa-231 (Source: DCFPAK3.02)	1.608E-01	1.608E-01	DCF1(24)
A-1	Pa-233 (Source: DCFPAK3.02)	1.018E+00	1.018E+00	DCF1(25)
A-1	Pb-209 (Source: DCFPAK3.02)	7.528E-04	7.528E-04	DCF1(26)
A-1	Pb-210 (Source: DCFPAK3.02)	2.092E-03	2.092E-03	DCF1(27)
A-1	Pb-211 (Source: DCFPAK3.02)	3.680E-01	3.680E-01	DCF1(28)
A-1	Pb-214 (Source: DCFPAK3.02)	1.257E+00	1.257E+00	DCF1(29)
A-1	Po-210 (Source: DCFPAK3.02)	5.641E-05	5.641E-05	DCF1(30)
A-1	Po-211 (Source: DCFPAK3.02)	4.707E-02	4.707E-02	DCF1(31)
A-1	Po-213 (Source: DCFPAK3.02)	2.167E-04	2.167E-04	DCF1(32)
A-1	Po-214 (Source: DCFPAK3.02)	4.801E-04	4.801E-04	DCF1(33)
A-1	Po-215 (Source: DCFPAK3.02)	9.452E-04	9.452E-04	DCF1(34)
A-1	Po-218 (Source: DCFPAK3.02)	9.228E-09	9.228E-09	DCF1(35)
A-1	Pu-239 (Source: DCFPAK3.02)	2.765E-04	2.765E-04	DCF1(36)
A-1	Ra-223 (Source: DCFPAK3.02)	5.791E-01	5.791E-01	DCF1(37)
A-1	Ra-225 (Source: DCFPAK3.02)	8.910E-03	8.910E-03	DCF1(38)
A-1	Ra-226 (Source: DCFPAK3.02)	3.176E-02	3.176E-02	DCF1(39)
A-1	Rn-218 (Source: DCFPAK3.02)	4.259E-03	4.259E-03	DCF1(40)
A-1	Rn-219 (Source: DCFPAK3.02)	2.970E-01	2.970E-01	DCF1(41)
A-1	Rn-222 (Source: DCFPAK3.02)	2.130E-03	2.130E-03	DCF1(42)
A-1	Sm-148 (Source: DCFPAK3.02)	0.000E+00	0.000E+00	DCF1(43)
A-1	Sr-90 (Source: DCFPAK3.02)	6.463E-04	6.463E-04	DCF1(44)
A-1	Th-227 (Source: DCFPAK3.02)	5.641E-01	5.641E-01	DCF1(45)
A-1	Th-229 (Source: DCFPAK3.02)	2.877E-01	2.877E-01	DCF1(46)
A-1	Th-231 (Source: DCFPAK3.02)	3.250E-02	3.250E-02	DCF1(47)
A-1	Tl-206 (Source: DCFPAK3.02)	1.278E-02	1.278E-02	DCF1(48)
A-1	Tl-207 (Source: DCFPAK3.02)	2.391E-02	2.391E-02	DCF1(49)

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.RAD

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: DOE STD-1196-2011 (Reference Person)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Tl-209 (Source: DCFPAK3.02)	1.287E+01	1.287E+01	DCF1(50)
A-1	Tl-210 (Source: DCFPAK3.02)	1.677E+01	1.677E+01	DCF1(51)
A-1	U-233 (Source: DCFPAK3.02)	9.191E-04	9.191E-04	DCF1(52)
A-1	U-235 (Source: DCFPAK3.02)	7.005E-01	7.005E-01	DCF1(53)
A-1	U-235m (Source: DCFPAK3.02)	0.000E+00	0.000E+00	DCF1(54)
A-1	Y-90 (Source: DCFPAK3.02)	4.016E-02	4.016E-02	DCF1(55)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-225+D	3.397E-02	3.397E-02	DCF2(1)
B-1	Ac-227	5.957E-01	5.957E-01	DCF2(2)
B-1	Am-241	3.630E-01	3.630E-01	DCF2(5)
B-1	Bi-210	5.402E-04	5.402E-04	DCF2(6)
B-1	Bi-210+D	5.402E-04	5.402E-04	DCF2(7)
B-1	Bi-213+D	1.313E-04	1.313E-04	DCF2(8)
B-1	Bi-214+D	6.364E-05	6.364E-05	DCF2(9)
B-1	Co-60	1.221E-04	1.221E-04	DCF2(12)
B-1	Cs-137+D	1.543E-04	1.543E-04	DCF2(13)
B-1	Eu-152	3.674E-04	3.674E-04	DCF2(14)
B-1	Eu-154	4.255E-04	4.255E-04	DCF2(16)
B-1	Fr-223	4.921E-05	4.921E-05	DCF2(17)
B-1	Fr-223+D	4.921E-05	4.921E-05	DCF2(18)
B-1	Gd-152	7.437E-02	7.437E-02	DCF2(19)
B-1	H-3	1.069E-06	1.069E-06	DCF2(20)
B-1	Nd-144	7.437E-02	7.437E-02	DCF2(21)
B-1	Np-237	1.868E-01	1.868E-01	DCF2(22)
B-1	Pa-231	8.769E-01	8.769E-01	DCF2(23)
B-1	Pa-233	1.687E-05	1.687E-05	DCF2(26)
B-1	Pb-209	2.583E-07	2.583E-07	DCF2(27)
B-1	Pb-210	2.231E-02	2.231E-02	DCF2(28)
B-1	Pb-210+D	2.231E-02	2.231E-02	DCF2(30)
B-1	Pb-211+D	5.032E-05	5.032E-05	DCF2(31)
B-1	Pb-214	5.920E-05	5.920E-05	DCF2(32)
B-1	Po-210	1.732E-02	1.732E-02	DCF2(35)
B-1	Pu-239	4.477E-01	4.477E-01	DCF2(36)
B-1	Ra-223+D	3.474E-02	3.474E-02	DCF2(42)
B-1	Ra-225	3.112E-02	3.112E-02	DCF2(43)
B-1	Ra-226	3.811E-02	3.811E-02	DCF2(44)
B-1	Rn-222+D	0.000E+00	0.000E+00	DCF2(53)
B-1	Rn-222+D1	0.000E+00	0.000E+00	DCF2(56)
B-1	Rn-222+D2	0.000E+00	0.000E+00	DCF2(59)
B-1	Sm-148	7.770E-02	7.770E-02	DCF2(62)
B-1	Sr-90	6.068E-04	6.068E-04	DCF2(63)
B-1	Th-227	4.144E-02	4.144E-02	DCF2(64)
B-1	Th-229	9.213E-01	9.213E-01	DCF2(65)
B-1	Th-231	1.399E-06	1.399E-06	DCF2(66)
B-1	U-233	3.811E-02	3.811E-02	DCF2(69)
B-1	U-235	3.378E-02	3.378E-02	DCF2(70)
B-1	U-235m	3.393E-12	3.393E-12	DCF2(73)
B-1	Y-90	6.549E-06	6.549E-06	DCF2(76)

Summary : RESRAD Default Parameters
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Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: DOE STD-1196-2011 (Reference Person)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-225+D	1.935E-04	1.935E-04	DCF3(1)
D-1	Ac-227	1.450E-03	1.450E-03	DCF3(2)
D-1	Am-241	8.806E-04	8.806E-04	DCF3(5)
D-1	Bi-210	6.660E-06	6.660E-06	DCF3(6)
D-1	Bi-210+D	6.660E-06	6.660E-06	DCF3(7)
D-1	Bi-213+D	9.916E-07	9.916E-07	DCF3(8)
D-1	Bi-214+D	5.513E-07	5.513E-07	DCF3(9)
D-1	Co-60	2.031E-05	2.031E-05	DCF3(12)
D-1	Cs-137+D	4.921E-05	4.921E-05	DCF3(13)
D-1	Eu-152	6.438E-06	6.438E-06	DCF3(14)
D-1	Eu-154	9.657E-06	9.657E-06	DCF3(16)
D-1	Fr-223	1.195E-05	1.195E-05	DCF3(17)
D-1	Fr-223+D	1.195E-05	1.195E-05	DCF3(18)
D-1	Gd-152	1.968E-04	1.968E-04	DCF3(19)
D-1	H-3	1.695E-07	1.695E-07	DCF3(20)
D-1	Nd-144	1.954E-04	1.954E-04	DCF3(21)
D-1	Np-237	4.625E-04	4.625E-04	DCF3(22)
D-1	Pa-231	2.068E-03	2.068E-03	DCF3(23)
D-1	Pa-233	4.884E-06	4.884E-06	DCF3(26)
D-1	Pb-209	2.764E-07	2.764E-07	DCF3(27)
D-1	Pb-210	3.774E-03	3.774E-03	DCF3(28)
D-1	Pb-210+D	3.774E-03	3.774E-03	DCF3(30)
D-1	Pb-211+D	9.694E-07	9.694E-07	DCF3(31)
D-1	Pb-214	7.363E-07	7.363E-07	DCF3(32)
D-1	Po-210	6.475E-03	6.475E-03	DCF3(35)
D-1	Pu-239	1.066E-03	1.066E-03	DCF3(36)
D-1	Ra-223+D	8.029E-04	8.029E-04	DCF3(42)
D-1	Ra-225	8.806E-04	8.806E-04	DCF3(43)
D-1	Ra-226	1.676E-03	1.676E-03	DCF3(44)
D-1	Rn-222+D	0.000E+00	0.000E+00	DCF3(53)
D-1	Rn-222+D1	0.000E+00	0.000E+00	DCF3(56)
D-1	Rn-222+D2	0.000E+00	0.000E+00	DCF3(59)
D-1	Sm-148	2.035E-04	2.035E-04	DCF3(62)
D-1	Sr-90	1.332E-04	1.332E-04	DCF3(63)
D-1	Th-227	5.439E-05	5.439E-05	DCF3(64)
D-1	Th-229	2.253E-03	2.253E-03	DCF3(65)
D-1	Th-231	1.706E-06	1.706E-06	DCF3(66)
D-1	U-233	2.227E-04	2.227E-04	DCF3(69)
D-1	U-235	2.031E-04	2.031E-04	DCF3(70)
D-1	U-235m	2.153E-11	2.153E-11	DCF3(73)
D-1	Y-90	1.369E-05	1.369E-05	DCF3(76)
D-34	Food transfer factors:			
D-34	Ac-225+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-225+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-225+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				

Summary : RESRAD Default Parameters
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Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: DOE STD-1196-2011 (Reference Person)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ac-227 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(2,1)
D-34	Ac-227 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(2,2)
D-34	Ac-227 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(2,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(5,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(5,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(5,3)
D-34				
D-34	Bi-210 , plant/soil concentration ratio, dimensionless	1.000E-01	1.000E-01	RTF(6,1)
D-34	Bi-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(6,2)
D-34	Bi-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-04	5.000E-04	RTF(6,3)
D-34				
D-34	Bi-210+D , plant/soil concentration ratio, dimensionless	1.000E-01	1.000E-01	RTF(7,1)
D-34	Bi-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(7,2)
D-34	Bi-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-04	5.000E-04	RTF(7,3)
D-34				
D-34	Bi-213+D , plant/soil concentration ratio, dimensionless	1.000E-01	1.000E-01	RTF(8,1)
D-34	Bi-213+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(8,2)
D-34	Bi-213+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-04	5.000E-04	RTF(8,3)
D-34				
D-34	Bi-214+D , plant/soil concentration ratio, dimensionless	1.000E-01	1.000E-01	RTF(9,1)
D-34	Bi-214+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(9,2)
D-34	Bi-214+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-04	5.000E-04	RTF(9,3)
D-34				
D-34	Co-60 , plant/soil concentration ratio, dimensionless	8.000E-02	8.000E-02	RTF(12,1)
D-34	Co-60 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-02	2.000E-02	RTF(12,2)
D-34	Co-60 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF(12,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(13,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(13,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(13,3)
D-34				
D-34	Eu-152 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(14,1)
D-34	Eu-152 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(14,2)
D-34	Eu-152 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-05	5.000E-05	RTF(14,3)
D-34				
D-34	Eu-154 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(16,1)
D-34	Eu-154 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(16,2)
D-34	Eu-154 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-05	5.000E-05	RTF(16,3)
D-34				
D-34	Fr-223 , plant/soil concentration ratio, dimensionless	3.000E-02	3.000E-02	RTF(17,1)
D-34	Fr-223 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(17,2)
D-34	Fr-223 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(17,3)
D-34				
D-34	Fr-223+D , plant/soil concentration ratio, dimensionless	3.000E-02	3.000E-02	RTF(18,1)
D-34	Fr-223+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(18,2)
D-34	Fr-223+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(18,3)
D-34				

Summary : RESRAD Default Parameters
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Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: DOE STD-1196-2011 (Reference Person)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Gd-152 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(19,1)
D-34	Gd-152 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(19,2)
D-34	Gd-152 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(19,3)
D-34				
D-34	H-3 , plant/soil concentration ratio, dimensionless	4.800E+00	4.800E+00	RTF(20,1)
D-34	H-3 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.200E-02	1.200E-02	RTF(20,2)
D-34	H-3 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-02	1.000E-02	RTF(20,3)
D-34				
D-34	Nd-144 , plant/soil concentration ratio, dimensionless	2.400E-03	2.400E-03	RTF(21,1)
D-34	Nd-144 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(21,2)
D-34	Nd-144 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(21,3)
D-34				
D-34	Np-237 , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(22,1)
D-34	Np-237 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(22,2)
D-34	Np-237 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(22,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(23,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(23,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(23,3)
D-34				
D-34	Pa-233 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(26,1)
D-34	Pa-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(26,2)
D-34	Pa-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(26,3)
D-34				
D-34	Pb-209 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(27,1)
D-34	Pb-209 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(27,2)
D-34	Pb-209 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(27,3)
D-34				
D-34	Pb-210 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(28,1)
D-34	Pb-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(28,2)
D-34	Pb-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(28,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(30,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(30,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(30,3)
D-34				
D-34	Pb-211+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(31,1)
D-34	Pb-211+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(31,2)
D-34	Pb-211+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(31,3)
D-34				
D-34	Pb-214 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(32,1)
D-34	Pb-214 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(32,2)
D-34	Pb-214 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(32,3)
D-34				
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(35,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(35,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(35,3)
D-34				

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: DOE STD-1196-2011 (Reference Person)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(36,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(36,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(36,3)
D-34				
D-34	Ra-223+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(42,1)
D-34	Ra-223+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(42,2)
D-34	Ra-223+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(42,3)
D-34				
D-34	Ra-225 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(43,1)
D-34	Ra-225 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(43,2)
D-34	Ra-225 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(43,3)
D-34				
D-34	Ra-226 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(44,1)
D-34	Ra-226 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(44,2)
D-34	Ra-226 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(44,3)
D-34				
D-34	Rn-222+D , plant/soil concentration ratio, dimensionless	0.000E+00	0.000E+00	RTF(53,1)
D-34	Rn-222+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	0.000E+00	0.000E+00	RTF(53,2)
D-34	Rn-222+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	0.000E+00	0.000E+00	RTF(53,3)
D-34				
D-34	Rn-222+D1 , plant/soil concentration ratio, dimensionless	0.000E+00	0.000E+00	RTF(56,1)
D-34	Rn-222+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	0.000E+00	0.000E+00	RTF(56,2)
D-34	Rn-222+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	0.000E+00	0.000E+00	RTF(56,3)
D-34				
D-34	Rn-222+D2 , plant/soil concentration ratio, dimensionless	0.000E+00	0.000E+00	RTF(59,1)
D-34	Rn-222+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	0.000E+00	0.000E+00	RTF(59,2)
D-34	Rn-222+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	0.000E+00	0.000E+00	RTF(59,3)
D-34				
D-34	Sm-148 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(62,1)
D-34	Sm-148 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(62,2)
D-34	Sm-148 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(62,3)
D-34				
D-34	Sr-90 , plant/soil concentration ratio, dimensionless	3.000E-01	3.000E-01	RTF(63,1)
D-34	Sr-90 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-03	8.000E-03	RTF(63,2)
D-34	Sr-90 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF(63,3)
D-34				
D-34	Th-227 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(64,1)
D-34	Th-227 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(64,2)
D-34	Th-227 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(64,3)
D-34				
D-34	Th-229 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(65,1)
D-34	Th-229 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(65,2)
D-34	Th-229 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(65,3)
D-34				
D-34	Th-231 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(66,1)
D-34	Th-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(66,2)
D-34	Th-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(66,3)
D-34				

Summary : RESRAD Default Parameters
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Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: DOE STD-1196-2011 (Reference Person)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(69,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(69,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(69,3)
D-34				
D-34	U-235 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(70,1)
D-34	U-235 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(70,2)
D-34	U-235 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(70,3)
D-34				
D-34	U-235m , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(73,1)
D-34	U-235m , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(73,2)
D-34	U-235m , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(73,3)
D-34				
D-34	Y-90 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(76,1)
D-34	Y-90 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(76,2)
D-34	Y-90 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(76,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-225+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-225+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Ac-227 , fish	1.500E+01	1.500E+01	BIOFAC(2,1)
D-5	Ac-227 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5				
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(5,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(5,2)
D-5				
D-5	Bi-210 , fish	1.500E+01	1.500E+01	BIOFAC(6,1)
D-5	Bi-210 , crustacea and mollusks	1.000E+01	1.000E+01	BIOFAC(6,2)
D-5				
D-5	Bi-210+D , fish	1.500E+01	1.500E+01	BIOFAC(7,1)
D-5	Bi-210+D , crustacea and mollusks	1.000E+01	1.000E+01	BIOFAC(7,2)
D-5				
D-5	Bi-213+D , fish	1.500E+01	1.500E+01	BIOFAC(8,1)
D-5	Bi-213+D , crustacea and mollusks	1.000E+01	1.000E+01	BIOFAC(8,2)
D-5				
D-5	Bi-214+D , fish	1.500E+01	1.500E+01	BIOFAC(9,1)
D-5	Bi-214+D , crustacea and mollusks	1.000E+01	1.000E+01	BIOFAC(9,2)
D-5				
D-5	Co-60 , fish	3.000E+02	3.000E+02	BIOFAC(12,1)
D-5	Co-60 , crustacea and mollusks	2.000E+02	2.000E+02	BIOFAC(12,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(13,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(13,2)
D-5				
D-5	Eu-152 , fish	5.000E+01	5.000E+01	BIOFAC(14,1)
D-5	Eu-152 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(14,2)
D-5				
D-5	Eu-154 , fish	5.000E+01	5.000E+01	BIOFAC(16,1)
D-5	Eu-154 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(16,2)
D-5				

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: DOE STD-1196-2011 (Reference Person)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Fr-223 , fish	3.000E+01	3.000E+01	BIOFAC(17,1)
D-5	Fr-223 , crustacea and mollusks	0.000E+00	-1.000E+00	BIOFAC(17,2)
D-5				
D-5	Fr-223+D , fish	3.000E+01	3.000E+01	BIOFAC(18,1)
D-5	Fr-223+D , crustacea and mollusks	0.000E+00	-1.000E+00	BIOFAC(18,2)
D-5				
D-5	Gd-152 , fish	2.500E+01	2.500E+01	BIOFAC(19,1)
D-5	Gd-152 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(19,2)
D-5				
D-5	H-3 , fish	1.000E+00	1.000E+00	BIOFAC(20,1)
D-5	H-3 , crustacea and mollusks	1.000E+00	1.000E+00	BIOFAC(20,2)
D-5				
D-5	Nd-144 , fish	1.000E+02	1.000E+02	BIOFAC(21,1)
D-5	Nd-144 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(21,2)
D-5				
D-5	Np-237 , fish	3.000E+01	3.000E+01	BIOFAC(22,1)
D-5	Np-237 , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(22,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(23,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(23,2)
D-5				
D-5	Pa-233 , fish	1.000E+01	1.000E+01	BIOFAC(26,1)
D-5	Pa-233 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(26,2)
D-5				
D-5	Pb-209 , fish	3.000E+02	3.000E+02	BIOFAC(27,1)
D-5	Pb-209 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(27,2)
D-5				
D-5	Pb-210 , fish	3.000E+02	3.000E+02	BIOFAC(28,1)
D-5	Pb-210 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(28,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(30,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(30,2)
D-5				
D-5	Pb-211+D , fish	3.000E+02	3.000E+02	BIOFAC(31,1)
D-5	Pb-211+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(31,2)
D-5				
D-5	Pb-214 , fish	3.000E+02	3.000E+02	BIOFAC(32,1)
D-5	Pb-214 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(32,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(35,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(35,2)
D-5				
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(36,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(36,2)
D-5				
D-5	Ra-223+D , fish	5.000E+01	5.000E+01	BIOFAC(42,1)
D-5	Ra-223+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(42,2)
D-5				
D-5	Ra-225 , fish	5.000E+01	5.000E+01	BIOFAC(43,1)
D-5	Ra-225 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(43,2)

Summary : RESRAD Default Parameters
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Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: DOE STD-1196-2011 (Reference Person)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Ra-226 , fish	5.000E+01	5.000E+01	BIOFAC(44,1)
D-5	Ra-226 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(44,2)
D-5				
D-5	Rn-222+D , fish	0.000E+00	0.000E+00	BIOFAC(53,1)
D-5	Rn-222+D , crustacea and mollusks	0.000E+00	0.000E+00	BIOFAC(53,2)
D-5				
D-5	Rn-222+D1 , fish	0.000E+00	0.000E+00	BIOFAC(56,1)
D-5	Rn-222+D1 , crustacea and mollusks	0.000E+00	0.000E+00	BIOFAC(56,2)
D-5				
D-5	Rn-222+D2 , fish	0.000E+00	0.000E+00	BIOFAC(59,1)
D-5	Rn-222+D2 , crustacea and mollusks	0.000E+00	0.000E+00	BIOFAC(59,2)
D-5				
D-5	Sm-148 , fish	2.500E+01	2.500E+01	BIOFAC(62,1)
D-5	Sm-148 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(62,2)
D-5				
D-5	Sr-90 , fish	6.000E+01	6.000E+01	BIOFAC(63,1)
D-5	Sr-90 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(63,2)
D-5				
D-5	Th-227 , fish	1.000E+02	1.000E+02	BIOFAC(64,1)
D-5	Th-227 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(64,2)
D-5				
D-5	Th-229 , fish	1.000E+02	1.000E+02	BIOFAC(65,1)
D-5	Th-229 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(65,2)
D-5				
D-5	Th-231 , fish	1.000E+02	1.000E+02	BIOFAC(66,1)
D-5	Th-231 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(66,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC(69,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(69,2)
D-5				
D-5	U-235 , fish	1.000E+01	1.000E+01	BIOFAC(70,1)
D-5	U-235 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(70,2)
D-5				
D-5	U-235m , fish	1.000E+01	1.000E+01	BIOFAC(73,1)
D-5	U-235m , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(73,2)
D-5				
D-5	Y-90 , fish	3.000E+01	3.000E+01	BIOFAC(76,1)
D-5	Y-90 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(76,2)

#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.

Summary : RESRAD Default Parameters
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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	1.214E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	2.000E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.200E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	8.890E+01	1.000E+02	---	T(6)
R011	Times for calculations (yr)	1.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	3.000E+02	1.000E+03	---	T(8)
R011	Times for calculations (yr)	1.000E+03	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.360E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Co-60	3.610E-02	0.000E+00	---	S1(12)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.130E-01	0.000E+00	---	S1(13)
R012	Initial principal radionuclide (pCi/g): Eu-152	1.300E-01	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Eu-154	2.300E-01	0.000E+00	---	S1(16)
R012	Initial principal radionuclide (pCi/g): H-3	2.280E+00	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): Pu-239	2.590E+00	0.000E+00	---	S1(36)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(44)
R012	Initial principal radionuclide (pCi/g): Sr-90	3.310E-01	0.000E+00	---	S1(63)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Co-60	not used	0.000E+00	---	W1(12)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(13)
R012	Concentration in groundwater (pCi/L): Eu-152	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Eu-154	not used	0.000E+00	---	W1(16)
R012	Concentration in groundwater (pCi/L): H-3	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(36)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(44)
R012	Concentration in groundwater (pCi/L): Sr-90	not used	0.000E+00	---	W1(63)
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)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	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)	8.000E+00	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH

Summary : RESRAD Default Parameters
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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Runoff coefficient	2.000E-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	Romberg failures occurred	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
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)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.245E-03	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Co-60				
R016	Contaminated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCC(12)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+03	---	DCNUCU(12,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+03	---	DCNUCS(12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.666E-04	ALEACH(12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(12)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCC(13)
R016	Unsaturated zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU(13,1)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS(13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.623E-05	ALEACH(13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(13)

Summary : RESRAD Default Parameters
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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Eu-152				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	not used	-1.000E+00	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	not used	-1.000E+00	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.020E-04	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Eu-154				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCC(16)
R016	Unsaturated zone 1 (cm**3/g)	not used	-1.000E+00	---	DCNUCU(16,1)
R016	Saturated zone (cm**3/g)	not used	-1.000E+00	---	DCNUCS(16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.020E-04	ALEACH(16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(16)
R016	Distribution coefficients for H-3				
R016	Contaminated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCC(20)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(20,1)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.790E-01	ALEACH(20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(20)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(36)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+03	---	DCNUCU(36,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+03	---	DCNUCS(36)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.332E-05	ALEACH(36)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(36)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(44)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(44,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(44)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.374E-03	ALEACH(44)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(44)
R016	Distribution coefficients for Sr-90				
R016	Contaminated zone (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCC(63)
R016	Unsaturated zone 1 (cm**3/g)	not used	3.000E+01	---	DCNUCU(63,1)
R016	Saturated zone (cm**3/g)	not used	3.000E+01	---	DCNUCS(63)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.516E-03	ALEACH(63)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(63)
R016	Distribution coefficients for daughter Ac-225				
R016	Contaminated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.245E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)

Summary : RESRAD Default Parameters
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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.245E-03	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for daughter Bi-210				
R016	Contaminated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(6,1)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.790E-01	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for daughter Bi-213				
R016	Contaminated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.790E-01	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for daughter Bi-214				
R016	Contaminated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.790E-01	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for daughter Fr-223				
R016	Contaminated zone (cm**3/g)	2.000E+02	2.000E+02	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+02	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+02	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.324E-04	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)
R016	Distribution coefficients for daughter Gd-152				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCC(19)
R016	Unsaturated zone 1 (cm**3/g)	not used	-1.000E+00	---	DCNUCU(19,1)
R016	Saturated zone (cm**3/g)	not used	-1.000E+00	---	DCNUCS(19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.020E-04	ALEACH(19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(19)
R016	Distribution coefficients for daughter Nd-144				
R016	Contaminated zone (cm**3/g)	1.580E+02	1.580E+02	---	DCNUCC(21)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.580E+02	---	DCNUCU(21,1)
R016	Saturated zone (cm**3/g)	not used	1.580E+02	---	DCNUCS(21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.053E-03	ALEACH(21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(21)

Summary : RESRAD Default Parameters
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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Np-237				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	2.574E+02	DCNUCC(22)
R016	Unsaturated zone 1 (cm**3/g)	not used	-1.000E+00	---	DCNUCU(22,1)
R016	Saturated zone (cm**3/g)	not used	-1.000E+00	---	DCNUCS(22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.469E-04	ALEACH(22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(22)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(23)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(23,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH(23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(23)
R016	Distribution coefficients for daughter Pa-233				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(26)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(26,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(26)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH(26)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(26)
R016	Distribution coefficients for daughter Pb-209				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(27)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU(27,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS(27)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.663E-03	ALEACH(27)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(27)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(28)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU(28,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS(28)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.663E-03	ALEACH(28)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(28)
R016	Distribution coefficients for daughter Pb-211				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(31)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU(31,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS(31)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.663E-03	ALEACH(31)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(31)
R016	Distribution coefficients for daughter Pb-214				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(32)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU(32,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS(32)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.663E-03	ALEACH(32)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(32)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC(35)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+01	---	DCNUCU(35,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+01	---	DCNUCS(35)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.632E-02	ALEACH(35)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(35)
R016	Distribution coefficients for daughter Ra-223				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(42)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(42,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(42)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.374E-03	ALEACH(42)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(42)
R016	Distribution coefficients for daughter Ra-225				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(43)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(43,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(43)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.374E-03	ALEACH(43)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(43)
R016	Distribution coefficients for daughter Rn-222				
R016	Contaminated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCC(53)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(53,1)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(53)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.790E-01	ALEACH(53)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(53)
R016	Distribution coefficients for daughter Sm-148				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCC(62)
R016	Unsaturated zone 1 (cm**3/g)	not used	-1.000E+00	---	DCNUCU(62,1)
R016	Saturated zone (cm**3/g)	not used	-1.000E+00	---	DCNUCS(62)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.020E-04	ALEACH(62)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(62)
R016	Distribution coefficients for daughter Th-227				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(64)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(64,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(64)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.778E-06	ALEACH(64)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(64)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(65)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(65,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(65)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.778E-06	ALEACH(65)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(65)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Th-231				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(66)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(66,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(66)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.778E-06	ALEACH(66)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(66)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(69)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(69,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(69)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH(69)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(69)
R016	Distribution coefficients for daughter U-235				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(70)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(70,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(70)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH(70)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(70)
R016	Distribution coefficients for daughter U-235m				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(73)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(73,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(73)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH(73)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(73)
R016	Distribution coefficients for daughter Y-90				
R016	Contaminated zone (cm**3/g)	7.200E+02	7.200E+02	---	DCNUCC(76)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.200E+02	---	DCNUCU(76,1)
R016	Saturated zone (cm**3/g)	not used	7.200E+02	---	DCNUCS(76)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.314E-04	ALEACH(76)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(76)
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	3.000E+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	6.840E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.300E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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)
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)
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)	3.650E+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

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	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)
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

Summary : RESRAD Default Parameters
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Site-Specific Parameter Summary (continued)

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

Summary : RESRAD Default Parameters

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	12140.00 square meters	Am-241	1.360E+00
Thickness:	2.00 meters	Co-60	3.610E-02
Cover Depth:	0.00 meters	Cs-137	1.130E-01
		Eu-152	1.300E-01
		Eu-154	2.300E-01
		H-3	2.280E+00
		Pu-239	2.590E+00
		Ra-226	1.000E+00
		Sr-90	3.310E-01

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.200E+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	8.890E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	7.268E+00	7.244E+00	7.006E+00	6.410E+00	5.601E+00	4.626E+00	4.483E+00	2.592E+00	4.650E-01
M(t):	6.057E-01	6.037E-01	5.838E-01	5.341E-01	4.667E-01	3.855E-01	3.736E-01	2.160E-01	3.875E-02

Maximum TDOSE(t): 7.268E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.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 = 0.000E+00 years

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.
Am-241	2.757E-02	0.0038	2.470E-02	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.293E-02	0.0045
Co-60	2.708E-01	0.0373	2.076E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.898E-05	0.0000
Cs-137	1.846E-01	0.0254	8.666E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.519E-04	0.0000
Eu-152	4.423E-01	0.0609	2.341E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.254E-05	0.0000
Eu-154	8.363E-01	0.1151	4.727E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.895E-05	0.0000
H-3	0.000E+00	0.0000	1.177E-02	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.294E-06	0.0000
Pu-239	3.796E-04	0.0001	5.830E-02	0.0080	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.625E-02	0.0105
Ra-226	5.244E+00	0.7214	1.941E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.883E-02	0.0067
Sr-90	6.768E-03	0.0009	1.006E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.321E-03	0.0002
Total	7.012E+00	0.9647	9.672E-02	0.0133	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.596E-01	0.0220

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

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.
Am-241	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	8.519E-02	0.0117
Co-60	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	2.708E-01	0.0373
Cs-137	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	1.847E-01	0.0254
Eu-152	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	4.423E-01	0.0609
Eu-154	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	8.363E-01	0.1151
H-3	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	1.177E-02	0.0016
Pu-239	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	1.349E-01	0.0186
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	5.294E+00	0.7284
Sr-90	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	8.100E-03	0.0011
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	7.268E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.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

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.
Am-241	2.730E-02	0.0038	2.446E-02	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.261E-02	0.0045
Co-60	2.374E-01	0.0328	1.820E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.664E-05	0.0000
Cs-137	1.804E-01	0.0249	8.469E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.484E-04	0.0000
Eu-152	4.201E-01	0.0580	2.223E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.141E-05	0.0000
Eu-154	7.713E-01	0.1065	4.360E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.437E-05	0.0000
H-3	0.000E+00	0.0000	2.337E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.052E-06	0.0000
Pu-239	3.796E-04	0.0001	5.829E-02	0.0080	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.624E-02	0.0105
Ra-226	5.347E+00	0.7381	1.990E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.590E-02	0.0077
Sr-90	6.712E-03	0.0009	9.765E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.285E-03	0.0002
Total	6.991E+00	0.9650	8.709E-02	0.0120	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.663E-01	0.0230

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

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.
Am-241	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	8.436E-02	0.0116
Co-60	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	2.374E-01	0.0328
Cs-137	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-01	0.0249
Eu-152	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	4.202E-01	0.0580
Eu-154	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	7.714E-01	0.1065
H-3	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	2.338E-03	0.0003
Pu-239	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	1.349E-01	0.0186
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	5.405E+00	0.7461
Sr-90	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	8.007E-03	0.0011
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	7.244E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.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

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.
Am-241	2.676E-02	0.0038	2.398E-02	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.197E-02	0.0046
Co-60	1.824E-01	0.0260	1.399E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.279E-05	0.0000
Cs-137	1.723E-01	0.0246	8.088E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.418E-04	0.0000
Eu-152	3.791E-01	0.0541	2.006E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.932E-05	0.0000
Eu-154	6.561E-01	0.0936	3.709E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.625E-05	0.0000
H-3	0.000E+00	0.0000	9.201E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.140E-08	0.0000
Pu-239	3.795E-04	0.0001	5.828E-02	0.0083	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.623E-02	0.0109
Ra-226	5.317E+00	0.7589	2.092E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.138E-02	0.0102
Sr-90	6.326E-03	0.0009	9.203E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.211E-03	0.0002
Total	6.741E+00	0.9621	8.446E-02	0.0121	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.810E-01	0.0258

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

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.
Am-241	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	8.271E-02	0.0118
Co-60	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	1.825E-01	0.0260
Cs-137	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	1.724E-01	0.0246
Eu-152	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	3.791E-01	0.0541
Eu-154	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	6.562E-01	0.0937
H-3	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	9.205E-05	0.0000
Pu-239	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	1.349E-01	0.0193
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	5.391E+00	0.7694
Sr-90	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	7.547E-03	0.0011
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	7.006E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.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

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.
Am-241	2.498E-02	0.0039	2.238E-02	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.984E-02	0.0047
Co-60	7.259E-02	0.0113	5.566E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.089E-06	0.0000
Cs-137	1.466E-01	0.0229	6.884E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.207E-04	0.0000
Eu-152	2.645E-01	0.0413	1.400E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.348E-05	0.0000
Eu-154	3.725E-01	0.0581	2.106E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.626E-05	0.0000
H-3	0.000E+00	0.0000	1.086E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.886E-13	0.0000
Pu-239	3.792E-04	0.0001	5.823E-02	0.0091	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.617E-02	0.0119
Ra-226	5.215E+00	0.8136	2.394E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.181E-01	0.0184
Sr-90	5.143E-03	0.0008	7.482E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.847E-04	0.0002
Total	6.101E+00	0.9519	8.302E-02	0.0130	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.252E-01	0.0351

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

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.
Am-241	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	7.720E-02	0.0120
Co-60	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	7.259E-02	0.0113
Cs-137	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	1.468E-01	0.0229
Eu-152	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	2.645E-01	0.0413
Eu-154	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	3.725E-01	0.0581
H-3	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	1.086E-09	0.0000
Pu-239	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	1.348E-01	0.0210
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	5.335E+00	0.8323
Sr-90	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	6.135E-03	0.0010
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	6.410E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.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

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.
Am-241	2.052E-02	0.0037	1.838E-02	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.450E-02	0.0044
Co-60	5.215E-03	0.0009	3.999E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.656E-07	0.0000
Cs-137	9.255E-02	0.0165	4.345E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.615E-05	0.0000
Eu-152	9.462E-02	0.0169	5.007E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.822E-06	0.0000
Eu-154	7.392E-02	0.0132	4.178E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.211E-06	0.0000
H-3	0.000E+00	0.0000	7.283E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.277E-27	0.0000
Pu-239	3.784E-04	0.0001	5.810E-02	0.0104	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.600E-02	0.0136
Ra-226	4.931E+00	0.8804	2.889E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.993E-01	0.0356
Sr-90	2.846E-03	0.0005	4.140E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.448E-04	0.0001
Total	5.221E+00	0.9322	7.938E-02	0.0142	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.005E-01	0.0536

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

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.
Am-241	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	6.341E-02	0.0113
Co-60	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	5.216E-03	0.0009
Cs-137	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	9.263E-02	0.0165
Eu-152	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	9.462E-02	0.0169
Eu-154	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	7.392E-02	0.0132
H-3	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	7.286E-24	0.0000
Pu-239	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	1.345E-01	0.0240
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	5.133E+00	0.9165
Sr-90	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	3.394E-03	0.0006
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	5.601E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.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 = 8.890E+01 years

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.
Am-241	1.150E-02	0.0025	1.029E-02	0.0022	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.372E-02	0.0030
Co-60	2.236E-06	0.0000	1.714E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.567E-10	0.0000
Cs-137	2.386E-02	0.0052	1.120E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.963E-05	0.0000
Eu-152	4.581E-03	0.0010	2.425E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.335E-07	0.0000
Eu-154	6.312E-04	0.0001	3.568E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.450E-08	0.0000
H-3	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	0.000E+00	0.0000
Pu-239	3.759E-04	0.0001	5.772E-02	0.0125	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.550E-02	0.0163
Ra-226	4.181E+00	0.9037	2.983E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.437E-01	0.0527
Sr-90	4.980E-04	0.0001	7.244E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.534E-05	0.0000
Total	4.222E+00	0.9127	7.099E-02	0.0153	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.331E-01	0.0720

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 8.890E+01 years

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.
Am-241	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	3.551E-02	0.0077
Co-60	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	2.236E-06	0.0000
Cs-137	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	2.388E-02	0.0052
Eu-152	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	4.582E-03	0.0010
Eu-154	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	6.313E-04	0.0001
H-3	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	0.000E+00	0.0000
Pu-239	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	1.336E-01	0.0289
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	4.427E+00	0.9570
Sr-90	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	5.940E-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	4.626E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.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

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.
Am-241	1.031E-02	0.0023	9.224E-03	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.230E-02	0.0027
Co-60	5.184E-07	0.0000	3.975E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.634E-11	0.0000
Cs-137	1.848E-02	0.0041	8.677E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.521E-05	0.0000
Eu-152	2.589E-03	0.0006	1.370E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.320E-07	0.0000
Eu-154	2.573E-04	0.0001	1.454E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.814E-08	0.0000
H-3	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	0.000E+00	0.0000
Pu-239	3.755E-04	0.0001	5.765E-02	0.0129	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.540E-02	0.0168
Ra-226	4.053E+00	0.9040	2.921E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.405E-01	0.0536
Sr-90	3.585E-04	0.0001	5.216E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.865E-05	0.0000
Total	4.085E+00	0.9112	6.979E-02	0.0156	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.283E-01	0.0732

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

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.
Am-241	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	3.183E-02	0.0071
Co-60	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	5.185E-07	0.0000
Cs-137	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	1.850E-02	0.0041
Eu-152	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	2.589E-03	0.0006
Eu-154	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	2.573E-04	0.0001
H-3	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	0.000E+00	0.0000
Pu-239	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	1.334E-01	0.0298
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	4.296E+00	0.9583
Sr-90	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	4.277E-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	4.483E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.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

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.
Am-241	1.457E-03	0.0006	1.287E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.716E-03	0.0007
Co-60	1.900E-18	0.0000	1.457E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.332E-22	0.0000
Cs-137	1.853E-04	0.0001	8.699E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.525E-07	0.0000
Eu-152	8.874E-08	0.0000	4.697E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.523E-12	0.0000
Eu-154	2.435E-11	0.0000	1.376E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.716E-15	0.0000
H-3	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	0.000E+00	0.0000
Pu-239	3.673E-04	0.0001	5.637E-02	0.0217	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.373E-02	0.0284
Ra-226	2.312E+00	0.8919	1.709E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.432E-01	0.0553
Sr-90	9.643E-07	0.0000	1.403E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.846E-07	0.0000
Total	2.314E+00	0.8927	5.937E-02	0.0229	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.187E-01	0.0844

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

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.
Am-241	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	4.460E-03	0.0017
Co-60	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	1.900E-18	0.0000
Cs-137	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	1.855E-04	0.0001
Eu-152	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	8.875E-08	0.0000
Eu-154	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	2.435E-11	0.0000
H-3	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	0.000E+00	0.0000
Pu-239	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	1.305E-01	0.0503
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	2.457E+00	0.9479
Sr-90	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	1.150E-06	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	2.592E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
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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

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.
Am-241	1.574E-05	0.0000	1.539E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.062E-06	0.0000
Co-60	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	0.000E+00	0.0000
Cs-137	1.870E-11	0.0000	8.777E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.538E-14	0.0000
Eu-152	2.091E-23	0.0000	1.389E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.020E-17	0.0000
Eu-154	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	0.000E+00	0.0000
H-3	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	0.000E+00	0.0000
Pu-239	3.397E-04	0.0007	5.212E-02	0.1121	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.817E-02	0.1466
Ra-226	3.240E-01	0.6969	2.396E-04	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.008E-02	0.0432
Sr-90	9.727E-16	0.0000	1.415E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.862E-16	0.0000
Total	3.244E-01	0.6976	5.236E-02	0.1126	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.825E-02	0.1898

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

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.
Am-241	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	1.934E-05	0.0000
Co-60	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	0.000E+00	0.0000
Cs-137	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	1.871E-11	0.0000
Eu-152	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	3.409E-17	0.0000
Eu-154	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	0.000E+00	0.0000
H-3	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	0.000E+00	0.0000
Pu-239	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	1.206E-01	0.2594
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	3.444E-01	0.7406
Sr-90	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	1.160E-15	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	4.650E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

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	8.890E+01	1.000E+02	3.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	6.264E-02	6.203E-02	6.082E-02	5.677E-02	4.662E-02	2.610E-02	2.340E-02	3.263E-03	3.308E-06
Am-241	Np-237	1.000E+00	9.493E-09	2.835E-08	6.547E-08	1.894E-07	4.968E-07	1.096E-06	1.171E-06	1.597E-06	1.084E-06
Am-241	Pa-233	1.000E+00	6.976E-08	2.390E-07	5.761E-07	1.702E-06	4.493E-06	9.934E-06	1.061E-05	1.449E-05	9.830E-06
Am-241	U-233	1.000E+00	1.483E-15	1.217E-14	6.879E-14	6.204E-13	4.842E-12	3.227E-11	3.891E-11	1.589E-10	2.310E-10
Am-241	Th-229	1.000E+00	9.855E-19	1.780E-17	2.285E-16	6.271E-15	1.461E-13	3.049E-12	4.182E-12	6.212E-11	5.002E-10
Am-241	Ra-225	1.000E+00	9.167E-20	1.876E-18	2.564E-17	7.278E-16	1.715E-14	3.592E-13	4.927E-13	7.328E-12	5.902E-11
Am-241	Ac-225+D	1.000E+00	2.652E-19	5.955E-18	8.505E-17	2.472E-15	5.867E-14	1.232E-12	1.690E-12	2.516E-11	2.027E-10
Am-241	Bi-213+D	1.000E+00	1.246E-18	2.798E-17	3.997E-16	1.162E-14	2.758E-13	5.791E-12	7.945E-12	1.182E-10	9.526E-10
Am-241	Pb-209	1.000E+00	1.009E-21	2.271E-20	3.246E-19	9.436E-18	2.240E-16	4.705E-15	6.455E-15	9.607E-14	7.740E-13
Am-241	∑DSR(j)		6.264E-02	6.203E-02	6.082E-02	5.677E-02	4.662E-02	2.611E-02	2.341E-02	3.279E-03	1.422E-05
Co-60	Co-60	1.000E+00	7.502E+00	6.577E+00	5.054E+00	2.011E+00	1.445E-01	6.193E-05	1.436E-05	5.263E-17	0.000E+00
Cs-137+D	Cs-137+D	1.000E+00	1.635E+00	1.598E+00	1.526E+00	1.299E+00	8.197E-01	2.113E-01	1.637E-01	1.641E-03	1.656E-10
Eu-152	Eu-152	7.210E-01	2.453E+00	2.330E+00	2.103E+00	1.467E+00	5.248E-01	2.541E-02	1.436E-02	4.922E-07	1.160E-22
Eu-152	Eu-152	2.790E-01	9.493E-01	9.017E-01	8.136E-01	5.677E-01	2.031E-01	9.833E-03	5.557E-03	1.905E-07	4.489E-23
Eu-152	Gd-152	2.790E-01	8.078E-18	2.369E-17	5.259E-17	1.332E-16	2.521E-16	3.120E-16	3.127E-16	3.021E-16	2.622E-16
Eu-152	Sm-148	2.790E-01	2.780E-34	1.918E-33	9.810E-33	7.835E-32	4.942E-31	2.271E-30	2.622E-30	8.726E-30	2.645E-29
Eu-152	Nd-144	2.790E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.401E-45	2.382E-44	3.083E-44	3.307E-43	2.903E-42
Eu-152	∑DSR(j)		9.493E-01	9.017E-01	8.136E-01	5.677E-01	2.031E-01	9.833E-03	5.557E-03	1.905E-07	2.622E-16
Eu-154	Eu-154	1.000E+00	3.636E+00	3.354E+00	2.853E+00	1.620E+00	3.214E-01	2.745E-03	1.119E-03	1.059E-10	2.760E-35
H-3	H-3	1.000E+00	5.163E-03	1.026E-03	4.037E-05	4.765E-10	3.196E-24	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-239	Pu-239	9.856E-01	5.135E-02	5.134E-02	5.133E-02	5.129E-02	5.117E-02	5.084E-02	5.077E-02	4.965E-02	4.590E-02
Pu-239	U-235m	9.856E-01	5.743E-10	5.865E-10	5.864E-10	5.859E-10	5.846E-10	5.808E-10	5.800E-10	5.672E-10	5.244E-10
Pu-239	U-235	9.856E-01	1.822E-10	5.458E-10	1.269E-09	3.763E-09	1.057E-08	2.808E-08	3.100E-08	6.804E-08	9.759E-08
Pu-239	Th-231	9.856E-01	8.642E-12	2.603E-11	6.063E-11	1.799E-10	5.052E-10	1.343E-09	1.482E-09	3.254E-09	4.667E-09
Pu-239	Pa-231	9.856E-01	6.264E-16	4.408E-15	2.327E-14	2.053E-13	1.656E-12	1.248E-11	1.539E-11	8.976E-11	2.737E-10
Pu-239	Ac-227	9.856E-01	1.861E-18	2.790E-17	3.197E-16	7.855E-15	1.553E-13	2.291E-12	2.980E-12	2.388E-11	8.128E-11
Pu-239	Th-227	9.856E-01	6.065E-18	1.045E-16	1.288E-15	3.296E-14	6.608E-13	9.792E-12	1.274E-11	1.022E-10	3.481E-10
Pu-239	Ra-223+D	9.856E-01	8.157E-18	1.549E-16	2.002E-15	5.257E-14	1.063E-12	1.579E-11	2.055E-11	1.650E-10	5.620E-10
Pu-239	Pb-211+D	9.856E-01	5.530E-18	1.050E-16	1.358E-15	3.565E-14	7.208E-13	1.071E-11	1.394E-11	1.119E-10	3.812E-10
Pu-239	∑DSR(j)		5.135E-02	5.134E-02	5.133E-02	5.129E-02	5.117E-02	5.084E-02	5.077E-02	4.965E-02	4.590E-02

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

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	8.890E+01	1.000E+02	3.000E+02	1.000E+03
Pu-239	Pu-239	1.379E-02	7.185E-04	7.184E-04	7.182E-04	7.176E-04	7.160E-04	7.113E-04	7.104E-04	6.947E-04	6.423E-04
Pu-239	U-235m	1.379E-02	8.036E-12	8.206E-12	8.205E-12	8.198E-12	8.180E-12	8.126E-12	8.116E-12	7.936E-12	7.337E-12
Pu-239	U-235	1.379E-02	2.549E-12	7.637E-12	1.776E-11	5.265E-11	1.478E-10	3.929E-10	4.337E-10	9.520E-10	1.366E-09
Pu-239	Th-231	1.379E-02	1.209E-13	3.642E-13	8.483E-13	2.517E-12	7.069E-12	1.879E-11	2.074E-11	4.553E-11	6.530E-11
Pu-239	Pa-231	1.379E-02	8.764E-18	6.168E-17	3.256E-16	2.872E-15	2.317E-14	1.746E-13	2.154E-13	1.256E-12	3.829E-12
Pu-239	Ac-227	1.379E-02	2.605E-20	3.903E-19	4.473E-18	1.099E-16	2.173E-15	3.205E-14	4.169E-14	3.341E-13	1.137E-12
Pu-239	Fr-223	1.379E-02	3.439E-20	5.155E-19	5.908E-18	1.452E-16	2.871E-15	4.234E-14	5.507E-14	4.413E-13	1.502E-12
Pu-239	Ra-223+D	1.379E-02	1.515E-19	2.485E-18	2.979E-17	7.506E-16	1.497E-14	2.214E-13	2.880E-13	2.309E-12	7.863E-12
Pu-239	Pb-211+D	1.379E-02	1.027E-19	1.685E-18	2.021E-17	5.091E-16	1.015E-14	1.501E-13	1.953E-13	1.566E-12	5.333E-12
Pu-239	∑DSR(j)		7.185E-04	7.184E-04	7.182E-04	7.176E-04	7.160E-04	7.113E-04	7.104E-04	6.947E-04	6.423E-04
Pu-239	Pu-239	8.275E-07	4.311E-08	4.311E-08	4.310E-08	4.306E-08	4.297E-08	4.268E-08	4.263E-08	4.168E-08	3.854E-08
Pu-239	U-235m	8.275E-07	4.822E-16	4.924E-16	4.923E-16	4.919E-16	4.908E-16	4.876E-16	4.870E-16	4.762E-16	4.403E-16
Pu-239	U-235	8.275E-07	1.530E-16	4.583E-16	1.066E-15	3.159E-15	8.870E-15	2.357E-14	2.602E-14	5.713E-14	8.194E-14
Pu-239	Th-231	8.275E-07	7.255E-18	2.185E-17	5.090E-17	1.510E-16	4.241E-16	1.127E-15	1.244E-15	2.732E-15	3.918E-15
Pu-239	Pa-231	8.275E-07	5.259E-22	3.701E-21	1.954E-20	1.723E-19	1.390E-18	1.048E-17	1.292E-17	7.536E-17	2.298E-16
Pu-239	Ac-227	8.275E-07	1.563E-24	2.342E-23	2.684E-22	6.595E-21	1.304E-19	1.923E-18	2.502E-18	2.005E-17	6.824E-17
Pu-239	Fr-223+D	8.275E-07	1.800E-23	2.699E-22	3.093E-21	7.599E-20	1.503E-18	2.216E-17	2.883E-17	2.310E-16	7.863E-16
Pu-239	Pb-211+D	8.275E-07	7.325E-24	1.098E-22	1.259E-21	3.093E-20	6.116E-19	9.021E-18	1.173E-17	9.402E-17	3.201E-16
Pu-239	∑DSR(j)		4.311E-08	4.311E-08	4.310E-08	4.306E-08	4.297E-08	4.268E-08	4.263E-08	4.168E-08	3.854E-08
Pu-239	Pu-239	5.917E-04	3.083E-05	3.082E-05	3.082E-05	3.079E-05	3.072E-05	3.052E-05	3.048E-05	2.981E-05	2.756E-05
Pu-239	U-235	5.917E-04	1.094E-13	3.277E-13	7.621E-13	2.259E-12	6.343E-12	1.686E-11	1.861E-11	4.085E-11	5.859E-11
Pu-239	Th-231	5.917E-04	5.189E-15	1.563E-14	3.640E-14	1.080E-13	3.033E-13	8.061E-13	8.899E-13	1.953E-12	2.802E-12
Pu-239	Pa-231	5.917E-04	3.761E-19	2.647E-18	1.397E-17	1.232E-16	9.940E-16	7.493E-15	9.241E-15	5.389E-14	1.643E-13
Pu-239	Ac-227	5.917E-04	1.118E-21	1.675E-20	1.920E-19	4.716E-18	9.325E-17	1.375E-15	1.789E-15	1.433E-14	4.880E-14
Pu-239	Th-227	5.917E-04	3.642E-21	6.277E-20	7.734E-19	1.979E-17	3.967E-16	5.879E-15	7.648E-15	6.136E-14	2.090E-13
Pu-239	Ra-223+D	5.917E-04	4.899E-21	9.300E-20	1.202E-18	3.156E-17	6.380E-16	9.480E-15	1.234E-14	9.905E-14	3.374E-13
Pu-239	Pb-211+D	5.917E-04	3.321E-21	6.307E-20	8.151E-19	2.140E-17	4.327E-16	6.430E-15	8.367E-15	6.718E-14	2.288E-13
Pu-239	∑DSR(j)		3.083E-05	3.082E-05	3.082E-05	3.079E-05	3.072E-05	3.052E-05	3.048E-05	2.981E-05	2.756E-05
Pu-239	Pu-239	8.280E-06	4.313E-07	4.313E-07	4.312E-07	4.308E-07	4.299E-07	4.271E-07	4.265E-07	4.171E-07	3.856E-07
Pu-239	U-235	8.280E-06	1.531E-15	4.585E-15	1.066E-14	3.161E-14	8.875E-14	2.359E-13	2.604E-13	5.716E-13	8.198E-13
Pu-239	Th-231	8.280E-06	7.260E-17	2.187E-16	5.093E-16	1.511E-15	4.244E-15	1.128E-14	1.245E-14	2.733E-14	3.921E-14
Pu-239	Pa-231	8.280E-06	5.263E-21	3.703E-20	1.955E-19	1.724E-18	1.391E-17	1.048E-16	1.293E-16	7.540E-16	2.299E-15
Pu-239	Ac-227	8.280E-06	1.564E-23	2.344E-22	2.686E-21	6.598E-20	1.305E-18	1.924E-17	2.503E-17	2.006E-16	6.828E-16
Pu-239	Fr-223	8.280E-06	2.065E-23	3.095E-22	3.547E-21	8.715E-20	1.723E-18	2.542E-17	3.306E-17	2.649E-16	9.018E-16
Pu-239	Ra-223+D	8.280E-06	9.098E-23	1.492E-21	1.789E-20	4.506E-19	8.986E-18	1.329E-16	1.729E-16	1.386E-15	4.721E-15
Pu-239	Pb-211+D	8.280E-06	6.169E-23	1.012E-21	1.213E-20	3.056E-19	6.095E-18	9.014E-17	1.173E-16	9.404E-16	3.202E-15
Pu-239	∑DSR(j)		4.313E-07	4.313E-07	4.312E-07	4.308E-07	4.299E-07	4.271E-07	4.265E-07	4.171E-07	3.856E-07

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

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	8.890E+01	1.000E+02	3.000E+02	1.000E+03
Pu-239	Pu-239	4.968E-10	2.588E-11	2.588E-11	2.587E-11	2.585E-11	2.579E-11	2.562E-11	2.559E-11	2.503E-11	2.314E-11
Pu-239	U-235	4.968E-10	9.185E-20	2.751E-19	6.398E-19	1.897E-18	5.325E-18	1.415E-17	1.562E-17	3.430E-17	4.919E-17
Pu-239	Th-231	4.968E-10	4.356E-21	1.312E-20	3.056E-20	9.067E-20	2.546E-19	6.768E-19	7.471E-19	1.640E-18	2.352E-18
Pu-239	Pa-231	4.968E-10	3.158E-25	2.222E-24	1.173E-23	1.035E-22	8.345E-22	6.291E-21	7.758E-21	4.524E-20	1.380E-19
Pu-239	Ac-227	4.968E-10	9.385E-28	1.406E-26	1.612E-25	3.959E-24	7.829E-23	1.155E-21	1.502E-21	1.203E-20	4.097E-20
Pu-239	Fr-223+D	4.968E-10	1.081E-26	1.620E-25	1.857E-24	4.562E-23	9.021E-22	1.330E-20	1.731E-20	1.387E-19	4.721E-19
Pu-239	Pb-211+D	4.968E-10	4.399E-27	6.594E-26	7.558E-25	1.857E-23	3.672E-22	5.416E-21	7.044E-21	5.644E-20	1.922E-19
Pu-239	∑DSR(j)		2.588E-11	2.588E-11	2.587E-11	2.585E-11	2.579E-11	2.562E-11	2.559E-11	2.503E-11	2.314E-11
Ra-226	Ra-226	9.998E-01	6.484E-02	6.466E-02	6.430E-02	6.304E-02	5.960E-02	5.052E-02	4.897E-02	2.793E-02	3.916E-03
Ra-226	Rn-222+D	9.998E-01	1.065E-03	1.086E-03	1.080E-03	1.059E-03	1.001E-03	8.487E-04	8.227E-04	4.693E-04	6.578E-05
Ra-226	Pb-214	9.998E-01	6.371E-01	6.497E-01	6.461E-01	6.335E-01	5.989E-01	5.077E-01	4.921E-01	2.807E-01	3.935E-02
Ra-226	Bi-214+D	9.998E-01	4.588E+00	4.678E+00	4.652E+00	4.562E+00	4.313E+00	3.656E+00	3.543E+00	2.021E+00	2.833E-01
Ra-226	Pb-210	9.998E-01	1.577E-03	4.750E-03	1.077E-02	2.870E-02	6.022E-02	7.926E-02	7.842E-02	4.702E-02	6.591E-03
Ra-226	Bi-210	9.998E-01	4.302E-05	1.331E-04	3.040E-04	8.134E-04	1.709E-03	2.250E-03	2.226E-03	1.334E-03	1.871E-04
Ra-226	Po-210	9.998E-01	1.005E-03	5.114E-03	1.500E-02	4.516E-02	9.822E-02	1.306E-01	1.293E-01	7.756E-02	1.087E-02
Ra-226	∑DSR(j)		5.293E+00	5.404E+00	5.390E+00	5.334E+00	5.132E+00	4.427E+00	4.295E+00	2.456E+00	3.443E-01
Ra-226	Ra-226	1.320E-06	8.559E-08	8.535E-08	8.487E-08	8.322E-08	7.868E-08	6.669E-08	6.464E-08	3.687E-08	5.169E-09
Ra-226	Rn-222+D	1.320E-06	1.406E-09	1.434E-09	1.426E-09	1.398E-09	1.322E-09	1.120E-09	1.086E-09	6.194E-10	8.683E-11
Ra-226	Pb-214	1.320E-06	8.410E-07	8.576E-07	8.528E-07	8.362E-07	7.906E-07	6.701E-07	6.495E-07	3.705E-07	5.194E-08
Ra-226	Bi-214+D	1.320E-06	6.056E-06	6.176E-06	6.141E-06	6.022E-06	5.693E-06	4.825E-06	4.677E-06	2.668E-06	3.740E-07
Ra-226	Pb-210	1.320E-06	2.081E-09	6.270E-09	1.421E-08	3.789E-08	7.949E-08	1.046E-07	1.035E-07	6.206E-08	8.701E-09
Ra-226	Bi-210+D	1.320E-06	1.793E-10	5.545E-10	1.267E-09	3.389E-09	7.120E-09	9.374E-09	9.274E-09	5.560E-09	7.795E-10
Ra-226	∑DSR(j)		6.986E-06	7.127E-06	7.096E-06	6.984E-06	6.650E-06	5.677E-06	5.505E-06	3.144E-06	4.407E-07
Ra-226	Ra-226	1.900E-08	1.232E-09	1.228E-09	1.222E-09	1.198E-09	1.132E-09	9.599E-10	9.304E-10	5.307E-10	7.440E-11
Ra-226	Rn-222+D	1.900E-08	2.024E-11	2.064E-11	2.052E-11	2.012E-11	1.902E-11	1.613E-11	1.563E-11	8.916E-12	1.250E-12
Ra-226	Pb-214	1.900E-08	1.211E-08	1.234E-08	1.228E-08	1.204E-08	1.138E-08	9.645E-09	9.350E-09	5.333E-09	7.476E-10
Ra-226	Bi-214+D	1.900E-08	8.717E-08	8.889E-08	8.839E-08	8.667E-08	8.194E-08	6.946E-08	6.732E-08	3.840E-08	5.383E-09
Ra-226	Pb-210+D	1.900E-08	1.223E-10	3.684E-10	8.351E-10	2.226E-09	4.671E-09	6.148E-09	6.082E-09	3.647E-09	5.112E-10
Ra-226	∑DSR(j)		1.006E-07	1.029E-07	1.027E-07	1.022E-07	9.914E-08	8.622E-08	8.370E-08	4.792E-08	6.718E-09
Ra-226	Ra-226	1.998E-04	1.296E-05	1.292E-05	1.285E-05	1.260E-05	1.191E-05	1.010E-05	9.786E-06	5.582E-06	7.825E-07
Ra-226	Rn-222+D1	1.998E-04	2.184E-07	2.228E-07	2.215E-07	2.172E-07	2.053E-07	1.741E-07	1.687E-07	9.624E-08	1.349E-08
Ra-226	Bi-214+D	1.998E-04	9.168E-04	9.349E-04	9.297E-04	9.116E-04	8.619E-04	7.305E-04	7.081E-04	4.039E-04	5.662E-05
Ra-226	Pb-210	1.998E-04	3.151E-07	9.492E-07	2.152E-06	5.736E-06	1.203E-05	1.584E-05	1.567E-05	9.396E-06	1.317E-06
Ra-226	Bi-210	1.998E-04	8.598E-09	2.660E-08	6.075E-08	1.625E-07	3.415E-07	4.496E-07	4.448E-07	2.667E-07	3.739E-08
Ra-226	Po-210	1.998E-04	2.009E-07	1.022E-06	2.998E-06	9.024E-06	1.963E-05	2.610E-05	2.583E-05	1.550E-05	2.173E-06
Ra-226	∑DSR(j)		9.305E-04	9.501E-04	9.480E-04	9.394E-04	9.060E-04	7.832E-04	7.600E-04	4.348E-04	6.094E-05
Ra-226	Ra-226	2.637E-10	1.710E-11	1.706E-11	1.696E-11	1.663E-11	1.572E-11	1.333E-11	1.292E-11	7.369E-12	1.033E-12
Ra-226	Rn-222+D1	2.637E-10	2.883E-13	2.940E-13	2.924E-13	2.867E-13	2.711E-13	2.298E-13	2.227E-13	1.270E-13	1.781E-14
Ra-226	Bi-214+D	2.637E-10	1.210E-09	1.234E-09	1.227E-09	1.203E-09	1.138E-09	9.643E-10	9.347E-10	5.332E-10	7.474E-11
Ra-226	Pb-210	2.637E-10	4.160E-13	1.253E-12	2.840E-12	7.571E-12	1.589E-11	2.091E-11	2.069E-11	1.240E-11	1.739E-12
Ra-226	Bi-210+D	2.637E-10	3.583E-14	1.108E-13	2.531E-13	6.773E-13	1.423E-12	1.873E-12	1.853E-12	1.111E-12	1.558E-13
Ra-226	∑DSR(j)		1.228E-09	1.253E-09	1.248E-09	1.229E-09	1.171E-09	1.001E-09	9.704E-10	5.542E-10	7.768E-11

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

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	8.890E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	Ra-226	3.796E-12	2.462E-13	2.455E-13	2.441E-13	2.394E-13	2.263E-13	1.918E-13	1.859E-13	1.061E-13	1.487E-14
Ra-226	Rn-222+D1	3.796E-12	4.150E-15	4.232E-15	4.209E-15	4.127E-15	3.902E-15	3.307E-15	3.206E-15	1.829E-15	2.563E-16
Ra-226	Bi-214+D	3.796E-12	1.742E-11	1.776E-11	1.766E-11	1.732E-11	1.638E-11	1.388E-11	1.345E-11	7.675E-12	1.076E-12
Ra-226	Pb-210+D	3.796E-12	2.444E-14	7.363E-14	1.669E-13	4.449E-13	9.335E-13	1.229E-12	1.216E-12	7.288E-13	1.022E-13
Ra-226	∑DSR(j)		1.769E-11	1.809E-11	1.808E-11	1.801E-11	1.754E-11	1.530E-11	1.486E-11	8.511E-12	1.193E-12
Ra-226	Ra-226	2.000E-07	1.297E-08	1.293E-08	1.286E-08	1.261E-08	1.192E-08	1.011E-08	9.796E-09	5.588E-09	7.833E-10
Ra-226	Rn-222+D2	2.000E-07	6.922E-10	7.059E-10	7.019E-10	6.883E-10	6.507E-10	5.515E-10	5.346E-10	3.050E-10	4.275E-11
Ra-226	Pb-210	2.000E-07	3.155E-10	9.502E-10	2.154E-09	5.742E-09	1.205E-08	1.586E-08	1.569E-08	9.405E-09	1.319E-09
Ra-226	Bi-210	2.000E-07	8.608E-12	2.663E-11	6.081E-11	1.627E-10	3.418E-10	4.500E-10	4.453E-10	2.670E-10	3.743E-11
Ra-226	Po-210	2.000E-07	2.012E-10	1.023E-09	3.002E-09	9.033E-09	1.965E-08	2.613E-08	2.586E-08	1.552E-08	2.175E-09
Ra-226	∑DSR(j)		1.419E-08	1.564E-08	1.878E-08	2.824E-08	4.461E-08	5.309E-08	5.232E-08	3.108E-08	4.357E-09
Ra-226	Ra-226	2.640E-13	1.712E-14	1.707E-14	1.698E-14	1.665E-14	1.574E-14	1.334E-14	1.293E-14	7.376E-15	1.034E-15
Ra-226	Rn-222+D2	2.640E-13	9.137E-16	9.317E-16	9.265E-16	9.085E-16	8.589E-16	7.280E-16	7.057E-16	4.025E-16	5.643E-17
Ra-226	Pb-210	2.640E-13	4.165E-16	1.254E-15	2.843E-15	7.579E-15	1.590E-14	2.093E-14	2.071E-14	1.242E-14	1.741E-15
Ra-226	Bi-210+D	2.640E-13	3.587E-17	1.109E-16	2.534E-16	6.780E-16	1.424E-15	1.875E-15	1.855E-15	1.112E-15	1.559E-16
Ra-226	∑DSR(j)		1.849E-14	1.937E-14	2.100E-14	2.581E-14	3.392E-14	3.687E-14	3.620E-14	2.131E-14	2.987E-15
Ra-226	Ra-226	3.800E-15	2.464E-16	2.457E-16	2.444E-16	2.396E-16	2.265E-16	1.920E-16	1.861E-16	1.062E-16	1.488E-17
Ra-226	Rn-222+D2	3.800E-15	1.315E-17	1.341E-17	1.334E-17	1.308E-17	1.236E-17	1.048E-17	1.016E-17	5.794E-18	8.122E-19
Ra-226	Pb-210+D	3.800E-15	2.447E-17	7.370E-17	1.671E-16	4.453E-16	9.344E-16	1.230E-15	1.217E-15	7.295E-16	1.023E-16
Ra-226	∑DSR(j)		2.841E-16	3.329E-16	4.248E-16	6.980E-16	1.173E-15	1.432E-15	1.413E-15	8.415E-16	1.180E-16
Sr-90	Sr-90	1.000E+00	3.992E-03	3.875E-03	3.653E-03	2.969E-03	1.643E-03	2.875E-04	2.070E-04	5.567E-07	5.616E-16
Sr-90	Y-90	1.000E+00	2.048E-02	2.032E-02	1.915E-02	1.557E-02	8.612E-03	1.507E-03	1.085E-03	2.918E-06	2.944E-15
Sr-90	∑DSR(j)		2.447E-02	2.419E-02	2.280E-02	1.853E-02	1.026E-02	1.795E-03	1.292E-03	3.475E-06	3.506E-15

The DSR includes contributions from associated (half-life ≤ 10 minut) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.200E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	8.890E+01	1.000E+02	3.000E+02	1.000E+03
Am-241	1.916E+02	1.935E+02	1.973E+02	2.114E+02	2.574E+02	4.596E+02	5.127E+02	3.659E+03	8.437E+05
Co-60	1.600E+00	1.825E+00	2.374E+00	5.967E+00	8.306E+01	1.938E+05	8.355E+05	*1.113E+15	*1.113E+15
Cs-137	7.340E+00	7.511E+00	7.864E+00	9.239E+00	1.464E+01	5.678E+01	7.330E+01	7.312E+03	7.247E+10
Eu-152	3.527E+00	3.713E+00	4.115E+00	5.897E+00	1.649E+01	3.405E+02	6.024E+02	1.758E+07	*1.727E+14
Eu-154	3.300E+00	3.578E+00	4.206E+00	7.409E+00	3.734E+01	4.372E+03	1.073E+04	1.134E+11	*2.685E+14
H-3	2.324E+03	1.170E+04	2.972E+05	2.518E+10	*9.621E+15	*9.621E+15	*9.621E+15	*9.621E+15	*9.621E+15
Pu-239	2.303E+02	2.304E+02	2.304E+02	2.306E+02	2.311E+02	2.326E+02	2.329E+02	2.382E+02	2.577E+02
Ra-226	2.267E+00	2.220E+00	2.226E+00	2.249E+00	2.338E+00	2.710E+00	2.793E+00	4.885E+00	3.485E+01
Sr-90	4.904E+02	4.961E+02	5.263E+02	6.474E+02	1.170E+03	6.687E+03	9.287E+03	3.453E+06	*1.366E+14

*At specific activity limit

Summary : RESRAD Default Parameters
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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 = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.360E+00	0.000E+00	6.264E-02	1.916E+02	6.264E-02	1.916E+02
Co-60	3.610E-02	0.000E+00	7.502E+00	1.600E+00	7.502E+00	1.600E+00
Cs-137	1.130E-01	0.000E+00	1.635E+00	7.340E+00	1.635E+00	7.340E+00
Eu-152	1.300E-01	0.000E+00	3.403E+00	3.527E+00	3.403E+00	3.527E+00
Eu-154	2.300E-01	0.000E+00	3.636E+00	3.300E+00	3.636E+00	3.300E+00
H-3	2.280E+00	0.000E+00	5.163E-03	2.324E+03	5.163E-03	2.324E+03
Pu-239	2.590E+00	0.000E+00	5.210E-02	2.303E+02	5.210E-02	2.303E+02
Ra-226	1.000E+00	0.1214 ± 0.0002	5.411E+00	2.218E+00	5.294E+00	2.267E+00
Sr-90	3.310E-01	0.000E+00	2.447E-02	4.904E+02	2.447E-02	4.904E+02

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.RAD

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

Nuclide (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	8.890E+01	1.000E+02	3.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	8.519E-02	8.436E-02	8.271E-02	7.720E-02	6.340E-02	3.549E-02	3.182E-02	4.438E-03	4.499E-06
Np-237	Am-241	1.000E+00	1.291E-08	3.855E-08	8.904E-08	2.576E-07	6.756E-07	1.490E-06	1.592E-06	2.172E-06	1.474E-06
Pa-233	Am-241	1.000E+00	9.487E-08	3.251E-07	7.835E-07	2.314E-06	6.111E-06	1.351E-05	1.443E-05	1.971E-05	1.337E-05
U-233	Am-241	1.000E+00	2.016E-15	1.655E-14	9.355E-14	8.438E-13	6.586E-12	4.389E-11	5.292E-11	2.161E-10	3.142E-10
Th-229	Am-241	1.000E+00	1.340E-18	2.421E-17	3.108E-16	8.529E-15	1.987E-13	4.147E-12	5.687E-12	8.448E-11	6.802E-10
Ra-225	Am-241	1.000E+00	1.247E-19	2.552E-18	3.486E-17	9.898E-16	2.332E-14	4.885E-13	6.701E-13	9.966E-12	8.026E-11
Ac-225	Am-241	1.000E+00	3.606E-19	8.099E-18	1.157E-16	3.361E-15	7.980E-14	1.676E-12	2.299E-12	3.422E-11	2.756E-10
Bi-213	Am-241	1.000E+00	1.694E-18	3.805E-17	5.436E-16	1.580E-14	3.750E-13	7.876E-12	1.080E-11	1.608E-10	1.295E-09
Pb-209	Am-241	1.000E+00	1.373E-21	3.088E-20	4.414E-19	1.283E-17	3.047E-16	6.399E-15	8.779E-15	1.307E-13	1.053E-12
Co-60	Co-60	1.000E+00	2.708E-01	2.374E-01	1.825E-01	7.259E-02	5.216E-03	2.236E-06	5.185E-07	1.900E-18	0.000E+00
Cs-137	Cs-137	1.000E+00	1.847E-01	1.805E-01	1.724E-01	1.468E-01	9.263E-02	2.388E-02	1.850E-02	1.855E-04	1.871E-11
Eu-152	Eu-152	7.210E-01	3.189E-01	3.029E-01	2.733E-01	1.907E-01	6.822E-02	3.303E-03	1.867E-03	6.399E-08	1.508E-23
Eu-152	Eu-152	2.790E-01	1.234E-01	1.172E-01	1.058E-01	7.381E-02	2.640E-02	1.278E-03	7.225E-04	2.476E-08	5.835E-24
Eu-152	∑DOSE(j)		4.423E-01	4.202E-01	3.791E-01	2.645E-01	9.462E-02	4.582E-03	2.589E-03	8.875E-08	2.091E-23
Gd-152	Eu-152	2.790E-01	1.050E-18	3.080E-18	6.837E-18	1.731E-17	3.277E-17	4.056E-17	4.065E-17	3.927E-17	3.409E-17
Sm-148	Eu-152	2.790E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.742E-31	3.408E-31	1.134E-30	3.438E-30
Nd-144	Eu-152	2.790E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-154	Eu-154	1.000E+00	8.363E-01	7.714E-01	6.562E-01	3.725E-01	7.392E-02	6.313E-04	2.573E-04	2.435E-11	0.000E+00
H-3	H-3	1.000E+00	1.177E-02	2.338E-03	9.205E-05	1.086E-09	7.286E-24	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-239	Pu-239	9.856E-01	1.330E-01	1.330E-01	1.329E-01	1.328E-01	1.325E-01	1.317E-01	1.315E-01	1.286E-01	1.189E-01
Pu-239	Pu-239	1.379E-02	1.861E-03	1.861E-03	1.860E-03	1.859E-03	1.855E-03	1.842E-03	1.840E-03	1.799E-03	1.664E-03
Pu-239	∑DOSE(j)		1.348E-01	1.348E-01	1.348E-01	1.347E-01	1.344E-01	1.335E-01	1.333E-01	1.304E-01	1.206E-01
U-235m	Pu-239	9.856E-01	1.488E-09	1.519E-09	1.519E-09	1.518E-09	1.514E-09	1.504E-09	1.502E-09	1.469E-09	1.358E-09
U-235m	Pu-239	1.379E-02	2.081E-11	2.125E-11	2.125E-11	2.123E-11	2.119E-11	2.105E-11	2.102E-11	2.055E-11	1.900E-11
U-235m	Pu-239	8.275E-07	1.249E-15	1.275E-15	1.275E-15	1.274E-15	1.271E-15	1.263E-15	1.261E-15	1.233E-15	1.140E-15
U-235m	∑DOSE(j)		1.508E-09	1.540E-09	1.540E-09	1.539E-09	1.535E-09	1.525E-09	1.523E-09	1.490E-09	1.377E-09
U-235	Pu-239	9.856E-01	4.719E-10	1.414E-09	3.288E-09	9.746E-09	2.736E-08	7.272E-08	8.028E-08	1.762E-07	2.528E-07
U-235	Pu-239	1.379E-02	6.603E-12	1.978E-11	4.600E-11	1.364E-10	3.829E-10	1.018E-09	1.123E-09	2.466E-09	3.537E-09
U-235	Pu-239	8.275E-07	3.962E-16	1.187E-15	2.760E-15	8.182E-15	2.297E-14	6.105E-14	6.740E-14	1.480E-13	2.122E-13
U-235	Pu-239	5.917E-04	2.833E-13	8.487E-13	1.974E-12	5.851E-12	1.643E-11	4.366E-11	4.820E-11	1.058E-10	1.517E-10

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.RAD

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

Nuclide (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	8.890E+01	1.000E+02	3.000E+02	1.000E+03
U-235	Pu-239	8.280E-06	3.965E-15	1.188E-14	2.762E-14	8.187E-14	2.299E-13	6.109E-13	6.744E-13	1.480E-12	2.123E-12
U-235	Pu-239	4.968E-10	2.379E-19	7.126E-19	1.657E-18	4.912E-18	1.379E-17	3.665E-17	4.046E-17	8.883E-17	1.274E-16
U-235	∑DOSE(j)		4.788E-10	1.434E-09	3.336E-09	9.888E-09	2.776E-08	7.378E-08	8.145E-08	1.788E-07	2.565E-07
Th-231	Pu-239	9.856E-01	2.238E-11	6.742E-11	1.570E-10	4.659E-10	1.308E-09	3.477E-09	3.839E-09	8.427E-09	1.209E-08
Th-231	Pu-239	1.379E-02	3.132E-13	9.433E-13	2.197E-12	6.519E-12	1.831E-11	4.866E-11	5.372E-11	1.179E-10	1.691E-10
Th-231	Pu-239	8.275E-07	1.879E-17	5.660E-17	1.318E-16	3.911E-16	1.099E-15	2.920E-15	3.223E-15	7.075E-15	1.015E-14
Th-231	Pu-239	5.917E-04	1.344E-14	4.048E-14	9.428E-14	2.797E-13	7.855E-13	2.088E-12	2.305E-12	5.059E-12	7.257E-12
Th-231	Pu-239	8.280E-06	1.880E-16	5.663E-16	1.319E-15	3.914E-15	1.099E-14	2.921E-14	3.225E-14	7.079E-14	1.015E-13
Th-231	Pu-239	4.968E-10	1.128E-20	3.398E-20	7.915E-20	2.348E-19	6.595E-19	1.753E-18	1.935E-18	4.248E-18	6.093E-18
Th-231	∑DOSE(j)		2.271E-11	6.840E-11	1.593E-10	4.727E-10	1.328E-09	3.528E-09	3.895E-09	8.550E-09	1.226E-08
Pa-231	Pu-239	9.856E-01	1.622E-15	1.142E-14	6.027E-14	5.316E-13	4.288E-12	3.233E-11	3.987E-11	2.325E-10	7.088E-10
Pa-231	Pu-239	1.379E-02	2.270E-17	1.597E-16	8.433E-16	7.438E-15	6.000E-14	4.523E-13	5.578E-13	3.253E-12	9.918E-12
Pa-231	Pu-239	8.275E-07	1.362E-21	9.586E-21	5.060E-20	4.463E-19	3.600E-18	2.714E-17	3.347E-17	1.952E-16	5.951E-16
Pa-231	Pu-239	5.917E-04	9.742E-19	6.855E-18	3.618E-17	3.192E-16	2.574E-15	1.941E-14	2.393E-14	1.396E-13	4.256E-13
Pa-231	Pu-239	8.280E-06	1.363E-20	9.592E-20	5.063E-19	4.466E-18	3.602E-17	2.715E-16	3.349E-16	1.953E-15	5.955E-15
Pa-231	Pu-239	4.968E-10	8.179E-25	5.755E-24	3.038E-23	2.680E-22	2.161E-21	1.629E-20	2.009E-20	1.172E-19	3.573E-19
Pa-231	∑DOSE(j)		1.646E-15	1.158E-14	6.115E-14	5.394E-13	4.351E-12	3.280E-11	4.045E-11	2.359E-10	7.192E-10
Ac-227	Pu-239	9.856E-01	4.821E-18	7.225E-17	8.281E-16	2.034E-14	4.023E-13	5.933E-12	7.717E-12	6.184E-11	2.105E-10
Ac-227	Pu-239	1.379E-02	6.746E-20	1.011E-18	1.159E-17	2.846E-16	5.629E-15	8.302E-14	1.080E-13	8.652E-13	2.946E-12
Ac-227	Pu-239	8.275E-07	4.048E-24	6.066E-23	6.952E-22	1.708E-20	3.378E-19	4.981E-18	6.479E-18	5.192E-17	1.767E-16
Ac-227	Pu-239	5.917E-04	2.895E-21	4.338E-20	4.972E-19	1.221E-17	2.415E-16	3.562E-15	4.633E-15	3.712E-14	1.264E-13
Ac-227	Pu-239	8.280E-06	4.051E-23	6.070E-22	6.956E-21	1.709E-19	3.379E-18	4.984E-17	6.483E-17	5.195E-16	1.768E-15
Ac-227	Pu-239	4.968E-10	2.431E-27	3.642E-26	4.174E-25	1.025E-23	2.028E-22	2.991E-21	3.890E-21	3.117E-20	1.061E-19
Ac-227	∑DOSE(j)		4.891E-18	7.331E-17	8.401E-16	2.064E-14	4.082E-13	6.020E-12	7.830E-12	6.274E-11	2.136E-10
Th-227	Pu-239	9.856E-01	1.571E-17	2.707E-16	3.336E-15	8.538E-14	1.712E-12	2.536E-11	3.300E-11	2.647E-10	9.015E-10
Th-227	Pu-239	5.917E-04	9.434E-21	1.626E-19	2.003E-18	5.126E-17	1.028E-15	1.523E-14	1.981E-14	1.589E-13	5.412E-13
Th-227	∑DOSE(j)		1.572E-17	2.709E-16	3.338E-15	8.543E-14	1.713E-12	2.538E-11	3.301E-11	2.649E-10	9.020E-10
Ra-223	Pu-239	9.856E-01	2.113E-17	4.012E-16	5.185E-15	1.361E-13	2.753E-12	4.090E-11	5.322E-11	4.273E-10	1.455E-09
Ra-223	Pu-239	1.379E-02	3.924E-19	6.435E-18	7.716E-17	1.944E-15	3.877E-14	5.734E-13	7.459E-13	5.981E-12	2.037E-11
Ra-223	Pu-239	5.917E-04	1.269E-20	2.409E-19	3.113E-18	8.174E-17	1.653E-15	2.455E-14	3.195E-14	2.565E-13	8.738E-13
Ra-223	Pu-239	8.280E-06	2.356E-22	3.864E-21	4.633E-20	1.167E-18	2.327E-17	3.442E-16	4.478E-16	3.591E-15	1.223E-14
Ra-223	∑DOSE(j)		2.153E-17	4.078E-16	5.265E-15	1.382E-13	2.793E-12	4.150E-11	5.400E-11	4.335E-10	1.477E-09
Pb-211	Pu-239	9.856E-01	1.432E-17	2.720E-16	3.516E-15	9.234E-14	1.867E-12	2.774E-11	3.610E-11	2.898E-10	9.872E-10
Pb-211	Pu-239	1.379E-02	2.660E-19	4.364E-18	5.233E-17	1.318E-15	2.629E-14	3.889E-13	5.059E-13	4.057E-12	1.381E-11
Pb-211	Pu-239	8.275E-07	1.897E-23	2.844E-22	3.260E-21	8.011E-20	1.584E-18	2.336E-17	3.039E-17	2.435E-16	8.290E-16
Pb-211	Pu-239	5.917E-04	8.602E-21	1.633E-19	2.111E-18	5.544E-17	1.121E-15	1.665E-14	2.167E-14	1.740E-13	5.927E-13
Pb-211	Pu-239	8.280E-06	1.598E-22	2.620E-21	3.142E-20	7.916E-19	1.579E-17	2.335E-16	3.037E-16	2.436E-15	8.293E-15
Pb-211	Pu-239	4.968E-10	1.139E-26	1.708E-25	1.957E-24	4.809E-23	9.510E-22	1.403E-20	1.824E-20	1.462E-19	4.977E-19
Pb-211	∑DOSE(j)		1.460E-17	2.766E-16	3.571E-15	9.371E-14	1.894E-12	2.815E-11	3.663E-11	2.941E-10	1.002E-09
Fr-223	Pu-239	1.379E-02	8.908E-20	1.335E-18	1.530E-17	3.760E-16	7.435E-15	1.097E-13	1.426E-13	1.143E-12	3.891E-12
Fr-223	Pu-239	8.275E-07	4.663E-23	6.989E-22	8.010E-21	1.968E-19	3.892E-18	5.740E-17	7.466E-17	5.982E-16	2.037E-15
Fr-223	Pu-239	8.280E-06	5.350E-23	8.017E-22	9.188E-21	2.257E-19	4.464E-18	6.583E-17	8.563E-17	6.861E-16	2.336E-15
Fr-223	∑DOSE(j)		8.918E-20	1.337E-18	1.532E-17	3.764E-16	7.443E-15	1.098E-13	1.428E-13	1.144E-12	3.895E-12

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.RAD

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

Nuclide (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	8.890E+01	1.000E+02	3.000E+02	1.000E+03
Pu-239	Pu-239	8.275E-07	1.117E-07	1.116E-07	1.116E-07	1.115E-07	1.113E-07	1.105E-07	1.104E-07	1.080E-07	9.982E-08
Pu-239	Pu-239	5.917E-04	7.984E-05	7.983E-05	7.981E-05	7.975E-05	7.957E-05	7.905E-05	7.895E-05	7.720E-05	7.138E-05
Pu-239	∑DOSE(j)		7.995E-05	7.994E-05	7.993E-05	7.986E-05	7.968E-05	7.916E-05	7.906E-05	7.731E-05	7.148E-05
Pu-239	Pu-239	8.280E-06	1.117E-06	1.117E-06	1.117E-06	1.116E-06	1.113E-06	1.106E-06	1.105E-06	1.080E-06	9.987E-07
Pu-239	Pu-239	4.968E-10	6.703E-11	6.703E-11	6.701E-11	6.696E-11	6.681E-11	6.637E-11	6.629E-11	6.482E-11	5.993E-11
Pu-239	∑DOSE(j)		1.117E-06	1.117E-06	1.117E-06	1.116E-06	1.113E-06	1.106E-06	1.105E-06	1.080E-06	9.988E-07
Fr-223	Pu-239	4.968E-10	2.800E-26	4.197E-25	4.809E-24	1.182E-22	2.336E-21	3.446E-20	4.482E-20	3.592E-19	1.223E-18
Ra-226	Ra-226	9.998E-01	6.484E-02	6.466E-02	6.430E-02	6.304E-02	5.960E-02	5.052E-02	4.897E-02	2.793E-02	3.916E-03
Ra-226	Ra-226	1.320E-06	8.559E-08	8.535E-08	8.487E-08	8.322E-08	7.868E-08	6.669E-08	6.464E-08	3.687E-08	5.169E-09
Ra-226	∑DOSE(j)		6.484E-02	6.466E-02	6.430E-02	6.304E-02	5.960E-02	5.052E-02	4.897E-02	2.793E-02	3.916E-03
Rn-222	Ra-226	9.998E-01	1.065E-03	1.086E-03	1.080E-03	1.059E-03	1.001E-03	8.487E-04	8.227E-04	4.693E-04	6.578E-05
Rn-222	Ra-226	1.320E-06	1.406E-09	1.434E-09	1.426E-09	1.398E-09	1.322E-09	1.120E-09	1.086E-09	6.194E-10	8.683E-11
Rn-222	Ra-226	1.900E-08	2.024E-11	2.064E-11	2.052E-11	2.012E-11	1.902E-11	1.613E-11	1.563E-11	8.916E-12	1.250E-12
Rn-222	∑DOSE(j)		1.065E-03	1.086E-03	1.080E-03	1.059E-03	1.001E-03	8.487E-04	8.227E-04	4.693E-04	6.578E-05
Pb-214	Ra-226	9.998E-01	6.371E-01	6.497E-01	6.461E-01	6.335E-01	5.989E-01	5.077E-01	4.921E-01	2.807E-01	3.935E-02
Pb-214	Ra-226	1.320E-06	8.410E-07	8.576E-07	8.528E-07	8.362E-07	7.906E-07	6.701E-07	6.495E-07	3.705E-07	5.194E-08
Pb-214	Ra-226	1.900E-08	1.211E-08	1.234E-08	1.228E-08	1.204E-08	1.138E-08	9.645E-09	9.350E-09	5.333E-09	7.476E-10
Pb-214	∑DOSE(j)		6.371E-01	6.497E-01	6.461E-01	6.335E-01	5.989E-01	5.077E-01	4.921E-01	2.807E-01	3.935E-02
Bi-214	Ra-226	9.998E-01	4.588E+00	4.678E+00	4.652E+00	4.562E+00	4.313E+00	3.656E+00	3.543E+00	2.021E+00	2.833E-01
Bi-214	Ra-226	1.320E-06	6.056E-06	6.176E-06	6.141E-06	6.022E-06	5.693E-06	4.825E-06	4.677E-06	2.668E-06	3.740E-07
Bi-214	Ra-226	1.900E-08	8.717E-08	8.889E-08	8.839E-08	8.667E-08	8.194E-08	6.946E-08	6.732E-08	3.840E-08	5.383E-09
Bi-214	Ra-226	1.998E-04	9.168E-04	9.349E-04	9.297E-04	9.116E-04	8.619E-04	7.305E-04	7.081E-04	4.039E-04	5.662E-05
Bi-214	Ra-226	2.637E-10	1.210E-09	1.234E-09	1.227E-09	1.203E-09	1.138E-09	9.643E-10	9.347E-10	5.332E-10	7.474E-11
Bi-214	Ra-226	3.796E-12	1.742E-11	1.776E-11	1.766E-11	1.732E-11	1.638E-11	1.388E-11	1.345E-11	7.675E-12	1.076E-12
Bi-214	∑DOSE(j)		4.589E+00	4.679E+00	4.653E+00	4.563E+00	4.314E+00	3.656E+00	3.544E+00	2.022E+00	2.834E-01
Pb-210	Ra-226	9.998E-01	1.577E-03	4.750E-03	1.077E-02	2.870E-02	6.022E-02	7.926E-02	7.842E-02	4.702E-02	6.591E-03
Pb-210	Ra-226	1.320E-06	2.081E-09	6.270E-09	1.421E-08	3.789E-08	7.949E-08	1.046E-07	1.035E-07	6.206E-08	8.701E-09
Pb-210	Ra-226	1.998E-04	3.151E-07	9.492E-07	2.152E-06	5.736E-06	1.203E-05	1.584E-05	1.567E-05	9.396E-06	1.317E-06
Pb-210	Ra-226	2.637E-10	4.160E-13	1.253E-12	2.840E-12	7.571E-12	1.589E-11	2.091E-11	2.069E-11	1.240E-11	1.739E-12
Pb-210	Ra-226	2.000E-07	3.155E-10	9.502E-10	2.154E-09	5.742E-09	1.205E-08	1.586E-08	1.569E-08	9.405E-09	1.319E-09
Pb-210	Ra-226	2.640E-13	4.165E-16	1.254E-15	2.843E-15	7.579E-15	1.590E-14	2.093E-14	2.071E-14	1.242E-14	1.741E-15
Pb-210	∑DOSE(j)		1.577E-03	4.751E-03	1.077E-02	2.871E-02	6.023E-02	7.928E-02	7.844E-02	4.702E-02	6.593E-03
Bi-210	Ra-226	9.998E-01	4.302E-05	1.331E-04	3.040E-04	8.134E-04	1.709E-03	2.250E-03	2.226E-03	1.334E-03	1.871E-04
Bi-210	Ra-226	1.998E-04	8.598E-09	2.660E-08	6.075E-08	1.625E-07	3.415E-07	4.496E-07	4.448E-07	2.667E-07	3.739E-08
Bi-210	Ra-226	2.000E-07	8.608E-12	2.663E-11	6.081E-11	1.627E-10	3.418E-10	4.500E-10	4.453E-10	2.670E-10	3.743E-11
Bi-210	∑DOSE(j)		4.303E-05	1.331E-04	3.040E-04	8.135E-04	1.709E-03	2.250E-03	2.226E-03	1.335E-03	1.871E-04
Po-210	Ra-226	9.998E-01	1.005E-03	5.114E-03	1.500E-02	4.516E-02	9.822E-02	1.306E-01	1.293E-01	7.756E-02	1.087E-02
Po-210	Ra-226	1.998E-04	2.009E-07	1.022E-06	2.998E-06	9.024E-06	1.963E-05	2.610E-05	2.583E-05	1.550E-05	2.173E-06
Po-210	Ra-226	2.000E-07	2.012E-10	1.023E-09	3.002E-09	9.033E-09	1.965E-08	2.613E-08	2.586E-08	1.552E-08	2.175E-09
Po-210	∑DOSE(j)		1.005E-03	5.115E-03	1.501E-02	4.516E-02	9.824E-02	1.306E-01	1.293E-01	7.758E-02	1.088E-02

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.RAD

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

Nuclide (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	8.890E+01	1.000E+02	3.000E+02	1.000E+03
Bi-210	Ra-226	1.320E-06	1.793E-10	5.545E-10	1.267E-09	3.389E-09	7.120E-09	9.374E-09	9.274E-09	5.560E-09	7.795E-10
Bi-210	Ra-226	2.637E-10	3.583E-14	1.108E-13	2.531E-13	6.773E-13	1.423E-12	1.873E-12	1.853E-12	1.111E-12	1.558E-13
Bi-210	Ra-226	2.640E-13	3.587E-17	1.109E-16	2.534E-16	6.780E-16	1.424E-15	1.875E-15	1.855E-15	1.112E-15	1.559E-16
Bi-210	∑DOSE(j)		1.793E-10	5.546E-10	1.267E-09	3.390E-09	7.121E-09	9.375E-09	9.276E-09	5.562E-09	7.797E-10
Ra-226	Ra-226	1.900E-08	1.232E-09	1.228E-09	1.222E-09	1.198E-09	1.132E-09	9.599E-10	9.304E-10	5.307E-10	7.440E-11
Ra-226	Ra-226	1.998E-04	1.296E-05	1.292E-05	1.285E-05	1.260E-05	1.191E-05	1.010E-05	9.786E-06	5.582E-06	7.825E-07
Ra-226	∑DOSE(j)		1.296E-05	1.292E-05	1.285E-05	1.260E-05	1.191E-05	1.010E-05	9.787E-06	5.583E-06	7.826E-07
Pb-210	Ra-226	1.900E-08	1.223E-10	3.684E-10	8.351E-10	2.226E-09	4.671E-09	6.148E-09	6.082E-09	3.647E-09	5.112E-10
Pb-210	Ra-226	3.796E-12	2.444E-14	7.363E-14	1.669E-13	4.449E-13	9.335E-13	1.229E-12	1.216E-12	7.288E-13	1.022E-13
Pb-210	Ra-226	3.800E-15	2.447E-17	7.370E-17	1.671E-16	4.453E-16	9.344E-16	1.230E-15	1.217E-15	7.295E-16	1.023E-16
Pb-210	∑DOSE(j)		1.223E-10	3.685E-10	8.352E-10	2.227E-09	4.672E-09	6.149E-09	6.084E-09	3.647E-09	5.113E-10
Rn-222	Ra-226	1.998E-04	2.184E-07	2.228E-07	2.215E-07	2.172E-07	2.053E-07	1.741E-07	1.687E-07	9.624E-08	1.349E-08
Rn-222	Ra-226	3.796E-12	4.150E-15	4.232E-15	4.209E-15	4.127E-15	3.902E-15	3.307E-15	3.206E-15	1.829E-15	2.563E-16
Rn-222	∑DOSE(j)		2.184E-07	2.228E-07	2.215E-07	2.172E-07	2.053E-07	1.741E-07	1.687E-07	9.624E-08	1.349E-08
Ra-226	Ra-226	2.637E-10	1.710E-11	1.706E-11	1.696E-11	1.663E-11	1.572E-11	1.333E-11	1.292E-11	7.369E-12	1.033E-12
Ra-226	Ra-226	3.796E-12	2.462E-13	2.455E-13	2.441E-13	2.394E-13	2.263E-13	1.918E-13	1.859E-13	1.061E-13	1.487E-14
Ra-226	∑DOSE(j)		1.735E-11	1.730E-11	1.720E-11	1.687E-11	1.595E-11	1.352E-11	1.310E-11	7.475E-12	1.048E-12
Rn-222	Ra-226	2.637E-10	2.883E-13	2.940E-13	2.924E-13	2.867E-13	2.711E-13	2.298E-13	2.227E-13	1.270E-13	1.781E-14
Ra-226	Ra-226	2.000E-07	1.297E-08	1.293E-08	1.286E-08	1.261E-08	1.192E-08	1.011E-08	9.796E-09	5.588E-09	7.833E-10
Ra-226	Ra-226	2.640E-13	1.712E-14	1.707E-14	1.698E-14	1.665E-14	1.574E-14	1.334E-14	1.293E-14	7.376E-15	1.034E-15
Ra-226	∑DOSE(j)		1.297E-08	1.293E-08	1.286E-08	1.261E-08	1.192E-08	1.011E-08	9.796E-09	5.588E-09	7.833E-10
Rn-222	Ra-226	2.000E-07	6.922E-10	7.059E-10	7.019E-10	6.883E-10	6.507E-10	5.515E-10	5.346E-10	3.050E-10	4.275E-11
Rn-222	Ra-226	2.640E-13	9.137E-16	9.317E-16	9.265E-16	9.085E-16	8.589E-16	7.280E-16	7.057E-16	4.025E-16	5.643E-17
Rn-222	Ra-226	3.800E-15	1.315E-17	1.341E-17	1.334E-17	1.308E-17	1.236E-17	1.048E-17	1.016E-17	5.794E-18	8.122E-19
Rn-222	∑DOSE(j)		6.922E-10	7.059E-10	7.019E-10	6.883E-10	6.507E-10	5.515E-10	5.346E-10	3.050E-10	4.275E-11
Ra-226	Ra-226	3.800E-15	2.464E-16	2.457E-16	2.444E-16	2.396E-16	2.265E-16	1.920E-16	1.861E-16	1.062E-16	1.488E-17
Sr-90	Sr-90	1.000E+00	1.321E-03	1.283E-03	1.209E-03	9.828E-04	5.438E-04	9.516E-05	6.852E-05	1.843E-07	1.859E-16
Y-90	Sr-90	1.000E+00	6.778E-03	6.724E-03	6.338E-03	5.152E-03	2.851E-03	4.989E-04	3.592E-04	9.660E-07	9.745E-16

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

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (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	8.890E+01	1.000E+02	3.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.360E+00	1.347E+00	1.320E+00	1.232E+00	1.012E+00	5.666E-01	5.079E-01	7.085E-02	7.182E-05
Np-237	Am-241	1.000E+00	0.000E+00	4.374E-07	1.298E-06	4.174E-06	1.130E-05	2.520E-05	2.694E-05	3.686E-05	2.501E-05
Pa-233	Am-241	1.000E+00	0.000E+00	3.909E-07	1.253E-06	4.130E-06	1.127E-05	2.518E-05	2.692E-05	3.685E-05	2.500E-05
U-233	Am-241	1.000E+00	0.000E+00	7.715E-13	7.916E-12	8.951E-11	7.463E-10	5.084E-09	6.137E-09	2.522E-08	3.674E-08
Th-229	Am-241	1.000E+00	0.000E+00	2.226E-17	7.252E-16	2.819E-14	7.261E-13	1.566E-11	2.152E-11	3.228E-10	2.607E-09
Ra-225	Am-241	1.000E+00	0.000E+00	1.849E-17	6.829E-16	2.770E-14	7.219E-13	1.563E-11	2.148E-11	3.226E-10	2.606E-09
Ac-225	Am-241	1.000E+00	0.000E+00	1.618E-17	6.551E-16	2.736E-14	7.189E-13	1.561E-11	2.145E-11	3.224E-10	2.605E-09
Bi-213	Am-241	1.000E+00	0.000E+00	1.617E-17	6.549E-16	2.736E-14	7.188E-13	1.560E-11	2.145E-11	3.224E-10	2.605E-09
Pb-209	Am-241	1.000E+00	0.000E+00	1.614E-17	6.546E-16	2.735E-14	7.188E-13	1.560E-11	2.145E-11	3.224E-10	2.605E-09
Co-60	Co-60	1.000E+00	3.610E-02	3.165E-02	2.432E-02	9.676E-03	6.952E-04	2.980E-07	6.911E-08	2.533E-19	0.000E+00
Cs-137	Cs-137	1.000E+00	1.130E-01	1.104E-01	1.055E-01	8.977E-02	5.666E-02	1.461E-02	1.131E-02	1.134E-04	1.144E-11
Eu-152	Eu-152	7.210E-01	9.373E-02	8.903E-02	8.033E-02	5.606E-02	2.005E-02	9.709E-04	5.487E-04	1.881E-08	4.432E-24
Eu-152	Eu-152	2.790E-01	3.627E-02	3.445E-02	3.109E-02	2.169E-02	7.759E-03	3.757E-04	2.123E-04	7.277E-09	1.715E-24
Eu-152	∑S(j):		1.300E-01	1.235E-01	1.114E-01	7.775E-02	2.781E-02	1.347E-03	7.611E-04	2.608E-08	6.147E-24
Gd-152	Eu-152	2.790E-01	0.000E+00	2.269E-16	6.470E-16	1.818E-15	3.546E-15	4.418E-15	4.429E-15	4.279E-15	3.715E-15
Sm-148	Eu-152	2.790E-01	0.000E+00	1.133E-32	9.855E-32	9.766E-31	6.566E-30	3.076E-29	3.555E-29	1.188E-28	3.606E-28
Nd-144	Eu-152	2.790E-01	0.000E+00	0.000E+00	0.000E+00	1.401E-45	2.242E-44	3.391E-43	4.456E-43	4.685E-42	4.129E-41
Eu-154	Eu-154	1.000E+00	2.300E-01	2.121E-01	1.805E-01	1.025E-01	2.033E-02	1.736E-04	7.075E-05	6.696E-12	1.746E-36
H-3	H-3	1.000E+00	2.280E+00	4.530E-01	1.784E-02	2.110E-07	1.424E-21	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-239	Pu-239	9.856E-01	2.553E+00	2.552E+00	2.552E+00	2.550E+00	2.544E+00	2.527E+00	2.524E+00	2.468E+00	2.282E+00
Pu-239	Pu-239	1.379E-02	3.572E-02	3.571E-02	3.571E-02	3.568E-02	3.560E-02	3.536E-02	3.532E-02	3.454E-02	3.193E-02
Pu-239	∑S(j):		2.588E+00	2.588E+00	2.588E+00	2.586E+00	2.580E+00	2.563E+00	2.560E+00	2.503E+00	2.314E+00
U-235m	Pu-239	9.856E-01	0.000E+00	2.552E+00	2.552E+00	2.550E+00	2.544E+00	2.527E+00	2.524E+00	2.468E+00	2.282E+00
U-235m	Pu-239	1.379E-02	0.000E+00	3.571E-02	3.571E-02	3.568E-02	3.560E-02	3.536E-02	3.532E-02	3.454E-02	3.193E-02
U-235m	Pu-239	8.275E-07	0.000E+00	2.143E-06	2.143E-06	2.141E-06	2.136E-06	2.122E-06	2.119E-06	2.072E-06	1.916E-06
U-235m	∑S(j):		0.000E+00	2.588E+00	2.588E+00	2.586E+00	2.580E+00	2.563E+00	2.560E+00	2.503E+00	2.314E+00
U-235	Pu-239	9.856E-01	0.000E+00	2.509E-09	7.501E-09	2.471E-08	7.165E-08	1.925E-07	2.126E-07	4.683E-07	6.723E-07
U-235	Pu-239	1.379E-02	0.000E+00	3.510E-11	1.050E-10	3.457E-10	1.002E-09	2.693E-09	2.975E-09	6.552E-09	9.406E-09
U-235	Pu-239	8.275E-07	0.000E+00	2.106E-15	6.298E-15	2.074E-14	6.015E-14	1.616E-13	1.785E-13	3.931E-13	5.644E-13
U-235	Pu-239	5.917E-04	0.000E+00	1.506E-12	4.504E-12	1.483E-11	4.301E-11	1.156E-10	1.276E-10	2.811E-10	4.036E-10

Summary : RESRAD Default Parameters
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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (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	8.890E+01	1.000E+02	3.000E+02	1.000E+03
U-235	Pu-239	8.280E-06	0.000E+00	2.108E-14	6.302E-14	2.076E-13	6.019E-13	1.617E-12	1.786E-12	3.933E-12	5.647E-12
U-235	Pu-239	4.968E-10	0.000E+00	1.265E-18	3.781E-18	1.245E-17	3.611E-17	9.702E-17	1.072E-16	2.360E-16	3.389E-16
U-235	∑S(j):		0.000E+00	2.546E-09	7.611E-09	2.507E-08	7.269E-08	1.953E-07	2.157E-07	4.751E-07	6.821E-07
Th-231	Pu-239	9.856E-01	0.000E+00	2.498E-09	7.491E-09	2.470E-08	7.164E-08	1.925E-07	2.126E-07	4.682E-07	6.723E-07
Th-231	Pu-239	1.379E-02	0.000E+00	3.496E-11	1.048E-10	3.456E-10	1.002E-09	2.693E-09	2.975E-09	6.552E-09	9.406E-09
Th-231	Pu-239	8.275E-07	0.000E+00	2.098E-15	6.289E-15	2.074E-14	6.015E-14	1.616E-13	1.785E-13	3.931E-13	5.644E-13
Th-231	Pu-239	5.917E-04	0.000E+00	1.500E-12	4.497E-12	1.483E-11	4.301E-11	1.156E-10	1.276E-10	2.811E-10	4.036E-10
Th-231	Pu-239	8.280E-06	0.000E+00	2.099E-14	6.293E-14	2.075E-13	6.018E-13	1.617E-12	1.786E-12	3.933E-12	5.647E-12
Th-231	Pu-239	4.968E-10	0.000E+00	1.259E-18	3.776E-18	1.245E-17	3.611E-17	9.702E-17	1.072E-16	2.360E-16	3.389E-16
Th-231	∑S(j):		0.000E+00	2.535E-09	7.600E-09	2.506E-08	7.268E-08	1.953E-07	2.157E-07	4.751E-07	6.821E-07
Pa-231	Pu-239	9.856E-01	0.000E+00	2.630E-14	2.370E-13	2.597E-12	2.236E-11	1.723E-10	2.128E-10	1.249E-09	3.816E-09
Pa-231	Pu-239	1.379E-02	0.000E+00	3.681E-16	3.316E-15	3.634E-14	3.129E-13	2.411E-12	2.977E-12	1.748E-11	5.340E-11
Pa-231	Pu-239	8.275E-07	0.000E+00	2.208E-20	1.990E-19	2.181E-18	1.878E-17	1.447E-16	1.786E-16	1.049E-15	3.204E-15
Pa-231	Pu-239	5.917E-04	0.000E+00	1.579E-17	1.423E-16	1.559E-15	1.343E-14	1.035E-13	1.277E-13	7.498E-13	2.291E-12
Pa-231	Pu-239	8.280E-06	0.000E+00	2.210E-19	1.991E-18	2.182E-17	1.879E-16	1.448E-15	1.787E-15	1.049E-14	3.206E-14
Pa-231	Pu-239	4.968E-10	0.000E+00	1.326E-23	1.195E-22	1.309E-21	1.127E-20	8.686E-20	1.072E-19	6.295E-19	1.924E-18
Pa-231	∑S(j):		0.000E+00	2.669E-14	2.405E-13	2.635E-12	2.269E-11	1.748E-10	2.159E-10	1.267E-09	3.872E-09
Ac-227	Pu-239	9.856E-01	0.000E+00	2.754E-16	7.326E-15	2.513E-13	5.483E-12	8.348E-11	1.088E-10	8.790E-10	3.000E-09
Ac-227	Pu-239	1.379E-02	0.000E+00	3.853E-18	1.025E-16	3.517E-15	7.672E-14	1.168E-12	1.522E-12	1.230E-11	4.197E-11
Ac-227	Pu-239	8.275E-07	0.000E+00	2.312E-22	6.151E-21	2.110E-19	4.603E-18	7.009E-17	9.133E-17	7.380E-16	2.518E-15
Ac-227	Pu-239	5.917E-04	0.000E+00	1.654E-19	4.399E-18	1.509E-16	3.292E-15	5.012E-14	6.530E-14	5.277E-13	1.801E-12
Ac-227	Pu-239	8.280E-06	0.000E+00	2.314E-21	6.155E-20	2.111E-18	4.606E-17	7.013E-16	9.138E-16	7.384E-15	2.520E-14
Ac-227	Pu-239	4.968E-10	0.000E+00	1.388E-25	3.693E-24	1.267E-22	2.764E-21	4.208E-20	5.483E-20	4.431E-19	1.512E-18
Ac-227	∑S(j):		0.000E+00	2.794E-16	7.433E-15	2.550E-13	5.563E-12	8.470E-11	1.104E-10	8.919E-10	3.043E-09
Th-227	Pu-239	9.856E-01	0.000E+00	2.227E-16	6.816E-15	2.461E-13	5.447E-12	8.333E-11	1.086E-10	8.787E-10	2.999E-09
Th-227	Pu-239	5.917E-04	0.000E+00	1.337E-19	4.093E-18	1.477E-16	3.270E-15	5.003E-14	6.520E-14	5.275E-13	1.801E-12
Th-227	∑S(j):		0.000E+00	2.228E-16	6.821E-15	2.462E-13	5.450E-12	8.338E-11	1.087E-10	8.792E-10	3.001E-09
Ra-223	Pu-239	9.856E-01	0.000E+00	1.934E-16	6.513E-15	2.428E-13	5.424E-12	8.322E-11	1.085E-10	8.784E-10	2.999E-09
Ra-223	Pu-239	1.379E-02	0.000E+00	3.375E-18	9.805E-17	3.471E-15	7.640E-14	1.167E-12	1.520E-12	1.230E-11	4.197E-11
Ra-223	Pu-239	5.917E-04	0.000E+00	1.162E-19	3.910E-18	1.458E-16	3.256E-15	4.996E-14	6.513E-14	5.274E-13	1.801E-12
Ra-223	Pu-239	8.280E-06	0.000E+00	2.027E-21	5.887E-20	2.084E-18	4.587E-17	7.004E-16	9.127E-16	7.382E-15	2.519E-14
Ra-223	∑S(j):		0.000E+00	1.969E-16	6.615E-15	2.464E-13	5.504E-12	8.444E-11	1.101E-10	8.912E-10	3.043E-09
Pb-211	Pu-239	9.856E-01	0.000E+00	1.934E-16	6.512E-15	2.428E-13	5.424E-12	8.322E-11	1.085E-10	8.784E-10	2.999E-09
Pb-211	Pu-239	1.379E-02	0.000E+00	3.374E-18	9.804E-17	3.471E-15	7.640E-14	1.167E-12	1.520E-12	1.230E-11	4.197E-11
Pb-211	Pu-239	8.275E-07	0.000E+00	2.311E-22	6.150E-21	2.110E-19	4.603E-18	7.009E-17	9.133E-17	7.380E-16	2.518E-15
Pb-211	Pu-239	5.917E-04	0.000E+00	1.161E-19	3.910E-18	1.458E-16	3.256E-15	4.996E-14	6.513E-14	5.274E-13	1.801E-12
Pb-211	Pu-239	8.280E-06	0.000E+00	2.026E-21	5.886E-20	2.084E-18	4.587E-17	7.004E-16	9.127E-16	7.382E-15	2.519E-14
Pb-211	Pu-239	4.968E-10	0.000E+00	1.388E-25	3.693E-24	1.267E-22	2.764E-21	4.208E-20	5.483E-20	4.431E-19	1.512E-18
Pb-211	∑S(j):		0.000E+00	1.969E-16	6.614E-15	2.464E-13	5.504E-12	8.444E-11	1.101E-10	8.912E-10	3.043E-09
Fr-223	Pu-239	1.379E-02	0.000E+00	3.852E-18	1.025E-16	3.517E-15	7.672E-14	1.168E-12	1.522E-12	1.230E-11	4.197E-11
Fr-223	Pu-239	8.275E-07	0.000E+00	2.311E-22	6.151E-21	2.110E-19	4.603E-18	7.009E-17	9.133E-17	7.380E-16	2.518E-15
Fr-223	Pu-239	8.280E-06	0.000E+00	2.313E-21	6.155E-20	2.111E-18	4.606E-17	7.013E-16	9.138E-16	7.384E-15	2.520E-14
Fr-223	∑S(j):		0.000E+00	3.855E-18	1.026E-16	3.519E-15	7.677E-14	1.169E-12	1.523E-12	1.231E-11	4.200E-11

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (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	8.890E+01	1.000E+02	3.000E+02	1.000E+03
Pu-239	Pu-239	8.275E-07	2.143E-06	2.143E-06	2.143E-06	2.141E-06	2.136E-06	2.122E-06	2.119E-06	2.072E-06	1.916E-06
Pu-239	Pu-239	5.917E-04	1.533E-03	1.532E-03	1.532E-03	1.531E-03	1.527E-03	1.517E-03	1.515E-03	1.482E-03	1.370E-03
Pu-239	∑S(j):		1.535E-03	1.535E-03	1.534E-03	1.533E-03	1.530E-03	1.519E-03	1.518E-03	1.484E-03	1.372E-03
Pu-239	Pu-239	8.280E-06	2.144E-05	2.144E-05	2.144E-05	2.142E-05	2.137E-05	2.123E-05	2.120E-05	2.073E-05	1.917E-05
Pu-239	Pu-239	4.968E-10	1.287E-09	1.287E-09	1.286E-09	1.285E-09	1.282E-09	1.274E-09	1.272E-09	1.244E-09	1.150E-09
Pu-239	∑S(j):		2.145E-05	2.144E-05	2.144E-05	2.142E-05	2.137E-05	2.123E-05	2.121E-05	2.074E-05	1.917E-05
Fr-223	Pu-239	4.968E-10	0.000E+00	1.388E-25	3.693E-24	1.267E-22	2.764E-21	4.208E-20	5.483E-20	4.431E-19	1.512E-18
Ra-226	Ra-226	9.998E-01	9.998E-01	9.970E-01	9.914E-01	9.721E-01	9.191E-01	7.790E-01	7.551E-01	4.307E-01	6.038E-02
Ra-226	Ra-226	1.320E-06	1.320E-06	1.316E-06	1.309E-06	1.283E-06	1.213E-06	1.028E-06	9.967E-07	5.686E-07	7.970E-08
Ra-226	∑S(j):		9.998E-01	9.970E-01	9.914E-01	9.721E-01	9.191E-01	7.790E-01	7.551E-01	4.307E-01	6.038E-02
Rn-222	Ra-226	9.998E-01	0.000E+00	9.854E-01	9.799E-01	9.609E-01	9.084E-01	7.700E-01	7.464E-01	4.257E-01	5.968E-02
Rn-222	Ra-226	1.320E-06	0.000E+00	1.301E-06	1.294E-06	1.268E-06	1.199E-06	1.016E-06	9.852E-07	5.620E-07	7.878E-08
Rn-222	Ra-226	1.900E-08	0.000E+00	1.872E-08	1.862E-08	1.826E-08	1.726E-08	1.463E-08	1.418E-08	8.089E-09	1.134E-09
Rn-222	∑S(j):		0.000E+00	9.854E-01	9.799E-01	9.609E-01	9.084E-01	7.700E-01	7.464E-01	4.257E-01	5.968E-02
Pb-214	Ra-226	9.998E-01	0.000E+00	9.854E-01	9.799E-01	9.609E-01	9.084E-01	7.700E-01	7.464E-01	4.257E-01	5.968E-02
Pb-214	Ra-226	1.320E-06	0.000E+00	1.301E-06	1.294E-06	1.268E-06	1.199E-06	1.016E-06	9.852E-07	5.620E-07	7.878E-08
Pb-214	Ra-226	1.900E-08	0.000E+00	1.872E-08	1.862E-08	1.826E-08	1.726E-08	1.463E-08	1.418E-08	8.089E-09	1.134E-09
Pb-214	∑S(j):		0.000E+00	9.854E-01	9.799E-01	9.609E-01	9.084E-01	7.700E-01	7.464E-01	4.257E-01	5.968E-02
Bi-214	Ra-226	9.998E-01	0.000E+00	9.854E-01	9.799E-01	9.608E-01	9.084E-01	7.699E-01	7.463E-01	4.257E-01	5.968E-02
Bi-214	Ra-226	1.320E-06	0.000E+00	1.301E-06	1.293E-06	1.268E-06	1.199E-06	1.016E-06	9.852E-07	5.620E-07	7.877E-08
Bi-214	Ra-226	1.900E-08	0.000E+00	1.872E-08	1.862E-08	1.826E-08	1.726E-08	1.463E-08	1.418E-08	8.089E-09	1.134E-09
Bi-214	Ra-226	1.998E-04	0.000E+00	1.969E-04	1.958E-04	1.920E-04	1.815E-04	1.539E-04	1.491E-04	8.508E-05	1.193E-05
Bi-214	Ra-226	2.637E-10	0.000E+00	2.599E-10	2.585E-10	2.535E-10	2.396E-10	2.031E-10	1.969E-10	1.123E-10	1.574E-11
Bi-214	Ra-226	3.796E-12	0.000E+00	3.742E-12	3.721E-12	3.648E-12	3.449E-12	2.923E-12	2.834E-12	1.616E-12	2.266E-13
Bi-214	∑S(j):		0.000E+00	9.856E-01	9.801E-01	9.610E-01	9.086E-01	7.701E-01	7.465E-01	4.258E-01	5.969E-02
Pb-210	Ra-226	9.998E-01	0.000E+00	2.986E-02	8.734E-02	2.587E-01	5.603E-01	7.441E-01	7.364E-01	4.419E-01	6.195E-02
Pb-210	Ra-226	1.320E-06	0.000E+00	3.941E-08	1.153E-07	3.415E-07	7.396E-07	9.822E-07	9.721E-07	5.833E-07	8.177E-08
Pb-210	Ra-226	1.998E-04	0.000E+00	5.968E-06	1.746E-05	5.171E-05	1.120E-04	1.487E-04	1.472E-04	8.830E-05	1.238E-05
Pb-210	Ra-226	2.637E-10	0.000E+00	7.877E-12	2.304E-11	6.825E-11	1.478E-10	1.963E-10	1.943E-10	1.166E-10	1.634E-11
Pb-210	Ra-226	2.000E-07	0.000E+00	5.974E-09	1.747E-08	5.176E-08	1.121E-07	1.489E-07	1.473E-07	8.839E-08	1.239E-08
Pb-210	Ra-226	2.640E-13	0.000E+00	7.886E-15	2.307E-14	6.833E-14	1.480E-13	1.965E-13	1.945E-13	1.167E-13	1.636E-14
Pb-210	∑S(j):		0.000E+00	2.987E-02	8.736E-02	2.588E-01	5.604E-01	7.442E-01	7.366E-01	4.419E-01	6.196E-02
Bi-210	Ra-226	9.998E-01	0.000E+00	2.883E-02	8.548E-02	2.544E-01	5.516E-01	7.328E-01	7.253E-01	4.352E-01	6.101E-02
Bi-210	Ra-226	1.998E-04	0.000E+00	5.762E-06	1.708E-05	5.084E-05	1.102E-04	1.464E-04	1.449E-04	8.696E-05	1.219E-05
Bi-210	Ra-226	2.000E-07	0.000E+00	5.769E-09	1.710E-08	5.089E-08	1.103E-07	1.466E-07	1.451E-07	8.705E-08	1.220E-08
Bi-210	∑S(j):		0.000E+00	2.884E-02	8.550E-02	2.545E-01	5.517E-01	7.329E-01	7.254E-01	4.353E-01	6.102E-02
Po-210	Ra-226	9.998E-01	0.000E+00	1.531E-02	6.984E-02	2.406E-01	5.413E-01	7.265E-01	7.193E-01	4.320E-01	6.056E-02
Po-210	Ra-226	1.998E-04	0.000E+00	3.060E-06	1.396E-05	4.807E-05	1.082E-04	1.452E-04	1.437E-04	8.633E-05	1.210E-05
Po-210	Ra-226	2.000E-07	0.000E+00	3.063E-09	1.397E-08	4.812E-08	1.083E-07	1.453E-07	1.439E-07	8.642E-08	1.212E-08
Po-210	∑S(j):		0.000E+00	1.531E-02	6.985E-02	2.406E-01	5.414E-01	7.267E-01	7.195E-01	4.321E-01	6.057E-02

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (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	8.890E+01	1.000E+02	3.000E+02	1.000E+03
Bi-210	Ra-226	1.320E-06	0.000E+00	3.806E-08	1.128E-07	3.358E-07	7.281E-07	9.673E-07	9.573E-07	5.744E-07	8.053E-08
Bi-210	Ra-226	2.637E-10	0.000E+00	7.606E-12	2.255E-11	6.711E-11	1.455E-10	1.933E-10	1.913E-10	1.148E-10	1.609E-11
Bi-210	Ra-226	2.640E-13	0.000E+00	7.615E-15	2.257E-14	6.718E-14	1.457E-13	1.935E-13	1.915E-13	1.149E-13	1.611E-14
Bi-210	∑S(j):		0.000E+00	3.807E-08	1.129E-07	3.359E-07	7.282E-07	9.675E-07	9.575E-07	5.745E-07	8.055E-08
Ra-226	Ra-226	1.900E-08	1.900E-08	1.894E-08	1.884E-08	1.847E-08	1.746E-08	1.480E-08	1.435E-08	8.184E-09	1.147E-09
Ra-226	Ra-226	1.998E-04	1.998E-04	1.992E-04	1.981E-04	1.943E-04	1.837E-04	1.557E-04	1.509E-04	8.608E-05	1.207E-05
Ra-226	∑S(j):		1.998E-04	1.993E-04	1.981E-04	1.943E-04	1.837E-04	1.557E-04	1.509E-04	8.609E-05	1.207E-05
Pb-210	Ra-226	1.900E-08	0.000E+00	5.673E-10	1.660E-09	4.916E-09	1.065E-08	1.414E-08	1.399E-08	8.395E-09	1.177E-09
Pb-210	Ra-226	3.796E-12	0.000E+00	1.134E-13	3.317E-13	9.825E-13	2.127E-12	2.825E-12	2.796E-12	1.678E-12	2.352E-13
Pb-210	Ra-226	3.800E-15	0.000E+00	1.135E-16	3.320E-16	9.835E-16	2.130E-15	2.828E-15	2.799E-15	1.679E-15	2.355E-16
Pb-210	∑S(j):		0.000E+00	5.674E-10	1.660E-09	4.917E-09	1.065E-08	1.414E-08	1.399E-08	8.397E-09	1.177E-09
Rn-222	Ra-226	1.998E-04	0.000E+00	1.969E-04	1.958E-04	1.920E-04	1.815E-04	1.539E-04	1.492E-04	8.508E-05	1.193E-05
Rn-222	Ra-226	3.796E-12	0.000E+00	3.742E-12	3.721E-12	3.648E-12	3.449E-12	2.924E-12	2.834E-12	1.617E-12	2.266E-13
Rn-222	∑S(j):		0.000E+00	1.969E-04	1.958E-04	1.920E-04	1.815E-04	1.539E-04	1.492E-04	8.508E-05	1.193E-05
Ra-226	Ra-226	2.637E-10	2.637E-10	2.630E-10	2.615E-10	2.564E-10	2.424E-10	2.055E-10	1.992E-10	1.136E-10	1.593E-11
Ra-226	Ra-226	3.796E-12	3.796E-12	3.786E-12	3.764E-12	3.691E-12	3.490E-12	2.958E-12	2.867E-12	1.635E-12	2.293E-13
Ra-226	∑S(j):		2.675E-10	2.668E-10	2.653E-10	2.601E-10	2.459E-10	2.085E-10	2.021E-10	1.153E-10	1.616E-11
Rn-222	Ra-226	2.637E-10	0.000E+00	2.599E-10	2.585E-10	2.535E-10	2.396E-10	2.031E-10	1.969E-10	1.123E-10	1.574E-11
Ra-226	Ra-226	2.000E-07	2.000E-07	1.994E-07	1.983E-07	1.945E-07	1.838E-07	1.558E-07	1.511E-07	8.616E-08	1.208E-08
Ra-226	Ra-226	2.640E-13	2.640E-13	2.633E-13	2.618E-13	2.567E-13	2.427E-13	2.057E-13	1.994E-13	1.137E-13	1.594E-14
Ra-226	∑S(j):		2.000E-07	1.994E-07	1.983E-07	1.945E-07	1.838E-07	1.558E-07	1.511E-07	8.616E-08	1.208E-08
Rn-222	Ra-226	2.000E-07	0.000E+00	1.971E-07	1.960E-07	1.922E-07	1.817E-07	1.540E-07	1.493E-07	8.516E-08	1.194E-08
Rn-222	Ra-226	2.640E-13	0.000E+00	2.602E-13	2.588E-13	2.537E-13	2.399E-13	2.033E-13	1.971E-13	1.124E-13	1.576E-14
Rn-222	Ra-226	3.800E-15	0.000E+00	3.745E-15	3.724E-15	3.652E-15	3.453E-15	2.927E-15	2.837E-15	1.618E-15	2.268E-16
Rn-222	∑S(j):		0.000E+00	1.971E-07	1.960E-07	1.922E-07	1.817E-07	1.540E-07	1.493E-07	8.516E-08	1.194E-08
Ra-226	Ra-226	3.800E-15	3.800E-15	3.789E-15	3.768E-15	3.695E-15	3.493E-15	2.961E-15	2.870E-15	1.637E-15	2.295E-16
Sr-90	Sr-90	1.000E+00	3.310E-01	3.213E-01	3.029E-01	2.462E-01	1.362E-01	2.384E-02	1.717E-02	4.616E-05	4.657E-14
Y-90	Sr-90	1.000E+00	0.000E+00	3.214E-01	3.030E-01	2.463E-01	1.363E-01	2.385E-02	1.717E-02	4.618E-05	4.658E-14

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

RESCALC.EXE execution time = 153.77 seconds
Total water/soil iteration failures = 2.

Intrisk : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.RAD

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Part III: Intake Quantities and Health Risk Factors

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Amount of Intake Quantities and Excess Cancer Risks
Time= 0.000E+00 9
Time= 1.000E+00 15
Time= 3.000E+00 21
Time= 1.000E+01 27
Time= 3.000E+01 33
Time= 8.890E+01 39
Time= 1.000E+02 45
Time= 3.000E+02 51
Time= 1.000E+03 57

Intrisk : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.RAD

Cancer Risk Slope Factors Summary Table
Risk Library: DCFPAK3.02 Morbidity

Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-1	Ground external radiation slope factors, 1/yr per (pCi/g):			
Sf-1	Ac-225+D	1.47E-07	4.12E-08	SLPF(1,1)
Sf-1	Ac-227	1.98E-10	1.98E-10	SLPF(2,1)
Sf-1	Am-241	2.77E-08	2.77E-08	SLPF(5,1)
Sf-1	Bi-210	2.77E-09	2.77E-09	SLPF(6,1)
Sf-1	Bi-210+D	8.87E-09	2.77E-09	SLPF(7,1)
Sf-1	Bi-213+D	7.59E-07	5.43E-07	SLPF(8,1)
Sf-1	Bi-214+D	7.35E-06	7.34E-06	SLPF(9,1)
Sf-1	Co-60	1.24E-05	1.24E-05	SLPF(12,1)
Sf-1	Cs-137+D	2.54E-06	5.52E-10	SLPF(13,1)
Sf-1	Eu-152	5.41E-06	5.41E-06	SLPF(14,1)
Sf-1	Eu-154	5.85E-06	5.85E-06	SLPF(16,1)
Sf-1	Fr-223	1.35E-07	1.35E-07	SLPF(17,1)
Sf-1	Fr-223+D	1.22E-06	1.35E-07	SLPF(18,1)
Sf-1	Gd-152	0.00E+00	0.00E+00	SLPF(19,1)
Sf-1	H-3	0.00E+00	0.00E+00	SLPF(20,1)
Sf-1	Nd-144	0.00E+00	0.00E+00	SLPF(21,1)
Sf-1	Np-237	5.17E-08	5.17E-08	SLPF(22,1)
Sf-1	Pa-231	1.27E-07	1.27E-07	SLPF(23,1)
Sf-1	Pa-233	8.03E-07	8.03E-07	SLPF(26,1)
Sf-1	Pb-209	5.37E-10	5.37E-10	SLPF(27,1)
Sf-1	Pb-210	1.48E-09	1.48E-09	SLPF(28,1)
Sf-1	Pb-210+D	4.91E-07	1.48E-09	SLPF(30,1)
Sf-1	Pb-211+D	4.97E-07	2.91E-07	SLPF(31,1)
Sf-1	Pb-214	9.93E-07	9.93E-07	SLPF(32,1)
Sf-1	Po-210	4.51E-11	4.51E-11	SLPF(35,1)
Sf-1	Pu-239	2.09E-10	2.09E-10	SLPF(36,1)
Sf-1	Ra-223+D	6.91E-07	4.55E-07	SLPF(42,1)
Sf-1	Ra-225	6.11E-09	6.11E-09	SLPF(43,1)
Sf-1	Ra-226	2.50E-08	2.50E-08	SLPF(44,1)
Sf-1	Rn-222+D	1.69E-09	1.69E-09	SLPF(53,1)
Sf-1	Rn-222+D1	1.72E-09	1.69E-09	SLPF(56,1)
Sf-1	Rn-222+D2	5.49E-09	1.69E-09	SLPF(59,1)
Sf-1	Sm-148	0.00E+00	0.00E+00	SLPF(62,1)
Sf-1	Sr-90	4.83E-10	4.83E-10	SLPF(63,1)
Sf-1	Th-227	4.45E-07	4.45E-07	SLPF(64,1)
Sf-1	Th-229	2.24E-07	2.24E-07	SLPF(65,1)
Sf-1	Th-231	2.49E-08	2.49E-08	SLPF(66,1)
Sf-1	U-233	7.11E-10	7.11E-10	SLPF(69,1)
Sf-1	U-235	5.51E-07	5.51E-07	SLPF(70,1)
Sf-1	U-235m	0.00E+00	0.00E+00	SLPF(73,1)
Sf-1	Y-90	1.90E-08	1.90E-08	SLPF(76,1)
Sf-2	Inhalation, slope factors, 1/(pCi):			
Sf-2	Ac-225+D	2.86E-08	2.86E-08	SLPF(1,2)
Sf-2	Ac-227	1.49E-07	1.49E-07	SLPF(2,2)
Sf-2	Am-241	3.77E-08	3.77E-08	SLPF(5,2)
Sf-2	Bi-210	4.55E-10	4.55E-10	SLPF(6,2)
Sf-2	Bi-210+D	4.55E-10	4.55E-10	SLPF(7,2)
Sf-2	Bi-213+D	7.40E-11	7.40E-11	SLPF(8,2)

Cancer Risk Slope Factors Summary Table (continued)
Risk Library: DCFPAK3.02 Morbidity

Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-2	Bi-214+D	3.10E-11	3.10E-11	SLPF(9,2)
Sf-2	Co-60	1.01E-10	1.01E-10	SLPF(12,2)
Sf-2	Cs-137+D	1.13E-10	1.13E-10	SLPF(13,2)
Sf-2	Eu-152	1.91E-10	1.91E-10	SLPF(14,2)
Sf-2	Eu-154	2.06E-10	2.06E-10	SLPF(16,2)
Sf-2	Fr-223	4.07E-11	4.07E-11	SLPF(17,2)
Sf-2	Fr-223+D	4.07E-11	4.07E-11	SLPF(18,2)
Sf-2	Gd-152	9.10E-09	9.10E-09	SLPF(19,2)
Sf-2	H-3	8.47E-13	8.47E-13	SLPF(20,2)
Sf-2	Nd-144	1.04E-08	1.04E-08	SLPF(21,2)
Sf-2	Np-237	2.87E-08	2.87E-08	SLPF(22,2)
Sf-2	Pa-231	7.62E-08	7.62E-08	SLPF(23,2)
Sf-2	Pa-233	1.53E-11	1.53E-11	SLPF(26,2)
Sf-2	Pb-209	2.08E-13	2.08E-13	SLPF(27,2)
Sf-2	Pb-210	1.59E-08	1.59E-08	SLPF(28,2)
Sf-2	Pb-210+D	1.59E-08	1.59E-08	SLPF(30,2)
Sf-2	Pb-211+D	4.03E-11	4.03E-11	SLPF(31,2)
Sf-2	Pb-214	4.00E-11	4.00E-11	SLPF(32,2)
Sf-2	Po-210	1.45E-08	1.45E-08	SLPF(35,2)
Sf-2	Pu-239	5.55E-08	5.55E-08	SLPF(36,2)
Sf-2	Ra-223+D	2.92E-08	2.92E-08	SLPF(42,2)
Sf-2	Ra-225	2.62E-08	2.62E-08	SLPF(43,2)
Sf-2	Ra-226	2.81E-08	2.81E-08	SLPF(44,2)
Sf-2	Rn-222+D	0.00E+00	0.00E+00	SLPF(53,2)
Sf-2	Rn-222+D1	0.00E+00	0.00E+00	SLPF(56,2)
Sf-2	Rn-222+D2	0.00E+00	0.00E+00	SLPF(59,2)
Sf-2	Sm-148	1.08E-08	1.08E-08	SLPF(62,2)
Sf-2	Sr-90	4.25E-10	4.25E-10	SLPF(63,2)
Sf-2	Th-227	3.50E-08	3.50E-08	SLPF(64,2)
Sf-2	Th-229	1.75E-07	1.75E-07	SLPF(65,2)
Sf-2	Th-231	1.50E-12	1.50E-12	SLPF(66,2)
Sf-2	U-233	2.83E-08	2.83E-08	SLPF(69,2)
Sf-2	U-235	2.50E-08	2.50E-08	SLPF(70,2)
Sf-2	U-235m	1.87E-18	1.87E-18	SLPF(73,2)
Sf-2	Y-90	8.40E-12	8.40E-12	SLPF(76,2)
Sf-3	Food ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-225+D	2.72E-10	2.72E-10	SLPF(1,3)
Sf-3	Ac-227	2.45E-10	2.45E-10	SLPF(2,3)
Sf-3	Am-241	1.34E-10	1.34E-10	SLPF(5,3)
Sf-3	Bi-210	1.30E-11	1.30E-11	SLPF(6,3)
Sf-3	Bi-210+D	1.30E-11	1.30E-11	SLPF(7,3)
Sf-3	Bi-213+D	7.18E-13	7.18E-13	SLPF(8,3)
Sf-3	Bi-214+D	2.65E-13	2.65E-13	SLPF(9,3)
Sf-3	Co-60	2.23E-11	2.23E-11	SLPF(12,3)
Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(13,3)
Sf-3	Eu-152	8.32E-12	8.32E-12	SLPF(14,3)
Sf-3	Eu-154	1.42E-11	1.42E-11	SLPF(16,3)
Sf-3	Fr-223	1.01E-11	1.01E-11	SLPF(17,3)
Sf-3	Fr-223+D	1.01E-11	1.01E-11	SLPF(18,3)

Cancer Risk Slope Factors Summary Table (continued)
Risk Library: DCFPAK3.02 Morbidity

Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-3	Gd-152	3.85E-11	3.85E-11	SLPF(19,3)
Sf-3	H-3	1.44E-13	1.44E-13	SLPF(20,3)
Sf-3	Nd-144	3.92E-11	3.92E-11	SLPF(21,3)
Sf-3	Np-237	8.29E-11	8.29E-11	SLPF(22,3)
Sf-3	Pa-231	2.26E-10	2.26E-10	SLPF(23,3)
Sf-3	Pa-233	8.95E-12	8.95E-12	SLPF(26,3)
Sf-3	Pb-209	3.49E-13	3.49E-13	SLPF(27,3)
Sf-3	Pb-210	1.18E-09	1.18E-09	SLPF(28,3)
Sf-3	Pb-210+D	1.18E-09	1.18E-09	SLPF(30,3)
Sf-3	Pb-211+D	5.81E-13	5.81E-13	SLPF(31,3)
Sf-3	Pb-214	4.85E-13	4.85E-13	SLPF(32,3)
Sf-3	Po-210	2.25E-09	2.25E-09	SLPF(35,3)
Sf-3	Pu-239	1.74E-10	1.74E-10	SLPF(36,3)
Sf-3	Ra-223+D	3.39E-10	3.39E-10	SLPF(42,3)
Sf-3	Ra-225	1.54E-10	1.54E-10	SLPF(43,3)
Sf-3	Ra-226	5.14E-10	5.14E-10	SLPF(44,3)
Sf-3	Rn-222+D	0.00E+00	0.00E+00	SLPF(53,3)
Sf-3	Rn-222+D1	0.00E+00	0.00E+00	SLPF(56,3)
Sf-3	Rn-222+D2	0.00E+00	0.00E+00	SLPF(59,3)
Sf-3	Sm-148	4.11E-11	4.11E-11	SLPF(62,3)
Sf-3	Sr-90	6.88E-11	6.88E-11	SLPF(63,3)
Sf-3	Th-227	7.03E-11	7.03E-11	SLPF(64,3)
Sf-3	Th-229	2.90E-10	2.90E-10	SLPF(65,3)
Sf-3	Th-231	3.22E-12	3.22E-12	SLPF(66,3)
Sf-3	U-233	9.69E-11	9.69E-11	SLPF(69,3)
Sf-3	U-235	9.43E-11	9.43E-11	SLPF(70,3)
Sf-3	U-235m	1.06E-17	1.06E-17	SLPF(73,3)
Sf-3	Y-90	2.65E-11	2.65E-11	SLPF(76,3)
Sf-3	Water ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-225+D	1.89E-10	1.89E-10	SLPF(1,4)
Sf-3	Ac-227	2.01E-10	2.01E-10	SLPF(2,4)
Sf-3	Am-241	1.04E-10	1.04E-10	SLPF(5,4)
Sf-3	Bi-210	8.92E-12	8.92E-12	SLPF(6,4)
Sf-3	Bi-210+D	8.92E-12	8.92E-12	SLPF(7,4)
Sf-3	Bi-213+D	5.07E-13	5.07E-13	SLPF(8,4)
Sf-3	Bi-214+D	1.92E-13	1.92E-13	SLPF(9,4)
Sf-3	Co-60	1.58E-11	1.58E-11	SLPF(12,4)
Sf-3	Cs-137+D	3.05E-11	3.05E-11	SLPF(13,4)
Sf-3	Eu-152	5.84E-12	5.84E-12	SLPF(14,4)
Sf-3	Eu-154	9.84E-12	9.84E-12	SLPF(16,4)
Sf-3	Fr-223	7.36E-12	7.36E-12	SLPF(17,4)
Sf-3	Fr-223+D	7.36E-12	7.36E-12	SLPF(18,4)
Sf-3	Gd-152	2.97E-11	2.97E-11	SLPF(19,4)
Sf-3	H-3	1.12E-13	1.12E-13	SLPF(20,4)
Sf-3	Nd-144	3.07E-11	3.07E-11	SLPF(21,4)
Sf-3	Np-237	6.22E-11	6.22E-11	SLPF(22,4)
Sf-3	Pa-231	1.72E-10	1.72E-10	SLPF(23,4)
Sf-3	Pa-233	6.14E-12	6.14E-12	SLPF(26,4)
Sf-3	Pb-209	2.41E-13	2.41E-13	SLPF(27,4)

Cancer Risk Slope Factors Summary Table (continued)
Risk Library: DCFPAK3.02 Morbidity

Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-3	Pb-210	8.84E-10	8.84E-10	SLPF(28,4)
Sf-3	Pb-210+D	8.84E-10	8.84E-10	SLPF(30,4)
Sf-3	Pb-211+D	4.11E-13	4.11E-13	SLPF(31,4)
Sf-3	Pb-214	3.44E-13	3.44E-13	SLPF(32,4)
Sf-3	Po-210	1.78E-09	1.78E-09	SLPF(35,4)
Sf-3	Pu-239	1.35E-10	1.35E-10	SLPF(36,4)
Sf-3	Ra-223+D	2.38E-10	2.38E-10	SLPF(42,4)
Sf-3	Ra-225	1.14E-10	1.14E-10	SLPF(43,4)
Sf-3	Ra-226	3.85E-10	3.85E-10	SLPF(44,4)
Sf-3	Rn-222+D	0.00E+00	0.00E+00	SLPF(53,4)
Sf-3	Rn-222+D1	0.00E+00	0.00E+00	SLPF(56,4)
Sf-3	Rn-222+D2	0.00E+00	0.00E+00	SLPF(59,4)
Sf-3	Sm-148	3.20E-11	3.20E-11	SLPF(62,4)
Sf-3	Sr-90	5.59E-11	5.59E-11	SLPF(63,4)
Sf-3	Th-227	4.81E-11	4.81E-11	SLPF(64,4)
Sf-3	Th-229	2.23E-10	2.23E-10	SLPF(65,4)
Sf-3	Th-231	2.19E-12	2.19E-12	SLPF(66,4)
Sf-3	U-233	7.18E-11	7.18E-11	SLPF(69,4)
Sf-3	U-235	6.95E-11	6.95E-11	SLPF(70,4)
Sf-3	U-235m	7.62E-18	7.62E-18	SLPF(73,4)
Sf-3	Y-90	1.80E-11	1.80E-11	SLPF(76,4)
Sf-3	Soil ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-225+D	2.72E-10	2.72E-10	SLPF(1,5)
Sf-3	Ac-227	2.45E-10	2.45E-10	SLPF(2,5)
Sf-3	Am-241	1.34E-10	1.34E-10	SLPF(5,5)
Sf-3	Bi-210	1.30E-11	1.30E-11	SLPF(6,5)
Sf-3	Bi-210+D	1.30E-11	1.30E-11	SLPF(7,5)
Sf-3	Bi-213+D	7.18E-13	7.18E-13	SLPF(8,5)
Sf-3	Bi-214+D	2.65E-13	2.65E-13	SLPF(9,5)
Sf-3	Co-60	2.23E-11	2.23E-11	SLPF(12,5)
Sf-3	Cs-137+D	3.74E-11	3.74E-11	SLPF(13,5)
Sf-3	Eu-152	8.32E-12	8.32E-12	SLPF(14,5)
Sf-3	Eu-154	1.42E-11	1.42E-11	SLPF(16,5)
Sf-3	Fr-223	1.01E-11	1.01E-11	SLPF(17,5)
Sf-3	Fr-223+D	1.01E-11	1.01E-11	SLPF(18,5)
Sf-3	Gd-152	3.85E-11	3.85E-11	SLPF(19,5)
Sf-3	H-3	1.44E-13	1.44E-13	SLPF(20,5)
Sf-3	Nd-144	3.92E-11	3.92E-11	SLPF(21,5)
Sf-3	Np-237	8.29E-11	8.29E-11	SLPF(22,5)
Sf-3	Pa-231	2.26E-10	2.26E-10	SLPF(23,5)
Sf-3	Pa-233	8.95E-12	8.95E-12	SLPF(26,5)
Sf-3	Pb-209	3.49E-13	3.49E-13	SLPF(27,5)
Sf-3	Pb-210	1.18E-09	1.18E-09	SLPF(28,5)
Sf-3	Pb-210+D	1.18E-09	1.18E-09	SLPF(30,5)
Sf-3	Pb-211+D	5.81E-13	5.81E-13	SLPF(31,5)
Sf-3	Pb-214	4.85E-13	4.85E-13	SLPF(32,5)
Sf-3	Po-210	2.25E-09	2.25E-09	SLPF(35,5)
Sf-3	Pu-239	1.74E-10	1.74E-10	SLPF(36,5)
Sf-3	Ra-223+D	3.39E-10	3.39E-10	SLPF(42,5)

Cancer Risk Slope Factors Summary Table (continued)
Risk Library: DCFPAK3.02 Morbidity

Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-3	Ra-225	1.54E-10	1.54E-10	SLPF(43,5)
Sf-3	Ra-226	5.14E-10	5.14E-10	SLPF(44,5)
Sf-3	Rn-222+D	0.00E+00	0.00E+00	SLPF(53,5)
Sf-3	Rn-222+D1	0.00E+00	0.00E+00	SLPF(56,5)
Sf-3	Rn-222+D2	0.00E+00	0.00E+00	SLPF(59,5)
Sf-3	Sm-148	4.11E-11	4.11E-11	SLPF(62,5)
Sf-3	Sr-90	6.88E-11	6.88E-11	SLPF(63,5)
Sf-3	Th-227	7.03E-11	7.03E-11	SLPF(64,5)
Sf-3	Th-229	2.90E-10	2.90E-10	SLPF(65,5)
Sf-3	Th-231	3.22E-12	3.22E-12	SLPF(66,5)
Sf-3	U-233	9.69E-11	9.69E-11	SLPF(69,5)
Sf-3	U-235	9.43E-11	9.43E-11	SLPF(70,5)
Sf-3	U-235m	1.06E-17	1.06E-17	SLPF(73,5)
Sf-3	Y-90	2.65E-11	2.65E-11	SLPF(76,5)
Sf-Rn	Radon Inhalation slope factors, 1/(pCi):			
Sf-Rn	Rn-222	1.80E-12	1.80E-12	SLPFRN(1,1)
Sf-Rn	Po-218	3.70E-12	3.70E-12	SLPFRN(1,2)
Sf-Rn	Pb-214	6.20E-12	6.20E-12	SLPFRN(1,3)
Sf-Rn	Bi-214	1.50E-11	1.50E-11	SLPFRN(1,4)
Sf-Rn	Radon K factors, (mrem/WLM):			
Sf-Rn	Rn-222 Indoor	3.88E+02	3.88E+02	KFACTR(1,1)
Sf-Rn	Rn-222 Outdoor	3.88E+02	3.88E+02	KFACTR(1,2)

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Risk Slope and Environmental Transport Factors for the Ground Pathway

Nuclide (i)	Slope(i)*	ETFG(i,t) At Time in Years (dimensionless)								
	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	8.890E+01	1.000E+02	3.000E+02	1.000E+03
Ac-225	4.120E-08	5.291E-01	5.291E-01	5.291E-01	5.291E-01	5.291E-01	5.291E-01	5.291E-01	5.291E-01	5.291E-01
Ac-227	1.990E-10	5.340E-01	5.340E-01	5.340E-01	5.340E-01	5.340E-01	5.340E-01	5.340E-01	5.340E-01	5.340E-01
Am-241	2.770E-08	5.480E-01	5.480E-01	5.480E-01	5.480E-01	5.480E-01	5.480E-01	5.480E-01	5.480E-01	5.480E-01
At-217	9.360E-10	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01
At-218	2.740E-11	5.202E-01	5.202E-01	5.202E-01	5.202E-01	5.202E-01	5.202E-01	5.202E-01	5.202E-01	5.202E-01
At-219	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ba-137m	2.690E-06	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01
Bi-210	2.770E-09	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01
Bi-211	1.900E-07	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01
Bi-213	5.430E-07	5.203E-01	5.203E-01	5.203E-01	5.203E-01	5.203E-01	5.203E-01	5.203E-01	5.203E-01	5.203E-01
Bi-214	7.340E-06	5.202E-01	5.202E-01	5.202E-01	5.202E-01	5.202E-01	5.202E-01	5.202E-01	5.202E-01	5.202E-01
Bi-215	1.080E-06	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01
Co-60	1.240E-05	5.202E-01	5.202E-01	5.202E-01	5.202E-01	5.202E-01	5.202E-01	5.202E-01	5.202E-01	5.202E-01
Cs-137	5.520E-10	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01
Eu-152	5.410E-06	5.177E-01	5.177E-01	5.177E-01	5.177E-01	5.177E-01	5.177E-01	5.177E-01	5.177E-01	5.176E-01
Eu-154	5.850E-06	5.195E-01	5.195E-01	5.195E-01	5.195E-01	5.195E-01	5.195E-01	5.195E-01	5.195E-01	5.195E-01
Fr-221	1.050E-07	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01
Fr-223	1.350E-07	5.253E-01	5.253E-01	5.253E-01	5.253E-01	5.253E-01	5.253E-01	5.253E-01	5.253E-01	5.253E-01
Gd-152	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Hg-206	4.830E-07	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01
Nd-144	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Np-237	5.170E-08	5.482E-01	5.482E-01	5.482E-01	5.482E-01	5.482E-01	5.482E-01	5.482E-01	5.482E-01	5.482E-01
Pa-231	1.270E-07	5.253E-01	5.253E-01	5.253E-01	5.253E-01	5.253E-01	5.253E-01	5.253E-01	5.253E-01	5.253E-01
Pa-233	8.030E-07	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01
Pb-209	5.370E-10	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01
Pb-210	1.480E-09	5.518E-01	5.518E-01	5.518E-01	5.518E-01	5.518E-01	5.518E-01	5.518E-01	5.518E-01	5.518E-01
Pb-211	2.910E-07	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01
Pb-214	9.940E-07	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01
Po-210	4.510E-11	5.192E-01	5.192E-01	5.192E-01	5.192E-01	5.192E-01	5.192E-01	5.192E-01	5.192E-01	5.192E-01
Po-211	3.760E-08	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01
Po-213	1.730E-10	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01
Po-214	3.850E-10	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01
Po-215	7.480E-10	5.203E-01	5.203E-01	5.203E-01	5.203E-01	5.203E-01	5.203E-01	5.203E-01	5.203E-01	5.203E-01
Po-218	6.840E-15	5.333E-01	5.333E-01	5.333E-01	5.333E-01	5.333E-01	5.333E-01	5.333E-01	5.333E-01	5.333E-01
Pu-239	2.090E-10	5.301E-01	5.301E-01	5.301E-01	5.301E-01	5.301E-01	5.301E-01	5.301E-01	5.301E-01	5.301E-01
Ra-223	4.550E-07	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01
Ra-225	6.110E-09	5.482E-01	5.482E-01	5.482E-01	5.482E-01	5.482E-01	5.482E-01	5.482E-01	5.482E-01	5.482E-01
Ra-226	2.500E-08	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01
Rn-218	3.390E-09	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01
Rn-219	2.350E-07	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01
Rn-222	1.690E-09	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01
Sm-148	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Sr-90	4.830E-10	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01
Th-227	4.450E-07	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01
Th-229	2.240E-07	5.291E-01	5.291E-01	5.291E-01	5.291E-01	5.291E-01	5.291E-01	5.291E-01	5.291E-01	5.291E-01
Th-231	2.490E-08	5.518E-01	5.518E-01	5.518E-01	5.518E-01	5.518E-01	5.518E-01	5.518E-01	5.518E-01	5.518E-01
Tl-206	6.110E-09	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01
Tl-207	1.590E-08	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01
Tl-209	1.030E-05	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01

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Risk Slope and Environmental Transport Factors for the Ground Pathway

Nuclide (i)	Slope(i)* t=	ETFG(i,t) At Time in Years (dimensionless) 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	8.890E+01	1.000E+02	3.000E+02	1.000E+03
Tl-210	1.340E-05	5.192E-01	5.192E-01	5.192E-01	5.192E-01	5.192E-01	5.192E-01	5.192E-01	5.192E-01	5.192E-01
U-233	7.110E-10	5.274E-01	5.274E-01	5.274E-01	5.274E-01	5.274E-01	5.274E-01	5.274E-01	5.274E-01	5.274E-01
U-235	5.510E-07	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01
U-235m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-90	1.900E-08	5.192E-01	5.192E-01	5.192E-01	5.192E-01	5.192E-01	5.192E-01	5.192E-01	5.192E-01	5.192E-01

* - Units are 1/yr per (pCi/g) at infinite depth and area. Multiplication by ETFG(i,t) converts to site conditions.

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 0.000E+00 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-225	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ac-227	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Am-241	6.838E-02	0.000E+00	0.000E+00	0.000E+00	3.758E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.758E+01
Bi-210	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Bi-213	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Bi-214	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Co-60	1.815E-03	0.000E+00	0.000E+00	0.000E+00	9.975E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.975E-01
Cs-137	5.681E-03	0.000E+00	0.000E+00	0.000E+00	3.122E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.122E+00
Eu-152	6.536E-03	0.000E+00	0.000E+00	0.000E+00	3.592E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.592E+00
Eu-154	1.156E-02	0.000E+00	0.000E+00	0.000E+00	6.355E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.355E+00
Fr-223	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Gd-152	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
H-3	2.219E+04	0.000E+00	0.000E+00	0.000E+00	6.300E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.300E+01
Nd-144	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Np-237	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pa-231	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pa-233	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-209	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-211	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-214	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Po-210	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-239	1.302E-01	0.000E+00	0.000E+00	0.000E+00	7.156E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.156E+01
Ra-223	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-225	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	5.028E-02	0.000E+00	0.000E+00	0.000E+00	2.763E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.763E+01
Rn-222	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Sm-148	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Sr-90	1.664E-02	0.000E+00	0.000E+00	0.000E+00	9.146E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.146E+00
Th-227	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-229	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-231	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-233	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-235	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-235m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-90	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

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Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 0.000E+00 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-225	4.239E-19	0.0000	7.848E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.102E-20	0.0000
Ac-227	4.727E-21	0.0000	3.343E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.015E-19	0.0000
Am-241	5.362E-07	0.0037	6.703E-08	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.304E-07	0.0009
Bi-210	1.416E-08	0.0001	2.238E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.519E-09	0.0000
Bi-213	2.154E-18	0.0000	2.033E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.084E-22	0.0000
Bi-214	1.083E-04	0.7483	4.420E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.079E-10	0.0000
Co-60	1.735E-06	0.0120	1.360E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.658E-10	0.0000
Cs-137	3.219E-06	0.0222	1.385E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.528E-09	0.0000
Eu-152	5.567E-06	0.0385	1.912E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.572E-10	0.0000
Eu-154	7.880E-06	0.0544	2.687E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E-09	0.0000
Fr-223	4.355E-20	0.0000	1.256E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.713E-22	0.0000
Gd-152	0.000E+00	0.0000	3.041E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.066E-23	0.0000
H-3	0.000E+00	0.0000	1.163E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.610E-12	0.0000
Nd-144	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
Np-237	5.060E-12	0.0000	2.574E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.088E-13	0.0000
Pa-231	1.539E-17	0.0000	8.841E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.439E-18	0.0000
Pa-233	7.477E-11	0.0000	1.362E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.386E-14	0.0000
Pb-209	1.544E-21	0.0000	5.712E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.262E-23	0.0000
Pb-210	8.121E-09	0.0001	7.935E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.231E-07	0.0022
Pb-211	1.132E-17	0.0000	8.887E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.033E-22	0.0000
Pb-214	1.480E-05	0.1022	5.697E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.797E-10	0.0000
Po-210	2.202E-10	0.0000	6.855E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.853E-07	0.0040
Pu-239	8.595E-09	0.0001	2.164E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.736E-07	0.0026
Ra-223	1.592E-17	0.0000	6.432E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.099E-19	0.0000
Ra-225	1.841E-20	0.0000	7.229E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.331E-20	0.0000
Ra-226	3.786E-07	0.0026	4.072E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.088E-07	0.0028
Rn-222	2.484E-08	0.0002	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
Sm-148	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
Sr-90	1.673E-09	0.0000	1.408E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.251E-08	0.0001
Th-227	1.018E-17	0.0000	7.649E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.442E-20	0.0000
Th-229	6.565E-19	0.0000	4.863E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.444E-20	0.0000
Th-231	1.523E-14	0.0000	8.374E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.850E-17	0.0000
U-233	2.885E-18	0.0000	1.095E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.061E-17	0.0000
U-235	3.216E-13	0.0000	1.395E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.891E-15	0.0000
U-235m	0.000E+00	0.0000	7.262E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.269E-14	0.0000
Y-90	6.469E-08	0.0004	2.769E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.793E-09	0.0000
Total	1.426E-04	0.9848	3.511E-07	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.847E-06	0.0128

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-225	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	4.727E-19	0.0000
Ac-227	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	6.406E-19	0.0000
Am-241	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	7.336E-07	0.0051
Bi-210	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	1.790E-08	0.0001
Bi-213	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	2.154E-18	0.0000
Bi-214	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	1.083E-04	0.7483
Co-60	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	1.735E-06	0.0120
Cs-137	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	3.221E-06	0.0222
Eu-152	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	5.568E-06	0.0385
Eu-154	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	7.882E-06	0.0544
Fr-223	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	4.372E-20	0.0000
Gd-152	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	1.011E-22	0.0000
H-3	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	1.164E-08	0.0001
Nd-144	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
Np-237	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	5.726E-12	0.0000
Pa-231	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	1.772E-17	0.0000
Pa-233	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	7.481E-11	0.0000
Pb-209	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	1.597E-21	0.0000
Pb-210	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	3.392E-07	0.0023
Pb-211	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-17	0.0000
Pb-214	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	1.480E-05	0.1023
Po-210	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	5.924E-07	0.0041
Pu-239	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	5.986E-07	0.0041
Ra-223	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	1.640E-17	0.0000
Ra-225	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	4.895E-20	0.0000
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	8.281E-07	0.0057
Rn-222	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	2.484E-08	0.0002
Sm-148	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
Sr-90	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	1.433E-08	0.0001
Th-227	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	1.034E-17	0.0000
Th-229	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	7.495E-19	0.0000
Th-231	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	1.533E-14	0.0000
U-233	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	3.444E-17	0.0000
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	3.259E-13	0.0000
U-235m	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	2.270E-14	0.0000
Y-90	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	6.949E-08	0.0005
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	1.448E-04	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of Radon and its Decay Products at t= 0.000E+00 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Am-241	5.363E-07	0.0037	6.703E-08	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.304E-07	0.0009
Co-60	1.735E-06	0.0120	1.360E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.658E-10	0.0000
Cs-137	3.219E-06	0.0222	1.385E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.528E-09	0.0000
Eu-152	5.567E-06	0.0385	1.912E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.572E-10	0.0000
Eu-154	7.880E-06	0.0544	2.687E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E-09	0.0000
H-3	0.000E+00	0.0000	1.163E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.610E-12	0.0000
Pu-239	8.595E-09	0.0001	2.164E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.736E-07	0.0026
Ra-226	1.236E-04	0.8535	5.584E-08	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.321E-06	0.0091
Sr-90	6.637E-08	0.0005	1.436E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.731E-08	0.0001
Total	1.426E-04	0.9848	3.511E-07	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.847E-06	0.0128

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Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Am-241	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	7.337E-07	0.0051
Co-60	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	1.735E-06	0.0120
Cs-137	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	3.221E-06	0.0222
Eu-152	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	5.568E-06	0.0385
Eu-154	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	7.882E-06	0.0544
H-3	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	1.164E-08	0.0001
Pu-239	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	5.986E-07	0.0041
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	1.249E-04	0.8630
Sr-90	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	8.382E-08	0.0006
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	1.448E-04	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+00 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-225	8.133E-19	0.000E+00	0.000E+00	0.000E+00	4.470E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.470E-16
Ac-227	1.405E-17	0.000E+00	0.000E+00	0.000E+00	7.720E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.720E-15
Am-241	6.771E-02	0.000E+00	0.000E+00	0.000E+00	3.721E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.721E+01
Bi-210	1.450E-03	0.000E+00	0.000E+00	0.000E+00	7.968E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.968E-01
Bi-213	8.129E-19	0.000E+00	0.000E+00	0.000E+00	4.467E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.467E-16
Bi-214	4.955E-02	0.000E+00	0.000E+00	0.000E+00	2.723E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.723E+01
Co-60	1.591E-03	0.000E+00	0.000E+00	0.000E+00	8.744E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.744E-01
Cs-137	5.552E-03	0.000E+00	0.000E+00	0.000E+00	3.051E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.051E+00
Eu-152	6.209E-03	0.000E+00	0.000E+00	0.000E+00	3.412E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.412E+00
Eu-154	1.067E-02	0.000E+00	0.000E+00	0.000E+00	5.861E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.861E+00
Fr-223	1.938E-19	0.000E+00	0.000E+00	0.000E+00	1.065E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.065E-16
Gd-152	1.141E-17	0.000E+00	0.000E+00	0.000E+00	6.269E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.269E-15
H-3	4.409E+03	0.000E+00	0.000E+00	0.000E+00	1.252E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.252E+01
Nd-144	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Np-237	2.199E-08	0.000E+00	0.000E+00	0.000E+00	1.209E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.209E-05
Pa-231	1.342E-15	0.000E+00	0.000E+00	0.000E+00	7.374E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.374E-13
Pa-233	1.965E-08	0.000E+00	0.000E+00	0.000E+00	1.080E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.080E-05
Pb-209	8.113E-19	0.000E+00	0.000E+00	0.000E+00	4.459E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.459E-16
Pb-210	1.502E-03	0.000E+00	0.000E+00	0.000E+00	8.252E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.252E-01
Pb-211	9.898E-18	0.000E+00	0.000E+00	0.000E+00	5.439E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.439E-15
Pb-214	4.955E-02	0.000E+00	0.000E+00	0.000E+00	2.723E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.723E+01
Po-210	7.698E-04	0.000E+00	0.000E+00	0.000E+00	4.231E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.231E-01
Pu-239	1.302E-01	0.000E+00	0.000E+00	0.000E+00	7.155E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.155E+01
Ra-223	9.901E-18	0.000E+00	0.000E+00	0.000E+00	5.441E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.441E-15
Ra-225	9.295E-19	0.000E+00	0.000E+00	0.000E+00	5.108E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.108E-16
Ra-226	5.014E-02	0.000E+00	0.000E+00	0.000E+00	2.755E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.755E+01
Rn-222	4.956E-02	0.000E+00	0.000E+00	0.000E+00	2.723E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.723E+01
Sm-148	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Sr-90	1.616E-02	0.000E+00	0.000E+00	0.000E+00	8.879E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.879E+00
Th-227	1.120E-17	0.000E+00	0.000E+00	0.000E+00	6.157E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.157E-15
Th-229	1.119E-18	0.000E+00	0.000E+00	0.000E+00	6.150E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.150E-16
Th-231	1.274E-10	0.000E+00	0.000E+00	0.000E+00	7.004E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.004E-08
U-233	3.879E-14	0.000E+00	0.000E+00	0.000E+00	2.132E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.132E-11
U-235	1.280E-10	0.000E+00	0.000E+00	0.000E+00	7.033E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.033E-08
U-235m	1.301E-01	0.000E+00	0.000E+00	0.000E+00	7.151E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.151E+01
Y-90	1.616E-02	0.000E+00	0.000E+00	0.000E+00	8.882E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.882E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 1.000E+00 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-225	4.824E-19	0.0000	8.932E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.668E-20	0.0000
Ac-227	5.345E-21	0.0000	3.781E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.409E-19	0.0000
Am-241	5.310E-07	0.0037	6.637E-08	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.291E-07	0.0009
Bi-210	1.494E-08	0.0001	2.362E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.714E-09	0.0000
Bi-213	2.451E-18	0.0000	2.314E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.233E-22	0.0000
Bi-214	1.083E-04	0.7543	4.420E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.079E-10	0.0000
Co-60	1.521E-06	0.0106	1.192E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.453E-10	0.0000
Cs-137	3.146E-06	0.0219	1.353E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.471E-09	0.0000
Eu-152	5.288E-06	0.0368	1.816E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.343E-10	0.0000
Eu-154	7.268E-06	0.0506	2.478E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.363E-10	0.0000
Fr-223	4.925E-20	0.0000	1.420E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.937E-22	0.0000
Gd-152	0.000E+00	0.0000	3.199E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.433E-23	0.0000
H-3	0.000E+00	0.0000	2.310E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.114E-12	0.0000
Nd-144	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
Np-237	5.379E-12	0.0000	2.736E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.346E-13	0.0000
Pa-231	1.696E-17	0.0000	9.738E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.585E-18	0.0000
Pa-233	7.951E-11	0.0000	1.448E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.664E-14	0.0000
Pb-209	1.758E-21	0.0000	6.501E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.988E-23	0.0000
Pb-210	8.571E-09	0.0001	8.374E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.410E-07	0.0024
Pb-211	1.281E-17	0.0000	1.005E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.957E-22	0.0000
Pb-214	1.480E-05	0.1031	5.696E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.796E-10	0.0000
Po-210	2.328E-10	0.0000	7.249E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.190E-07	0.0043
Pu-239	8.594E-09	0.0001	2.164E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.735E-07	0.0026
Ra-223	1.801E-17	0.0000	7.277E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.637E-19	0.0000
Ra-225	2.095E-20	0.0000	8.225E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.652E-20	0.0000
Ra-226	3.775E-07	0.0026	4.061E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.076E-07	0.0028
Rn-222	2.484E-08	0.0002	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
Sm-148	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
Sr-90	1.624E-09	0.0000	1.367E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.215E-08	0.0001
Th-227	1.151E-17	0.0000	8.652E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.549E-20	0.0000
Th-229	7.468E-19	0.0000	5.531E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.056E-20	0.0000
Th-231	1.623E-14	0.0000	8.922E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.049E-16	0.0000
U-233	3.174E-18	0.0000	1.204E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.267E-17	0.0000
U-235	3.427E-13	0.0000	1.486E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.080E-15	0.0000
U-235m	0.000E+00	0.0000	7.280E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.275E-14	0.0000
Y-90	6.305E-08	0.0004	2.699E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.671E-09	0.0000
Total	1.414E-04	0.9844	3.418E-07	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.895E-06	0.0132

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-225	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	5.380E-19	0.0000
Ac-227	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	7.243E-19	0.0000
Am-241	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	7.265E-07	0.0051
Bi-210	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	1.889E-08	0.0001
Bi-213	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	2.451E-18	0.0000
Bi-214	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	1.083E-04	0.7543
Co-60	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	1.521E-06	0.0106
Cs-137	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	3.148E-06	0.0219
Eu-152	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	5.289E-06	0.0368
Eu-154	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	7.269E-06	0.0506
Fr-223	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	4.944E-20	0.0000
Gd-152	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	1.063E-22	0.0000
H-3	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	2.311E-09	0.0000
Nd-144	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
Np-237	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	6.087E-12	0.0000
Pa-231	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	1.951E-17	0.0000
Pa-233	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	7.956E-11	0.0000
Pb-209	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	1.818E-21	0.0000
Pb-210	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	3.580E-07	0.0025
Pb-211	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	1.281E-17	0.0000
Pb-214	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	1.480E-05	0.1031
Po-210	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	6.265E-07	0.0044
Pu-239	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	5.985E-07	0.0042
Ra-223	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	1.855E-17	0.0000
Ra-225	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	5.569E-20	0.0000
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	8.257E-07	0.0057
Rn-222	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	2.484E-08	0.0002
Sm-148	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
Sr-90	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	0.0001
Th-227	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	1.170E-17	0.0000
Th-229	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	8.526E-19	0.0000
Th-231	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	1.634E-14	0.0000
U-233	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	3.789E-17	0.0000
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	3.473E-13	0.0000
U-235m	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	2.275E-14	0.0000
Y-90	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	6.773E-08	0.0005
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	1.436E-04	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of Radon and its Decay Products at t= 1.000E+00 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Am-241	5.311E-07	0.0037	6.637E-08	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.291E-07	0.0009
Co-60	1.521E-06	0.0106	1.192E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.453E-10	0.0000
Cs-137	3.146E-06	0.0219	1.353E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.471E-09	0.0000
Eu-152	5.288E-06	0.0368	1.816E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.343E-10	0.0000
Eu-154	7.268E-06	0.0506	2.478E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.363E-10	0.0000
H-3	0.000E+00	0.0000	2.310E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.114E-12	0.0000
Pu-239	8.594E-09	0.0001	2.164E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.735E-07	0.0026
Ra-226	1.236E-04	0.8603	5.657E-08	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.372E-06	0.0096
Sr-90	6.468E-08	0.0005	1.394E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.682E-08	0.0001
Total	1.414E-04	0.9844	3.418E-07	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.895E-06	0.0132

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Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Am-241	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	7.265E-07	0.0051
Co-60	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	1.521E-06	0.0106
Cs-137	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	3.148E-06	0.0219
Eu-152	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	5.289E-06	0.0368
Eu-154	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	7.269E-06	0.0506
H-3	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	2.311E-09	0.0000
Pu-239	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	5.985E-07	0.0042
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	1.250E-04	0.8702
Sr-90	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	8.164E-08	0.0006
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	1.436E-04	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+00 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-225	3.294E-17	0.000E+00	0.000E+00	0.000E+00	1.810E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.810E-14
Ac-227	3.737E-16	0.000E+00	0.000E+00	0.000E+00	2.054E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.054E-13
Am-241	6.639E-02	0.000E+00	0.000E+00	0.000E+00	3.648E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.648E+01
Bi-210	4.299E-03	0.000E+00	0.000E+00	0.000E+00	2.362E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.362E+00
Bi-213	3.293E-17	0.000E+00	0.000E+00	0.000E+00	1.810E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.810E-14
Bi-214	4.928E-02	0.000E+00	0.000E+00	0.000E+00	2.708E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.708E+01
Co-60	1.223E-03	0.000E+00	0.000E+00	0.000E+00	6.720E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.720E-01
Cs-137	5.302E-03	0.000E+00	0.000E+00	0.000E+00	2.914E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.914E+00
Eu-152	5.602E-03	0.000E+00	0.000E+00	0.000E+00	3.079E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.079E+00
Eu-154	9.073E-03	0.000E+00	0.000E+00	0.000E+00	4.986E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.986E+00
Fr-223	5.157E-18	0.000E+00	0.000E+00	0.000E+00	2.834E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.834E-15
Gd-152	3.253E-17	0.000E+00	0.000E+00	0.000E+00	1.788E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.788E-14
H-3	1.736E+02	0.000E+00	0.000E+00	0.000E+00	4.930E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.930E-01
Nd-144	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Np-237	6.529E-08	0.000E+00	0.000E+00	0.000E+00	3.588E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.588E-05
Pa-231	1.209E-14	0.000E+00	0.000E+00	0.000E+00	6.645E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.645E-12
Pa-233	6.298E-08	0.000E+00	0.000E+00	0.000E+00	3.461E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.461E-05
Pb-209	3.291E-17	0.000E+00	0.000E+00	0.000E+00	1.809E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.809E-14
Pb-210	4.392E-03	0.000E+00	0.000E+00	0.000E+00	2.414E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.414E+00
Pb-211	3.326E-16	0.000E+00	0.000E+00	0.000E+00	1.828E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.828E-13
Pb-214	4.927E-02	0.000E+00	0.000E+00	0.000E+00	2.708E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.708E+01
Po-210	3.512E-03	0.000E+00	0.000E+00	0.000E+00	1.930E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.930E+00
Pu-239	1.302E-01	0.000E+00	0.000E+00	0.000E+00	7.154E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.154E+01
Ra-223	3.326E-16	0.000E+00	0.000E+00	0.000E+00	1.828E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.828E-13
Ra-225	3.433E-17	0.000E+00	0.000E+00	0.000E+00	1.887E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.887E-14
Ra-226	4.986E-02	0.000E+00	0.000E+00	0.000E+00	2.740E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.740E+01
Rn-222	4.928E-02	0.000E+00	0.000E+00	0.000E+00	2.708E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.708E+01
Sm-148	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.723E-30	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.723E-30
Sr-90	1.523E-02	0.000E+00	0.000E+00	0.000E+00	8.369E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.369E+00
Th-227	3.429E-16	0.000E+00	0.000E+00	0.000E+00	1.885E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.885E-13
Th-229	3.646E-17	0.000E+00	0.000E+00	0.000E+00	2.004E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.004E-14
Th-231	3.821E-10	0.000E+00	0.000E+00	0.000E+00	2.100E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.100E-07
U-233	3.980E-13	0.000E+00	0.000E+00	0.000E+00	2.187E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.187E-10
U-235	3.827E-10	0.000E+00	0.000E+00	0.000E+00	2.103E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.103E-07
U-235m	1.301E-01	0.000E+00	0.000E+00	0.000E+00	7.150E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.150E+01
Y-90	1.523E-02	0.000E+00	0.000E+00	0.000E+00	8.371E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.371E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

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Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 3.000E+00 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-225	6.171E-19	0.0000	1.143E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.971E-20	0.0000
Ac-227	6.751E-21	0.0000	4.775E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.306E-19	0.0000
Am-241	5.206E-07	0.0037	6.508E-08	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.266E-07	0.0009
Bi-210	1.643E-08	0.0001	2.597E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.083E-09	0.0000
Bi-213	3.135E-18	0.0000	2.960E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.578E-22	0.0000
Bi-214	1.077E-04	0.7645	4.395E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.067E-10	0.0000
Co-60	1.169E-06	0.0083	9.163E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.117E-10	0.0000
Cs-137	3.004E-06	0.0213	1.292E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.359E-09	0.0000
Eu-152	4.772E-06	0.0339	1.639E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.919E-10	0.0000
Eu-154	6.183E-06	0.0439	2.108E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.965E-10	0.0000
Fr-223	6.220E-20	0.0000	1.794E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.447E-22	0.0000
Gd-152	0.000E+00	0.0000	3.492E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.113E-23	0.0000
H-3	0.000E+00	0.0000	9.090E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.384E-14	0.0000
Nd-144	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
Np-237	6.006E-12	0.0000	3.055E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.853E-13	0.0000
Pa-231	2.037E-17	0.0000	1.170E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.904E-18	0.0000
Pa-233	8.886E-11	0.0000	1.619E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.212E-14	0.0000
Pb-209	2.248E-21	0.0000	8.315E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.660E-23	0.0000
Pb-210	9.421E-09	0.0001	9.204E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.748E-07	0.0027
Pb-211	1.620E-17	0.0000	1.271E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.006E-21	0.0000
Pb-214	1.472E-05	0.1045	5.665E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.775E-10	0.0000
Po-210	2.571E-10	0.0000	8.005E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.835E-07	0.0049
Pu-239	8.592E-09	0.0001	2.163E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.734E-07	0.0027
Ra-223	2.277E-17	0.0000	9.200E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.863E-19	0.0000
Ra-225	2.678E-20	0.0000	1.052E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.392E-20	0.0000
Ra-226	3.754E-07	0.0027	4.038E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.053E-07	0.0029
Rn-222	2.470E-08	0.0002	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
Sm-148	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
Sr-90	1.531E-09	0.0000	1.288E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.145E-08	0.0001
Th-227	1.455E-17	0.0000	1.093E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.207E-19	0.0000
Th-229	9.545E-19	0.0000	7.070E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.462E-20	0.0000
Th-231	1.822E-14	0.0000	1.001E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.178E-16	0.0000
U-233	3.802E-18	0.0000	1.443E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.716E-17	0.0000
U-235	3.846E-13	0.0000	1.667E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.457E-15	0.0000
U-235m	0.000E+00	0.0000	7.278E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.274E-14	0.0000
Y-90	5.943E-08	0.0004	2.544E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.403E-09	0.0000
Total	1.386E-04	0.9835	3.396E-07	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.988E-06	0.0141

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-225	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	6.882E-19	0.0000
Ac-227	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	9.149E-19	0.0000
Am-241	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	7.123E-07	0.0051
Bi-210	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	2.077E-08	0.0001
Bi-213	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	3.135E-18	0.0000
Bi-214	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	1.077E-04	0.7645
Co-60	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	1.169E-06	0.0083
Cs-137	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	3.006E-06	0.0213
Eu-152	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	4.772E-06	0.0339
Eu-154	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	6.184E-06	0.0439
Fr-223	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	6.245E-20	0.0000
Gd-152	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	1.160E-22	0.0000
H-3	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	9.095E-11	0.0000
Nd-144	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
Np-237	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	6.797E-12	0.0000
Pa-231	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	2.344E-17	0.0000
Pa-233	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	8.891E-11	0.0000
Pb-209	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	2.325E-21	0.0000
Pb-210	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	3.935E-07	0.0028
Pb-211	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	1.620E-17	0.0000
Pb-214	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	1.472E-05	0.1045
Po-210	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	6.918E-07	0.0049
Pu-239	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	5.984E-07	0.0042
Ra-223	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	2.345E-17	0.0000
Ra-225	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	7.122E-20	0.0000
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	8.211E-07	0.0058
Rn-222	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	2.470E-08	0.0002
Sm-148	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
Sr-90	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	1.311E-08	0.0001
Th-227	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	1.478E-17	0.0000
Th-229	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	1.090E-18	0.0000
Th-231	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	1.833E-14	0.0000
U-233	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	4.539E-17	0.0000
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	3.897E-13	0.0000
U-235m	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	2.275E-14	0.0000
Y-90	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	6.384E-08	0.0005
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	1.409E-04	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of Radon and its Decay Products at t= 3.000E+00 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Am-241	5.207E-07	0.0037	6.508E-08	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.266E-07	0.0009
Co-60	1.169E-06	0.0083	9.163E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.117E-10	0.0000
Cs-137	3.004E-06	0.0213	1.292E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.359E-09	0.0000
Eu-152	4.772E-06	0.0339	1.639E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.919E-10	0.0000
Eu-154	6.183E-06	0.0439	2.108E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.965E-10	0.0000
H-3	0.000E+00	0.0000	9.090E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.384E-14	0.0000
Pu-239	8.592E-09	0.0001	2.163E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.734E-07	0.0027
Ra-226	1.229E-04	0.8719	5.795E-08	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.468E-06	0.0104
Sr-90	6.096E-08	0.0004	1.314E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.585E-08	0.0001
Total	1.386E-04	0.9835	3.396E-07	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.988E-06	0.0141

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Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Am-241	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	7.124E-07	0.0051
Co-60	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	1.169E-06	0.0083
Cs-137	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	3.006E-06	0.0213
Eu-152	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	4.772E-06	0.0339
Eu-154	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	6.184E-06	0.0439
H-3	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	9.095E-11	0.0000
Pu-239	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	5.984E-07	0.0042
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	1.244E-04	0.8828
Sr-90	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	7.695E-08	0.0005
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	1.409E-04	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+01 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-225	1.376E-15	0.000E+00	0.000E+00	0.000E+00	7.560E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.560E-13
Ac-227	1.282E-14	0.000E+00	0.000E+00	0.000E+00	7.046E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.046E-12
Am-241	6.196E-02	0.000E+00	0.000E+00	0.000E+00	3.405E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.405E+01
Bi-210	1.279E-02	0.000E+00	0.000E+00	0.000E+00	7.031E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.031E+00
Bi-213	1.376E-15	0.000E+00	0.000E+00	0.000E+00	7.559E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.559E-13
Bi-214	4.832E-02	0.000E+00	0.000E+00	0.000E+00	2.655E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.655E+01
Co-60	4.865E-04	0.000E+00	0.000E+00	0.000E+00	2.674E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.674E-01
Cs-137	4.514E-03	0.000E+00	0.000E+00	0.000E+00	2.480E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.480E+00
Eu-152	3.909E-03	0.000E+00	0.000E+00	0.000E+00	2.148E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.148E+00
Eu-154	5.151E-03	0.000E+00	0.000E+00	0.000E+00	2.831E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.831E+00
Fr-223	1.769E-16	0.000E+00	0.000E+00	0.000E+00	9.723E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.723E-14
Gd-152	9.141E-17	0.000E+00	0.000E+00	0.000E+00	5.024E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.024E-14
H-3	2.054E-03	0.000E+00	0.000E+00	0.000E+00	5.831E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.831E-06
Nd-144	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Np-237	2.098E-07	0.000E+00	0.000E+00	0.000E+00	1.153E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.153E-04
Pa-231	1.325E-13	0.000E+00	0.000E+00	0.000E+00	7.282E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.282E-11
Pa-233	2.076E-07	0.000E+00	0.000E+00	0.000E+00	1.141E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.141E-04
Pb-209	1.375E-15	0.000E+00	0.000E+00	0.000E+00	7.558E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.558E-13
Pb-210	1.301E-02	0.000E+00	0.000E+00	0.000E+00	7.151E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.151E+00
Pb-211	1.239E-14	0.000E+00	0.000E+00	0.000E+00	6.809E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.809E-12
Pb-214	4.831E-02	0.000E+00	0.000E+00	0.000E+00	2.655E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.655E+01
Po-210	1.210E-02	0.000E+00	0.000E+00	0.000E+00	6.648E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.648E+00
Pu-239	1.301E-01	0.000E+00	0.000E+00	0.000E+00	7.148E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.148E+01
Ra-223	1.239E-14	0.000E+00	0.000E+00	0.000E+00	6.809E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.809E-12
Ra-225	1.393E-15	0.000E+00	0.000E+00	0.000E+00	7.653E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.653E-13
Ra-226	4.889E-02	0.000E+00	0.000E+00	0.000E+00	2.687E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.687E+01
Rn-222	4.832E-02	0.000E+00	0.000E+00	0.000E+00	2.655E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.655E+01
Sm-148	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.698E-29	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.698E-29
Sr-90	1.238E-02	0.000E+00	0.000E+00	0.000E+00	6.803E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.803E+00
Th-227	1.238E-14	0.000E+00	0.000E+00	0.000E+00	6.803E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.803E-12
Th-229	1.418E-15	0.000E+00	0.000E+00	0.000E+00	7.790E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.790E-13
Th-231	1.260E-09	0.000E+00	0.000E+00	0.000E+00	6.924E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.924E-07
U-233	4.500E-12	0.000E+00	0.000E+00	0.000E+00	2.473E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.473E-09
U-235	1.260E-09	0.000E+00	0.000E+00	0.000E+00	6.926E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.926E-07
U-235m	1.300E-01	0.000E+00	0.000E+00	0.000E+00	7.144E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.144E+01
Y-90	1.238E-02	0.000E+00	0.000E+00	0.000E+00	6.805E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.805E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

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Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 1.000E+01 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-225	1.308E-18	0.0000	2.421E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.265E-19	0.0000
Ac-227	1.370E-20	0.0000	9.694E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.741E-19	0.0000
Am-241	4.859E-07	0.0036	6.074E-08	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.182E-07	0.0009
Bi-210	2.082E-08	0.0002	3.290E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.174E-09	0.0000
Bi-213	6.643E-18	0.0000	6.272E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.343E-22	0.0000
Bi-214	1.056E-04	0.7913	4.310E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.027E-10	0.0000
Co-60	4.650E-07	0.0035	3.646E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.443E-11	0.0000
Cs-137	2.557E-06	0.0192	1.100E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.008E-09	0.0000
Eu-152	3.330E-06	0.0249	1.144E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.734E-10	0.0000
Eu-154	3.510E-06	0.0263	1.197E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.522E-10	0.0000
Fr-223	1.263E-19	0.0000	3.642E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.967E-22	0.0000
Gd-152	0.000E+00	0.0000	4.307E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.001E-22	0.0000
H-3	0.000E+00	0.0000	1.071E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.167E-19	0.0000
Nd-144	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
Np-237	8.100E-12	0.0000	4.120E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.544E-13	0.0000
Pa-231	3.530E-17	0.0000	2.027E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.299E-18	0.0000
Pa-233	1.200E-10	0.0000	2.187E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.041E-14	0.0000
Pb-209	4.764E-21	0.0000	1.762E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.623E-22	0.0000
Pb-210	1.193E-08	0.0001	1.166E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.748E-07	0.0036
Pb-211	3.296E-17	0.0000	2.587E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.047E-21	0.0000
Pb-214	1.443E-05	0.1081	5.554E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.702E-10	0.0000
Po-210	3.290E-10	0.0000	1.024E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.746E-07	0.0066
Pu-239	8.585E-09	0.0001	2.162E-07	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.732E-07	0.0028
Ra-223	4.635E-17	0.0000	1.872E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.193E-18	0.0000
Ra-225	5.671E-20	0.0000	2.227E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.181E-20	0.0000
Ra-226	3.681E-07	0.0028	3.959E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.975E-07	0.0030
Rn-222	2.422E-08	0.0002	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
Sm-148	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
Sr-90	1.245E-09	0.0000	1.047E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.308E-09	0.0001
Th-227	2.959E-17	0.0000	2.223E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.454E-19	0.0000
Th-229	2.018E-18	0.0000	1.495E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.366E-19	0.0000
Th-231	2.505E-14	0.0000	1.377E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.620E-16	0.0000
U-233	6.519E-18	0.0000	2.474E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.656E-17	0.0000
U-235	5.289E-13	0.0000	2.293E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.754E-15	0.0000
U-235m	0.000E+00	0.0000	7.273E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.272E-14	0.0000
Y-90	4.831E-08	0.0004	2.068E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.579E-09	0.0000
Total	1.309E-04	0.9805	3.390E-07	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.260E-06	0.0169

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-225	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	1.458E-18	0.0000
Ac-227	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	1.857E-18	0.0000
Am-241	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	6.648E-07	0.0050
Bi-210	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	2.632E-08	0.0002
Bi-213	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	6.644E-18	0.0000
Bi-214	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	1.056E-04	0.7913
Co-60	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	4.650E-07	0.0035
Cs-137	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	2.559E-06	0.0192
Eu-152	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	3.330E-06	0.0249
Eu-154	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	3.511E-06	0.0263
Fr-223	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	1.268E-19	0.0000
Gd-152	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	1.431E-22	0.0000
H-3	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	1.072E-15	0.0000
Nd-144	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
Np-237	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	9.166E-12	0.0000
Pa-231	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	4.062E-17	0.0000
Pa-233	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	1.201E-10	0.0000
Pb-209	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	4.927E-21	0.0000
Pb-210	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	4.984E-07	0.0037
Pb-211	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	3.297E-17	0.0000
Pb-214	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	1.443E-05	0.1081
Po-210	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	8.852E-07	0.0066
Pu-239	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	5.979E-07	0.0045
Ra-223	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	4.773E-17	0.0000
Ra-225	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	1.508E-19	0.0000
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	8.051E-07	0.0060
Rn-222	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	2.422E-08	0.0002
Sm-148	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
Sr-90	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	1.066E-08	0.0001
Th-227	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	3.006E-17	0.0000
Th-229	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	2.304E-18	0.0000
Th-231	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	2.522E-14	0.0000
U-233	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	7.782E-17	0.0000
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	5.359E-13	0.0000
U-235m	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	2.273E-14	0.0000
Y-90	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	5.189E-08	0.0004
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	1.335E-04	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of Radon and its Decay Products at t= 1.000E+01 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 1.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Am-241	4.861E-07	0.0036	6.074E-08	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.182E-07	0.0009
Co-60	4.650E-07	0.0035	3.646E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.443E-11	0.0000
Cs-137	2.557E-06	0.0192	1.100E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.008E-09	0.0000
Eu-152	3.330E-06	0.0249	1.144E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.734E-10	0.0000
Eu-154	3.510E-06	0.0263	1.197E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.522E-10	0.0000
H-3	0.000E+00	0.0000	1.071E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.167E-19	0.0000
Pu-239	8.586E-09	0.0001	2.162E-07	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.732E-07	0.0028
Ra-226	1.205E-04	0.9026	6.192E-08	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.753E-06	0.0131
Sr-90	4.956E-08	0.0004	1.068E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.289E-08	0.0001
Total	1.309E-04	0.9805	3.390E-07	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.260E-06	0.0169

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Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Am-241	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	6.650E-07	0.0050
Co-60	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	4.650E-07	0.0035
Cs-137	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	2.559E-06	0.0192
Eu-152	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	3.330E-06	0.0249
Eu-154	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	3.511E-06	0.0263
H-3	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	1.072E-15	0.0000
Pu-239	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	5.979E-07	0.0045
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	1.223E-04	0.9162
Sr-90	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	6.255E-08	0.0005
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	1.335E-04	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+01 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-225	3.614E-14	0.000E+00	0.000E+00	0.000E+00	1.986E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.986E-11
Ac-227	2.797E-13	0.000E+00	0.000E+00	0.000E+00	1.537E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.537E-10
Am-241	5.089E-02	0.000E+00	0.000E+00	0.000E+00	2.796E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.796E+01
Bi-210	2.774E-02	0.000E+00	0.000E+00	0.000E+00	1.524E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.524E+01
Bi-213	3.614E-14	0.000E+00	0.000E+00	0.000E+00	1.986E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.986E-11
Bi-214	4.568E-02	0.000E+00	0.000E+00	0.000E+00	2.510E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.510E+01
Co-60	3.495E-05	0.000E+00	0.000E+00	0.000E+00	1.921E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.921E-02
Cs-137	2.849E-03	0.000E+00	0.000E+00	0.000E+00	1.565E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.565E+00
Eu-152	1.398E-03	0.000E+00	0.000E+00	0.000E+00	7.684E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.684E-01
Eu-154	1.022E-03	0.000E+00	0.000E+00	0.000E+00	5.617E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.617E-01
Fr-223	3.860E-15	0.000E+00	0.000E+00	0.000E+00	2.121E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.121E-12
Gd-152	1.783E-16	0.000E+00	0.000E+00	0.000E+00	9.798E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.798E-14
H-3	1.385E-17	0.000E+00	0.000E+00	0.000E+00	3.934E-20	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.934E-20
Nd-144	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Np-237	5.684E-07	0.000E+00	0.000E+00	0.000E+00	3.124E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.124E-04
Pa-231	1.141E-12	0.000E+00	0.000E+00	0.000E+00	6.269E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.269E-10
Pa-233	5.665E-07	0.000E+00	0.000E+00	0.000E+00	3.113E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.113E-04
Pb-209	3.614E-14	0.000E+00	0.000E+00	0.000E+00	1.986E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.986E-11
Pb-210	2.818E-02	0.000E+00	0.000E+00	0.000E+00	1.548E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.548E+01
Pb-211	2.767E-13	0.000E+00	0.000E+00	0.000E+00	1.521E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.521E-10
Pb-214	4.567E-02	0.000E+00	0.000E+00	0.000E+00	2.510E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.510E+01
Po-210	2.722E-02	0.000E+00	0.000E+00	0.000E+00	1.496E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.496E+01
Pu-239	1.298E-01	0.000E+00	0.000E+00	0.000E+00	7.132E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.132E+01
Ra-223	2.767E-13	0.000E+00	0.000E+00	0.000E+00	1.521E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.521E-10
Ra-225	3.629E-14	0.000E+00	0.000E+00	0.000E+00	1.995E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.995E-11
Ra-226	4.622E-02	0.000E+00	0.000E+00	0.000E+00	2.540E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.540E+01
Rn-222	4.568E-02	0.000E+00	0.000E+00	0.000E+00	2.510E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.510E+01
Sm-148	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.814E-28	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.814E-28
Sr-90	6.849E-03	0.000E+00	0.000E+00	0.000E+00	3.764E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.764E+00
Th-227	2.740E-13	0.000E+00	0.000E+00	0.000E+00	1.506E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.506E-10
Th-229	3.651E-14	0.000E+00	0.000E+00	0.000E+00	2.006E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.006E-11
Th-231	3.654E-09	0.000E+00	0.000E+00	0.000E+00	2.008E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.008E-06
U-233	3.752E-11	0.000E+00	0.000E+00	0.000E+00	2.062E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.062E-08
U-235	3.655E-09	0.000E+00	0.000E+00	0.000E+00	2.009E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.009E-06
U-235m	1.297E-01	0.000E+00	0.000E+00	0.000E+00	7.128E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.128E+01
Y-90	6.852E-03	0.000E+00	0.000E+00	0.000E+00	3.765E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.765E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 3.000E+01 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-225	5.920E-18	0.0000	1.096E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.728E-19	0.0000
Ac-227	5.507E-20	0.0000	3.896E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.513E-18	0.0000
Am-241	3.990E-07	0.0033	4.988E-08	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.704E-08	0.0008
Bi-210	2.827E-08	0.0002	4.468E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.027E-09	0.0001
Bi-213	3.008E-17	0.0000	2.839E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.514E-21	0.0000
Bi-214	9.986E-05	0.8258	4.074E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.916E-10	0.0000
Co-60	3.341E-08	0.0003	2.619E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.192E-12	0.0000
Cs-137	1.614E-06	0.0133	6.943E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.268E-09	0.0000
Eu-152	1.191E-06	0.0098	4.090E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.781E-11	0.0000
Eu-154	6.966E-07	0.0058	2.375E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.973E-11	0.0000
Fr-223	5.075E-19	0.0000	1.464E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.996E-21	0.0000
Gd-152	0.000E+00	0.0000	5.504E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.279E-22	0.0000
H-3	0.000E+00	0.0000	6.490E-30	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Nd-144	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
Np-237	1.328E-11	0.0000	6.757E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.073E-12	0.0000
Pa-231	1.018E-16	0.0000	5.845E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.513E-18	0.0000
Pa-233	1.973E-10	0.0000	3.593E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.157E-13	0.0000
Pb-209	2.157E-20	0.0000	7.978E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.349E-22	0.0000
Pb-210	1.620E-08	0.0001	1.583E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.445E-07	0.0053
Pb-211	1.330E-16	0.0000	1.044E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.264E-21	0.0000
Pb-214	1.365E-05	0.1128	5.251E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.500E-10	0.0000
Po-210	4.512E-10	0.0000	1.405E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.200E-06	0.0099
Pu-239	8.566E-09	0.0001	2.157E-07	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.723E-07	0.0031
Ra-223	1.871E-16	0.0000	7.558E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.817E-18	0.0000
Ra-225	2.563E-19	0.0000	1.007E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.246E-19	0.0000
Ra-226	3.480E-07	0.0029	3.743E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.758E-07	0.0031
Rn-222	2.289E-08	0.0002	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
Sm-148	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
Sr-90	6.886E-10	0.0000	5.795E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.150E-09	0.0000
Th-227	1.192E-16	0.0000	8.959E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.888E-19	0.0000
Th-229	9.104E-18	0.0000	6.743E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.163E-19	0.0000
Th-231	4.370E-14	0.0000	2.402E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.826E-16	0.0000
U-233	1.812E-17	0.0000	6.875E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.294E-16	0.0000
U-235	9.225E-13	0.0000	4.000E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.292E-15	0.0000
U-235m	0.000E+00	0.0000	7.256E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.267E-14	0.0000
Y-90	2.673E-08	0.0002	1.144E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.980E-09	0.0000
Total	1.179E-04	0.9749	3.335E-07	0.0028	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.705E-06	0.0224

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-225	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	6.602E-18	0.0000
Ac-227	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	7.464E-18	0.0000
Am-241	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	5.460E-07	0.0045
Bi-210	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	3.574E-08	0.0003
Bi-213	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	3.008E-17	0.0000
Bi-214	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	9.986E-05	0.8258
Co-60	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	3.341E-08	0.0003
Cs-137	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	1.615E-06	0.0134
Eu-152	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	1.191E-06	0.0098
Eu-154	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	6.967E-07	0.0058
Fr-223	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	5.095E-19	0.0000
Gd-152	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	1.829E-22	0.0000
H-3	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	6.490E-30	0.0000
Nd-144	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
Np-237	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	1.503E-11	0.0000
Pa-231	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	1.171E-16	0.0000
Pa-233	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	1.974E-10	0.0000
Pb-209	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	2.231E-20	0.0000
Pb-210	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	6.766E-07	0.0056
Pb-211	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	1.331E-16	0.0000
Pb-214	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	1.365E-05	0.1128
Po-210	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	1.214E-06	0.0100
Pu-239	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	5.966E-07	0.0049
Ra-223	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	1.927E-16	0.0000
Ra-225	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	6.816E-19	0.0000
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	7.612E-07	0.0063
Rn-222	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	2.289E-08	0.0002
Sm-148	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
Sr-90	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	5.897E-09	0.0000
Th-227	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	1.211E-16	0.0000
Th-229	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	1.039E-17	0.0000
Th-231	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	4.399E-14	0.0000
U-233	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	2.163E-16	0.0000
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	9.348E-13	0.0000
U-235m	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	2.268E-14	0.0000
Y-90	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	2.871E-08	0.0002
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	1.209E-04	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of Radon and its Decay Products at t= 3.000E+01 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Am-241	3.993E-07	0.0033	4.988E-08	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.704E-08	0.0008
Co-60	3.341E-08	0.0003	2.619E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.192E-12	0.0000
Cs-137	1.614E-06	0.0133	6.943E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.268E-09	0.0000
Eu-152	1.191E-06	0.0098	4.090E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.781E-11	0.0000
Eu-154	6.966E-07	0.0058	2.375E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.973E-11	0.0000
H-3	0.000E+00	0.0000	6.490E-30	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
Pu-239	8.567E-09	0.0001	2.157E-07	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.723E-07	0.0031
Ra-226	1.139E-04	0.9420	6.785E-08	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.227E-06	0.0184
Sr-90	2.742E-08	0.0002	5.910E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.131E-09	0.0001
Total	1.179E-04	0.9749	3.335E-07	0.0028	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.705E-06	0.0224

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Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Am-241	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	5.462E-07	0.0045
Co-60	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	3.341E-08	0.0003
Cs-137	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	1.615E-06	0.0134
Eu-152	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	1.191E-06	0.0098
Eu-154	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	6.967E-07	0.0058
H-3	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	6.490E-30	0.0000
Pu-239	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	5.966E-07	0.0049
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	1.162E-04	0.9610
Sr-90	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	3.461E-08	0.0003
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	1.209E-04	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 8.890E+01 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-225	7.846E-13	0.000E+00	0.000E+00	0.000E+00	4.312E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.312E-10
Ac-227	4.259E-12	0.000E+00	0.000E+00	0.000E+00	2.340E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.340E-09
Am-241	2.849E-02	0.000E+00	0.000E+00	0.000E+00	1.566E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.566E+01
Bi-210	3.685E-02	0.000E+00	0.000E+00	0.000E+00	2.025E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.025E+01
Bi-213	7.846E-13	0.000E+00	0.000E+00	0.000E+00	4.312E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.312E-10
Bi-214	3.872E-02	0.000E+00	0.000E+00	0.000E+00	2.128E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.128E+01
Co-60	1.498E-08	0.000E+00	0.000E+00	0.000E+00	8.234E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.234E-06
Cs-137	7.344E-04	0.000E+00	0.000E+00	0.000E+00	4.036E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.036E-01
Eu-152	6.770E-05	0.000E+00	0.000E+00	0.000E+00	3.721E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.721E-02
Eu-154	8.729E-06	0.000E+00	0.000E+00	0.000E+00	4.797E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.797E-03
Fr-223	5.877E-14	0.000E+00	0.000E+00	0.000E+00	3.230E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.230E-11
Gd-152	2.221E-16	0.000E+00	0.000E+00	0.000E+00	1.221E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.221E-13
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Nd-144	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Np-237	1.267E-06	0.000E+00	0.000E+00	0.000E+00	6.964E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.964E-04
Pa-231	8.790E-12	0.000E+00	0.000E+00	0.000E+00	4.831E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.831E-09
Pa-233	1.266E-06	0.000E+00	0.000E+00	0.000E+00	6.957E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.957E-04
Pb-209	7.845E-13	0.000E+00	0.000E+00	0.000E+00	4.312E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.312E-10
Pb-210	3.742E-02	0.000E+00	0.000E+00	0.000E+00	2.056E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.056E+01
Pb-211	4.245E-12	0.000E+00	0.000E+00	0.000E+00	2.333E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.333E-09
Pb-214	3.871E-02	0.000E+00	0.000E+00	0.000E+00	2.127E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.127E+01
Po-210	3.654E-02	0.000E+00	0.000E+00	0.000E+00	2.008E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.008E+01
Pu-239	1.289E-01	0.000E+00	0.000E+00	0.000E+00	7.085E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.085E+01
Ra-223	4.245E-12	0.000E+00	0.000E+00	0.000E+00	2.333E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.333E-09
Ra-225	7.858E-13	0.000E+00	0.000E+00	0.000E+00	4.319E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.319E-10
Ra-226	3.917E-02	0.000E+00	0.000E+00	0.000E+00	2.153E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.153E+01
Rn-222	3.872E-02	0.000E+00	0.000E+00	0.000E+00	2.128E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.128E+01
Sm-148	1.547E-30	0.000E+00	0.000E+00	0.000E+00	8.500E-28	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.500E-28
Sr-90	1.199E-03	0.000E+00	0.000E+00	0.000E+00	6.587E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.587E-01
Th-227	4.192E-12	0.000E+00	0.000E+00	0.000E+00	2.304E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.304E-09
Th-229	7.874E-13	0.000E+00	0.000E+00	0.000E+00	4.327E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.327E-10
Th-231	9.819E-09	0.000E+00	0.000E+00	0.000E+00	5.396E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.396E-06
U-233	2.556E-10	0.000E+00	0.000E+00	0.000E+00	1.405E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.405E-07
U-235	9.819E-09	0.000E+00	0.000E+00	0.000E+00	5.396E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.396E-06
U-235m	1.289E-01	0.000E+00	0.000E+00	0.000E+00	7.081E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.081E+01
Y-90	1.199E-03	0.000E+00	0.000E+00	0.000E+00	6.589E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.589E-01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

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Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 8.890E+01 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 8.890E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-225	5.610E-17	0.0000	1.039E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.428E-18	0.0000
Ac-227	3.857E-19	0.0000	2.728E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.460E-17	0.0000
Am-241	2.234E-07	0.0022	2.793E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.433E-08	0.0005
Bi-210	3.128E-08	0.0003	4.945E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.776E-09	0.0001
Bi-213	2.850E-16	0.0000	2.691E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.434E-20	0.0000
Bi-214	8.464E-05	0.8431	3.453E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.624E-10	0.0000
Co-60	1.432E-11	0.0000	1.123E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.368E-15	0.0000
Cs-137	4.161E-07	0.0041	1.790E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.268E-10	0.0000
Eu-152	5.767E-08	0.0006	1.981E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.736E-12	0.0000
Eu-154	5.949E-09	0.0001	2.028E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.663E-13	0.0000
Fr-223	3.553E-18	0.0000	1.025E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.398E-20	0.0000
Gd-152	0.000E+00	0.0000	6.078E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.412E-22	0.0000
H-3	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
Nd-144	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
Np-237	2.333E-11	0.0000	1.187E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.885E-12	0.0000
Pa-231	4.643E-16	0.0000	2.667E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.340E-17	0.0000
Pa-233	3.469E-10	0.0000	6.319E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.035E-13	0.0000
Pb-209	2.044E-19	0.0000	7.560E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.964E-21	0.0000
Pb-210	1.792E-08	0.0002	1.751E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.132E-07	0.0071
Pb-211	9.353E-16	0.0000	7.341E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.809E-20	0.0000
Pb-214	1.157E-05	0.1152	4.451E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.966E-10	0.0000
Po-210	5.020E-10	0.0000	1.563E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.335E-06	0.0133
Pu-239	8.510E-09	0.0001	2.143E-07	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.699E-07	0.0037
Ra-223	1.315E-15	0.0000	5.313E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.386E-17	0.0000
Ra-225	2.426E-18	0.0000	9.527E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.072E-18	0.0000
Ra-226	2.950E-07	0.0029	3.173E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.185E-07	0.0032
Rn-222	1.941E-08	0.0002	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
Sm-148	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
Sr-90	1.205E-10	0.0000	1.014E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.013E-10	0.0000
Th-227	8.370E-16	0.0000	6.289E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.941E-18	0.0000
Th-229	8.598E-17	0.0000	6.369E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.821E-18	0.0000
Th-231	9.171E-14	0.0000	5.040E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.929E-16	0.0000
U-233	7.342E-17	0.0000	2.786E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.245E-16	0.0000
U-235	1.936E-12	0.0000	8.393E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.740E-14	0.0000
U-235m	0.000E+00	0.0000	7.209E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.252E-14	0.0000
Y-90	4.678E-09	0.0000	2.002E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.466E-10	0.0000
Total	9.729E-05	0.9690	3.077E-07	0.0031	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.800E-06	0.0279

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 8.890E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-225	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	6.256E-17	0.0000
Ac-227	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	5.227E-17	0.0000
Am-241	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	3.057E-07	0.0030
Bi-210	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	3.956E-08	0.0004
Bi-213	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	2.850E-16	0.0000
Bi-214	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	8.464E-05	0.8431
Co-60	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	1.432E-11	0.0000
Cs-137	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	4.164E-07	0.0041
Eu-152	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	5.767E-08	0.0006
Eu-154	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	5.949E-09	0.0001
Fr-223	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	3.568E-18	0.0000
Gd-152	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	2.020E-22	0.0000
H-3	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
Nd-144	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
Np-237	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	2.640E-11	0.0000
Pa-231	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	5.343E-16	0.0000
Pa-233	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	3.471E-10	0.0000
Pb-209	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	2.114E-19	0.0000
Pb-210	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	7.486E-07	0.0075
Pb-211	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	9.353E-16	0.0000
Pb-214	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	1.157E-05	0.1152
Po-210	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-06	0.0135
Pu-239	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	5.926E-07	0.0059
Ra-223	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	1.354E-15	0.0000
Ra-225	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	6.451E-18	0.0000
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	6.452E-07	0.0064
Rn-222	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	1.941E-08	0.0002
Sm-148	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
Sr-90	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	1.032E-09	0.0000
Th-227	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	8.503E-16	0.0000
Th-229	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	9.817E-17	0.0000
Th-231	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	9.230E-14	0.0000
U-233	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	8.765E-16	0.0000
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	1.961E-12	0.0000
U-235m	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	2.253E-14	0.0000
Y-90	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	5.025E-09	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	1.004E-04	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of Radon and its Decay Products at t= 8.890E+01 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 8.890E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Am-241	2.238E-07	0.0022	2.793E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.433E-08	0.0005
Co-60	1.432E-11	0.0000	1.123E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.368E-15	0.0000
Cs-137	4.161E-07	0.0041	1.790E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.268E-10	0.0000
Eu-152	5.767E-08	0.0006	1.981E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.736E-12	0.0000
Eu-154	5.949E-09	0.0001	2.028E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.663E-13	0.0000
H-3	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	0.000E+00	0.0000
Pu-239	8.512E-09	0.0001	2.143E-07	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.699E-07	0.0037
Ra-226	9.657E-05	0.9619	6.544E-08	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.375E-06	0.0237
Sr-90	4.798E-09	0.0000	1.034E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.248E-09	0.0000
Total	9.729E-05	0.9690	3.077E-07	0.0031	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.800E-06	0.0279

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Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 8.890E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Am-241	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	3.060E-07	0.0030
Co-60	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	1.432E-11	0.0000
Cs-137	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	4.164E-07	0.0041
Eu-152	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	5.767E-08	0.0006
Eu-154	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	5.949E-09	0.0001
H-3	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	0.000E+00	0.0000
Pu-239	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	5.927E-07	0.0059
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	9.901E-05	0.9862
Sr-90	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	6.057E-09	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	1.004E-04	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+02 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-225	1.079E-12	0.000E+00	0.000E+00	0.000E+00	5.927E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.927E-10
Ac-227	5.549E-12	0.000E+00	0.000E+00	0.000E+00	3.049E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.049E-09
Am-241	2.554E-02	0.000E+00	0.000E+00	0.000E+00	1.403E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.403E+01
Bi-210	3.647E-02	0.000E+00	0.000E+00	0.000E+00	2.004E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.004E+01
Bi-213	1.078E-12	0.000E+00	0.000E+00	0.000E+00	5.926E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.926E-10
Bi-214	3.753E-02	0.000E+00	0.000E+00	0.000E+00	2.063E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.063E+01
Co-60	3.475E-09	0.000E+00	0.000E+00	0.000E+00	1.910E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.910E-06
Cs-137	5.689E-04	0.000E+00	0.000E+00	0.000E+00	3.126E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.126E-01
Eu-152	3.826E-05	0.000E+00	0.000E+00	0.000E+00	2.103E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.103E-02
Eu-154	3.557E-06	0.000E+00	0.000E+00	0.000E+00	1.955E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.955E-03
Fr-223	7.657E-14	0.000E+00	0.000E+00	0.000E+00	4.208E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.208E-11
Gd-152	2.227E-16	0.000E+00	0.000E+00	0.000E+00	1.224E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.224E-13
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Nd-144	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Np-237	1.355E-06	0.000E+00	0.000E+00	0.000E+00	7.444E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.444E-04
Pa-231	1.085E-11	0.000E+00	0.000E+00	0.000E+00	5.965E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.965E-09
Pa-233	1.353E-06	0.000E+00	0.000E+00	0.000E+00	7.437E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.437E-04
Pb-209	1.078E-12	0.000E+00	0.000E+00	0.000E+00	5.926E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.926E-10
Pb-210	3.703E-02	0.000E+00	0.000E+00	0.000E+00	2.035E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.035E+01
Pb-211	5.534E-12	0.000E+00	0.000E+00	0.000E+00	3.041E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.041E-09
Pb-214	3.753E-02	0.000E+00	0.000E+00	0.000E+00	2.062E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.062E+01
Po-210	3.617E-02	0.000E+00	0.000E+00	0.000E+00	1.988E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.988E+01
Pu-239	1.288E-01	0.000E+00	0.000E+00	0.000E+00	7.077E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.077E+01
Ra-223	5.534E-12	0.000E+00	0.000E+00	0.000E+00	3.041E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.041E-09
Ra-225	1.080E-12	0.000E+00	0.000E+00	0.000E+00	5.935E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.935E-10
Ra-226	3.797E-02	0.000E+00	0.000E+00	0.000E+00	2.087E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.087E+01
Rn-222	3.753E-02	0.000E+00	0.000E+00	0.000E+00	2.063E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.063E+01
Sm-148	1.787E-30	0.000E+00	0.000E+00	0.000E+00	9.823E-28	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.823E-28
Sr-90	8.630E-04	0.000E+00	0.000E+00	0.000E+00	4.743E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.743E-01
Th-227	5.463E-12	0.000E+00	0.000E+00	0.000E+00	3.002E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.002E-09
Th-229	1.082E-12	0.000E+00	0.000E+00	0.000E+00	5.945E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.945E-10
Th-231	1.085E-08	0.000E+00	0.000E+00	0.000E+00	5.960E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.960E-06
U-233	3.086E-10	0.000E+00	0.000E+00	0.000E+00	1.696E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.696E-07
U-235	1.085E-08	0.000E+00	0.000E+00	0.000E+00	5.961E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.961E-06
U-235m	1.287E-01	0.000E+00	0.000E+00	0.000E+00	7.072E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.072E+01
Y-90	8.633E-04	0.000E+00	0.000E+00	0.000E+00	4.744E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.744E-01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 1.000E+02 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-225	7.325E-17	0.0000	1.356E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.088E-18	0.0000
Ac-227	4.799E-19	0.0000	3.395E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.061E-17	0.0000
Am-241	2.003E-07	0.0021	2.503E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.870E-08	0.0005
Bi-210	3.074E-08	0.0003	4.858E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.640E-09	0.0001
Bi-213	3.722E-16	0.0000	3.513E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.873E-20	0.0000
Bi-214	8.205E-05	0.8438	3.348E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.574E-10	0.0000
Co-60	3.321E-12	0.0000	2.604E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.173E-16	0.0000
Cs-137	3.223E-07	0.0033	1.387E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.531E-10	0.0000
Eu-152	3.259E-08	0.0003	1.119E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.677E-12	0.0000
Eu-154	2.424E-09	0.0000	8.265E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.123E-13	0.0000
Fr-223	4.422E-18	0.0000	1.275E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.739E-20	0.0000
Gd-152	0.000E+00	0.0000	6.079E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.412E-22	0.0000
H-3	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
Nd-144	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
Np-237	2.458E-11	0.0000	1.250E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.986E-12	0.0000
Pa-231	5.546E-16	0.0000	3.185E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.184E-17	0.0000
Pa-233	3.654E-10	0.0000	6.657E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.143E-13	0.0000
Pb-209	2.669E-19	0.0000	9.872E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.094E-21	0.0000
Pb-210	1.761E-08	0.0002	1.721E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.007E-07	0.0072
Pb-211	1.164E-15	0.0000	9.137E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.231E-20	0.0000
Pb-214	1.121E-05	0.1153	4.314E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.875E-10	0.0000
Po-210	4.934E-10	0.0000	1.536E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.312E-06	0.0135
Pu-239	8.499E-09	0.0001	2.140E-07	0.0022	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.694E-07	0.0038
Ra-223	1.637E-15	0.0000	6.613E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.214E-17	0.0000
Ra-225	3.167E-18	0.0000	1.244E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.011E-18	0.0000
Ra-226	2.859E-07	0.0029	3.076E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.087E-07	0.0032
Rn-222	1.881E-08	0.0002	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
Sm-148	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
Sr-90	8.677E-11	0.0000	7.302E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.489E-10	0.0000
Th-227	1.042E-15	0.0000	7.827E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.639E-18	0.0000
Th-229	1.122E-16	0.0000	8.314E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.599E-18	0.0000
Th-231	9.970E-14	0.0000	5.480E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.446E-16	0.0000
U-233	8.580E-17	0.0000	3.256E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.129E-16	0.0000
U-235	2.104E-12	0.0000	9.125E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.892E-14	0.0000
U-235m	0.000E+00	0.0000	7.200E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.249E-14	0.0000
Y-90	3.368E-09	0.0000	1.442E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.495E-10	0.0000
Total	9.418E-05	0.9686	3.029E-07	0.0031	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.748E-06	0.0283

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-225	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	8.169E-17	0.0000
Ac-227	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	6.504E-17	0.0000
Am-241	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	2.740E-07	0.0028
Bi-210	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-08	0.0004
Bi-213	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	3.722E-16	0.0000
Bi-214	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	8.205E-05	0.8438
Co-60	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	3.321E-12	0.0000
Cs-137	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	3.225E-07	0.0033
Eu-152	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	3.259E-08	0.0003
Eu-154	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	2.425E-09	0.0000
Fr-223	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	4.439E-18	0.0000
Gd-152	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	2.020E-22	0.0000
H-3	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
Nd-144	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
Np-237	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	2.781E-11	0.0000
Pa-231	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	6.383E-16	0.0000
Pa-233	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	3.657E-10	0.0000
Pb-209	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	2.760E-19	0.0000
Pb-210	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	7.355E-07	0.0076
Pb-211	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	1.164E-15	0.0000
Pb-214	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	1.121E-05	0.1153
Po-210	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	1.327E-06	0.0137
Pu-239	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	5.919E-07	0.0061
Ra-223	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	1.686E-15	0.0000
Ra-225	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	8.422E-18	0.0000
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	6.254E-07	0.0064
Rn-222	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	1.881E-08	0.0002
Sm-148	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
Sr-90	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	7.430E-10	0.0000
Th-227	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	1.058E-15	0.0000
Th-229	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	1.282E-16	0.0000
Th-231	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	1.003E-13	0.0000
U-233	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	1.024E-15	0.0000
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	2.132E-12	0.0000
U-235m	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	2.250E-14	0.0000
Y-90	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	3.618E-09	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	9.723E-05	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

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Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of Radon and its Decay Products at t= 1.000E+02 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Am-241	2.007E-07	0.0021	2.504E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.870E-08	0.0005
Co-60	3.321E-12	0.0000	2.604E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.173E-16	0.0000
Cs-137	3.223E-07	0.0033	1.387E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.531E-10	0.0000
Eu-152	3.259E-08	0.0003	1.119E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.677E-12	0.0000
Eu-154	2.424E-09	0.0000	8.265E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.123E-13	0.0000
H-3	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	0.000E+00	0.0000
Pu-239	8.501E-09	0.0001	2.140E-07	0.0022	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.694E-07	0.0038
Ra-226	9.361E-05	0.9628	6.388E-08	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.329E-06	0.0240
Sr-90	3.455E-09	0.0000	7.446E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.985E-10	0.0000
Total	9.418E-05	0.9686	3.029E-07	0.0031	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.748E-06	0.0283

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Am-241	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	2.744E-07	0.0028
Co-60	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	3.321E-12	0.0000
Cs-137	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	3.225E-07	0.0033
Eu-152	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	3.259E-08	0.0003
Eu-154	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	2.425E-09	0.0000
H-3	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	0.000E+00	0.0000
Pu-239	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	5.919E-07	0.0061
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	9.601E-05	0.9874
Sr-90	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	4.361E-09	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	9.723E-05	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+02 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-225	1.621E-11	0.000E+00	0.000E+00	0.000E+00	8.908E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.908E-09
Ac-227	4.484E-11	0.000E+00	0.000E+00	0.000E+00	2.464E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.464E-08
Am-241	3.562E-03	0.000E+00	0.000E+00	0.000E+00	1.958E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.958E+00
Bi-210	2.188E-02	0.000E+00	0.000E+00	0.000E+00	1.203E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.203E+01
Bi-213	1.621E-11	0.000E+00	0.000E+00	0.000E+00	8.907E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.907E-09
Bi-214	2.141E-02	0.000E+00	0.000E+00	0.000E+00	1.177E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.177E+01
Co-60	1.273E-20	0.000E+00	0.000E+00	0.000E+00	6.998E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.998E-18
Cs-137	5.703E-06	0.000E+00	0.000E+00	0.000E+00	3.134E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.134E-03
Eu-152	1.311E-09	0.000E+00	0.000E+00	0.000E+00	7.207E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.207E-07
Eu-154	3.367E-13	0.000E+00	0.000E+00	0.000E+00	1.850E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.850E-10
Fr-223	6.188E-13	0.000E+00	0.000E+00	0.000E+00	3.401E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.401E-10
Gd-152	2.151E-16	0.000E+00	0.000E+00	0.000E+00	1.182E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.182E-13
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Nd-144	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Np-237	1.853E-06	0.000E+00	0.000E+00	0.000E+00	1.018E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.018E-03
Pa-231	6.371E-11	0.000E+00	0.000E+00	0.000E+00	3.501E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.501E-08
Pa-233	1.853E-06	0.000E+00	0.000E+00	0.000E+00	1.018E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.018E-03
Pb-209	1.621E-11	0.000E+00	0.000E+00	0.000E+00	8.907E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.907E-09
Pb-210	2.222E-02	0.000E+00	0.000E+00	0.000E+00	1.221E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.221E+01
Pb-211	4.481E-11	0.000E+00	0.000E+00	0.000E+00	2.463E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.463E-08
Pb-214	2.141E-02	0.000E+00	0.000E+00	0.000E+00	1.176E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.176E+01
Po-210	2.172E-02	0.000E+00	0.000E+00	0.000E+00	1.194E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.194E+01
Pu-239	1.259E-01	0.000E+00	0.000E+00	0.000E+00	6.920E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.920E+01
Ra-223	4.481E-11	0.000E+00	0.000E+00	0.000E+00	2.463E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.463E-08
Ra-225	1.622E-11	0.000E+00	0.000E+00	0.000E+00	8.913E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.913E-09
Ra-226	2.166E-02	0.000E+00	0.000E+00	0.000E+00	1.190E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.190E+01
Rn-222	2.141E-02	0.000E+00	0.000E+00	0.000E+00	1.177E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.177E+01
Sm-148	5.975E-30	0.000E+00	0.000E+00	0.000E+00	3.283E-27	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.283E-27
Sr-90	2.321E-06	0.000E+00	0.000E+00	0.000E+00	1.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.276E-03
Th-227	4.421E-11	0.000E+00	0.000E+00	0.000E+00	2.429E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.429E-08
Th-229	1.623E-11	0.000E+00	0.000E+00	0.000E+00	8.918E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.918E-09
Th-231	2.389E-08	0.000E+00	0.000E+00	0.000E+00	1.313E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.313E-05
U-233	1.268E-09	0.000E+00	0.000E+00	0.000E+00	6.967E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.967E-07
U-235	2.389E-08	0.000E+00	0.000E+00	0.000E+00	1.313E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.313E-05
U-235m	1.258E-01	0.000E+00	0.000E+00	0.000E+00	6.916E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.916E+01
Y-90	2.322E-06	0.000E+00	0.000E+00	0.000E+00	1.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.276E-03

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

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Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 3.000E+02 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-225	8.344E-16	0.0000	1.545E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.074E-17	0.0000
Ac-227	3.063E-18	0.0000	2.167E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.954E-16	0.0000
Am-241	2.793E-08	0.0005	3.492E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.793E-09	0.0001
Bi-210	1.813E-08	0.0003	2.865E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.505E-09	0.0001
Bi-213	4.239E-15	0.0000	4.002E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.133E-19	0.0000
Bi-214	4.680E-05	0.8444	1.909E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.981E-11	0.0000
Co-60	1.217E-23	0.0000	2.168E-30	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.163E-27	0.0000
Cs-137	3.231E-09	0.0001	1.390E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.538E-12	0.0000
Eu-152	1.117E-12	0.0000	3.836E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.173E-17	0.0000
Eu-154	2.294E-16	0.0000	7.822E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.955E-20	0.0000
Fr-223	2.822E-17	0.0000	8.140E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.110E-19	0.0000
Gd-152	0.000E+00	0.0000	5.856E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.361E-22	0.0000
H-3	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
Nd-144	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
Np-237	3.130E-11	0.0000	1.592E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.529E-12	0.0000
Pa-231	2.711E-15	0.0000	1.557E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.534E-16	0.0000
Pa-233	4.657E-10	0.0000	8.482E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.731E-13	0.0000
Pb-209	3.040E-18	0.0000	1.125E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.036E-19	0.0000
Pb-210	1.038E-08	0.0002	1.015E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.132E-07	0.0075
Pb-211	7.443E-15	0.0000	5.841E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.623E-19	0.0000
Pb-214	6.395E-06	0.1154	2.461E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.640E-10	0.0000
Po-210	2.911E-10	0.0000	9.063E-09	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.739E-07	0.0140
Pu-239	8.311E-09	0.0001	2.093E-07	0.0038	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.612E-07	0.0065
Ra-223	1.047E-14	0.0000	4.228E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.694E-16	0.0000
Ra-225	3.606E-17	0.0000	1.416E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.566E-17	0.0000
Ra-226	1.631E-07	0.0029	1.754E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.761E-07	0.0032
Rn-222	1.073E-08	0.0002	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
Sm-148	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
Sr-90	2.333E-13	0.0000	1.964E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.745E-12	0.0000
Th-227	6.656E-15	0.0000	5.001E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.519E-17	0.0000
Th-229	1.277E-15	0.0000	9.456E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.643E-17	0.0000
Th-231	2.011E-13	0.0000	1.105E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.300E-15	0.0000
U-233	2.961E-16	0.0000	1.124E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.115E-15	0.0000
U-235	4.245E-12	0.0000	1.841E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.816E-14	0.0000
U-235m	0.000E+00	0.0000	7.040E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.200E-14	0.0000
Y-90	9.058E-12	0.0000	3.877E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.711E-13	0.0000
Total	5.344E-05	0.9642	2.498E-07	0.0045	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.736E-06	0.0313

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-225	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	9.306E-16	0.0000
Ac-227	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	4.151E-16	0.0000
Am-241	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	3.822E-08	0.0007
Bi-210	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	2.292E-08	0.0004
Bi-213	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	4.239E-15	0.0000
Bi-214	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	4.680E-05	0.8444
Co-60	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	1.217E-23	0.0000
Cs-137	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	3.234E-09	0.0001
Eu-152	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-12	0.0000
Eu-154	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	2.295E-16	0.0000
Fr-223	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	2.834E-17	0.0000
Gd-152	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	1.946E-22	0.0000
H-3	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
Nd-144	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
Np-237	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	3.542E-11	0.0000
Pa-231	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	3.120E-15	0.0000
Pa-233	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	4.659E-10	0.0000
Pb-209	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	3.144E-18	0.0000
Pb-210	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	4.337E-07	0.0078
Pb-211	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	7.443E-15	0.0000
Pb-214	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	6.395E-06	0.1154
Po-210	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	7.832E-07	0.0141
Pu-239	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	5.788E-07	0.0104
Ra-223	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	1.078E-14	0.0000
Ra-225	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	9.588E-17	0.0000
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	3.567E-07	0.0064
Rn-222	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	1.073E-08	0.0002
Sm-148	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
Sr-90	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	1.998E-12	0.0000
Th-227	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	6.761E-15	0.0000
Th-229	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	1.458E-15	0.0000
Th-231	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	2.024E-13	0.0000
U-233	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	3.535E-15	0.0000
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	4.302E-12	0.0000
U-235m	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	2.200E-14	0.0000
Y-90	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	9.730E-12	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	5.542E-05	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of Radon and its Decay Products at t= 3.000E+02 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Am-241	2.843E-08	0.0005	3.494E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.796E-09	0.0001
Co-60	1.217E-23	0.0000	2.168E-30	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.163E-27	0.0000
Cs-137	3.231E-09	0.0001	1.390E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.538E-12	0.0000
Eu-152	1.117E-12	0.0000	3.836E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.173E-17	0.0000
Eu-154	2.294E-16	0.0000	7.822E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.955E-20	0.0000
H-3	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	0.000E+00	0.0000
Pu-239	8.315E-09	0.0002	2.093E-07	0.0038	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.612E-07	0.0065
Ra-226	5.340E-05	0.9634	3.708E-08	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.368E-06	0.0247
Sr-90	9.292E-12	0.0000	2.003E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.416E-12	0.0000
Total	5.344E-05	0.9642	2.498E-07	0.0045	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.736E-06	0.0313

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Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Am-241	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	3.872E-08	0.0007
Co-60	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	1.217E-23	0.0000
Cs-137	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	3.234E-09	0.0001
Eu-152	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-12	0.0000
Eu-154	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	2.295E-16	0.0000
H-3	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	0.000E+00	0.0000
Pu-239	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	5.788E-07	0.0104
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	5.480E-05	0.9888
Sr-90	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	1.173E-11	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	5.542E-05	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+03 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-225	1.310E-10	0.000E+00	0.000E+00	0.000E+00	7.198E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.198E-08
Ac-227	1.530E-10	0.000E+00	0.000E+00	0.000E+00	8.409E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.409E-08
Am-241	3.611E-06	0.000E+00	0.000E+00	0.000E+00	1.984E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.984E-03
Bi-210	3.068E-03	0.000E+00	0.000E+00	0.000E+00	1.686E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.686E+00
Bi-213	1.310E-10	0.000E+00	0.000E+00	0.000E+00	7.197E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.197E-08
Bi-214	3.001E-03	0.000E+00	0.000E+00	0.000E+00	1.649E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.649E+00
Co-60	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Cs-137	5.754E-13	0.000E+00	0.000E+00	0.000E+00	3.162E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.162E-10
Eu-152	3.090E-25	0.000E+00	0.000E+00	0.000E+00	1.698E-22	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.698E-22
Eu-154	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Fr-223	2.112E-12	0.000E+00	0.000E+00	0.000E+00	1.160E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.160E-09
Gd-152	1.868E-16	0.000E+00	0.000E+00	0.000E+00	1.026E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.026E-13
H-3	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Nd-144	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Np-237	1.258E-06	0.000E+00	0.000E+00	0.000E+00	6.911E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.911E-04
Pa-231	1.947E-10	0.000E+00	0.000E+00	0.000E+00	1.070E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.070E-07
Pa-233	1.257E-06	0.000E+00	0.000E+00	0.000E+00	6.909E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.909E-04
Pb-209	1.310E-10	0.000E+00	0.000E+00	0.000E+00	7.197E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.197E-08
Pb-210	3.115E-03	0.000E+00	0.000E+00	0.000E+00	1.712E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.712E+00
Pb-211	1.530E-10	0.000E+00	0.000E+00	0.000E+00	8.408E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.408E-08
Pb-214	3.001E-03	0.000E+00	0.000E+00	0.000E+00	1.649E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.649E+00
Po-210	3.046E-03	0.000E+00	0.000E+00	0.000E+00	1.674E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.674E+00
Pu-239	1.164E-01	0.000E+00	0.000E+00	0.000E+00	6.398E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.398E+01
Ra-223	1.530E-10	0.000E+00	0.000E+00	0.000E+00	8.408E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.408E-08
Ra-225	1.310E-10	0.000E+00	0.000E+00	0.000E+00	7.201E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.201E-08
Ra-226	3.036E-03	0.000E+00	0.000E+00	0.000E+00	1.669E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.669E+00
Rn-222	3.001E-03	0.000E+00	0.000E+00	0.000E+00	1.649E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.649E+00
Sm-148	1.813E-29	0.000E+00	0.000E+00	0.000E+00	9.965E-27	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.965E-27
Sr-90	2.341E-15	0.000E+00	0.000E+00	0.000E+00	1.287E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.287E-12
Th-227	1.509E-10	0.000E+00	0.000E+00	0.000E+00	8.293E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.293E-08
Th-229	1.311E-10	0.000E+00	0.000E+00	0.000E+00	7.202E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.202E-08
Th-231	3.429E-08	0.000E+00	0.000E+00	0.000E+00	1.885E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.885E-05
U-233	1.847E-09	0.000E+00	0.000E+00	0.000E+00	1.015E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.015E-06
U-235	3.429E-08	0.000E+00	0.000E+00	0.000E+00	1.885E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.885E-05
U-235m	1.163E-01	0.000E+00	0.000E+00	0.000E+00	6.394E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.394E+01
Y-90	2.342E-15	0.000E+00	0.000E+00	0.000E+00	1.287E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.287E-12

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of Radon and its Decay Products as pCi/yr at t= 1.000E+03 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-225	6.172E-15	0.0000	1.143E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.973E-16	0.0000
Ac-227	9.761E-18	0.0000	6.905E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.226E-16	0.0000
Am-241	2.832E-11	0.0000	3.539E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.886E-12	0.0000
Bi-210	2.541E-09	0.0003	4.016E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.316E-10	0.0001
Bi-213	3.136E-14	0.0000	2.961E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.578E-18	0.0000
Bi-214	6.560E-06	0.7983	2.677E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.259E-11	0.0000
Co-60	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
Cs-137	3.260E-16	0.0000	1.403E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.560E-19	0.0000
Eu-152	2.633E-28	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
Eu-154	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
Fr-223	8.994E-17	0.0000	2.594E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.538E-19	0.0000
Gd-152	0.000E+00	0.0000	5.084E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.181E-22	0.0000
H-3	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
Nd-144	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
Np-237	2.106E-11	0.0000	1.071E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.702E-12	0.0000
Pa-231	7.793E-15	0.0000	4.476E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.285E-16	0.0000
Pa-233	3.133E-10	0.0000	5.707E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.838E-13	0.0000
Pb-209	2.249E-17	0.0000	8.319E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.663E-19	0.0000
Pb-210	1.456E-09	0.0002	1.422E-09	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.792E-08	0.0070
Pb-211	2.373E-14	0.0000	1.862E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.474E-18	0.0000
Pb-214	8.964E-07	0.1091	3.450E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.299E-11	0.0000
Po-210	4.081E-11	0.0000	1.271E-09	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.085E-07	0.0132
Pu-239	7.684E-09	0.0009	1.935E-07	0.0235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.340E-07	0.0406
Ra-223	3.337E-14	0.0000	1.348E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.591E-16	0.0000
Ra-225	2.667E-16	0.0000	1.047E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.377E-16	0.0000
Ra-226	2.286E-08	0.0028	2.459E-09	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.469E-08	0.0030
Rn-222	1.504E-09	0.0002	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
Sm-148	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
Sr-90	2.354E-22	0.0000	1.981E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.761E-21	0.0000
Th-227	2.122E-14	0.0000	1.594E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.759E-16	0.0000
Th-229	9.438E-15	0.0000	6.991E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.390E-16	0.0000
Th-231	2.812E-13	0.0000	1.546E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.818E-15	0.0000
U-233	4.109E-16	0.0000	1.559E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.935E-15	0.0000
U-235	5.936E-12	0.0000	2.574E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.335E-14	0.0000
U-235m	0.000E+00	0.0000	6.509E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.034E-14	0.0000
Y-90	9.138E-21	0.0000	3.911E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.770E-22	0.0000
Total	7.493E-06	0.9118	1.987E-07	0.0242	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.257E-07	0.0640

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-225	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	6.884E-15	0.0000
Ac-227	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	1.323E-15	0.0000
Am-241	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	3.874E-11	0.0000
Bi-210	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	3.213E-09	0.0004
Bi-213	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	3.136E-14	0.0000
Bi-214	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	6.560E-06	0.7983
Co-60	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
Cs-137	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	3.262E-16	0.0000
Eu-152	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	2.633E-28	0.0000
Eu-154	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
Fr-223	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	9.030E-17	0.0000
Gd-152	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	1.690E-22	0.0000
H-3	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
Nd-144	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
Np-237	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	2.383E-11	0.0000
Pa-231	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	8.969E-15	0.0000
Pa-233	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	3.135E-10	0.0000
Pb-209	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	2.326E-17	0.0000
Pb-210	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	6.080E-08	0.0074
Pb-211	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	2.373E-14	0.0000
Pb-214	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	8.965E-07	0.1091
Po-210	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	1.098E-07	0.0134
Pu-239	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	5.351E-07	0.0651
Ra-223	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	3.436E-14	0.0000
Ra-225	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	7.091E-16	0.0000
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	5.001E-08	0.0061
Rn-222	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	1.504E-09	0.0002
Sm-148	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
Sr-90	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	2.016E-21	0.0000
Th-227	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	2.155E-14	0.0000
Th-229	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	1.078E-14	0.0000
Th-231	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	2.830E-13	0.0000
U-233	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	4.906E-15	0.0000
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	6.015E-12	0.0000
U-235m	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	2.034E-14	0.0000
Y-90	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	9.815E-21	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	8.218E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

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Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of Radon and its Decay Products at t= 1.000E+03 years

Radon Pathway	Radionuclides							
	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p) and Fraction of Total Risk at t= 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Am-241	3.628E-10	0.0000	4.614E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.776E-12	0.0000
Co-60	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	0.000E+00	0.0000
Cs-137	3.260E-16	0.0000	1.403E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.560E-19	0.0000
Eu-152	2.633E-28	0.0000	5.084E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.181E-22	0.0000
Eu-154	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	0.000E+00	0.0000
H-3	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	0.000E+00	0.0000
Pu-239	7.690E-09	0.0009	1.935E-07	0.0235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.340E-07	0.0406
Ra-226	7.485E-06	0.9109	5.198E-09	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.918E-07	0.0233
Sr-90	9.373E-21	0.0000	2.020E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.438E-21	0.0000
Total	7.493E-06	0.9118	1.987E-07	0.0242	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.257E-07	0.0640

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Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Am-241	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	3.761E-10	0.0000
Co-60	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	0.000E+00	0.0000
Cs-137	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	3.262E-16	0.0000
Eu-152	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	1.690E-22	0.0000
Eu-154	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	0.000E+00	0.0000
H-3	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	0.000E+00	0.0000
Pu-239	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	5.351E-07	0.0651
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	7.682E-06	0.9348
Sr-90	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	1.183E-20	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	8.218E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Summary : RESRAD Default Parameters
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Dose Conversion Factor (and Related) Parameter Summary
Dose Library: DOE STD-1196-2011 (Reference Person)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-228 (Source: DCFPAK3.02)	5.044E+00	5.044E+00	DCF1(1)
A-1	Bi-212 (Source: DCFPAK3.02)	6.258E-01	6.258E-01	DCF1(2)
A-1	Pb-212 (Source: DCFPAK3.02)	6.314E-01	6.314E-01	DCF1(3)
A-1	Po-212 (Source: DCFPAK3.02)	0.000E+00	0.000E+00	DCF1(4)
A-1	Po-216 (Source: DCFPAK3.02)	8.873E-05	8.873E-05	DCF1(5)
A-1	Ra-224 (Source: DCFPAK3.02)	4.950E-02	4.950E-02	DCF1(6)
A-1	Ra-228 (Source: DCFPAK3.02)	6.575E-05	6.575E-05	DCF1(7)
A-1	Rn-220 (Source: DCFPAK3.02)	3.474E-03	3.474E-03	DCF1(8)
A-1	Th-228 (Source: DCFPAK3.02)	7.248E-03	7.248E-03	DCF1(9)
A-1	Th-232 (Source: DCFPAK3.02)	4.782E-04	4.782E-04	DCF1(10)
A-1	Tl-208 (Source: DCFPAK3.02)	2.167E+01	2.167E+01	DCF1(11)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-228	5.957E-05	5.957E-05	DCF2(1)
B-1	Bi-212+D	1.358E-04	1.358E-04	DCF2(2)
B-1	Pb-212	7.585E-04	7.585E-04	DCF2(3)
B-1	Ra-224+D	1.347E-02	1.347E-02	DCF2(4)
B-1	Ra-228	6.327E-02	6.327E-02	DCF2(5)
B-1	Th-228	1.610E-01	1.610E-01	DCF2(6)
B-1	Th-232	4.255E-01	4.255E-01	DCF2(7)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-228	1.902E-06	1.902E-06	DCF3(1)
D-1	Bi-212+D	1.302E-06	1.302E-06	DCF3(2)
D-1	Pb-212	3.811E-05	3.811E-05	DCF3(3)
D-1	Ra-224+D	4.662E-04	4.662E-04	DCF3(4)
D-1	Ra-228	5.920E-03	5.920E-03	DCF3(5)
D-1	Th-228	4.292E-04	4.292E-04	DCF3(6)
D-1	Th-232	1.029E-03	1.029E-03	DCF3(7)
D-34	Food transfer factors:			
D-34	Ac-228 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-228 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-228 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Bi-212+D , plant/soil concentration ratio, dimensionless	1.000E-01	1.000E-01	RTF(2,1)
D-34	Bi-212+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(2,2)
D-34	Bi-212+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-04	5.000E-04	RTF(2,3)
D-34				
D-34	Pb-212 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-212 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-212 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Ra-224+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(4,1)
D-34	Ra-224+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Ra-224+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,3)
D-34				

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Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: DOE STD-1196-2011 (Reference Person)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ra-228 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-228 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-228 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Th-228 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Th-228 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Th-228 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(7,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-228 , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-228 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Bi-212+D , fish	1.500E+01	1.500E+01	BIOFAC(2,1)
D-5	Bi-212+D , crustacea and mollusks	1.000E+01	1.000E+01	BIOFAC(2,2)
D-5				
D-5	Pb-212 , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-212 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Ra-224+D , fish	5.000E+01	5.000E+01	BIOFAC(4,1)
D-5	Ra-224+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(4,2)
D-5				
D-5	Ra-228 , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-228 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Th-228 , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-228 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5				
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(7,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(7,2)

#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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	4.840E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	2.000E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.200E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	8.890E+01	1.000E+02	---	T(6)
R011	Times for calculations (yr)	1.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	3.000E+02	1.000E+03	---	T(8)
R011	Times for calculations (yr)	1.000E+03	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Th-232	1.690E+00	0.000E+00	---	S1(7)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(7)
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)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	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	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+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	2.000E-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
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

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(7,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.778E-06	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for daughter Ac-228				
R016	Contaminated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.245E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Bi-212				
R016	Contaminated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	0.000E+00	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	0.000E+00	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.790E-01	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for daughter Pb-212				
R016	Contaminated zone (cm**3/g)	1.000E+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	1.663E-03	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for daughter Ra-224				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.374E-03	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.374E-03	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Th-228				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(6,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.778E-06	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
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	3.000E+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	6.840E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.300E-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)
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)
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)	3.650E+01	3.650E+01	---	SOIL

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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)	1.500E-01	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)
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

Summary : RESRAD Default Parameters
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Site-Specific Parameter Summary (continued)

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

Summary : RESRAD Default Parameters
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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	484.00 square meters	Th-232	1.690E+00
Thickness:	2.00 meters		
Cover Depth:	0.00 meters		

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 1.200E+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	8.890E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	3.398E-01	1.036E+00	2.664E+00	7.409E+00	1.116E+01	1.152E+01	1.152E+01	1.151E+01	1.149E+01
M(t):	2.832E-02	8.630E-02	2.220E-01	6.174E-01	9.303E-01	9.601E-01	9.601E-01	9.595E-01	9.576E-01

Maximum TDOSE(t): 1.152E+01 mrem/yr at t = 88.6 ± 0.2 years

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 8.862E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-232	1.131E+01	0.9813	4.008E-02	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.752E-01	0.0152
Total	1.131E+01	0.9813	4.008E-02	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.752E-01	0.0152

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 8.862E+01 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-232	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	1.152E+01	1.0000
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	1.152E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
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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

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.
Th-232	2.825E-01	0.8314	2.616E-02	0.0770	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.113E-02	0.0916
Total	2.825E-01	0.8314	2.616E-02	0.0770	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.113E-02	0.0916

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

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.
Th-232	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	3.398E-01	1.0000
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	3.398E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
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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

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.
Th-232	9.626E-01	0.9295	2.692E-02	0.0260	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.611E-02	0.0445
Total	9.626E-01	0.9295	2.692E-02	0.0260	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.611E-02	0.0445

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

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.
Th-232	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	1.036E+00	1.0000
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	1.036E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
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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

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.
Th-232	2.563E+00	0.9620	2.886E-02	0.0108	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.240E-02	0.0272
Total	2.563E+00	0.9620	2.886E-02	0.0108	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.240E-02	0.0272

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

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.
Th-232	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	2.664E+00	1.0000
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	2.664E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.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

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.
Th-232	7.243E+00	0.9777	3.482E-02	0.0047	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.307E-01	0.0176
Total	7.243E+00	0.9777	3.482E-02	0.0047	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.307E-01	0.0176

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

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.
Th-232	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	7.409E+00	1.0000
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	7.409E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.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

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.
Th-232	1.095E+01	0.9811	3.963E-02	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.714E-01	0.0154
Total	1.095E+01	0.9811	3.963E-02	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.714E-01	0.0154

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

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.
Th-232	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	1.116E+01	1.0000
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	1.116E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
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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 = 8.890E+01 years

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.
Th-232	1.131E+01	0.9813	4.008E-02	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.752E-01	0.0152
Total	1.131E+01	0.9813	4.008E-02	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.752E-01	0.0152

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 8.890E+01 years

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.
Th-232	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	1.152E+01	1.0000
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	1.152E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.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

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.
Th-232	1.131E+01	0.9813	4.008E-02	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.752E-01	0.0152
Total	1.131E+01	0.9813	4.008E-02	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.752E-01	0.0152

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

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.
Th-232	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	1.152E+01	1.0000
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	1.152E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.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

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.
Th-232	1.130E+01	0.9813	4.006E-02	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.751E-01	0.0152
Total	1.130E+01	0.9813	4.006E-02	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.751E-01	0.0152

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

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.
Th-232	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	1.151E+01	1.0000
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	1.151E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.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

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.
Th-232	1.128E+01	0.9813	3.998E-02	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.747E-01	0.0152
Total	1.128E+01	0.9813	3.998E-02	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.747E-01	0.0152

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

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.
Th-232	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	1.149E+01	1.0000
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	1.149E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

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	8.890E+01	1.000E+02	3.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	2.932E-02	2.932E-02	2.932E-02	2.932E-02	2.932E-02	2.932E-02	2.931E-02	2.930E-02	2.924E-02
Th-232	Ra-228	1.000E+00	4.716E-03	1.341E-02	2.791E-02	5.791E-02	7.802E-02	7.989E-02	7.989E-02	7.984E-02	7.969E-02
Th-232	Ac-228	1.000E+00	1.398E-01	3.982E-01	8.288E-01	1.720E+00	2.318E+00	2.373E+00	2.373E+00	2.372E+00	2.367E+00
Th-232	Th-228	1.000E+00	9.780E-05	6.007E-04	2.385E-03	8.850E-03	1.434E-02	1.487E-02	1.487E-02	1.486E-02	1.483E-02
Th-232	Ra-224+D	1.000E+00	2.039E-04	1.284E-03	5.153E-03	1.922E-02	3.118E-02	3.233E-02	3.233E-02	3.231E-02	3.224E-02
Th-232	Pb-212	1.000E+00	1.940E-03	1.226E-02	4.924E-02	1.837E-01	2.982E-01	3.091E-01	3.091E-01	3.090E-01	3.084E-01
Th-232	Bi-212+D	1.000E+00	2.496E-02	1.577E-01	6.337E-01	2.365E+00	3.837E+00	3.979E+00	3.978E+00	3.976E+00	3.968E+00
Th-232	∑DSR(j)		2.011E-01	6.128E-01	1.576E+00	4.384E+00	6.606E+00	6.817E+00	6.817E+00	6.813E+00	6.800E+00

The DSR includes contributions from associated (half-life ≤ 10 minut) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.200E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	8.890E+01	1.000E+02	3.000E+02	1.000E+03
Th-232	5.968E+01	1.958E+01	7.612E+00	2.737E+00	1.817E+00	1.760E+00	1.760E+00	1.761E+00	1.765E+00

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 = 88.6 ± 0.2 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Th-232	1.690E+00	88.6 ± 0.2	6.817E+00	1.760E+00	6.817E+00	1.760E+00

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.RAD

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

Nuclide (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	8.890E+01	1.000E+02	3.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	4.956E-02	4.956E-02	4.955E-02	4.955E-02	4.955E-02	4.954E-02	4.954E-02	4.951E-02	4.942E-02
Ra-228	Th-232	1.000E+00	7.970E-03	2.267E-02	4.716E-02	9.787E-02	1.319E-01	1.350E-01	1.350E-01	1.349E-01	1.347E-01
Ac-228	Th-232	1.000E+00	2.363E-01	6.730E-01	1.401E+00	2.907E+00	3.917E+00	4.011E+00	4.011E+00	4.008E+00	4.001E+00
Th-228	Th-232	1.000E+00	1.653E-04	1.015E-03	4.031E-03	1.496E-02	2.424E-02	2.513E-02	2.513E-02	2.512E-02	2.507E-02
Ra-224	Th-232	1.000E+00	3.446E-04	2.170E-03	8.708E-03	3.247E-02	5.269E-02	5.463E-02	5.463E-02	5.460E-02	5.449E-02
Pb-212	Th-232	1.000E+00	3.279E-03	2.071E-02	8.322E-02	3.105E-01	5.039E-01	5.224E-01	5.224E-01	5.222E-01	5.211E-01
Bi-212	Th-232	1.000E+00	4.218E-02	2.665E-01	1.071E+00	3.996E+00	6.485E+00	6.724E+00	6.724E+00	6.720E+00	6.706E+00

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (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	8.890E+01	1.000E+02	3.000E+02	1.000E+03
Th-232	Th-232	1.000E+00	1.690E+00	1.690E+00	1.690E+00	1.690E+00	1.690E+00	1.690E+00	1.690E+00	1.689E+00	1.685E+00
Ra-228	Th-232	1.000E+00	0.000E+00	1.917E-01	5.111E-01	1.173E+00	1.616E+00	1.657E+00	1.657E+00	1.656E+00	1.653E+00
Ac-228	Th-232	1.000E+00	0.000E+00	1.915E-01	5.110E-01	1.172E+00	1.616E+00	1.657E+00	1.657E+00	1.656E+00	1.653E+00
Th-228	Th-232	1.000E+00	0.000E+00	3.145E-02	2.096E-01	9.464E-01	1.594E+00	1.657E+00	1.657E+00	1.656E+00	1.653E+00
Ra-224	Th-232	1.000E+00	0.000E+00	3.062E-02	2.080E-01	9.452E-01	1.594E+00	1.657E+00	1.657E+00	1.656E+00	1.653E+00
Pb-212	Th-232	1.000E+00	0.000E+00	3.051E-02	2.078E-01	9.451E-01	1.594E+00	1.657E+00	1.657E+00	1.656E+00	1.653E+00
Bi-212	Th-232	1.000E+00	0.000E+00	3.050E-02	2.078E-01	9.449E-01	1.594E+00	1.657E+00	1.657E+00	1.656E+00	1.653E+00

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

RESCALC.EXE execution time = 1.47 seconds

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Part III: Intake Quantities and Health Risk Factors

Cancer Risk Slope Factors 2
Risk Slope and ETFG for the Ground Pathway 4
Amount of Intake Quantities and Excess Cancer Risks
Time= 0.000E+00 5
Time= 1.000E+00 8
Time= 3.000E+00 11
Time= 1.000E+01 14
Time= 3.000E+01 17
Time= 8.890E+01 20
Time= 1.000E+02 23
Time= 3.000E+02 26
Time= 1.000E+03 29

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Cancer Risk Slope Factors Summary Table
Risk Library: DCFPAK3.02 Morbidity

Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-1	Ground external radiation slope factors, 1/yr per (pCi/g):			
Sf-1	Ac-228	4.04E-06	4.04E-06	SLPF(1,1)
Sf-1	Bi-212+D	6.79E-06	4.96E-07	SLPF(2,1)
Sf-1	Pb-212	4.96E-07	4.96E-07	SLPF(3,1)
Sf-1	Ra-224+D	4.19E-08	3.91E-08	SLPF(4,1)
Sf-1	Ra-228	3.43E-11	3.43E-11	SLPF(5,1)
Sf-1	Th-228	5.64E-09	5.64E-09	SLPF(6,1)
Sf-1	Th-232	3.58E-10	3.58E-10	SLPF(7,1)
Sf-2	Inhalation, slope factors, 1/(pCi):			
Sf-2	Ac-228	4.92E-11	4.92E-11	SLPF(1,2)
Sf-2	Bi-212+D	8.43E-11	8.43E-11	SLPF(2,2)
Sf-2	Pb-212	6.40E-10	6.40E-10	SLPF(3,2)
Sf-2	Ra-224+D	1.13E-08	1.13E-08	SLPF(4,2)
Sf-2	Ra-228	4.37E-08	4.37E-08	SLPF(5,2)
Sf-2	Th-228	1.32E-07	1.32E-07	SLPF(6,2)
Sf-2	Th-232	4.33E-08	4.33E-08	SLPF(7,2)
Sf-3	Food ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-228	2.73E-12	2.73E-12	SLPF(1,3)
Sf-3	Bi-212+D	1.01E-12	1.01E-12	SLPF(2,3)
Sf-3	Pb-212	3.57E-11	3.57E-11	SLPF(3,3)
Sf-3	Ra-224+D	2.38E-10	2.38E-10	SLPF(4,3)
Sf-3	Ra-228	1.42E-09	1.42E-09	SLPF(5,3)
Sf-3	Th-228	1.48E-10	1.48E-10	SLPF(6,3)
Sf-3	Th-232	1.33E-10	1.33E-10	SLPF(7,3)
Sf-3	Water ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-228	1.88E-12	1.88E-12	SLPF(1,4)
Sf-3	Bi-212+D	7.18E-13	7.18E-13	SLPF(2,4)
Sf-3	Pb-212	2.52E-11	2.52E-11	SLPF(3,4)
Sf-3	Ra-224+D	1.67E-10	1.67E-10	SLPF(4,4)
Sf-3	Ra-228	1.04E-09	1.04E-09	SLPF(5,4)
Sf-3	Th-228	1.08E-10	1.08E-10	SLPF(6,4)
Sf-3	Th-232	1.01E-10	1.01E-10	SLPF(7,4)
Sf-3	Soil ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-228	2.73E-12	2.73E-12	SLPF(1,5)
Sf-3	Bi-212+D	1.01E-12	1.01E-12	SLPF(2,5)
Sf-3	Pb-212	3.57E-11	3.57E-11	SLPF(3,5)
Sf-3	Ra-224+D	2.38E-10	2.38E-10	SLPF(4,5)
Sf-3	Ra-228	1.42E-09	1.42E-09	SLPF(5,5)
Sf-3	Th-228	1.48E-10	1.48E-10	SLPF(6,5)
Sf-3	Th-232	1.33E-10	1.33E-10	SLPF(7,5)
Sf-Rn	Radon Inhalation slope factors, 1/(pCi):			
Sf-Rn	Rn-220Inhalation slope factors, 1/(pCi):	1.90E-13	1.90E-13	SLPFRN(2,1)
Sf-Rn	Po-216Inhalation slope factors, 1/(pCi):	3.00E-15	3.00E-15	SLPFRN(2,2)
Sf-Rn	Pb-212Inhalation slope factors, 1/(pCi):	3.90E-11	3.90E-11	SLPFRN(2,3)
Sf-Rn	Bi-212Inhalation slope factors, 1/(pCi):	3.70E-11	3.70E-11	SLPFRN(2,4)

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Cancer Risk Slope Factors Summary Table (continued)
Risk Library: DCFPAK3.02 Morbidity

Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-Rn	Radon K factors, (mrem/WLM):			
Sf-Rn	Rn-220 Indoor	1.88E+02	1.88E+02	KFACTR(2,1)
Sf-Rn	Rn-220 Outdoor	1.88E+02	1.88E+02	KFACTR(2,2)

*Base Case means Default.Lib w/o Associate Nuclide contributions.

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Risk Slope and Environmental Transport Factors for the Ground Pathway

Nuclide (i)	Slope(i)* t=	ETFG(i,t) At Time in Years (dimensionless) 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	8.890E+01	1.000E+02	3.000E+02	1.000E+03
Ac-228	4.040E-06	4.799E-01	4.799E-01	4.799E-01	4.799E-01	4.799E-01	4.799E-01	4.799E-01	4.799E-01	4.799E-01
Bi-212	4.960E-07	4.819E-01	4.819E-01	4.819E-01	4.819E-01	4.819E-01	4.819E-01	4.819E-01	4.819E-01	4.819E-01
Pb-212	4.960E-07	4.985E-01	4.985E-01	4.985E-01	4.985E-01	4.985E-01	4.985E-01	4.985E-01	4.985E-01	4.985E-01
Po-212	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Po-216	7.100E-11	4.819E-01	4.819E-01	4.819E-01	4.819E-01	4.819E-01	4.819E-01	4.819E-01	4.819E-01	4.819E-01
Ra-224	3.910E-08	4.958E-01	4.958E-01	4.958E-01	4.958E-01	4.958E-01	4.958E-01	4.958E-01	4.958E-01	4.958E-01
Ra-228	3.430E-11	5.504E-01	5.504E-01	5.504E-01	5.504E-01	5.504E-01	5.504E-01	5.504E-01	5.504E-01	5.504E-01
Rn-220	2.770E-09	4.808E-01	4.808E-01	4.808E-01	4.808E-01	4.808E-01	4.808E-01	4.808E-01	4.808E-01	4.808E-01
Th-228	5.640E-09	5.022E-01	5.022E-01	5.022E-01	5.022E-01	5.022E-01	5.022E-01	5.022E-01	5.022E-01	5.022E-01
Th-232	3.580E-10	5.498E-01	5.498E-01	5.498E-01	5.498E-01	5.498E-01	5.498E-01	5.498E-01	5.498E-01	5.498E-01
Tl-208	1.750E-05	4.824E-01	4.824E-01	4.824E-01	4.824E-01	4.824E-01	4.824E-01	4.824E-01	4.824E-01	4.823E-01

* - Units are 1/yr per (pCi/g) at infinite depth and area. Multiplication by ETFG(i,t) converts to site conditions.

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 0.000E+00 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Bi-212	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-212	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-224	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-232	6.079E-02	0.000E+00	0.000E+00	0.000E+00	2.260E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.260E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 0.000E+00 years

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-228	7.090E-05	0.3807	6.471E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.337E-09	0.0000
Bi-212	1.053E-04	0.5656	9.761E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.346E-10	0.0000
Pb-212	7.957E-06	0.0427	7.407E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.535E-08	0.0001
Ra-224	6.678E-07	0.0036	1.310E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E-07	0.0006
Ra-228	6.904E-10	0.0000	5.743E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.964E-07	0.0037
Th-228	9.122E-08	0.0005	1.534E-07	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.374E-08	0.0003
Th-232	9.978E-09	0.0001	7.894E-08	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.031E-08	0.0005
Total	1.849E-04	0.9932	3.037E-07	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.702E-07	0.0052

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-228	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	7.090E-05	0.3807
Bi-212	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	1.053E-04	0.5656
Pb-212	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	7.973E-06	0.0428
Ra-224	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	7.834E-07	0.0042
Ra-228	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	7.546E-07	0.0041
Th-228	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	3.083E-07	0.0017
Th-232	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	1.792E-07	0.0010
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	1.862E-04	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 0.000E+00 years

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Th-232	1.849E-04	0.9932	3.037E-07	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.702E-07	0.0052
Total	1.849E-04	0.9932	3.037E-07	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.702E-07	0.0052

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Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Th-232	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	1.862E-04	1.0000
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	1.862E-04	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+00 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-228	6.888E-03	0.000E+00	0.000E+00	0.000E+00	2.561E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.561E+00
Bi-212	1.097E-03	0.000E+00	0.000E+00	0.000E+00	4.079E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.079E-01
Pb-212	1.098E-03	0.000E+00	0.000E+00	0.000E+00	4.081E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.081E-01
Ra-224	1.101E-03	0.000E+00	0.000E+00	0.000E+00	4.094E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.094E-01
Ra-228	6.895E-03	0.000E+00	0.000E+00	0.000E+00	2.564E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.564E+00
Th-228	1.131E-03	0.000E+00	0.000E+00	0.000E+00	4.205E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.205E-01
Th-232	6.078E-02	0.000E+00	0.000E+00	0.000E+00	2.260E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.260E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+00 years

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-228	7.384E-05	0.3791	6.740E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.393E-09	0.0000
Bi-212	1.105E-04	0.5671	1.024E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.559E-10	0.0000
Pb-212	8.347E-06	0.0429	7.770E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.610E-08	0.0001
Ra-224	7.005E-07	0.0036	1.375E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.076E-07	0.0006
Ra-228	7.191E-10	0.0000	5.982E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.254E-07	0.0037
Th-228	9.569E-08	0.0005	1.609E-07	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.686E-08	0.0003
Th-232	9.978E-09	0.0001	7.894E-08	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.031E-08	0.0005
Total	1.935E-04	0.9932	3.143E-07	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.008E-06	0.0052

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-228	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	7.385E-05	0.3791
Bi-212	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	1.105E-04	0.5671
Pb-212	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	8.364E-06	0.0429
Ra-224	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	8.218E-07	0.0042
Ra-228	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	7.859E-07	0.0040
Th-228	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	3.234E-07	0.0017
Th-232	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	1.792E-07	0.0009
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	1.948E-04	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+00 years

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Th-232	1.935E-04	0.9932	3.143E-07	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.008E-06	0.0052
Total	1.935E-04	0.9932	3.143E-07	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.008E-06	0.0052

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Th-232	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	1.948E-04	1.0000
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	1.948E-04	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+00 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-228	1.838E-02	0.000E+00	0.000E+00	0.000E+00	6.834E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.834E+00
Bi-212	7.473E-03	0.000E+00	0.000E+00	0.000E+00	2.779E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.779E+00
Pb-212	7.475E-03	0.000E+00	0.000E+00	0.000E+00	2.779E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.779E+00
Ra-224	7.482E-03	0.000E+00	0.000E+00	0.000E+00	2.782E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.782E+00
Ra-228	1.838E-02	0.000E+00	0.000E+00	0.000E+00	6.836E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.836E+00
Th-228	7.539E-03	0.000E+00	0.000E+00	0.000E+00	2.803E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.803E+00
Th-232	6.078E-02	0.000E+00	0.000E+00	0.000E+00	2.260E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.260E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+00 years

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-228	7.870E-05	0.3738	7.183E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.484E-09	0.0000
Bi-212	1.204E-04	0.5721	1.116E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.970E-10	0.0000
Pb-212	9.100E-06	0.0432	8.472E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.755E-08	0.0001
Ra-224	7.637E-07	0.0036	1.499E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.173E-07	0.0006
Ra-228	7.664E-10	0.0000	6.375E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.731E-07	0.0037
Th-228	1.043E-07	0.0005	1.754E-07	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.289E-08	0.0003
Th-232	9.978E-09	0.0000	7.894E-08	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.031E-08	0.0004
Total	2.091E-04	0.9933	3.341E-07	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.073E-06	0.0051

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-228	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	7.870E-05	0.3738
Bi-212	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	1.204E-04	0.5721
Pb-212	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	9.119E-06	0.0433
Ra-224	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	8.960E-07	0.0043
Ra-228	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	8.376E-07	0.0040
Th-228	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	3.526E-07	0.0017
Th-232	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	1.792E-07	0.0009
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	2.105E-04	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+00 years

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Th-232	2.091E-04	0.9933	3.341E-07	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.073E-06	0.0051
Total	2.091E-04	0.9933	3.341E-07	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.073E-06	0.0051

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Th-232	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	2.105E-04	1.0000
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	2.105E-04	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+01 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-228	4.217E-02	0.000E+00	0.000E+00	0.000E+00	1.568E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.568E+01
Bi-212	3.399E-02	0.000E+00	0.000E+00	0.000E+00	1.264E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.264E+01
Pb-212	3.399E-02	0.000E+00	0.000E+00	0.000E+00	1.264E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.264E+01
Ra-224	3.400E-02	0.000E+00	0.000E+00	0.000E+00	1.264E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.264E+01
Ra-228	4.217E-02	0.000E+00	0.000E+00	0.000E+00	1.568E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.568E+01
Th-228	3.404E-02	0.000E+00	0.000E+00	0.000E+00	1.266E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.266E+01
Th-232	6.078E-02	0.000E+00	0.000E+00	0.000E+00	2.260E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.260E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+01 years

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-228	8.890E-05	0.3611	8.115E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.677E-09	0.0000
Bi-212	1.438E-04	0.5840	1.333E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.934E-10	0.0000
Pb-212	1.086E-05	0.0441	1.011E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.095E-08	0.0001
Ra-224	9.117E-07	0.0037	1.789E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.400E-07	0.0006
Ra-228	8.658E-10	0.0000	7.201E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.733E-07	0.0035
Th-228	1.245E-07	0.0005	2.093E-07	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.699E-08	0.0004
Th-232	9.978E-09	0.0000	7.894E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.031E-08	0.0004
Total	2.446E-04	0.9935	3.794E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.214E-06	0.0049

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-228	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	8.891E-05	0.3611
Bi-212	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	1.438E-04	0.5840
Pb-212	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	1.089E-05	0.0442
Ra-224	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	1.070E-06	0.0043
Ra-228	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	9.462E-07	0.0038
Th-228	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	4.208E-07	0.0017
Th-232	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	1.792E-07	0.0007
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	2.462E-04	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+01 years

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Th-232	2.446E-04	0.9935	3.794E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.214E-06	0.0049
Total	2.446E-04	0.9935	3.794E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.214E-06	0.0049

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Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Th-232	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	2.462E-04	1.0000
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	2.462E-04	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+01 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-228	5.811E-02	0.000E+00	0.000E+00	0.000E+00	2.161E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.161E+01
Bi-212	5.734E-02	0.000E+00	0.000E+00	0.000E+00	2.132E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.132E+01
Pb-212	5.734E-02	0.000E+00	0.000E+00	0.000E+00	2.132E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.132E+01
Ra-224	5.734E-02	0.000E+00	0.000E+00	0.000E+00	2.132E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.132E+01
Ra-228	5.812E-02	0.000E+00	0.000E+00	0.000E+00	2.161E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.161E+01
Th-228	5.735E-02	0.000E+00	0.000E+00	0.000E+00	2.132E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.132E+01
Th-232	6.078E-02	0.000E+00	0.000E+00	0.000E+00	2.260E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.260E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+01 years

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-228	9.574E-05	0.3522	8.739E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.806E-09	0.0000
Bi-212	1.611E-04	0.5924	1.493E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.646E-10	0.0000
Pb-212	1.217E-05	0.0448	1.133E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.347E-08	0.0001
Ra-224	1.021E-06	0.0038	2.004E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.568E-07	0.0006
Ra-228	9.324E-10	0.0000	7.755E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.405E-07	0.0035
Th-228	1.394E-07	0.0005	2.344E-07	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.741E-08	0.0004
Th-232	9.977E-09	0.0000	7.893E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.030E-08	0.0003
Total	2.701E-04	0.9937	4.123E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.311E-06	0.0048

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-228	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	9.574E-05	0.3522
Bi-212	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	1.611E-04	0.5924
Pb-212	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	1.219E-05	0.0449
Ra-224	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	1.198E-06	0.0044
Ra-228	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	1.019E-06	0.0037
Th-228	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	4.712E-07	0.0017
Th-232	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	1.792E-07	0.0007
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	2.719E-04	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+01 years

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Th-232	2.701E-04	0.9937	4.123E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.311E-06	0.0048
Total	2.701E-04	0.9937	4.123E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.311E-06	0.0048

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Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Th-232	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	2.719E-04	1.0000
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	2.719E-04	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 8.890E+01 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-228	5.960E-02	0.000E+00	0.000E+00	0.000E+00	2.216E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.216E+01
Bi-212	5.959E-02	0.000E+00	0.000E+00	0.000E+00	2.215E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.215E+01
Pb-212	5.959E-02	0.000E+00	0.000E+00	0.000E+00	2.216E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.216E+01
Ra-224	5.959E-02	0.000E+00	0.000E+00	0.000E+00	2.216E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.216E+01
Ra-228	5.960E-02	0.000E+00	0.000E+00	0.000E+00	2.216E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.216E+01
Th-228	5.960E-02	0.000E+00	0.000E+00	0.000E+00	2.216E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.216E+01
Th-232	6.077E-02	0.000E+00	0.000E+00	0.000E+00	2.260E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.260E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 8.890E+01 years

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 8.890E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-228	9.637E-05	0.3514	8.796E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.817E-09	0.0000
Bi-212	1.627E-04	0.5931	1.508E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.713E-10	0.0000
Pb-212	1.229E-05	0.0448	1.144E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.370E-08	0.0001
Ra-224	1.031E-06	0.0038	2.024E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.584E-07	0.0006
Ra-228	9.384E-10	0.0000	7.806E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.466E-07	0.0035
Th-228	1.408E-07	0.0005	2.367E-07	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.838E-08	0.0004
Th-232	9.976E-09	0.0000	7.892E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.029E-08	0.0003
Total	2.725E-04	0.9937	4.153E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.320E-06	0.0048

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 8.890E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-228	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	9.637E-05	0.3514
Bi-212	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	1.627E-04	0.5932
Pb-212	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	1.232E-05	0.0449
Ra-224	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	1.210E-06	0.0044
Ra-228	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	1.026E-06	0.0037
Th-228	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	4.759E-07	0.0017
Th-232	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	1.792E-07	0.0007
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	2.742E-04	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 8.890E+01 years

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 8.890E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Th-232	2.725E-04	0.9937	4.153E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.320E-06	0.0048
Total	2.725E-04	0.9937	4.153E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.320E-06	0.0048

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Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 8.890E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Th-232	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	2.742E-04	1.0000
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	2.742E-04	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+02 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-228	5.960E-02	0.000E+00	0.000E+00	0.000E+00	2.216E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.216E+01
Bi-212	5.959E-02	0.000E+00	0.000E+00	0.000E+00	2.215E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.215E+01
Pb-212	5.959E-02	0.000E+00	0.000E+00	0.000E+00	2.216E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.216E+01
Ra-224	5.959E-02	0.000E+00	0.000E+00	0.000E+00	2.216E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.216E+01
Ra-228	5.960E-02	0.000E+00	0.000E+00	0.000E+00	2.216E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.216E+01
Th-228	5.960E-02	0.000E+00	0.000E+00	0.000E+00	2.216E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.216E+01
Th-232	6.077E-02	0.000E+00	0.000E+00	0.000E+00	2.259E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.259E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+02 years

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-228	9.636E-05	0.3514	8.796E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.817E-09	0.0000
Bi-212	1.627E-04	0.5931	1.508E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.713E-10	0.0000
Pb-212	1.229E-05	0.0448	1.144E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.370E-08	0.0001
Ra-224	1.031E-06	0.0038	2.024E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.584E-07	0.0006
Ra-228	9.384E-10	0.0000	7.806E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.466E-07	0.0035
Th-228	1.408E-07	0.0005	2.367E-07	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.838E-08	0.0004
Th-232	9.975E-09	0.0000	7.892E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.028E-08	0.0003
Total	2.725E-04	0.9937	4.153E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.320E-06	0.0048

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-228	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	9.637E-05	0.3514
Bi-212	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	1.627E-04	0.5932
Pb-212	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	1.232E-05	0.0449
Ra-224	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	1.210E-06	0.0044
Ra-228	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	1.026E-06	0.0037
Th-228	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	4.759E-07	0.0017
Th-232	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	1.792E-07	0.0007
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	2.742E-04	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+02 years

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Th-232	2.725E-04	0.9937	4.153E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.320E-06	0.0048
Total	2.725E-04	0.9937	4.153E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.320E-06	0.0048

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Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Th-232	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	2.742E-04	1.0000
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	2.742E-04	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+02 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-228	5.956E-02	0.000E+00	0.000E+00	0.000E+00	2.215E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.215E+01
Bi-212	5.955E-02	0.000E+00	0.000E+00	0.000E+00	2.214E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.214E+01
Pb-212	5.956E-02	0.000E+00	0.000E+00	0.000E+00	2.215E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.215E+01
Ra-224	5.956E-02	0.000E+00	0.000E+00	0.000E+00	2.215E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.215E+01
Ra-228	5.956E-02	0.000E+00	0.000E+00	0.000E+00	2.215E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.215E+01
Th-228	5.956E-02	0.000E+00	0.000E+00	0.000E+00	2.215E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.215E+01
Th-232	6.073E-02	0.000E+00	0.000E+00	0.000E+00	2.258E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.258E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 3.000E+02 years

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-228	9.631E-05	0.3514	8.791E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.816E-09	0.0000
Bi-212	1.626E-04	0.5931	1.507E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.709E-10	0.0000
Pb-212	1.228E-05	0.0448	1.144E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.369E-08	0.0001
Ra-224	1.031E-06	0.0038	2.023E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.583E-07	0.0006
Ra-228	9.379E-10	0.0000	7.801E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.460E-07	0.0035
Th-228	1.407E-07	0.0005	2.366E-07	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.832E-08	0.0004
Th-232	9.970E-09	0.0000	7.887E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.023E-08	0.0003
Total	2.723E-04	0.9937	4.151E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.319E-06	0.0048

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-228	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	9.631E-05	0.3514
Bi-212	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	1.626E-04	0.5932
Pb-212	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	1.231E-05	0.0449
Ra-224	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	1.209E-06	0.0044
Ra-228	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	1.025E-06	0.0037
Th-228	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	4.756E-07	0.0017
Th-232	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	1.791E-07	0.0007
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	2.741E-04	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 3.000E+02 years

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Th-232	2.723E-04	0.9937	4.151E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.319E-06	0.0048
Total	2.723E-04	0.9937	4.151E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.319E-06	0.0048

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Th-232	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	2.741E-04	1.0000
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	2.741E-04	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+03 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-228	5.945E-02	0.000E+00	0.000E+00	0.000E+00	2.210E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.210E+01
Bi-212	5.944E-02	0.000E+00	0.000E+00	0.000E+00	2.210E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.210E+01
Pb-212	5.944E-02	0.000E+00	0.000E+00	0.000E+00	2.210E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.210E+01
Ra-224	5.944E-02	0.000E+00	0.000E+00	0.000E+00	2.210E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.210E+01
Ra-228	5.945E-02	0.000E+00	0.000E+00	0.000E+00	2.210E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.210E+01
Th-228	5.945E-02	0.000E+00	0.000E+00	0.000E+00	2.210E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.210E+01
Th-232	6.062E-02	0.000E+00	0.000E+00	0.000E+00	2.254E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.254E+01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Amount of Intake Quantities QINT9(irn,i,t) and QINT9W(irn,i,t) for Inhalation of
Radon and its Decay Products as pCi/yr at t= 1.000E+03 years

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-228	9.612E-05	0.3514	8.774E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.813E-09	0.0000
Bi-212	1.622E-04	0.5931	1.504E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.696E-10	0.0000
Pb-212	1.226E-05	0.0448	1.141E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.364E-08	0.0001
Ra-224	1.029E-06	0.0038	2.019E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.580E-07	0.0006
Ra-228	9.361E-10	0.0000	7.786E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.442E-07	0.0035
Th-228	1.404E-07	0.0005	2.361E-07	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.813E-08	0.0004
Th-232	9.950E-09	0.0000	7.872E-08	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.006E-08	0.0003
Total	2.718E-04	0.9937	4.143E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.317E-06	0.0048

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-228	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	9.612E-05	0.3514
Bi-212	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	1.622E-04	0.5931
Pb-212	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	1.228E-05	0.0449
Ra-224	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	1.207E-06	0.0044
Ra-228	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	1.023E-06	0.0037
Th-228	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	4.747E-07	0.0017
Th-232	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	1.787E-07	0.0007
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	2.735E-04	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS9(irn,i,t) and CNRS9W(irn,i,t) for Inhalation of
Radon and its Decay Products at t= 1.000E+03 years

Radon	Radionuclides							
Pathway	Rn-222	Po-218	Pb-214	Bi-214	Rn-220	Po-216	Pb-212	Bi-212
Water-ind.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Water-dep.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Total	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Water-ind. == Water-independent Water-dep. == Water-dependent

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Th-232	2.718E-04	0.9937	4.143E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.317E-06	0.0048
Total	2.718E-04	0.9937	4.143E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.317E-06	0.0048

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Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Th-232	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	2.735E-04	1.0000
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	2.735E-04	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Summary : RESRAD Default Parameters
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Dose Conversion Factor (and Related) Parameter Summary
Dose Library: DOE STD-1196-2011 (Reference Person)

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: DCFPAK3.02)	2.615E-04	2.615E-04	DCF1(1)
A-1	At-219 (Source: DCFPAK3.02)	0.000E+00	0.000E+00	DCF1(2)
A-1	Bi-211 (Source: DCFPAK3.02)	2.410E-01	2.410E-01	DCF1(3)
A-1	Bi-215 (Source: DCFPAK3.02)	1.369E+00	1.369E+00	DCF1(4)
A-1	Fr-223 (Source: DCFPAK3.02)	1.758E-01	1.758E-01	DCF1(5)
A-1	Pa-231 (Source: DCFPAK3.02)	1.608E-01	1.608E-01	DCF1(6)
A-1	Pb-211 (Source: DCFPAK3.02)	3.680E-01	3.680E-01	DCF1(7)
A-1	Po-211 (Source: DCFPAK3.02)	4.707E-02	4.707E-02	DCF1(8)
A-1	Po-215 (Source: DCFPAK3.02)	9.452E-04	9.452E-04	DCF1(9)
A-1	Ra-223 (Source: DCFPAK3.02)	5.791E-01	5.791E-01	DCF1(10)
A-1	Rn-219 (Source: DCFPAK3.02)	2.970E-01	2.970E-01	DCF1(11)
A-1	Th-227 (Source: DCFPAK3.02)	5.641E-01	5.641E-01	DCF1(12)
A-1	Th-231 (Source: DCFPAK3.02)	3.250E-02	3.250E-02	DCF1(13)
A-1	Tl-207 (Source: DCFPAK3.02)	2.391E-02	2.391E-02	DCF1(14)
A-1	U-235 (Source: DCFPAK3.02)	7.005E-01	7.005E-01	DCF1(15)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227	5.957E-01	5.957E-01	DCF2(1)
B-1	Fr-223	4.921E-05	4.921E-05	DCF2(4)
B-1	Fr-223+D	4.921E-05	4.921E-05	DCF2(5)
B-1	Pa-231	8.769E-01	8.769E-01	DCF2(6)
B-1	Pb-211+D	5.032E-05	5.032E-05	DCF2(9)
B-1	Ra-223+D	3.474E-02	3.474E-02	DCF2(10)
B-1	Th-227	4.144E-02	4.144E-02	DCF2(11)
B-1	Th-231	1.399E-06	1.399E-06	DCF2(12)
B-1	U-235	3.378E-02	3.378E-02	DCF2(15)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227	1.450E-03	1.450E-03	DCF3(1)
D-1	Fr-223	1.195E-05	1.195E-05	DCF3(4)
D-1	Fr-223+D	1.195E-05	1.195E-05	DCF3(5)
D-1	Pa-231	2.068E-03	2.068E-03	DCF3(6)
D-1	Pb-211+D	9.694E-07	9.694E-07	DCF3(9)
D-1	Ra-223+D	8.029E-04	8.029E-04	DCF3(10)
D-1	Th-227	5.439E-05	5.439E-05	DCF3(11)
D-1	Th-231	1.706E-06	1.706E-06	DCF3(12)
D-1	U-235	2.031E-04	2.031E-04	DCF3(15)
D-34	Food transfer factors:			
D-34	Ac-227 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Fr-223 , plant/soil concentration ratio, dimensionless	3.000E-02	3.000E-02	RTF(4,1)
D-34	Fr-223 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(4,2)
D-34	Fr-223 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(4,3)
D-34				

Summary : RESRAD Default Parameters
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Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: DOE STD-1196-2011 (Reference Person)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Fr-223+D , plant/soil concentration ratio, dimensionless	3.000E-02	3.000E-02	RTF(5,1)
D-34	Fr-223+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(5,2)
D-34	Fr-223+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(5,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(6,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(6,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34				
D-34	Pb-211+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(9,1)
D-34	Pb-211+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(9,2)
D-34	Pb-211+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(9,3)
D-34				
D-34	Ra-223+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(10,1)
D-34	Ra-223+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(10,2)
D-34	Ra-223+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(10,3)
D-34				
D-34	Th-227 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(11,1)
D-34	Th-227 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(11,2)
D-34	Th-227 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(11,3)
D-34				
D-34	Th-231 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(12,1)
D-34	Th-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(12,2)
D-34	Th-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(12,3)
D-34				
D-34	U-235 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(15,1)
D-34	U-235 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(15,2)
D-34	U-235 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(15,3)
D-34				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227 , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Fr-223 , fish	3.000E+01	3.000E+01	BIOFAC(4,1)
D-5	Fr-223 , crustacea and mollusks	0.000E+00	-1.000E+00	BIOFAC(4,2)
D-5				
D-5	Fr-223+D , fish	3.000E+01	3.000E+01	BIOFAC(5,1)
D-5	Fr-223+D , crustacea and mollusks	0.000E+00	-1.000E+00	BIOFAC(5,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(6,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(6,2)
D-5				
D-5	Pb-211+D , fish	3.000E+02	3.000E+02	BIOFAC(9,1)
D-5	Pb-211+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5				
D-5	Ra-223+D , fish	5.000E+01	5.000E+01	BIOFAC(10,1)
D-5	Ra-223+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(10,2)
D-5				
D-5	Th-227 , fish	1.000E+02	1.000E+02	BIOFAC(11,1)
D-5	Th-227 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(11,2)

Summary : RESRAD Default Parameters
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Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: DOE STD-1196-2011 (Reference Person)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-231 , fish	1.000E+02	1.000E+02	BIOFAC(12,1)
D-5	Th-231 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(12,2)
D-5				
D-5	U-235 , fish	1.000E+01	1.000E+01	BIOFAC(15,1)
D-5	U-235 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(15,2)
D-5				

#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.

Summary : RESRAD Default Parameters
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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	1.214E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	2.000E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.200E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	8.890E+01	1.000E+02	---	T(6)
R011	Times for calculations (yr)	1.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	3.000E+02	1.000E+03	---	T(8)
R011	Times for calculations (yr)	1.000E+03	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): U-235	1.950E-01	0.000E+00	---	S1(15)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(15)
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)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	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	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+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	2.000E-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
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

Summary : RESRAD Default Parameters
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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.245E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Fr-223				
R016	Contaminated zone (cm**3/g)	2.000E+02	2.000E+02	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	not used	2.000E+02	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	not used	2.000E+02	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.324E-04	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(6,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for daughter Pb-211				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.663E-03	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for daughter Ra-223				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.374E-03	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)

Summary : RESRAD Default Parameters
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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Th-227				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(11,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.778E-06	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R016	Distribution coefficients for daughter Th-231				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(12)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(12,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.778E-06	ALEACH(12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(12)
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	3.000E+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	6.840E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.300E-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)
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)
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)

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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)	3.650E+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)	1.500E-01	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)
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

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.RAD

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

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	12140.00 square meters	U-235	1.950E-01
Thickness:	2.00 meters		
Cover Depth:	0.00 meters		

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 1.200E+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	8.890E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	7.662E-02	7.644E-02	7.594E-02	7.421E-02	6.950E-02	5.735E-02	5.531E-02	2.884E-02	2.950E-03
M(t):	6.385E-03	6.370E-03	6.328E-03	6.184E-03	5.791E-03	4.779E-03	4.609E-03	2.404E-03	2.458E-04

Maximum TDOSE(t): 7.662E-02 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.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 = 0.000E+00 years

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.
U-235	7.519E-02	0.9813	3.308E-04	0.0043	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.102E-03	0.0144
Total	7.519E-02	0.9813	3.308E-04	0.0043	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.102E-03	0.0144

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

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.
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	7.662E-02	1.0000
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	7.662E-02	1.0000

*Sum of all water independent and dependent pathways.

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

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.
U-235	7.502E-02	0.9813	3.298E-04	0.0043	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.099E-03	0.0144
Total	7.502E-02	0.9813	3.298E-04	0.0043	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.099E-03	0.0144

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

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.
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	7.644E-02	1.0000
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	7.644E-02	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.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

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.
U-235	7.452E-02	0.9813	3.280E-04	0.0043	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.092E-03	0.0144
Total	7.452E-02	0.9813	3.280E-04	0.0043	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.092E-03	0.0144

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

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.
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	7.594E-02	1.0000
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	7.594E-02	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.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

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.
U-235	7.282E-02	0.9813	3.219E-04	0.0043	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.069E-03	0.0144
Total	7.282E-02	0.9813	3.219E-04	0.0043	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.069E-03	0.0144

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

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.
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	7.421E-02	1.0000
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	7.421E-02	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.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

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.
U-235	6.818E-02	0.9811	3.057E-04	0.0044	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.006E-03	0.0145
Total	6.818E-02	0.9811	3.057E-04	0.0044	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.006E-03	0.0145

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

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.
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	6.950E-02	1.0000
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	6.950E-02	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.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 = 8.890E+01 years

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.
U-235	5.624E-02	0.9806	2.639E-04	0.0046	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.466E-04	0.0148
Total	5.624E-02	0.9806	2.639E-04	0.0046	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.466E-04	0.0148

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 8.890E+01 years

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.
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	5.735E-02	1.0000
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	5.735E-02	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\SITE28.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

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.
U-235	5.424E-02	0.9805	2.567E-04	0.0046	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.196E-04	0.0148
Total	5.424E-02	0.9805	2.567E-04	0.0046	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.196E-04	0.0148

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

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.
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	5.531E-02	1.0000
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	5.531E-02	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
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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

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.
U-235	2.823E-02	0.9788	1.544E-04	0.0054	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.560E-04	0.0158
Total	2.823E-02	0.9788	1.544E-04	0.0054	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.560E-04	0.0158

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

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.
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	2.884E-02	1.0000
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	2.884E-02	1.0000

*Sum of all water independent and dependent pathways.

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

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.
U-235	2.871E-03	0.9733	2.267E-05	0.0077	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.623E-05	0.0191
Total	2.871E-03	0.9733	2.267E-05	0.0077	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.623E-05	0.0191

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

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.
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	2.950E-03	1.0000
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	2.950E-03	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters
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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

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	8.890E+01	1.000E+02	3.000E+02	1.000E+03
U-235	U-235	9.862E-01	3.702E-01	3.690E-01	3.665E-01	3.581E-01	3.351E-01	2.756E-01	2.656E-01	1.368E-01	1.339E-02
U-235	Th-231	9.862E-01	1.733E-02	1.764E-02	1.753E-02	1.713E-02	1.603E-02	1.318E-02	1.270E-02	6.541E-03	6.406E-04
U-235	Pa-231	9.862E-01	1.917E-06	5.766E-06	1.339E-05	3.927E-05	1.068E-04	2.572E-04	2.787E-04	4.281E-04	1.386E-04
U-235	Ac-227	9.862E-01	7.583E-09	5.276E-08	2.715E-07	2.190E-06	1.393E-05	5.952E-05	6.713E-05	1.274E-04	4.412E-05
U-235	Th-227	9.862E-01	2.626E-08	2.057E-07	1.116E-06	9.258E-06	5.943E-05	2.547E-04	2.873E-04	5.457E-04	1.890E-04
U-235	Ra-223+D	9.862E-01	3.684E-08	3.128E-07	1.757E-06	1.483E-05	9.572E-05	4.110E-04	4.636E-04	8.811E-04	3.052E-04
U-235	Pb-211+D	9.862E-01	2.498E-08	2.121E-07	1.191E-06	1.006E-05	6.493E-05	2.788E-04	3.144E-04	5.976E-04	2.070E-04
U-235	∑DSR(j)		3.875E-01	3.866E-01	3.841E-01	3.753E-01	3.515E-01	2.900E-01	2.797E-01	1.459E-01	1.492E-02
U-235	U-235	1.380E-02	5.180E-03	5.163E-03	5.128E-03	5.011E-03	4.689E-03	3.856E-03	3.717E-03	1.914E-03	1.874E-04
U-235	Th-231	1.380E-02	2.425E-04	2.469E-04	2.453E-04	2.396E-04	2.242E-04	1.844E-04	1.777E-04	9.152E-05	8.963E-06
U-235	Pa-231	1.380E-02	2.683E-08	8.068E-08	1.873E-07	5.495E-07	1.494E-06	3.599E-06	3.899E-06	5.990E-06	1.939E-06
U-235	Ac-227	1.380E-02	1.061E-10	7.382E-10	3.799E-09	3.065E-08	1.949E-07	8.329E-07	9.393E-07	1.783E-06	6.174E-07
U-235	Fr-223	1.380E-02	1.401E-10	9.750E-10	5.017E-09	4.048E-08	2.575E-07	1.100E-06	1.241E-06	2.355E-06	8.155E-07
U-235	Ra-223+D	1.380E-02	6.427E-10	4.819E-09	2.562E-08	2.102E-07	1.345E-06	5.756E-06	6.492E-06	1.233E-05	4.269E-06
U-235	Pb-211+D	1.380E-02	4.358E-10	3.268E-09	1.737E-08	1.426E-07	9.120E-07	3.904E-06	4.403E-06	8.362E-06	2.896E-06
U-235	∑DSR(j)		5.422E-03	5.410E-03	5.374E-03	5.251E-03	4.917E-03	4.056E-03	3.911E-03	2.036E-03	2.069E-04
U-235	U-235	8.280E-07	3.108E-07	3.098E-07	3.077E-07	3.007E-07	2.813E-07	2.314E-07	2.230E-07	1.148E-07	1.125E-08
U-235	Th-231	8.280E-07	1.455E-08	1.481E-08	1.472E-08	1.438E-08	1.345E-08	1.107E-08	1.067E-08	5.491E-09	5.378E-10
U-235	Pa-231	8.280E-07	1.610E-12	4.841E-12	1.124E-11	3.297E-11	8.963E-11	2.160E-10	2.340E-10	3.594E-10	1.164E-10
U-235	Ac-227	8.280E-07	6.367E-15	4.430E-14	2.279E-13	1.839E-12	1.170E-11	4.998E-11	5.636E-11	1.070E-10	3.705E-11
U-235	Fr-223+D	8.280E-07	7.335E-14	5.104E-13	2.626E-12	2.119E-11	1.348E-10	5.759E-10	6.494E-10	1.233E-09	4.269E-10
U-235	Pb-211+D	8.280E-07	2.985E-14	2.077E-13	1.069E-12	8.624E-12	5.486E-11	2.344E-10	2.643E-10	5.018E-10	1.738E-10
U-235	∑DSR(j)		3.254E-07	3.246E-07	3.225E-07	3.151E-07	2.951E-07	2.435E-07	2.349E-07	1.225E-07	1.254E-08

The DSR includes contributions from associated (half-life ≤ 10 minut) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.200E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	8.890E+01	1.000E+02	3.000E+02	1.000E+03
U-235	3.054E+01	3.061E+01	3.081E+01	3.153E+01	3.367E+01	4.080E+01	4.231E+01	8.112E+01	7.933E+02

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 = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
U-235	1.950E-01	0.000E+00	3.929E-01	3.054E+01	3.929E-01	3.054E+01

Summary : RESRAD Default Parameters
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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (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	8.890E+01	1.000E+02	3.000E+02	1.000E+03
U-235	U-235	9.862E-01	7.219E-02	7.195E-02	7.147E-02	6.983E-02	6.534E-02	5.374E-02	5.180E-02	2.667E-02	2.612E-03
U-235	U-235	1.380E-02	1.010E-03	1.007E-03	1.000E-03	9.771E-04	9.143E-04	7.520E-04	7.248E-04	3.732E-04	3.655E-05
U-235	∑DOSE(j)		7.320E-02	7.295E-02	7.247E-02	7.081E-02	6.626E-02	5.449E-02	5.252E-02	2.704E-02	2.649E-03
Th-231	U-235	9.862E-01	3.380E-03	3.441E-03	3.418E-03	3.339E-03	3.125E-03	2.570E-03	2.477E-03	1.275E-03	1.249E-04
Th-231	U-235	1.380E-02	4.730E-05	4.814E-05	4.783E-05	4.673E-05	4.373E-05	3.596E-05	3.466E-05	1.785E-05	1.748E-06
Th-231	U-235	8.280E-07	2.838E-09	2.889E-09	2.870E-09	2.804E-09	2.624E-09	2.158E-09	2.080E-09	1.071E-09	1.049E-10
Th-231	∑DOSE(j)		3.427E-03	3.489E-03	3.466E-03	3.386E-03	3.169E-03	2.606E-03	2.512E-03	1.293E-03	1.267E-04
Pa-231	U-235	9.862E-01	3.739E-07	1.124E-06	2.611E-06	7.658E-06	2.082E-05	5.016E-05	5.434E-05	8.348E-05	2.702E-05
Pa-231	U-235	1.380E-02	5.231E-09	1.573E-08	3.653E-08	1.072E-07	2.913E-07	7.018E-07	7.604E-07	1.168E-06	3.781E-07
Pa-231	U-235	8.280E-07	3.139E-13	9.441E-13	2.192E-12	6.430E-12	1.748E-11	4.211E-11	4.562E-11	7.009E-11	2.269E-11
Pa-231	∑DOSE(j)		3.791E-07	1.140E-06	2.647E-06	7.765E-06	2.111E-05	5.086E-05	5.510E-05	8.465E-05	2.740E-05
Ac-227	U-235	9.862E-01	1.479E-09	1.029E-08	5.294E-08	4.271E-07	2.716E-06	1.161E-05	1.309E-05	2.485E-05	8.604E-06
Ac-227	U-235	1.380E-02	2.069E-11	1.440E-10	7.407E-10	5.976E-09	3.801E-08	1.624E-07	1.832E-07	3.477E-07	1.204E-07
Ac-227	U-235	8.280E-07	1.241E-15	8.638E-15	4.445E-14	3.586E-13	2.281E-12	9.745E-12	1.099E-11	2.086E-11	7.224E-12
Ac-227	∑DOSE(j)		1.499E-09	1.043E-08	5.368E-08	4.331E-07	2.754E-06	1.177E-05	1.327E-05	2.520E-05	8.725E-06
Th-227	U-235	9.862E-01	5.121E-09	4.011E-08	2.176E-07	1.805E-06	1.159E-05	4.966E-05	5.602E-05	1.064E-04	3.685E-05
Ra-223	U-235	9.862E-01	7.183E-09	6.099E-08	3.425E-07	2.892E-06	1.867E-05	8.014E-05	9.040E-05	1.718E-04	5.951E-05
Ra-223	U-235	1.380E-02	1.253E-10	9.397E-10	4.995E-09	4.099E-08	2.622E-07	1.122E-06	1.266E-06	2.404E-06	8.325E-07
Ra-223	∑DOSE(j)		7.308E-09	6.193E-08	3.475E-07	2.933E-06	1.893E-05	8.126E-05	9.167E-05	1.742E-04	6.034E-05
Pb-211	U-235	9.862E-01	4.870E-09	4.136E-08	2.323E-07	1.961E-06	1.266E-05	5.436E-05	6.132E-05	1.165E-04	4.036E-05
Pb-211	U-235	1.380E-02	8.497E-11	6.373E-10	3.388E-09	2.780E-08	1.778E-07	7.613E-07	8.586E-07	1.631E-06	5.647E-07
Pb-211	U-235	8.280E-07	5.820E-15	4.050E-14	2.085E-13	1.682E-12	1.070E-11	4.571E-11	5.155E-11	9.786E-11	3.388E-11
Pb-211	∑DOSE(j)		4.955E-09	4.200E-08	2.357E-07	1.989E-06	1.284E-05	5.512E-05	6.218E-05	1.182E-04	4.093E-05
Fr-223	U-235	1.380E-02	2.732E-11	1.901E-10	9.784E-10	7.893E-09	5.020E-08	2.145E-07	2.419E-07	4.593E-07	1.590E-07
Fr-223	U-235	8.280E-07	1.430E-14	9.952E-14	5.121E-13	4.132E-12	2.628E-11	1.123E-10	1.266E-10	2.404E-10	8.324E-11
Fr-223	∑DOSE(j)		2.734E-11	1.902E-10	9.789E-10	7.897E-09	5.023E-08	2.146E-07	2.421E-07	4.595E-07	1.591E-07
U-235	U-235	8.280E-07	6.061E-08	6.041E-08	6.001E-08	5.863E-08	5.486E-08	4.512E-08	4.349E-08	2.239E-08	2.193E-09

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

Summary : RESRAD Default Parameters
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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (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	8.890E+01	1.000E+02	3.000E+02	1.000E+03
U-235	U-235	9.862E-01	1.923E-01	1.917E-01	1.904E-01	1.860E-01	1.741E-01	1.432E-01	1.380E-01	7.105E-02	6.959E-03
U-235	U-235	1.380E-02	2.691E-03	2.682E-03	2.664E-03	2.603E-03	2.436E-03	2.003E-03	1.931E-03	9.941E-04	9.737E-05
U-235	∑S(j):		1.950E-01	1.944E-01	1.931E-01	1.886E-01	1.765E-01	1.452E-01	1.399E-01	7.204E-02	7.056E-03
Th-231	U-235	9.862E-01	0.000E+00	1.917E-01	1.904E-01	1.860E-01	1.741E-01	1.432E-01	1.380E-01	7.105E-02	6.959E-03
Th-231	U-235	1.380E-02	0.000E+00	2.682E-03	2.664E-03	2.603E-03	2.436E-03	2.003E-03	1.931E-03	9.941E-04	9.737E-05
Th-231	U-235	8.280E-07	0.000E+00	1.609E-07	1.599E-07	1.562E-07	1.462E-07	1.202E-07	1.159E-07	5.965E-08	5.842E-09
Th-231	∑S(j):		0.000E+00	1.944E-01	1.931E-01	1.886E-01	1.765E-01	1.452E-01	1.399E-01	7.204E-02	7.056E-03
Pa-231	U-235	9.862E-01	0.000E+00	4.038E-06	1.207E-05	3.934E-05	1.104E-04	2.690E-04	2.916E-04	4.496E-04	1.457E-04
Pa-231	U-235	1.380E-02	0.000E+00	5.651E-08	1.689E-07	5.505E-07	1.545E-06	3.764E-06	4.081E-06	6.290E-06	2.038E-06
Pa-231	U-235	8.280E-07	0.000E+00	3.391E-12	1.013E-11	3.303E-11	9.273E-11	2.259E-10	2.449E-10	3.774E-10	1.223E-10
Pa-231	∑S(j):		0.000E+00	4.095E-06	1.224E-05	3.989E-05	1.120E-04	2.728E-04	2.957E-04	4.558E-04	1.477E-04
Ac-227	U-235	9.862E-01	0.000E+00	6.324E-08	5.550E-07	5.559E-06	3.771E-05	1.644E-04	1.856E-04	3.541E-04	1.228E-04
Ac-227	U-235	1.380E-02	0.000E+00	8.849E-10	7.765E-09	7.778E-08	5.276E-07	2.301E-06	2.598E-06	4.955E-06	1.718E-06
Ac-227	U-235	8.280E-07	0.000E+00	5.310E-14	4.660E-13	4.667E-12	3.166E-11	1.381E-10	1.559E-10	2.973E-10	1.031E-10
Ac-227	∑S(j):		0.000E+00	6.413E-08	5.627E-07	5.637E-06	3.824E-05	1.667E-04	1.882E-04	3.591E-04	1.245E-04
Th-227	U-235	9.862E-01	0.000E+00	5.462E-08	5.289E-07	5.483E-06	3.756E-05	1.643E-04	1.855E-04	3.541E-04	1.228E-04
Ra-223	U-235	9.862E-01	0.000E+00	4.959E-08	5.131E-07	5.437E-06	3.747E-05	1.642E-04	1.854E-04	3.541E-04	1.228E-04
Ra-223	U-235	1.380E-02	0.000E+00	8.086E-10	7.539E-09	7.712E-08	5.263E-07	2.299E-06	2.596E-06	4.954E-06	1.718E-06
Ra-223	∑S(j):		0.000E+00	5.040E-08	5.206E-07	5.514E-06	3.799E-05	1.665E-04	1.880E-04	3.590E-04	1.245E-04
Pb-211	U-235	9.862E-01	0.000E+00	4.958E-08	5.131E-07	5.436E-06	3.747E-05	1.642E-04	1.854E-04	3.541E-04	1.228E-04
Pb-211	U-235	1.380E-02	0.000E+00	8.085E-10	7.538E-09	7.712E-08	5.263E-07	2.299E-06	2.596E-06	4.954E-06	1.718E-06
Pb-211	U-235	8.280E-07	0.000E+00	5.308E-14	4.659E-13	4.667E-12	3.166E-11	1.381E-10	1.559E-10	2.973E-10	1.031E-10
Pb-211	∑S(j):		0.000E+00	5.039E-08	5.206E-07	5.514E-06	3.799E-05	1.665E-04	1.880E-04	3.590E-04	1.245E-04
Fr-223	U-235	1.380E-02	0.000E+00	8.848E-10	7.765E-09	7.778E-08	5.276E-07	2.301E-06	2.598E-06	4.955E-06	1.718E-06
Fr-223	U-235	8.280E-07	0.000E+00	5.309E-14	4.659E-13	4.667E-12	3.166E-11	1.381E-10	1.559E-10	2.973E-10	1.031E-10
Fr-223	∑S(j):		0.000E+00	8.849E-10	7.766E-09	7.778E-08	5.277E-07	2.301E-06	2.598E-06	4.955E-06	1.718E-06
U-235	U-235	8.280E-07	1.615E-07	1.609E-07	1.599E-07	1.562E-07	1.462E-07	1.202E-07	1.159E-07	5.965E-08	5.842E-09

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

RESCALC.EXE execution time = 1.87 seconds

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Cancer Risk Slope Factors Summary Table
Risk Library: DCFPAK3.02 Morbidity

Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-1	Ground external radiation slope factors, 1/yr per (pCi/g):			
Sf-1	Ac-227	1.98E-10	1.98E-10	SLPF(1,1)
Sf-1	Fr-223	1.35E-07	1.35E-07	SLPF(4,1)
Sf-1	Fr-223+D	1.22E-06	1.35E-07	SLPF(5,1)
Sf-1	Pa-231	1.27E-07	1.27E-07	SLPF(6,1)
Sf-1	Pb-211+D	4.97E-07	2.91E-07	SLPF(9,1)
Sf-1	Ra-223+D	6.91E-07	4.55E-07	SLPF(10,1)
Sf-1	Th-227	4.45E-07	4.45E-07	SLPF(11,1)
Sf-1	Th-231	2.49E-08	2.49E-08	SLPF(12,1)
Sf-1	U-235	5.51E-07	5.51E-07	SLPF(15,1)
Sf-2	Inhalation, slope factors, 1/(pCi):			
Sf-2	Ac-227	1.49E-07	1.49E-07	SLPF(1,2)
Sf-2	Fr-223	4.07E-11	4.07E-11	SLPF(4,2)
Sf-2	Fr-223+D	4.07E-11	4.07E-11	SLPF(5,2)
Sf-2	Pa-231	7.62E-08	7.62E-08	SLPF(6,2)
Sf-2	Pb-211+D	4.03E-11	4.03E-11	SLPF(9,2)
Sf-2	Ra-223+D	2.92E-08	2.92E-08	SLPF(10,2)
Sf-2	Th-227	3.50E-08	3.50E-08	SLPF(11,2)
Sf-2	Th-231	1.50E-12	1.50E-12	SLPF(12,2)
Sf-2	U-235	2.50E-08	2.50E-08	SLPF(15,2)
Sf-3	Food ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-227	2.45E-10	2.45E-10	SLPF(1,3)
Sf-3	Fr-223	1.01E-11	1.01E-11	SLPF(4,3)
Sf-3	Fr-223+D	1.01E-11	1.01E-11	SLPF(5,3)
Sf-3	Pa-231	2.26E-10	2.26E-10	SLPF(6,3)
Sf-3	Pb-211+D	5.81E-13	5.81E-13	SLPF(9,3)
Sf-3	Ra-223+D	3.39E-10	3.39E-10	SLPF(10,3)
Sf-3	Th-227	7.03E-11	7.03E-11	SLPF(11,3)
Sf-3	Th-231	3.22E-12	3.22E-12	SLPF(12,3)
Sf-3	U-235	9.43E-11	9.43E-11	SLPF(15,3)
Sf-3	Water ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-227	2.01E-10	2.01E-10	SLPF(1,4)
Sf-3	Fr-223	7.36E-12	7.36E-12	SLPF(4,4)
Sf-3	Fr-223+D	7.36E-12	7.36E-12	SLPF(5,4)
Sf-3	Pa-231	1.72E-10	1.72E-10	SLPF(6,4)
Sf-3	Pb-211+D	4.11E-13	4.11E-13	SLPF(9,4)
Sf-3	Ra-223+D	2.38E-10	2.38E-10	SLPF(10,4)
Sf-3	Th-227	4.81E-11	4.81E-11	SLPF(11,4)
Sf-3	Th-231	2.19E-12	2.19E-12	SLPF(12,4)
Sf-3	U-235	6.95E-11	6.95E-11	SLPF(15,4)
Sf-3	Soil ingestion, slope factors, 1/(pCi):			
Sf-3	Ac-227	2.45E-10	2.45E-10	SLPF(1,5)
Sf-3	Fr-223	1.01E-11	1.01E-11	SLPF(4,5)
Sf-3	Fr-223+D	1.01E-11	1.01E-11	SLPF(5,5)
Sf-3	Pa-231	2.26E-10	2.26E-10	SLPF(6,5)
Sf-3	Pb-211+D	5.81E-13	5.81E-13	SLPF(9,5)

Cancer Risk Slope Factors Summary Table (continued)
Risk Library: DCFPAK3.02 Morbidity

Menu	Parameter	Current Value	Base Case*	Parameter Name
Sf-3	Ra-223+D	3.39E-10	3.39E-10	SLPF(10,5)
Sf-3	Th-227	7.03E-11	7.03E-11	SLPF(11,5)
Sf-3	Th-231	3.22E-12	3.22E-12	SLPF(12,5)
Sf-3	U-235	9.43E-11	9.43E-11	SLPF(15,5)

*Base Case means Default.Lib w/o Associate Nuclide contributions.

Risk Slope and Environmental Transport Factors for the Ground Pathway

Nuclide (i)	Slope(i)* t=	ETFG(i,t) At Time in Years (dimensionless) 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	8.890E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	1.990E-10	5.340E-01	5.340E-01	5.340E-01	5.340E-01	5.340E-01	5.340E-01	5.340E-01	5.340E-01	5.340E-01
At-219	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Bi-211	1.900E-07	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01
Bi-215	1.080E-06	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01	5.225E-01
Fr-223	1.350E-07	5.253E-01	5.253E-01	5.253E-01	5.253E-01	5.253E-01	5.253E-01	5.253E-01	5.253E-01	5.253E-01
Pa-231	1.270E-07	5.253E-01	5.253E-01	5.253E-01	5.253E-01	5.253E-01	5.253E-01	5.253E-01	5.253E-01	5.253E-01
Pb-211	2.910E-07	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01
Po-211	3.760E-08	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01	5.176E-01
Po-215	7.480E-10	5.203E-01	5.203E-01	5.203E-01	5.203E-01	5.203E-01	5.203E-01	5.203E-01	5.203E-01	5.203E-01
Ra-223	4.550E-07	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01
Rn-219	2.350E-07	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01	5.252E-01
Th-227	4.450E-07	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01
Th-231	2.490E-08	5.518E-01	5.518E-01	5.518E-01	5.518E-01	5.518E-01	5.518E-01	5.518E-01	5.518E-01	5.518E-01
Tl-207	1.590E-08	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01	5.182E-01
U-235	5.510E-07	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01	5.263E-01

* - Units are 1/yr per (pCi/g) at infinite depth and area. Multiplication by ETFG(i,t) converts to site conditions.

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Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 0.000E+00 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-227	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Fr-223	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pa-231	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-211	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-223	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-227	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-231	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-235	9.804E-03	0.000E+00	0.000E+00	0.000E+00	5.388E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.388E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	4.524E-14	0.0000	3.200E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.886E-12	0.0000
Fr-223	4.169E-13	0.0000	1.202E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.640E-15	0.0000
Pa-231	1.159E-10	0.0001	6.656E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.083E-11	0.0000
Pb-211	1.088E-10	0.0001	8.541E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.760E-15	0.0000
Ra-223	1.530E-10	0.0001	6.182E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.940E-12	0.0000
Th-227	9.769E-11	0.0001	7.340E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.101E-13	0.0000
Th-231	7.609E-08	0.0444	4.182E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.919E-10	0.0003
U-235	1.615E-06	0.9425	7.002E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.451E-08	0.0085
Total	1.691E-06	0.9871	7.013E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.502E-08	0.0088

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	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	6.131E-12	0.0000
Fr-223	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	4.185E-13	0.0000
Pa-231	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	1.334E-10	0.0001
Pb-211	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	1.088E-10	0.0001
Ra-223	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	1.576E-10	0.0001
Th-227	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	9.924E-11	0.0001
Th-231	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	7.658E-08	0.0447
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	1.636E-06	0.9550
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	1.713E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
U-235	1.691E-06	0.9871	7.013E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.502E-08	0.0088
Total	1.691E-06	0.9871	7.013E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.502E-08	0.0088

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 0.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
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	1.713E-06	1.0000
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	1.713E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+00 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-227	3.224E-09	0.000E+00	0.000E+00	0.000E+00	1.772E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.772E-06
Fr-223	4.449E-11	0.000E+00	0.000E+00	0.000E+00	2.445E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.445E-08
Pa-231	2.059E-07	0.000E+00	0.000E+00	0.000E+00	1.131E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.131E-04
Pb-211	2.533E-09	0.000E+00	0.000E+00	0.000E+00	1.392E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.392E-06
Ra-223	2.534E-09	0.000E+00	0.000E+00	0.000E+00	1.393E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.393E-06
Th-227	2.746E-09	0.000E+00	0.000E+00	0.000E+00	1.509E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.509E-06
Th-231	9.772E-03	0.000E+00	0.000E+00	0.000E+00	5.370E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.370E+00
U-235	9.772E-03	0.000E+00	0.000E+00	0.000E+00	5.370E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.370E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	4.942E-14	0.0000	3.496E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.152E-12	0.0000
Fr-223	4.553E-13	0.0000	1.313E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.791E-15	0.0000
Pa-231	1.233E-10	0.0001	7.084E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.153E-11	0.0000
Pb-211	1.189E-10	0.0001	9.334E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.387E-15	0.0000
Ra-223	1.672E-10	0.0001	6.756E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.305E-12	0.0000
Th-227	1.067E-10	0.0001	8.020E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.851E-13	0.0000
Th-231	7.625E-08	0.0446	4.191E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.930E-10	0.0003
U-235	1.609E-06	0.9422	6.979E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.447E-08	0.0085
Total	1.686E-06	0.9871	6.991E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.498E-08	0.0088

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	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	6.697E-12	0.0000
Fr-223	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	4.571E-13	0.0000
Pa-231	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	1.419E-10	0.0001
Pb-211	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	1.189E-10	0.0001
Ra-223	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	1.722E-10	0.0001
Th-227	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	1.084E-10	0.0001
Th-231	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	7.675E-08	0.0449
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	1.631E-06	0.9547
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	1.708E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
U-235	1.686E-06	0.9871	6.991E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.498E-08	0.0088
Total	1.686E-06	0.9871	6.991E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.498E-08	0.0088

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
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	1.708E-06	1.0000
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	1.708E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+00 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-227	2.829E-08	0.000E+00	0.000E+00	0.000E+00	1.555E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.555E-05
Fr-223	3.904E-10	0.000E+00	0.000E+00	0.000E+00	2.146E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.146E-07
Pa-231	6.153E-07	0.000E+00	0.000E+00	0.000E+00	3.381E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.381E-04
Pb-211	2.617E-08	0.000E+00	0.000E+00	0.000E+00	1.438E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.438E-05
Ra-223	2.618E-08	0.000E+00	0.000E+00	0.000E+00	1.439E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.439E-05
Th-227	2.659E-08	0.000E+00	0.000E+00	0.000E+00	1.461E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.461E-05
Th-231	9.707E-03	0.000E+00	0.000E+00	0.000E+00	5.335E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.335E+00
U-235	9.707E-03	0.000E+00	0.000E+00	0.000E+00	5.335E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.335E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	5.836E-14	0.0000	4.128E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.723E-12	0.0000
Fr-223	5.377E-13	0.0000	1.551E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.115E-15	0.0000
Pa-231	1.381E-10	0.0001	7.930E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.291E-11	0.0000
Pb-211	1.406E-10	0.0001	1.103E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.730E-15	0.0000
Ra-223	1.976E-10	0.0001	7.984E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.088E-12	0.0000
Th-227	1.261E-10	0.0001	9.476E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.046E-12	0.0000
Th-231	7.575E-08	0.0446	4.163E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.897E-10	0.0003
U-235	1.599E-06	0.9421	6.932E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.437E-08	0.0085
Total	1.675E-06	0.9871	6.947E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.488E-08	0.0088

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	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	7.909E-12	0.0000
Fr-223	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	5.399E-13	0.0000
Pa-231	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	1.589E-10	0.0001
Pb-211	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	1.406E-10	0.0001
Ra-223	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	2.035E-10	0.0001
Th-227	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	1.281E-10	0.0001
Th-231	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	7.624E-08	0.0449
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	1.620E-06	0.9547
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	1.697E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
U-235	1.675E-06	0.9871	6.947E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.488E-08	0.0088
Total	1.675E-06	0.9871	6.947E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.488E-08	0.0088

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+00 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
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	1.697E-06	1.0000
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	1.697E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+01 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-227	2.834E-07	0.000E+00	0.000E+00	0.000E+00	1.557E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.557E-04
Fr-223	3.911E-09	0.000E+00	0.000E+00	0.000E+00	2.149E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.149E-06
Pa-231	2.006E-06	0.000E+00	0.000E+00	0.000E+00	1.102E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.102E-03
Pb-211	2.772E-07	0.000E+00	0.000E+00	0.000E+00	1.523E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.523E-04
Ra-223	2.772E-07	0.000E+00	0.000E+00	0.000E+00	1.523E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.523E-04
Th-227	2.757E-07	0.000E+00	0.000E+00	0.000E+00	1.515E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.515E-04
Th-231	9.484E-03	0.000E+00	0.000E+00	0.000E+00	5.212E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.212E+00
U-235	9.484E-03	0.000E+00	0.000E+00	0.000E+00	5.212E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.212E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	9.498E-14	0.0000	6.719E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.059E-12	0.0000
Fr-223	8.752E-13	0.0000	2.524E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.443E-15	0.0000
Pa-231	1.881E-10	0.0001	1.080E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.758E-11	0.0000
Pb-211	2.293E-10	0.0001	1.799E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.424E-14	0.0000
Ra-223	3.224E-10	0.0002	1.302E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.300E-12	0.0000
Th-227	2.056E-10	0.0001	1.544E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.705E-12	0.0000
Th-231	7.401E-08	0.0446	4.068E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.785E-10	0.0003
U-235	1.562E-06	0.9419	6.773E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.404E-08	0.0085
Total	1.637E-06	0.9871	6.794E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.455E-08	0.0088

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	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	1.287E-11	0.0000
Fr-223	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	8.787E-13	0.0000
Pa-231	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	2.165E-10	0.0001
Pb-211	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	2.293E-10	0.0001
Ra-223	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	3.320E-10	0.0002
Th-227	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	2.088E-10	0.0001
Th-231	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	7.449E-08	0.0449
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	1.583E-06	0.9545
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	1.658E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
U-235	1.637E-06	0.9871	6.794E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.455E-08	0.0088
Total	1.637E-06	0.9871	6.794E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.455E-08	0.0088

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
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	1.658E-06	1.0000
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	1.658E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+01 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-227	1.922E-06	0.000E+00	0.000E+00	0.000E+00	1.056E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.056E-03
Fr-223	2.653E-08	0.000E+00	0.000E+00	0.000E+00	1.458E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.458E-05
Pa-231	5.631E-06	0.000E+00	0.000E+00	0.000E+00	3.094E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.094E-03
Pb-211	1.910E-06	0.000E+00	0.000E+00	0.000E+00	1.050E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.050E-03
Ra-223	1.910E-06	0.000E+00	0.000E+00	0.000E+00	1.050E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.050E-03
Th-227	1.888E-06	0.000E+00	0.000E+00	0.000E+00	1.038E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.038E-03
Th-231	8.875E-03	0.000E+00	0.000E+00	0.000E+00	4.877E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.877E+00
U-235	8.875E-03	0.000E+00	0.000E+00	0.000E+00	4.877E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.877E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	2.263E-13	0.0000	1.601E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.443E-11	0.0000
Fr-223	2.085E-12	0.0000	6.013E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.201E-15	0.0000
Pa-231	3.182E-10	0.0002	1.828E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.975E-11	0.0000
Pb-211	5.481E-10	0.0004	4.302E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.404E-14	0.0000
Ra-223	7.707E-10	0.0005	3.113E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.984E-11	0.0000
Th-227	4.907E-10	0.0003	3.687E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.069E-12	0.0000
Th-231	6.926E-08	0.0446	3.806E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.478E-10	0.0003
U-235	1.462E-06	0.9411	6.338E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.314E-08	0.0085
Total	1.533E-06	0.9871	6.380E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.365E-08	0.0088

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	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	3.067E-11	0.0000
Fr-223	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	2.093E-12	0.0000
Pa-231	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	3.662E-10	0.0002
Pb-211	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	5.481E-10	0.0004
Ra-223	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	7.936E-10	0.0005
Th-227	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	4.985E-10	0.0003
Th-231	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	6.970E-08	0.0449
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	1.481E-06	0.9537
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	1.553E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
U-235	1.533E-06	0.9871	6.380E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.365E-08	0.0088
Total	1.533E-06	0.9871	6.380E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.365E-08	0.0088

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
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	1.553E-06	1.0000
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	1.553E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 8.890E+01 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-227	8.383E-06	0.000E+00	0.000E+00	0.000E+00	4.607E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.607E-03
Fr-223	1.157E-07	0.000E+00	0.000E+00	0.000E+00	6.358E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.358E-05
Pa-231	1.372E-05	0.000E+00	0.000E+00	0.000E+00	7.538E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.538E-03
Pb-211	8.371E-06	0.000E+00	0.000E+00	0.000E+00	4.600E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.600E-03
Ra-223	8.371E-06	0.000E+00	0.000E+00	0.000E+00	4.600E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.600E-03
Th-227	8.260E-06	0.000E+00	0.000E+00	0.000E+00	4.540E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.540E-03
Th-231	7.299E-03	0.000E+00	0.000E+00	0.000E+00	4.011E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.011E+00
U-235	7.299E-03	0.000E+00	0.000E+00	0.000E+00	4.011E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.011E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 8.890E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	6.216E-13	0.0000	4.397E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.965E-11	0.0000
Fr-223	5.727E-12	0.0000	1.652E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.253E-14	0.0000
Pa-231	6.058E-10	0.0005	3.480E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.663E-11	0.0000
Pb-211	1.509E-09	0.0012	1.185E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.376E-14	0.0000
Ra-223	2.122E-09	0.0017	8.574E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.464E-11	0.0000
Th-227	1.350E-09	0.0011	1.014E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.120E-11	0.0000
Th-231	5.696E-08	0.0445	3.131E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.682E-10	0.0003
U-235	1.202E-06	0.9382	5.213E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.081E-08	0.0084
Total	1.265E-06	0.9870	5.310E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.134E-08	0.0088

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 8.890E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	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	8.424E-11	0.0001
Fr-223	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	5.750E-12	0.0000
Pa-231	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	6.972E-10	0.0005
Pb-211	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	1.510E-09	0.0012
Ra-223	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	2.186E-09	0.0017
Th-227	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	1.371E-09	0.0011
Th-231	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	5.733E-08	0.0447
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	1.218E-06	0.9507
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	1.281E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 8.890E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
U-235	1.265E-06	0.9870	5.310E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.134E-08	0.0088
Total	1.265E-06	0.9870	5.310E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.134E-08	0.0088

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 8.890E+01 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
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	1.281E-06	1.0000
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	1.281E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+02 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-227	9.464E-06	0.000E+00	0.000E+00	0.000E+00	5.201E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.201E-03
Fr-223	1.306E-07	0.000E+00	0.000E+00	0.000E+00	7.178E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.178E-05
Pa-231	1.487E-05	0.000E+00	0.000E+00	0.000E+00	8.171E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.171E-03
Pb-211	9.452E-06	0.000E+00	0.000E+00	0.000E+00	5.194E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.194E-03
Ra-223	9.452E-06	0.000E+00	0.000E+00	0.000E+00	5.194E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.194E-03
Th-227	9.327E-06	0.000E+00	0.000E+00	0.000E+00	5.126E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.126E-03
Th-231	7.035E-03	0.000E+00	0.000E+00	0.000E+00	3.866E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.866E+00
U-235	7.035E-03	0.000E+00	0.000E+00	0.000E+00	3.866E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.866E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	6.836E-13	0.0000	4.836E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.360E-11	0.0000
Fr-223	6.299E-12	0.0000	1.817E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.478E-14	0.0000
Pa-231	6.464E-10	0.0005	3.712E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.042E-11	0.0000
Pb-211	1.660E-09	0.0013	1.303E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.031E-13	0.0000
Ra-223	2.335E-09	0.0019	9.432E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.011E-11	0.0000
Th-227	1.485E-09	0.0012	1.116E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.232E-11	0.0000
Th-231	5.490E-08	0.0444	3.017E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.549E-10	0.0003
U-235	1.159E-06	0.9376	5.024E-09	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.041E-08	0.0084
Total	1.220E-06	0.9870	5.130E-09	0.0042	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.095E-08	0.0089

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	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	9.265E-11	0.0001
Fr-223	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	6.324E-12	0.0000
Pa-231	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	7.439E-10	0.0006
Pb-211	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	1.661E-09	0.0013
Ra-223	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	2.404E-09	0.0019
Th-227	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	1.509E-09	0.0012
Th-231	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	5.525E-08	0.0447
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	1.174E-06	0.9501
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	1.236E-06	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
U-235	1.220E-06	0.9870	5.130E-09	0.0042	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.095E-08	0.0089
Total	1.220E-06	0.9870	5.130E-09	0.0042	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.095E-08	0.0089

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
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	1.236E-06	1.0000
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	1.236E-06	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 3.000E+02 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-227	1.805E-05	0.000E+00	0.000E+00	0.000E+00	9.921E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.921E-03
Fr-223	2.491E-07	0.000E+00	0.000E+00	0.000E+00	1.369E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.369E-04
Pa-231	2.292E-05	0.000E+00	0.000E+00	0.000E+00	1.260E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.260E-02
Pb-211	1.805E-05	0.000E+00	0.000E+00	0.000E+00	9.920E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.920E-03
Ra-223	1.805E-05	0.000E+00	0.000E+00	0.000E+00	9.920E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.920E-03
Th-227	1.780E-05	0.000E+00	0.000E+00	0.000E+00	9.784E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.784E-03
Th-231	3.622E-03	0.000E+00	0.000E+00	0.000E+00	1.991E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.991E+00
U-235	3.622E-03	0.000E+00	0.000E+00	0.000E+00	1.991E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.991E+00

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	1.148E-12	0.0000	8.122E-11	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.324E-11	0.0001
Fr-223	1.058E-11	0.0000	3.051E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.161E-14	0.0000
Pa-231	9.109E-10	0.0014	5.232E-11	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.515E-11	0.0001
Pb-211	2.791E-09	0.0043	2.191E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.734E-13	0.0000
Ra-223	3.925E-09	0.0061	1.586E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.011E-10	0.0002
Th-227	2.496E-09	0.0039	1.875E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.070E-11	0.0000
Th-231	2.827E-08	0.0439	1.554E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.827E-10	0.0003
U-235	5.966E-07	0.9270	2.587E-09	0.0040	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.362E-09	0.0083
Total	6.350E-07	0.9867	2.755E-09	0.0043	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.825E-09	0.0091

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	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	1.556E-10	0.0002
Fr-223	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	1.062E-11	0.0000
Pa-231	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	1.048E-09	0.0016
Pb-211	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	2.792E-09	0.0043
Ra-223	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	4.042E-09	0.0063
Th-227	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	2.535E-09	0.0039
Th-231	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	2.845E-08	0.0442
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	6.045E-07	0.9393
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	6.436E-07	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
U-235	6.350E-07	0.9867	2.755E-09	0.0043	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.825E-09	0.0091
Total	6.350E-07	0.9867	2.755E-09	0.0043	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.825E-09	0.0091

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 3.000E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
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	6.436E-07	1.0000
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	6.436E-07	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Amount of Intake Quantities QINT(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As pCi/yr at t= 1.000E+03 years

Radio-	Water Independent Pathways (Inhalation w/o radon)					Water Dependent Pathways					Total
Nuclide	Inhalation	Plant	Meat	Milk	Soil	Water	Fish	Plant	Meat	Milk	Ingestion*
Ac-227	6.259E-06	0.000E+00	0.000E+00	0.000E+00	3.440E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.440E-03
Fr-223	8.637E-08	0.000E+00	0.000E+00	0.000E+00	4.747E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.747E-05
Pa-231	7.427E-06	0.000E+00	0.000E+00	0.000E+00	4.082E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.082E-03
Pb-211	6.260E-06	0.000E+00	0.000E+00	0.000E+00	3.440E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.440E-03
Ra-223	6.260E-06	0.000E+00	0.000E+00	0.000E+00	3.440E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.440E-03
Th-227	6.174E-06	0.000E+00	0.000E+00	0.000E+00	3.393E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.393E-03
Th-231	3.548E-04	0.000E+00	0.000E+00	0.000E+00	1.950E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.950E-01
U-235	3.548E-04	0.000E+00	0.000E+00	0.000E+00	1.950E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.950E-01

* Sum of all ingestion pathways, i.e. water independent plant, meat, milk, soil
and water-dependent water, fish, plant, meat, milk pathways

Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	3.834E-13	0.0000	2.712E-11	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.445E-11	0.0004
Fr-223	3.532E-12	0.0001	1.019E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.389E-14	0.0000
Pa-231	2.855E-10	0.0044	1.640E-11	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.669E-11	0.0004
Pb-211	9.323E-10	0.0142	7.317E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.791E-14	0.0000
Ra-223	1.311E-09	0.0200	5.296E-12	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.375E-11	0.0005
Th-227	8.335E-10	0.0127	6.263E-12	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.912E-12	0.0001
Th-231	2.768E-09	0.0423	1.522E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.790E-11	0.0003
U-235	5.843E-08	0.8920	2.534E-10	0.0039	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.252E-10	0.0080
Total	6.456E-08	0.9856	3.085E-10	0.0047	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.350E-10	0.0097

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Excess Cancer Risks CNRS(i,p,t) for Individual Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-	Water		Fish		Plant		Meat		Milk		All Pathways**	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
Ac-227	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	5.196E-11	0.0008
Fr-223	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	3.546E-12	0.0001
Pa-231	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	3.286E-10	0.0050
Pb-211	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	9.324E-10	0.0142
Ra-223	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	1.350E-09	0.0206
Th-227	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	8.467E-10	0.0129
Th-231	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	2.786E-09	0.0425
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	5.921E-08	0.9038
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	6.551E-08	1.0000

** Sum of water independent ground, inhalation, plant, meat, milk, soil
and water dependent water, fish, plant, meat, milk pathways

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
U-235	6.456E-08	0.9856	3.085E-10	0.0047	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.350E-10	0.0097
Total	6.456E-08	0.9856	3.085E-10	0.0047	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.350E-10	0.0097

Total Excess Cancer Risk CNRS(i,p,t)*** for Initially Existent Radionuclides (i) and Pathways (p)
and Fraction of Total Risk at t= 1.000E+03 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All pathways	
Nuclide	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.	risk	fract.
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	6.551E-08	1.0000
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	6.551E-08	1.0000

***CNRSI(i,p,t) includes contribution from decay daughter radionuclides

Appendix D. PRG Calculator Output Files

Site-Specific
Resident Soil Inputs - Secular Equilibrium

*** Inputted values different from Resident defaults are highlighted.**

Variable	Resident Soil Default Value	Form-input Value
A (PEF Dispersion Constant)	16.2302	13.8139
B (PEF Dispersion Constant)	18.7762	20.1624
City (Climate Zone)	Default	San Francisco, CA (2)
C (PEF Dispersion Constant)	216.108	234.2869
$CF_{res\text{-}produce}$ (contaminated plant fraction) unitless	1	1
$CF_{res\text{-}apple}$ (contaminated apple fraction) unitless	1	1
$CF_{res\text{-}asparagus}$ (contaminated asparagus fraction) unitless	1	1
$CF_{res\text{-}berry}$ (contaminated berry fraction) unitless	1	1
$CF_{res\text{-}broccoli}$ (contaminated broccoli fraction) unitless	1	1
$CF_{res\text{-}beet}$ (contaminated beet fraction) unitless	1	1
$CF_{res\text{-}cabbage}$ (contaminated cabbage fraction) unitless	1	1
$CF_{res\text{-}cereal\ grain}$ (contaminated cereal grain fraction) unitless	1	1
$CF_{res\text{-}citrus}$ (contaminated citrus fraction) unitless	1	1
$CF_{res\text{-}corn}$ (contaminated corn fraction) unitless	1	1
$CF_{res\text{-}carrot}$ (contaminated carrot fraction) unitless	1	1
$CF_{res\text{-}cucumber}$ (contaminated cucumber fraction) unitless	1	1
$CF_{res\text{-}lettuce}$ (contaminated lettuce fraction) unitless	1	1
$CF_{res\text{-}lima\ bean}$ (contaminated lima bean fraction) unitless	1	1
$CF_{res\text{-}okra}$ (contaminated okra fraction) unitless	1	1
$CF_{res\text{-}onion}$ (contaminated onion fraction) unitless	1	1
$CF_{res\text{-}peach}$ (contaminated peach fraction) unitless	1	1
$CF_{res\text{-}pea}$ (contaminated pea fraction) unitless	1	1
$CF_{res\text{-}pear}$ (contaminated pear fraction) unitless	1	1
$CF_{res\text{-}potato}$ (contaminated potato fraction) unitless	1	1
$CF_{res\text{-}pumpkin}$ (contaminated pumpkin fraction) unitless	1	1
$CF_{res\text{-}rice}$ (contaminated rice fraction) unitless	1	1
$CF_{res\text{-}snap\ bean}$ (contaminated snap bean fraction) unitless	1	1
$CF_{res\text{-}strawberry}$ (contaminated strawberry fraction) unitless	1	1
$CF_{res\text{-}tomato}$ (contaminated tomato fraction) unitless	1	1
$ED_{res\text{-}a}$ (exposure duration - resident adult) yr	20	20

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Site-Specific
Resident Soil Inputs - Secular Equilibrium

*** Inputted values different from Resident defaults are highlighted.**

Variable	Resident Soil Default Value	Form-input Value
ED_{res-c} (exposure duration - resident child) yr	6	6
EF_{res-a} (exposure frequency - resident adult) day/yr	350	350
EF_{res-c} (exposure frequency - resident child) day/yr	350	350
$IFAP_{res-adj}$ (age-adjusted apple ingestion factor) g	667520	667520
$IFAS_{res-adj}$ (age-adjusted asparagus ingestion factor) g	300300	300300
$IFBE_{res-adj}$ (age-adjusted berry ingestion factor) g	297990	297990
$IFBR_{res-adj}$ (age-adjusted broccoli ingestion factor) g	251510	251510
$IFBT_{res-adj}$ (age-adjusted beet ingestion factor) g	245490	245490
$IFCB_{res-adj}$ (age-adjusted cabbage ingestion factor) g	670530	670530
$IFCG_{res-adj}$ (age-adjusted cereal grain ingestion factor) g	611800	611800
$IFCI_{res-adj}$ (age-adjusted citrus ingestion factor) g	2573410	2573410
$IFCO_{res-adj}$ (age-adjusted corn ingestion factor) g	468580	468580
$IFCR_{res-adj}$ (age-adjusted carrot ingestion factor) g	222390	222390
$IFCU_{res-adj}$ (age-adjusted cucumber ingestion factor) g	630140	630140
$IFLE_{res-adj}$ (age-adjusted lettuce ingestion factor) g	271320	271320
$IFLI_{res-adj}$ (age-adjusted lima bean ingestion factor) g	250250	250250
$IFOK_{res-adj}$ (age-adjusted okra ingestion factor) g	222530	222530
$IFON_{res-adj}$ (age-adjusted onion ingestion factor) g	164780	164780
$IFPC_{res-adj}$ (age-adjusted peach ingestion factor) g	1043840	1043840
$IFPE_{res-adj}$ (age-adjusted pea ingestion factor) g	315210	315210
$IFPR_{res-adj}$ (age-adjusted pear ingestion factor) g	503370	503370
$IFPT_{res-adj}$ (age-adjusted potato ingestion factor) g	1003170	1003170
$IFPU_{res-adj}$ (age-adjusted pumpkin ingestion factor) g	548520	548520
$IFRI_{res-adj}$ (age-adjusted rice ingestion factor) g	572880	572880
$IFSN_{res-adj}$ (age-adjusted snap bean ingestion factor) g	434630	434630
$IFST_{res-adj}$ (age-adjusted strawberry ingestion factor) g	336630	336630
$IFTO_{res-adj}$ (age-adjusted tomato ingestion factor) g	624470	624470
$IRAP_{res-a}$ (apple ingestion rate - resident adult) g/day	73.7	73.7
$IRAP_{res-c}$ (apple ingestion rate - resident child) g/day	72.2	72.2
$IRAS_{res-a}$ (asparagus ingestion rate - resident adult) g/day	39.3	39.3

Site-Specific
Resident Soil Inputs - Secular Equilibrium

*** Inputted values different from Resident defaults are highlighted.**

Variable	Resident Soil Default Value	Form-input Value
$IRAS_{res-c}$ (asparagus ingestion rate - resident child) g/day	12.0	12.0
$IRBE_{res-a}$ (berry ingestion rate - resident adult) g/day	35.4	35.4
$IRBE_{res-c}$ (berry ingestion rate - resident child) g/day	23.9	23.9
$IRBR_{res-a}$ (broccoli ingestion rate - resident adult) g/day	32.0	32.0
$IRBR_{res-c}$ (broccoli ingestion rate - resident child) g/day	13.1	13.1
$IRBT_{res-a}$ (beet ingestion rate - resident adult) g/day	33.9	33.9
$IRBT_{res-c}$ (beet ingestion rate - resident child) g/day	3.9	3.9
$IRCB_{res-a}$ (cabbage ingestion rate - resident adult) g/day	92.1	92.1
$IRCB_{res-c}$ (cabbage ingestion rate - resident child) g/day	12.3	12.3
$IRCG_{res-a}$ (cereal grain ingestion rate - resident adult) g/day	76.0	76.0
$IRCG_{res-c}$ (cereal grain ingestion rate - resident child) g/day	38.0	38.0
$IRCI_{res-a}$ (citrus ingestion rate - resident adult) g/day	309.4	309.4
$IRCI_{res-c}$ (citrus ingestion rate - resident child) g/day	194.1	194.1
$IRCO_{res-a}$ (corn ingestion rate - resident adult) g/day	59.8	59.8
$IRCO_{res-c}$ (corn ingestion rate - resident child) g/day	23.8	23.8
$IRCR_{res-a}$ (carrot ingestion rate - resident adult) g/day	27.3	27.3
$IRCR_{res-c}$ (carrot ingestion rate - resident child) g/day	14.9	14.9
$IRCU_{res-a}$ (cucumber ingestion rate - resident adult) g/day	82.4	82.4
$IRCU_{res-c}$ (cucumber ingestion rate - resident child) g/day	25.4	25.4
$IRLE_{res-a}$ (lettuce ingestion rate - resident adult) g/day	37.5	37.5
$IRLE_{res-c}$ (lettuce ingestion rate - resident child) g/day	4.2	4.2
$IRLI_{res-a}$ (lima bean ingestion rate - resident adult) g/day	33.8	33.8
$IRLI_{res-c}$ (lima bean ingestion rate - resident child) g/day	6.5	6.5
$IROK_{res-a}$ (okra ingestion rate - resident adult) g/day	30.2	30.2
$IROK_{res-c}$ (okra ingestion rate - resident child) g/day	5.3	5.3
$IRON_{res-a}$ (onion ingestion rate - resident adult) g/day	21.8	21.8
$IRON_{res-c}$ (onion ingestion rate - resident child) g/day	5.8	5.8
$IRPC_{res-a}$ (peach ingestion rate - resident adult) g/day	115.7	115.7
$IRPC_{res-c}$ (peach ingestion rate - resident child) g/day	111.4	111.4
$IRPE_{res-a}$ (pea ingestion rate - resident adult) g/day	35.4	35.4

Site-Specific
Resident Soil Inputs - Secular Equilibrium

*** Inputted values different from Resident defaults are highlighted.**

Variable	Resident Soil Default Value	Form-input Value
$IRPE_{res-c}$ (pea ingestion rate - resident child) g/day	32.1	32.1
$IRPR_{res-a}$ (pear ingestion rate - resident adult) g/day	51.9	51.9
$IRPR_{res-c}$ (pear ingestion rate - resident child) g/day	66.7	66.7
$IRPT_{res-a}$ (potato ingestion rate - resident adult) g/day	127.8	127.8
$IRPT_{res-c}$ (potato ingestion rate - resident child) g/day	51.7	51.7
$IRPU_{res-a}$ (pumpkin ingestion rate - resident adult) g/day	64.8	64.8
$IRPU_{res-c}$ (pumpkin ingestion rate - resident child) g/day	45.2	45.2
$IRRI_{res-a}$ (rice ingestion rate - resident adult) g/day	73.2	73.2
$IRRI_{res-c}$ (rice ingestion rate - resident child) g/day	28.8	28.8
$IRSN_{res-a}$ (snap bean ingestion rate - resident adult) g/day	53.9	53.9
$IRSN_{res-c}$ (snap bean ingestion rate - resident child) g/day	27.3	27.3
$IRST_{res-a}$ (strawberry ingestion rate - resident adult) g/day	40.5	40.5
$IRST_{res-c}$ (strawberry ingestion rate - resident child) g/day	25.3	25.3
$IRTO_{res-a}$ (tomato ingestion rate - resident adult) g/day	80.3	80.3
$IRTO_{res-c}$ (tomato ingestion rate - resident child) g/day	29.7	29.7
MLF_{apple} (apple mass loading factor) unitless	0.000160	0.000160
$MLF_{asparagus}$ (asparagus mass loading factor) unitless	0.0000790	0.0000790
MLF_{berry} (berry mass loading factor) unitless	0.000166	0.000166
$MLF_{broccoli}$ (broccoli mass loading factor) unitless	0.00101	0.00101
MLF_{beet} (beet mass loading factor) unitless	0.000138	0.000138
$MLF_{cabbage}$ (cabbage mass loading factor) unitless	0.000105	0.000105
$MLF_{cereal\ grain}$ (cereal grain mass loading factor) unitless	0.250	0.250
MLF_{citrus} (citrus mass loading factor) unitless	0.000157	0.000157
MLF_{corn} (corn mass loading factor) unitless	0.000145	0.000145
MLF_{carrot} (carrot mass loading factor) unitless	0.0000970	0.0000970
$MLF_{cucumber}$ (cucumber mass loading factor) unitless	0.0000400	0.0000400
$MLF_{lettuce}$ (lettuce mass loading factor) unitless	0.0135	0.0135
$MLF_{lima\ bean}$ (lima bean mass loading factor) unitless	0.00383	0.00383
MLF_{okra} (okra mass loading factor) unitless	0.0000800	0.0000800
MLF_{onion} (onion mass loading factor) unitless	0.0000970	0.0000970

Site-Specific
Resident Soil Inputs - Secular Equilibrium

*** Inputted values different from Resident defaults are highlighted.**

Variable	Resident Soil Default Value	Form-input Value
MLF_{peach} (peach mass loading factor) unitless	0.000150	0.000150
MLF_{pea} (pea mass loading factor) unitless	0.000178	0.000178
MLF_{pear} (pear mass loading factor) unitless	0.000160	0.000160
MLF_{potato} (potato mass loading factor) unitless	0.000210	0.000210
$MLF_{pumpkin}$ (pumpkin mass loading factor) unitless	0.0000580	0.0000580
MLF_{rice} (rice mass loading factor) unitless	0.250	0.250
$MLF_{snap\ bean}$ (snap bean mass loading factor) unitless	0.00500	0.00500
$MLF_{strawberry}$ (strawberry mass loading factor) unitless	0.0000800	0.0000800
MLF_{tomato} (tomato mass loading factor) unitless	0.00159	0.00159
TR (target cancer risk) unitless	1.0E-06	1.0E-06
F(x) (function dependent on U_m/U_t) unitless	0.194	0.0391
PEF (particulate emission factor) m^3/kg	1359344438	4078965031.971621
Q/C_{wind} (g/m^2-s per kg/m^3)	93.77	32.35983267992716
A_c (acres)	0.5	420
ED_{res} (exposure duration - resident) yr	26	26
ED_{res-a} (exposure duration - resident adult) yr	20	20
ED_{res-c} (exposure duration - resident child) yr	6	6
EF_{res} (exposure frequency - resident) day/yr	350	350
EF_{res-a} (exposure frequency - resident adult) day/yr	350	350
EF_{res-c} (exposure frequency - resident child) day/yr	350	350
ET_{res} (exposure time - resident) hr/day	24	24
ET_{res-a} (exposure time - resident adult) hr/day	24	24
ET_{res-c} (exposure time - resident child) hr/day	24	24
ET_{res-i} (exposure time - indoor resident) hr/day	16.416	16.416
ET_{res-o} (exposure time - outdoor resident) hr/day	1.752	1.752
GSF_i (gamma shielding factor - indoor) unitless	0.4	0.4
$IFA_{res-adj}$ (age-adjusted soil inhalation factor - resident) m^3	161000	161000
$IFS_{res-adj}$ (age-adjusted soil ingestion factor - resident) mg	1120000	1120000
IRA_{res-a} (inhalation rate - resident adult) m^3/day	20	20
IRA_{res-c} (inhalation rate - resident child) m^3/day	10	10

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Site-Specific
Resident Soil Inputs - Secular Equilibrium

*** Inputted values different from Resident defaults are highlighted.**

Variable	Resident Soil Default Value	Form-input Value
IRS_{res-a} (soil intake rate - resident adult) mg/day	100	100
IRS_{res-c} (soil intake rate - resident child) mg/day	200	200
t_{res} (time - resident) yr	26	26
TR (target cancer risk) unitless	1.0E-06	1.0E-06
U_m (mean annual wind speed) m/s	4.69	3.89
U_t (equivalent threshold value)	11.32	11.32
V (fraction of vegetative cover) unitless	0.5	0.5

Site-Specific
Resident PRGs for Soil - Secular Equilibrium

Isotope	Ingestion PRG TR=1E-06 (pCi/g)	Inhalation PRG TR=1E-06 (pCi/g)	External Exposure PRG TR=1E-06 (pCi/g)	Produce Consumption PRG TR=1E-06 (pCi/g)	Total PRG TR=1E-06 (pCi/g)
**Secular Equilibrium PRG for Am-241*	*5.60E-01*	*7.82E+01*	*5.73E-02*	-	***5.19E-02***
**Secular Equilibrium PRG for Co-60*	*2.34E+01*	*2.52E+05*	*9.35E-03*	-	***9.35E-03***
**Secular Equilibrium PRG for Cs-137*	*2.10E+01*	*2.25E+05*	*4.56E-02*	-	***4.55E-02***
**Secular Equilibrium PRG for Eu-152*	*1.48E+01*	*2.93E+03*	*2.14E-02*	-	***2.14E-02***
**Secular Equilibrium PRG for Eu-154*	*3.52E+01*	*1.23E+05*	*1.98E-02*	-	***1.98E-02***
**Secular Equilibrium PRG for H-3*	*9.93E+03*	*1.25E-01*	-	-	***1.25E-01***
**Secular Equilibrium PRG for Pu-239*	*5.26E-01*	*6.85E+01*	*4.96E-02*	-	***4.53E-02***
**Secular Equilibrium PRG for Ra-226*	*1.57E-01*	*4.28E+02*	*1.38E-02*	-	***1.27E-02***
**Secular Equilibrium PRG for Sr-90*	*6.59E+00*	*5.84E+04*	*5.94E+00*	-	***3.13E+00***
**Secular Equilibrium PRG for Th-232*	*3.08E-01*	*1.09E+02*	*1.02E-02*	-	***9.85E-03***
**Secular Equilibrium PRG for U-235*	*6.08E-01*	*8.06E+01*	*4.96E-02*	-	***4.59E-02***

Site-Specific
Resident Individual Contribution PRGs for Soil - Secular Equilibrium

Isotope	Parent	Fractional Contribution of Progeny	ICRP Lung Absorption Type	Inhalation Slope Factor (risk/pCi)	External Exposure Slope Factor (risk/yr per pCi/g)	Food Ingestion Slope Factor (risk/pCi)	Soil Ingestion Slope Factor (risk/pCi)	Particulate Emission Factor (m^3/kg)	Lambda (1/yr)	Halflife (yr)
**Secular Equilibrium PRG for Am-241*	*Am-241*	-		-	-	-	-	-	-	-
Ac-225	Am-241	1.00E+00	S	2.86E-08	4.12E-08	2.72E-10	4.88E-10	4.08E+09	2.53E+01	2.74E-02
Am-241	Am-241	1.00E+00	F	3.77E-08	2.77E-08	1.34E-10	1.84E-10	4.08E+09	1.60E-03	4.32E+02
At-217	Am-241	1.00E+00	-	0.00E+00	9.36E-10	0.00E+00	0.00E+00	4.08E+09	6.77E+08	1.02E-09
Bi-213	Am-241	1.00E+00	S	7.40E-11	5.43E-07	7.18E-13	1.19E-12	4.08E+09	7.99E+03	8.67E-05
Fr-221	Am-241	1.00E+00	-	0.00E+00	1.05E-07	0.00E+00	0.00E+00	4.08E+09	7.43E+04	9.32E-06
Np-237	Am-241	1.00E+00	S	2.87E-08	5.17E-08	8.29E-11	1.25E-10	4.08E+09	3.23E-07	2.14E+06
Pa-233	Am-241	1.00E+00	S	1.53E-11	8.03E-07	8.95E-12	1.65E-11	4.08E+09	9.38E+00	7.39E-02
Pb-209	Am-241	1.00E+00	S	2.08E-13	5.37E-10	3.49E-13	6.25E-13	4.08E+09	1.87E+03	3.71E-04
Po-213	Am-241	9.79E-01	-	0.00E+00	1.73E-10	0.00E+00	0.00E+00	4.08E+09	5.20E+12	1.33E-13
Ra-225	Am-241	1.00E+00	S	2.62E-08	6.11E-09	1.54E-10	2.42E-10	4.08E+09	1.70E+01	4.08E-02
Th-229	Am-241	1.00E+00	S	1.75E-07	2.24E-07	2.90E-10	3.85E-10	4.08E+09	9.44E-05	7.34E+03
Tl-209	Am-241	2.09E-02	-	0.00E+00	1.03E-05	0.00E+00	0.00E+00	4.08E+09	1.69E+05	4.11E-06
U-233	Am-241	1.00E+00	S	2.83E-08	7.11E-10	9.69E-11	1.50E-10	4.08E+09	4.35E-06	1.59E+05
**Secular Equilibrium PRG for Co-60*	*Co-60*	-		-	-	-	-	-	-	-
Co-60	Co-60	1.00E+00	S	1.01E-10	1.24E-05	2.23E-11	3.81E-11	4.08E+09	1.31E-01	5.27E+00
**Secular Equilibrium PRG for Cs-137*	*Cs-137*	-		-	-	-	-	-	-	-
Ba-137m	Cs-137	9.44E-01	-	0.00E+00	2.69E-06	0.00E+00	0.00E+00	4.08E+09	1.43E+05	4.86E-06
Cs-137	Cs-137	1.00E+00	S	1.12E-10	5.52E-10	3.74E-11	4.26E-11	4.08E+09	2.30E-02	3.02E+01
**Secular Equilibrium PRG for Eu-152*	*Eu-152*	-		-	-	-	-	-	-	-
Eu-152	Eu-152	1.00E+00	F	1.91E-10	5.41E-06	8.33E-12	1.46E-11	4.08E+09	5.12E-02	1.35E+01
Gd-152	Eu-152	2.79E-01	F	9.10E-09	0.00E+00	3.85E-11	5.48E-11	4.08E+09	6.42E-15	1.08E+14
Nd-144	Eu-152	2.79E-01	F	1.04E-08	0.00E+00	3.92E-11	5.37E-11	4.08E+09	3.03E-16	2.29E+15
Sm-148	Eu-152	2.79E-01	F	1.08E-08	0.00E+00	4.11E-11	5.59E-11	4.08E+09	9.90E-17	7.00E+15
**Secular Equilibrium PRG for Eu-154*	*Eu-154*	-		-	-	-	-	-	-	-
Eu-154	Eu-154	1.00E+00	F	2.06E-10	5.85E-06	1.42E-11	2.54E-11	4.08E+09	8.06E-02	8.59E+00
**Secular Equilibrium PRG for H-3*	*H-3*	-		-	-	-	-	-	-	-
H-3	H-3	1.00E+00	S	8.47E-13	0.00E+00	1.44E-13	8.99E-14	1.70E+01	5.63E-02	1.23E+01
**Secular Equilibrium PRG for Pu-239*	*Pu-239*	-		-	-	-	-	-	-	-

Site-Specific
Resident Individual Contribution PRGs for Soil - Secular Equilibrium

Isotope	1000029 m² Soil Volume Area Correction Factor	0 cm Soil Volume Gamma Shielding Factor	Total Indoor GSF Soil Volume	Ingestion PRG TR=1E-06 (pCi/g)	Inhalation PRG TR=1E-06 (pCi/g)	External Exposure PRG TR=1E-06 (pCi/g)	Produce Consumption PRG TR=1E-06 (pCi/g)	Total PRG TR=1E-06 (pCi/g)	Total PRG TR=1E-06 (mg/kg)
**Secular Equilibrium PRG for Am-241*	-	-	-	*5.60E-01*	*7.82E+01*	*5.73E-02*	-	***5.19E-02***	-
Ac-225	1.00E+00	1.00E+00	4.00E-01	1.83E+00	8.87E+02	2.81E+00	-	**1.11E+00**	1.56E-11
Am-241	1.00E+00	1.00E+00	4.00E-01	4.85E+00	6.71E+02	4.18E+00	-	**2.24E+00**	1.30E-07
At-217	1.00E+00	1.00E+00	4.00E-01	-	-	1.24E+02	-	**1.24E+02**	5.04E-21
Bi-213	1.00E+00	1.00E+00	4.00E-01	7.50E+02	3.42E+05	2.13E-01	-	**2.13E-01**	2.43E-13
Fr-221	1.00E+00	1.00E+00	4.00E-01	-	-	1.10E+00	-	**1.10E+00**	5.23E-15
Np-237	1.00E+00	1.00E+00	4.00E-01	7.16E+00	8.84E+02	2.24E+00	-	**1.70E+00**	8.36E-04
Pa-233	1.00E+00	1.00E+00	4.00E-01	5.42E+01	1.66E+06	1.44E-01	-	**1.44E-01**	3.35E-10
Pb-209	9.00E-01	1.00E+00	4.00E-01	1.43E+03	1.22E+08	2.39E+02	-	**2.05E+02**	1.06E-15
Po-213	1.00E+00	1.00E+00	4.00E-01	-	-	6.84E+02	-	**6.84E+02**	1.16E-25
Ra-225	1.00E+00	1.00E+00	4.00E-01	3.68E+00	9.69E+02	1.90E+01	-	**3.07E+00**	8.36E-12
Th-229	1.00E+00	1.00E+00	4.00E-01	2.32E+00	1.45E+02	5.16E-01	-	**4.21E-01**	1.12E-05
Tl-209	1.00E+00	1.00E+00	4.00E-01	-	-	5.37E-01	-	**5.37E-01**	4.48E-15
U-233	1.00E+00	1.00E+00	4.00E-01	5.94E+00	8.95E+02	1.63E+02	-	**5.70E+00**	1.82E-05
**Secular Equilibrium PRG for Co-60*	-	-	-	*2.34E+01*	*2.52E+05*	*9.35E-03*	-	***9.35E-03***	-
Co-60	1.00E+00	1.00E+00	4.00E-01	2.34E+01	2.52E+05	9.35E-03	-	**9.35E-03**	9.48E-08
**Secular Equilibrium PRG for Cs-137*	-	-	-	*2.10E+01*	*2.25E+05*	*4.56E-02*	-	***4.55E-02***	-
Ba-137m	1.00E+00	1.00E+00	4.00E-01	-	-	4.56E-02	-	**4.56E-02**	4.08E-14
Cs-137	1.00E+00	1.00E+00	4.00E-01	2.10E+01	2.25E+05	2.10E+02	-	**1.91E+01**	6.07E-10
**Secular Equilibrium PRG for Eu-152*	-	-	-	*1.48E+01*	*2.93E+03*	*2.14E-02*	-	***2.14E-02***	-
Eu-152	1.00E+00	1.00E+00	4.00E-01	6.12E+01	1.32E+05	2.14E-02	-	**2.14E-02**	2.69E-07
Gd-152	9.00E-01	1.00E+00	4.00E-01	5.84E+01	9.98E+03	-	-	**5.81E+01**	7.91E+02
Nd-144	9.00E-01	1.00E+00	4.00E-01	5.96E+01	8.73E+03	-	-	**5.92E+01**	1.56E+04
Sm-148	9.00E-01	1.00E+00	4.00E-01	5.73E+01	8.38E+03	-	-	**5.69E+01**	5.10E+04
**Secular Equilibrium PRG for Eu-154*	-	-	-	*3.52E+01*	*1.23E+05*	*1.98E-02*	-	***1.98E-02***	-
Eu-154	1.00E+00	1.00E+00	4.00E-01	3.52E+01	1.23E+05	1.98E-02	-	**1.98E-02**	1.87E-07
**Secular Equilibrium PRG for H-3*	-	-	-	*9.93E+03*	*1.25E-01*	-	-	***1.25E-01***	-
H-3	9.00E-01	1.00E+00	4.00E-01	9.93E+03	1.25E-01	-	-	**1.25E-01**	8.30E-10
**Secular Equilibrium PRG for Pu-239*	-	-	-	*5.26E-01*	*6.85E+01*	*4.96E-02*	-	***4.53E-02***	-

Site-Specific
Resident Individual Contribution PRGs for Soil - Secular Equilibrium

Isotope	Parent	Fractional Contribution of Progeny	ICRP Lung Absorption Type	Inhalation Slope Factor (risk/pCi)	External Exposure Slope Factor (risk/yr per pCi/g)	Food Ingestion Slope Factor (risk/pCi)	Soil Ingestion Slope Factor (risk/pCi)	Particulate Emission Factor (m^3/kg)	Lambda (1/yr)	Halflife (yr)
Ac-227	Pu-239	1.00E+00	S	1.49E-07	1.98E-10	2.45E-10	2.90E-10	4.08E+09	3.18E-02	2.18E+01
At-219	Pu-239	8.28E-07	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.08E+09	3.90E+05	1.78E-06
Bi-211	Pu-239	1.00E+00	-	0.00E+00	1.90E-07	0.00E+00	0.00E+00	4.08E+09	1.70E+05	4.07E-06
Bi-215	Pu-239	8.03E-07	-	0.00E+00	1.08E-06	0.00E+00	0.00E+00	4.08E+09	4.79E+04	1.45E-05
Fr-223	Pu-239	1.38E-02	S	4.07E-11	1.35E-07	1.01E-11	1.69E-11	4.08E+09	1.66E+04	4.19E-05
Pa-231	Pu-239	1.00E+00	F	7.62E-08	1.27E-07	2.26E-10	2.98E-10	4.08E+09	2.12E-05	3.28E+04
Pb-211	Pu-239	1.00E+00	S	4.03E-11	2.91E-07	5.81E-13	9.55E-13	4.08E+09	1.01E+04	6.87E-05
Po-211	Pu-239	2.76E-03	-	0.00E+00	3.76E-08	0.00E+00	0.00E+00	4.08E+09	4.24E+07	1.64E-08
Po-215	Pu-239	1.00E+00	-	0.00E+00	7.48E-10	0.00E+00	0.00E+00	4.08E+09	1.23E+10	5.65E-11
Pu-239	Pu-239	1.00E+00	F	5.55E-08	2.09E-10	1.74E-10	2.28E-10	4.08E+09	2.87E-05	2.41E+04
Ra-223	Pu-239	1.00E+00	S	2.92E-08	4.55E-07	3.39E-10	5.99E-10	4.08E+09	2.21E+01	3.13E-02
Rn-219	Pu-239	1.00E+00	-	0.00E+00	2.35E-07	0.00E+00	0.00E+00	4.08E+09	5.52E+06	1.26E-07
Th-227	Pu-239	9.86E-01	S	3.50E-08	4.45E-07	7.03E-11	1.29E-10	4.08E+09	1.35E+01	5.12E-02
Th-231	Pu-239	1.00E+00	S	1.50E-12	2.49E-08	3.22E-12	5.96E-12	4.08E+09	2.38E+02	2.91E-03
Tl-207	Pu-239	9.97E-01	-	0.00E+00	1.59E-08	0.00E+00	0.00E+00	4.08E+09	7.64E+04	9.08E-06
U-235	Pu-239	1.00E+00	S	2.50E-08	5.51E-07	9.44E-11	1.48E-10	4.08E+09	9.84E-10	7.04E+08
U-235m	Pu-239	9.99E-01	M	1.87E-18	0.00E+00	1.06E-17	1.65E-17	4.08E+09	1.40E+04	4.95E-05
**Secular Equilibrium PRG for Ra-226*	*Ra-226*	-		-	-	-	-	-	-	-
At-218	Ra-226	2.00E-04	-	0.00E+00	2.74E-11	0.00E+00	0.00E+00	4.08E+09	1.46E+07	4.76E-08
Bi-210	Ra-226	1.00E+00	S	4.55E-10	2.77E-09	1.30E-11	2.40E-11	4.08E+09	5.05E+01	1.37E-02
Bi-214	Ra-226	1.00E+00	S	6.18E-11	7.34E-06	2.65E-13	4.03E-13	4.08E+09	1.83E+04	3.79E-05
Hg-206	Ra-226	1.90E-08	-	0.00E+00	4.83E-07	0.00E+00	0.00E+00	4.08E+09	4.47E+04	1.55E-05
Pb-210	Ra-226	1.00E+00	S	1.59E-08	1.48E-09	1.18E-09	1.72E-09	4.08E+09	3.12E-02	2.22E+01
Pb-214	Ra-226	1.00E+00	S	7.77E-11	9.94E-07	4.85E-13	7.92E-13	4.08E+09	1.36E+04	5.10E-05
Po-210	Ra-226	1.00E+00	S	1.45E-08	4.51E-11	2.25E-09	3.27E-09	4.08E+09	1.83E+00	3.79E-01
Po-214	Ra-226	1.00E+00	-	0.00E+00	3.85E-10	0.00E+00	0.00E+00	4.08E+09	1.33E+11	5.21E-12
Po-218	Ra-226	1.00E+00	-	1.39E-11	6.84E-15	0.00E+00	0.00E+00	4.08E+09	1.17E+05	5.90E-06
Ra-226	Ra-226	1.00E+00	S	2.82E-08	2.50E-08	5.14E-10	6.77E-10	4.08E+09	4.33E-04	1.60E+03
Rn-218	Ra-226	2.00E-07	-	0.00E+00	3.39E-09	0.00E+00	0.00E+00	4.08E+09	6.24E+08	1.11E-09

Site-Specific
Resident Individual Contribution PRGs for Soil - Secular Equilibrium

Isotope	1000029 m² Soil Volume Area Correction Factor	0 cm Soil Volume Gamma Shielding Factor	Total Indoor GSF Soil Volume	Ingestion PRG TR=1E-06 (pCi/g)	Inhalation PRG TR=1E-06 (pCi/g)	External Exposure PRG TR=1E-06 (pCi/g)	Produce Consumption PRG TR=1E-06 (pCi/g)	Total PRG TR=1E-06 (pCi/g)	Total PRG TR=1E-06 (mg/kg)
Ac-227	1.00E+00	1.00E+00	4.00E-01	3.08E+00	1.69E+02	5.83E+02	-	**3.01E+00**	4.60E-09
At-219	9.00E-01	1.00E+00	4.00E-01	-	-	-	-	**-**	-
Bi-211	1.00E+00	1.00E+00	4.00E-01	-	-	6.08E-01	-	**6.08E-01**	3.96E-15
Bi-215	1.00E+00	1.00E+00	4.00E-01	-	-	1.33E+05	-	**1.33E+05**	6.55E-20
Fr-223	1.00E+00	1.00E+00	4.00E-01	3.83E+03	4.51E+07	6.19E+01	-	**6.09E+01**	4.29E-16
Pa-231	1.00E+00	1.00E+00	4.00E-01	3.00E+00	3.32E+02	9.09E-01	-	**6.96E-01**	3.04E-05
Pb-211	1.00E+00	1.00E+00	4.00E-01	9.35E+02	6.28E+05	3.98E-01	-	**3.98E-01**	1.02E-13
Po-211	1.00E+00	1.00E+00	4.00E-01	-	-	1.12E+03	-	**1.12E+03**	8.67E-21
Po-215	1.00E+00	1.00E+00	4.00E-01	-	-	1.55E+02	-	**1.55E+02**	2.20E-22
Pu-239	1.00E+00	1.00E+00	4.00E-01	3.92E+00	4.56E+02	5.54E+02	-	**3.86E+00**	4.18E-06
Ra-223	1.00E+00	1.00E+00	4.00E-01	1.49E+00	8.68E+02	2.54E-01	-	**2.17E-01**	9.01E-11
Rn-219	1.00E+00	1.00E+00	4.00E-01	-	-	4.93E-01	-	**4.93E-01**	1.56E-16
Th-227	1.00E+00	1.00E+00	4.00E-01	7.03E+00	7.34E+02	2.64E-01	-	**2.54E-01**	1.28E-10
Th-231	1.00E+00	1.00E+00	4.00E-01	1.50E+02	1.69E+07	4.65E+00	-	**4.51E+00**	4.18E-13
Tl-207	1.00E+00	1.00E+00	4.00E-01	-	-	7.31E+00	-	**7.31E+00**	7.20E-16
U-235	1.00E+00	1.00E+00	4.00E-01	6.05E+00	1.01E+03	2.10E-01	-	**2.03E-01**	2.28E+00
U-235m	1.00E+00	1.00E+00	4.00E-01	5.41E+07	1.36E+13	-	-	**5.41E+07**	6.01E-22
**Secular Equilibrium PRG for Ra-226*	-	-	-	*1.57E-01*	*4.28E+02*	*1.38E-02*	-	***1.27E-02***	-
At-218	9.00E-01	1.00E+00	4.00E-01	-	-	2.34E+07	-	**2.34E+07**	1.24E-24
Bi-210	1.00E+00	1.00E+00	4.00E-01	3.72E+01	5.57E+04	4.18E+01	-	**1.97E+01**	4.10E-13
Bi-214	1.00E+00	1.00E+00	4.00E-01	2.21E+03	4.10E+05	1.58E-02	-	**1.58E-02**	1.44E-12
Hg-206	1.00E+00	1.00E+00	4.00E-01	-	-	1.26E+07	-	**1.26E+07**	7.10E-22
Pb-210	1.00E+00	1.00E+00	4.00E-01	5.20E-01	1.60E+03	7.80E+01	-	**5.16E-01**	2.53E-08
Pb-214	1.00E+00	1.00E+00	4.00E-01	1.13E+03	3.26E+05	1.16E-01	-	**1.16E-01**	2.62E-13
Po-210	1.00E+00	1.00E+00	4.00E-01	2.73E-01	1.75E+03	2.57E+03	-	**2.73E-01**	8.18E-10
Po-214	1.00E+00	1.00E+00	4.00E-01	-	-	3.00E+02	-	**3.00E+02**	1.04E-23
Po-218	9.00E-01	1.00E+00	4.00E-01	-	1.82E+06	1.88E+07	-	**1.66E+06**	2.17E-21
Ra-226	1.00E+00	1.00E+00	4.00E-01	1.32E+00	9.00E+02	4.63E+00	-	**1.03E+00**	9.88E-07
Rn-218	1.00E+00	1.00E+00	4.00E-01	-	-	1.71E+08	-	**1.71E+08**	3.96E-27

Site-Specific
Resident Individual Contribution PRGs for Soil - Secular Equilibrium

Isotope	Parent	Fractional Contribution of Progeny	ICRP Lung Absorption Type	Inhalation Slope Factor (risk/pCi)	External Exposure Slope Factor (risk/yr per pCi/g)	Food Ingestion Slope Factor (risk/pCi)	Soil Ingestion Slope Factor (risk/pCi)	Particulate Emission Factor (m^3/kg)	Lambda (1/yr)	Halflife (yr)
Rn-222	Ra-226	1.00E+00	-	2.28E-12	1.69E-09	0.00E+00	0.00E+00	4.08E+09	6.62E+01	1.05E-02
Tl-206	Ra-226	1.34E-06	-	0.00E+00	6.11E-09	0.00E+00	0.00E+00	4.08E+09	8.67E+04	7.99E-06
Tl-210	Ra-226	2.10E-04	-	0.00E+00	1.34E-05	0.00E+00	0.00E+00	4.08E+09	2.80E+05	2.47E-06
**Secular Equilibrium PRG for Sr-90*	*Sr-90*	-		-	-	-	-	-	-	-
Sr-90	Sr-90	1.00E+00	S	4.26E-10	4.83E-10	6.88E-11	8.62E-11	4.08E+09	2.41E-02	2.88E+01
Y-90	Sr-90	1.00E+00	S	8.40E-12	1.90E-08	2.65E-11	4.92E-11	4.08E+09	9.47E+01	7.32E-03
**Secular Equilibrium PRG for Th-232*	*Th-232*	-		-	-	-	-	-	-	-
Ac-228	Th-232	1.00E+00	S	4.92E-11	4.04E-06	2.73E-12	4.92E-12	4.08E+09	9.87E+02	7.02E-04
Bi-212	Th-232	1.00E+00	S	1.13E-10	4.96E-07	1.01E-12	1.68E-12	4.08E+09	6.02E+03	1.15E-04
Pb-212	Th-232	1.00E+00	S	6.29E-10	4.96E-07	3.57E-11	6.33E-11	4.08E+09	5.71E+02	1.21E-03
Po-212	Th-232	6.41E-01	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.08E+09	7.31E+13	9.48E-15
Po-216	Th-232	1.00E+00	-	0.00E+00	7.10E-11	0.00E+00	0.00E+00	4.08E+09	1.51E+08	4.60E-09
Ra-224	Th-232	1.00E+00	S	1.13E-08	3.91E-08	2.38E-10	4.26E-10	4.08E+09	6.91E+01	1.00E-02
Ra-228	Th-232	1.00E+00	S	4.37E-08	3.43E-11	1.42E-09	1.98E-09	4.08E+09	1.21E-01	5.75E+00
Rn-220	Th-232	1.00E+00	-	1.15E-12	2.77E-09	0.00E+00	0.00E+00	4.08E+09	3.93E+05	1.76E-06
Th-228	Th-232	1.00E+00	S	1.32E-07	5.64E-09	1.48E-10	2.43E-10	4.08E+09	3.63E-01	1.91E+00
Th-232	Th-232	1.00E+00	S	4.33E-08	3.58E-10	1.33E-10	1.84E-10	4.08E+09	4.93E-11	1.41E+10
Tl-208	Th-232	3.59E-01	-	0.00E+00	1.75E-05	0.00E+00	0.00E+00	4.08E+09	1.19E+05	5.81E-06
**Secular Equilibrium PRG for U-235*	*U-235*	-		-	-	-	-	-	-	-
Ac-227	U-235	1.00E+00	S	1.49E-07	1.98E-10	2.45E-10	2.90E-10	4.08E+09	3.18E-02	2.18E+01
At-219	U-235	8.28E-07	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.08E+09	3.90E+05	1.78E-06
Bi-211	U-235	1.00E+00	-	0.00E+00	1.90E-07	0.00E+00	0.00E+00	4.08E+09	1.70E+05	4.07E-06
Bi-215	U-235	8.03E-07	-	0.00E+00	1.08E-06	0.00E+00	0.00E+00	4.08E+09	4.79E+04	1.45E-05
Fr-223	U-235	1.38E-02	S	4.07E-11	1.35E-07	1.01E-11	1.69E-11	4.08E+09	1.66E+04	4.19E-05
Pa-231	U-235	1.00E+00	F	7.62E-08	1.27E-07	2.26E-10	2.98E-10	4.08E+09	2.12E-05	3.28E+04
Pb-211	U-235	1.00E+00	S	4.03E-11	2.91E-07	5.81E-13	9.55E-13	4.08E+09	1.01E+04	6.87E-05
Po-211	U-235	2.76E-03	-	0.00E+00	3.76E-08	0.00E+00	0.00E+00	4.08E+09	4.24E+07	1.64E-08
Po-215	U-235	1.00E+00	-	0.00E+00	7.48E-10	0.00E+00	0.00E+00	4.08E+09	1.23E+10	5.65E-11
Ra-223	U-235	1.00E+00	S	2.92E-08	4.55E-07	3.39E-10	5.99E-10	4.08E+09	2.21E+01	3.13E-02

Site-Specific
Resident Individual Contribution PRGs for Soil - Secular Equilibrium

Isotope	1000029 m² Soil Volume Area Correction Factor	0 cm Soil Volume Gamma Shielding Factor	Total Indoor GSF Soil Volume	Ingestion PRG TR=1E-06 (pCi/g)	Inhalation PRG TR=1E-06 (pCi/g)	External Exposure PRG TR=1E-06 (pCi/g)	Produce Consumption PRG TR=1E-06 (pCi/g)	Total PRG TR=1E-06 (pCi/g)	Total PRG TR=1E-06 (mg/kg)
Rn-222	1.00E+00	1.00E+00	4.00E-01	-	1.11E+07	6.84E+01	-	**6.84E+01**	9.53E-14
Tl-206	1.00E+00	1.00E+00	4.00E-01	-	-	1.42E+07	-	**1.42E+07**	3.26E-22
Tl-210	1.00E+00	1.00E+00	4.00E-01	-	-	4.10E+01	-	**4.10E+01**	3.54E-17
**Secular Equilibrium PRG for Sr-90*	-	-	-	*6.59E+00*	*5.84E+04*	*5.94E+00*	-	***3.13E+00***	-
Sr-90	9.00E-01	1.00E+00	4.00E-01	1.04E+01	5.95E+04	2.66E+02	-	**9.97E+00**	7.28E-10
Y-90	1.00E+00	1.00E+00	4.00E-01	1.81E+01	3.02E+06	6.08E+00	-	**4.55E+00**	4.05E-13
**Secular Equilibrium PRG for Th-232*	-	-	-	*3.08E-01*	*1.09E+02*	*1.02E-02*	-	***9.85E-03***	-
Ac-228	1.00E+00	1.00E+00	4.00E-01	1.81E+02	5.15E+05	2.86E-02	-	**2.86E-02**	1.56E-11
Bi-212	1.00E+00	1.00E+00	4.00E-01	5.32E+02	2.24E+05	2.33E-01	-	**2.33E-01**	2.93E-13
Pb-212	1.00E+00	1.00E+00	4.00E-01	1.41E+01	4.03E+04	2.33E-01	-	**2.29E-01**	3.14E-12
Po-212	9.00E-01	1.00E+00	4.00E-01	-	-	-	-	**-**	-
Po-216	1.00E+00	1.00E+00	4.00E-01	-	-	1.63E+03	-	**1.63E+03**	1.71E-21
Ra-224	1.00E+00	1.00E+00	4.00E-01	2.10E+00	2.24E+03	2.96E+00	-	**1.23E+00**	5.13E-12
Ra-228	1.00E+00	1.00E+00	4.00E-01	4.51E-01	5.80E+02	3.37E+03	-	**4.51E-01**	8.15E-09
Rn-220	1.00E+00	1.00E+00	4.00E-01	-	2.20E+07	4.18E+01	-	**4.18E+01**	2.60E-17
Th-228	1.00E+00	1.00E+00	4.00E-01	3.67E+00	1.91E+02	2.05E+01	-	**3.07E+00**	3.98E-10
Th-232	1.00E+00	1.00E+00	4.00E-01	4.86E+00	5.85E+02	3.23E+02	-	**4.74E+00**	1.92E+00
Tl-208	1.00E+00	1.00E+00	4.00E-01	-	-	1.84E-02	-	**1.84E-02**	1.84E-13
**Secular Equilibrium PRG for U-235*	-	-	-	*6.08E-01*	*8.06E+01*	*4.96E-02*	-	***4.59E-02***	-
Ac-227	1.00E+00	1.00E+00	4.00E-01	3.08E+00	1.69E+02	5.83E+02	-	**3.01E+00**	4.60E-09
At-219	9.00E-01	1.00E+00	4.00E-01	-	-	-	-	**-**	-
Bi-211	1.00E+00	1.00E+00	4.00E-01	-	-	6.08E-01	-	**6.08E-01**	3.96E-15
Bi-215	1.00E+00	1.00E+00	4.00E-01	-	-	1.33E+05	-	**1.33E+05**	6.55E-20
Fr-223	1.00E+00	1.00E+00	4.00E-01	3.83E+03	4.51E+07	6.19E+01	-	**6.09E+01**	4.29E-16
Pa-231	1.00E+00	1.00E+00	4.00E-01	3.00E+00	3.32E+02	9.09E-01	-	**6.96E-01**	3.04E-05
Pb-211	1.00E+00	1.00E+00	4.00E-01	9.35E+02	6.28E+05	3.98E-01	-	**3.98E-01**	1.02E-13
Po-211	1.00E+00	1.00E+00	4.00E-01	-	-	1.12E+03	-	**1.12E+03**	8.67E-21
Po-215	1.00E+00	1.00E+00	4.00E-01	-	-	1.55E+02	-	**1.55E+02**	2.20E-22
Ra-223	1.00E+00	1.00E+00	4.00E-01	1.49E+00	8.68E+02	2.54E-01	-	**2.17E-01**	9.01E-11

Site-Specific
Resident Individual Contribution PRGs for Soil - Secular Equilibrium

Isotope	Parent	Fractional Contribution of Progeny	ICRP Lung Absorption Type	Inhalation Slope Factor (risk/pCi)	External Exposure Slope Factor (risk/yr per pCi/g)	Food Ingestion Slope Factor (risk/pCi)	Soil Ingestion Slope Factor (risk/pCi)	Particulate Emission Factor (m^3/kg)	Lambda (1/yr)	Halflife (yr)
Rn-219	U-235	1.00E+00	-	0.00E+00	2.35E-07	0.00E+00	0.00E+00	4.08E+09	5.52E+06	1.26E-07
Th-227	U-235	9.86E-01	S	3.50E-08	4.45E-07	7.03E-11	1.29E-10	4.08E+09	1.35E+01	5.12E-02
Th-231	U-235	1.00E+00	S	1.50E-12	2.49E-08	3.22E-12	5.96E-12	4.08E+09	2.38E+02	2.91E-03
Tl-207	U-235	9.97E-01	-	0.00E+00	1.59E-08	0.00E+00	0.00E+00	4.08E+09	7.64E+04	9.08E-06
U-235	U-235	1.00E+00	S	2.50E-08	5.51E-07	9.44E-11	1.48E-10	4.08E+09	9.84E-10	7.04E+08

Site-Specific
Resident Individual Contribution PRGs for Soil - Secular Equilibrium

Isotope	1000029 m² Soil Volume Area Correction Factor	0 cm Soil Volume Gamma Shielding Factor	Total Indoor GSF Soil Volume	Ingestion PRG TR=1E-06 (pCi/g)	Inhalation PRG TR=1E-06 (pCi/g)	External Exposure PRG TR=1E-06 (pCi/g)	Produce Consumption PRG TR=1E-06 (pCi/g)	Total PRG TR=1E-06 (pCi/g)	Total PRG TR=1E-06 (mg/kg)
Rn-219	1.00E+00	1.00E+00	4.00E-01	-	-	4.93E-01	-	**4.93E-01**	1.56E-16
Th-227	1.00E+00	1.00E+00	4.00E-01	7.03E+00	7.34E+02	2.64E-01	-	**2.54E-01**	1.28E-10
Th-231	1.00E+00	1.00E+00	4.00E-01	1.50E+02	1.69E+07	4.65E+00	-	**4.51E+00**	4.18E-13
Tl-207	1.00E+00	1.00E+00	4.00E-01	-	-	7.31E+00	-	**7.31E+00**	7.20E-16
U-235	1.00E+00	1.00E+00	4.00E-01	6.05E+00	1.01E+03	2.10E-01	-	**2.03E-01**	2.28E+00

Site-Specific
Resident Risk for Soil - Secular Equilibrium

Isotope	Ingestion Risk	Inhalation Risk	External Exposure Risk	Produce Consumption Risk	Total Risk
*Secular Equilibrium Risk for Am-241	2.43E-06	1.74E-08	2.37E-05	-	**2.62E-05**
*Secular Equilibrium Risk for Co-60	1.54E-09	1.43E-13	3.86E-06	-	**3.86E-06**
*Secular Equilibrium Risk for Cs-137	5.39E-09	5.02E-13	2.48E-06	-	**2.48E-06**
*Secular Equilibrium Risk for Eu-152	8.80E-09	4.44E-11	6.07E-06	-	**6.08E-06**
*Secular Equilibrium Risk for Eu-154	6.54E-09	1.87E-12	1.16E-05	-	**1.16E-05**
*Secular Equilibrium Risk for H-3	2.30E-10	1.83E-05	0.00E+00	-	**1.83E-05**
*Secular Equilibrium Risk for Pu-239	4.92E-06	3.78E-08	5.22E-05	-	**5.72E-05**
*Secular Equilibrium Risk for Ra-226	6.38E-06	2.33E-09	7.23E-05	-	**7.87E-05**
*Secular Equilibrium Risk for Sr-90	5.02E-08	5.67E-12	5.57E-08	-	**1.06E-07**
*Secular Equilibrium Risk for Th-232	5.49E-06	1.54E-08	1.66E-04	-	**1.72E-04**
*Secular Equilibrium Risk for U-235	3.21E-07	2.42E-09	3.93E-06	-	**4.25E-06**
*Total Risk	1.96E-05	1.84E-05	3.42E-04	-	**3.80E-04**

Site-Specific
Resident Individual Risk Contributions for Soil - Secular Equilibrium

Isotope	ICRP Lung Absorption Type	Inhalation Slope Factor (risk/pCi)	External Exposure Slope Factor (risk/yr per pCi/g)	Food Ingestion Slope Factor (risk/pCi)	Soil Ingestion Slope Factor (risk/pCi)	Concentration (pCi/g)	Particulate Emission Factor (m^3/kg)	Lambda (1/yr)	Halflife (yr)	1000029 m^2 Soil Volume Area Correction Factor
**Secular Equilibrium Risk for Am-241*		-	-	-	-	-	-	-	-	-
Ac-225	S	2.86E-08	4.12E-08	2.72E-10	4.88E-10	1.36	4.08E+09	2.53E+01	2.74E-02	1.00E+00
Am-241	F	3.77E-08	2.77E-08	1.34E-10	1.84E-10	1.36	4.08E+09	1.60E-03	4.32E+02	1.00E+00
At-217	-	0.00E+00	9.36E-10	0.00E+00	0.00E+00	1.36	4.08E+09	6.77E+08	1.02E-09	1.00E+00
Bi-213	S	7.40E-11	5.43E-07	7.18E-13	1.19E-12	1.36	4.08E+09	7.99E+03	8.67E-05	1.00E+00
Fr-221	-	0.00E+00	1.05E-07	0.00E+00	0.00E+00	1.36	4.08E+09	7.43E+04	9.32E-06	1.00E+00
Np-237	S	2.87E-08	5.17E-08	8.29E-11	1.25E-10	1.36	4.08E+09	3.23E-07	2.14E+06	1.00E+00
Pa-233	S	1.53E-11	8.03E-07	8.95E-12	1.65E-11	1.36	4.08E+09	9.38E+00	7.39E-02	1.00E+00
Pb-209	S	2.08E-13	5.37E-10	3.49E-13	6.25E-13	1.36	4.08E+09	1.87E+03	3.71E-04	9.00E-01
Po-213	-	0.00E+00	1.73E-10	0.00E+00	0.00E+00	1.36	4.08E+09	5.20E+12	1.33E-13	1.00E+00
Ra-225	S	2.62E-08	6.11E-09	1.54E-10	2.42E-10	1.36	4.08E+09	1.70E+01	4.08E-02	1.00E+00
Th-229	S	1.75E-07	2.24E-07	2.90E-10	3.85E-10	1.36	4.08E+09	9.44E-05	7.34E+03	1.00E+00
Tl-209	-	0.00E+00	1.03E-05	0.00E+00	0.00E+00	1.36	4.08E+09	1.69E+05	4.11E-06	1.00E+00
U-233	S	2.83E-08	7.11E-10	9.69E-11	1.50E-10	1.36	4.08E+09	4.35E-06	1.59E+05	1.00E+00
**Secular Equilibrium Risk for Co-60*		-	-	-	-	-	-	-	-	-
Co-60	S	1.01E-10	1.24E-05	2.23E-11	3.81E-11	0.0361	4.08E+09	1.31E-01	5.27E+00	1.00E+00
**Secular Equilibrium Risk for Cs-137*		-	-	-	-	-	-	-	-	-
Ba-137m	-	0.00E+00	2.69E-06	0.00E+00	0.00E+00	0.113	4.08E+09	1.43E+05	4.86E-06	1.00E+00
Cs-137	S	1.12E-10	5.52E-10	3.74E-11	4.26E-11	0.113	4.08E+09	2.30E-02	3.02E+01	1.00E+00
**Secular Equilibrium Risk for Eu-152*		-	-	-	-	-	-	-	-	-
Eu-152	F	1.91E-10	5.41E-06	8.33E-12	1.46E-11	0.13	4.08E+09	5.12E-02	1.35E+01	1.00E+00
Gd-152	F	9.10E-09	0.00E+00	3.85E-11	5.48E-11	0.13	4.08E+09	6.42E-15	1.08E+14	9.00E-01
Nd-144	F	1.04E-08	0.00E+00	3.92E-11	5.37E-11	0.13	4.08E+09	3.03E-16	2.29E+15	9.00E-01
Sm-148	F	1.08E-08	0.00E+00	4.11E-11	5.59E-11	0.13	4.08E+09	9.90E-17	7.00E+15	9.00E-01
**Secular Equilibrium Risk for Eu-154*		-	-	-	-	-	-	-	-	-
Eu-154	F	2.06E-10	5.85E-06	1.42E-11	2.54E-11	0.23	4.08E+09	8.06E-02	8.59E+00	1.00E+00
**Secular Equilibrium Risk for H-3*		-	-	-	-	-	-	-	-	-
H-3	S	8.47E-13	0.00E+00	1.44E-13	8.99E-14	2.28	1.70E+01	5.63E-02	1.23E+01	9.00E-01
**Secular Equilibrium Risk for Pu-239*		-	-	-	-	-	-	-	-	-

Site-Specific
Resident Individual Risk Contributions for Soil - Secular Equilibrium

0 cm Soil Volume Gamma Shielding Factor	Total Indoor GSF Soil Volume	Ingestion CDI (pCi)	Inhalation CDI (pCi)	External Exposure CDI (pCi)	Produce Consumption CDI (pCi)	Ingestion Risk	Inhalation Risk	External Exposure Risk	Produce Consumption Risk	Total Risk
-	-	-	-	-	-	*2.43E-06*	*1.74E-08*	*2.37E-05*	-	***2.62E-05***
1.00E+00	4.00E-01	1.52E+03	5.37E-02	1.18E+01	-	7.44E-07	1.53E-09	4.84E-07	-	**1.23E-06**
1.00E+00	4.00E-01	1.52E+03	5.37E-02	1.18E+01	-	2.81E-07	2.03E-09	3.25E-07	-	**6.08E-07**
1.00E+00	4.00E-01	1.52E+03	5.37E-02	1.18E+01	-	0.00E+00	0.00E+00	1.10E-08	-	**1.10E-08**
1.00E+00	4.00E-01	1.52E+03	5.37E-02	1.18E+01	-	1.81E-09	3.97E-12	6.38E-06	-	**6.38E-06**
1.00E+00	4.00E-01	1.52E+03	5.37E-02	1.18E+01	-	0.00E+00	0.00E+00	1.23E-06	-	**1.23E-06**
1.00E+00	4.00E-01	1.52E+03	5.37E-02	1.18E+01	-	1.90E-07	1.54E-09	6.08E-07	-	**7.99E-07**
1.00E+00	4.00E-01	1.52E+03	5.37E-02	1.18E+01	-	2.51E-08	8.20E-13	9.44E-06	-	**9.47E-06**
1.00E+00	4.00E-01	1.52E+03	5.37E-02	1.06E+01	-	9.52E-10	1.12E-14	5.68E-09	-	**6.63E-09**
1.00E+00	4.00E-01	1.52E+03	5.37E-02	1.18E+01	-	0.00E+00	0.00E+00	1.99E-09	-	**1.99E-09**
1.00E+00	4.00E-01	1.52E+03	5.37E-02	1.18E+01	-	3.69E-07	1.40E-09	7.18E-08	-	**4.42E-07**
1.00E+00	4.00E-01	1.52E+03	5.37E-02	1.18E+01	-	5.86E-07	9.37E-09	2.63E-06	-	**3.23E-06**
1.00E+00	4.00E-01	1.52E+03	5.37E-02	1.18E+01	-	0.00E+00	0.00E+00	2.53E-06	-	**2.53E-06**
1.00E+00	4.00E-01	1.52E+03	5.37E-02	1.18E+01	-	2.29E-07	1.52E-09	8.36E-09	-	**2.39E-07**
-	-	-	-	-	-	*1.54E-09*	*1.43E-13*	*3.86E-06*	-	***3.86E-06***
1.00E+00	4.00E-01	4.04E+01	1.42E-03	3.12E-01	-	1.54E-09	1.43E-13	3.86E-06	-	**3.86E-06**
-	-	-	-	-	-	*5.39E-09*	*5.02E-13*	*2.48E-06*	-	***2.48E-06***
1.00E+00	4.00E-01	1.27E+02	4.46E-03	9.76E-01	-	0.00E+00	0.00E+00	2.48E-06	-	**2.48E-06**
1.00E+00	4.00E-01	1.27E+02	4.46E-03	9.76E-01	-	5.39E-09	5.02E-13	5.39E-10	-	**5.92E-09**
-	-	-	-	-	-	*8.80E-09*	*4.44E-11*	*6.07E-06*	-	***6.08E-06***
1.00E+00	4.00E-01	1.46E+02	5.13E-03	1.12E+00	-	2.12E-09	9.82E-13	6.07E-06	-	**6.08E-06**
1.00E+00	4.00E-01	1.46E+02	5.13E-03	1.01E+00	-	2.22E-09	1.30E-11	0.00E+00	-	**2.24E-09**
1.00E+00	4.00E-01	1.46E+02	5.13E-03	1.01E+00	-	2.18E-09	1.49E-11	0.00E+00	-	**2.19E-09**
1.00E+00	4.00E-01	1.46E+02	5.13E-03	1.01E+00	-	2.27E-09	1.55E-11	0.00E+00	-	**2.29E-09**
-	-	-	-	-	-	*6.54E-09*	*1.87E-12*	*1.16E-05*	-	***1.16E-05***
1.00E+00	4.00E-01	2.58E+02	9.08E-03	1.99E+00	-	6.54E-09	1.87E-12	1.16E-05	-	**1.16E-05**
-	-	-	-	-	-	*2.30E-10*	*1.83E-05*	*0.00E+00*	-	***1.83E-05***
1.00E+00	4.00E-01	2.55E+03	2.16E+07	1.77E+01	-	2.30E-10	1.83E-05	0.00E+00	-	**1.83E-05**
-	-	-	-	-	-	*4.92E-06*	*3.78E-08*	*5.22E-05*	-	***5.72E-05***

Site-Specific
Resident Individual Risk Contributions for Soil - Secular Equilibrium

Isotope	ICRP Lung Absorption Type	Inhalation Slope Factor (risk/pCi)	External Exposure Slope Factor (risk/yr per pCi/g)	Food Ingestion Slope Factor (risk/pCi)	Soil Ingestion Slope Factor (risk/pCi)	Concentration (pCi/g)	Particulate Emission Factor (m^3/kg)	Lambda (1/yr)	Halflife (yr)	1000029 m^2 Soil Volume Area Correction Factor
Ac-227	S	1.49E-07	1.98E-10	2.45E-10	2.90E-10	2.59	4.08E+09	3.18E-02	2.18E+01	1.00E+00
At-219	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.59	4.08E+09	3.90E+05	1.78E-06	9.00E-01
Bi-211	-	0.00E+00	1.90E-07	0.00E+00	0.00E+00	2.59	4.08E+09	1.70E+05	4.07E-06	1.00E+00
Bi-215	-	0.00E+00	1.08E-06	0.00E+00	0.00E+00	2.59	4.08E+09	4.79E+04	1.45E-05	1.00E+00
Fr-223	S	4.07E-11	1.35E-07	1.01E-11	1.69E-11	2.59	4.08E+09	1.66E+04	4.19E-05	1.00E+00
Pa-231	F	7.62E-08	1.27E-07	2.26E-10	2.98E-10	2.59	4.08E+09	2.12E-05	3.28E+04	1.00E+00
Pb-211	S	4.03E-11	2.91E-07	5.81E-13	9.55E-13	2.59	4.08E+09	1.01E+04	6.87E-05	1.00E+00
Po-211	-	0.00E+00	3.76E-08	0.00E+00	0.00E+00	2.59	4.08E+09	4.24E+07	1.64E-08	1.00E+00
Po-215	-	0.00E+00	7.48E-10	0.00E+00	0.00E+00	2.59	4.08E+09	1.23E+10	5.65E-11	1.00E+00
Pu-239	F	5.55E-08	2.09E-10	1.74E-10	2.28E-10	2.59	4.08E+09	2.87E-05	2.41E+04	1.00E+00
Ra-223	S	2.92E-08	4.55E-07	3.39E-10	5.99E-10	2.59	4.08E+09	2.21E+01	3.13E-02	1.00E+00
Rn-219	-	0.00E+00	2.35E-07	0.00E+00	0.00E+00	2.59	4.08E+09	5.52E+06	1.26E-07	1.00E+00
Th-227	S	3.50E-08	4.45E-07	7.03E-11	1.29E-10	2.59	4.08E+09	1.35E+01	5.12E-02	1.00E+00
Th-231	S	1.50E-12	2.49E-08	3.22E-12	5.96E-12	2.59	4.08E+09	2.38E+02	2.91E-03	1.00E+00
Tl-207	-	0.00E+00	1.59E-08	0.00E+00	0.00E+00	2.59	4.08E+09	7.64E+04	9.08E-06	1.00E+00
U-235	S	2.50E-08	5.51E-07	9.44E-11	1.48E-10	2.59	4.08E+09	9.84E-10	7.04E+08	1.00E+00
U-235m	M	1.87E-18	0.00E+00	1.06E-17	1.65E-17	2.59	4.08E+09	1.40E+04	4.95E-05	1.00E+00
**Secular Equilibrium Risk for Ra-226*		-	-	-	-	-	-	-	-	-
At-218	-	0.00E+00	2.74E-11	0.00E+00	0.00E+00	1	4.08E+09	1.46E+07	4.76E-08	9.00E-01
Bi-210	S	4.55E-10	2.77E-09	1.30E-11	2.40E-11	1	4.08E+09	5.05E+01	1.37E-02	1.00E+00
Bi-214	S	6.18E-11	7.34E-06	2.65E-13	4.03E-13	1	4.08E+09	1.83E+04	3.79E-05	1.00E+00
Hg-206	-	0.00E+00	4.83E-07	0.00E+00	0.00E+00	1	4.08E+09	4.47E+04	1.55E-05	1.00E+00
Pb-210	S	1.59E-08	1.48E-09	1.18E-09	1.72E-09	1	4.08E+09	3.12E-02	2.22E+01	1.00E+00
Pb-214	S	7.77E-11	9.94E-07	4.85E-13	7.92E-13	1	4.08E+09	1.36E+04	5.10E-05	1.00E+00
Po-210	S	1.45E-08	4.51E-11	2.25E-09	3.27E-09	1	4.08E+09	1.83E+00	3.79E-01	1.00E+00
Po-214	-	0.00E+00	3.85E-10	0.00E+00	0.00E+00	1	4.08E+09	1.33E+11	5.21E-12	1.00E+00
Po-218	-	1.39E-11	6.84E-15	0.00E+00	0.00E+00	1	4.08E+09	1.17E+05	5.90E-06	9.00E-01
Ra-226	S	2.82E-08	2.50E-08	5.14E-10	6.77E-10	1	4.08E+09	4.33E-04	1.60E+03	1.00E+00
Rn-218	-	0.00E+00	3.39E-09	0.00E+00	0.00E+00	1	4.08E+09	6.24E+08	1.11E-09	1.00E+00

Site-Specific
Resident Individual Risk Contributions for Soil - Secular Equilibrium

0 cm Soil Volume Gamma Shielding Factor	Total Indoor GSF Soil Volume	Ingestion CDI (pCi)	Inhalation CDI (pCi)	External Exposure CDI (pCi)	Produce Consumption CDI (pCi)	Ingestion Risk	Inhalation Risk	External Exposure Risk	Produce Consumption Risk	Total Risk
1.00E+00	4.00E-01	2.90E+03	1.02E-01	2.24E+01	-	8.41E-07	1.53E-08	4.44E-09	-	**8.61E-07**
1.00E+00	4.00E-01	2.90E+03	1.02E-01	2.01E+01	-	0.00E+00	0.00E+00	0.00E+00	-	**0.00E+00**
1.00E+00	4.00E-01	2.90E+03	1.02E-01	2.24E+01	-	0.00E+00	0.00E+00	4.26E-06	-	**4.26E-06**
1.00E+00	4.00E-01	2.90E+03	1.02E-01	2.24E+01	-	0.00E+00	0.00E+00	1.95E-11	-	**1.95E-11**
1.00E+00	4.00E-01	2.90E+03	1.02E-01	2.24E+01	-	6.77E-10	5.74E-14	4.18E-08	-	**4.25E-08**
1.00E+00	4.00E-01	2.90E+03	1.02E-01	2.24E+01	-	8.64E-07	7.79E-09	2.85E-06	-	**3.72E-06**
1.00E+00	4.00E-01	2.90E+03	1.02E-01	2.24E+01	-	2.77E-09	4.12E-12	6.51E-06	-	**6.51E-06**
1.00E+00	4.00E-01	2.90E+03	1.02E-01	2.24E+01	-	0.00E+00	0.00E+00	2.32E-09	-	**2.32E-09**
1.00E+00	4.00E-01	2.90E+03	1.02E-01	2.24E+01	-	0.00E+00	0.00E+00	1.68E-08	-	**1.68E-08**
1.00E+00	4.00E-01	2.90E+03	1.02E-01	2.24E+01	-	6.61E-07	5.67E-09	4.68E-09	-	**6.72E-07**
1.00E+00	4.00E-01	2.90E+03	1.02E-01	2.24E+01	-	1.74E-06	2.98E-09	1.02E-05	-	**1.19E-05**
1.00E+00	4.00E-01	2.90E+03	1.02E-01	2.24E+01	-	0.00E+00	0.00E+00	5.25E-06	-	**5.25E-06**
1.00E+00	4.00E-01	2.90E+03	1.02E-01	2.24E+01	-	3.68E-07	3.53E-09	9.82E-06	-	**1.02E-05**
1.00E+00	4.00E-01	2.90E+03	1.02E-01	2.24E+01	-	1.73E-08	1.54E-13	5.57E-07	-	**5.74E-07**
1.00E+00	4.00E-01	2.90E+03	1.02E-01	2.24E+01	-	0.00E+00	0.00E+00	3.54E-07	-	**3.54E-07**
1.00E+00	4.00E-01	2.90E+03	1.02E-01	2.24E+01	-	4.28E-07	2.56E-09	1.23E-05	-	**1.28E-05**
1.00E+00	4.00E-01	2.90E+03	1.02E-01	2.24E+01	-	4.78E-14	1.91E-19	0.00E+00	-	**4.78E-14**
-	-	-	-	-	-	*6.38E-06*	*2.33E-09*	*7.23E-05*	-	***7.87E-05***
1.00E+00	4.00E-01	1.12E+03	3.95E-02	7.78E+00	-	0.00E+00	0.00E+00	4.27E-14	-	**4.27E-14**
1.00E+00	4.00E-01	1.12E+03	3.95E-02	8.64E+00	-	2.69E-08	1.80E-11	2.39E-08	-	**5.08E-08**
1.00E+00	4.00E-01	1.12E+03	3.95E-02	8.64E+00	-	4.52E-10	2.44E-12	6.35E-05	-	**6.35E-05**
1.00E+00	4.00E-01	1.12E+03	3.95E-02	8.64E+00	-	0.00E+00	0.00E+00	7.94E-14	-	**7.94E-14**
1.00E+00	4.00E-01	1.12E+03	3.95E-02	8.64E+00	-	1.92E-06	6.27E-10	1.28E-08	-	**1.94E-06**
1.00E+00	4.00E-01	1.12E+03	3.95E-02	8.64E+00	-	8.87E-10	3.07E-12	8.58E-06	-	**8.59E-06**
1.00E+00	4.00E-01	1.12E+03	3.95E-02	8.64E+00	-	3.67E-06	5.72E-10	3.89E-10	-	**3.67E-06**
1.00E+00	4.00E-01	1.12E+03	3.95E-02	8.64E+00	-	0.00E+00	0.00E+00	3.33E-09	-	**3.33E-09**
1.00E+00	4.00E-01	1.12E+03	3.95E-02	7.78E+00	-	0.00E+00	5.49E-13	5.32E-14	-	**6.02E-13**
1.00E+00	4.00E-01	1.12E+03	3.95E-02	8.64E+00	-	7.58E-07	1.11E-09	2.16E-07	-	**9.75E-07**
1.00E+00	4.00E-01	1.12E+03	3.95E-02	8.64E+00	-	0.00E+00	0.00E+00	5.85E-15	-	**5.85E-15**

Site-Specific
Resident Individual Risk Contributions for Soil - Secular Equilibrium

Isotope	ICRP Lung Absorption Type	Inhalation Slope Factor (risk/pCi)	External Exposure Slope Factor (risk/yr per pCi/g)	Food Ingestion Slope Factor (risk/pCi)	Soil Ingestion Slope Factor (risk/pCi)	Concentration (pCi/g)	Particulate Emission Factor (m^3/kg)	Lambda (1/yr)	Halflife (yr)	1000029 m^2 Soil Volume Area Correction Factor
Rn-222	-	2.28E-12	1.69E-09	0.00E+00	0.00E+00	1	4.08E+09	6.62E+01	1.05E-02	1.00E+00
Tl-206	-	0.00E+00	6.11E-09	0.00E+00	0.00E+00	1	4.08E+09	8.67E+04	7.99E-06	1.00E+00
Tl-210	-	0.00E+00	1.34E-05	0.00E+00	0.00E+00	1	4.08E+09	2.80E+05	2.47E-06	1.00E+00
**Secular Equilibrium Risk for Sr-90*		-	-	-	-	-	-	-	-	-
Sr-90	S	4.26E-10	4.83E-10	6.88E-11	8.62E-11	0.331	4.08E+09	2.41E-02	2.88E+01	9.00E-01
Y-90	S	8.40E-12	1.90E-08	2.65E-11	4.92E-11	0.331	4.08E+09	9.47E+01	7.32E-03	1.00E+00
**Secular Equilibrium Risk for Th-232*		-	-	-	-	-	-	-	-	-
Ac-228	S	4.92E-11	4.04E-06	2.73E-12	4.92E-12	1.69	4.08E+09	9.87E+02	7.02E-04	1.00E+00
Bi-212	S	1.13E-10	4.96E-07	1.01E-12	1.68E-12	1.69	4.08E+09	6.02E+03	1.15E-04	1.00E+00
Pb-212	S	6.29E-10	4.96E-07	3.57E-11	6.33E-11	1.69	4.08E+09	5.71E+02	1.21E-03	1.00E+00
Po-212	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.69	4.08E+09	7.31E+13	9.48E-15	9.00E-01
Po-216	-	0.00E+00	7.10E-11	0.00E+00	0.00E+00	1.69	4.08E+09	1.51E+08	4.60E-09	1.00E+00
Ra-224	S	1.13E-08	3.91E-08	2.38E-10	4.26E-10	1.69	4.08E+09	6.91E+01	1.00E-02	1.00E+00
Ra-228	S	4.37E-08	3.43E-11	1.42E-09	1.98E-09	1.69	4.08E+09	1.21E-01	5.75E+00	1.00E+00
Rn-220	-	1.15E-12	2.77E-09	0.00E+00	0.00E+00	1.69	4.08E+09	3.93E+05	1.76E-06	1.00E+00
Th-228	S	1.32E-07	5.64E-09	1.48E-10	2.43E-10	1.69	4.08E+09	3.63E-01	1.91E+00	1.00E+00
Th-232	S	4.33E-08	3.58E-10	1.33E-10	1.84E-10	1.69	4.08E+09	4.93E-11	1.41E+10	1.00E+00
Tl-208	-	0.00E+00	1.75E-05	0.00E+00	0.00E+00	1.69	4.08E+09	1.19E+05	5.81E-06	1.00E+00
**Secular Equilibrium Risk for U-235*		-	-	-	-	-	-	-	-	-
Ac-227	S	1.49E-07	1.98E-10	2.45E-10	2.90E-10	0.195	4.08E+09	3.18E-02	2.18E+01	1.00E+00
At-219	-	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.195	4.08E+09	3.90E+05	1.78E-06	9.00E-01
Bi-211	-	0.00E+00	1.90E-07	0.00E+00	0.00E+00	0.195	4.08E+09	1.70E+05	4.07E-06	1.00E+00
Bi-215	-	0.00E+00	1.08E-06	0.00E+00	0.00E+00	0.195	4.08E+09	4.79E+04	1.45E-05	1.00E+00
Fr-223	S	4.07E-11	1.35E-07	1.01E-11	1.69E-11	0.195	4.08E+09	1.66E+04	4.19E-05	1.00E+00
Pa-231	F	7.62E-08	1.27E-07	2.26E-10	2.98E-10	0.195	4.08E+09	2.12E-05	3.28E+04	1.00E+00
Pb-211	S	4.03E-11	2.91E-07	5.81E-13	9.55E-13	0.195	4.08E+09	1.01E+04	6.87E-05	1.00E+00
Po-211	-	0.00E+00	3.76E-08	0.00E+00	0.00E+00	0.195	4.08E+09	4.24E+07	1.64E-08	1.00E+00
Po-215	-	0.00E+00	7.48E-10	0.00E+00	0.00E+00	0.195	4.08E+09	1.23E+10	5.65E-11	1.00E+00
Ra-223	S	2.92E-08	4.55E-07	3.39E-10	5.99E-10	0.195	4.08E+09	2.21E+01	3.13E-02	1.00E+00

Site-Specific
Resident Individual Risk Contributions for Soil - Secular Equilibrium

0 cm Soil Volume Gamma Shielding Factor	Total Indoor GSF Soil Volume	Ingestion CDI (pCi)	Inhalation CDI (pCi)	External Exposure CDI (pCi)	Produce Consumption CDI (pCi)	Ingestion Risk	Inhalation Risk	External Exposure Risk	Produce Consumption Risk	Total Risk
1.00E+00	4.00E-01	1.12E+03	3.95E-02	8.64E+00	-	0.00E+00	9.00E-14	1.46E-08	-	**1.46E-08**
1.00E+00	4.00E-01	1.12E+03	3.95E-02	8.64E+00	-	0.00E+00	0.00E+00	7.07E-14	-	**7.07E-14**
1.00E+00	4.00E-01	1.12E+03	3.95E-02	8.64E+00	-	0.00E+00	0.00E+00	2.44E-08	-	**2.44E-08**
-	-	-	-	-	-	*5.02E-08*	*5.67E-12*	*5.57E-08*	-	***1.06E-07***
1.00E+00	4.00E-01	3.71E+02	1.31E-02	2.57E+00	-	3.20E-08	5.56E-12	1.24E-09	-	**3.32E-08**
1.00E+00	4.00E-01	3.71E+02	1.31E-02	2.86E+00	-	1.82E-08	1.10E-13	5.44E-08	-	**7.27E-08**
-	-	-	-	-	-	*5.49E-06*	*1.54E-08*	*1.66E-04*	-	***1.72E-04***
1.00E+00	4.00E-01	1.89E+03	6.67E-02	1.46E+01	-	9.31E-09	3.28E-12	5.90E-05	-	**5.90E-05**
1.00E+00	4.00E-01	1.89E+03	6.67E-02	1.46E+01	-	3.18E-09	7.54E-12	7.25E-06	-	**7.25E-06**
1.00E+00	4.00E-01	1.89E+03	6.67E-02	1.46E+01	-	1.20E-07	4.20E-11	7.25E-06	-	**7.37E-06**
1.00E+00	4.00E-01	1.89E+03	6.67E-02	1.31E+01	-	0.00E+00	0.00E+00	0.00E+00	-	**0.00E+00**
1.00E+00	4.00E-01	1.89E+03	6.67E-02	1.46E+01	-	0.00E+00	0.00E+00	1.04E-09	-	**1.04E-09**
1.00E+00	4.00E-01	1.89E+03	6.67E-02	1.46E+01	-	8.05E-07	7.55E-10	5.71E-07	-	**1.38E-06**
1.00E+00	4.00E-01	1.89E+03	6.67E-02	1.46E+01	-	3.75E-06	2.91E-09	5.01E-10	-	**3.75E-06**
1.00E+00	4.00E-01	1.89E+03	6.67E-02	1.46E+01	-	0.00E+00	7.67E-14	4.04E-08	-	**4.04E-08**
1.00E+00	4.00E-01	1.89E+03	6.67E-02	1.46E+01	-	4.60E-07	8.84E-09	8.24E-08	-	**5.51E-07**
1.00E+00	4.00E-01	1.89E+03	6.67E-02	1.46E+01	-	3.48E-07	2.89E-09	5.23E-09	-	**3.56E-07**
1.00E+00	4.00E-01	1.89E+03	6.67E-02	1.46E+01	-	0.00E+00	0.00E+00	9.19E-05	-	**9.19E-05**
-	-	-	-	-	-	*3.21E-07*	*2.42E-09*	*3.93E-06*	-	***4.25E-06***
1.00E+00	4.00E-01	2.18E+02	7.70E-03	1.69E+00	-	6.34E-08	1.15E-09	3.34E-10	-	**6.48E-08**
1.00E+00	4.00E-01	2.18E+02	7.70E-03	1.52E+00	-	0.00E+00	0.00E+00	0.00E+00	-	**0.00E+00**
1.00E+00	4.00E-01	2.18E+02	7.70E-03	1.69E+00	-	0.00E+00	0.00E+00	3.21E-07	-	**3.21E-07**
1.00E+00	4.00E-01	2.18E+02	7.70E-03	1.69E+00	-	0.00E+00	0.00E+00	1.47E-12	-	**1.47E-12**
1.00E+00	4.00E-01	2.18E+02	7.70E-03	1.69E+00	-	5.10E-11	4.32E-15	3.15E-09	-	**3.20E-09**
1.00E+00	4.00E-01	2.18E+02	7.70E-03	1.69E+00	-	6.51E-08	5.87E-10	2.14E-07	-	**2.80E-07**
1.00E+00	4.00E-01	2.18E+02	7.70E-03	1.69E+00	-	2.08E-10	3.10E-13	4.90E-07	-	**4.90E-07**
1.00E+00	4.00E-01	2.18E+02	7.70E-03	1.69E+00	-	0.00E+00	0.00E+00	1.75E-10	-	**1.75E-10**
1.00E+00	4.00E-01	2.18E+02	7.70E-03	1.69E+00	-	0.00E+00	0.00E+00	1.26E-09	-	**1.26E-09**
1.00E+00	4.00E-01	2.18E+02	7.70E-03	1.69E+00	-	1.31E-07	2.25E-10	7.67E-07	-	**8.98E-07**

Site-Specific
Resident Individual Risk Contributions for Soil - Secular Equilibrium

Isotope	ICRP Lung Absorption Type	Inhalation Slope Factor (risk/pCi)	External Exposure Slope Factor (risk/yr per pCi/g)	Food Ingestion Slope Factor (risk/pCi)	Soil Ingestion Slope Factor (risk/pCi)	Concentration (pCi/g)	Particulate Emission Factor (m^3/kg)	Lambda (1/yr)	Halflife (yr)	1000029 m^2 Soil Volume Area Correction Factor
Rn-219	-	0.00E+00	2.35E-07	0.00E+00	0.00E+00	0.195	4.08E+09	5.52E+06	1.26E-07	1.00E+00
Th-227	S	3.50E-08	4.45E-07	7.03E-11	1.29E-10	0.195	4.08E+09	1.35E+01	5.12E-02	1.00E+00
Th-231	S	1.50E-12	2.49E-08	3.22E-12	5.96E-12	0.195	4.08E+09	2.38E+02	2.91E-03	1.00E+00
Tl-207	-	0.00E+00	1.59E-08	0.00E+00	0.00E+00	0.195	4.08E+09	7.64E+04	9.08E-06	1.00E+00
U-235	S	2.50E-08	5.51E-07	9.44E-11	1.48E-10	0.195	4.08E+09	9.84E-10	7.04E+08	1.00E+00

Site-Specific
Resident Individual Risk Contributions for Soil - Secular Equilibrium

0 cm Soil Volume Gamma Shielding Factor	Total Indoor GSF Soil Volume	Ingestion CDI (pCi)	Inhalation CDI (pCi)	External Exposure CDI (pCi)	Produce Consumption CDI (pCi)	Ingestion Risk	Inhalation Risk	External Exposure Risk	Produce Consumption Risk	Total Risk
1.00E+00	4.00E-01	2.18E+02	7.70E-03	1.69E+00	-	0.00E+00	0.00E+00	3.95E-07	-	**3.95E-07**
1.00E+00	4.00E-01	2.18E+02	7.70E-03	1.69E+00	-	2.77E-08	2.66E-10	7.39E-07	-	**7.67E-07**
1.00E+00	4.00E-01	2.18E+02	7.70E-03	1.69E+00	-	1.30E-09	1.16E-14	4.19E-08	-	**4.32E-08**
1.00E+00	4.00E-01	2.18E+02	7.70E-03	1.69E+00	-	0.00E+00	0.00E+00	2.67E-08	-	**2.67E-08**
1.00E+00	4.00E-01	2.18E+02	7.70E-03	1.69E+00	-	3.22E-08	1.93E-10	9.29E-07	-	**9.61E-07**

Site-Specific
Resident Soil Inputs - No secular equilibrium, no progeny (with decay)

*** Inputted values different from Resident defaults are highlighted.**

Variable	Resident Soil Default Value	Form-input Value
A (PEF Dispersion Constant)	16.2302	13.8139
B (PEF Dispersion Constant)	18.7762	20.1624
City (Climate Zone)	Default	San Francisco, CA (2)
C (PEF Dispersion Constant)	216.108	234.2869
$CF_{res\text{-}produce}$ (contaminated plant fraction) unitless	1	1
$CF_{res\text{-}apple}$ (contaminated apple fraction) unitless	1	1
$CF_{res\text{-}asparagus}$ (contaminated asparagus fraction) unitless	1	1
$CF_{res\text{-}berry}$ (contaminated berry fraction) unitless	1	1
$CF_{res\text{-}broccoli}$ (contaminated broccoli fraction) unitless	1	1
$CF_{res\text{-}beet}$ (contaminated beet fraction) unitless	1	1
$CF_{res\text{-}cabbage}$ (contaminated cabbage fraction) unitless	1	1
$CF_{res\text{-}cereal\ grain}$ (contaminated cereal grain fraction) unitless	1	1
$CF_{res\text{-}citrus}$ (contaminated citrus fraction) unitless	1	1
$CF_{res\text{-}corn}$ (contaminated corn fraction) unitless	1	1
$CF_{res\text{-}carrot}$ (contaminated carrot fraction) unitless	1	1
$CF_{res\text{-}cucumber}$ (contaminated cucumber fraction) unitless	1	1
$CF_{res\text{-}lettuce}$ (contaminated lettuce fraction) unitless	1	1
$CF_{res\text{-}lima\ bean}$ (contaminated lima bean fraction) unitless	1	1
$CF_{res\text{-}okra}$ (contaminated okra fraction) unitless	1	1
$CF_{res\text{-}onion}$ (contaminated onion fraction) unitless	1	1
$CF_{res\text{-}peach}$ (contaminated peach fraction) unitless	1	1
$CF_{res\text{-}pea}$ (contaminated pea fraction) unitless	1	1
$CF_{res\text{-}pear}$ (contaminated pear fraction) unitless	1	1
$CF_{res\text{-}potato}$ (contaminated potato fraction) unitless	1	1
$CF_{res\text{-}pumpkin}$ (contaminated pumpkin fraction) unitless	1	1
$CF_{res\text{-}rice}$ (contaminated rice fraction) unitless	1	1
$CF_{res\text{-}snap\ bean}$ (contaminated snap bean fraction) unitless	1	1
$CF_{res\text{-}strawberry}$ (contaminated strawberry fraction) unitless	1	1
$CF_{res\text{-}tomato}$ (contaminated tomato fraction) unitless	1	1
$ED_{res\text{-}a}$ (exposure duration - resident adult) yr	20	20

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Site-Specific
Resident Soil Inputs - No secular equilibrium, no progeny (with decay)

*** Inputted values different from Resident defaults are highlighted.**

Variable	Resident Soil Default Value	Form-input Value
ED_{res-c} (exposure duration - resident child) yr	6	6
EF_{res-a} (exposure frequency - resident adult) day/yr	350	350
EF_{res-c} (exposure frequency - resident child) day/yr	350	350
$IFAP_{res-adj}$ (age-adjusted apple ingestion factor) g	667520	667520
$IFAS_{res-adj}$ (age-adjusted asparagus ingestion factor) g	300300	300300
$IFBE_{res-adj}$ (age-adjusted berry ingestion factor) g	297990	297990
$IFBR_{res-adj}$ (age-adjusted broccoli ingestion factor) g	251510	251510
$IFBT_{res-adj}$ (age-adjusted beet ingestion factor) g	245490	245490
$IFCB_{res-adj}$ (age-adjusted cabbage ingestion factor) g	670530	670530
$IFCG_{res-adj}$ (age-adjusted cereal grain ingestion factor) g	611800	611800
$IFCI_{res-adj}$ (age-adjusted citrus ingestion factor) g	2573410	2573410
$IFCO_{res-adj}$ (age-adjusted corn ingestion factor) g	468580	468580
$IFCR_{res-adj}$ (age-adjusted carrot ingestion factor) g	222390	222390
$IFCU_{res-adj}$ (age-adjusted cucumber ingestion factor) g	630140	630140
$IFLE_{res-adj}$ (age-adjusted lettuce ingestion factor) g	271320	271320
$IFLI_{res-adj}$ (age-adjusted lima bean ingestion factor) g	250250	250250
$IFOK_{res-adj}$ (age-adjusted okra ingestion factor) g	222530	222530
$IFON_{res-adj}$ (age-adjusted onion ingestion factor) g	164780	164780
$IFPC_{res-adj}$ (age-adjusted peach ingestion factor) g	1043840	1043840
$IFPE_{res-adj}$ (age-adjusted pea ingestion factor) g	315210	315210
$IFPR_{res-adj}$ (age-adjusted pear ingestion factor) g	503370	503370
$IFPT_{res-adj}$ (age-adjusted potato ingestion factor) g	1003170	1003170
$IFPU_{res-adj}$ (age-adjusted pumpkin ingestion factor) g	548520	548520
$IFRI_{res-adj}$ (age-adjusted rice ingestion factor) g	572880	572880
$IFSN_{res-adj}$ (age-adjusted snap bean ingestion factor) g	434630	434630
$IFST_{res-adj}$ (age-adjusted strawberry ingestion factor) g	336630	336630
$IFTO_{res-adj}$ (age-adjusted tomato ingestion factor) g	624470	624470
$IRAP_{res-a}$ (apple ingestion rate - resident adult) g/day	73.7	73.7
$IRAP_{res-c}$ (apple ingestion rate - resident child) g/day	72.2	72.2
$IRAS_{res-a}$ (asparagus ingestion rate - resident adult) g/day	39.3	39.3

Site-Specific
Resident Soil Inputs - No secular equilibrium, no progeny (with decay)

*** Inputted values different from Resident defaults are highlighted.**

Variable	Resident Soil Default Value	Form-input Value
$IRAS_{res-c}$ (asparagus ingestion rate - resident child) g/day	12.0	12.0
$IRBE_{res-a}$ (berry ingestion rate - resident adult) g/day	35.4	35.4
$IRBE_{res-c}$ (berry ingestion rate - resident child) g/day	23.9	23.9
$IRBR_{res-a}$ (broccoli ingestion rate - resident adult) g/day	32.0	32.0
$IRBR_{res-c}$ (broccoli ingestion rate - resident child) g/day	13.1	13.1
$IRBT_{res-a}$ (beet ingestion rate - resident adult) g/day	33.9	33.9
$IRBT_{res-c}$ (beet ingestion rate - resident child) g/day	3.9	3.9
$IRCB_{res-a}$ (cabbage ingestion rate - resident adult) g/day	92.1	92.1
$IRCB_{res-c}$ (cabbage ingestion rate - resident child) g/day	12.3	12.3
$IRCG_{res-a}$ (cereal grain ingestion rate - resident adult) g/day	76.0	76.0
$IRCG_{res-c}$ (cereal grain ingestion rate - resident child) g/day	38.0	38.0
$IRCI_{res-a}$ (citrus ingestion rate - resident adult) g/day	309.4	309.4
$IRCI_{res-c}$ (citrus ingestion rate - resident child) g/day	194.1	194.1
$IRCO_{res-a}$ (corn ingestion rate - resident adult) g/day	59.8	59.8
$IRCO_{res-c}$ (corn ingestion rate - resident child) g/day	23.8	23.8
$IRCR_{res-a}$ (carrot ingestion rate - resident adult) g/day	27.3	27.3
$IRCR_{res-c}$ (carrot ingestion rate - resident child) g/day	14.9	14.9
$IRCU_{res-a}$ (cucumber ingestion rate - resident adult) g/day	82.4	82.4
$IRCU_{res-c}$ (cucumber ingestion rate - resident child) g/day	25.4	25.4
$IRLE_{res-a}$ (lettuce ingestion rate - resident adult) g/day	37.5	37.5
$IRLE_{res-c}$ (lettuce ingestion rate - resident child) g/day	4.2	4.2
$IRLI_{res-a}$ (lima bean ingestion rate - resident adult) g/day	33.8	33.8
$IRLI_{res-c}$ (lima bean ingestion rate - resident child) g/day	6.5	6.5
$IROK_{res-a}$ (okra ingestion rate - resident adult) g/day	30.2	30.2
$IROK_{res-c}$ (okra ingestion rate - resident child) g/day	5.3	5.3
$IRON_{res-a}$ (onion ingestion rate - resident adult) g/day	21.8	21.8
$IRON_{res-c}$ (onion ingestion rate - resident child) g/day	5.8	5.8
$IRPC_{res-a}$ (peach ingestion rate - resident adult) g/day	115.7	115.7
$IRPC_{res-c}$ (peach ingestion rate - resident child) g/day	111.4	111.4
$IRPE_{res-a}$ (pea ingestion rate - resident adult) g/day	35.4	35.4

Site-Specific
Resident Soil Inputs - No secular equilibrium, no progeny (with decay)

*** Inputted values different from Resident defaults are highlighted.**

Variable	Resident Soil Default Value	Form-input Value
$IRPE_{res-c}$ (pea ingestion rate - resident child) g/day	32.1	32.1
$IRPR_{res-a}$ (pear ingestion rate - resident adult) g/day	51.9	51.9
$IRPR_{res-c}$ (pear ingestion rate - resident child) g/day	66.7	66.7
$IRPT_{res-a}$ (potato ingestion rate - resident adult) g/day	127.8	127.8
$IRPT_{res-c}$ (potato ingestion rate - resident child) g/day	51.7	51.7
$IRPU_{res-a}$ (pumpkin ingestion rate - resident adult) g/day	64.8	64.8
$IRPU_{res-c}$ (pumpkin ingestion rate - resident child) g/day	45.2	45.2
$IRRI_{res-a}$ (rice ingestion rate - resident adult) g/day	73.2	73.2
$IRRI_{res-c}$ (rice ingestion rate - resident child) g/day	28.8	28.8
$IRSN_{res-a}$ (snap bean ingestion rate - resident adult) g/day	53.9	53.9
$IRSN_{res-c}$ (snap bean ingestion rate - resident child) g/day	27.3	27.3
$IRST_{res-a}$ (strawberry ingestion rate - resident adult) g/day	40.5	40.5
$IRST_{res-c}$ (strawberry ingestion rate - resident child) g/day	25.3	25.3
$IRTO_{res-a}$ (tomato ingestion rate - resident adult) g/day	80.3	80.3
$IRTO_{res-c}$ (tomato ingestion rate - resident child) g/day	29.7	29.7
MLF_{apple} (apple mass loading factor) unitless	0.000160	0.000160
$MLF_{asparagus}$ (asparagus mass loading factor) unitless	0.0000790	0.0000790
MLF_{berry} (berry mass loading factor) unitless	0.000166	0.000166
$MLF_{broccoli}$ (broccoli mass loading factor) unitless	0.00101	0.00101
MLF_{beet} (beet mass loading factor) unitless	0.000138	0.000138
$MLF_{cabbage}$ (cabbage mass loading factor) unitless	0.000105	0.000105
$MLF_{cereal\ grain}$ (cereal grain mass loading factor) unitless	0.250	0.250
MLF_{citrus} (citrus mass loading factor) unitless	0.000157	0.000157
MLF_{corn} (corn mass loading factor) unitless	0.000145	0.000145
MLF_{carrot} (carrot mass loading factor) unitless	0.0000970	0.0000970
$MLF_{cucumber}$ (cucumber mass loading factor) unitless	0.0000400	0.0000400
$MLF_{lettuce}$ (lettuce mass loading factor) unitless	0.0135	0.0135
$MLF_{lima\ bean}$ (lima bean mass loading factor) unitless	0.00383	0.00383
MLF_{okra} (okra mass loading factor) unitless	0.0000800	0.0000800
MLF_{onion} (onion mass loading factor) unitless	0.0000970	0.0000970

Site-Specific
Resident Soil Inputs - No secular equilibrium, no progeny (with decay)

*** Inputted values different from Resident defaults are highlighted.**

Variable	Resident Soil Default Value	Form-input Value
MLF_{peach} (peach mass loading factor) unitless	0.000150	0.000150
MLF_{pea} (pea mass loading factor) unitless	0.000178	0.000178
MLF_{pear} (pear mass loading factor) unitless	0.000160	0.000160
MLF_{potato} (potato mass loading factor) unitless	0.000210	0.000210
$MLF_{pumpkin}$ (pumpkin mass loading factor) unitless	0.0000580	0.0000580
MLF_{rice} (rice mass loading factor) unitless	0.250	0.250
$MLF_{snap\ bean}$ (snap bean mass loading factor) unitless	0.00500	0.00500
$MLF_{strawberry}$ (strawberry mass loading factor) unitless	0.0000800	0.0000800
MLF_{tomato} (tomato mass loading factor) unitless	0.00159	0.00159
TR (target cancer risk) unitless	1.0E-06	1.0E-06
F(x) (function dependent on U_m/U_t) unitless	0.194	0.0391
PEF (particulate emission factor) m^3/kg	1359344438	4078965031.971621
Q/C_{wind} (g/m^2-s per kg/m^3)	93.77	32.35983267992716
A_c (acres)	0.5	420
ED_{res} (exposure duration - resident) yr	26	26
ED_{res-a} (exposure duration - resident adult) yr	20	20
ED_{res-c} (exposure duration - resident child) yr	6	6
EF_{res} (exposure frequency - resident) day/yr	350	350
EF_{res-a} (exposure frequency - resident adult) day/yr	350	350
EF_{res-c} (exposure frequency - resident child) day/yr	350	350
ET_{res} (exposure time - resident) hr/day	24	24
ET_{res-a} (exposure time - resident adult) hr/day	24	24
ET_{res-c} (exposure time - resident child) hr/day	24	24
ET_{res-i} (exposure time - indoor resident) hr/day	16.416	16.416
ET_{res-o} (exposure time - outdoor resident) hr/day	1.752	1.752
GSF_i (gamma shielding factor - indoor) unitless	0.4	0.4
$IFA_{res-adj}$ (age-adjusted soil inhalation factor - resident) m^3	161000	161000
$IFS_{res-adj}$ (age-adjusted soil ingestion factor - resident) mg	1120000	1120000
IRA_{res-a} (inhalation rate - resident adult) m^3/day	20	20
IRA_{res-c} (inhalation rate - resident child) m^3/day	10	10

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Site-Specific
Resident Soil Inputs - No secular equilibrium, no progeny (with decay)

*** Inputted values different from Resident defaults are highlighted.**

Variable	Resident Soil Default Value	Form-input Value
IRS_{res-a} (soil intake rate - resident adult) mg/day	100	100
IRS_{res-c} (soil intake rate - resident child) mg/day	200	200
t_{res} (time - resident) yr	26	26
TR (target cancer risk) unitless	1.0E-06	1.0E-06
U_m (mean annual wind speed) m/s	4.69	3.89
U_t (equivalent threshold value)	11.32	11.32
V (fraction of vegetative cover) unitless	0.5	0.5

Site-Specific
Resident PRGs for Soil - No secular equilibrium, no progeny (with decay)

Isotope	ICRP Lung Absorption Type	Inhalation Slope Factor (risk/pCi)	External Exposure Slope Factor (risk/yr per pCi/g)	Food Ingestion Slope Factor (risk/pCi)	Soil Ingestion Slope Factor (risk/pCi)	Particulate Emission Factor (m^3/kg)	Lambda (1/yr)	Halflife (yr)	1000029 m^2 Soil Volume Area Correction Factor	0 cm Soil Volume Gamma Shielding Factor	Total Indoor GSF Soil Volume
Am-241	F	3.77E-08	2.77E-08	1.34E-10	1.84E-10	4.08E+09	1.60E-03	4.32E+02	1.00E+00	1.00E+00	4.00E-01
Co-60	S	1.01E-10	1.24E-05	2.23E-11	3.81E-11	4.08E+09	1.31E-01	5.27E+00	1.00E+00	1.00E+00	4.00E-01
Eu-152	F	1.91E-10	5.41E-06	8.33E-12	1.46E-11	4.08E+09	5.12E-02	1.35E+01	1.00E+00	1.00E+00	4.00E-01
Eu-154	F	2.06E-10	5.85E-06	1.42E-11	2.54E-11	4.08E+09	8.06E-02	8.59E+00	1.00E+00	1.00E+00	4.00E-01
H-3	S	8.47E-13	0.00E+00	1.44E-13	8.99E-14	1.70E+01	5.63E-02	1.23E+01	9.00E-01	1.00E+00	4.00E-01

Isotope	Ingestion PRG TR=1E-06 (pCi/g)	Inhalation PRG TR=1E-06 (pCi/g)	External Exposure PRG TR=1E-06 (pCi/g)	Produce Consumption PRG TR=1E-06 (pCi/g)	Total PRG TR=1E-06 (pCi/g)	Total PRG TR=1E-06 (mg/kg)
Am-241	4.95E+00	6.85E+02	4.27E+00	-	**2.28E+00**	6.66E-07
Co-60	8.28E+01	8.90E+05	3.30E-02	-	**3.30E-02**	2.92E-11
Eu-152	1.11E+02	2.40E+05	3.87E-02	-	**3.87E-02**	2.23E-10
Eu-154	8.41E+01	2.94E+05	4.73E-02	-	**4.73E-02**	1.75E-10
H-3	1.89E+04	2.37E-01	-	-	**2.37E-01**	2.45E-11

Site-Specific
Resident Risk for Soil - No secular equilibrium, no progeny (with decay)

Isotope	ICRP Lung Absorption Type	Inhalation Slope Factor (risk/pCi)	External Exposure Slope Factor (risk/yr per pCi/g)	Food Ingestion Slope Factor (risk/pCi)	Soil Ingestion Slope Factor (risk/pCi)	Concentration (pCi/g)	Particulate Emission Factor (m^3/kg)	Lambda (1/yr)	Halflife (yr)	1000029 m^2 Soil Volume Area Correction Factor
Am-241	F	3.77E-08	2.77E-08	1.34E-10	1.84E-10	1.36	4.08E+09	1.60E-03	4.32E+02	1.00E+00
Co-60	S	1.01E-10	1.24E-05	2.23E-11	3.81E-11	0.0361	4.08E+09	1.31E-01	5.27E+00	1.00E+00
Eu-152	F	1.91E-10	5.41E-06	8.33E-12	1.46E-11	0.13	4.08E+09	5.12E-02	1.35E+01	1.00E+00
Eu-154	F	2.06E-10	5.85E-06	1.42E-11	2.54E-11	0.23	4.08E+09	8.06E-02	8.59E+00	1.00E+00
H-3	S	8.47E-13	0.00E+00	1.44E-13	8.99E-14	2.28	1.70E+01	5.63E-02	1.23E+01	9.00E-01
**Total Risk*		-	-	-	-	-	-	-	-	-

0 cm Soil Volume Gamma Shielding Factor	Total Indoor GSF Soil Volume	Ingestion CDI (pCi)	Inhalation CDI (pCi)	External Exposure CDI (pCi)	Produce Consumption CDI (pCi)	Ingestion Risk	Inhalation Risk	External Exposure Risk	Produce Consumption Risk	Total Risk
1.00E+00	4.00E-01	1.49E+03	5.26E-02	1.15E+01	-	2.75E-07	1.98E-09	3.19E-07	-	**5.95E-07**
1.00E+00	4.00E-01	1.14E+01	4.03E-04	8.83E-02	-	4.36E-10	4.06E-14	1.09E-06	-	**1.09E-06**
1.00E+00	4.00E-01	8.05E+01	2.84E-03	6.21E-01	-	1.17E-09	5.43E-13	3.36E-06	-	**3.36E-06**
1.00E+00	4.00E-01	1.08E+02	3.80E-03	8.31E-01	-	2.74E-09	7.83E-13	4.86E-06	-	**4.87E-06**
1.00E+00	4.00E-01	1.34E+03	1.13E+07	9.32E+00	-	1.21E-10	9.61E-06	0.00E+00	-	**9.61E-06**
-	-	-	-	-	-	*2.79E-07*	*9.61E-06*	*9.63E-06*	-	***1.95E-05***

Site-Specific
Resident Soil Inputs - No secular equilibrium, progeny included (with decay)

*** Inputted values different from Resident defaults are highlighted.**

Variable	Resident Soil Default Value	Form-input Value
A (PEF Dispersion Constant)	16.2302	13.8139
B (PEF Dispersion Constant)	18.7762	20.1624
City (Climate Zone)	Default	San Francisco, CA (2)
C (PEF Dispersion Constant)	216.108	234.2869
$CF_{res\text{-}produce}$ (contaminated plant fraction) unitless	1	1
$CF_{res\text{-}apple}$ (contaminated apple fraction) unitless	1	1
$CF_{res\text{-}asparagus}$ (contaminated asparagus fraction) unitless	1	1
$CF_{res\text{-}berry}$ (contaminated berry fraction) unitless	1	1
$CF_{res\text{-}broccoli}$ (contaminated broccoli fraction) unitless	1	1
$CF_{res\text{-}beet}$ (contaminated beet fraction) unitless	1	1
$CF_{res\text{-}cabbage}$ (contaminated cabbage fraction) unitless	1	1
$CF_{res\text{-}cereal\ grain}$ (contaminated cereal grain fraction) unitless	1	1
$CF_{res\text{-}citrus}$ (contaminated citrus fraction) unitless	1	1
$CF_{res\text{-}corn}$ (contaminated corn fraction) unitless	1	1
$CF_{res\text{-}carrot}$ (contaminated carrot fraction) unitless	1	1
$CF_{res\text{-}cucumber}$ (contaminated cucumber fraction) unitless	1	1
$CF_{res\text{-}lettuce}$ (contaminated lettuce fraction) unitless	1	1
$CF_{res\text{-}lima\ bean}$ (contaminated lima bean fraction) unitless	1	1
$CF_{res\text{-}okra}$ (contaminated okra fraction) unitless	1	1
$CF_{res\text{-}onion}$ (contaminated onion fraction) unitless	1	1
$CF_{res\text{-}peach}$ (contaminated peach fraction) unitless	1	1
$CF_{res\text{-}pea}$ (contaminated pea fraction) unitless	1	1
$CF_{res\text{-}pear}$ (contaminated pear fraction) unitless	1	1
$CF_{res\text{-}potato}$ (contaminated potato fraction) unitless	1	1
$CF_{res\text{-}pumpkin}$ (contaminated pumpkin fraction) unitless	1	1
$CF_{res\text{-}rice}$ (contaminated rice fraction) unitless	1	1
$CF_{res\text{-}snap\ bean}$ (contaminated snap bean fraction) unitless	1	1
$CF_{res\text{-}strawberry}$ (contaminated strawberry fraction) unitless	1	1
$CF_{res\text{-}tomato}$ (contaminated tomato fraction) unitless	1	1
$ED_{res\text{-}a}$ (exposure duration - resident adult) yr	20	20

Output generated 15MAY2019:17:15:14

Site-Specific
Resident Soil Inputs - No secular equilibrium, progeny included (with decay)

*** Inputted values different from Resident defaults are highlighted.**

Variable	Resident Soil Default Value	Form-input Value
ED_{res-c} (exposure duration - resident child) yr	6	6
EF_{res-a} (exposure frequency - resident adult) day/yr	350	350
EF_{res-c} (exposure frequency - resident child) day/yr	350	350
$IFAP_{res-adj}$ (age-adjusted apple ingestion factor) g	667520	667520
$IFAS_{res-adj}$ (age-adjusted asparagus ingestion factor) g	300300	300300
$IFBE_{res-adj}$ (age-adjusted berry ingestion factor) g	297990	297990
$IFBR_{res-adj}$ (age-adjusted broccoli ingestion factor) g	251510	251510
$IFBT_{res-adj}$ (age-adjusted beet ingestion factor) g	245490	245490
$IFCB_{res-adj}$ (age-adjusted cabbage ingestion factor) g	670530	670530
$IFCG_{res-adj}$ (age-adjusted cereal grain ingestion factor) g	611800	611800
$IFCI_{res-adj}$ (age-adjusted citrus ingestion factor) g	2573410	2573410
$IFCO_{res-adj}$ (age-adjusted corn ingestion factor) g	468580	468580
$IFCR_{res-adj}$ (age-adjusted carrot ingestion factor) g	222390	222390
$IFCU_{res-adj}$ (age-adjusted cucumber ingestion factor) g	630140	630140
$IFLE_{res-adj}$ (age-adjusted lettuce ingestion factor) g	271320	271320
$IFLI_{res-adj}$ (age-adjusted lima bean ingestion factor) g	250250	250250
$IFOK_{res-adj}$ (age-adjusted okra ingestion factor) g	222530	222530
$IFON_{res-adj}$ (age-adjusted onion ingestion factor) g	164780	164780
$IFPC_{res-adj}$ (age-adjusted peach ingestion factor) g	1043840	1043840
$IFPE_{res-adj}$ (age-adjusted pea ingestion factor) g	315210	315210
$IFPR_{res-adj}$ (age-adjusted pear ingestion factor) g	503370	503370
$IFPT_{res-adj}$ (age-adjusted potato ingestion factor) g	1003170	1003170
$IFPU_{res-adj}$ (age-adjusted pumpkin ingestion factor) g	548520	548520
$IFRI_{res-adj}$ (age-adjusted rice ingestion factor) g	572880	572880
$IFSN_{res-adj}$ (age-adjusted snap bean ingestion factor) g	434630	434630
$IFST_{res-adj}$ (age-adjusted strawberry ingestion factor) g	336630	336630
$IFTO_{res-adj}$ (age-adjusted tomato ingestion factor) g	624470	624470
$IRAP_{res-a}$ (apple ingestion rate - resident adult) g/day	73.7	73.7
$IRAP_{res-c}$ (apple ingestion rate - resident child) g/day	72.2	72.2
$IRAS_{res-a}$ (asparagus ingestion rate - resident adult) g/day	39.3	39.3

Output generated 15MAY2019:17:15:14

Site-Specific
Resident Soil Inputs - No secular equilibrium, progeny included (with decay)

*** Inputted values different from Resident defaults are highlighted.**

Variable	Resident Soil Default Value	Form-input Value
$IRAS_{res-c}$ (asparagus ingestion rate - resident child) g/day	12.0	12.0
$IRBE_{res-a}$ (berry ingestion rate - resident adult) g/day	35.4	35.4
$IRBE_{res-c}$ (berry ingestion rate - resident child) g/day	23.9	23.9
$IRBR_{res-a}$ (broccoli ingestion rate - resident adult) g/day	32.0	32.0
$IRBR_{res-c}$ (broccoli ingestion rate - resident child) g/day	13.1	13.1
$IRBT_{res-a}$ (beet ingestion rate - resident adult) g/day	33.9	33.9
$IRBT_{res-c}$ (beet ingestion rate - resident child) g/day	3.9	3.9
$IRCB_{res-a}$ (cabbage ingestion rate - resident adult) g/day	92.1	92.1
$IRCB_{res-c}$ (cabbage ingestion rate - resident child) g/day	12.3	12.3
$IRCG_{res-a}$ (cereal grain ingestion rate - resident adult) g/day	76.0	76.0
$IRCG_{res-c}$ (cereal grain ingestion rate - resident child) g/day	38.0	38.0
$IRCI_{res-a}$ (citrus ingestion rate - resident adult) g/day	309.4	309.4
$IRCI_{res-c}$ (citrus ingestion rate - resident child) g/day	194.1	194.1
$IRCO_{res-a}$ (corn ingestion rate - resident adult) g/day	59.8	59.8
$IRCO_{res-c}$ (corn ingestion rate - resident child) g/day	23.8	23.8
$IRCR_{res-a}$ (carrot ingestion rate - resident adult) g/day	27.3	27.3
$IRCR_{res-c}$ (carrot ingestion rate - resident child) g/day	14.9	14.9
$IRCU_{res-a}$ (cucumber ingestion rate - resident adult) g/day	82.4	82.4
$IRCU_{res-c}$ (cucumber ingestion rate - resident child) g/day	25.4	25.4
$IRLE_{res-a}$ (lettuce ingestion rate - resident adult) g/day	37.5	37.5
$IRLE_{res-c}$ (lettuce ingestion rate - resident child) g/day	4.2	4.2
$IRLI_{res-a}$ (lima bean ingestion rate - resident adult) g/day	33.8	33.8
$IRLI_{res-c}$ (lima bean ingestion rate - resident child) g/day	6.5	6.5
$IROK_{res-a}$ (okra ingestion rate - resident adult) g/day	30.2	30.2
$IROK_{res-c}$ (okra ingestion rate - resident child) g/day	5.3	5.3
$IRON_{res-a}$ (onion ingestion rate - resident adult) g/day	21.8	21.8
$IRON_{res-c}$ (onion ingestion rate - resident child) g/day	5.8	5.8
$IRPC_{res-a}$ (peach ingestion rate - resident adult) g/day	115.7	115.7
$IRPC_{res-c}$ (peach ingestion rate - resident child) g/day	111.4	111.4
$IRPE_{res-a}$ (pea ingestion rate - resident adult) g/day	35.4	35.4

Site-Specific
Resident Soil Inputs - No secular equilibrium, progeny included (with decay)

*** Inputted values different from Resident defaults are highlighted.**

Variable	Resident Soil Default Value	Form-input Value
$IRPE_{res-c}$ (pea ingestion rate - resident child) g/day	32.1	32.1
$IRPR_{res-a}$ (pear ingestion rate - resident adult) g/day	51.9	51.9
$IRPR_{res-c}$ (pear ingestion rate - resident child) g/day	66.7	66.7
$IRPT_{res-a}$ (potato ingestion rate - resident adult) g/day	127.8	127.8
$IRPT_{res-c}$ (potato ingestion rate - resident child) g/day	51.7	51.7
$IRPU_{res-a}$ (pumpkin ingestion rate - resident adult) g/day	64.8	64.8
$IRPU_{res-c}$ (pumpkin ingestion rate - resident child) g/day	45.2	45.2
$IRRI_{res-a}$ (rice ingestion rate - resident adult) g/day	73.2	73.2
$IRRI_{res-c}$ (rice ingestion rate - resident child) g/day	28.8	28.8
$IRSN_{res-a}$ (snap bean ingestion rate - resident adult) g/day	53.9	53.9
$IRSN_{res-c}$ (snap bean ingestion rate - resident child) g/day	27.3	27.3
$IRST_{res-a}$ (strawberry ingestion rate - resident adult) g/day	40.5	40.5
$IRST_{res-c}$ (strawberry ingestion rate - resident child) g/day	25.3	25.3
$IRTO_{res-a}$ (tomato ingestion rate - resident adult) g/day	80.3	80.3
$IRTO_{res-c}$ (tomato ingestion rate - resident child) g/day	29.7	29.7
MLF_{apple} (apple mass loading factor) unitless	0.000160	0.000160
$MLF_{asparagus}$ (asparagus mass loading factor) unitless	0.0000790	0.0000790
MLF_{berry} (berry mass loading factor) unitless	0.000166	0.000166
$MLF_{broccoli}$ (broccoli mass loading factor) unitless	0.00101	0.00101
MLF_{beet} (beet mass loading factor) unitless	0.000138	0.000138
$MLF_{cabbage}$ (cabbage mass loading factor) unitless	0.000105	0.000105
$MLF_{cereal\ grain}$ (cereal grain mass loading factor) unitless	0.250	0.250
MLF_{citrus} (citrus mass loading factor) unitless	0.000157	0.000157
MLF_{corn} (corn mass loading factor) unitless	0.000145	0.000145
MLF_{carrot} (carrot mass loading factor) unitless	0.0000970	0.0000970
$MLF_{cucumber}$ (cucumber mass loading factor) unitless	0.0000400	0.0000400
$MLF_{lettuce}$ (lettuce mass loading factor) unitless	0.0135	0.0135
$MLF_{lima\ bean}$ (lima bean mass loading factor) unitless	0.00383	0.00383
MLF_{okra} (okra mass loading factor) unitless	0.0000800	0.0000800
MLF_{onion} (onion mass loading factor) unitless	0.0000970	0.0000970

Site-Specific
Resident Soil Inputs - No secular equilibrium, progeny included (with decay)

*** Inputted values different from Resident defaults are highlighted.**

Variable	Resident Soil Default Value	Form-input Value
MLF_{peach} (peach mass loading factor) unitless	0.000150	0.000150
MLF_{pea} (pea mass loading factor) unitless	0.000178	0.000178
MLF_{pear} (pear mass loading factor) unitless	0.000160	0.000160
MLF_{potato} (potato mass loading factor) unitless	0.000210	0.000210
$MLF_{pumpkin}$ (pumpkin mass loading factor) unitless	0.0000580	0.0000580
MLF_{rice} (rice mass loading factor) unitless	0.250	0.250
$MLF_{snap\ bean}$ (snap bean mass loading factor) unitless	0.00500	0.00500
$MLF_{strawberry}$ (strawberry mass loading factor) unitless	0.0000800	0.0000800
MLF_{tomato} (tomato mass loading factor) unitless	0.00159	0.00159
TR (target cancer risk) unitless	1.0E-06	1.0E-06
F(x) (function dependent on U_m/U_t) unitless	0.194	0.0391
PEF (particulate emission factor) m^3/kg	1359344438	4078965031.971621
Q/C_{wind} (g/m^2-s per kg/m^3)	93.77	32.35983267992716
A_c (acres)	0.5	420
ED_{res} (exposure duration - resident) yr	26	26
ED_{res-a} (exposure duration - resident adult) yr	20	20
ED_{res-c} (exposure duration - resident child) yr	6	6
EF_{res} (exposure frequency - resident) day/yr	350	350
EF_{res-a} (exposure frequency - resident adult) day/yr	350	350
EF_{res-c} (exposure frequency - resident child) day/yr	350	350
ET_{res} (exposure time - resident) hr/day	24	24
ET_{res-a} (exposure time - resident adult) hr/day	24	24
ET_{res-c} (exposure time - resident child) hr/day	24	24
ET_{res-i} (exposure time - indoor resident) hr/day	16.416	16.416
ET_{res-o} (exposure time - outdoor resident) hr/day	1.752	1.752
GSF_i (gamma shielding factor - indoor) unitless	0.4	0.4
$IFA_{res-adj}$ (age-adjusted soil inhalation factor - resident) m^3	161000	161000
$IFS_{res-adj}$ (age-adjusted soil ingestion factor - resident) mg	1120000	1120000
IRA_{res-a} (inhalation rate - resident adult) m^3/day	20	20
IRA_{res-c} (inhalation rate - resident child) m^3/day	10	10

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Site-Specific
Resident Soil Inputs - No secular equilibrium, progeny included (with decay)

*** Inputted values different from Resident defaults are highlighted.**

Variable	Resident Soil Default Value	Form-input Value
IRS_{res-a} (soil intake rate - resident adult) mg/day	100	100
IRS_{res-c} (soil intake rate - resident child) mg/day	200	200
t_{res} (time - resident) yr	26	26
TR (target cancer risk) unitless	1.0E-06	1.0E-06
U_m (mean annual wind speed) m/s	4.69	3.89
U_t (equivalent threshold value)	11.32	11.32
V (fraction of vegetative cover) unitless	0.5	0.5

Site-Specific
Resident PRGs for Soil - No secular equilibrium, progeny included (with decay)

Isotope	ICRP Lung Absorption Type	Inhalation Slope Factor (risk/pCi)	External Exposure Slope Factor (risk/yr per pCi/g)	Food Ingestion Slope Factor (risk/pCi)	Soil Ingestion Slope Factor (risk/pCi)	Particulate Emission Factor (m^3/kg)	Lambda (1/yr)	Halflife (yr)	1000029 m^2 Soil Volume Area Correction Factor	0 cm Soil Volume Gamma Shielding Factor	Total Indoor GSF Soil Volume
Ac-227	S	1.49E-07	1.98E-10	2.45E-10	2.90E-10	4.08E+09	3.18E-02	2.18E+01	1.00E+00	1.00E+00	4.00E-01
At-219	-	-	-	-	-	4.08E+09	3.89E+05	1.78E-06	9.00E-01	1.00E+00	4.00E-01
Ba-137m	-	-	2.69E-06	-	-	4.08E+09	2.29E-02	3.02E+01	1.00E+00	1.00E+00	4.00E-01
Bi-211	-	-	1.90E-07	-	-	4.08E+09	1.70E+05	4.07E-06	1.00E+00	1.00E+00	4.00E-01
Bi-215	-	-	1.08E-06	-	-	4.08E+09	4.78E+04	1.45E-05	1.00E+00	1.00E+00	4.00E-01
Cs-137	S	1.12E-10	5.52E-10	3.74E-11	4.25E-11	4.08E+09	2.29E-02	3.02E+01	1.00E+00	1.00E+00	4.00E-01
Fr-223	S	4.07E-11	1.35E-07	1.01E-11	1.69E-11	4.08E+09	1.65E+04	4.19E-05	1.00E+00	1.00E+00	4.00E-01
Pa-231	F	7.62E-08	1.27E-07	2.26E-10	2.98E-10	4.08E+09	2.11E-05	3.28E+04	1.00E+00	1.00E+00	4.00E-01
Pb-211	S	4.03E-11	2.91E-07	5.81E-13	9.55E-13	4.08E+09	1.01E+04	6.87E-05	1.00E+00	1.00E+00	4.00E-01
Po-211	-	-	3.76E-08	-	-	4.08E+09	4.23E+07	1.64E-08	1.00E+00	1.00E+00	4.00E-01
Po-215	-	-	7.48E-10	-	-	4.08E+09	1.23E+10	5.65E-11	1.00E+00	1.00E+00	4.00E-01
Pu-239	F	5.55E-08	2.09E-10	1.74E-10	2.28E-10	4.08E+09	2.88E-05	2.41E+04	1.00E+00	1.00E+00	4.00E-01
Ra-223	S	2.92E-08	4.55E-07	3.39E-10	5.99E-10	4.08E+09	2.21E+01	3.13E-02	1.00E+00	1.00E+00	4.00E-01
Rn-219	-	-	2.35E-07	-	-	4.08E+09	5.50E+06	1.26E-07	1.00E+00	1.00E+00	4.00E-01
Sr-90	S	4.25E-10	4.83E-10	6.88E-11	8.62E-11	4.08E+09	2.41E-02	2.88E+01	9.00E-01	1.00E+00	4.00E-01
Th-227	S	3.50E-08	4.45E-07	7.03E-11	1.29E-10	4.08E+09	1.35E+01	5.12E-02	1.00E+00	1.00E+00	4.00E-01
Th-231	S	1.50E-12	2.49E-08	3.22E-12	5.96E-12	4.08E+09	9.84E-10	7.04E+08	1.00E+00	1.00E+00	4.00E-01
Tl-207	-	-	1.59E-08	-	-	4.08E+09	7.63E+04	9.08E-06	1.00E+00	1.00E+00	4.00E-01
U-235	S	2.50E-08	5.51E-07	9.44E-11	1.48E-10	4.08E+09	9.84E-10	7.04E+08	1.00E+00	1.00E+00	4.00E-01
U-235m	M	1.87E-18	-	1.06E-17	1.65E-17	4.08E+09	2.88E-05	2.41E+04	1.00E+00	1.00E+00	4.00E-01
Y-90	S	8.40E-12	1.90E-08	2.65E-11	4.92E-11	4.08E+09	2.41E-02	2.88E+01	1.00E+00	1.00E+00	4.00E-01

Site-Specific
Resident PRGs for Soil - No secular equilibrium, progeny included (with decay)

Isotope	Ingestion PRG TR=1E-06 (pCi/g)	Inhalation PRG TR=1E-06 (pCi/g)	External Exposure PRG TR=1E-06 (pCi/g)	Produce Consumption PRG TR=1E-06 (pCi/g)	Total PRG TR=1E-06 (pCi/g)	Total PRG TR=1E-06 (mg/kg)
Ac-227	4.52E+00	2.50E+02	8.59E+02	-	**4.42E+00**	6.13E-08
At-219	-	-	-	-	**-**	-
Ba-137m	-	-	5.71E-02	-	**5.71E-02**	6.62E-10
Bi-211	-	-	2.70E+06	-	**2.70E+06**	6.48E-09
Bi-215	-	-	1.33E+05	-	**1.33E+05**	1.16E-09
Cs-137	2.79E+01	3.00E+05	2.78E+02	-	**2.54E+01**	2.94E-07
Fr-223	2.27E+07	2.68E+11	3.69E+05	-	**3.63E+05**	9.49E-09
Pa-231	3.00E+00	3.33E+02	9.11E-01	-	**6.97E-01**	1.48E-05
Pb-211	2.45E+08	1.65E+11	1.04E+05	-	**1.04E+05**	4.23E-09
Po-211	-	-	3.38E+09	-	**3.38E+09**	3.28E-08
Po-215	-	-	4.93E+13	-	**4.93E+13**	1.68E-06
Pu-239	3.92E+00	4.57E+02	5.54E+02	-	**3.86E+00**	6.22E-05
Ra-223	8.58E+02	4.99E+05	1.46E+02	-	**1.25E+02**	2.44E-09
Rn-219	-	-	7.04E+07	-	**7.04E+07**	5.44E-09
Sr-90	1.39E+01	8.02E+04	3.58E+02	-	**1.34E+01**	9.73E-08
Th-227	2.44E+03	2.55E+05	9.15E+01	-	**8.82E+01**	2.87E-09
Th-231	1.50E+02	1.69E+07	4.65E+00	-	**4.51E+00**	2.05E+00
Tl-207	-	-	1.44E+07	-	**1.44E+07**	7.60E-08
U-235	6.03E+00	1.01E+03	2.10E-01	-	**2.03E-01**	9.40E-02
U-235m	5.41E+07	1.36E+13	-	-	**5.41E+07**	8.58E+02
Y-90	2.44E+01	4.06E+06	8.19E+00	-	**6.13E+00**	4.45E-08

Site-Specific
Resident Risk for Soil - No secular equilibrium, progeny included (with decay)

Isotope	ICRP Lung Absorption Type	Inhalation Slope Factor (risk/pCi)	External Exposure Slope Factor (risk/yr per pCi/g)	Food Ingestion Slope Factor (risk/pCi)	Soil Ingestion Slope Factor (risk/pCi)	Concentration (pCi/g)	Particulate Emission Factor (m^3/kg)	Lambda (1/yr)	Halflife (yr)	1000029 m^2 Soil Volume Area Correction Factor
Ac-227	S	1.49E-07	1.98E-10	2.45E-10	2.90E-10	-	4.08E+09	3.18E-02	2.18E+01	1.00E+00
At-219	-	-	-	-	-	-	4.08E+09	3.89E+05	1.78E-06	9.00E-01
Ba-137m	-	-	2.69E-06	-	-	1.13E-01	4.08E+09	2.29E-02	3.02E+01	1.00E+00
Bi-211	-	-	1.90E-07	-	-	-	4.08E+09	1.70E+05	4.07E-06	1.00E+00
Bi-215	-	-	1.08E-06	-	-	-	4.08E+09	4.78E+04	1.45E-05	1.00E+00
Cs-137	S	1.12E-10	5.52E-10	3.74E-11	4.25E-11	1.13E-01	4.08E+09	2.29E-02	3.02E+01	1.00E+00
Fr-223	S	4.07E-11	1.35E-07	1.01E-11	1.69E-11	-	4.08E+09	1.65E+04	4.19E-05	1.00E+00
Pa-231	F	7.62E-08	1.27E-07	2.26E-10	2.98E-10	-	4.08E+09	2.11E-05	3.28E+04	1.00E+00
Pb-211	S	4.03E-11	2.91E-07	5.81E-13	9.55E-13	-	4.08E+09	1.01E+04	6.87E-05	1.00E+00
Po-211	-	-	3.76E-08	-	-	-	4.08E+09	4.23E+07	1.64E-08	1.00E+00
Po-215	-	-	7.48E-10	-	-	-	4.08E+09	1.23E+10	5.65E-11	1.00E+00
Pu-239	F	5.55E-08	2.09E-10	1.74E-10	2.28E-10	2.59E+00	4.08E+09	2.88E-05	2.41E+04	1.00E+00
Ra-223	S	2.92E-08	4.55E-07	3.39E-10	5.99E-10	-	4.08E+09	2.21E+01	3.13E-02	1.00E+00
Rn-219	-	-	2.35E-07	-	-	-	4.08E+09	5.50E+06	1.26E-07	1.00E+00
Sr-90	S	4.25E-10	4.83E-10	6.88E-11	8.62E-11	3.31E-01	4.08E+09	2.41E-02	2.88E+01	9.00E-01
Th-227	S	3.50E-08	4.45E-07	7.03E-11	1.29E-10	-	4.08E+09	1.35E+01	5.12E-02	1.00E+00
Th-231	S	1.50E-12	2.49E-08	3.22E-12	5.96E-12	1.95E-01	4.08E+09	9.84E-10	7.04E+08	1.00E+00
Tl-207	-	-	1.59E-08	-	-	-	4.08E+09	7.63E+04	9.08E-06	1.00E+00
U-235	S	2.50E-08	5.51E-07	9.44E-11	1.48E-10	1.95E-01	4.08E+09	9.84E-10	7.04E+08	1.00E+00
U-235m	M	1.87E-18	-	1.06E-17	1.65E-17	2.59E+00	4.08E+09	2.88E-05	2.41E+04	1.00E+00
Y-90	S	8.40E-12	1.90E-08	2.65E-11	4.92E-11	3.31E-01	4.08E+09	2.41E-02	2.88E+01	1.00E+00
*Total Risk		-	-	-	-	-	-	-	-	-

Site-Specific
Resident Risk for Soil - No secular equilibrium, progeny included (with decay)

0 cm Soil Volume Gamma Shielding Factor	Total Indoor GSF Soil Volume	Ingestion CDI (pCi)	Inhalation CDI (pCi)	External Exposure CDI (pCi)	Produce Consumption CDI (pCi)	Ingestion Risk	Inhalation Risk	External Exposure Risk	Produce Consumption Risk	Total Risk
1.00E+00	4.00E-01	-	-	-	-	-	-	-	-	**-**
1.00E+00	4.00E-01	-	-	-	-	-	-	-	-	**-**
1.00E+00	4.00E-01	9.53E+01	3.36E-03	7.35E-01	-	-	-	1.98E-06	-	**1.98E-06**
1.00E+00	4.00E-01	-	-	-	-	-	-	-	-	**-**
1.00E+00	4.00E-01	-	-	-	-	-	-	-	-	**-**
1.00E+00	4.00E-01	9.53E+01	3.36E-03	7.35E-01	-	4.05E-09	3.76E-13	4.06E-10	-	**4.46E-09**
1.00E+00	4.00E-01	-	-	-	-	-	-	-	-	**-**
1.00E+00	4.00E-01	-	-	-	-	-	-	-	-	**-**
1.00E+00	4.00E-01	-	-	-	-	-	-	-	-	**-**
1.00E+00	4.00E-01	-	-	-	-	-	-	-	-	**-**
1.00E+00	4.00E-01	-	-	-	-	-	-	-	-	**-**
1.00E+00	4.00E-01	2.90E+03	1.02E-01	2.24E+01	-	6.61E-07	5.67E-09	4.68E-09	-	**6.71E-07**
1.00E+00	4.00E-01	-	-	-	-	-	-	-	-	**-**
1.00E+00	4.00E-01	-	-	-	-	-	-	-	-	**-**
1.00E+00	4.00E-01	2.76E+02	9.71E-03	1.91E+00	-	2.38E-08	4.13E-12	9.24E-10	-	**2.47E-08**
1.00E+00	4.00E-01	-	-	-	-	-	-	-	-	**-**
1.00E+00	4.00E-01	2.18E+02	7.70E-03	1.69E+00	-	1.30E-09	1.15E-14	4.20E-08	-	**4.33E-08**
1.00E+00	4.00E-01	-	-	-	-	-	-	-	-	**-**
1.00E+00	4.00E-01	2.18E+02	7.70E-03	1.69E+00	-	3.23E-08	1.92E-10	9.28E-07	-	**9.61E-07**
1.00E+00	4.00E-01	2.90E+03	1.02E-01	2.24E+01	-	4.78E-14	1.91E-19	-	-	**4.78E-14**
1.00E+00	4.00E-01	2.76E+02	9.71E-03	2.13E+00	-	1.36E-08	8.16E-14	4.04E-08	-	**5.40E-08**
-	-	-	-	-	-	*7.36E-07*	*5.87E-09*	*3.00E-06*	-	***3.74E-06***

ENCLOSURE 2

Public Comment Responsiveness Summary

DRAFT ADDENDUM TO THE FIVE-YEAR REVIEW, EVALUATION OF RADIOLOGICAL REMEDIAL GOALS FOR SOIL, HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CA

Thank you for your efforts in providing a thorough review of and comments on the Draft Addendum to the 2019 Five-Year Review, which includes the Battelle Report titled "*Hunters Point Naval Shipyard Estimated Excess Cancer Risks and Dose Equivalent Rates from Resident Exposures to Radionuclide-Containing Soils Report*" and dated August 7, 2019. The report evaluates the long-term protectiveness of the soil radiological remediation goals using preliminary assumptions about future site conditions in current risk and dose assessment models.

Input from the Bayview Hunters Point community is instrumental to the review and revision of Navy publications. Broader public participation is also required as part of the removal actions conducted at Hunters Point Naval Shipyard (HPNS or the Shipyard) under the Comprehensive Environmental Response Compensation, and Liability Act (CERCLA) of 1980 (also known as Superfund) process. The Navy has reviewed public comments and grouped them into five categories. Each category is listed in bold and followed by responses. Responses are intended to clarify and summarize what can be rather technical issues involving the evaluation of risk to the future residents of the Shipyard.

Navy Use of EPA Preliminary Remediation Goals as HPNS Cleanup Levels

Public comments contend that Navy should be using EPA Preliminary Remediation Goals (PRGs) for soil or Building Preliminary Remediation Goals (BPRGs) as the cleanup levels (remediation goals) for removal actions at HPNS. PRGs and BPRGs can be generated by running the EPA online calculators using solely default input values. The resulting soil and building dust radiological concentration levels are intended only to provide "go/no-go" thresholds very early in the CERCLA process to determine if an area warrants further investigation because it may exceed the PRG or BPRG. As described below, these values are being used as intended.

The process is described well in the User's Guide for the EPA PRG Calculator, which states:

> "PRGs (or BPRGs) often are used for site "screening" and as initial cleanup goals, if appropriate. The recommended PRGs (or BPRGs) on this site are not *de facto* cleanup standards and should not be applied as such. The recommended PRG's (or BPRG's) role in site 'screening' is typically to help identify areas, contaminants, and conditions that do not require further federal attention at a particular site. Generally, at sites where contaminant concentrations fall below PRGs (or BPRGs), no further action or study is warranted under the Superfund program, so long as the exposure assumptions at a site match those taken into account by the PRG (or BPRG) calculations. Radionuclide concentrations above the PRG (or BPRG) would not automatically designate a site as 'dirty' or trigger a response action; however, exceeding a PRG (or BPRG) suggests that further evaluation of the potential risks that may be posed by site contaminants is appropriate."

These further evaluations have been performed for many soil areas and buildings on the Shipyard. Early site data was used to refine preliminary cleanup goals into the current remediation goals (RGs) as documented in the Record of Decision for each parcel. RGs provide the maximum concentrations of each radionuclide that may remain in soil or buildings under the chosen and documented remedy. Each

time a site is sampled, and certainly when remediation occurs, the remaining concentrations are well below the RGs. Measurements are continuous throughout remedial activities to demonstrate that the remedy achieved the remedial goals. Final measurements confirm the remedy is complete and is protective (i.e., the remaining contaminants result in a total increased lifetime risk within the CERCLA risk management range). Due to the unreliable data and reports from Tetra Tech EC activities, the Navy is retesting the final survey work across HPNS.

Navy Use of Pathway Exposure Models

Public comments expressed concerns that the Navy was using RESRAD in lieu of the EPA calculator(s) or that the Navy refused to use the EPA calculator(s) until recently.

To the contrary, the Navy began using the EPA calculator(s) in this Five Year Review process simultaneously with RESRAD in 2017. The EPA calculator results were also reported in the Draft Addendum for comparison.

Consistent with other federal agencies, the Department of Defense uses EPA PRG calculators for their intended use in the development of risk-based screening values (PRGs) for generic evaluations during project scoping. After the scoping phase, risk assessments and refinement of the final RGs are performed using site-specific data. For RG development, the Navy prefers to use RESRAD-ONSITE for soils and RESRAD-BUILD for structures, both considered industry-standard radiological models. The EPA PRG calculator was adapted from RESRAD-ONSITE Version 6 as an online screening tool for soils. The EPA BPRG calculator was adapted from RESRAD-BUILD Version 3.1 as an online screening tool for buildings.

Navy Exclusion of Homegrown Produce Pathway Underestimates Resident Risks

Public comments indicated that future residents may either grow plants directly in HPNS soils, use HPNS soils in raised plant beds, or that the roots of plants in raised beds will penetrate into HPNS soils. The concern was raised that any consumption of these contaminated plants would result in an increased and unaccounted for radiological risk to residents.

While this concern is valid, it is addressed by the institutional controls that will convey with released property due to concerns about chemical contamination is some areas. These restrictions will limit homegrown produce by future residents to raised beds with impermeable bottoms and sides and filled with soil not originating on HPNS. The controls are cited in "Covenants to Restrict Use of Property" (CRUPs) and other documents. Since this route of radiological exposure (Pathway) to residents will not exist, it is not included in the evaluation of total site risk.

Navy Use of Average Radionuclide Concentrations Underestimates Resident Risks

Public comments stated that the use of average radionuclide concentrations to demonstrate compliance with the remediation goals would underestimate the potential risk to residents.

The Navy is using a point-to-point comparison of soil or building surface concentrations to their applicable remediation goal. Any point found to exceed the RG will be remediated. The RGs are therefore a not-to-exceed value used in future removal actions.

After the remedial goals have been achieved, the Navy will perform risk estimates to calculate risk values that are representative of site contamination and public exposure.

Navy Compliance with CERCLA Risk Management Guidance

Public comments raised concerns that the resident increased lifetime risk from a few radionuclides of concern reported in the Draft Addendum exceed 1 x 10^{-4} (or 1 in 10,000) and that the use of sum-of-fractions, or the inclusion of chemical contaminant risk, may cause other instances where risks exceed this threshold.

As stated in the 40 CFR 300.340(e) for CERCLA, "For known or suspected carcinogens, acceptable exposure levels are generally concentration levels that represent an excess upper bound lifetime cancer risk to an individual of between 10^{-4} and 10^{-6}. In cases involving multiple contaminants or pathways where attainment of chemical [radiological]-specific ARARs will result in cumulative risk in excess of 10^{-4}, [factors related to technical limitations such as detection/quantification limits for contaminants; factors related to uncertainty; and other pertinent information] may be considered when determining the cleanup level to be attained." These factors, along with inter-agency agreements, were considered in the development of the current RGs. While estimated risks for soils or buildings contaminated at the RGs may indeed exceed 1 x 10^{-4}, the Navy will demonstrate that the final risk from exposures upon property release, including the risk from chemicals and other radionuclides, will achieve the CERCLA risk range. As discussed earlier, final site-specific data will be used to demonstrate the documented remedy was both achieved and is protective.

Navy Use of Appropriate Risk and Dose Coefficients

Public comments stated that the dose and risk coefficients used to convert resident exposure scenarios to resulting dose and risk were inapplicable. However, both the RESRAD models and the EPA calculators used in the Draft Addendum implement essentially the same coefficients for radionuclide ingestion, inhalation and external exposure. Both RESRAD and the EPA calculators use risk coefficients (slope factors, SF) to convert exposures to radionuclides into an associated risk and use dose rate coefficients (dose conversion factors, DCF) to convert exposures to an associated dose. The SFs and DCFs in the EPA calculators are from DOE's Center for Radiation Protection Knowledge at Oak Ridge National Laboratory and are published in PDF form (https://epa-prgs.ornl.gov/radionuclides/SlopesandDosesMasterTableFinal.pdf) or in a software program (DCFPAK). The User's Guide for EPA's Dose Compliance Concentrations (DCC) calculator states that users should choose International Commission on Radiological Protection (ICRP) 107 DCFs if they are not complying with an ARAR that specifies another DCF. Accordingly, both the SFs and DCFs used in RESRAD in the Draft Addendum used ICRP 107 coefficients that were populated using the DCFPAK 3.02 software used in the EPA calculators.

RESPONSES TO COMMENTS FROM EPA

EPA General Comments:

a. The draft addendum does not provide sufficient justification to exceed the 1×10^{-4} cancer risk generally used by EPA to make risk management decisions at CERCLA sites for any individual radionuclide. In the absence of Site-specific circumstances that justify exceeding a 1×10^{-4} cancer risk, we expect that any locations where radiological retesting data demonstrate that the combined radiological and chemical risk exceeds 1×10^{-4} would be remediated.
   - Navy Response: The Navy understands that the 1x10-4 is an important consideration for the EPA, but notes that it is not a bright line in the NCP. The Navy agrees to evaluate combined site risks after collection of data and compare them to the CERCLA risk management range to determine if changes to the Record of Decision or additional remedial actions are necessary to achieve remedial action objectives.
   - As information is available, the Navy will complete evaluations per survey unit and share with regulatory agencies. These evaluations will also be summarized and included with the project completion report.
   - Background levels for radiological constituents will be determined and will inform the risk evaluation through a comparison of radiological concentrations and risk from Navy activities to concentrations and risk that are inclusive of background. During retesting, soils found to exceed RGs due to site-related activities will be remediated.

b. The draft addendum does not evaluate the additive cancer risk from multiple radionuclides and chemicals.
   - Navy Response: The cancer risks associated with each RG, as calculated and reported in the draft addendum, are based on mostly default values and are upper bound, conservative estimates. Following each future site investigation, Navy will use site-specific data to calculate a final, total residual cancer risk for the associated area to future residents.

EPA Specific Comments:

1. The cover letter includes the statement that "The residential scenario is the most conservative of future land uses ... " We agree that the residential scenario is the appropriate future land use for the evaluation. We note, however, that other land uses, while not expected at the Hunters Point Naval Shipyard Site, may be more conservative (e.g., the "farmer" scenario available in EPA's PRG calculator).
   - Navy Response: Comment noted.

2. The report includes the statement that "These actions are conducted to ensure average, radionuclide-specific radioactivity concentrations in residual soil do not exceed the remediation goals (RGs)." Our understanding is that the radiological remediation goals have been and will in the future be applied on a not-to-exceed basis (i.e., any location exceeding a remediation goal has been or will be remediated).
   - Navy Response: The language will be changed to, “These actions were conducted to ensure radionuclide-specific radioactivity concentrations in residual soil do not exceed the remediation goals (RGs)."

3. The report includes the statement that "The RGs ... are to be added to site- and radionuclide-specific background." As noted in the letter, this statement is correct for radium-226 but is not consistent with the Records of Decisions for the other radionuclides present at the Site, or with the remediation goals for chemical contaminants at the Site. In accordance with EPA guidance, any remediation goal below background may be adjusted upward to the background concentration.

- Navy Response: The sentence will be changed to remove, "and are to be added to site- and radionuclide-specific background".

4. We agree with the Site-specific assumptions used to estimate risks associated with the individual soil remediation goals, using the PRG calculator.
   - Navy Response: Comment noted.

5. The Navy assumes that future residents of the Site may be exposed to residual levels of radioactivity from ingestion or inhalation of small quantities of soil and from external radiation. The Navy assumes no exposure from consumption of homegrown produce. This assumption is appropriate if institutional controls ("ICs") are implemented and successfully enforced. We will continue to work with the Navy and State agencies to ensure that necessary ICs are included in "Covenants to Restrict Use of Property" ("CRUPs") and other documents restricting future use of the Site. We will also work with the Navy and State agencies to monitor the effectiveness of the restrictions. We expect the CRUPs to limit homegrown produce grown by future residents of the Site to raised beds with impermeable bottoms and sides to prevent contact with and uptake of any residual contaminants in the underlying soil.
   - Navy Response: Comment noted.