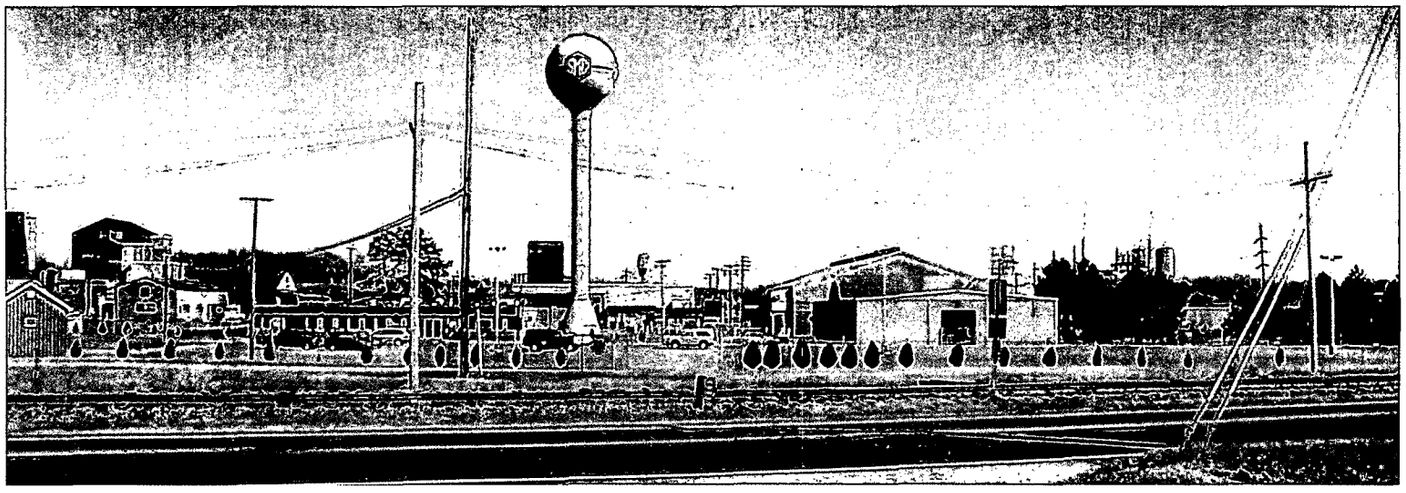


DECOMMISSIONING PLAN

SHIELDALLOY METALLURGICAL CORPORATION
NEWFIELD, NEW JERSEY

REVISION 1b: AUGUST 2009

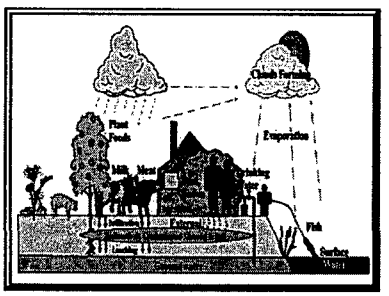
Appendix 19.11 RADIATION DOSE MODELING FOR THE SMC FACILITY

Prepared by

Integrated Environmental Management, Inc. *and* **TRC Environmental Corporation**

Appendix 19.11 - Radiation Dose Modeling for the SMC Facility

Radiation Dose Modeling for the SMC Facility



Shieldalloy Metallurgical Corporation

Report No. 94005/G-29358

Radiation Dose Modeling for the SMC Facility

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August 27, 2009

TABLE OF CONTENTS

1 INTRODUCTION 1

2 ASSESSMENT METHODOLOGY 3
2.1 Radionuclide Fate and Transport 3
2.2 Managing Uncertainty 4
2.2.1 How Sources of Uncertainty are Addressed 5
2.2.2 Evaluation Process 6
2.2.3 Interpreting Uncertainty Analysis Results 7

3 SITE CONCEPTUAL MODEL 8
3.1 Source Term 8
3.1.1 Unrestricted Area Source Term 8
3.1.2 Restricted Area Source Term 9
3.1.2.1 Thickness of the Contaminated Zone 9
3.1.2.2 Radionuclide Content 10
3.1.3 Distribution Coefficients 11
3.1.3.1 Source Term Kds 11
3.1.3.2 Subsurface Soil Kds 14
3.2 Site Physical Parameters 16
3.2.1 Unrestricted Area Physical Parameters 17
3.2.2 Restricted Area Physical Parameters 17
3.2.2.1 Cover Layer Thickness 18
3.2.2.2 Cover Layer Density 19
3.2.2.3 Infiltration Rate 19
3.2.2.4 Contaminated Zone Layer 20
3.2.2.5 Unsaturated Zone Layer 20
3.2.2.6 Saturated Zone Layer 22
3.3 Exposure Scenarios 23
3.3.1 Key Assumptions For the Unrestricted Portion of the Site 26
3.3.2 Key Assumptions for the Restricted Portion of the Property 26
3.3.3 Key Assumptions if Controls Fail 26
3.4 Dose Modeling Packages 28

4 OCCASIONAL TRESPASSER PACKAGE (UNRESTRICTED) 32
4.1 General Information 32
4.2 Critical Group Description 32
4.3 Applicable Exposure Pathways 32
4.4 Key Parameter Justification 33
4.5 Results 44

5 RECREATIONAL HUNTER PACKAGE (UNRESTRICTED) 46
5.1 General Information 46
5.2 Critical Group Description 46
5.3 Applicable Exposure Pathways 46
5.4 Key Parameter Justification 47
5.5 Results 59

6 AGRICULTURAL FARM FAMILY PACKAGE (RESTRICTED) 60

6.1 General Information 60
6.2 Critical Group Description 60
6.3 Applicable Exposure Pathways 61
6.4 Key Parameter Justification 63
6.5 Results 74

7 MAINTENANCE WORKER PACKAGE (RESTRICTED) 76
7.1 General Information 76
7.2 Critical Group Description 76
7.3 Applicable Exposure Pathways 76
7.4 Key Parameters Justification 77
7.5 Results 93

8 INDUSTRIAL WORKER PACKAGE (NEXT TO RESTRICTED AREA) 95
8.1 General Information 95
8.2 Critical Group Description 95
8.3 Applicable Exposure Pathways 95
8.4 Key Parameter Justification 96
8.5 Results 112

9 RECREATIONAL HUNTER PACKAGE (RESTRICTED) 113
9.1 General Information 113
9.2 Critical Group Description 113
9.3 Applicable Exposure Pathways 113
9.4 Key Parameter Justification 114
9.5 Results 130

10 BARRIER EXCAVATION PACKAGE (RESTRICTED/EXCAVATED) 132
10.1 General Information 132
10.2 Critical Group Description 132
10.2.1 Exposure of the Excavator 133
10.2.2 Exposure of the Nearby Resident 133
10.2.3 Exposure of the Recreational Hunter 134
10.3 Applicable Exposure Pathways 134
10.4 Key Parameter Justification 135
10.5 Results 151
10.5.1 Slag Excavation Scenario (Restricted Area, Controls Fail) 151
10.5.2 Resident Scenario (Restricted Area, Controls Fail, Excavation) 152
10.5.3 Recreational Hunter Scenario (Restricted Area, Controls Fail, Excavation) 153

11 OCCASIONAL TRESPASSER PACKAGE (RESTRICTED) 154
11.1 General Information 154
11.2 Critical Group Description 154
11.3 Applicable Exposure Pathways 154
11.4 Key Parameters Justification 155
11.5 Results 170

12 FIGURES 172
Figure 12.1 - Restricted Area 173
Figure 12.2 - Site Conceptual Model 175

1 INTRODUCTION

An important aspect of the Shieldalloy Metallurgical Corporation (SMC) decommissioning plan (DP) is an assessment of the potential radiation dose that could result from the residual radioactivity at the SMC facility after all decommissioning activities are completed. As described in Chapter 5 of the DP, radiation doses for a variety of realistic and unrealistic exposure scenarios were evaluated. This document contains the information used as input to the dose assessment and a summary of results.

The SMC facility is treated as two separate land areas for dose modeling purposes because SMC proposes to release the majority of the property for unrestricted use. A much smaller portion of the property will be placed under an amended license that incorporates Long Term Control (LTC) requirements and restrictions for radiation safety purposes. Therefore, dose modeling is intended to demonstrate that *both* of the following limits will be met once decommissioning is complete:[1,2]

> *"A site will be considered acceptable for unrestricted use if the residual radioactivity that is distinguishable from background radiation results in a total effective dose equivalent (TEDE) to an average member of the critical group that does not exceed 25 millirem (0.25 mSv) per year, including that from groundwater sources of drinking water, and the residual radioactivity has been reduced to levels that are As Low As Reasonably Achievable (ALARA). Determination of the levels which are ALARA must take into account consideration of any detriments, such as deaths from transportation accidents, expected to potentially result from decontamination and waste disposal."*

and:

> *"A site will be considered acceptable for license termination under restricted conditions if: . . . (e) Residual radioactivity at the site has been reduced so that if the institutional controls were no longer in effect, there is reasonable assurance that the TEDE from residual radioactivity distinguishable from background to the average member of the critical group is as low as reasonably achievable and would not exceed either– (e)(1) 100 millirem (1 mSv) per year–, . . ."*

To decommission the majority of the SMC facility, a radiation dose objective of 25 millirem above background is applicable and is used as the basis for demonstrating that the property may be released for unrestricted use. For approximately 11.7 acres within the Storage Yard, the 25 millirem dose objective is still applicable with all of the proposed controls in place. However, in the unlikely event that all controls associated with the restricted area should fail, the dose objective to be met is 100 millirem per year.

The U. S. Nuclear Regulatory Commission (NRC) has developed guidance on acceptable approaches and methodologies for radiation dose modeling to demonstrate compliance with the aforementioned dose objectives. In addition, the NRC has offered SMC specific examples of acceptable dose

[1] US Nuclear Regulatory Commission, *Radiological Criteria for Unrestricted Use*, Title 10 CFR 20.1402, July 21, 1997.
[2] US Nuclear Regulatory Commission, *Criteria For License Termination Under Restricted Conditions*, Title 10 CFR 20.1403, July 21, 1997.

modeling for use as a guide.[3] SMC has thus selected scenarios and critical population groups, developed the source term, selected exposure pathways, and calculated Derived Concentration Guideline Levels (DCGLs) in accordance with NUREG-1757 and NRC Staff recommendations.[4]

Assessment of the radiation dose potential associated with the decommissioning of SMC's Newfield, New Jersey facility is performed in this report. In this document is a brief description of the methodology used to perform the dose assessments, a presentation of the site conceptual model which includes the source term used as input to the assessment, the exposure scenarios deemed reasonably likely under LTC conditions, the less likely exposure scenarios if the controls specified as part of the terms of the amended license should fail, a discussion of the uncertainty associated with the input parameters, and the findings (results) of the assessment. The specific information associated with a given exposure scenario is contained within a single, separate chapter, called a "dose modeling package" for the scenario. In each package, there is general information about the scenario, a description of the critical exposure group, a listing of the applicable exposure pathways, justifications for key parameters used as input to the dose modeling, a presentation of results, and copies of the summary reports produced by the computer models used to assess the dose.

[3] Kalman, Kenneth, U. S. Nuclear Regulatory Commission, in an e-mail communication to David Smith, Shieldalloy Metallurgical Corporation, April 5, 2006, 2:57 p.m., referred SMC to the DPs for the Michigan Department of Natural Resource (MDNR) and Whittaker sites, accessible on the ADAMS data base. A search of the data base identified the only following documents with apparent relevance: (1) Michigan Department of Natural Resources, "Decommissioning Plan; Tobico Marsh SGA Site, Kawkawlin, Michigan", February, 2003; and (2) Whittaker Corporation, "Dose Assessment in Support of Establishing Derived Concentration Guideline Levels for the Whittaker Decommissioning Site", August, 2004.

[4] U.S. Nuclear Regulatory Commission, *Consolidated NMSS Decommissioning Guidance-Decommissioning Process for Materials Licensees*, NUREG-1757, Volume 1, September, 2003.

2 ASSESSMENT METHODOLOGY

2.1 Radionuclide Fate and Transport

The process of assessing the radiation dose potential for the SMC facility involves defining the source(s), preparing a site conceptual model, identifying the likely pathways for potential human exposure, and assessing the availability of a receptor to receive a dose. However, the relationships between these factors are complex and often interdependent. Therefore, a computer program to model the plausible human exposure scenarios and to perform the complex sets of computations was utilized.

The computer code, RESRAD (Version 6.4) was used to model radionuclide fate and transport of residual radioactivity at the site and to assess the radiation dose incurred by hypothetical receptors after decommissioning is complete.[5] This code provides an estimate of the annual radiation dose beginning immediately after decommissioning is complete and extending for 1,000 years into the future.[6] It is widely-accepted and used as an industry-standard tool for performing radiological dose assessments and for calculating DCGLs.

The following are several important features of the RESRAD code that are pertinent to the evaluations performed for the SMC facility:

- The radiation dose conversion factors (DCFs) used by RESRAD are taken from Federal Guidance Reports (FGRs) No. 11 and 12, which are derived from a dosimetry model promulgated by the International Commission on Radiation Protection (ICRP);[7,8,9,10]
- Short-lived radioactive progeny (e.g. half-life less than 180 days) are accounted for using the "parent+D" DCFs;
- RESRAD integrates and normalizes exposure factors based on the fraction of time a receptor is exposed over the exposure period;[11] and
- RESRAD uses single-point estimates for values of every parameter to evaluate complete pathways in the deterministic module of the code.

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[5] Yu, C, Zielen, A.J, et al, *User's Manual for RESRAD Version 6*, ANL/EAD-4, Argonne National Laboratory, Argonne, Illinois, July, 2001.
[6] The RESRAD code was chosen because it can adequately depict the key site-specific features of SMC's site. It is also able to derive values for exposure parameters based on built-in fate and transport computations using well-defined site-specific data. In addition, the code is able to integrate radiation dose projections over time taking into account transient conditions that may occur.
[7] U.S. Environmental Protection Agency, *Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion*, Federal Guidance Report Number 11, EPA 520/1-88-20, September, 1988.
[8] U.S. Environmental Protection Agency, *External Exposure to Radionuclides in Air, Water and Soil*, Federal Guidance Report Number 12, EPA 402 R-93-081, September, 1993.
[9] International Council on Radiation Protection, *Report of the Task Force on Reference Man*, ICRP Report 23, 1981.
[10] The bio-kinetic dosimetry model accounts for particle fractioning that might occur following exposure. For example, the DCFs for particle inhalation account for the dose to the GI tract from the fraction of respired particles that are ingested. As a result, there is no need to independently account for biological fractioning in the dose calculations.
[11] For example, a soil ingestion rate of 100 mg/d for a receptor who is exposed for only 50% of one day would result in an ingestion intake of 50 mg.

One feature of the RESRAD code permits users to select from two types of risk assessment methods, deterministic and probabilistic. Most radiation protection professionals are familiar with the deterministic approach because it has been, until recently, the most widely used of the two. It is designed to capture the reasonable maximum exposure (RME) condition for a receptor using single point estimates of parameter values used to calculate dose. Such a calculation provides a single point estimate of radiation dose that could result from a given concentration of radioactivity under explicit use conditions.

However, few of the parameters used to calculate deterministic dose potentials at long times into the future can be described by a single value. Therefore, there is a tendency to use unrealistically-conservative input parameters in order to bound the inherent uncertainty in the deterministic approach. This excess conservatism often leads to gross over-estimation of the radiological impact of the site or use conditions.[12]

Instead, an alternative approach, the probabilistic methodology for risk assessment, which addresses the potential for exposure through what is essentially an uncertainty analysis, takes both the range and distribution of individual input parameters into consideration.[13] The probabilistic method, described further below, offers a substantially clearer picture of what the dosimetric impacts of a decommissioning method might be and it is a useful tool for risk management.

Because the NRC has established its decision-making criteria on the use of probabilistic assessment methods that result in a mean or "reasonably foreseeable" exposure to a member of the critical exposure group, and because it is a required assessment methodology in NUREG-1757, this is the approach that was used by SMC in its assessment of the dose potential for the two areas at the decommissioned SMC facility (i.e., the restricted and the unrestricted areas).[14,15,16,17] Probabilistic methods were used to evaluate the range of present and future radiation dose potentials associated with the restricted area under conditions of all controls being in place and in the unlikely event that they fail, as well as in the development of Derived Concentration Guideline Levels (DCGLs) for the unrestricted portion of the site. However, there is an inherent uncertainty in projecting future conditions, which will be managed as described in the following section.

2.2 Managing Uncertainty

Uncertainty analysis imparts more information to the decision maker than deterministic analysis. It characterizes a range of potential doses and the likelihood that a particular dose would be exceeded. However, regardless of the method, uncertainty is inherent in all dose and risk assessment calculations and should be considered in determining whether a selected release criterion will satisfy regulatory requirements.

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[12] This difficulty was acknowledged by the NRC in recent guidance specific to SMC and in supplemental information to accompany NUREG-1757.

[13] U.S. Nuclear Regulatory Commission, *Consolidated NMSS Decommissioning Guidance, Decommissioning Process for Materials Licensees*, NUREG 1757, Vol. 1, Rev. 1, September, 2003.

[14] The average member of the critical group is used rather than using the RME for the entire population. In a typical deterministic risk, the RME is used for the entire population.

[15] As defined in 10 CFR 20.1003, the critical group is a group of individuals expected to receive the greatest exposure to residual radioactivity for any applicable set of conditions.

[16] U.S. Nuclear Regulatory Commission, *Radiological Criteria for License Termination*, Volume 62, Federal Register, page 39058, July 21, 1997.

[17] NUREG-1757, Vol. 2, Section 2.1, September, 2003.

In general, there are three primary sources of uncertainty in a dose assessment: Uncertainty in the models, uncertainty in the scenarios and uncertainty in the input parameters.[18] Models are simplifications of reality and, in general, several alternative models may be consistent with available data. Computer modeling codes have permitted the analyst to increasingly refine the models they use because the computer is handling the complex calculations that result.

The RESRAD code used for evaluation of the exposure scenarios at the SMC facility has been developed and maintained using a stringent version control process. Its models (or their components) are tested for mathematical correctness, verified, and benchmarked against comparable models, when available. However, modeling in and of itself implies a degree of uncertainty in that direct measurements or standards are typically not available to compare to modeled results. On the other hand, with the selection of a suitable model for the site conditions and scenarios to be considered, and configuring the model with realistic and most probable input parameters, one may be reasonably confident in the model's predictions.

The current regulatory philosophy is to evaluate the uncertainty in an estimate along with the severity of consequence and probability of exceeding a deterministic regulatory limit. Such a decision method is termed "risk-informed decision making." The advent of powerful personal computers and increasingly capable software tools, coupled with increased knowledge of key physical, behavioral, and metabolic parameters used to make dose assessments, have brought probabilistic analysis to the state of the art. While not all regulating agencies expect that assessments will employ the probabilistic approach, with a quantitative assessment of the associated uncertainties, the NRC has adopted a risk-informed approach to regulatory decision making, suggesting that an assessment of uncertainty be included in dose assessments.[19] The NRC's Probabilistic Risk Assessment (PRA) Policy Statement states, in part:[20]

> *"The use of PRA technology should be increased in all regulatory matters to the extent supported by the state of the art in PRA methods and data, and in a manner that complements the NRC's deterministic approach."*

Even with the use of probabilistic analyses, it should be recognized that not all sources of uncertainty could be, or need to be, considered in a dose assessment. The primary emphasis in uncertainty analysis is to identify the important assumptions and parameter values that, if altered, could change the decision. Therefore, sensitivity analysis performed in conjunction with the uncertainty analysis is used to identify parameters and assumptions that have the largest effect on the overall result and provides a tool for understanding and explaining the influence of these key assumptions and parameter values on the variability of the estimated dose.

2.2.1 How Sources of Uncertainty are Addressed

An important issue in uncertainty and sensitivity analysis is that not all sources of uncertainty can be easily quantified. Of the three primary sources, parameter uncertainty is the one best understood and will be dealt with quantitatively in this section. Mathematical approaches for quantifying the uncertainty in the site conceptual model and future use scenarios, on the other hand, are not well developed (e.g., it is difficult to predict with certainty the characteristics of a future society). For

[18] Bonano, E.J, Davis, P.A., *A Review of Uncertainties Relevant in Performance Assessment of High Level Radioactive Waste Repositories*, NUREG/CR-5211, September, 1988.
[19] NUREG-1757, September, 2003.
[20] U.S. Nuclear Regulatory Commission, *Probabilistic Risk Assessment Policy Statement*, Commission Policy Statement, August, 1995.

these reasons, no attempt to formally quantify or model scenario uncertainty is made in this document.

To address the use scenario uncertainly, a suite of scenarios capturing the plausible range of future uses of the SMC facility, given the nature and site-specific impediments to future land development, have been developed and were considered in the assessment. In addition, conceptual site models have been designed and selected to represent the existing features at the site and to conservatively represent the conditions that might be encountered in each scenario. By carefully selecting input parameters, the estimates of dose potential using the RESRAD computer code will tend to overestimate rather than underestimate the potential dose.

2.2.2 Evaluation Process

The RESRAD computer code's probabilistic module uses an enhanced random sampling algorithm called Latin Hypercube sampling when projecting future conditions. For this sampling method, input parameter values are selected randomly from probability distribution functions (PDF). A PDF is identified for each variable of interest and a decision is made as to whether a parameter is independent or correlated to other input variables. The following describes the evaluation process for the scenarios of interest:

- Each scenario was evaluated using the deterministic module to identify a concentration in the "contaminated zone" (i.e., soil in the SMC unrestricted area and the consolidated material in the restricted area) to the deterministic regulatory limits. Coarse scale sensitivity analysis was then performed to "zero in" on the parameters that had the greatest potential to impact the dose.

- Pathways of interest were identified through preliminary runs of the deterministic module for all the scenarios. These identified the scenario-specific pathways that most significantly contributed to dose. For the SMC facility, the direct exposure pathway, meaning exposure to radiations coming from the source term, was consistently the dominant pathway, leading all others by a significant margin.[21]

- Where site-specific knowledge was lacking, where the dose-response was not sensitive to variability in a given parameter, or where default parameter distributions were reasonably representative of site conditions or conditions being portrayed in the exposure scenario, the RESRAD default value was used. Where no default distribution was recommended, or where there was knowledge of site-specific conditions, an appropriate distribution was selected based upon the degree of knowledge of site-specific conditions.

- The Latin-Hypercube sampling algorithm (a variant of the Monte Carlo sampling technique which has an advantage in that it forces the sampling to occur over the entire range of possible values in the PDF rather than rely on pure random sampling) was set to sample 1,500 times (300 samples, repeated five times for each "run" of the RESRAD code).

[21] The direct exposure pathway, called the "ground pathway" in the RESRAD computer code, may refer to the source term in either then restricted area (i.e., the consolidated materials) or in the unrestricted area (i.e., the residual radioactivity in concentrations that are no higher than the DCGL (see Appendix 19.10 of the DP).

2.2.3 Interpreting Uncertainty Analysis Results

Since the results of the uncertainty analyses is a distribution in the annual dose projection, some percentage of the calculated doses may exceed the applicable regulatory limit. At the same time, because not all parameter distributions are symmetrical and because some parameters are correlated, the mean dose from the uncertainty analysis is not necessarily equal to a deterministic dose calculated using single point estimates of the various parameters. A further phenomenon of probabilistic modeling is that the mean dose for a particular series of repetitions is frequently higher than the 90th or even the 95th percentile estimates of probable dose. This occurs with the very rarest combinations of the most conservative or outlying assumptions of individual parameters. In those very few cases, where the Monte Carlo sampling technique selects combinations of values from the outermost extremes of a parameter distribution, the resulting dose projects can be quite large when compared to the majority of conditions sampled.

An important issue that must be addressed in the treatment of uncertainty is specifying how to interpret the analytical results in the context of the fact that regulatory dose limits are deterministic (i.e., a single value). There is no such thing as absolute assurance that the regulatory limit will be met, so regulatory compliance is stated in terms of a metric of the distribution of parameters. Even for a deterministic analysis, the resulting estimate of dose is simply one of a range of possible doses that could result for the site and the scenario.

Therefore, for the assessment of present and future dose potential at the SMC facility after decommissioning is complete, the peak of the mean dose for the critical exposure group from a probabilistic analysis, or the *most likely* exposed population, is the value used for comparison to the applicable deterministic regulatory dose limit.[22] Since the severely skewed cumulative distribution phenomenon occurs repeatedly in the radiation doses modeled for the SMC facility with the probabilistic approach, a suite of projected annual doses corresponding to the 50th, 90th, 95th, and maximum are also reported for comparison to the compliance measure. Finally, the deterministic estimate of projected annual dose is also provided for comparison.

[22] The parameters used to perform the assessment were selected to represent the critical exposure group (analogous to the Reasonable Maximum Exposure concept), and as such already overstate the expected dose to the average receptor at the site.

3 SITE CONCEPTUAL MODEL

The site conceptual model (SCM) for the SMC facility is the relationship between the sources of residual radioactivity, the areas where the sources are located, transport mechanisms, exposure routes, and the receptor (i.e., hypothetically exposed human). The SCM provides a description of how residual radioactivity at the site might enter into the environment, how it moves around within the environment, and the routes used to expose humans.

The SCM has three fundamental components that are needed to calculate (or model) the potential future dose to a receptor on or near the decommissioned facility. The first component is the source term itself.[23] The second is the physical characteristic(s) of the site.[24] The third is the range of realistic (plausible) human exposure scenarios that are described by factors that are associated with human behavior and metabolic processes. Each of these fundamental components is described in the subsections that follow. Figure 12.1 is an aerial photograph of the SMC facility that shows the stockpiled materials in the Storage Yard that will be consolidated and covered with an engineered barrier during the decommissioning process. Figure 12.2 is a graphical representation of the SCM for the restricted and unrestricted areas at the SMC facility.

3.1 Source Term

The source term abstraction used by the RESRAD computer code to project potential future dose is derived from knowledge about the residual radioactivity at the site. The source term is defined primarily by its radionuclide composition, but may also include parameters for mass, volume, lateral and vertical extent (spatial configuration), density, leachability potential and other parameters, as applicable. The following subsections describe the source term for the SMC facility.

3.1.1 Unrestricted Area Source Term

The source term for most of the SMC facility property is the concentrations of radioactivity that will be allowed to remain after remediation is complete. That concentration, bounded by an upper limit on radiation dose potential of 25 millirem TEDE, applies only to the unrestricted portion of the site. The DCGL Document, which appears in Appendix 19.10 of the DP, describes how the concentrations were determined. The following table is a summary of results for the unrestricted area:

Radionuclide	DCGL equivalent to 25 mrem TEDE (pCi/g)
Th-232+ progeny	8.3
U-234+progeny	11.6
U-235+progeny	31.9
U-238+progeny	781.3
Natural Uranium	22.9

[23] The size, thickness, and radiological composition of the source must be conceptualized in the source term abstraction.
[24] The site must be described in a physical abstraction that includes physical and hydraulic characteristics of the site and its potentially impacted environment.

3.1.2 Restricted Area Source Term

The restricted area source term is comprised of the contributions from a variety of components, including boulders of vitreous, radionuclide-bearing slag, a baghouse dust pile with significantly lower source material concentrations, and stockpiled soil and building rubble with even lower concentrations. A detailed treatment of the various aspects of the SMC facility source term is presented in the Source Term Document, which appears in Appendix 19.2 of the DP. The following subsections describe each of the key components and their impact on the resulting dose.

3.1.2.1 Thickness of the Contaminated Zone

Each of the individual material stockpiles in the Storage Yard (see Figure 12.1) was modeled separately by assuming it to be located under a cover equivalent to that described in the engineered barrier design documents (see Appendix 19.6, 19.7, 19.8 and 19.9 of the DP). Each covered stockpile was assumed to be in the shape of a column with a fixed height (4.5 meters or 13 feet), and an area determined from the stockpile volume estimate given in the Source Term Document. The following table summarizes the individual area results used as input to the RESRAD computer code, with the total dose potential for a given scenario being the sum of the dose potentials calculated for each of the Storage Yard areas.:

Storage Yard Area Number	Volume (meter^3)	Height (meters)	Area (meter^2)	Length Parallel to Aquifer Flow (meters)
1	11,000	4.5	2,444	49.4
2	800	4.5	178	13.3
3	2,300	4.5	511	22.6
4	23,000	4.5	5,111	71.5
5A	4,900	4.5	1,089	33.0
5B	3,900	4.5	867	192.7
5 (total)	8,800	4.5	1,956	434.7
6	1,500	4.5	333	74.0
7	800	4.5	178	39.6
8	10,000	4.5	2,222	493.8
9	3,100	4.5	689	153.1

In order to establish a range of data for the probabilistic analysis, both the area and thickness of the contaminated zones were assumed to have a triangular distribution, with minimum and maximum values at ±20% of the central tendency.

In order to test the sensitivity of the dose modeling results to the assumed stockpile thicknesses, Area 4 was evaluated over a thickness range of 0.5 to 4.5 meters. Area 4 was selected for the test because it is the largest stockpile in the Storage Yard, and it contains, by far, the majority of the radioactivity in the Storage Yard (see Appendix 19.2 of the DP). Any changes in radiation dose as

a result of the selection of the thickness parameter are thus most likely to be observed in Area 4. The following table is a summary of the sensitivity testing results:[25]

Thickness of Contaminated Zone (meters)	Area of Contaminated Zone (m^2)	Length Parallel to Aquifer Flow (m)	Deterministic Dose (mrem TEDE)	Maximum dose occurs in Year	RESRAD File No.
0.5	45,900	214.2	6E-07	1,000	2119202.rad
2	11,500	107.2	6E-07	1,000	2119203.rad
4.5	5,100	71.4	6E-07	1,000	2119201.rad

This table shows the dose modeling results for the restricted area of the SMC facility are not influenced by the thickness of the contaminated zone over a range of 0.5 to 4.5 meters. Therefore, the selection of 4.5 meters for the evaluation of the various scenarios is appropriate.

3.1.2.2 Radionuclide Content

The radionuclide content of each area is also described in the Source Term Document (Appendix 19.2 of the DP). The relatively longer-lived progeny of Th-232 and U-238 are in general secular equilibrium with their parent (i.e., no single isotope is present in significantly higher or lower concentrations than the others), an assumption that is supported by the results of analytical testing. The source term used as input to the RESRAD computer code includes all of the isotopes in the thorium and uranium decay series with half-lives longer than 180 days, as shown in the following table:[26]

Isotope	Quantity of Radioactive Material in each Area (pCi/gram)								
	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	Area 7	Area 8	Area 9
Ac-227	0.3	0.2	16.9	17.2	0.7	10.1	7.1	1.1	1.6
Pa-231	0.3	0.2	16.9	17.2	0.7	10.1	7.1	1.1	1.6
Pb-210	1.5	1.9	264.0	177.8	23.6	185.1	132.0	22.4	60.4
Ra-226	1.5	1.9	264.0	177.8	23.6	185.1	132.0	22.4	60.4
Ra-228	2.8	3.5	417.3	450.5	27.0	836.5	185.4	38.4	50.4
Th-228	2.8	3.5	417.3	450.5	27.0	836.5	185.4	38.4	50.4
Th-230	4.9	2.9	240.8	177.8	10.5	144.4	101.9	15.8	22.7
Th-232	2.8	3.5	417.3	450.5	27.0	836.5	185.4	38.4	50.4
U-234	4.9	2.9	240.8	246.3	10.5	144.4	101.9	15.8	22.7
U-235	0.3	0.2	16.9	17.2	0.7	10.1	7.1	1.1	1.6
U-238	4.9	2.9	240.8	246.3	10.5	144.4	101.9	15.8	22.7

[25] The area and length parallel to aquifer flow were adjusted accordingly to accommodate the contaminated zone thickness.

[26] Isotopes with half-lives shorter than 180 days are assumed to be in equilibrium with their first parent with a half-life greater than 180 days and are accounted for in dose calculations through the use of "parent+D" dose conversion factors.

3.1.3 Distribution Coefficients

Distribution coefficients (Kd) describe the partitioning between solid (soil) and liquid phases of soluble concentrations of radionuclides introduced to a soil column. It is a key parameter influencing the migration of radioactivity from the contaminated zone to the ground water. In the general environment, distribution coefficients for a given chemical species (e.g., radium) can vary over many orders of magnitude depending on the soil type, pH, redox potential, and presence of other ions. Other elements (e.g., thorium or uranium) are somewhat less subject to extreme variability.

The distribution coefficient, Kd, is the ratio of the mass of solute species adsorbed or precipitated on the solids per unit of dry mass of the soil to the solute concentration in liquids within the pore spaces in the soil. The key component of this definition as it relates to the conditions at the site and the ground water transport model in the RESRAD computer code is that it assumes the radionuclide is introduced to the soil column as a solute. While this approach may be appropriate to describe the retardation of soluble contaminant migration in the soil column beneath the contaminated zone, it fails to address the situation encountered for the contaminated zone itself. The following subsections describe the Kds for both the source term and the soil column, as well as their impact on the resulting dose.

3.1.3.1 Source Term Kds

The conditions encountered at the SMC facility are not typical of soil of most types. By far the preponderance of the radioactivity in the Storage Yard is contained in a vitreous slag that is essentially insoluble even under conditions that are far more extreme than those encountered *in situ*. A comprehensive sample collection and analysis campaign took place, the results of which appear in the Source Term Document (see Appendix 19.2 of the DP). From there, the following distribution coefficients for each of the stockpiles in the Storage Yard were selected for input to the RESRAD computer code when describing the contaminated zone:[27]

Distribution coefficients for Area 1 (cm^3/g)			
Element	**Minimum**	**Mean**	**Maximum**
Actinium	45	450	2,400
Lead	19	270	1,405
Protactinium	380	550	2,700
Radium 226	425	50,303	493,443
Radium 228	61	109,859	1,465,296
Thorium	2,300	16,800	706,667
Uranium	1,400	13,933	1,760,000

[27] These distribution coefficients describe the ability of the radioactive elements to leach from the consolidated materials in the Storage Yard materials into the water.

Distribution coefficients for Area 2 (cm^3/g)			
Element	**Minimum**	**Mean**	**Maximum**
Actinium	45	450	2,400
Lead	19	270	1,405
Protactinium	380	550	2,700
Radium 226	425	50,303	493,443
Radium 228	61	109,589	1,465,296
Thorium	2,300	16,800	706,667
Uranium	1,400	13,933	1,760,000

Distribution coefficients for Area 3 (cm^3/g)			
Element	**Minimum**	**Mean**	**Maximum**
Actinium	45	450	2,400
Lead	19	270	1,405
Protactinium	380	550	2,700
Radium 226	1,048	1,604	2,241
Radium 228	9,178	12,569	14,473
Thorium	125,000	139,111	155,000
Uranium	638,000	729,667	813,000

Distribution coefficients for Area 4 (cm^3/g)			
Element	**Minimum**	**Mean**	**Maximum**
Actinium	45	450	2,400
Lead	19	270	1,405
Protactinium	380	550	2,700
Radium 226	425	7,100	88,760
Radium 228	2,640	10,508	52,288
Thorium	96,333	156,056	209,000
Uranium	432,000	767,200	1,760,000

Distribution coefficients for Area 5 (cm^3/g)			
Element	**Minimum**	**Mean**	**Maximum**
Actinium	45	450	2,400
Lead	19	270	1,405
Protactinium	380	550	2,700
Radium 226	12,294	164,574	452,830
Radium 228	61	10,926	26,864
Thorium	3,667	19,122	32,900
Uranium	2,000	13,933	37,500

Distribution coefficients for Area 6 (cm^3/g)			
Element	**Minimum**	**Mean**	**Maximum**
Actinium	45	450	2,400
Lead	19	270	1,405
Protactinium	380	550	2,700
Radium 226	2,901	30,280	194,241
Radium 228	1,273	280,685	1,465,296
Thorium	12,000	248,296	706,667
Uranium	14,900	466,940	1,600,000

Distribution coefficients for Area 7 (cm^3/g)			
Element	**Minimum**	**Mean**	**Maximum**
Actinium	45	450	2,400
Lead	19	270	1,405
Protactinium	380	550	2,700
Radium 226	76,966	160,599	244,231
Radium 228	1,276	19,559	37,843
Thorium	1,933	61,800	121,667
Uranium	1,400	308,700	616,000

Distribution coefficients for Area 8 (cm^3/g)			
Element	**Minimum**	**Mean**	**Maximum**
Actinium	45	450	2,400
Lead	19	270	1,405
Protactinium	380	550	2,700
Radium 226	2,695	3,480	4,687
Radium 228	2,497	6,595	12,680
Thorium	5,156	54,829	141,052
Uranium	5,699	15,985	23,408

Distribution coefficients for Area 9 (cm^3/g)			
Element	**Minimum**	**Mean**	**Maximum**
Actinium	45	450	2,400
Lead	19	270	1,405
Protactinium	380	550	2,700
Radium 226	13,441	134,133	493,443
Radium 228	1,828	14,403	28,542
Thorium	2,300	16,800	39,000
Uranium	15,500	68,900	117,000

3.1.3.2 Subsurface Soil Kds

For the soil column below the Storage Yard, distribution coefficients were selected from the guidance provided by the NRC in NUREG-1757, Volume 2, Appendix I.6.4.4. In that document, the NRC recommends that Kd values be selected for input to the RESRAD computer code by using: (a) literature values, (b) default distributions used in the DandD code; or © default distributions present in the RESRAD computer code.[28] In NUREG-1757, the NRC states that "no single set of ancillary parameters such as pH or soil texture, is universally appropriate for all cases for determining the appropriate Kd values" and recommends the use of *a range of Kd values* selected from a listing of literature sources provided in that document. The document further states that: "For those isotopes where the Kd does not have a significant impact on the dose assessment, the *median value* within the range is an acceptable input parameter."

Based on the NUREG-1757 guidance, the values given in the literature are considered to be appropriate for selecting subsurface soil Kds for the SMC facility, with the range in values useful for sensitivity analysis of the Kd parameter. The same data set was previously approved for use by

[28] The DandD computer program is used for screening analyses for license termination and decommissioning. The DandD software automates the definition and development of the scenarios, exposure pathways, models, mathematical formulations, assumptions, and justifications of parameter selections documented in Volumes 1 and 3 of NUREG/CR-5512.

the NRC in the assessment of dose potential at the Salt Waste Disposal facility at the U. S. Department of Energy's (USDOE's) Savannah River site in South Carolina.[29,30] The following are the applicable literature values:

Element	Distribution Coefficient (cm^3/g)			
	Sheppard and Thibault, 1990 (Sand)[a]	Kennedy and Strenge, 1992 (Sand)[b]	RESRAD Default, 2001[c]	Measured for SMC Slag[d]
Actinium	450	420	20	450[a]
Protactinium	550	510	50	550[a]
Lead	270	270	100	270[a]
Radium	500	500	70	7,100[d]
Thorium	3,200	3,200	60,000	156,056[d]
Uranium	35	15	50	767,200[d]

a. Sheppard and Thibault, *Default Soil Solid/Liquid Partition Coefficients, K_dS, for Four Major Soil Types: A Compendium*, Health Physics Journal, Volume 59, Number 4, October 1990.
b. Kennedy and Strenge, *Residual Radioactive Contamination from Decommissioning*, NUREG/CR-5512, Volume 1, October, 1992.
c. Yu, Zielen, Cheng, et al, *User's Manual for RESRAD Version 6*, ANL/EAD-4, July, 2001
d. Taken from the measured values listed above for Area 4, and included in this table to provide an upper bound on the range.

Once again, Area 4 of the Storage Yard was used as the test case for evaluating the sensitivity of modeled radiation doses to Kds. The input parameters associated with Area 4, along with the range of Kds shown in the aforementioned table for subsurface soils, were used as input to the RESRAD computer code. The following are the resulting estimates of dose:

Source of Kd Data	Maximum Deterministic Dose (mrem TEDE)	Maximum Dose Occurs at (yr)	RESRAD File No.
Sheppard and Thibault, (1990, for sand)[a]	5.7E-07	1,000	2109902.rad
Kennedy and Strenge (1992, for sand)[b]	5.7E-07	1,000	2109903.rad
RESRAD Default, 2001[c]	5.7E-07	1,000	2109904.rad
SMC Slag (Area 4)[d]	5.7E-07	1,000	2109901.rad

a. Sheppard and Thibault, *Default Soil Solid/Liquid Partition Coefficients, K_dS, for Four Major Soil Types: A Compendium*, Health Physics Journal, Volume 59, Number 4, October 1990.
b. Kennedy and Strenge, *Residual Radioactive Contamination from Decommissioning*, NUREG/CR-5512, Volume 1, October, 1992.
c. Yu, Zielen, Cheng, et al, *User's Manual for RESRAD Version 6*, ANL/EAD-4, July, 2001
d. Source Term Document (Appendix 19.2 of the DP).

[29] The Savannah River project used NRC guidance (NUREG-5512) and literature values (Sheppard and Thibault) to establish a range of Kds for each element. This document contains the state of industry knowledge on the movement of elements in subsurface soils, and it is based upon the same sources cited by the NRC in NUREG-1757.
[30] The NRC offered the Savannah River approach to SMC as a "template" for Kd selection during a teleconference held on August 29, 2007.

Because there were no changes in dose over the broad ranges of Kd used as input to the calculations, it is clear that the results of the dose modeling for the SMC facility are not sensitive to subsurface soil Kds, and that any of the aforementioned literature values are appropriate. The following table is a listing of the values that were used for the analysis of the various exposure scenarios, with the range taken from the literature values and the input value taken as the median of the range:

Distribution Coefficients for Unsaturated and Saturated Zones (cm^3/g)				
Element	**Minimum**	**Mean**	**Maximum**	**Reference**
Actinium	45	450	2,400	Sheppard and Thibault, 1990
Lead	19	270	1,405	Sheppard and Thibault, 1990
Protactinium	380	550	2,700	Sheppard and Thibault, 1990
Radium	57	3,533	21,000	NUREG 6697, Attachment C, Table 3.9-3
Thorium	207	5,884	150,000	NUREG 6697, Attachment C, Table 3.9-3
Uranium	0.03	126	2,200	NUREG 6697, Attachment C, Table 3.9-3

A subsurface soil sampling campaign within the Storage Yard demonstrated no licensable radioactivity has migrated to the subsurface soils from the materials that have been stockpiled there for over 40 years (see Appendix 19.1, ER Appendix E). This finding supports the conclusion that there is a negligible release rate and slow movement of radioactivity from the stockpiles. Similarly, analysis of the groundwater shows there has been no radiological contamination from the presence of the materials in the Storage Yard.

Literature values (Shephard and Thibault, 1990 for sand) were used as input to the dose modeling for the distribution coefficients in subsurface soils. In May 2009, SMC forwarded samples of various types of subsurface soil from geotechnical borings within the Storage Yard to a commercial analytical laboratory for assessment of Kd. The resulting values revealed the measured distribution coefficients for radium and uranium are consistent with the literature values.[31] A site specific Kd in subsurface soils for thorium could not be determined because of the apparent insolubility of this element under the aqueous chemical conditions expected in leachate from the Storage Yard, which were synthesized for use in the Kd measurement experiments. This insolubility significantly inhibits and potentially precludes, the migration of thorium through the subsurface soils. Thus, using model simulations of migrating leachate containing thorium based on the literature values of Kd for that element, is a conservative approach. In any event, the sensitivity analysis shown above demonstrates the radiation dose is not sensitive to subsurface soil Kd and it is thus not a critical parameter in the dose modeling.

3.2 Site Physical Parameters

The second major conceptual component of the dose assessment process is the physical abstraction of the site, which must capture and express its important physical, hydraulic, and geological conditions. It is also used to place the source term in the context of the environment and systems

[31] Hay, D., "Subsurface Soil Kd Data and Interpretation", August, 2009.

that surround it.[32] The following subsections describe the physical parameters of the unrestricted and the restricted area at the SMC facility.

3.2.1 Unrestricted Area Physical Parameters

The RESRAD computer model uses information about the physical characteristics of a site to estimate the migration potential for radionuclides and the ultimate distribution of the radioactive materials in the receptor exposure pathways over the course of a 1,000-year time period after decommissioning is complete. For the SMC unrestricted area, three layers - the contaminated zone, the unsaturated zone and saturated zone - were defined and used as input to the RESRAD model, with a receptor positioned on top of the layers. For the "contaminated zone" it was assumed that the radioactivity is present in the top 6 inches (0.15 meters) of the ground surface and no cover was applied (e.g., topsoil, ground cover, asphalt) that could limit the receptor's contact with the radioactivity. Therefore, the surface soil in the unrestricted area is input to the RESRAD code as the contaminated zone and the surface soil erosion rate becomes the contaminated zone erosion rate.

In recognition of the relatively flat topographic features of the site, the general meteorological signature for the area surrounding the site, and the non-invasive nature of all reasonably foreseeable exposure scenarios, lower than average soil erosion potential exists. The contaminated zone erosion rate in the unrestricted portion of the property was nonetheless conservatively modeled with a deterministic value of 0.001 meters of soil loss per year, or one meter in 1,000 years, which is equivalent to the RESRAD default value for this parameter. Annual dose estimates are not particularly sensitive to this parameter since the peak annual dose occurs in the first year after decommissioning is complete and decreases each year thereafter, regardless of the surface soil erosion rate used.

For the soil column under the contaminated zone (i.e., the unsaturated zone and the saturated zone), the same characteristics as those described for the restricted area were used. The input parameters used for the unrestricted area physical characteristics are in the DCGL document (see Appendix 19.10 of the DP).

3.2.2 Restricted Area Physical Parameters

Conceptually, the restricted area of the SMC facility, after decommissioning is complete, will be comprised of five "layers", all of which are important to the dose modeling process. These are summarized as follows, based upon the detailed description provided in the engineered barrier specifications (see Appendix 19.6 and 19.7 of the DP):

- Cover Layer - A multi-element layer (engineered barrier) of non-impacted native soil, clay topsoil, and rock that is constructed to form a barrier over the contaminated zone (consolidated material) and underlying layers (soil column);
- Contaminated Zone Layer - A layer (consolidated material) lying just beneath the cover layer in which the source term is located;
- Commingled Layer - A layer of soil lying beneath the contaminated zone that is commingled with slag and other clayey silty soils from the Bridgeton formation overlaying the Cohansey sand, with a thickness ranging from two to seven feet;

[32] The physical, hydraulic, and geologic conditions must be described and input into the RESRAD computer code. RESRAD models the vertical migration of radiological contaminants from the surface or near surface soils to ground water sources of drinking water and surface water bodies for the purpose of calculating the potential exposure of human receptors who may use such water.

- Undisturbed Surface Layer - A relatively thick, dense, undisturbed native deposit of gravel/sands of the Bridgeton Formation, with a thickness ranging from one to 3.5 meters (three to 12 feet), underlain by the fine- to coarse-grained sands of the Cohansey Sand; and

- Saturated Zone Layer - The saturated Cohansey Sand to the depth of the confining Kirkwood formation (i.e., 36.5 meters or 120 feet or more).

The various parameters used to describe the composition of each "layer" are defined within RESRAD with probabilistic variables. These, which account for the variability and uncertainty inherent in hydrogeological features, are described in detail in the subsections that follow.

3.2.2.1 Cover Layer Thickness

The engineered barrier overlies the radionuclide-containing consolidated material. It will be constructed of soil (native materials brought onto the site), compacted clay, various liners and stone to form a cover over the consolidated materials. The robust engineered barrier is designed to minimize the infiltration of water, provide shielding from the source term, and protect against intruders and erosion.

In the RESRAD computer code, the thickness of the engineered barrier is modeled as a triangular distribution with a central tendency value of 1.83 meters (six feet) and a minimum and maximum of 1.3 to 3.7 meters (4.3 to 12.1 feet), respectively. This thickness, while not expected to vary greatly over the capped area, is an important consideration in the construction of the engineered barrier and will thus be confirmed routinely during construction to verify is remains uniform.[33] It is also an important variable in the dose assessment process. Therefore, a sensitivity analysis of impact of barrier thickness on radiation dose potential was performed, with the results shown in the following table:

Thickness of the Engineered Barrier (m)	Deterministic Dose (mrem TEDE)	Maximum dose occurs in Year	RESRAD File No.
0.3	115	1,000	2119506.rad
0.4	29.8	1,000	2119507.rad
0.5	7.9	1,000	2119505.rad
0.8	0.2	1,000	2119504.rad
1.0	0.02	1,000	2119503.rad
1.3	4E-04	1,000	2119502.rad
1.8	6E-07	1,000	2119501.rad

This table shows the radiation dose potential is sensitive to the thickness of the barrier, and that it exceeds 25 millirem if the cover thickness drops to 0.4 meters. This is the result of external exposure from the Th-232 (81%), Ra-226 (12%) and Th-230 (7%) in the source term. The likelihood that the engineered barrier designed for the SMC facility will lose 78% of its original thickness is remote because the design basis erosion rate for the cover (see Appendix 19.6 and 19.7

[33] The minimum thickness was selected by evaluating dose potentials with the cover soil completely removed and ignoring the protection provided by the rock surface.

of the DP) is only 1.5×10^{-5} meters per year.[34] It would take an erosion rate of more than 100 times the design basis to reduce the barrier to 0.4 meters from its installed thickness.

3.2.2.2 Cover Layer Density

The density of the clay-bearing materials that will be used in the construction of the engineered barrier is estimated to range from 130 to 140 pounds per cubic foot (pcf) or 2.08 to 2.24 g/cm^3. Other materials proposed for barrier have densities ranging from 100 to 110 pcf or 1.60 to 1.76 gm/cm^3. Since the clay makes up half of the total barrier thickness, a conservative estimate for the effective density of the entire barrier, when modeled as a single unit, is 1.92 g/cm^3.

3.2.2.3 Infiltration Rate

For purposes of evaluating expected performance, RESRAD modeling is typically completed based on various parameters, including infiltration. RESRAD defines the infiltration rate, I (m/yr) on the basis of the following equation:

$$I = (1 - C_e)\,[(1 - C_r)\,P_r + I_{rr}]$$

where C_e = Evaporation Coefficient (dimensionless), which is the ratio of the total volume of water vapor that is transferred to the atmosphere through evapotranspiration, to the total volume of water available in the root zone;[35] C_r = Runoff Coefficient (dimensionless), the ratio of runoff from the barrier surface to the total amount of precipitation; Pr = Precipitation (m/yr), which is available from local meterological data; I_{rr} = Irrigation Rate (m/yr), with no irrigation proposed for the SMC restricted area.

RESRAD cannot be used to directly model infiltration in multi-layer barriers or account for changes in properties of the barrier over time. Since the RESRAD codes use this particular equation to derive an infiltration rate for any barrier, whether single- or multi-layer, the values used for precipitation rate, runoff coefficient, and/or evapotranspiration coefficient cannot necessarily be the default values from the RESRAD code in the case of a multi-layer barrier. Therefore, a range of site-specific infiltration rates initially was determined as previously described for the multi-layer barrier proposed for the site, to ensure that representative values were incorporated into RESRAD modeling.

Infiltration for the "as designed" engineered barrier design at the SMC facility was determined to be 0.028 meters per year.[36] A combination of the evaporation and runoff coefficients were selected for input to the RESRAD computer code which results in that infiltration value.[37]

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[34] Engineered Barrier Design Report.
[35] NUREG-6697 (2000). "Development of Probabilistic RESRAD 6.0 and RESRAD-Build 3.0 Computer Codes."
[36] See Attachment Q of Appendix 19.7 of the DP.
[37] Despite the robust erosion protection design based on the PMP in accordance with NUREG-1623, RESRAD modeling was performed assuming a six-foot thick cover, which is equivalent to a net loss of one foot of material from the currently proposed design. Based on the results of recent leachability testing to determine partition coefficients (Kd) using actual slag samples, it was determined through RESRAD modeling that for the worst case infiltration rate of 7.1 cm/year (based on the simplified water balance approach) the resulting dose would be 10^{-8} mrem/year. This extremely low dose reflects the fact that direct exposure remains the more important pathway at this low rate of percolation through the cap. For a much higher infiltration rate of 16.8 cm/year, corresponding to values of 0.6 for both C_r and C_e in the above equation, groundwater ingestion becomes important, but the resulting dose is only 2.3 mrem/year. Only an infiltration rate of 18.5 cm/year, which is nearly triple the independently derived worst case rate, yields a groundwater dose (24 mrem/year) that approaches the more stringent of the two applicable dose criteria (i.e., 25 mrem/year). Given these results, and in light of the supporting analysis of the variability in infiltration rates over time for the proposed
(continued...)

3.2.2.4 Contaminated Zone Layer

Residual radioactivity in the form of ferrocolumbium slag, baghouse dust, soil and building rubble will be consolidated within a portion of the existing Storage Yard and then covered with the engineered barrier. The contaminated zone will consist of approximately 63,200 cubic meters of material, with a mean density of 2.8 g/cm[38]. A hydraulic conductivity of 0.01 meters per year, which is the RESRAD default input parameter for silty clayey soil, was taken from NUREG-6697, Appendix C.[39] Information about the distribution coefficients for the radioactivity in the contaminated zone is shown in Section 3.1 above and in the Source Term Document (see Appendix 19.2). It confirms that the radionuclides are tightly bound in the slag matrix and do not leach into water.

The total porosity of the contaminated zone was also selected from NUREG-6697, Appendix C for silty clayey soil.[40] Additional information about the chemical and physical properties of the consolidated materials is presented in the Environmental Report (Appendix 19.1 of the DP).

For dose modeling purposes, the watershed area was assumed to be 690 acres, which represents the low lying areas adjacent to the Storage Yard.[41] The watershed area is used to calculate dilution factors for contaminant concentrations in surface water bodies in the vicinity of the SMC facility. The larger the watershed area, the greater volume through which dilution is possible, and the lower the radiation dose. While there is no realistic pathway for humans to drink surface water from the site, animals may use ponded water to supplement their water supply. Other parameters used to define the contaminated layer for the individual exposure scenarios are described elsewhere in this report.

3.2.2.5 Unsaturated Zone Layer

The unsaturated zone layer is defined in the RESRAD model of the SMC facility as two layers, a layer of surface soil commingled with fine slag (top layer) and a native layer (bottom layer). The native layer is the undisturbed native deposits of gravel/sand layer of the Bridgeton Formation, underlain by coarse-grained sands of the Cohansey Sand. There is little to a trace of silt found in the Cohansey Sand.

The top layer consists of fine sand with variable percentages of silt and clay and traces of fine gravel. This layer, which also contains fine slag/baghouse dust and other non native solids such as concrete, has been reworked through heavy equipment operation. This layer has an average thickness of 1.5 meters with a minimum thickness of 0.8 meters and a maximum thickness of 2.2 meters, as estimated from borings at the site in 2008.[42] The density of the layer is estimated to be 1.696 g/cm^3 with a minimum of 1.123 and maximum of 2.269, which is typical of silty clay and greater than the density found in the native unsaturated layer.

For dose modeling purposes, the porosity of the unsaturated zone layer, which is a measure of how much of the soil volume is made up of pore space (air) as opposed to solid materials, is assumed to be 0.36, with a minimum of 0.144 and a maximum of 0.576. The porosity of the top layer is lower

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[37] (...continued)
design, it is clear that the engineered barrier will provide more than sufficient, long-term protection of groundwater.
[38] See Appendix 19.2 of the DP.
[39] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
[40] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
[41] See Appendix E of the ER (Appendix 19.1 of the DP).
[42] TRC, Field study, 2008, Geotechnical Investigation Information.

than the values reported for the native soil because of the presence of a mixture of soil and slag. The values selected for this layer are at the lower end of the range provided for the type of soil.

For dose modeling purposes, the effective porosity is assumed to be 0.289, with a minimum set at 0.062 and a maximum of 0.517. Also according to Kresic (1997), the presence of fines (i.e., silts and clays) significantly reduces effective porosity. The values selected for this layer are the lower end of the range provided in the literature for this type of soil.

The average hydraulic conductivity of the top layer is likely to be lower than that of the bottom layer (native soil) because of its finer grain size and compaction by heavy equipment. The range of values for hydraulic conductivity are typical of a range of soil types evaluated in NUREG-6697, Appendix C, Table 3.4-1.[43]

For the bottom layer, the native unsaturated zone, the thickness was determined to be an average of 1.9 meters with a triangular distribution; the minimum thickness is 0.9 meters and the maximum thickness is 3.7 meters. The average value was estimated from well locations in the vicinity of the Storage Yard based on wells 11S, 12S, and 13S. Measurements were made by SMC for six years (from January 2001 through April 2007, measured each quarter). A total of 26 data points were summarized for each well.

The density of the bottom layer is 1.51 g/cm^3 with a minimum density of 1.019 g/cm3 and a maximum density of 2.002 g/cm^3, which is typical of native sand and a RESRAD default value. Unsaturated soils are characterized as fine to medium sand and fine to coarse sand (based on boring logs for wells MW-12D and MW-13D) and silty sand with gravel (based on boring log for well MW-11S). Applicable bulk densities range from 1.60 g/cm^3 for dry sand to 1.73 g/cm^3 for dry sand and gravel.[44]

Values for total porosity in the bottom layer are reported to be 0.25 to 0.40 for non-uniform sand and 0.25 to 0.35 for gravelly sand.[45] The RESRAD default value for coarse sand was selected as it is the sand type defined in NUREG-6697, Appendix C, Table 3.2-1 with a total porosity closest to those cited above.[46]

The effective porosity of the bottom layer was determined to be 0.383 with a minimum of 0.195 and a maximum of 0.572. Effective porosity of non-uniform sands and gravels, and their mixtures, is up to 10% less than total porosity. For a range of total porosity above (0.25 to 0.40), the effective porosity range is 0.225 to 0.36.[47,48] Also according to Kresic (1997), the presence of fines significantly reduces effective porosity. However, limited amounts of silt and clay are expected in the sands and gravels of the Bridgeton Formation. Values for sand were selected from NUREG-

[43] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
[44] T. Glover, *Pocket Reference, 2nd Edition*, Sequoia Publishing, Inc Littleton, Colorado, page 542, 1995.
[45] Kresic, N., *Quantitative Solutions in Hydrogeology and Groundwater Modeling*, New York: Lewis Publishers, page 461, 1997.
[46] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
[47] Kresic, N., 1997. Quantitative Solutions in Hydrogeology and Groundwater Modeling, New York: Lewis Publishers, 461 p.
[48] Kresic, N., 1997. Quantitative Solutions in Hydrogeology and Groundwater Modeling, New York: Lewis Publishers, 461 p.

6697, Appendix C, Table 3.3-1 as it is the sand type with effective porosity values closest to those cited above, and its selection is consistent with the material used to represent total porosity.[49]

The reported field capacity for sand is about 0.10 and ranges up to about 0.18 for fine sand (Fetter, 1994). Consequently, the RESRAD default value of 0.2 is higher than expected for the unsaturated zone. Field capacity is not a single value, rather it is time-dependent.[50,51] It is used to calculate the volumetric water capacity of the contaminated zone and unsaturated zone. The value, FCUZ, is used when the calculated capacity is lower than the set value.[52]

For purposes of sensitivity analysis, Area 4 in the Storage Yard was again used as a test case. The RESRAD code was used to calculate the radiation dose over field capacity values ranging from 1E-06 to one, with the results shown in the following table:[53]

Value of Field Capacity	Resulting Deterministic Dose (mrem TEDE)	Maximum Dose Occurs in Year	RESRAD File No.
1E-06	6E-07	1,000	2119101.rad
0.2	6E-07	1,000	2119102.rad
0.5	6E-07	1,000	2119103.rad
1.0	6E-07	1,000	2119104.rad

This table shows the radiation dose potential is not sensitive to changes in field capacity over the broad range shown. A field capacity of 0.2 was thus selected for use in modeling the dose potential at the SMC facility.

The hydraulic conductivity of the native unsaturated layer is 9,500 meters per year with a triangular distribution ranging from 8,600 to 10,400 meters per year. Aquifer testing of wells completed in the upper Cohansey Sand provides the data used for hydraulic conductivity. A pumping test of the Layne well indicated a transmissivity of 82,000 gpd/ft (Weston, 1972), and a recovery test of P4 (also referred to as IWC4) indicated a transmissivity of 90,400 gpd/ft (Woodward-Moorehouse, 1974).[54,55,56] The equivalent hydraulic conductivity is 78 to 93 feet per day, depending on the assumed formation thickness (130 to 140 feet). The average hydraulic conductivity of 9,500 meters per year (85.5 feet per day) is thus used as the central tendency value for dose modeling purposes.

3.2.2.6 Saturated Zone Layer

The lower-most (deepest) layer of the soil column is described as the deep aquifer layer. The Cohansey Sand lies beneath the Bridgeton Formation and is composed of coarse sands and little to

[49] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
[50] Delleur, J.W., The Handbook of Groundwater Engineering, New York: CRC Press, 1999.
[51] Fetter, C.W., 1994. Applied Hydrogeology. New York: Macmillan College Publishing Company, 691 p.
[52] Argonne National Laboratory, *User's Manual for RESRAD Version 6*, Appendix E, July, 2001
[53] RESRAD permits a maximum value of 1.0 to define field capacity.
[54] TRC Environmental Consultants, Inc., *Remedial Investigation Technical Report*, Project Number 7650-N51, Windsor, Connecticut, April, 1992.
[55] Roy F. Weston, Inc., *Hydrogeologic Investigation of Ground Water Contamination, Interim Report*, Prepared for Shieldalloy Corporation, Newfield, New Jersey, 1972.
[56] Woodward-Moorehouse and Associates, Inc. and Woodward-Envicon, Inc., *Preliminary Report, Groundwater Contamination Study, Phase II*. Prepared for Shieldalloy Corporation, Newfield, New Jersey, 1974.

trace silt in the upper 12 meters (40 feet), and generally finer sand and some silt, with some clay and silt stringers in the lower 18 to 24 meters (60 to 80 feet). Saturated soils beneath each area in the Storage Yard are characterized as fine to medium sand and fine to coarse sand (based on boring logs for wells MW-12D and MW-13D) and silty sand with gravel and gravel (based on boring log for well MW-11S).[57,58]

Applicable bulk densities range from 1.60 g/cm^3 for dry sand to 1.73 cm^3 for dry sand and gravel.[59] Based on the saturated soils descriptions above, applicable total porosity values cited in Kresic are 0.25 to 0.40 for non-uniform sand and 0.25 to 0.35 for gravelly sand. The RESRAD default value for coarse sand was selected for use in modeling the various scenarios at the SMC facility as it is the sand type defined in RESRAD Table E.8 with total porosity values closest to those cited above.[60]

Effective porosity of non-uniform sands and gravels, and their mixtures, is up to 10% less than total porosity.[61] For range of total porosity above (0.25-0.40), effective porosity range is 0.225 to 0.36. The RESRAD default value for coarse sand was selected as it is the sand type defined in RESRAD Table E.8 with effective porosity values closest to those cited above and its selection is consistent with the material used to represent total porosity.

During previous hydrogeological studies at the SMC facility, a pumping test of the Layne well indicated a T of 82,000 gpd/ft (Weston, 1972), and a recovery test of P4 (IWC4) indicated T of 90,400 gpd/ft (Woodward-Moorehouse, 1974), or K of 78 to 93 ft/day for the Cohansey sand, depending on formation thickness assumed (130 to 140 feet).[62,63] The average of 9,500 meters per year (85.5 ft/day) is used as the central tendency value for dose modeling purposes.

The hydraulic gradient is selected to be 0.004 ft/ft, based on Figure 15 of that document (pg 48-49) as measured between wells SC-12D and A. If measured from the far eastern well to the far southwestern well, a gradient of 0.002 ft/ft is calculated.[64] The 0.004 gradient measured between wells A and SC-12D is more representative of the gradient in the immediate vicinity of the Storage Yard, and is also representative of the gradient towards a potable well, should one be located close to the Storage Yard. However, it is important to note, as described in the following subsection, ground water at the SMC facility is not potable and not likely to be ingested by anyone at the site unless significant treatment to decontaminate it is undertaken.

3.3 Exposure Scenarios

In order to demonstrate compliance with applicable requirements for both the restricted and unrestricted portions of the SMC facility, and to ensure a realistic correlation between radiation dose and residual radioactivity, the model portrayed in the RESRAD code should be sufficiently

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[57] TRC Environmental Consultants, Inc., *Final Focused Feasibility Study Report, Ground Water Remediation*, Project Number 13248-N51, Windsor, Connecticut, Revision 2, February 1994.
[58] TRC Environmental Consultants, Inc., *Remedial Investigation Technical Report*, Project Number 7650-N51, Windsor, Connecticut, April, 1992.
[59] T. Glover, *Pocket Reference, 2nd Edition*, Sequoia Publishing, Inc Littleton, Colorado, page 542, 1995.
[60] Kresic, N., *Quantitative Solutions in Hydrogeology and Groundwater Modeling*, New York: Lewis Publishers, page 461, 1997.
[61] Kresic, N., *Quantitative Solutions in Hydrogeology and Groundwater Modeling*, New York: Lewis Publishers, page 461, 1997.
[62] Roy F. Weston, Inc., 1972. *Hydrogeologic Investigation of Ground Water Contamination, Interim Report*. Prepared for Shieldalloy Corporation, Newfield, New Jersey.
[63] Woodward-Moorehouse and Associates, Inc. and Woodward-Envicon, Inc., *Preliminary Report, Groundwater Contamination Study, Phase II*, Prepared for Shieldalloy Corporation, Newfield, New Jersey, 1974.
[64] TRC Environmental Consultants, Inc., *Remedial Investigation Technical Report*, Project Number 7650-N51, Windsor, Connecticut, April, 1992.

representative of actual (site-specific) cases. Therefore, in advance of running the RESRAD code, SMC first envisioned and then characterized the most realistic exposure scenarios applicable to future (post-decommissioning) receptors.

A number of physical and demographic properties pertinent to the site contribute plausible and realistic conditions under which an individual might be exposed. In addition, the future use of the property as described in Chapter 3, above, was also taken into account. For the foreseeable future (100 years), the following is deemed reasonably likely for the SMC property:

- The property will retain industrial (light industry) zoning.
- Residential encroachment up to the property boundary is possible but not likely because of the restrictions established by the LTC requirements of the amended license held by the property owner, and anticipated land use factors.[65]
- Farming encroachment up to the property boundary is not likely due anticipated land use factors in areas that border the deed-noticed SMC property.
- The property may be subdivided, such that the "releasable" portion of the property (i.e., unrestricted area) is eventually de-coupled from the legal description of the property.
- All controls specified in Chapter 16 of the DP will be implemented as part of the requirement of the amended license issued to SMC, and those controls will remain in force in perpetuity.
- If regulatory control fails, physical controls will not fail instantly and completely. Instead, the engineered barrier will erode over time at a predictable rate once maintenance ceases.[66]
- Excavating the residual radioactivity from beneath the engineered barrier is highly unlikely because there is no economic value in the materials, the physical form of the majority of the residual radioactivity (i.e., large, vitrified and irregularly-shaped rocks) is unappealing, and the shape and construction of engineered barrier itself serves as a deterrent to excavation on anything more than a very small scale.
- Excavating some or the entire engineered barrier as a source of fill, thus partially exposing the residual radioactivity therein, is highly unlikely due to the relative difficulty of scavenging fill from a sloped, rock-covered surface, because the materials placed under the barrier have negligible monetary value and because of the overall size of the barrier.

[65] SMC is committed to documenting the restrictions established in the amended license in the form of a legal document recognized by and recorded with Gloucester County. Because the restrictions will be in effect for a substantial time period, SMC intends to have a recorded deed notice that addresses site use restrictions. SMC recognizes that the LTC provisions will include a license condition that requires the maintenance of the deed notice in the recorded land records that describes the legal issues associated with the property.

[66] The NRC separates institutional controls from engineered controls. Therefore, institutional controls are assumed to fail instantly, along with any maintenance, but engineered controls would degrade over time without monitoring and maintenance.

- The presence of the institutional controls at the site for a reasonable period of time after the date that decommissioning is complete would create a natural separation that would not be conducive to construction in close proximity to the engineered barrier even if controls should later fail.

- The fenced perimeter of the restricted area will be positioned such that the applicable dose limits in both the restricted and unrestricted portions of the property are maintained.

- There are existing site use restrictions due to the natural resource restoration requirements that apply to a large portion of the SMC facility (i.e, required maintenance of tree-planting areas). There are also potential future residential use restrictions due to soil contaminant levels under the CERCLA. Both of these would result in the creation of a land buffer that would prevent construction in close proximity to the engineered barrier.

- County-sensitive area zoning and the nearby Pinelands would deter construction near the restricted area.

There is sufficient justification for excluding the ground water exposure pathway from the dose assessments. These include but are not limited to the following:

- The engineered barrier is designed to minimize rainwater infiltration into the consolidated material;

- The distribution coefficients determined for the residual radioactivity in SMC's slag show that there is marked resistance to leaching;

- The ground water at the SMC facility contains hexavalent chromium, trichloroethylene and other constituents which, when compared to the National Primary Drinking Water standards defined at 40 CFR 141 and as referenced in Table M.12 of NUREG-1757, Vol. 2, shows that it is not a potable water supply;[67]

- There is no evidence to date of licensable radioactivity in the ground water, even from the closest down-stream wells despite uncontrolled exposure of the stockpiles to precipitation for 20 to 50 years;

- Testing of the soil below the material stockpiles in the Storage Yard demonstrates no movement of radioactivity from the stockpiles to the subsurface soil despite uncontrolled exposure of the stockpiles to precipitation for over 40 years (see Appendix 19.1 of the DP); and

- It is unreasonable to assume that future industrial operations on the SMC facility would drill and maintain their own on-site drinking water well when there is a readily-available source of municipal water.[68]

[67] TRC Environmental Corporation, "Ground Water Potability Analysis - Shieldalloy Metallurgical Corporation, Newfield, New Jersey", TRC Project No. 26770-0100-00000, June, 2006.
[68] This assumption was deemed valid by the NRC's approval of the decommissioning plan for the in-situ disposal of thorium slag in the SCA Hartley & Hartley Landfill (ADAMS Accession No. ML060370014).

Nonetheless, the ground water exposure pathway is included in the evaluation of the various exposure scenarios at NRC Staff request.

3.3.1 Key Assumptions For the Unrestricted Portion of the Site

For dose modeling purposes on the unrestricted portion of the SMC facility, the following key assumptions were made:

- The critical groups are industrial workers who work eight (8) hours per day on the site and occasional trespassers.
- Municipal water is used for drinking and irrigation purposes;
- Radioactive materials have been remediated to concentrations below the DCGLs established for this section;
- No water or food grown from the site is consumed;[69]
- A hypothetical industrial worker works at the site or an occasional trespasser visits the site after the decommissioning is complete and the engineered barrier is in place;[70]
- Workers leave the site after their work shift is completed each day and do not work on the weekends.

3.3.2 Key Assumptions for the Restricted Portion of the Property

Once decommissioning is complete, SMC will be issued an amended license incorporating LTC provisions. The conditions of this license will include a variety of institutional controls as described in Chapter 16 of the DP, all of which are designed to minimize the radiation exposure of population groups. When these conditions are in place, the only realistic exposure scenario for the foreseeable future would be an industrial worker who works on the unrestricted portion of the property, and a maintenance worker who is required to periodically traverse the engineered barrier and the restricted area for inspection and, as necessary, repair.[71] In addition, an occasional trespasser may climb the fence and traverse the restricted area for brief periods of time. All other scenarios are considered to be unrealistic.

3.3.3 Key Assumptions if Controls Fail

In the unlikely event that all institutional controls fail, it is reasonable to assume someone might trespass onto the engineered barrier within the SMC restricted area. Taking up residence on top of the barrier unlikely because its shape/form would not be conducive to building construction. In addition, the top surface has insufficient area to build a house or install footers for a building foundation. It is equally unreasonable to assume that truck farming or small-scale agriculture would

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[69] Yu, C, Zielen, A.J, et al, *User's Manual for RESRAD Version 6*, Table 2.2, ANL/EAD-4, Argonne National Laboratory, Argonne, Illinois, July, 2001.

[70] Although the hypothetical industrial worker can approach the engineered cover in the restricted area, access to that area is precluded as part of the LTC requirements.

[71] The use of realistic exposure scenarios, rather than those that are unduly conservative, was approved by the Commission in a November 17, 2003 memorandum from A. L. Vietti-Cook to W. D. Travers, "Staff Requirements - SECY-03-069 - Results of the License Termination Rule Analysis". In that memorandum it states in part that "The Commission has approved the staff's recommendation for use of realistic exposure scenarios as described in attachment 6".

be conducted directly on top of or on the sides of the engineered barrier, because flat surfaces are readily available in the immediate proximity.

The potential for trespassers to excavate the slag was evaluated and rejected by SMC. It was also rejected by the NRC during its evaluation of the decommissioning plan prepared for SMC's Cambridge, Ohio facility (with similar radiological constituents and a similar decommissioning alternative) in 1996.[72] The NRC concluded in the Draft Environmental Impact Statement for that action as follows:

> *"The staff believes, however, that the combined likelihood of the institutional controls failing and a member of the public obtaining slag from the stabilized piles is remote. Assuming that the access controls failed, and in order for an off-site residential use scenario to be occur, a member of the public would have to dig through the caps that will be on the piles to obtain the slag. While this might be possible if the material had some significant value and was known to be beneath the cover by a member of the public, this is or will not be the case. The slag is similar to other readily available and inexpensive sources of fill materials, such as limestone so it is unlikely that an individual would dig into the slag piles to obtain materials which are otherwise easily obtained. Also, if a member of the public knew that the slag was buried in the piles, he would also likely know that the material was radioactive and would therefore not use it."* [73]

Like the limestone in Ohio, the principle mineral resource in New Jersey is sand and gravel. Therefore, anyone seeking sand or gravel will pursue easier-to-process sources than the engineered barrier with its relatively large, impervious igneous slag.

SMC also considered the likelihood of a trespasser successfully excavating the slag and removing it from the engineered barrier, and rejected it, as it is not a viable alternative. The particle size of the slag in the consolidated materials is quite large (i.e., dimensions on the order of feet rather than inches or fractions of an inch), meaning it would take a significant effort to excavate it and crush it to a size that would be useful for fill or road bed. It is further unreasonable to assume anyone would pursue the use of slag as a source of fill when other fill sources that are easier to obtain are available.

The baghouse dust, on the other hand, does have a smaller particle size than the slag. However, during the construction of the engineered barrier, it will be used to fill void spaces between the large pieces. As such, its retrieval would be difficult and not cost-effective in light of the ready availability of such similar materials elsewhere.

Nonetheless, and at NRC staff request, the plausible and implausible exposure scenarios were evaluated for the unlikely event that institutional controls for the SMC restricted area fail are:[74]

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[72] U.S. Nuclear Regulatory Commission, *Draft Environmental Impact Statement, Decommissioning of the Shieldalloy Metallurgical Corporation, Cambridge, Ohio, Facility*, NUREG-1543, July, 1996.

[73] U.S. Nuclear Regulatory Commission, *Draft Environmental Impact Statement, Decommissioning of the Shieldalloy Metallurgical Corporation, Cambridge, Ohio, Facility*, NUREG-1543, Appendix H, July, 1996.

[74] Removing some or all of the engineered barrier as a source of fill, thus partially exposing the residual radioactivity therein, is not likely due to the relative difficulty of scavenging fill a sloped surface as compared to a nearby flat surface. And even if surface mining did occur, the radionuclide concentration in the excavated material would be small since it is comprised of radiologically-inert soil and possibly small amounts of the baghouse dust that was placed below the native soils as void filler. (The baghouse dust contains less than 0.05% source material.) Therefore, this scenario does not present dosimetric significance.

- A recreational hunter that would trespass onto the restricted area to hunt game on the engineered barrier;
- An subsistence farm family that takes up residence next to the engineered barrier;
- A trespasser who excavates a portion of the engineered barrier to partially expose its contents;
- A trespasser that traverses the engineered barrier where some of the cover has been excavated thus partially exposing the contents;
- A subsistence farm family that takes up residence in the line of sight of the partially excavated cover; and
- An industrial worker that works for a manufacturing facility on the unrestricted portion of the property, but with a work location that is in close proximity to the restricted area.

There was regulatory and public interest in the dose potential for the excavator scenarios, in spite of the fact that they are unlikely. Therefore, they were included in the evaluation as well.

3.4 Dose Modeling Packages

Based upon the assumptions and input parameters described above, the various exposure scenarios were evaluated with respect to the dose potential. The remaining chapters of this document contain the scenario-specific details for the realistic (most likely) post-decommissioning exposure scenarios assuming all controls remain in place, and for the implausible-to-impossible scenarios associated with the unlikely event of all controls failing.

In most cases, the parameters used as input to the dose assessments for the various scenarios were selected pursuant to NRC recommendation that they reflect conservative yet realistic to conditions at the site.[75] The exceptions were for scenarios deemed unlikely but evaluated nonetheless in response to regulatory or public input. The pages following this one contains a chart that lists the exposure scenarios that were evaluated, which chapter in this document contains the relevant information, the purpose for the evaluation, the RESRAD and MicroShield file numbers associated with that scenario, and other comments.

[75] U.S. Nuclear Regulatory Commission, *Results of the License Termination Rule Analysis*, SECY-03-0069, May 2, 2003.

EXPOSURE SCENARIO SUMMARY

Scenario	Chapter No.	Location	Controls	Type of Scenario	Evaluation Purpose	Comments	Summary Report No.
Site Conceptual Model Sensitivity Analysis	3	--	--	--	--	--	2109901 2109902 2109903 2109904 2119101 2119102 2119103 2119104 2119301 2119302 2119303 2119304 2119401 2119402 2119501 2119502 2119503 2119504 2119505 2119506 2119507
Industrial Worker	--	Unrestricted Area	Not relevant	Reasonably foreseeable	Demonstrate compliance with the criteria of the License Termination Rule (LTR)	The DCGL for surface soils in the unrestricted area is based on this exposure scenario.	See DCGL Document
Occasional Trespasser	4	Unrestricted Area	Not relevant	Less likely but plausible	Not analyzed for compliance; used only for risk-informed decision-making.	The Newfield site will be occupied such that access by trespassers will be prohibited.	2109801
Recreational Hunter	5	Unrestricted Area	Not relevant	Less likely but plausible	Not analyzed for compliance; used only for risk-informed decision-making.	The Unrestricted area is not likely to provide an attractive habitat to hunted animals, even in the event that controls fail.	2109802

Scenario	Chapter No.	Location	Controls	Type of Scenario	Evaluation Purpose	Comments	Summary Report No.
Agricultural Farm Family	6	Unrestricted or Restricted Area	Fail	Less likely but plausible	Not analyzed for compliance; used only for risk-informed decision-making and upper bounding of the DP dose potential.	This scenario assumes a house is built (and occupied) in the unrestricted area. The occupants are exposed to the uranium and thorium that remain in the surface soil at levels equal to the DCGLs. In addition, this family ingests groundwater.	2109804 2109601 2109602 2109603 2109604 2109605 2109606 2109607 2109608 2109609
Maintenance Worker	7	Restricted Area	In Place	Reasonably foreseeable	Demonstrate compliance with the criteria of the LTR.	The maintenance worker performs periodic inspections and minor maintenance on the engineered barrier. The thickness of the barrier is intended to reduce external radiation exposure to the maintenance worker.	2109201 2109202 2109203 2109204 2109205 2109206 2109207 2109208 2109209
Industrial Worker	8	(Next to) Restricted Area	In Place	Less likely but plausible	Not analyzed for compliance; used only for risk-informed decision-making.	It is assumed that the industrial worker works in the unrestricted area, but with all controls failing, he may work in close proximity to the restricted area.	2109101 2109102 2109103 2109104 2109105 2109106 2109107 2109108 2109109
Recreational Hunter	9	Restricted Area	Fail	Less likely but plausible	Not analyzed for compliance; used only for risk-informed decision-making.	The Storage Yard will be fenced and it is not likely that the Storage Yard will provide an attractive habitat to hunted animals, even in the event that controls fail.	2109401 2109402 2109403 2109404 2109405 2109406 2109407 2109408 2109409

Scenario	Chapter No.	Location	Controls	Type of Scenario	Evaluation Purpose	Comments	Summary Report No.
Slag Excavator	10.2.1	Restricted Area, Excavated	Fail	Less likely but plausible	Not analyzed for compliance; used only for risk-informed decision-making.	The effort to remove the slag from the Storage Yard is intensive and is assumed to be unsuccessful. The scenario assumes that the individual incurring exposures is the one who attempts the excavation.	2109805 2109806 2109807 2109808
Agricultural Farm Family (cover excavated)	10.2.2	Restricted Area, Excavated	Fail	Less likely but plausible	Not analyzed for compliance; used only for risk-informed decision-making.	An excavation in the restricted area occurs after the controls fail. However, this scenario assumes a house is built (and occupied) in the unrestricted area, adjacent to the Storage Yard.	09080603.ms6 09080604.ms6 09080606.ms6 09080607.ms6
Recreational Hunter (Cover Excavated)	10.2.3	Restricted Area, excavated	Fail	Less likely but plausible	Not analyzed for compliance; used only for risk-informed decision-making.	It is assumed that animals gain access to the property after the cover is excavated. The hunter is assumed to enter the property and encounter the open excavation. The hunter may ingest meat from an impacted animal, previously grazing inside the Restricted Area.	
Occasional Trespasser	11	Restricted Area	Fail	Less likely but plausible	Demonstrate compliance with the criteria of the LTR.	The SMC facility will be occupied such that access by trespassers will be prohibited.	2109301 2109302 2109303 2109304 2109305 2109306 2109307 2109308 2109309

4 OCCASIONAL TRESPASSER PACKAGE (UNRESTRICTED)

4.1 General Information

The occasional trespasser may attempt to enter the unrestricted area after decommissioning is complete. This scenario is possible but not likely due to the presence of the work force in the unrestricted area of the facility that would deter trespassers.

4.2 Critical Group Description

The unrestricted portion of the site will be fenced and signs will be posted that prohibit trespassers from entering the property. The owner of the property will maintain these controls for the foreseeable future, thus the likelihood of a trespasser entering the property is low and most likely to occur at night. Because there are assumed to be no provisions for full-time site security, it is possible that a trespasser gain access to the unrestricted portion of the property and thus becomes the critical group.

4.3 Applicable Exposure Pathways

RESRAD identifies the following potential pathways for the trespasser scenario:

- direct radiation exposure;
- particulate inhalation; and
- direct ingestion.

Other exposure pathways are inapplicable and were disabled for the purposes of dose modeling. The table identifies the pathways that were retained and provides an explanation for those that were not:

Pathway	Retained	Comments
Direct Exposure	Yes	The source term produces penetrating gamma radiation. Exposure from direct penetrating radiation is expected to be a significant contributor to the overall potential dose.
Particulate Inhalation	Yes	Allowance is made for soils containing radiological constituents of the source being liberated and suspended in the breathing air of the trespasser.
Radon	No	Radon is specifically excluded from consideration within the framework of the governing regulations. In addition, was included. is not a significant producer of radon.
Plant Ingestion	No	Ingestion of plant foods addresses those plant foods grown in the restricted area or irrigated with water containing radioactivity from on the site. Since trespassers are not expected to glean edible plant parts grown on site for food consumption, this pathway is implausible.
Drinking Water	No	Surface water on site is unfit for consumption as drinking water. No on-site sources of ground water have been developed for drinking water.
Meat Ingestion	No	Trespassers are not expected to consume meat from animals culled from the site.
Milk Ingestion	No	Milk ingestion is implausible because milk cows do not graze on industrial property.

Pathway	Retained	Comments
Aquatic Foods Ingestion	No	Trespassers are not expected to fish the surface water bodies at the site, even if they contained stock.
Direct Ingestion	Yes	Trespassers on the site may ingest relatively small amounts of soil through incidental oral contact with their hands.

The potential for exposure to radon gas was eliminated from this assessment based upon regulatory guidance. The NRC documented their concurrence with this approach in the Statement of Consideration for the License Termination Rule:[76]

> *"Following the approach taken in the proposed rule, this final rule includes radiological criteria for residual radioactivity that is distinguishable from background. Because of natural transport of radon gas in outdoor areas due to diffusion and air currents, doses from exposure to radon in outside areas due to radium in the soil are negligible... Therefore, in implementing the final rule, licensees will not be expected to demonstrate that radon from licensed activities is indistinguishable from background on a site-specific basis..."*

Furthermore, measurements of radon emanation rate from the various materials that will be consolidated under the engineered barrier (see the Source Term Document in Appendix 19.2 of the DP) shows the dose potential from this pathway to be a negligible contributor.

4.4 Key Parameter Justification

A number of input parameters were selected for use in the dose modeling of this scenario. The following are justifications for those that are key to the analysis:

- Indoor Time Fraction - The total time spent indoors by the trespasser is assumed to be zero (0) hours. It is assumed that all of the time in the unrestricted area is spent outdoors. This assumption maximizes the radiation dose and provides a conservatively high estimate of the potential radiation exposure.

- Outdoor Time Fraction - It is assumed that the trespasser spends one hour per day and no more than one day per month at the site or a total of 59 hours in the unrestricted area.[77] It is assumed that if trespassers enter the area, employees of the manufacturing facility will identify them and require that they leave the area immediately. The outdoor fraction, 0.007, is derived by dividing the 59 hours per year by the total number of hours in a year (i.e., 8,760 hours). For purposes of the sensitivity analysis, the probabilistic distribution ranges to twice the central tendency value.

- Inhalation Rate -The inhalation rate for the trespasser is assumed to be equal to an adult male doing light work, for an average of 8,400 cubic meters per year. This value is equal to the RESRAD default inhalation rate based on geometric mean rate

[76] U.S. Nuclear Regulatory Commission, *Radiological Criteria for License Termination*, Federal Register, Volume 62, Number 139, July 21, 1997.

[77] In U. S. Environmental Protection Agency, "Exposure Factors Handbook Volume III - Activity Factors", Table 15-80 EPA/600/P-95/002Fc (August, 1997), the mean number of hours per year spent in outdoor playing for the "All" category is all categories is 592. It is arbitrarily assumed that approximately 10 percent of the total outdoor time is spent trespassing on the SMC property.

for short term exposure to adult males.[78] It is conservative because it assumes the trespasser is involved in work intensive activities and in direct contact with the surface soil. The radiation dose associated with this value decreases as the inhalation rate drops.

- Mass loading for inhalation - The value selected for the analysis was the default value for the RESRAD code.[79] The mass loading in air describes the airborne dust loading conditions on the site and it is assumed that the trespasser is not involved in any intrusive activities that may call attention to the trespasser. It is not likely that the trespasser will incur significant exposure to airborne dust from the surface soil. The radiation dose associated with this value decreases as the mass loading decreases.

- Soil ingestion Rate - The trespasser may ingest soil as a result of incidental contact with the soil. The value selected, 18.3 grams per year, was the default value for the RESRAD code. It is assumed that the trespasser is engaged in non-contact intensive activities, but may ingest soil from incidental contact with the surface soil in the unrestricted area. The trespasser does not eat any animals or vegetables from the site. The radiation dose associated with this value decreases as the ingestion of impacted soil decreases.

Given the pathways described in Section 4.3, above, the following is a listing of the input parameters used for this exposure scenario:

Paramteter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Dose Conversion Factors	DCFX(n)	millirem/pCi	All DCFs used are RESRAD defaults			D	S	RESRAD defaults from FGR#11 and FGR#12, derived using ICRP 30 dosimetry model.[80,81] Short-lived (<180 days) radioactive progeny isotopes are accounted for through the use of the "parent+D" DCFs.
Area of Contaminated Zone	AREA	m2	244,000	loguniform	Range 244,000 to 295,000 m2	S	S	The area of the unrestricted portion is represented by the area of the site excluding the Restricted area.
Thickness of Contaminated Zone	THICK0	m	0.15	Triangular	Range 0.1 to 0.3 m	S	S	The residual activity of the unrestricted area is assumed to be present in the top 15 cm of soil, pursuant to NRC guidance (NUREG 1575, and NUREG 1757) on the thickness of surface soil. As stated in the DP, the only impacted soil in the unrestricted area originated with surface deposition from airborne depositions.

[78] U.S. Environmental Protection Agency, *Exposure Factors Handbook, Volume I, General Factors*, EPA 600/P-95-002Fa, August, 1997.
[79] Argonne National Laboratory, *User's Manual for RESRAD Version 6*, July, 2001.
[80] U.S. Environmental Protection Agency, *Limiting Values of Radionuclide Intake and Air Concentrations and Dose Conversion Factors for Inhalation, Submersion, and Ingestion*, Federal Guidance Report Number 11, EPA 520/1-88-020, September, 1988.
[81] U.S. Environmental Protection Agency, *External Exposure to Radionuclides in Air, Water and Soil*, Federal Guidance Report Number 12, EPA 402 R-93-081, September, 1993.

Paramteter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Length Parallel to Aquifer Flow, Area 4	LCZPAQ	m	494.0	Triangular	Min 395.2 Max 592.8	S	S	The RESRAD default value is derived as the square root of the area of the contaminated zone.[82]
Basic Radiation dose limit	BRDL	mrem TEDE	25			D	S	
Time since placement of material	TI	yr	0			D	S	
Calculation Times	T(n)	Yrs.	1 10 100 300 500 700 900 1000	NA		--	--	Evaluation at these time segments allows for consideration of the potential for conditions at the Site to evolve from the initial conditions specified (e.g., soil erosion impacts the cover thickness) and projects the changing Site conditions to the required 1000-year outlook.[83,84]
Actinium-227	S(1)	pCi/g	0.8	Point Estimate		--	--	When equal concentrations of Th-230, Ra-226, and Po-210 are included in the RESRAD runs, and if an activity mixture of 65.5% natural thorium and 34.5% natural uranium (typical of SMC's materials) is assumed, the resulting isotope-specific DCGLs consistent with the unity rule are 4.4 picocuries per gram for thorium and 12 picocuries per gram of uranium.[85]
Protactinium-231	S(2)	pCi/g	0.8	Point Estimate		--	--	
Lead-210	S1(3)	pCi/g	12	Point Estimate		--	--	
Radium-226	S1(4)	pCi/g	12	Point Estimate		--	--	
Radium-228	S1(5)	pCi/g	4.4	Point Estimate		--	--	
Thorium-228	S1 (6)	pCi/g	4.4	Point Estimate		--	--	
Thorium-230	S1(7)	pCi/g	12	Point Estimate		--	--	
Thorium-232	S1(8)	pCi/g	4.4	Point Estimate		--	--	
Uranium-234	S1(9)	pCi/g	12	Point Estimate		--	--	
Uranium-235	S1(10)	pCi/g	0.8	Point Estimate		--	--	
Uranium-238	S1(11)	pCi/g	12	Point Estimate		--	--	
Concentration in ground water	W1(n)	pCi/L	0					
Cover Depth (thickness)	COVER0	m	0	Triangular	Range: 0 to	S	S	The DCGLs derived for the unrestricted area assume the residual activity is present in the top 6 inches (0.15 m), with no cover.

[82] Argonne National Laboratory, *Data Collection Handbook to Support Modeling Impacts of Radioactive Material in Soil*, April, 1993.
[83] U.S. Nuclear Regulatory Commission, *Radiological Criteria for License Termination*, Volume 62, Federal Register, page 39058, July 21, 1997.
[84] U.S. Nuclear Regulatory Commission, *NMSS Decommissioning Standard Review Plan*, NUREG-1727, September, 2000.
[85] DCGL Document.

Paramteter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Cover Density	DENSCV	g/cm3				S	S	Not used
Cover Erosion Rate	VCV	m/yr				S	S	Not used
Contaminated Zone Density	DENSCZ	g/cm3	1.5	Triangular	Min 1.2 Max 1.6	S	S	Soils are characterized as fine to medium sand and fine to coarse sand (based on boring logs for wells MW-12D and MW-13D)[86] and silty sand with gravel and gravel (based on boring log for well MW-11S).[87] The density of the soil in the unrestricted area is equivalent to the nominal density of soil (i.e., RESRAD default value).
Contaminated Zone Erosion Rate	VCZ	m/yr	0.001	Continuous Logrithmic	Value CDF 5x10-8 0 7x10-4 0.22 5x10-3 0.95 2x10-1 1	S	I	The RESRAD default erosion of the surface soil is deemed conservative even in cases of significant farming and gardening activities.[88]
Contaminated Zone Total Porosity	TPCZ	Unitless 0 to 1	0.4	Point Estimate		D	I	Values for total porosity are reported to be 0.25 - 0.4 for non-uniform sand and 0.25 - 0.35 for gravelly sand.[89] RESRAD value for coarse sand was selected.[90]
Contaminated Zone Field Capacity	FCCZ	Unitless, 0 to 1	0.2	Point Estimate		D	I	RESRAD default
Contaminated Zone Hydraulic Conductivity	HCCZ	m/yr	10	Bounded Lognormal-N	μNormal: 2.3 σNormal 2.11 min: 0.004 Max: 9250	S	I	RESRAD default
Contaminated Zone B-Parameter	BCZ	Unitless	4.05	Bounded Lognormal-N	μNormal: 1.06 σNormal 0.66 min: 0.5 Max: 30	D	I	The value for sand was determined to be representative of the contaminated zone.[91]
Average Annual Wind Speed	WIND	m/sec	4.25	Bounded Lognormal-N	μNormal: 1.445 σNormal: 0.2419 Min: 1.4 Max: 13.0	D	I	RESRAD Default. The thirty year (1961-1990) site- specific annual average value (4.3 m/s) is nearly equal to the RESRAD default value.[92]

[86] TRC Environmental Consultants, Inc., *Remedial Investigation Technical Report*, Project Number 7650-N51, Windsor, Connecticut, April, 1992.
[87] TRC Environmental Consultants, Inc., *Final Focused Feasibility Study Report, Ground Water Remediation*, Project Number 13248-N51, Windsor, Connecticut, Revision 2, February 1994.
[88] Argonne National Laboratory, *Data Collection Handbook to Support Modeling the Impacts of Radioactive Material in Soil*, ANL/EAIS-8, 1993.
[89] Kresic, N., *Quantitative Solutions in Hydrogeology and Groundwater Modeling*, New York: Lewis Publishers, page 461, 1997.
[90] Argonne National Laboratory, *User's Manual for RESRAD Version 6*, Appendix E, July 2001.
[91] Argonne National Laboratory, *User's Manual for RESRAD Version 6*, Appendix E, July 2001.
[92] National Climate Data Center, *Local Climatological Data, Annual Summary with Comparative Data for Philadelphia, Pennsylvania*, 2000.

Paramteter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Humidity in air	HUMID	g/m3						Not used
Evapo transpiration Coefficient	EVAPTR	Unitless, 0 to 1	0.73	Triangular	Range: 0.4to 1.0	S	I	Mean annual evapotranspiration was determined as the sum of mean potential monthly evapotranspiration values, which were calculated by the Thornthwaite Method using mean monthly temperature and mean possible hours of daylight data..[93] [94] [95]Mean annual evapotranspiration was estimated to be 76.8 cm or 72% of the precipitation rate.
Precipitation Rate	PRECIP	m/year	1.05	Point Estimate		S	S	The nearest climatological stations are located in Atlantic City and Philadelphia. The annual average precipitation for Atlantic City is 41.3 inches per year while the average annual precipitation for Philadelphia is 41.42 inches.[96],[97] 1.05 m/yr corresponds to these values.
Irrigation Rate	RI	m/year	0.2	Point Estimate		S	S	RESRAD default
Irrigation mode	IDITCH	unitless	Overhead					RESRAD default
Runoff Coefficient	RUNOFF	Unitless, 0 to 1	0.2	Uniform	Range: 0.1 to 0.8	S	S	RESRAD default
Watershed Area for Nearby Stream or Pond	WAREA	m2	2.77x10 6	Point Estimate		S	I	Assumed to be 690 acres and represents the low lying areas adjacent to the Restricted area[98]. The watershed area is used to calculate dilution factors for contaminant concentrations in surface water bodies in the vicinity of the site. The larger the watershed area, the greater volume through which dilution is possible. While there is no pathway for humans to drink surface water, animals may use the pond for their water supply. The greater the dilution, the lower the radiation dose.
Accuracy for water/soil computations	EPS	unitless	0.001			D	I	

[93] Argonne National Laboratory, *User's Manual for RESRAD Version 6*, Appendix E, July, 2001.
[94] National Climate Data Center, *Local Climatological Data, Annual Summary with Comparative Data for Philadelphia, Pennsylvania*, 2000.
[95] D.M. Gray, *Handbook on the Principles of Hydrology*, Published by Water Information Center, Inc., New York, New York, 1973.
[96] National Climate Data Center, *Local Climatological Data, Annual Summary with Comparative Data for Atlantic City, New Jersey*, 2006.
[97] National Climate Data Center, *Local Climatological Data, Annual Summary with Comparative Data for Philadelphia, Pennsylvania*, 2006.
[98] Shieldalloy Metallurgical Corporation, *Decommissioning Plan for the SMC facility*, Appendix E, Report Number 94005/G-28247, Rev 1b.

Paramteter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Density, Saturated Zone	DENSAQ	g/cm3	1.51	Bounded Normal	Std Dev 0.159 Min 1.019 Max 2.002	S	I	Saturated soils beneath pile are characterized as fine to medium sand and fine to coarse sand (based on boring logs for wells MW-12D and MW-13D) and silty sand with gravel and gravel (based on boring log for well MW-11S).[99],[100] Applicable bulk densities range from 1.60 for dry sand to 1.73 for dry sand and gravel.[101]
Total Porosity Saturated Zone	TPSZ	Unitless,0 to 1	0.43	Bounded Normal	Std Dev 0.06 Min 0.244 Max 0.615	D	I	Based on the saturated soils descriptions above, applicable total porosity values cited in Kresic are 0.25-0.40 for non-uniform sand and 0.25-0.35 for gravelly sand. RESRAD value for coarse sand was selected as it is the sand type defined in RESRAD Table E.8 with total porosity values closest to those cited above.[102]
Effective Porosity, Saturated Zone	EPSZ	Unitless, 0 to 1	0.383	Bounded Normal	Std Dev 0.06 Min 0.195 Max 0.572	D	I	Effective porosity of non-uniform sands and gravels, and their mixtures, is up to 10% less than total porosity.[103] For range of total porosity above (0.25-0.40), effective porosity range is 0.225-0.36. RESRAD default value for coarse sand was selected as it is the sand type defined in RESRAD Table E.8 with effective porosity values closest to those cited above and its selection is consistent with the material used to represent total porosity.
Field Capacity, Saturated Zone	FCSZ	Unitless, 0 to 1	Not used			D	I	The value "field capacity" does not apply to saturated soils.
Hydraulic Conductivity, Saturated Zone	HCSZ	m/yr	9,500	Triangular	Min 8,600 Max 10,400	S	I	During previous hydrogeological studies at the site, a pumping test of the Layne well indicated a T of 82,000 gpd/ft (Weston, 1972), and a recovery test of P4 (IWC4) indicated T of 90,400 gpd/ft (Woodward-Moorehouse, 1974), or K of 78 to 93 ft/day for the Cohansey sand, depending on formation thickness assumed (130 to 140 feet).[104],[105] The average of 85.5 ft/day (9,500 m/yr) is used as the central tendency value.

[99] TRC Environmental Consultants, Inc., *Final Focused Feasibility Study Report, Ground Water Remediation*, Project Number 13248-N51, Windsor, Connecticut, Revision 2, February 1994.
[100] TRC Environmental Consultants, Inc., *Remedial Investigation Technical Report*, Project Number 7650-N51, Windsor, Connecticut, April, 1992.
[101] T. Glover, *Pocket Reference, 2nd Edition*, Sequoia Publishing, Inc Littleton, Colorado, page 542, 1995.
[102] Kresic, N., *Quantitative Solutions in Hydrogeology and Groundwater Modeling*, New York: Lewis Publishers, page 461, 1997.
[103] Kresic, N., *Quantitative Solutions in Hydrogeology and Groundwater Modeling*, New York: Lewis Publishers, page 461, 1997.
[104] Roy F. Weston, Inc., 1972. *Hydrogeologic Investigation of Ground Water Contamination, Interim Report*. Prepared for Shieldalloy Corporation, Newfield, New Jersey.
[105] Woodward-Moorehouse and Associates, Inc. and Woodward-Envicon, Inc., *Preliminary Report, Groundwater Contamination Study, Phase II*, Prepared for Shieldalloy Corporation, Newfield, New Jersey, 1974.

Paramteter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Hydraulic Gradient	HGWT	Unitless	0.004	Bounded Lognormal-N	μNormal: -5.11 σNormal: 1.77 min: 0 .00007 max: 0.5	S	I	The RI references a hydraulic gradient of 0.004 ft/ft based on Figure 15 (pg 48-49) as measured between wells SC-12D and A. If measured from the far eastern well to the far southwestern well, a gradient of 0.002 ft/ft is calculated.[106] The 0.004 gradient measured between wells A and SC-12D is more representative of the gradient in the immediate vicinity of the Restricted area. The value is also representative of the gradient towards a potable well, should one be located in the unrestricted area, close to the Restricted area.
Saturated Zone B-Parameter	BSZ	Unitless	4.05	Bounded Lognormal-N	μNormal: 1.06 σNormal: 0.66 Min: 0.5 Max: 30	D	I	RESRAD default value for generic soil was selected. The value and distribution represents a weighted average of the distributions for the individual soil classes.[107]
Water table drop rate	VWT	m/yr	0					
Well pump intake depth	DWIBWT	m (below the water table)	10			D	I	RESRAD default value was used.
Model: Nondispersion (ND) or Mass balance (MB)	MODEL	unitless	Mass Balance			D	I	
Well pumping rate	UW	m3/yr	453			D	I	RESRAD default value was used for estimate of water source. The default is typical for a Agricultural Farm Family and expected to be much lower for the exposure scenarios at Newfield.
Number of unsaturated zone strata	NS	unitless	1					
Thickness Unsaturated	H(1)	m	1.9	Triangular	Min 0.9 Max 3.7	S	S	The average thickness of the unsaturated zone was estimated from well locations in the vicinity of the restricted area based on wells 11S, 12S, and 13S. Measurements were made by SMC for six years (from January 2001 through April 2007, measured each quarter). A total of 26 data points were summarized for each well.
Density, Unsaturated	DENSUZ (1)	g/cm3	1.51	Bounded Normal	Std Dev 0.159 Min 1.019 Max 2.002	D,S	S	The density selected is typical of native sand (RESRAD default). Unsaturated soils are characterized as fine to medium sand and fine to coarse sand (based on boring logs for wells MW-12D and MW-13D) and silty sand with gravel (based on boring log for well MW-11S). Applicable bulk densities range from 1.60 for dry sand to 1.73 for dry sand and gravel.[108]

[106] TRC Environmental Consultants, Inc., *Remedial Investigation Technical Report*, Project Number 7650-N51, Windsor, Connecticut, April, 1992.
[107] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
[108] T. Glover, *Pocket Reference, 2nd Edition*, Sequoia Publishing, Inc Littleton, Colorado, page 542, 1995.

Paramteter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Total Porosity Unsaturated	TPUZ(1)	Unitless 0 to 1	0.43	Bounded Normal	Std Dev 0.06 Min 0.245 Max 0.615	D	I	Values for total porosity are reported to be 0.25-0.40 for non-uniform sand and 0.25-0.35 for gravelly sand.[109] RESRAD value for coarse sand was selected as it is the sand type defined in NUREG 6697, Appendix C, Table 3.2-1 with total porosity values closest to those cited above.[110]
Effective Porosity of Unsaturated Zone	EPUZ(1)	Unitless, 0 to 1	0.383	Bounded Normal	Std Dev 0.06 Min 0.195 Max 0.572	D	I	Effective porosity of non-uniform sands and gravels, and their mixtures, is up to 10% less than total porosity; for range of total porosity above (0.25-0.40), effective porosity range is 0.225-0.36.[111,112] Also according to Kresic (1997), the presence of fines, i.e., silts and clays, significantly reduces effective porosity. However, limited amounts of silt and clay are expected in the sands and gravels of the Bridgeton Formation. Value for sand was selected from NUREG 6697, Appendix C, Table 3.3-1 as it is the sand type with effective porosity values closest to those cited above and its selection is consistent with the material used to represent total porosity.[113]
Field Capacity Unsaturated Zone	FCUZ (1)	Unitless, 0 to 1	0.2	Point Estimate		D	I	The reported field capacity for sand is about 0.10 and ranges up to about 0.18 for fine sand (Fetter, 1994). Consequently, a value of 0.2 is much higher than expected for the site. Field capacity is not a single value, but is time-dependent (Fetter, 1994; Delleur, 1999).[114,115]
Unsaturated B-Parameter	BUZ(1)	Unitless	4.05	Bounded Lognormal-N	μNormal: 1.06 σNormal: 0.66 Min: 0.5 Max: 30	D	I	The RESRAD default value for generic soil was selected. The value and distribution represents a weighted average of the distributions for the individual soil classes.[116]

[109] Kresic, N., *Quantitative Solutions in Hydrogeology and Groundwater Modeling*, New York: Lewis Publishers, page 461, 1997.
[110] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
[111] Kresic, N., 1997. Quantitative Solutions in Hydrogeology and Groundwater Modeling, New York: Lewis Publishers, 461 p.
[112] Kresic, N., 1997. Quantitative Solutions in Hydrogeology and Groundwater Modeling, New York: Lewis Publishers, 461 p.
[113] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
[114] Delleur, J.W., The Handbook of Groundwater Engineering, New York: CRC Press, 1999.
[115] Fetter, C.W., 1994. Applied Hydrogeology. New York: Macmillan College Publishing Company, 691 p.
[116] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.

Paramteter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Hydraulic Conductivity Unsaturated	HCUZ (2)	m/yr	9,500	Triangular	Min 8,600 Max 10,400	S	I	The unsaturated, upper part of the Cohansey Sand consists of fine sand, fine-medium sand, medium-coarse sand, and coarse sand with variable percentages of silt and fine gravel. Aquifer testing of wells completed in the upper Cohansey Sand provides data for the hydraulic conductivity. A pumping test of the Layne well indicated a transmissivity of 82,000 gpd/ft (Weston, 1972), and a recovery test of P4 (also referred to as IWC4) indicated a transmissivity of 90,400 gpd/ft (Woodward-Moorehouse, 1974).[117, 118, 119] The equivalent hydraulic conductivity is 78 to 93 ft/day, depending on the assumed formation thickness (130 to 140 feet). The average hydraulic conductivity of 85.5 ft/day (9,500 m/yr) is used as the central tendency value.
Distribution coefficients for Thorium								
Thorium Kd contaminated zone	DCACT(n)	cm3/g	5,884	Triangular	Min 207 Max 150,000	S	S	Literature values were selected for the contaminated zone, using the lower range of values.[120]
Thorium Kd unsaturated zone	DCACTU (1) (1)	cm3/g	5,884	Triangular	Min 207 Max 150,000	D	S	Literature values were selected for both unsaturated zones, using the lower range of values.[121]
Thorium Kd saturated zone	DCACTS	cm3/g	5,884	Triangular	Min 207 Max 150,000	D	S	Literature values were selected for the saturated zones, using the lower range of values.[122]
Leach rate	ALEACH (1)	/yr						Not used
Solubility constant	SOLUBK (1)	unitless						Not used
Distribution coefficients for Uranium								
Uranium Kd contaminated zone	DCACTC (n)	cm3/g	126	Triangular	Min 0.03 Max 2,200	S	S	Literature values were selected for the contaminated zone, using the lower range of values.[123]
Uranium Kd unsaturated zone, Layer 2	DCACTU (2)	cm3/g	126	Triangular	Min 0.03 Max 2,200	D	S	Literature values were selected for the unsaturated zones, using the lower range of values.[124]

[117] TRC Environmental Consultants, Inc., *Remedial Investigation Technical Report*, Project Number 7650-N51, Windsor, Connecticut, April, 1992.
[118] Roy F. Weston, Inc., *Hydrogeologic Investigation of Ground Water Contamination, Interim Report*, Prepared for Shieldalloy Corporation, Newfield, New Jersey, 1972.
[119] Woodward-Moorehouse and Associates, Inc. and Woodward-Envicon, Inc., *Preliminary Report, Groundwater Contamination Study, Phase II*. Prepared for Shieldalloy Corporation, Newfield, New Jersey, 1974.
[120] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[121] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[122] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[123] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[124] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000

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Description	Code	Unit		Distribution	Range & Fit			
Uranium Kd saturated zone	DCACTS	cm3/g	126	Triangular	Min 0.03 Max 2,200	D	S	Literature values were selected for the saturated zones, using the lower range of values.[125]
Leach rate	ALEACH (2)	/yr						Not used
Solubility constant	SOLUBK (2)	unitless						Not used
Distribution coefficients for Radium								
Radium Kd contaminated zone	DCACT(n)	cm3/g	3,533	Triangular	Min 57 Max 21,000	S	S	Literature values were selected for the contaminated zone, using the lower range of values.[126]
Radium Kd unsaturated zone	DCACT(1)	cm3/g	3,533	Triangular	Min 57 Max 21,000	D	S	Literature values were selected for the unsaturated zones, using the lower range of values.[127]
Radium Kd saturated zone	DCACTS	cm3/g	3,533	Triangular	Min 57 . Max 21,000	D	S	Literature values were selected for the saturated zone, using the lower range of values.[128]
Leach rate	ALEACH (3)	/yr						Not used
Solubility constant	SOLUBK (3)	unitless						Not used
Distribution coefficients for Lead								
Lead Kd contaminated zone	DCACTC (n)	cm3/g	270	Triangular	Min 19 Max 1,405	D	S	Literature values were selected for the contminated zone, using the lower range of values.
Lead Kd unsaturated zone , Layer 2	DCACTU (2)	cm3/g	270	Triangular	Min 19 Max 1,405	D	S	Literature values were selected for the unsaturated zone, using the lower range of values.[129]
Lead Kd saturated zone	DCACTS	cm3/g	270	Triangular	Min 19 Max 1,405	S	S	Literature values were selected for the saturated zone, using the lower range of values.[130]
Leach rate	ALEACH (4)	/yr						Not used
Solubility constant	SOLUBK (4)	unitless						Not used
Inhalation Rate	INHALR	m3/yr	8,400	Triangular	Range: 4380 to 13100	D	I	Inhalation rate based on geometric mean rate for short term exposure to adult males.[131]

[125] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[126] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[127] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[128] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[129] Sheppard and Thibault, 1990.
[130] Sheppard and Thibault, 1990.
[131] U.S. Environmental Protection Agency, *Exposure Factors Handbook, Volume I, General Factors*, EPA 600/P-95-002Fa, August, 1997.

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Description	Code	Unit		Distribution	Range & Fit			
Mass Loading for Inhalation	MLINH	g/m3	0.00003	Continuous Linear	0.000000 - 0.0000 0.000008 - 0.0151 0.000016 - 0.1365 0.000030 - 0.8119 0.000040 - 0.9495 0.000060 - 0.9937 0.000076 - 0.9983 0.000100 - 1.0000	D	I	Mass loading in air describes the airborne dust loading conditions on the site.[132]
Exposure duration	ED	yr	30			D	S	The trespasser is assumed to be on site for each of the next 30 years.
Shielding factor, inhalation	SHF3	unitless	0.4			D	I	
Shielding factor, external gamma	SHF1	unitless	0.27	Bounded Lognormal-N	μNormal: -1.3 σNormal: 0.59 Min: 0.044 Max: 1	S	S	A shielding factor of 0.27 is associated with a frame house constructed with a slab or full basement with isotopes of uranium and thorium.
Exposure Frequency (Total)	EF	Days per year	2.5	EF and ET are not input parameters used by RESRAD. They are presented here to disclose the calculation used to arrive at the parameters RESRAD uses to account for exposure frequency, FIND & FOTD		--	--	Scenario-specific values used.
Exposure Time	ET	hours per day	24			--	--	Conservatively assumes that the trespasser spends 24 hours per day on the site before they are discovered and removed by the SMC staff.
Indoor Time Fraction	FIND	Unitless, 0 to 1	0	Point Estimate		O	S	The fraction of a total year (8,760hr) that is spent indoors on site. In order to maximize the total dose, this model assumes that all exposures occur outdoors.
Outdoor Time Fraction	FOTD	Unitless, 0 to 1	0.007	Triangular	Range: 0 to 0.014	O	S	The fraction of a total year (8,760hr) that is spent outdoors on Site. Equals 60 hrs outdoors on Site divided by 8760 hours. The probabilistic distribution ranges to twice the CT value.
Fruits, vegetables and grain consumption	DIET(1)	kg/yr						Not used
Leafy vegetable consumption	DIET(2)	kg/yr						Not used
Milk consumption	DIET(3)	L/yr						Not used
Meat and poultry consumption	DIET(4)	Kg/yr						Not used

[132] Argonne National Laboratory, *User's Manual for RESRAD Version 6*, July, 2001.

Paramteter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Fish consumption	DIET(5)	Kg/yr						Not used
Other seafood consumption	DIET(6)	Kg/yr						Not used
Soil Ingestion Rate	SOIL	g/y	18.3	Triangular	Range: 0.36.5	D	I	USEPA default value for adults engaged in non-contact intensive activities (50 mg/day).
Drinking water intake	DWI	L/yr				D	I	Not used
Contamination fraction of drinking water	FDW	unitless						Not used
Contamination fraction of household water	FHHW	unitless						Not used
Contamination fraction of livestock water	FLW	unitless						Not used
Contamination fraction of irrigation water	FIRW	unitless						Not used
Contamination fraction of aquatic food	FR9	unitless						Not used
Contamination fraction of plant food	FPLANT	unitless						Not used
Contamination fraction of meat	FMEAT	unitless						Not used
Contamination fraction of milk	FMILK	unitless						Not used
Depth of Soil Mixing Layer	DM	m	0.15	Triangular	Range: 0 to 0.6	D	I	Value based on conceptual site model for surface soil.[133]
Depth of Roots	DROOT	m	0.9	Uniform	Min 0.3 Max 4.0	D	I	

4.5 Results

The dose potential for a trespasser in the unrestricted area of the SMC facility was determined, assuming residual radioactivity over the entire 58 acres is equal to the DCGLs and that all controls over the restricted portion of the site remain in place. The following table is a summary of results:

[133] U.S. Nuclear Regulatory Commission, *Residual Radioactive Contamination from Decommissioning: Parameter Analysis*, NUREG/CR-5512, Vol.3, October 1999.

Statistic	Projected Annual Dose (millirem/year)
Annual Dose Limit	25.0
Peak Mean Annual Dose	1.1 ± 0.5
50th Percentile	1.1 ± 0.02
90th Percentile	1.9 ± 0.02
95th Percentile	2.0 ± 0.05
Maximum Annual Radiation Dose	2.7
Deterministic Estimate, Peak Annual Dose	1.2 @ 0 year

The pages that follow are the RESRAD summary reports for this exposure scenario.

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary 6
Summary of Pathway Selections 11
Contaminated Zone and Total Dose Summary 12
Total Dose Components
Time = 0.000E+00 13
Time = 1.000E+00 14
Time = 1.000E+01 15
Time = 1.000E+02 16
Time = 3.000E+02 17
Time = 5.000E+02 18
Time = 7.000E+02 19
Time = 9.000E+02 20
Time = 1.000E+03 21
Dose/Source Ratios Summed Over All Pathways 22
Single Radionuclide Soil Guidelines 23
Dose Per Nuclide Summed Over All Pathways 24
Soil Concentration Per Nuclide 25

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)

A-1	Ra-223	(Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224	(Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226	(Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219	(Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220	(Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222	(Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227	(Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228	(Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230	(Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231	(Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232	(Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234	(Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207	(Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208	(Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210	(Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234	(Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235	(Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238	(Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D		6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231		1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D		2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D		8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D		5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D		3.454E-01	3.420E-01	DCF2(6)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2(12)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3(2)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(5)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(6)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(7)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(8)
D-1	U-234	2.830E-04	2.830E-04	DCF3(9)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(10)
D-1	U-238	2.550E-04	2.550E-04	DCF3(11)
D-1	U-238+D	2.687E-04	2.550E-04	DCF3(12)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)

D-34	Ac-227+D	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34					
D-34	Pa-231	plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pa-231	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(2,3)
D-34					
D-34	Pb-210+D	plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34					
D-34	Ra-226+D	plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(4,1)
D-34	Ra-226+D	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Ra-226+D	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,3)
D-34					
D-34	Ra-228+D	plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-228+D	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-228+D	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34					
D-34	Th-228+D	plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Th-228+D	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Th-228+D	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34					
D-34	Th-230	plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Th-230	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Th-230	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(7,3)
D-34					

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter		Current Value#	Base Case*	Parameter Name
D-34	Th-232	plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(8,1)
D-34	Th-232	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(8,2)
D-34	Th-232	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(8,3)
D-34					
D-34	U-234	plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-234	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-234	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34					
D-34	U-235+D	plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-235+D	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-235+D	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)
D-34					
D-34	U-238	plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,1)
D-34	U-238	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(11,2)
D-34	U-238	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(11,3)
D-34					
D-34	U-238+D	plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(12,1)
D-34	U-238+D	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(12,2)
D-34	U-238+D	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(12,3)
D-5	Bioaccumulation factors, fresh water, L/kg:				
D-5	Ac-227+D	fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D	crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)

D-5					
D-5	Pa-231	, fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231	, crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5					
D-5	Pb-210+D	, fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D	, crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5					
D-5	Ra-226+D	, fish	5.000E+01	5.000E+01	BIOFAC(4,1)
D-5	Ra-226+D	, crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(4,2)
D-5					
D-5	Ra-228+D	, fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-228+D	, crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5					
D-5	Th-228+D	, fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-228+D	, crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5					
D-5	Th-230	, fish	1.000E+02	1.000E+02	BIOFAC(7,1)
D-5	Th-230	, crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(7,2)
D-5					
D-5	Th-232	, fish	1.000E+02	1.000E+02	BIOFAC(8,1)
D-5	Th-232	, crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(8,2)
D-5					
D-5	U-234	, fish	1.000E+01	1.000E+01	BIOFAC(9,1)
D-5	U-234	, crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5					
D-5	U-235+D	, fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-235+D	, crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter		Current Value#	Base Case*	Parameter Name
D-5	U-238	, fish	1.000E+01	1.000E+01	BIOFAC(11,1)
D-5	U-238	, crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(11,2)
D-5					
D-5	U-238+D	, fish	1.000E+01	1.000E+01	BIOFAC(12,1)
D-5	U-238+D	, crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(12,2)

#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.

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)	2.440E+05	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+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)	1.000E+01	3.000E+00	---	T(3)

R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	5.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	7.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	9.000E+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): Ac-227	8.000E-01	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Pa-231	8.000E-01	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.200E+01	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.200E+01	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	4.400E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	4.400E+00	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Th-230	1.200E+01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Th-232	4.400E+00	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-234	1.200E+01	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): U-235	8.000E-01	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): U-238	1.200E+01	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L): Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Pa-231	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(11)
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	4.050E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.250E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	7.300E-01	5.000E-01	---	EVAPTR

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Precipitation (m/yr)	1.050E+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
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 Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	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	2.772E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.268E-03	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+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	4.619E-03	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	3.533E+03	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	3.532E-04	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	3.533E+03	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	3.532E-04	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	5.884E+03	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	2.121E-04	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	5.884E+03	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	2.121E-04	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.121E-04	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.890E-03	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.890E-03	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	not used	5.000E+01	---	DCNUCU(11,1)
R016	Saturated zone (cm**3/g)	not used	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.890E-03	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	3.000E-05	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	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.000E-03	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)	1.830E+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

Site-Specific Parameter Summary (continued)

0 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	1	---	---	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

Contaminated Zone Dimensions

Area: 244000.00 square meters
Thickness: 0.15 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations, pCi/g

Ac-227	8.000E-01
Pa-231	8.000E-01
Pb-210	1.200E+01
Ra-226	1.200E+01
Ra-228	4.400E+00
Th-228	4.400E+00
Th-230	1.200E+01
Th-232	4.400E+00
U-234	1.200E+01
U-235	8.000E-01
U-238	1.200E+01

0

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

t (years):	0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
TDOSE(t):	1.245E+00	1.242E+00	1.209E+00	6.932E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

M(t): 4.982E-02 4.968E-02 4.838E-02 2.773E-02 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00

0Maximum TDOSE(t): 1.245E+00 mrem/yr at t = 0.000E+00 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 = 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.
Ac-227	1.027E-02	0.0082	1.055E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.486E-03	0.0012
Pa-231	1.153E-03	0.0009	2.210E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.105E-03	0.0009
Pb-210	4.889E-04	0.0004	5.457E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.095E-02	0.0088
Ra-226	7.856E-01	0.6308	2.143E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.194E-03	0.0018
Ra-228	1.867E-01	0.1500	5.105E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.333E-04	0.0007
Th-228	2.100E-01	0.1686	2.544E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.811E-04	0.0003
Th-230	2.701E-04	0.0002	7.806E-04	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.399E-04	0.0007
Th-232	1.073E-02	0.0086	1.442E-03	0.0012	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.583E-03	0.0013
U-234	3.319E-05	0.0000	3.146E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.314E-04	0.0003
U-235	4.035E-03	0.0032	1.954E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.718E-05	0.0000
U-238	1.132E-02	0.0091	2.813E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.097E-04	0.0003
Total	1.221E+00	0.9801	4.496E-03	0.0036	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.024E-02	0.0163

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.
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	0.000E+00	0.0000	1.281E-02	0.0103
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	0.000E+00	0.0000	2.479E-03	0.0020
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	0.000E+00	0.0000	1.150E-02	0.0092
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	7.878E-01	0.6326
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	0.000E+00	0.0000	1.876E-01	0.1507
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	0.000E+00	0.0000	2.107E-01	0.1691
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.891E-03	0.0015
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	1.376E-02	0.0110
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.792E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.081E-03	0.0033
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.201E-02	0.0096
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	1.245E+00	1.0000

0*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.

Ac-227	9.910E-03	0.0080	1.012E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.425E-03	0.0011
Pa-231	1.469E-03	0.0012	2.518E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.141E-03	0.0009
Pb-210	4.715E-04	0.0004	5.231E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.050E-02	0.0085
Ra-226	7.833E-01	0.6307	2.292E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.510E-03	0.0020
Ra-228	2.249E-01	0.1811	1.170E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.414E-04	0.0007
Th-228	1.458E-01	0.1174	1.759E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.634E-04	0.0002
Th-230	6.090E-04	0.0005	7.753E-04	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.352E-04	0.0007
Th-232	3.577E-02	0.0288	1.443E-03	0.0012	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.673E-03	0.0013
U-234	3.286E-05	0.0000	3.094E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.243E-04	0.0003
U-235	3.991E-03	0.0032	1.923E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.676E-05	0.0000
U-238	1.119E-02	0.0090	2.767E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.029E-04	0.0003
Total	1.217E+00	0.9803	4.456E-03	0.0036	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.004E-02	0.0161

0

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

0

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.
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	0.000E+00	0.0000	1.235E-02	0.0099
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	0.000E+00	0.0000	2.862E-03	0.0023
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	0.000E+00	0.0000	1.102E-02	0.0089
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	7.858E-01	0.6327
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	0.000E+00	0.0000	2.258E-01	0.1819
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	0.000E+00	0.0000	1.462E-01	0.1178
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.219E-03	0.0018
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	3.889E-02	0.0313
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.666E-04	0.0006
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.037E-03	0.0033
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.187E-02	0.0096
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	1.242E+00	1.0000

0*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+01 years
Water Independent Pathways (Inhalation excludes radon)

0

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.
Ac-227	7.168E-03	0.0059	6.966E-04	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.807E-04	0.0008
Pa-231	3.805E-03	0.0031	4.633E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.376E-03	0.0011
Pb-210	3.401E-04	0.0003	3.563E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.151E-03	0.0059
Ra-226	7.618E-01	0.6298	3.309E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.691E-03	0.0039
Ra-228	1.379E-01	0.1140	1.110E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.770E-04	0.0003
Th-228	5.453E-03	0.0045	6.325E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.473E-06	0.0000
Th-230	3.574E-03	0.0030	7.269E-04	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.970E-04	0.0007
Th-232	2.532E-01	0.2094	1.510E-03	0.0012	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.218E-03	0.0018
U-234	3.014E-05	0.0000	2.659E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.647E-04	0.0003
U-235	3.620E-03	0.0030	1.659E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.322E-05	0.0000
U-238	1.008E-02	0.0083	2.378E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.463E-04	0.0003
Total	1.187E+00	0.9814	4.103E-03	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.833E-02	0.0152

0

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

0 Water Dependent Pathways

0 Radio-	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.
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	0.000E+00	0.0000	8.845E-03	0.0073
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	0.000E+00	0.0000	5.645E-03	0.0047
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	0.000E+00	0.0000	7.527E-03	0.0062
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	7.665E-01	0.6338
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	0.000E+00	0.0000	1.384E-01	0.1144
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	0.000E+00	0.0000	5.469E-03	0.0045
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.098E-03	0.0042
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	2.570E-01	0.2125
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.608E-04	0.0005
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.660E-03	0.0030
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.067E-02	0.0088
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+00	1.0000

0*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+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0 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.
Ac-227	2.131E-04	0.0003	1.097E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.545E-05	0.0000
Pa-231	5.706E-03	0.0082	3.211E-04	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.612E-04	0.0010
Pb-210	1.129E-05	0.0000	5.087E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.021E-04	0.0001
Ra-226	4.257E-01	0.6141	2.097E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.565E-03	0.0051
Ra-228	1.632E-06	0.0000	8.043E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.612E-09	0.0000
Th-228	2.169E-17	0.0000	1.518E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.274E-20	0.0000
Th-230	1.915E-02	0.0276	2.536E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.975E-04	0.0006
Th-232	2.316E-01	0.3341	5.664E-04	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.064E-04	0.0013
U-234	1.683E-05	0.0000	3.888E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.332E-05	0.0001
U-235	1.059E-03	0.0015	2.799E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.209E-06	0.0000
U-238	2.709E-03	0.0039	3.465E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.047E-05	0.0001
Total	6.862E-01	0.9899	1.250E-03	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.755E-03	0.0083

0

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

0 Water Dependent Pathways

0 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.
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	0.000E+00	0.0000	2.395E-04	0.0003
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	0.000E+00	0.0000	6.689E-03	0.0096
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	0.000E+00	0.0000	1.139E-04	0.0002
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	4.293E-01	0.6193
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	0.000E+00	0.0000	1.636E-06	0.0000

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	0.000E+00	0.0000	2.173E-17	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.980E-02	0.0286
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	2.331E-01	0.3362
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.090E-04	0.0002
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.066E-03	0.0015
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.795E-03	0.0040
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.932E-01	1.0000

0*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 = 3.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

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.
ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*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 = 5.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)
0

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years
0 Water Dependent Pathways
0

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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 = 7.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)
0

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000

Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 7.000E+02 years

0

Water Dependent Pathways

0

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 08/07/2009 07:27 Page 20
Summary : SMC Trespasser Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109801.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 = 9.000E+02 years

0

Water Independent Pathways (Inhalation excludes radon)

0

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.000E+02 years

0

Water Dependent Pathways

0

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 08/07/2009 07:27 Page 21

Summary : SMC Trespasser Controls Fail Unrestricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109801.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-	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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0

Radio-	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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

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

0 Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
Ac-227+D	Ac-227+D	1.000E+00	1.602E-02	1.543E-02	1.106E-02	2.994E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pa-231	Pa-231	1.000E+00	2.842E-03	2.823E-03	2.656E-03	1.065E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pa-231	Ac-227+D	1.000E+00	2.561E-04	7.543E-04	4.400E-03	7.296E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pa-231	äDSR(j)		3.098E-03	3.578E-03	7.056E-03	8.361E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pb-210+D	Pb-210+D	1.000E+00	9.579E-04	9.184E-04	6.272E-04	9.490E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Ra-226+D	Ra-226+D	1.000E+00	6.563E-02	6.544E-02	6.363E-02	3.550E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.496E-05	4.390E-05	2.472E-04	2.738E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	äDSR(j)		6.565E-02	6.548E-02	6.388E-02	3.578E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Ra-228+D	Ra-228+D	1.000E+00	3.382E-02	2.991E-02	9.875E-03	1.126E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	8.822E-03	2.142E-02	2.158E-02	2.591E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	äDSR(j)		4.264E-02	5.133E-02	3.146E-02	3.717E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-228+D	Th-228+D	1.000E+00	4.788E-02	3.324E-02	1.243E-03	4.938E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	1.433E-04	1.424E-04	1.340E-04	5.021E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Ra-226+D	1.000E+00	1.421E-05	4.254E-05	2.903E-04	1.591E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Pb-210+D	1.000E+00	2.165E-09	1.492E-08	5.981E-07	9.100E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	äDSR(j)		1.576E-04	1.850E-04	4.249E-04	1.650E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-232	Th-232	1.000E+00	6.794E-04	6.747E-04	6.328E-04	2.220E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-232	Ra-228+D	1.000E+00	2.079E-03	5.906E-03	2.514E-02	2.081E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-232	Th-228+D	1.000E+00	3.687E-04	2.257E-03	3.263E-02	3.194E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-232	äDSR(j)		3.127E-03	8.838E-03	5.840E-02	5.298E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0U-234	U-234	1.000E+00	6.493E-05	6.388E-05	5.504E-05	8.516E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Th-230	1.000E+00	6.424E-10	1.908E-09	1.204E-08	2.905E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Ra-226+D	1.000E+00	4.254E-11	2.963E-10	1.329E-08	5.378E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Pb-210+D	1.000E+00	4.870E-15	7.193E-14	1.896E-11	2.611E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	äDSR(j)		6.493E-05	6.388E-05	5.507E-05	9.085E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0U-235+D	U-235+D	1.000E+00	5.102E-03	5.047E-03	4.573E-03	1.322E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-235+D	Pa-231	1.000E+00	2.996E-08	8.905E-08	5.671E-07	1.584E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-235+D	Ac-227+D	1.000E+00	1.807E-09	1.246E-08	5.028E-07	8.512E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-235+D	äDSR(j)		5.102E-03	5.047E-03	4.574E-03	1.332E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0U-238	U-238	5.400E-05	3.054E-09	3.004E-09	2.583E-09	3.855E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0U-238+D	U-238+D	9.999E-01	1.001E-03	9.894E-04	8.890E-04	2.329E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	U-234	9.999E-01	9.179E-11	2.714E-10	1.638E-09	2.426E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Th-230	9.999E-01	6.057E-16	4.193E-15	1.763E-13	3.479E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Ra-226+D	9.999E-01	3.010E-17	4.487E-16	1.299E-13	4.358E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Pb-210+D	9.999E-01	2.761E-21	8.428E-20	1.418E-16	1.820E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	äDSR(j)		1.001E-03	9.894E-04	8.890E-04	2.329E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

The DSR includes contributions from associated (half-life ó 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03

Ac-227	1.561E+03	1.620E+03	2.261E+03	8.349E+04	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13
Pa-231	8.069E+03	6.988E+03	3.543E+03	2.990E+03	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10
Pb-210	2.610E+04	2.722E+04	3.986E+04	2.634E+06	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13
Ra-226	3.808E+02	3.818E+02	3.914E+02	6.988E+02	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11
Ra-228	5.863E+02	4.871E+02	7.947E+02	6.726E+07	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14
Th-228	5.222E+02	7.522E+02	2.011E+04	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	1.587E+05	1.352E+05	5.884E+04	1.515E+04	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10
Th-232	7.995E+03	2.829E+03	4.281E+02	4.719E+02	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05
U-234	3.850E+05	3.913E+05	4.540E+05	2.752E+06	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09
U-235	4.900E+03	4.954E+03	5.465E+03	1.877E+04	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06
U-238	2.497E+04	2.527E+04	2.812E+04	1.073E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05
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*At specific activity limit

0

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

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
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Ac-227	8.000E-01	0.000E+00	1.602E-02	1.561E+03	1.602E-02	1.561E+03
Pa-231	8.000E-01	48.56 ñ 0.10	1.177E-02	2.124E+03	3.098E-03	8.069E+03
Pb-210	1.200E+01	0.000E+00	9.579E-04	2.610E+04	9.579E-04	2.610E+04
Ra-226	1.200E+01	0.000E+00	6.565E-02	3.808E+02	6.565E-02	3.808E+02
Ra-228	4.400E+00	2.562 ñ 0.005	5.527E-02	4.523E+02	4.264E-02	5.863E+02
Th-228	4.400E+00	0.000E+00	4.788E-02	5.222E+02	4.788E-02	5.222E+02
Th-230	1.200E+01	90.9 ñ 0.2	1.674E-03	1.494E+04	1.576E-04	1.587E+05
Th-232	4.400E+00	30.70 ñ 0.06	8.256E-02	3.028E+02	3.127E-03	7.995E+03
U-234	1.200E+01	0.000E+00	6.493E-05	3.850E+05	6.493E-05	3.850E+05
U-235	8.000E-01	0.000E+00	5.102E-03	4.900E+03	5.102E-03	4.900E+03
U-238	1.200E+01	0.000E+00	1.001E-03	2.497E+04	1.001E-03	2.497E+04
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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
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Ac-227	Ac-227	1.000E+00	1.281E-02	1.235E-02	8.845E-03	2.395E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ac-227	Pa-231	1.000E+00	2.049E-04	6.035E-04	3.520E-03	5.837E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ac-227	U-235	1.000E+00	1.446E-09	9.965E-09	4.022E-07	6.810E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ac-227	äDOSE(j)		1.302E-02	1.295E-02	1.237E-02	6.083E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pa-231	Pa-231	1.000E+00	2.274E-03	2.259E-03	2.125E-03	8.521E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pa-231	U-235	1.000E+00	2.397E-08	7.124E-08	4.537E-07	1.267E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pa-231	äDOSE(j)		2.274E-03	2.259E-03	2.125E-03	8.534E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pb-210	Pb-210	1.000E+00	1.150E-02	1.102E-02	7.527E-03	1.139E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Ra-226	1.000E+00	1.795E-04	5.268E-04	2.966E-03	3.286E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Th-230	1.000E+00	2.598E-08	1.790E-07	7.178E-06	1.092E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-234	1.000E+00	5.844E-14	8.632E-13	2.275E-10	3.133E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	9.999E-01	3.313E-20	1.011E-18	1.702E-15	2.184E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	äDOSE(j)		1.167E-02	1.155E-02	1.050E-02	3.509E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Ra-226	Ra-226	1.000E+00	7.876E-01	7.853E-01	7.635E-01	4.260E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	Th-230	1.000E+00	1.706E-04	5.104E-04	3.483E-03	1.909E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	U-234	1.000E+00	5.105E-10	3.555E-09	1.595E-07	6.454E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Ra-226	U-238	9.999E-01	3.612E-16	5.384E-15	1.559E-12	5.230E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	äDOSE(j)		7.878E-01	7.858E-01	7.670E-01	4.451E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Ra-228	Ra-228	1.000E+00	1.488E-01	1.316E-01	4.345E-02	4.954E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228	Th-232	1.000E+00	9.146E-03	2.599E-02	1.106E-01	9.157E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228	äDOSE(j)		1.580E-01	1.576E-01	1.541E-01	9.157E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-228	Ra-228	1.000E+00	3.882E-02	9.425E-02	9.497E-02	1.140E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-228	1.000E+00	2.107E-01	1.462E-01	5.469E-03	2.173E-17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	1.622E-03	9.931E-03	1.436E-01	1.405E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	äDOSE(j)		2.511E-01	2.504E-01	2.440E-01	1.406E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	1.720E-03	1.709E-03	1.608E-03	6.025E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-234	1.000E+00	7.709E-09	2.289E-08	1.445E-07	3.486E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	9.999E-01	7.269E-15	5.032E-14	2.115E-12	4.175E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	äDOSE(j)		1.720E-03	1.709E-03	1.608E-03	6.029E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-232	Th-232	1.000E+00	2.989E-03	2.969E-03	2.784E-03	9.768E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0U-234	U-234	1.000E+00	7.792E-04	7.666E-04	6.605E-04	1.022E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	9.999E-01	1.101E-09	3.257E-09	1.966E-08	2.912E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	äDOSE(j)		7.792E-04	7.666E-04	6.605E-04	1.022E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0U-235	U-235	1.000E+00	4.081E-03	4.037E-03	3.659E-03	1.058E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0U-238	U-238	5.400E-05	3.664E-08	3.604E-08	3.100E-08	4.626E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238	U-238	9.999E-01	1.201E-02	1.187E-02	1.067E-02	2.795E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238	äDOSE(j)		1.201E-02	1.187E-02	1.067E-02	2.795E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
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THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
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Ac-227	Ac-227	1.000E+00	8.000E-01	7.728E-01	5.660E-01	2.513E-02	2.478E-05	2.445E-08	2.411E-11	2.378E-14	7.470E-16
Ac-227	Pa-231	1.000E+00	0.000E+00	2.500E-02	2.127E-01	6.020E-01	3.965E-01	2.508E-01	1.587E-01	1.004E-01	7.985E-02
Ac-227	U-235	1.000E+00	0.000E+00	2.653E-07	2.311E-05	6.992E-04	9.563E-04	6.779E-04	4.390E-04	2.791E-04	2.221E-04
Ac-227	äS(j):		8.000E-01	7.978E-01	7.787E-01	6.279E-01	3.975E-01	2.515E-01	1.591E-01	1.007E-01	8.007E-02
0Pa-231	Pa-231	1.000E+00	8.000E-01	7.982E-01	7.819E-01	6.363E-01	4.025E-01	2.546E-01	1.611E-01	1.019E-01	8.106E-02
Pa-231	U-235	1.000E+00	0.000E+00	1.682E-05	1.593E-04	9.430E-04	1.006E-03	6.931E-04	4.463E-04	2.834E-04	2.255E-04
Pa-231	äS(j):		8.000E-01	7.982E-01	7.821E-01	6.372E-01	4.035E-01	2.553E-01	1.615E-01	1.022E-01	8.128E-02
0Pb-210	Pb-210	1.000E+00	1.200E+01	1.158E+01	8.397E+00	3.378E-01	2.677E-04	2.122E-07	1.681E-10	1.332E-13	3.751E-15
Pb-210	Ra-226	1.000E+00	0.000E+00	3.663E-01	3.124E+00	9.574E+00	8.437E+00	7.210E+00	6.160E+00	5.264E+00	4.866E+00
Pb-210	Th-230	1.000E+00	0.000E+00	7.981E-05	7.173E-03	3.162E-01	1.073E+00	1.688E+00	2.180E+00	2.569E+00	2.729E+00
Pb-210	U-234	1.000E+00	0.000E+00	2.396E-10	2.162E-07	9.032E-05	6.580E-04	1.256E-03	1.757E-03	2.158E-03	2.325E-03
Pb-210	U-238	9.999E-01	0.000E+00	1.699E-16	1.537E-12	6.267E-09	1.112E-07	2.763E-07	4.315E-07	5.603E-07	6.147E-07
Pb-210	äS(j):		1.200E+01	1.195E+01	1.153E+01	1.023E+01	9.511E+00	8.899E+00	8.342E+00	7.834E+00	7.597E+00
0Ra-226	Ra-226	1.000E+00	1.200E+01	1.199E+01	1.191E+01	1.109E+01	9.478E+00	8.099E+00	6.920E+00	5.913E+00	5.466E+00
Ra-226	Th-230	1.000E+00	0.000E+00	5.196E-03	5.172E-02	4.944E-01	1.342E+00	2.027E+00	2.574E+00	3.005E+00	3.183E+00
Ra-226	U-234	1.000E+00	0.000E+00	2.331E-08	2.257E-06	1.666E-04	8.571E-04	1.532E-03	2.090E-03	2.536E-03	2.721E-03
Ra-226	U-238	9.999E-01	0.000E+00	2.200E-14	2.100E-11	1.344E-08	1.523E-07	3.440E-07	5.186E-07	6.621E-07	7.225E-07
Ra-226	äS(j):		1.200E+01	1.200E+01	1.196E+01	1.159E+01	1.082E+01	1.013E+01	9.496E+00	8.921E+00	8.652E+00
0Ra-228	Ra-228	1.000E+00	4.400E+00	3.899E+00	1.313E+00	2.471E-05	7.790E-16	2.456E-26	7.744E-37	0.000E+00	0.000E+00
Ra-228	Th-232	1.000E+00	0.000E+00	4.995E-01	3.074E+00	4.303E+00	4.124E+00	3.953E+00	3.788E+00	3.631E+00	3.555E+00
Ra-228	äS(j):		4.400E+00	4.398E+00	4.387E+00	4.303E+00	4.124E+00	3.953E+00	3.788E+00	3.631E+00	3.555E+00
0Th-228	Ra-228	1.000E+00	0.000E+00	1.255E+00	1.794E+00	3.705E-05	1.168E-15	3.683E-26	1.161E-36	0.000E+00	0.000E+00
Th-228	Th-228	1.000E+00	4.400E+00	3.062E+00	1.172E-01	7.926E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	8.201E-02	2.477E+00	4.303E+00	4.124E+00	3.953E+00	3.788E+00	3.631E+00	3.555E+00
Th-228	äS(j):		4.400E+00	4.399E+00	4.388E+00	4.303E+00	4.124E+00	3.953E+00	3.788E+00	3.631E+00	3.555E+00
0Th-230	Th-230	1.000E+00	1.200E+01	1.200E+01	1.197E+01	1.174E+01	1.123E+01	1.074E+01	1.028E+01	9.835E+00	9.620E+00
Th-230	U-234	1.000E+00	0.000E+00	1.075E-04	1.027E-03	6.772E-03	9.878E-03	9.921E-03	9.557E-03	9.152E-03	8.953E-03

```
 Th-230  U-238   9.999E-01    0.000E+00 1.521E-10 1.433E-08 8.075E-07 2.408E-06 2.796E-06 2.780E-06 2.680E-06 2.623E-06
 Th-230  äS(j):              1.200E+01 1.200E+01 1.197E+01 1.174E+01 1.124E+01 1.075E+01 1.029E+01 9.844E+00 9.629E+00
0Th-232  Th-232  1.000E+00    4.400E+00 4.399E+00 4.391E+00 4.308E+00 4.129E+00 3.957E+00 3.793E+00 3.635E+00 3.559E+00
0U-234   U-234   1.000E+00    1.200E+01 1.188E+01 1.087E+01 4.462E+00 6.170E-01 8.532E-02 1.180E-02 1.631E-03 6.067E-04
 U-234   U-238   9.999E-01    0.000E+00 3.368E-05 3.081E-04 1.265E-03 5.250E-04 1.210E-04 2.344E-05 4.168E-06 1.722E-06
 U-234   äS(j):              1.200E+01 1.188E+01 1.087E+01 4.464E+00 6.176E-01 8.544E-02 1.182E-02 1.636E-03 6.084E-04
0U-235   U-235   1.000E+00    8.000E-01 7.921E-01 7.247E-01 2.976E-01 4.117E-02 5.696E-03 7.881E-04 1.090E-04 4.056E-05
0U-238   U-238   5.400E-05    6.480E-04 6.416E-04 5.870E-04 2.410E-04 3.335E-05 4.614E-06 6.384E-07 8.832E-08 3.285E-08
 U-238   U-238   9.999E-01    1.200E+01 1.188E+01 1.087E+01 4.463E+00 6.175E-01 8.544E-02 1.182E-02 1.636E-03 6.084E-04
 U-238   äS(j):              1.200E+01 1.188E+01 1.087E+01 4.464E+00 6.176E-01 8.544E-02 1.182E-02 1.636E-03 6.084E-04
 ÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ    ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ
 THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time =  145.37 seconds
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5 RECREATIONAL HUNTER PACKAGE (UNRESTRICTED)

5.1 General Information

A hypothetical recreational hunter may attempt to enter the unrestricted area in pursuit of game, but is not likely to do so because the on-going industrial operation in this area would deter the presence of game. There is also little shelter on the property, other than buildings, in which animals could hide and forage. Furthermore, hunters are not likely to venture onto such a small piece of industrial property when there are other unoccupied land areas close by.

5.2 Critical Group Description

The unrestricted portion of the site will be fenced and signs will be posted that prohibit trespassers from entering the property. SMC will maintain these controls for the foreseeable future, thus the likelihood that a hunter will enter the property during working hours is remote. However, because it is assumed there will be no full-time security at the site, it is possible a hunter might pursue game observed on the unrestricted portion of the property during off-hours, thus he forms the critical group.

5.3 Applicable Exposure Pathways

RESRAD identifies the following potential pathways for the recreational hunter scenario:

- direct radiation exposure;
- ingestion of meat;
- particulate inhalation; and
- direct ingestion.

Other exposure pathways are inapplicable and were disabled for the purposes of dose modeling. The following table identifies the pathways that were retained and provides an explanation for those that were not:[134]

Pathway	Retained	Comments
Direct Exposure	Yes	The source term produces penetrating gamma radiation. Exposure from direct penetrating radiation is expected to be a significant contributor to the overall potential dose.
Particulate Inhalation	Yes	Allowance is made for soils containing radiological constituents of the source being liberated and suspended in the breathing air of the hunter.
Radon	No	Radon is specifically excluded from consideration within the framework of the governing regulations. In addition, was included. is not a significant producer of radon.

[134] A comprehensive list of the input parameters used in the execution of the RESRAD dose modeling code to evaluate the potential future radiation dose for each scenario is provided in the RESRAD summary reports (see Appendix 19.5).

Pathway	Retained	Comments
Plant Ingestion	No	Ingestion of plant foods addresses those plant foods grown in the restricted area or irrigated with water containing radioactivity from the restricted area. Since hunters are not expected to glean edible plant parts grown on site for food consumption, this pathway is not applicable.
Drinking Water	No	Surface water on site is unfit for consumption as drinking water. No on-site sources of ground water have been developed for drinking water.
Meat Ingestion	Yes	Hunters are likely to consume meat from animals culled from the site.
Milk Ingestion	No	Milk ingestion pathway is incomplete because milk cows do not graze at an industrial site.
Aquatic Foods Ingestion	No	Hunters are not expected to spend time fishing the surface water bodies at the site, even if there were fish in any of them.
Direct Ingestion	Yes	Hunters on the site may ingest relatively small amounts of soil through incidental oral contact with their hands.

The potential for exposure to radon gas was eliminated from this assessment based upon regulatory guidance. The NRC documented their concurrence with this approach in the Statement of Consideration for the License Termination Rule:[135]

> *"Following the approach taken in the proposed rule, this final rule includes radiological criteria for residual radioactivity that is distinguishable from background. Because of natural transport of radon gas in outdoor areas due to diffusion and air currents, doses from exposure to radon in outside areas due to radium in the soil are negligible... Therefore, in implementing the final rule, licensees will not be expected to demonstrate that radon from licensed activities is indistinguishable from background on a site-specific basis..."*"

Furthermore, measurements of radon emanation rate from the various materials that will be consolidated under the engineered barrier (see the Source Term Document in Appendix 19.2 of the DP) shows the dose potential from this pathway to be a negligible contributor.

5.4 Key Parameter Justification

A number of input parameters were selected for use for the dose modeling of this scenario. The following is a justification for those that are key to the analysis:

- Indoor Time Fraction - The total time spent indoors by the hunter is assumed to be 0 hours. It is assumed that all of the time in the unrestricted area is spent outdoors, which maximizes the exposure potential.

- Outdoor Time Fraction - It is assumed that the hunter spends one hour per day and no more than one day per month on the 58-acre unrestricted area for a total of 75

[135] U.S. Nuclear Regulatory Commission, *Radiological Criteria for License Termination*, Federal Register, Volume 62, Number 139, July 21, 1997.

hours.[136] It is assumed that if hunters enter the unrestricted area, employees of the manufacturing facility will identify them and require that they leave the area immediately. The outdoor fraction, 0.009, is derived by dividing the 75 hours per year by the total number of hours in a year (i.e., 8,760 hours). For purposes of the sensitivity analysis, the probabilistic distribution ranges to twice as much as two (2) times the central tendency value.

- Inhalation Rate -The inhalation rate for the hunter is assumed to be equal to that of an adult male performing light work, for an average of 8,400 cubic meters per year. This value is equal to the RESRAD default inhalation rate based on geometric mean rate for short term exposure to adult males.[137] It is conservative because it assumes the hunter is not likely to be involved to be in work intensive activities and in direct contact with the surface soil. The radiation dose associated with this value decreases as the inhalation rate drops.

- Mass loading for inhalation - The value selected for the analysis was the RESRAD default parameter.[138] The mass loading in air describes the airborne dust loading conditions on the site and it is assumed that the hunter is not involved in any intrusive activities that may call attention to the hunter, meaning the hunter will not incur exposure to airborne dust. The radiation dose associated with this value decreases as the mass loading decreases.

- Soil ingestion Rate - The hunter may ingest soil as a result of incidental contact with the soil. The value selected, 18.3 grams per year, is the RESRAD default parameter. It is assumed that the hunter is engaged in non-contact intensive activities. The hunter does not enter the fenced unrestricted area, but may ingest soil from incidental contact with the surface soil in the unrestricted area. The hunter may eat animals that are culled from the site. The radiation dose associated with this value decreases as the ingestion of impacted soil decreases.

- Contaminated Fraction of Meat - The fraction of the hunter's annual diet of meet that is obtained from game harvested from the SMC unrestricted area is assumed to be 30%. This number is conservative in that the size of the site is small relative to the grazing land required to support game habitat. The use of the triangular distribution (i.e., 0 to 50%) results in a more conservative estimate than the RESRAD default for this site.[139]

Given the pathways described in Section 5.3, above, the following is a listing of the input parameters used for this exposure scenario:

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[136] In U. S. Environmental Protection Agency, "Exposure Factors Handbook Volume III - Activity Factors", Table 15-80 EPA/600/P-95/002Fc (August, 1997), the mean number of hours per year spent in outdoor playing for the "All" category is all categories is 592. It is arbitrarily assumed that approximately 10 percent of an individual's total outdoor time is spent trespassing on the SMC property.

[137] U.S. Environmental Protection Agency, *Exposure Factors Handbook, Volume I, General Factors*, EPA 600/P-95-002Fa, August, 1997.

[138] Argonne National Laboratory, *User's Manual for RESRAD Version 6*, July, 2001.

[139] U.S. Environmental Protection Agency, *Exposure Factors Handbook, Food Ingestion Factors*, Volume II, EPA/600/P-95/002Fb, August, 1997.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Dose Conversion Factors	DCFX (n)	millire m/pCi	All DCFs used are RESRAD defaults			D	S	RESRAD defaults from FGR#11 and FGR#12, derived using ICRP 30 dosimetry model.[140],[141] Short-lived (<180 days) radioactive progeny isotopes are accounted for through the use of the "parent+D" DCFs.
Area of Contaminated Zone	AREA	m2	244,000	loguniform	Range 195,200 to 295,000 m2	S	S	The area of the unrestricted portion is represented by the area of the site excluding the Restricted area.
Thickness of Contaminated Zone	THICK0	m	0.15	Triangular	Range 0.1 to 0.3 m	S	S	The residual activity of the unrestricted area is assumed to be present in the top 15 cm of soil, pursuant to NRC guidance (NUREG 1575, and NUREG 1757) on the thickness of surface soil. As stated in the DP, the only impacted soil in the unrestricted area originated with surface deposition from airborne depositions.
Length Parallel to Aquifer Flow,	LCZPAQ	m	494.0	Triangular	Min 395.2 Max 592.8	S	S	The RESRAD default value is derived as the square root of the area of the contaminated zone.[142]
Basic Radiation dose limit	BRDL	mrem TEDE	25			D	S	
Time since placement of material	TI	yr	0			D	S	
Calculation Times	T(n)	Yrs.	1 10 100 300 500 700 900 1000	NA		--	--	Evaluation at these time segments allows for consideration of the potential for conditions at the Site to evolve from the initial conditions specified (e.g., soil erosion impacts the cover thickness) and projects the changing Site conditions to the required 1000-year outlook.[143],[144]
Actinium-227	S(1)	pCi/g	0.8	Point Estimate		--	--	When equal concentrations of Th-230, Ra-226, and Po-210 are included in the RESRAD runs, and if an activity mixture of 65.5% natural thorium and 34.5% natural uranium (typical of SMC's materials) is assumed, the resulting isotope-specific DCGLs consistent with the unity rule are 4.4 picocuries per gram for thorium and 12 picocuries per gram of uranium.[145]
Protactinium-231	S(2)	pCi/g	0.8	Point Estimate		--	--	
Lead-210	S1(3)	pCi/g	12	Point Estimate		--	--	
Radium-226	S1(4)	pCi/g	12	Point Estimate		--	--	

[140] U.S. Environmental Protection Agency, *Limiting Values of Radionuclide Intake and Air Concentrations and Dose Conversion Factors for Inhalation, Submersion, and Ingestion*, Federal Guidance Report Number 11, EPA 520/1-88-020, September, 1988.
[141] U.S. Environmental Protection Agency, *External Exposure to Radionuclides in Air, Water and Soil*, Federal Guidance Report Number 12, EPA 402 R-93-081, September, 1993.
[142] Argonne National Laboratory, *Data Collection Handbook to Support Modeling Impacts of Radioactive Material in Soil*, April, 1993.
[143] U.S. Nuclear Regulatory Commission, *Radiological Criteria for License Termination*, Volume 62, Federal Register, page 39058, July 21, 1997.
[144] U.S. Nuclear Regulatory Commission, *NMSS Decommissioning Standard Review Plan*, NUREG-1727, September, 2000.
[145] DCGL Document.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Radium-228	S1(5)	pCi/g	4.4	Point Estimate		--	--	
Thorium-228	S1 (6)	pCi/g	4.4	Point Estimate		--	--	
Thorium-230	S1(7)	pCi/g	12	Point Estimate		--	--	
Thorium-232	S1(8)	pCi/g	4.4	Point Estimate		--	--	
Uranium-234	S1(9)	pCi/g	12	Point Estimate		--	--	
Uranium-235	S1(10)	pCi/g	0.8	Point Estimate		--	--	
Uranium-238	S1(11)	pCi/g	12	Point Estimate		--	--	
Concentration in ground water	W1(n)	pCi/L	0					
Cover Depth (thickness)	COVER0	m	0	Triangular	Range: 0 to	S	S	The DCGLs derived for the unrestricted area assume the residual activity is present in the top 6 inches (0.15 m), with no cover.
Cover Density	DENSCV	g/cm3				S	S	Not used
Cover Erosion Rate	VCV	m/yr				S	S	Not used
Contaminated Zone Density	DENSCZ	g/cm3	1.5	Triangular	Min 1.2 Max 1.6	S	S	Soils are characterized as fine to medium sand and fine to coarse sand (based on boring logs for wells MW-12D and MW-13D)[146] and silty sand with gravel and gravel (based on boring log for well MW-11S).[147] The density of the soil in the unrestricted area is equivalent to the nominal density of soil (i.e., RESRAD default value).
Contaminated Zone Erosion Rate	VCZ	m/yr	0.001	Continuous Logarithmic	Value CDF 5x10-8 0 7x10-4 0.22 5x10-3 0.95 2x10-1 1	S	I	The RESRAD default erosion of the surface soil is deemed conservative even in cases of significant farming and gardening activities.[148]

[146] TRC Environmental Consultants, Inc., *Remedial Investigation Technical Report*, Project Number 7650-N51, Windsor, Connecticut, April, 1992.
[147] TRC Environmental Consultants, Inc., *Final Focused Feasibility Study Report, Ground Water Remediation*, Project Number 13248-N51, Windsor, Connecticut, Revision 2, February 1994.
[148] Argonne National Laboratory, *Data Collection Handbook to Support Modeling the Impacts of Radioactive Material in Soil*, ANL/EAIS-8, 1993.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Contaminated Zone Total Porosity	TPCZ	Unitless 0 to 1	0.4	Point Estimate		D	I	Values for total porosity are reported to be 0.25 - 0.4 for non-uniform sand and 0.25 - 0.35 for gravelly sand.[149] RESRAD value for coarse sand was selected.[150]
Contaminated Zone Field Capacity	FCCZ	Unitless 0 to 1	0.2	Point Estimate		D	I	RESRAD default
Contaminated Zone Hydraulic Conductivity	HCCZ	m/yr	10	Bounded Lognormal-N	μNormal: 2.3 σNormal 2.11 min: 0.004 Max: 9250	S	I	RESRAD default
Contaminated Zone B-Parameter	BCZ	Unitless	4.05	Bounded Lognormal-N	μNormal: 1.06 σNormal 0.66 min: 0.5 Max: 30	D	I	The value for sand was determined to be representative of the contaminated zone.[151]
Average Annual Wind Speed	WIND	m/sec	4.25	Bounded Lognormal-N	μNormal: 1.445 σNormal: 0.2419 Min: 1.4 Max: 13.0	D	I	The thirty year (1961-1990) site- specific annual average value is reported to be 4.3 m/s.[152]
Humidity in air	HUMID	g/m3						Not used
Evapo transpiration Coefficient	EVAPTR	Unitless, 0 to 1	0.73	Triangular	Range: 0.4to 1.0	S	I	Mean annual evapotranspiration was determined as the sum of mean potential monthly evapotranspiration values, which were calculated by the Thornthwaite Method using mean monthly temperature and mean possible hours of daylight data..[153 154 155]Mean annual evapotranspiration was estimated to be 76.8 cm or 72% of the precipitation rate.
Precipitation Rate	PRECIP	m/year	1.05	Point Estimate		S	S	The nearest climatological stations are located in Atlantic City and Philadelphia. The annual average precipitation for Atlantic City is 41.3 inches per year while the average annual precipitation for Philadelphia is 41.42 inches.[156],[157] 1.05 m/yr corresponds to these values.

[149] Kresic, N., *Quantitative Solutions in Hydrogeology and Groundwater Modeling*, New York: Lewis Publishers, page 461, 1997.
[150] Argonne National Laboratory, *User's Manual for RESRAD Version 6*, Appendix E, July 2001.
[151] Argonne National Laboratory, *User's Manual for RESRAD Version 6*, Appendix E, July 2001.
[152] National Climate Data Center, *Local Climatological Data, Annual Summary with Comparative Data for Philadelphia, Pennsylvania*, 2000.
[153] Argonne National Laboratory, *User's Manual for RESRAD Version 6*, Appendix E, July, 2001.
[154] National Climate Data Center, *Local Climatological Data, Annual Summary with Comparative Data for Philadelphia, Pennsylvania*, 2000.
[155] D.M. Gray, *Handbook on the Principles of Hydrology*, Published by Water Information Center, Inc., New York, New York, 1973.
[156] National Climate Data Center, *Local Climatological Data, Annual Summary with Comparative Data for Atlantic City, New Jersey*, 2006.
[157] National Climate Data Center, *Local Climatological Data, Annual Summary with Comparative Data for Philadelphia, Pennsylvania*, 2006.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Irrigation Rate	RI	m/year	0.2	Point Estimate		S	S	RESRAD default
Irrigation mode	IDITCH	unitless	Overhead					RESRAD default
Runoff Coefficient	RUNOFF	Unitless, 0 to 1	0.2	Uniform	Range: 0.1 to 0.8	S	S	RESRAD default
Watershed Area for Nearby Stream or Pond	WAREA	m2	2.77x106	Point Estimate		S	I	Assumed to be 690 acres and represents the low lying areas adjacent to the Restricted area[158]. The watershed area is used to calculate dilution factors for contaminant concentrations in surface water bodies in the vicinity of the site. The larger the watershed area, the greater volume through which dilution is possible. While there is no pathway for humans to drink surface water, animals may use the pond for their water supply. The greater the dilution, the lower the radiation dose.
Accuracy for water/soil computations	EPS	unitless	0.001			D	I	
Density, Saturated Zone	DENSAQ	g/cm3	1.51	Bounded Normal	Std Dev 0.159 Min 1.019 Max 2.002	S	I	Saturated soils beneath pile are characterized as fine to medium sand and fine to coarse sand (based on boring logs for wells MW-12D and MW-13D) and silty sand with gravel and gravel (based on boring log for well MW-11S).[159,160] Applicable bulk densities range from 1.60 for dry sand to 1.73 for dry sand and gravel.[161]
Total Porosity Saturated Zone	TPSZ	Unitless ,0 to 1	0.43	Bounded Normal	Std Dev 0.06 Min 0.244 Max 0.615	D	I	Based on the saturated soils descriptions above, applicable total porosity values cited in Kresic are 0.25-0.40 for non-uniform sand and 0.25-0.35 for gravelly sand. RESRAD value for coarse sand was selected as it is the sand type defined in RESRAD Table E.8 with total porosity values closest to those cited above.[162]
Effective Porosity, Saturated Zone	EPSZ	Unitless, 0 to 1	0.383	Bounded Normal	Std Dev 0.06 Min 0.195 Max 0.572	D	I	Effective porosity of non-uniform sands and gravels, and their mixtures, is up to 10% less than total porosity.[163] For range of total porosity above (0.25-0.40), effective porosity range is 0.225-0.36. RESRAD default value for coarse sand was selected as it is the sand type defined in RESRAD Table E.8 with effective porosity values closest to those cited above and its selection is consistent with the material used to represent total porosity.

[158] Shieldalloy Metallurgical Corporation, *Decommissioning Plan for the SMC facility*, Appendix E, Report Number 94005/G-28247, Rev 1b.
[159] TRC Environmental Consultants, Inc., *Final Focused Feasibility Study Report, Ground Water Remediation*, Project Number 13248-N51, Windsor, Connecticut, Revision 2, February 1994.
[160] TRC Environmental Consultants, Inc., *Remedial Investigation Technical Report*, Project Number 7650-N51, Windsor, Connecticut, April, 1992.
[161] T. Glover, *Pocket Reference, 2nd Edition*, Sequoia Publishing, Inc Littleton, Colorado, page 542, 1995.
[162] Kresic, N., *Quantitative Solutions in Hydrogeology and Groundwater Modeling*, New York: Lewis Publishers, page 461, 1997.
[163] Kresic, N., *Quantitative Solutions in Hydrogeology and Groundwater Modeling*, New York: Lewis Publishers, page 461, 1997.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Field Capacity, Saturated Zone	FCSZ	Unitless, 0 to 1	Not used			D	I	The value "field capacity" does not apply to saturated soils.
Hydraulic Conductivity, Saturated Zone	HCSZ	m/yr	9,500	Triangular	Min 8,600 Max 10,400	S	I	During previous hydrogeological studies at the site, a pumping test of the Layne well indicated a T of 82,000 gpd/ft (Weston, 1972), and a recovery test of P4 (IWC4) indicated T of 90,400 gpd/ft (Woodward-Moorehouse, 1974), or K of 78 to 93 ft/day for the Cohansey sand, depending on formation thickness assumed (130 to 140 feet).[164,165] The average of 85.5 ft/day (9,500 m/yr) is used as the central tendency value.
Hydraulic Gradient	HGWT	Unitless	0.004	Bounded Lognormal-N	μNormal: -5.11 σNormal: 1.77 min: 0 .00007 max: 0.5	S	I	The RI references a hydraulic gradient of 0.004 ft/ft based on Figure 15 (pg 48-49) as measured between wells SC-12D and A. If measured from the far eastern well to the far southwestern well, a gradient of 0.002 ft/ft is calculated.[166] The 0.004 gradient measured between wells A and SC-12D is more representative of the gradient in the immediate vicinity of the Restricted area. The value is also representative of the gradient towards a potable well, should one be located in the unrestricted area, close to the Restricted area.
Saturated Zone B-Parameter	BSZ	Unitless	4.05	Bounded Lognormal-N	μNormal: 1.06 σNormal: 0.66 Min: 0.5 Max: 30	D	I	RESRAD default value for generic soil was selected. The value and distribution represents a weighted average of the distributions for the individual soil classes.[167]
Water table drop rate	VWT	m/yr	0					
Well pump intake depth	DWIBWT	m (below the water table)	10			D	I	RESRAD default value was used.
Model: Nondispersion (ND) or Mass balance (MB)	MODEL	unitless	Mass Balance			D	I	
Well pumping rate	UW	m3/yr	453			D	I	RESRAD default value was used for estimate of water source. The default is typical for a Agricultural Farm Family and expected to be much lower for the exposure scenarios at Newfield.
Number of unsaturated zone strata	NS	unitless	1					

[164] Roy F. Weston, Inc., 1972. *Hydrogeologic Investigation of Ground Water Contamination, Interim Report*. Prepared for Shieldalloy Corporation, Newfield, New Jersey.
[165] Woodward-Moorehouse and Associates, Inc. and Woodward-Envicon, Inc., *Preliminary Report, Groundwater Contamination Study, Phase II*, Prepared for Shieldalloy Corporation, Newfield, New Jersey, 1974.
[166] TRC Environmental Consultants, Inc., *Remedial Investigation Technical Report*, Project Number 7650-N51, Windsor, Connecticut, April, 1992.
[167] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Thickness Unsaturated	H(1)	m	1.9	Triangular	Min 0.9 Max 3.7	S	S	The average thickness of the unsaturated zone was estimated from well locations in the vicinity of the restricted area based on wells 11S, 12S, and 13S. Measurements were made by SMC for six years (from January 2001 through April 2007, measured each quarter). A total of 26 data points were summarized for each well.
Density, Unsaturated	DENS UZ(1)	g/cm3	1.51	Bounded Normal	Std Dev 0.159 Min 1.019 Max 2.002	D,S	S	The density selected is typical of native sand (RESRAD default). Unsaturated soils are characterized as fine to medium sand and fine to coarse sand (based on boring logs for wells MW-12D and MW-13D) and silty sand with gravel (based on boring log for well MW-11S). Applicable bulk densities range from 1.60 for dry sand to 1.73 for dry sand and gravel.[168]
Total Porosity Unsaturated	TPUZ(1)	Unitless 0 to 1	0.43	Bounded Normal	Std Dev 0.06 Min 0.245 Max 0.615	D	I	Values for total porosity are reported to be 0.25-0.40 for non-uniform sand and 0.25-0.35 for gravelly sand.[169] RESRAD value for coarse sand was selected as it is the sand type defined in NUREG 6697, Appendix C, Table 3.2-1 with total porosity values closest to those cited above.[170]
Effective Porosity of Unsaturated Zone	EPUZ(1)	Unitless 0 to 1	0.383	Bounded Normal	Std Dev 0.06 Min 0.195 Max 0.572	D	I	Effective porosity of non-uniform sands and gravels, and their mixtures, is up to 10% less than total porosity; for range of total porosity above (0.25-0.40), effective porosity range is 0.225-0.36.[171,172] Also according to Kresic (1997), the presence of fines, i.e., silts and clays, significantly reduces effective porosity. However, limited amounts of silt and clay are expected in the sands and gravels of the Bridgeton Formation. Value for sand was selected from NUREG 6697, Appendix C, Table 3.3-1 as it is the sand type with effective porosity values closest to those cited above and its selection is consistent with the material used to represent total porosity.[173]
Field Capacity Unsaturated Zone	FCUZ (1)	Unitless 0 to 1	0.2	Point Estimate		D	I	The reported field capacity for sand is about 0.10 and ranges up to about 0.18 for fine sand (Fetter, 1994). Consequently, a value of 0.2 is much higher than expected for the site. Field capacity is not a single value, but is time-dependent (Fetter, 1994; Delleur, 1999).[174,175]

[168] T. Glover, *Pocket Reference, 2nd Edition*, Sequoia Publishing, Inc Littleton, Colorado, page 542, 1995.
[169] Kresic, N., *Quantitative Solutions in Hydrogeology and Groundwater Modeling*, New York: Lewis Publishers, page 461, 1997.
[170] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
[171] Kresic, N., 1997. Quantitative Solutions in Hydrogeology and Groundwater Modeling, New York: Lewis Publishers, 461 p.
[172] Kresic, N., 1997. Quantitative Solutions in Hydrogeology and Groundwater Modeling, New York: Lewis Publishers, 461 p.
[173] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
[174] Delleur, J.W., The Handbook of Groundwater Engineering, New York: CRC Press, 1999.
[175] Fetter, C.W., 1994. Applied Hydrogeology. New York: Macmillan College Publishing Company, 691 p.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Unsaturated B-Parameter	BUZ(1)	Unitless	4.05	Bounded Lognormal-N	μNormal: 1.06 σNormal: 0.66 Min: 0.5 Max: 30	D	I	The RESRAD default value for generic soil was selected. The value and distribution represents a weighted average of the distributions for the individual soil classes.[176]
Hydraulic Conductivity Unsaturated Zone	HCUZ(1)	m/yr	9,500	Triangular	Min 8,600 Max 10,400	S	I	The unsaturated, upper part of the Cohansey Sand consists of fine sand, fine-medium sand, medium-coarse sand, and coarse sand with variable percentages of silt and fine gravel. Aquifer testing of wells completed in the upper Cohansey Sand provides data for the hydraulic conductivity. A pumping test of the Layne well indicated a transmissivity of 82,000 gpd/ft (Weston, 1972), and a recovery test of P4 (also referred to as IWC4) indicated a transmissivity of 90,400 gpd/ft (Woodward-Moorehouse, 1974).[177,178,179] The equivalent hydraulic conductivity is 78 to 93 ft/day, depending on the assumed formation thickness (130 to 140 feet). The average hydraulic conductivity of 85.5 ft/day (9,500 m/yr) is used as the central tendency value.
Distribution coefficients for Thorium								
Thorium Kd contaminated zone	DCACT(n)	cm3/g	5,884	Triangular	Min 207 Max 150,000	S	S	Literature values were selected for the contaminated zone, using the lower range of values.[180]
Thorium Kd unsaturated zone	DCACTU(1)(1)	cm3/g	5,884	Triangular	Min 207 Max 150,000	D	S	Literature values were selected for both unsaturated zones, using the lower range of values.[181]
Thorium Kd saturated zone	DCACTS	cm3/g	5,884	Triangular	Min 207 Max 150,000	D	S	Literature values were selected for the saturated zones, using the lower range of values.[182]
Leach rate	ALEACH(1)	/yr						Not used
Solubility constant	SOLUBK(1)	unitless						Not used
Distribution coefficients for Uranium								

[176] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
[177] TRC Environmental Consultants, Inc., *Remedial Investigation Technical Report*, Project Number 7650-N51, Windsor, Connecticut, April, 1992.
[178] Roy F. Weston, Inc., *Hydrogeologic Investigation of Ground Water Contamination, Interim Report*, Prepared for Shieldalloy Corporation, Newfield, New Jersey, 1972.
[179] Woodward-Moorehouse and Associates, Inc. and Woodward-Envicon, Inc., *Preliminary Report, Groundwater Contamination Study, Phase II*. Prepared for Shieldalloy Corporation, Newfield, New Jersey, 1974.
[180] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[181] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[182] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Uranium Kd contaminated zone	DCAC TC(n)	cm3/g	126	Triangular	Min 0.03 Max 2,200	S	S	Literature values were selected for the contaminated zone, using the lower range of values.[183]
Uranium Kd unsaturated zone	DCAC TU(2)	cm3/g	126	Triangular	Min 0.03 Max 2,200	D	S	Literature values were selected for the unsaturated zones, using the lower range of values.[184]
Uranium Kd saturated zone	DCAC TS	cm3/g	126	Triangular	Min 0.03 Max 2,200	D	S	Literature values were selected for the saturated zones, using the lower range of values.[185]
Leach rate	ALEA CH(2)	/yr						Not used
Solubility constant	SOLU BK(2)	unitless						Not used
Distribution coefficients for Radium								
Radium Kd contaminated zone	DCAC T(n)	cm3/g	3,533	Triangular	Min 57 Max 21,000	S	S	Literature values were selected for the contaminated zone, using the lower range of values.[186]
Radium Kd unsaturated zone	DCAC T(1)	cm3/g	3,533	Triangular	Min 57 Max 21,000	D	S	Literature values were selected for the unsaturated zones, using the lower range of values.[187]
Radium Kd saturated zone	DCAC TS	cm3/g	3,533	Triangular	Min 57 Max 21,000	D	S	Literature values were selected for the saturated zone, using the lower range of values.[188]
Leach rate	ALEA CH(3)	/yr						Not used
Solubility constant	SOLU BK(3)	unitless						Not used
Distribution coefficients for Lead								
Lead Kd contaminated zone	DCAC TC (n)	cm3/g	270	Triangular	Min 19 Max 1,405	D	S	Literature values were selected for the contaminated zone, using the lower range of values.
Lead Kd unsaturated zone	DCAC TU(2)	cm3/g	270	Triangular	Min 19 Max 1,405	D	S	Literature values were selected for the unsaturated zone, using the lower range of values.[189]
Lead Kd saturated zone	DCAC TS	cm3/g	270	Triangular	Min 19 Max 1,405	S	S	Literature values were selected for the saturated zone, using the lower range of values.[190]

[183] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[184] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[185] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[186] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[187] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[188] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[189] Sheppard and Thibault, 1990.
[190] Sheppard and Thibault, 1990.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Leach rate	ALEACH(4)	/yr						Not used
Solubility constant	SOLUBK(4)	unitless						Not used
Inhalation Rate	INHALR	m3/yr	8,400	Triangular	Range: 4380 to 13100	D	I	Inhalation rate based on geometric mean rate for short term exposure to adult males.[191]
Mass Loading for Inhalation	MLINH	g/m3	0.00003	Continuous Linear	0.000000 - 0.0000 0.000008 - 0.0151 0.000016 - 0.1365 0.000030 - 0.8119 0.000040 - 0.9495 0.000060 - 0.9937 0.000076 - 0.9983 0.000100 - 1.0000	D	I	Mass loading in air describes the airborne dust loading conditions on the site.[192]
Exposure duration	ED	yr	30			D	S	The hunter is assumed to be on site for each of the next 30 years.
Shielding factor, inhalation	SHF3	unitless	0.4			D	I	
Shielding factor, external gamma	SHF1	unitless	0.7	Bounded Lognormal-N	μNormal: -1.3 σNormal: 0.59 Min: 0.044 Max: 1	S	S	Not used. The shielding factor is a function of the shielding provided by building materials against the penetration of gamma radiation.
Exposure Frequency (Total)	EF	Days per year	3.1	EF and ET are not input parameters used by RESRAD. They are presented here to disclose the calculation used to arrive at the parameters RESRAD uses to account for exposure frequency, FIND & FOTD		--	--	Assume 75 hours per year of time are spent hunting specifically at the SMC facility.
Exposure Time	ET	hours per day	24			--	--	Conservatively assumes that the hunter spends 24 hours per day on the site before they are discovered and removed by the SMC staff.
Indoor Time Fraction	FIND	Unitless, 0 to 1	0	Point Estimate		O	S	The fraction of a total year (8,760hr) that is spent indoors on site. In order to maximize the total dose, this model assumes that all exposures occur outdoors.
Outdoor Time Fraction	FOTD	Unitless, 0 to 1	0.009	Triangular	Range: 0 to 0.017	O	S	The fraction of a total year (8,760hr) that is spent outdoors on Site. Equals 75 hrs outdoors on Site divided by 8760 hours. The probabilistic distribution ranges to twice the CT value.
Fruits, vegetables and grain consumption	DIET(1)	kg/yr						Not used

[191] U.S. Environmental Protection Agency, *Exposure Factors Handbook, Volume I, General Factors*, EPA 600/P-95-002Fa, August, 1997.
[192] Argonne National Laboratory, *User's Manual for RESRAD Version 6*, July, 2001.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Leafy vegetable consumption	DIET(2)	kg/yr						Not used
Milk consumption	DIET(3)	L/yr						Not used
Meat and poultry consumption	DIET(4)	Kg/yr	63					RESRAD default
Fish consumption	DIET(5)	Kg/yr						Not used
Other seafood consumption	DIET(6)	Kg/yr						Not used
Soil Ingestion Rate	SOIL	g/y	18.3	Triangular	Range: 0.36.5	D	I	USEPA default value for adults engaged in non-contact intensive activities (50 mg/day).
Drinking water intake	DWI	L/yr				D	I	Not used
Contamination fraction of drinking water	FDW	unitless						Not used
Contamination fraction of household water	FHHW	unitless						Not used
Contamination fraction of livestock water	FLW	unitless						Not used
Contamination fraction of irrigation water	FIRW	unitless						Not used
Contamination fraction of aquatic food	FR9	unitless						Not used
Contamination fraction of plant food	FPLANT	unitless						Not used
Contamination fraction of meat	FMEAT	unitless	0.3	Triangular	Min 0 Max 0.5			The value of 30% is conservative in that the size of the site is small relative to the grazing land required to support game habitat. The use of the triangular distribution (i.e., 0 to 50%) results in a more conservative estimate than the RESRAD default for this site.[193]

[193] U.S. Environmental Protection Agency, *Exposure Factors Handbook, Food Ingestion Factors*, Volume II, EPA/600/P-95/002Fb, August, 1997.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Contamination fraction of milk	FMILK	unitless						Not used
Depth of Soil Mixing Layer	DM	m	0.15	Triangular	Range: 0 to 0.6	D	I	Value based on conceptual site model for surface soil.[194]
Depth of Roots	DROOT	m	0.9	Uniform	Min 0.3 Max 4.0	D	I	

5.5 Results

The radiation dose potential for a hypothetical person who trespasses in the unrestricted area of the SMC facility to hunt. That individual may come in contact with the soil containing residual isotopes at levels equal to or below the DCGLs. The driving exposure pathway is direct exposure from residual radioactivity on the ground and ingestion of meat from animals that graze at the site. Direct exposure contributed 47% of the dose and meat ingestion contributed 52%, both of which reach their peak at year zero after decommissioning is complete. The following table is a summary of the dose modeling results:

Statistic	Projected Annual Dose (millirem/year)
Annual Dose Limit	25.0
Peak Mean Annual Dose	2.4 ± 1.0
50th Percentile	2.3 ± 0.06
90th Percentile	3.7 ± 0.12
95th Percentile	4.1 ± 0.12
Maximum Annual Radiation Dose	5.3
Deterministic Estimate, Peak Annual Dose	3.3 at year zero (0)

The pages that follow are the RESRAD summary reports for this exposure scenario.

[194] U.S. Nuclear Regulatory Commission, *Residual Radioactive Contamination from Decommissioning: Parameter Analysis*, NUREG/CR-5512, Vol.3, October 1999.

6 AGRICULTURAL FARM FAMILY PACKAGE (RESTRICTED)

6.1 General Information

An agricultural farm family at the SMC facility is a hypothetical subsistence family that builds a home in the restricted area, raises crops and livestock for family consumption on the restricted area, consumes water from a well drilled on the restricted area, ingests fish from a pond fed by water that comes in contact with the materials under the engineered barrier, and drinks milk from cows that graze only within the restricted area. The following are just a few reasons why this scenario is unreasonable:

- The hypothetical family is not likely to build a home on top of the rock-covered engineered barrier, with its side slopes, when there is level land so close by.
- Digging a foundation through the rock cover would be difficult, and the available flat surface on top of the engineered barrier make ingress and egress to the dwelling up a steep embankment undesirable.
- An on-site drinking water well would have to be installed next to the engineered barrier rather than through it because it is, and will continue to be, nearly impossible and extremely expensive to penetrate the consolidated pile even if using sophisticated machinery (e.g. diamond tipped mechanical drilling equipment).
- There is not enough land within the restricted area (11.7 acres) to for crop growth and cattle grazing sufficient to support the subsistence family.
- Any ponded water within in the restricted area would be too small to support a reasonable fish population, thus it would not likely be as popular as the many nearby fishing ponds (e.g. Malaga lake).

Most importantly, the restricted area is comprised of only 47,195 square meters (508,000 square feet), 40,522 square meters of which (436,500 square feet) will be rock covered. This leaves just less than two acres for farming. Given that 0.25 acres to 10 acres are required per person for subsistence farming, with even more acreage required for animal husbandry, SMC believes this scenario is not only highly improbable, it is impossible.[195] The abundance or arable land in the vicinity of the restricted area further eliminates this scenario from the realm of possibility. Nonetheless, at NRC Staff request, and in order to develop the upper bound of the dose potential, the agricultural farm family scenario is included in the dose assessment process.

6.2 Critical Group Description

The unrestricted portion of the site will be fenced and signs will be posted that prohibit trespassers from entering the property. SMC will maintain these controls for the foreseeable future, thus the agricultural farm family would only occupy the property if all controls fail. In fact, the agricultural farm family scenario would only occur in two ways:

- As a result of a breakdown in the existing civil society following a catastrophic event such as a global pandemic, global war, global natural disaster (such as a massive

[195] See http://www.economicexpert.com/a/Subsistence:farming.htm.

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary 6
Summary of Pathway Selections 11
Contaminated Zone and Total Dose Summary 12
Total Dose Components
Time = 0.000E+00 13
Time = 1.000E+00 14
Time = 1.000E+01 15
Time = 1.000E+02 16
Time = 3.000E+02 17
Time = 5.000E+02 18
Time = 7.000E+02 19
Time = 9.000E+02 20
Time = 1.000E+03 21
Dose/Source Ratios Summed Over All Pathways 22
Single Radionuclide Soil Guidelines 23
Dose Per Nuclide Summed Over All Pathways 24
Soil Concentration Per Nuclide 25

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)

A-1	Ra-223	(Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224	(Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226	(Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219	(Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220	(Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222	(Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227	(Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228	(Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230	(Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231	(Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232	(Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234	(Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207	(Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208	(Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210	(Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234	(Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235	(Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238	(Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D		6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231		1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D		2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D		8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D		5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D		3.454E-01	3.420E-01	DCF2(6)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2(12)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3(2)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(5)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(6)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(7)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(8)
D-1	U-234	2.830E-04	2.830E-04	DCF3(9)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(10)
D-1	U-238	2.550E-04	2.550E-04	DCF3(11)
D-1	U-238+D	2.687E-04	2.550E-04	DCF3(12)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)

```
D-34 ³ Ac-227+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,2)
D-34 ³ Ac-227+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Pa-231    , plant/soil concentration ratio, dimensionless  ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  2,1)
D-34 ³ Pa-231    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 5.000E-03 ³ 5.000E-03 ³ RTF(  2,2)
D-34 ³ Pa-231    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  2,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Pb-210+D  , plant/soil concentration ratio, dimensionless  ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  3,1)
D-34 ³ Pb-210+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 8.000E-04 ³ 8.000E-04 ³ RTF(  3,2)
D-34 ³ Pb-210+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 3.000E-04 ³ 3.000E-04 ³ RTF(  3,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Ra-226+D  , plant/soil concentration ratio, dimensionless  ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  4,1)
D-34 ³ Ra-226+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,2)
D-34 ³ Ra-226+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Ra-228+D  , plant/soil concentration ratio, dimensionless  ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  5,1)
D-34 ³ Ra-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,2)
D-34 ³ Ra-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Th-228+D  , plant/soil concentration ratio, dimensionless  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  6,1)
D-34 ³ Th-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  6,2)
D-34 ³ Th-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  6,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Th-230    , plant/soil concentration ratio, dimensionless  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  7,1)
D-34 ³ Th-230    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  7,2)
D-34 ³ Th-230    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  7,3)
D-34 ³                                                            ³           ³           ³
```


Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

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0 ,  ³                                                            ³ Current  ³   Base    ³  Parameter
 Menu ³                          Parameter                        ³  Value#  ³   Case*   ³    Name
ÄÄÄ
```

D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(4,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(4,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(7,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(7,2)
D-5				
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(8,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(8,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(9,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(11,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(11,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(12,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(12,2)

#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.

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)	2.440E+05	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E-01	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	4.940E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+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)	1.000E+01	3.000E+00	---	T(3)

R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	5.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	7.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	9.000E+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): Ac-227	8.000E-01	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Pa-231	8.000E-01	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.200E+01	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.200E+01	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	4.400E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	4.400E+00	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Th-230	1.200E+01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Th-232	4.400E+00	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-234	1.200E+01	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): U-235	8.000E-01	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): U-238	1.200E+01	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L): Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Pa-231	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(11)
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	4.050E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.250E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	7.300E-01	5.000E-01	---	EVAPTR

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Precipitation (m/yr)	1.050E+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)	2.770E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.510E+00	1.500E+00	---	DENSAQ

R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.830E-01	2.000E-01	---	EPSZ
R014.	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	9.500E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.000E-03	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.900E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.510E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.300E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	3.830E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.050E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	9.500E+03	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.772E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.268E-03	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.619E-03	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.532E-04	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(5)

R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.532E-04	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,1)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.121E-04	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,1)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.121E-04	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.121E-04	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.890E-03	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.890E-03	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,1)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.890E-03	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	3.000E-05	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	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	9.000E-03	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)	6.300E+01	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	1.830E+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	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	1.000E+00	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	3.000E-01	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	6.800E+01	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)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	5.000E-01	5.000E-01	---	LSI

R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	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	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	1.000E+00	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)	1.100E+00	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)	8.000E-02	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	1.000E+00	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	2.500E-01	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	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	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

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	1	---	---	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	active
5 -- milk ingestion	suppressed
6 -- aquatic foods	suppressed
7 -- drinking water	suppressed
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

1RESRAD, Version 6.4 T« Limit = 180 days 08/07/2009 09:23 Page 12
Summary : SMC Recreational Hunter Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109802.RAD

Contaminated Zone Dimensions

Area: 244000.00 square meters
Thickness: 0.15 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations, pCi/g

Ac-227	8.000E-01
Pa-231	8.000E-01
Pb-210	1.200E+01
Ra-226	1.200E+01
Ra-228	4.400E+00
Th-228	4.400E+00
Th-230	1.200E+01
Th-232	4.400E+00
U-234	1.200E+01
U-235	8.000E-01
U-238	1.200E+01

0

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

t (years):	0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
TDOSE(t):	3.346E+00	3.326E+00	3.141E+00	1.389E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

M(t): 1.338E-01 1.330E-01 1.256E-01 5.555E-02 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00

0Maximum TDOSE(t): 3.346E+00 mrem/yr at t = 0.000E+00 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 = 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	1.321E-02	0.0039	1.357E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	2.318E-03	0.0007	0.000E+00	0.0000	1.910E-03	0.0006
Pa-231	1.482E-03	0.0004	2.841E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	4.908E-01	0.1467	0.000E+00	0.0000	1.421E-03	0.0004
Pb-210	6.286E-04	0.0002	7.016E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.937E-01	0.2372	0.000E+00	0.0000	1.408E-02	0.0042
Ra-226	1.010E+00	0.3019	2.755E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.998E-01	0.0896	0.000E+00	0.0000	2.821E-03	0.0008
Ra-228	2.401E-01	0.0718	6.563E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.090E-01	0.0326	0.000E+00	0.0000	1.071E-03	0.0003
Th-228	2.700E-01	0.0807	3.271E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	2.877E-03	0.0009	0.000E+00	0.0000	4.899E-04	0.0001
Th-230	3.472E-04	0.0001	1.004E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	6.391E-03	0.0019	0.000E+00	0.0000	1.080E-03	0.0003
Th-232	1.380E-02	0.0041	1.854E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	1.699E-02	0.0051	0.000E+00	0.0000	2.036E-03	0.0006
U-234	4.268E-05	0.0000	4.044E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.145E-02	0.0034	0.000E+00	0.0000	5.547E-04	0.0002
U-235	5.187E-03	0.0016	2.513E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.256E-04	0.0002	0.000E+00	0.0000	3.495E-05	0.0000
U-238	1.456E-02	0.0044	3.617E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.087E-02	0.0032	0.000E+00	0.0000	5.267E-04	0.0002
Total	1.569E+00	0.4690	5.780E-03	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	1.745E+00	0.5215	0.000E+00	0.0000	2.603E-02	0.0078

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	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	0.000E+00	0.0000	1.879E-02	0.0056
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	0.000E+00	0.0000	4.940E-01	0.1476
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	0.000E+00	0.0000	8.085E-01	0.2416
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	1.313E+00	0.3923
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	0.000E+00	0.0000	3.503E-01	0.1047
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	0.000E+00	0.0000	2.737E-01	0.0818
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.821E-03	0.0026
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	3.468E-02	0.0104
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.245E-02	0.0037
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	5.973E-03	0.0018
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.632E-02	0.0079
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	3.346E+00	1.0000

0*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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.

Ac-227	1.274E-02	0.0038	1.302E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	2.224E-03	0.0007	0.000E+00	0.0000	1.833E-03	0.0006
Pa-231	1.889E-03	0.0006	3.237E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	4.867E-01	0.1463	0.000E+00	0.0000	1.467E-03	0.0004
Pb-210	6.062E-04	0.0002	6.725E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.608E-01	0.2288	0.000E+00	0.0000	1.350E-02	0.0041
Ra-226	1.007E+00	0.3028	2.947E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.221E-01	0.0968	0.000E+00	0.0000	3.227E-03	0.0010
Ra-228	2.891E-01	0.0869	1.504E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.696E-02	0.0292	0.000E+00	0.0000	1.082E-03	0.0003
Th-228	1.875E-01	0.0564	2.261E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.989E-03	0.0006	0.000E+00	0.0000	3.387E-04	0.0001
Th-230	7.831E-04	0.0002	9.968E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	6.479E-03	0.0019	0.000E+00	0.0000	1.074E-03	0.0003
Th-232	4.599E-02	0.0138	1.855E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	2.903E-02	0.0087	0.000E+00	0.0000	2.151E-03	0.0006
U-234	4.225E-05	0.0000	3.978E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.126E-02	0.0034	0.000E+00	0.0000	5.456E-04	0.0002
U-235	5.132E-03	0.0015	2.472E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.240E-04	0.0002	0.000E+00	0.0000	3.441E-05	0.0000
U-238	1.439E-02	0.0043	3.557E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.069E-02	0.0032	0.000E+00	0.0000	5.180E-04	0.0002
Total	1.565E+00	0.4707	5.729E-03	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	1.729E+00	0.5199	0.000E+00	0.0000	2.577E-02	0.0077

0

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

0

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.
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	0.000E+00	0.0000	1.810E-02	0.0054
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	0.000E+00	0.0000	4.904E-01	0.1475
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	0.000E+00	0.0000	7.750E-01	0.2330
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	1.332E+00	0.4006
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	0.000E+00	0.0000	3.873E-01	0.1165
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	0.000E+00	0.0000	1.900E-01	0.0571
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.333E-03	0.0028
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	7.902E-02	0.0238
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.225E-02	0.0037
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	5.915E-03	0.0018
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.596E-02	0.0078
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	3.326E+00	1.0000

0*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+01 years
Water Independent Pathways (Inhalation excludes radon)

0

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.
Ac-227	9.216E-03	0.0029	8.956E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	1.530E-03	0.0005	0.000E+00	0.0000	1.261E-03	0.0004
Pa-231	4.892E-03	0.0016	5.957E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	4.484E-01	0.1428	0.000E+00	0.0000	1.770E-03	0.0006
Pb-210	4.373E-04	0.0001	4.581E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.183E-01	0.1650	0.000E+00	0.0000	9.194E-03	0.0029
Ra-226	9.794E-01	0.3118	4.255E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.708E-01	0.1499	0.000E+00	0.0000	6.032E-03	0.0019
Ra-228	1.773E-01	0.0565	1.427E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.152E-02	0.0100	0.000E+00	0.0000	4.848E-04	0.0002
Th-228	7.011E-03	0.0022	8.132E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.153E-05	0.0000	0.000E+00	0.0000	1.218E-05	0.0000
Th-230	4.596E-03	0.0015	9.346E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	7.599E-03	0.0024	0.000E+00	0.0000	1.025E-03	0.0003
Th-232	3.256E-01	0.1037	1.941E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	8.833E-02	0.0281	0.000E+00	0.0000	2.851E-03	0.0009
U-234	3.875E-05	0.0000	3.419E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	9.680E-03	0.0031	0.000E+00	0.0000	4.689E-04	0.0001
U-235	4.654E-03	0.0015	2.133E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.047E-04	0.0002	0.000E+00	0.0000	2.986E-05	0.0000
U-238	1.296E-02	0.0041	3.057E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	9.191E-03	0.0029	0.000E+00	0.0000	4.452E-04	0.0001
Total	1.526E+00	0.4859	5.275E-03	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	1.586E+00	0.5050	0.000E+00	0.0000	2.357E-02	0.0075

0

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

0 Water Dependent Pathways

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.
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	0.000E+00	0.0000	1.290E-02	0.0041
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	0.000E+00	0.0000	4.557E-01	0.1451
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	0.000E+00	0.0000	5.280E-01	0.1681
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	1.456E+00	0.4636
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	0.000E+00	0.0000	2.095E-01	0.0667
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	0.000E+00	0.0000	7.103E-03	0.0023
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.415E-02	0.0045
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	4.187E-01	0.1333
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.053E-02	0.0034
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	5.410E-03	0.0017
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.291E-02	0.0073
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	3.141E+00	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 08/07/2009 09:23 Page 16
Summary : SMC Recreational Hunter Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109802.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

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.
Ac-227	2.740E-04	0.0002	1.411E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.413E-05	0.0000	0.000E+00	0.0000	1.986E-05	0.0000
Pa-231	7.337E-03	0.0053	4.129E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	1.300E-01	0.0936	0.000E+00	0.0000	8.501E-04	0.0006
Pb-210	1.451E-05	0.0000	6.540E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.407E-03	0.0053	0.000E+00	0.0000	1.312E-04	0.0001
Ra-226	5.474E-01	0.3942	2.697E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.019E-01	0.2174	0.000E+00	0.0000	4.583E-03	0.0033
Ra-228	2.098E-06	0.0000	1.034E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.114E-07	0.0000	0.000E+00	0.0000	3.358E-09	0.0000
Th-228	2.789E-17	0.0000	1.952E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.718E-19	0.0000	0.000E+00	0.0000	2.923E-20	0.0000
Th-230	2.462E-02	0.0177	3.260E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.311E-02	0.0094	0.000E+00	0.0000	5.111E-04	0.0004
Th-232	2.978E-01	0.2145	7.282E-04	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	4.179E-02	0.0301	0.000E+00	0.0000	1.165E-03	0.0008
U-234	2.164E-05	0.0000	4.999E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.416E-03	0.0010	0.000E+00	0.0000	6.855E-05	0.0000
U-235	1.361E-03	0.0010	3.598E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.820E-04	0.0002	0.000E+00	0.0000	5.412E-06	0.0000
U-238	3.484E-03	0.0025	4.456E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.341E-03	0.0010	0.000E+00	0.0000	6.489E-05	0.0000
Total	8.823E-01	0.6354	1.607E-03	0.0012	0.000E+00	0.0000	0.000E+00	0.0000	4.973E-01	0.3581	0.000E+00	0.0000	7.400E-03	0.0053

0

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

0 Water Dependent Pathways

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.
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	0.000E+00	0.0000	3.321E-04	0.0002
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	0.000E+00	0.0000	1.386E-01	0.0998
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	0.000E+00	0.0000	7.553E-03	0.0054
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	8.539E-01	0.6149
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	0.000E+00	0.0000	2.314E-06	0.0000

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	0.000E+00	0.0000	2.811E-17	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.856E-02	0.0278
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	3.415E-01	0.2459
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.556E-03	0.0011
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	1.652E-03	0.0012
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.934E-03	0.0036
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	1.389E+00	1.0000

0*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 = 3.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

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

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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 = 5.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years
0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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 = 7.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000

Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 7.000E+02 years

0

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T½ Limit = 180 days 08/07/2009 09:23 Page 20
Summary : SMC Recreational Hunter Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109802.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 = 9.000E+02 years

0

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.000E+02 years

0

Water Dependent Pathways

Radio-	Water	Fish	Radon	Plant	Meat	Milk	All Pathways*

Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 08/07/2009 09:23 Page 21

Summary : SMC Recreational Hunter Controls Fail Unrestricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109802.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-	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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0

Radio-	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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

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íííííííí íííííííííí íííííííí íííííííííí íííííííí íííííííííí íííííííí íííííííííí íííííííí íííííííííí íííííííí íííííííííí íííííííí íííííííííí íííííííí
 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  0.000E+00 0.0000
0*Sum of all water independent and dependent pathways.
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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

0 Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
Ac-227+D	Ac-227+D	1.000E+00	2.349E-02	2.263E-02	1.613E-02	4.151E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pa-231	Pa-231	1.000E+00	6.159E-01	6.104E-01	5.618E-01	1.628E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pa-231	Ac-227+D	1.000E+00	1.643E-03	2.578E-03	7.772E-03	1.051E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pa-231	äDSR(j)		6.175E-01	6.130E-01	5.696E-01	1.733E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pb-210+D	Pb-210+D	1.000E+00	6.737E-02	6.458E-02	4.400E-02	6.295E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Ra-226+D	Ra-226+D	1.000E+00	1.081E-01	1.077E-01	1.038E-01	5.292E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.266E-03	3.335E-03	1.757E-02	1.824E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	äDSR(j)		1.094E-01	1.110E-01	1.214E-01	7.116E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Ra-228+D	Ra-228+D	1.000E+00	6.790E-02	5.995E-02	1.950E-02	1.902E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	1.170E-02	2.808E-02	2.811E-02	3.357E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	äDSR(j)		7.961E-02	8.803E-02	4.761E-02	5.260E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-228+D	Th-228+D	1.000E+00	6.221E-02	4.319E-02	1.614E-03	6.388E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	7.125E-04	7.077E-04	6.641E-04	2.358E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Ra-226+D	1.000E+00	2.245E-05	6.889E-05	4.724E-04	2.371E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Pb-210+D	1.000E+00	1.870E-07	1.189E-06	4.300E-05	6.070E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	äDSR(j)		7.351E-04	7.777E-04	1.179E-03	3.213E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-232	Th-232	1.000E+00	3.505E-03	3.481E-03	3.264E-03	1.139E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-232	Ra-228+D	1.000E+00	3.884E-03	1.150E-02	4.933E-02	3.505E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-232	Th-228+D	1.000E+00	4.924E-04	2.978E-03	4.257E-02	4.142E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-232	äDSR(j)		7.881E-03	1.796E-02	9.516E-02	7.761E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0U-234	U-234	1.000E+00	1.038E-03	1.021E-03	8.774E-04	1.285E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Th-230	1.000E+00	3.766E-09	1.014E-08	6.025E-08	1.365E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Ra-226+D	1.000E+00	6.581E-11	4.734E-10	2.158E-08	8.015E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Pb-210+D	1.000E+00	4.249E-13	5.915E-12	1.377E-09	1.743E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	äDSR(j)		1.038E-03	1.021E-03	8.774E-04	1.297E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0U-235+D	U-235+D	1.000E+00	7.461E-03	7.375E-03	6.642E-03	1.811E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-235+D	Pa-231	1.000E+00	5.734E-06	1.838E-05	1.192E-04	2.419E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-235+D	Ac-227+D	1.000E+00	1.609E-08	6.251E-08	1.021E-06	1.238E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-235+D	äDSR(j)		7.466E-03	7.394E-03	6.762E-03	2.065E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0U-238	U-238	5.400E-05	5.035E-08	4.953E-08	4.257E-08	6.219E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0U-238+D	U-238+D	9.999E-01	2.193E-03	2.163E-03	1.909E-03	4.111E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	U-234	9.999E-01	1.467E-09	4.336E-09	2.611E-08	3.662E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Th-230	9.999E-01	3.891E-15	2.358E-14	8.906E-13	1.636E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Ra-226+D	9.999E-01	4.582E-17	7.086E-16	2.105E-13	6.494E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Pb-210+D	9.999E-01	2.399E-19	7.072E-18	1.039E-14	1.216E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	äDSR(j)		2.193E-03	2.163E-03	1.909E-03	4.111E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

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The DSR includes contributions from associated (half-life ó 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g

Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03

Ac-227	1.064E+03	1.105E+03	1.550E+03	6.022E+04	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13
Pa-231	4.049E+01	4.078E+01	4.389E+01	1.443E+02	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10
Pb-210	3.711E+02	3.871E+02	5.682E+02	3.972E+04	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13
Ra-226	2.285E+02	2.252E+02	2.060E+02	3.513E+02	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11
Ra-228	3.141E+02	2.840E+02	5.251E+02	4.753E+07	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14
Th-228	4.019E+02	5.789E+02	1.549E+04	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	3.401E+04	3.214E+04	2.120E+04	7.780E+03	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10
Th-232	3.172E+03	1.392E+03	2.627E+02	3.221E+02	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05
U-234	2.409E+04	2.449E+04	2.849E+04	1.928E+05	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09
U-235	3.348E+03	3.381E+03	3.697E+03	1.210E+04	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06
U-238	1.140E+04	1.156E+04	1.310E+04	6.081E+04	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05

*At specific activity limit

0

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

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Ac-227	8.000E-01	0.000E+00	2.349E-02	1.064E+03	2.349E-02	1.064E+03
Pa-231	8.000E-01	0.000E+00	6.175E-01	4.049E+01	6.175E-01	4.049E+01
Pb-210	1.200E+01	0.000E+00	6.737E-02	3.711E+02	6.737E-02	3.711E+02
Ra-226	1.200E+01	24.54 ñ 0.05	1.265E-01	1.976E+02	1.094E-01	2.285E+02
Ra-228	4.400E+00	1.921 ñ 0.004	9.004E-02	2.777E+02	7.961E-02	3.141E+02
Th-228	4.400E+00	0.000E+00	6.221E-02	4.019E+02	6.221E-02	4.019E+02
Th-230	1.200E+01	84.0 ñ 0.2	3.355E-03	7.452E+03	7.351E-04	3.401E+04
Th-232	4.400E+00	28.79 ñ 0.06	1.289E-01	1.940E+02	7.881E-03	3.172E+03
U-234	1.200E+01	0.000E+00	1.038E-03	2.409E+04	1.038E-03	2.409E+04
U-235	8.000E-01	0.000E+00	7.466E-03	3.348E+03	7.466E-03	3.348E+03
U-238	1.200E+01	0.000E+00	2.193E-03	1.140E+04	2.193E-03	1.140E+04

1RESRAD, Version 6.4 T« Limit = 180 days 08/07/2009 09:23 Page 24
Summary : SMC Recreational Hunter Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109802.RAD

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

0Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
Ac-227	Ac-227	1.000E+00	1.879E-02	1.810E-02	1.290E-02	3.321E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ac-227	Pa-231	1.000E+00	1.315E-03	2.062E-03	6.218E-03	8.405E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ac-227	U-235	1.000E+00	1.287E-08	5.001E-08	8.166E-07	9.907E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ac-227	ädose(j)		2.011E-02	2.016E-02	1.912E-02	8.747E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pa-231	Pa-231	1.000E+00	4.927E-01	4.883E-01	4.495E-01	1.302E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pa-231	U-235	1.000E+00	4.587E-06	1.470E-05	9.536E-05	1.935E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pa-231	ädose(j)		4.927E-01	4.884E-01	4.496E-01	1.304E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pb-210	Pb-210	1.000E+00	8.085E-01	7.750E-01	5.280E-01	7.553E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Ra-226	1.000E+00	1.519E-02	4.003E-02	2.109E-01	2.189E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Th-230	1.000E+00	2.245E-06	1.427E-05	5.160E-04	7.284E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-234	1.000E+00	5.099E-12	7.098E-11	1.652E-08	2.092E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	9.999E-01	2.879E-18	8.487E-17	1.247E-13	1.460E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	ädose(j)		8.237E-01	8.151E-01	7.394E-01	2.337E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Ra-226	Ra-226	1.000E+00	1.297E+00	1.292E+00	1.245E+00	6.351E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	Th-230	1.000E+00	2.694E-04	8.266E-04	5.669E-03	2.845E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	U-234	1.000E+00	7.897E-10	5.681E-09	2.590E-07	9.618E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Ra-226	U-238	9.999E-01	5.498E-16	8.504E-15	2.526E-12	7.793E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	äDOSE(j)		1.298E+00	1.293E+00	1.251E+00	6.635E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Ra-228	Ra-228	1.000E+00	2.988E-01	2.638E-01	8.580E-02	8.370E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228	Th-232	1.000E+00	1.709E-02	5.061E-02	2.170E-01	1.542E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228	äDOSE(j)		3.159E-01	3.144E-01	3.028E-01	1.542E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-228	Ra-228	1.000E+00	5.149E-02	1.236E-01	1.237E-01	1.477E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-228	1.000E+00	2.737E-01	1.900E-01	7.103E-03	2.811E-17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	2.167E-03	1.310E-02	1.873E-01	1.822E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	äDOSE(j)		3.274E-01	3.267E-01	3.181E-01	1.822E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	8.550E-03	8.492E-03	7.969E-03	2.829E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-234	1.000E+00	4.519E-08	1.217E-07	7.230E-07	1.638E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	9.999E-01	4.669E-14	2.830E-13	1.069E-11	1.963E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	äDOSE(j)		8.550E-03	8.492E-03	7.969E-03	2.831E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-232	Th-232	1.000E+00	1.542E-02	1.532E-02	1.436E-02	5.012E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0U-234	U-234	1.000E+00	1.245E-02	1.225E-02	1.053E-02	1.542E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	9.999E-01	1.760E-08	5.203E-08	3.133E-07	4.395E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	äDOSE(j)		1.245E-02	1.225E-02	1.053E-02	1.543E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0U-235	U-235	1.000E+00	5.968E-03	5.900E-03	5.314E-03	1.449E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0U-238	U-238	5.400E-05	6.042E-07	5.943E-07	5.108E-07	7.463E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238	U-238	9.999E-01	2.632E-02	2.596E-02	2.291E-02	4.933E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238	äDOSE(j)		2.632E-02	2.596E-02	2.291E-02	4.933E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
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THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+00	8.000E-01	7.728E-01	5.660E-01	2.513E-02	2.478E-05	2.445E-08	2.411E-11	2.378E-14	7.470E-16
Ac-227	Pa-231	1.000E+00	0.000E+00	2.500E-02	2.127E-01	6.020E-01	3.965E-01	2.508E-01	1.587E-01	1.004E-01	7.985E-02
Ac-227	U-235	1.000E+00	0.000E+00	2.653E-07	2.311E-05	6.992E-04	9.563E-04	6.779E-04	4.390E-04	2.791E-04	2.221E-04
Ac-227	äS(j):		8.000E-01	7.978E-01	7.787E-01	6.279E-01	3.975E-01	2.515E-01	1.591E-01	1.007E-01	8.007E-02
0Pa-231	Pa-231	1.000E+00	8.000E-01	7.982E-01	7.819E-01	6.363E-01	4.025E-01	2.546E-01	1.611E-01	1.019E-01	8.106E-02
Pa-231	U-235	1.000E+00	0.000E+00	1.682E-05	1.593E-04	9.430E-04	1.006E-03	6.931E-04	4.463E-04	2.834E-04	2.255E-04
Pa-231	äS(j):		8.000E-01	7.982E-01	7.821E-01	6.372E-01	4.035E-01	2.553E-01	1.615E-01	1.022E-01	8.128E-02
0Pb-210	Pb-210	1.000E+00	1.200E+01	1.158E+01	8.397E+00	3.378E-01	2.677E-04	2.122E-07	1.681E-10	1.332E-13	3.751E-15
Pb-210	Ra-226	1.000E+00	0.000E+00	3.663E-01	3.124E+00	9.574E+00	8.437E+00	7.210E+00	6.160E+00	5.264E+00	4.866E+00
Pb-210	Th-230	1.000E+00	0.000E+00	7.981E-05	7.173E-03	3.162E-01	1.073E+00	1.688E+00	2.180E+00	2.569E+00	2.729E+00
Pb-210	U-234	1.000E+00	0.000E+00	2.396E-10	2.162E-07	9.032E-05	6.580E-04	1.256E-03	1.757E-03	2.158E-03	2.325E-03
Pb-210	U-238	9.999E-01	0.000E+00	1.699E-16	1.537E-12	6.267E-09	1.112E-07	2.763E-07	4.315E-07	5.603E-07	6.147E-07
Pb-210	äS(j):		1.200E+01	1.195E+01	1.153E+01	1.023E+01	9.511E+00	8.899E+00	8.342E+00	7.834E+00	7.597E+00
0Ra-226	Ra-226	1.000E+00	1.200E+01	1.199E+01	1.191E+01	1.109E+01	9.478E+00	8.099E+00	6.920E+00	5.913E+00	5.466E+00
Ra-226	Th-230	1.000E+00	0.000E+00	5.196E-03	5.172E-02	4.944E-01	1.342E+00	2.027E+00	2.574E+00	3.005E+00	3.183E+00
Ra-226	U-234	1.000E+00	0.000E+00	2.331E-08	2.257E-06	1.666E-04	8.571E-04	1.532E-03	2.090E-03	2.536E-03	2.721E-03
Ra-226	U-238	9.999E-01	0.000E+00	2.200E-14	2.100E-11	1.344E-08	1.523E-07	3.440E-07	5.186E-07	6.621E-07	7.225E-07
Ra-226	äS(j):		1.200E+01	1.200E+01	1.196E+01	1.159E+01	1.082E+01	1.013E+01	9.496E+00	8.921E+00	8.652E+00
0Ra-228	Ra-228	1.000E+00	4.400E+00	3.899E+00	1.313E+00	2.471E-05	7.790E-16	2.456E-26	7.744E-37	0.000E+00	0.000E+00
Ra-228	Th-232	1.000E+00	0.000E+00	4.995E-01	3.074E+00	4.303E+00	4.124E+00	3.953E+00	3.788E+00	3.631E+00	3.555E+00
Ra-228	äS(j):		4.400E+00	4.398E+00	4.387E+00	4.303E+00	4.124E+00	3.953E+00	3.788E+00	3.631E+00	3.555E+00
0Th-228	Ra-228	1.000E+00	0.000E+00	1.255E+00	1.794E+00	3.705E-05	1.168E-15	3.683E-26	1.161E-36	0.000E+00	0.000E+00
Th-228	Th-228	1.000E+00	4.400E+00	3.062E+00	1.172E-01	7.926E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	8.201E-02	2.477E+00	4.303E+00	4.124E+00	3.953E+00	3.788E+00	3.631E+00	3.555E+00
Th-228	äS(j):		4.400E+00	4.399E+00	4.388E+00	4.303E+00	4.124E+00	3.953E+00	3.788E+00	3.631E+00	3.555E+00
0Th-230	Th-230	1.000E+00	1.200E+01	1.200E+01	1.197E+01	1.174E+01	1.123E+01	1.074E+01	1.028E+01	9.835E+00	9.620E+00
Th-230	U-234	1.000E+00	0.000E+00	1.075E-04	1.027E-03	6.772E-03	9.878E-03	9.921E-03	9.557E-03	9.152E-03	8.953E-03

```
 Th-230  U-238   9.999E-01    0.000E+00 1.521E-10 1.433E-08 8.075E-07 2.408E-06 2.796E-06 2.780E-06 2.680E-06 2.623E-06
 Th-230  äS(j):               1.200E+01 1.200E+01 1.197E+01 1.174E+01 1.124E+01 1.075E+01 1.029E+01 9.844E+00 9.629E+00
0Th-232  Th-232  1.000E+00    4.400E+00 4.399E+00 4.391E+00 4.308E+00 4.129E+00 3.957E+00 3.793E+00 3.635E+00 3.559E+00
0U-234   U-234   1.000E+00    1.200E+01 1.188E+01 1.087E+01 4.462E+00 6.170E-01 8.532E-02 1.180E-02 1.631E-03 6.067E-04
 U-234   U-238   9.999E-01    0.000E+00 3.368E-05 3.081E-04 1.265E-03 5.250E-04 1.210E-04 2.344E-05 4.168E-06 1.722E-06
 U-234   äS(j):               1.200E+01 1.188E+01 1.087E+01 4.464E+00 6.176E-01 8.544E-02 1.182E-02 1.636E-03 6.084E-04
0U-235   U-235   1.000E+00    8.000E-01 7.921E-01 7.247E-01 2.976E-01 4.117E-02 5.696E-03 7.881E-04 1.090E-04 4.056E-05
0U-238   U-238   5.400E-05    6.480E-04 6.416E-04 5.870E-04 2.410E-04 3.335E-05 4.614E-06 6.384E-07 8.832E-08 3.285E-08
 U-238   U-238   9.999E-01    1.200E+01 1.188E+01 1.087E+01 4.463E+00 6.175E-01 8.544E-02 1.182E-02 1.636E-03 6.084E-04
 U-238   äS(j):               1.200E+01 1.188E+01 1.087E+01 4.464E+00 6.176E-01 8.544E-02 1.182E-02 1.636E-03 6.084E-04
 ÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ    ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ
 THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time =  191.13 seconds
 Total water/soil iteration failures = 8.000E+00.
```

volcanic eruption) resulting in significant world and US population reduction with concurrent loss of significant portions of humanity's knowledge base;[196] and

- As a result of massive population increase on the eastern seaboard of the United States through either gradual general large scale world population increase, general massive US population increase or because of a massive sudden redistribution of population to the East Coast resulting from a local catastrophic event such as destruction of most major West Coast cities by earthquake, tsunami, or war.[197]

Nonetheless, the agricultural farm family, with a residence within the restricted area, becomes a critical group. In this case, the home is constructed next to, rather than on top of, the engineered barrier, on a surface that contains residual radioactivity equal to the DCGL for the SMC facility. As described in Section 3.3.1, above, the DCGL was derived for the Industrial Worker, which is the reasonably likely post-decommissioning use of the site.

6.3 Applicable Exposure Pathways

RESRAD identifies the following potential pathways for the Farm Family scenario:

- direct radiation exposure;
- particulate inhalation;
- plant ingestion;
- drinking water;
- meat ingestion;
- aquatic foods ingestion;
- milk ingestion; and
- direct ingestion.

Other exposure pathways are not applicable and were disabled for the purposes of this dose assessment. The following table is a list of the pathways that have been retained and provides an explanation for those that were not:

[196] This would consequently result in a loss of well organized government and institutional controls at the site. It can be envisaged that up until that point, institutional controls and hence engineering controls were in place and therefore well maintained. Even under these circumstances, because there is an abundance of high quality arable land in the local area, a subsistence farm family would be unlikely to choose the *immediate* vicinity of the engineered barrier to build a dwelling or grow crops and raise animals. Also, as noted in this subsection, the area in question is so small that any farming activity in the restricted area would be minimal and unlikely to be able to sustain a family.

[197] Under these circumstances it is expected that infrastructure would need to be significantly improved to cope with the increased population, requiring sophisticated government and therefore it is difficult to envisage how the knowledge of institutional controls would be lost such that a family could build and run a subsistence farm adjacent to the engineered barrier. Even if this were the case, a sophisticated government and society would be expected to quickly reestablish knowledge of the slag pile contents if the immediate area around it were to be inhabited.

Pathway	Retained	Comments
Direct Exposure	Yes	The residual radioactivity remaining after the site is released is at levels equal to or less than the DCGLs. Exposure from direct penetrating radiation is expected to be a significant contributor to the overall potential dose.
Particulate Inhalation	Yes	Allowance is made for soils containing radiological constituents of the source being liberated and suspended in the breathing air of the farm family.
Radon	No	Radon is specifically excluded from consideration within the framework of the governing regulations. In addition, was included. is not a significant producer of radon (see Appendix 19.2 of the DP).
Plant Ingestion	Yes	Ingestion of plant foods addresses those plant foods grown in the restricted area or irrigated with water containing radioactivity from the site. The Farm Families grow and ingest all of their plants at the site.
Drinking Water	Yes	Surface water on site is unfit for consumption as drinking water. No on-site sources of ground water have been developed for drinking water. However, for bounding purposes, this pathway is included. In addition, the dose stemming from impacted ground water from the restricted area is added to the total dose for the subsistence family.
Meat Ingestion	Yes	Farm families consume meat raised on the site. While this pathway is enabled for bounding purposes, the unrestricted area is too small to produce all of the meat likely to be ingested by a farm family.
Milk Ingestion	Yes	Milk ingestion pathway is included for this evaluation for bounding purposes.
Aquatic Foods Ingestion	Yes	Farm Families are assumed to ingest aquatic foods that are caught in the surface water bodies within the restricted area for bounding purposes.
Direct Ingestion	Yes	Farm families on the site may ingest small amounts of soil through incidental oral contact with their hands.

The potential for exposure to radon gas was eliminated from this assessment based upon regulatory guidance. The NRC documented their concurrence with this approach in the Statement of Consideration for the License Termination Rule:[198]

> *"Following the approach taken in the proposed rule, this final rule includes radiological criteria for residual radioactivity that is distinguishable from background. Because of natural transport of radon gas in outdoor areas due to diffusion and air currents, doses from exposure to radon in outside areas due to radium in the soil are negligible... Therefore, in implementing the final rule, licensees will not be expected to demonstrate that radon from licensed activities is indistinguishable from background on a site-specific basis..."*"

[198] U.S. Nuclear Regulatory Commission, *Radiological Criteria for License Termination*, Federal Register, Volume 62, Number 139, July 21, 1997.

Furthermore, measurements of radon emanation rate from the various materials that will be consolidated under the engineered barrier (see the Source Term Document in Appendix 19.2 of the DP) shows the dose potential from this pathway to be a negligible contributor.

6.4 Key Parameter Justification

A number of input parameters were selected for use in modeling the dose potential for this scenario. The following are justifications for those that are key to the analysis:

- Indoor Time Fraction - The total time spent indoors by the farm family is assumed to be 4,380 hours or 50% of the time spent at the site (RESRAD default parameter).

- Outdoor Time Fraction - It is assumed that the farm family spends approximately 2,190 hours outdoors or 25% of the time spent at the site (RESRAD default parameter).

- Inhalation Rate -The inhalation rate for the farm family is assumed to be equivalent to that of an adult male performing light work, which averages 8,400 cubic meters per year. This value is equal to the RESRAD default parameter for inhalation rate based on geometric mean rate for short term exposure to adult males.[199]

- Mass loading for inhalation - The RESRAD default value for mass loading was selected.[200] The mass loading in air describes the airborne dust loading conditions likely to be encountered at the site.

- Soil ingestion Rate - The farm family may ingest radioactivity as a result of incidental contact with soil that contains residual radioactivity equal to the DCGL for the Industrial worker. The value selected, 18.3 grams per year, is the RESRAD default parameter. The farm family does not access the consolidated material under the engineered barrier, but may ingest soil from incidental contact with the surface soil in the restricted area. The radiation dose associated with this value decreases as the ingestion of impacted soil decreases.

- Contaminated Fraction of Meat - The fraction of the annual meat diet that is obtained from game harvested from the restricted area is assumed to be 100%. This is an exceedingly conservative assumption because the size of the restricted area is too small to support animal grazing or a game habitat.

- Drinking Water - The RESRAD default value for the rural resident's water ingestion rate is 510 liters per year, which is consistent with the rate recommended by the EPA of 1.4 liters per day or 511 liters per year.[201]

Given the pathways described in Section 4.3, above, the following is a listing of the input parameters used for this exposure scenario:

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[199] U.S. Environmental Protection Agency, *Exposure Factors Handbook, Volume I, General Factors*, EPA 600/P-95-002Fa, August, 1997.
[200] Argonne National Laboratory, *User's Manual for RESRAD Version 6*, July, 2001.
[201] USEPA, 1997.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Dose Conversion Factors	DCFX(n)	millirem /pCi	All DCFs used are RESRAD defaults			D	S	RESRAD defaults from FGR#11 and FGR#12, derived using ICRP 30 dosimetry model.[202,203] Short-lived (<180 days) radioactive progeny isotopes are accounted for through the use of the "parent+D" DCFs.
Area of Contaminated Zone	AREA	m2	244,000	loguniform	Range 195,200 to 295,000 m2	S	S	The area of the unrestricted portion is represented by the area of the site excluding the Restricted area.
Thickness of Contaminated Zone	THICK0	m	0.15	Triangular	Range 0.1 to 0.3 m	S	S	The residual activity of the unrestricted area is assumed to be present in the top 15 cm of soil, pursuant to NRC guidance (NUREG 1575, and NUREG 1757) on the thickness of surface soil. As stated in the DP, the only impacted soil in the unrestricted area originated with surface deposition from airborne depositions.
Length Parallel to Aquifer Flow,	LCZPAQ	m	494.0	Triangular	Min 395.2 Max 592.8	S	S	The RESRAD default value is derived as the square root of the area of the contaminated zone.[204]
Basic Radiation dose limit	BRDL	mrem TEDE	25			D	S	
Time since placement of material	TI	yr	0			D	S	
Calculation Times	T(n)	Yrs.	1 10 100 300 500 700 900 1000	NA		--	--	Evaluation at these time segments allows for consideration of the potential for conditions at the Site to evolve from the initial conditions specified (e.g., soil erosion impacts the cover thickness) and projects the changing Site conditions to the required 1000-year outlook.[205,206]
Actinium-227	S(1)	pCi/g	0.8	Point Estimate		--	--	When equal concentrations of Th-230, Ra-226, and Po-210 are included in the RESRAD runs, and if an activity mixture of 65.5% natural thorium and 34.5% natural uranium (typical of SMC's materials) is assumed, the resulting isotope-specific DCGLs consistent with the unity rule are 4.4 picocuries per gram for thorium and 12 picocuries per gram of uranium.[207]
Protactinium-231	S(2)	pCi/g	0.8	Point Estimate		--	--	
Lead-210	S1(3)	pCi/g	12	Point Estimate		--	--	
Radium-226	S1(4)	pCi/g	12	Point Estimate		--	--	
Radium-228	S1(5)	pCi/g	4.4	Point Estimate		--	--	

[202] U.S. Environmental Protection Agency, *Limiting Values of Radionuclide Intake and Air Concentrations and Dose Conversion Factors for Inhalation, Submersion, and Ingestion*, Federal Guidance Report Number 11, EPA 520/1-88-020, September, 1988.
[203] U.S. Environmental Protection Agency, *External Exposure to Radionuclides in Air, Water and Soil*, Federal Guidance Report Number 12, EPA 402 R-93-081, September, 1993.
[204] Argonne National Laboratory, *Data Collection Handbook to Support Modeling Impacts of Radioactive Material in Soil*, April, 1993.
[205] U.S. Nuclear Regulatory Commission, *Radiological Criteria for License Termination*, Volume 62, Federal Register, page 39058, July 21, 1997.
[206] U.S. Nuclear Regulatory Commission, *NMSS Decommissioning Standard Review Plan*, NUREG-1727, September, 2000.
[207] DCGL Document.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Thorium-228	S1 (6)	pCi/g	4.4	Point Estimate		--	--	
Thorium-230	S1(7)	pCi/g	12	Point Estimate		--	--	
Thorium-232	S1(8)	pCi/g	4.4	Point Estimate		--	--	
Uranium-234	S1(9)	pCi/g	12	Point Estimate		--	--	
Uranium-235	S1(10)	pCi/g	0.8	Point Estimate		--	--	
Uranium-238	S1(11)	pCi/g	12	Point Estimate		--	--	
Concentration in ground water	W1(n)	pCi/L	0					
Cover Depth (thickness)	COVER0	m	0	Triangular	Range: 0 to	S	S	The DCGLs derived for the unrestricted area assume the residual activity is present in the top 6 inches (0.15 m), with no cover.
Cover Density	DENSCV	g/cm3				S	S	Not used
Cover Erosion Rate	VCV	m/yr				S	S	Not used
Contaminated Zone Density	DENSCZ	g/cm3	1.5	Triangular	Min 1.2 Max 1.6	S	S	Soils are characterized as fine to medium sand and fine to coarse sand (based on boring logs for wells MW-12D and MW-13D)[208] and silty sand with gravel and gravel (based on boring log for well MW-11S).[209] The density of the soil in the unrestricted area is equivalent to the nominal density of soil (i.e., RESRAD default value).
Contaminated Zone Erosion Rate	VCZ	m/yr	0.001	Continuous Logarithmic	Value CDF 5x10-8 0 7x10-4 0.22 5x10-3 0.95 2x10-1 1	S	I	The RESRAD default erosion of the surface soil is deemed conservative even in cases of significant farming and gardening activities.[210]
Contaminated Zone Total Porosity	TPCZ	Unitless 0 to 1	0.4	Point Estimate		D	I	Values for total porosity are reported to be 0.25 - 0.4 for non-uniform sand and 0.25 - 0.35 for gravelly sand.[211] RESRAD value for coarse sand was selected.[212]

[208] TRC Environmental Consultants, Inc., *Remedial Investigation Technical Report*, Project Number 7650-N51, Windsor, Connecticut, April, 1992.
[209] TRC Environmental Consultants, Inc., *Final Focused Feasibility Study Report, Ground Water Remediation*, Project Number 13248-N51, Windsor, Connecticut, Revision 2, February 1994.
[210] Argonne National Laboratory, *Data Collection Handbook to Support Modeling the Impacts of Radioactive Material in Soil*, ANL/EAIS-8, 1993.
[211] Kresic, N., *Quantitative Solutions in Hydrogeology and Groundwater Modeling*, New York: Lewis Publishers, page 461, 1997.
[212] Argonne National Laboratory, *User's Manual for RESRAD Version 6*, Appendix E, July 2001.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Contaminated Zone Field Capacity	FCCZ	Unitless, 0 to 1	0.2	Point Estimate		D	I	RESRAD default
Contaminated Zone Hydraulic Conductivity	HCCZ	m/yr	10	Bounded Lognormal-N	μNormal: 2.3 σNormal 2.11 min: 0.004 Max: 9250	S	I	RESRAD default
Contaminated Zone B-Parameter	BCZ	Unitless	4.05	Bounded Lognormal-N	μNormal: 1.06 σNormal 0.66 min: 0.5 Max: 30	D	I	The value for sand was determined to be representative of the contaminated zone.[213]
Average Annual Wind Speed	WIND	m/sec	4.25	Bounded Lognormal-N	μNormal: 1.445 σNormal: 0.2419 Min: 1.4 Max: 13.0	D	I	The thirty year (1961-1990) site- specific annual average value is reported to be 4.3 m/s.[214]
Humidity in air	HUMID	g/m3						Not used
Evapo transpiration Coefficient	EVAPTR	Unitless, 0 to 1	0.73	Triangular	Range: 0.4to 1.0	S	I	Mean annual evapotranspiration was determined as the sum of mean potential monthly evapotranspiration values, which were calculated by the Thornthwaite Method using mean monthly temperature and mean possible hours of daylight data..[215 216 217]Mean annual evapotranspiration was estimated to be 76.8 cm or 72% of the precipitation rate.
Precipitation Rate	PRECIP	m/year	1.05	Point Estimate		S	S	The nearest climatological stations are located in Atlantic City and Philadelphia. The annual average precipitation for Atlantic City is 41.3 inches per year while the average annual precipitation for Philadelphia is 41.42 inches.[218],[219] 1.05 m/yr corresponds to these values.
Irrigation Rate	RI	m/year	0.2	Point Estimate		S	S	RESRAD default

[213] Argonne National Laboratory, *User's Manual for RESRAD Version 6*, Appendix E, July 2001.
[214] National Climate Data Center, *Local Climatological Data, Annual Summary with Comparative Data for Philadelphia, Pennsylvania*, 2000.
[215] Argonne National Laboratory, *User's Manual for RESRAD Version 6*, Appendix E, July, 2001.
[216] National Climate Data Center, *Local Climatological Data, Annual Summary with Comparative Data for Philadelphia, Pennsylvania*, 2000.
[217] D.M. Gray, *Handbook on the Principles of Hydrology*, Published by Water Information Center, Inc., New York, New York, 1973.
[218] National Climate Data Center, *Local Climatological Data, Annual Summary with Comparative Data for Atlantic City, New Jersey*, 2006.
[219] National Climate Data Center, *Local Climatological Data, Annual Summary with Comparative Data for Philadelphia, Pennsylvania*, 2006.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Irrigation mode	IDITCH	unitless	Overhead					RESRAD default
Runoff Coefficient	RUNOFF	Unitless, 0 to 1	0.2	Uniform	Range: 0.1 to 0.8	S	S	RESRAD default
Watershed Area for Nearby Stream or Pond	WAREA	m2	2.77x106	Point Estimate		S	I	Assumed to be 690 acres and represents the low lying areas adjacent to the Restricted area[220]. The watershed area is used to calculate dilution factors for contaminant concentrations in surface water bodies in the vicinity of the site. The larger the watershed area, the greater volume through which dilution is possible. While there is no pathway for humans to drink surface water, animals may use the pond for their water supply. The greater the dilution, the lower the radiation dose.
Accuracy for water/soil computations	EPS	unitless	0.001			D	I	
Density, Saturated Zone	DENSAQ	g/cm3	1.51	Bounded Normal	Std Dev 0.159 Min 1.019 Max 2.002	S	I	Saturated soils beneath pile are characterized as fine to medium sand and fine to coarse sand (based on boring logs for wells MW-12D and MW-13D) and silty sand with gravel and gravel (based on boring log for well MW-11S).[221,222] Applicable bulk densities range from 1.60 for dry sand to 1.73 for dry sand and gravel.[223]
Total Porosity Saturated Zone	TPSZ	Unitless ,0 to 1	0.43	Bounded Normal	Std Dev 0.06 Min 0.244 Max 0.615	D	I	Based on the saturated soils descriptions above, applicable total porosity values cited in Kresic are 0.25-0.40 for non-uniform sand and 0.25-0.35 for gravelly sand. RESRAD value for coarse sand was selected as it is the sand type defined in RESRAD Table E.8 with total porosity values closest to those cited above.[224]
Effective Porosity, Saturated Zone	EPSZ	Unitless, 0 to 1	0.383	Bounded Normal	Std Dev 0.06 Min 0.195 Max 0.572	D	I	Effective porosity of non-uniform sands and gravels, and their mixtures, is up to 10% less than total porosity.[225] For range of total porosity above (0.25-0.40), effective porosity range is 0.225-0.36. RESRAD default value for coarse sand was selected as it is the sand type defined in RESRAD Table E.8 with effective porosity values closest to those cited above and its selection is consistent with the material used to represent total porosity.

[220] Shieldalloy Metallurgical Corporation, *Decommissioning Plan for the SMC facility*, Appendix E, Report Number 94005/G-28247, Rev 1b.
[221] TRC Environmental Consultants, Inc., *Final Focused Feasibility Study Report, Ground Water Remediation*, Project Number 13248-N51, Windsor, Connecticut, Revision 2, February 1994.
[222] TRC Environmental Consultants, Inc., *Remedial Investigation Technical Report*, Project Number 7650-N51, Windsor, Connecticut, April, 1992.
[223] T. Glover, *Pocket Reference, 2nd Edition*, Sequoia Publishing, Inc Littleton, Colorado, page 542, 1995.
[224] Kresic, N., *Quantitative Solutions in Hydrogeology and Groundwater Modeling*, New York: Lewis Publishers, page 461, 1997.
[225] Kresic, N., *Quantitative Solutions in Hydrogeology and Groundwater Modeling*, New York: Lewis Publishers, page 461, 1997.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Field Capacity, Saturated Zone	FCSZ	Unitless ,0 to 1	Not used			D	I	The value "field capacity" does not apply to saturated soils.
Hydraulic Conductivity, Saturated Zone	HCSZ	m/yr	9,500	Triangular	Min 8,600 Max 10,400	S	I	During previous hydrogeological studies at the site, a pumping test of the Layne well indicated a T of 82,000 gpd/ft (Weston, 1972), and a recovery test of P4 (IWC4) indicated T of 90,400 gpd/ft (Woodward-Moorehouse, 1974), or K of 78 to 93 ft/day for the Cohansey sand, depending on formation thickness assumed (130 to 140 feet).[226,227] The average of 85.5 ft/day (9,500 m/yr) is used as the central tendency value.
Hydraulic Gradient	HGWT	Unitless	0.004	Bounded Lognormal-N	μNormal: -5.11 σNormal: 1.77 min: 0 .00007 max: 0.5	S	I	The RI references a hydraulic gradient of 0.004 ft/ft based on Figure 15 (pg 48-49) as measured between wells SC-12D and A. If measured from the far eastern well to the far southwestern well, a gradient of 0.002 ft/ft is calculated.[228] The 0.004 gradient measured between wells A and SC-12D is more representative of the gradient in the immediate vicinity of the Restricted area. The value is also representative of the gradient towards a potable well, should one be located in the unrestricted area, close to the Restricted area.
Saturated Zone B-Parameter	BSZ	Unitless	4.05	Bounded Lognormal-N	μNormal: 1.06 σNormal: 0.66 Min: 0.5 Max: 30	D	I	RESRAD default value for generic soil was selected. The value and distribution represents a weighted average of the distributions for the individual soil classes.[229]
Water table drop rate	VWT	m/yr	0					
Well pump intake depth	DWIBWT	m (below the water table)	10			D	I	RESRAD default value was used.
Model: Nondispersion (ND) or Mass balance (MB)	MODEL	unitless	Mass Balance			D	I	
Well pumping rate	UW	m3/yr	453			D	I	RESRAD default value was used for estimate of water source. The default is typical for a Agricultural Farm Family and expected to be much lower for the exposure scenarios at Newfield.
Number of unsaturated zone strata	NS	unitless	1					

[226] Roy F. Weston, Inc., 1972. *Hydrogeologic Investigation of Ground Water Contamination, Interim Report*. Prepared for Shieldalloy Corporation, Newfield, New Jersey.
[227] Woodward-Moorehouse and Associates, Inc. and Woodward-Envicon, Inc., *Preliminary Report, Groundwater Contamination Study, Phase II*, Prepared for Shieldalloy Corporation, Newfield, New Jersey, 1974.
[228] TRC Environmental Consultants, Inc., *Remedial Investigation Technical Report*, Project Number 7650-N51, Windsor, Connecticut, April, 1992.
[229] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Thickness Unsaturated	H(1)	m	1.9	Triangular	Min 0.9 Max 3.7	S	S	The average thickness of the unsaturated zone was estimated from well locations in the vicinity of the restricted area based on wells 11S, 12S, and 13S. Measurements were made by SMC for six years (from January 2001 through April 2007, measured each quarter). A total of 26 data points were summarized for each well.
Density, Unsaturated	DENSUZ(1)	g/cm3	1.51	Bounded Normal	Std Dev 0.159 Min 1.019 Max 2.002	D,S	S	The density selected is typical of native sand (RESRAD default). Unsaturated soils are characterized as fine to medium sand and fine to coarse sand (based on boring logs for wells MW-12D and MW-13D) and silty sand with gravel (based on boring log for well MW-11S). Applicable bulk densities range from 1.60 for dry sand to 1.73 for dry sand and gravel.[230]
Total Porosity Unsaturated	TPUZ(1)	Unitless 0 to 1	0.43	Bounded Normal	Std Dev 0.06 Min 0.245 Max 0.615	D	I	Values for total porosity are reported to be 0.25-0.40 for non-uniform sand and 0.25-0.35 for gravelly sand.[231] RESRAD value for coarse sand was selected as it is the sand type defined in NUREG 6697, Appendix C, Table 3.2-1 with total porosity values closest to those cited above.[232]
Effective Porosity of Unsaturated Zone	EPUZ(1)	Unitless 0 to 1	0.383	Bounded Normal	Std Dev 0.06 Min 0.195 Max 0.572	D	I	Effective porosity of non-uniform sands and gravels, and their mixtures, is up to 10% less than total porosity; for range of total porosity above (0.25-0.40), effective porosity range is 0.225-0.36.[233,234] Also according to Kresic (1997), the presence of fines, i.e., silts and clays, significantly reduces effective porosity. However, limited amounts of silt and clay are expected in the sands and gravels of the Bridgeton Formation. Value for sand was selected from NUREG 6697, Appendix C, Table 3.3-1 as it is the sand type with effective porosity values closest to those cited above and its selection is consistent with the material used to represent total porosity.[235]
Field Capacity Unsaturated Zone	FCUZ (1)	Unitless 0 to 1	0.2	Point Estimate		D	I	The reported field capacity for sand is about 0.10 and ranges up to about 0.18 for fine sand (Fetter, 1994). Consequently, a value of 0.2 is much higher than expected for the site. Field capacity is not a single value, but is time-dependent (Fetter, 1994; Delleur, 1999).[236,237]

[230] T. Glover, *Pocket Reference, 2nd Edition*, Sequoia Publishing, Inc Littleton, Colorado, page 542, 1995.
[231] Kresic, N., *Quantitative Solutions in Hydrogeology and Groundwater Modeling*, New York: Lewis Publishers, page 461, 1997.
[232] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
[233] Kresic, N., 1997. Quantitative Solutions in Hydrogeology and Groundwater Modeling, New York: Lewis Publishers, 461 p.
[234] Kresic, N., 1997. Quantitative Solutions in Hydrogeology and Groundwater Modeling, New York: Lewis Publishers, 461 p.
[235] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
[236] Delleur, J.W., The Handbook of Groundwater Engineering, New York: CRC Press, 1999.
[237] Fetter, C.W., 1994. Applied Hydrogeology. New York: Macmillan College Publishing Company, 691 p.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Unsaturated B-Parameter	BUZ(1)	Unitless	4.05	Bounded Lognormal-N	μNormal: 1.06 σNormal: 0.66 Min: 0.5 Max: 30	D	I	The RESRAD default value for generic soil was selected. The value and distribution represents a weighted average of the distributions for the individual soil classes.[238]
Hydraulic Conductivity Unsaturated Zone	HCUZ (1)	m/yr	9,500	Triangular	Min 8,600 Max 10,400	S	I	The unsaturated, upper part of the Cohansey Sand consists of fine sand, fine-medium sand, medium-coarse sand, and coarse sand with variable percentages of silt and fine gravel. Aquifer testing of wells completed in the upper Cohansey Sand provides data for the hydraulic conductivity. A pumping test of the Layne well indicated a transmissivity of 82,000 gpd/ft (Weston, 1972), and a recovery test of P4 (also referred to as IWC4) indicated a transmissivity of 90,400 gpd/ft (Woodward-Moorehouse, 1974).[239, 240, 241] The equivalent hydraulic conductivity is 78 to 93 ft/day, depending on the assumed formation thickness (130 to 140 feet). The average hydraulic conductivity of 85.5 ft/day (9,500 m/yr) is used as the central tendency value.
Distribution coefficients for Thorium								
Thorium Kd contaminated zone	DCACT(n)	cm3/g	5,884	Triangular	Min 207 Max 150,000	S	S	Literature values were selected for the contaminated zone, using the lower range of values.[242]
Thorium Kd unsaturated zone	DCACTU(1) (1)	cm3/g	5,884	Triangular	Min 207 Max 150,000	D	S	Literature values were selected for both unsaturated zones, using the lower range of values.[243]
Thorium Kd saturated zone	DCACTS	cm3/g	5,884	Triangular	Min 207 Max 150,000	D	S	Literature values were selected for the saturated zones, using the lower range of values.[244]
Leach rate	ALEACH(1)	/yr						Not used
Solubility constant	SOLUBK(1)	unitless						Not used
Distribution coefficients for Uranium								

238 U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
239 TRC Environmental Consultants, Inc., *Remedial Investigation Technical Report*, Project Number 7650-N51, Windsor, Connecticut, April, 1992.
240 Roy F. Weston, Inc., *Hydrogeologic Investigation of Ground Water Contamination, Interim Report*, Prepared for Shieldalloy Corporation, Newfield, New Jersey, 1972.
241 Woodward-Moorehouse and Associates, Inc. and Woodward-Envicon, Inc., *Preliminary Report, Groundwater Contamination Study, Phase II.* Prepared for Shieldalloy Corporation, Newfield, New Jersey, 1974.
242 U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
243 U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
244 U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Uranium Kd contaminated zone	DCACT C(n)	cm3/g	126	Triangular	Min 0.03 Max 2,200	S	S	Literature values were selected for the contaminated zone, using the lower range of values.[245]
Uranium Kd unsaturated zone	DCACT U(2)	cm3/g	126	Triangular	Min 0.03 Max 2,200	D	S	Literature values were selected for the unsaturated zones, using the lower range of values.[246]
Uranium Kd saturated zone	DCACT S	cm3/g	126	Triangular	Min 0.03 Max 2,200	D	S	Literature values were selected for the saturated zones, using the lower range of values.[247]
Leach rate	ALEAC H(2)	/yr						Not used
Solubility constant	SOLUB K(2)	unitless						Not used
Distribution coefficients for Radium								
Radium Kd contaminated zone	DCACT(n)	cm3/g	3,533	Triangular	Min 57 Max 21,000	S	S	Literature values were selected for the contaminated zone, using the lower range of values.[248]
Radium Kd unsaturated zone	DCACT(i)	cm3/g	3,533	Triangular	Min 57 Max 21,000	D	S	Literature values were selected for the unsaturated zones, using the lower range of values.[249]
Radium Kd saturated zone	DCACT S	cm3/g	3,533	Triangular	Min 57 Max 21,000	D	S	Literature values were selected for the saturated zone, using the lower range of values.[250]
Leach rate	ALEAC H(3)	/yr						Not used
Solubility constant	SOLUB K(3)	unitless						Not used
Distribution coefficients for Lead								
Lead Kd contaminated zone	DCACT C (n)	cm3/g	270	Triangular	Min 19 Max 1,405	D	S	Literature values were selected for the contaminated zone, using the lower range of values.
Lead Kd unsaturated zone	DCACT U(2)	cm3/g	270	Triangular	Min 19 Max 1,405	D	S	Literature values were selected for the unsaturated zone, using the lower range of values.[251]

[245] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[246] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[247] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[248] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[249] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[250] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[251] Sheppard and Thibault, 1990.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Lead Kd saturated zone	DCACTS	cm3/g	270	Triangular	Min 19 Max 1,405	S	S	Literature values were selected for the saturated zone, using the lower range of values.[252]
Leach rate	ALEACH(4)	/yr						Not used
Solubility constant	SOLUBK(4)	unitless						Not used
Inhalation Rate	INHALR	m3/yr	8,400	Triangular	Range: 4380 to 13100	D	I	Inhalation rate based on geometric mean rate for short term exposure to adult males.[253]
Mass Loading for Inhalation	MLINH	g/m3	0.00003	Continuous Linear	0.000000 - 0.0000 0.000008 - 0.0151 0.000016 - 0.1365 0.000030 - 0.8119 0.000040 - 0.9495 0.000060 - 0.9937 0.000076 - 0.9983 0.000100 - 1.0000	D	I	Mass loading in air describes the airborne dust loading conditions on the site.[254]
Exposure duration	ED	yr	30			D	S	The Farm Family is assumed to be on site for each of the next 30 years.
Shielding factor, inhalation	SHF3	unitless	0.4			D	I	
Shielding factor, external gamma	SHF1	unitless	0.7	Bounded Lognormal-N	μNormal: -1.3 σNormal: 0.59 Min: 0.044 Max: 1	S	S	RESRAD default
Exposure Frequency (Total)	EF	Days per year	365	EF and ET are not input parameters used by RESRAD. They are presented here to disclose the calculation used to arrive at the parameters RESRAD uses to account for exposure frequency, FIND & FOTD		--	--	Assume the suburban resident lives in a house constructed at the SMC facility. The Farm Family is employed offsite but spends time in the Unrestricted area when not working.
Exposure Time	ET	hours per day	24			--	--	Conservatively assumes that the Farm Family spends 24 hours per day on the site.

[252] Sheppard and Thibault, 1990.
[253] U.S. Environmental Protection Agency, *Exposure Factors Handbook, Volume I, General Factors*, EPA 600/P-95-002Fa, August, 1997.
[254] Argonne National Laboratory, *User's Manual for RESRAD Version 6*, July, 2001.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Indoor Time Fraction	FIND	Unitless, 0 to 1	0.5	Triangular	Min 0.3 Max 0.68		O	The fraction of a total year (8,760hr) that is spent indoors on site. RESRAD assumes that the Agricultural Farmer and Farm Family spend 50% of their time inside on the contaminated site.[255] The EPA Exposure Factor Handbook assumes that the resident spends an average of 16.4 h/d (5,969 hrs/yr or 0.68) inside.[256]
Outdoor Time Fraction	FOTD	Unitless, 0 to 1	0.25	Triangular	Range: 0.12 to 0.5	O	S	The fraction of a total year (8,760hr) that is spent outdoors on Site. Equals 75 hrs outdoors on Site divided by 8760 hours. The probabilistic distribution ranges to twice the CT value.
Fruits, vegetables and grain consumption	DIET(1)	kg/yr	160	Point Estimate				RESRAD default
Leafy vegetable consumption	DIET(2)	kg/yr	14	Point Estimate				RESRAD default
Milk consumption	DIET(3)	L/yr						Not used
Meat and poultry consumption	DIET(4)	Kg/yr	0					Not used
Fish consumption	DIET(5)	Kg/yr						Not used
Other seafood consumption	DIET(6)	Kg/yr						Not used
Soil Ingestion Rate	SOIL	g/y	36.5	Triangular	Min 0 Max 36.5	D	I	RESRAD default. RESRAD uses 36.5 g/yr as the soil ingestion rate. The actual resident soil ingestion rate is corrected by the occupancy factor, which is the sum of the time spent on site (time fraction inside + time fraction outside).[257] The average value suggested in the EPA Exposure Factor Handbook is 50 mg/d or 18.3 g/yr.[258]
Drinking water intake	DWI	L/yr	510	Truncated Log normal-N	μNormal: 6.01 σNormal: 0.49 Lower 0.001 Upper: 0.99	D	I	RESRAD default. Water from saturated zone beneath the Restricted Area is assumed to be ingested by the Farm Family. The dose from Restricted area is added to the dose stemming from the water beneath the unrestricted area

[255] Argonne National Laboratory, *User's Manual for RESRAD Version 6*, ANL/EAD-4, July, 2001.
[256] U.S. Environmental Protection Agency, *Exposure Factors Handbook, Volume I, General Factors*, EPA 600/P-95-002Fa, August, 1997.
[257] Argonne National Laboratory, *User's Manual for RESRAD Version 6*, ANL/EAD-4, July, 2001.
[258] U.S. Environmental Protection Agency, *Exposure Factors Handbook, Volume I, General Factors*, EPA 600/P-95-002Fa, August, 1997.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Contamination fraction of drinking water	FDW	unitless	1					RESRAD default
Contamination fraction of household water	FHHW	unitless						Not used
Contamination fraction of livestock water	FLW	unitless						Not used
Contamination fraction of irrigation water	FIRW	unitless	1					RESRAD default
Contamination fraction of aquatic food	FR9	unitless						Not used
Contamination fraction of plant food	FPLANT	unitless	-1					RESRAD default. The amount of water is proportional to the size of the unrestricted area.
Contamination fraction of meat	FMEAT	unitless						Not used.[259]
Contamination fraction of milk	FMILK	unitless						Not used
Depth of Soil Mixing Layer	DM	m	0.15	Triangular	Range: 0 to 0.6	D	I	Value based on conceptual site model for surface soil.[260]
Depth of Roots	DROOT	m	0.9	Uniform	Min 0.3 Max 4.0	D	I	

6.5 Results

The radiation dose potential for an agricultural farm family member living within the restricted area at the SMC facility after all controls fail was determined not for compliance, but for placing an upper bound on the dose potential. Although unrealistic, the family home is built next to the engineered barrier on soil with surface activity equal to the DCGLs derived for the Industrial worker.[261] The driving radiation dose pathway was from direct exposure from surface soil, followed by the ingestion of impacted plants, with direct exposure contributing 72% of the total dose at year zero (0) after decommissioning, and plant ingestion contributing only 19%. The following is a summary of the dose modeling results for this unrealistic bounding scenario:

[259] U.S. Environmental Protection Agency, *Exposure Factors Handbook, Food Ingestion Factors*, Volume II, EPA/600/P-95/002Fb, August, 1997.
[260] U.S. Nuclear Regulatory Commission, *Residual Radioactive Contamination from Decommissioning: Parameter Analysis*, NUREG/CR-5512, Vol.3, October 1999.
[261] The DCGLs for the Industrial Worker assumes a lesser residence time, thus the dose potential for the subsistence farmer would be higher.

Statistic	Projected Annual Dose (millirem/year)
Annual Dose Limit	100.0
Peak Mean Annual Dose	86.0 ± 36.1
50th Percentile	80.6 ± 2.1
90th Percentile	134.0 ± 0.6
95th Percentile	156.0 ± 5.6
Maximum Annual Radiation Dose	210.0
Deterministic Estimate, Peak Annual Dose	146.2 @ 0 years

The pages that follow are the RESRAD summary reports for the Agricultural Farm Family scenario.

7 MAINTENANCE WORKER PACKAGE (RESTRICTED)

7.1 General Information

A maintenance worker will have specific duties to perform in and around the restricted area as part of the Long Term Control Plan (LTC Plan) for the SMC facility. This individual does not visit the restricted area continuously, but rather does so in a set pattern several times each year (i.e., quarterly).

7.2 Critical Group Description

A maintenance worker in the employ of SMC will inspect and maintain the engineered barrier that is installed over consolidated material by walking or possibly driving over its surface.[262] It is assumed that during quarterly surveillance activities, the maintenance worker will inspect the entire surface of the barrier and repair any evidence of damage (e.g., erosion, intrusion, etc.), thus he becomes the critical group for this exposure scenario.

7.3 Applicable Exposure Pathways

RESRAD identifies the following potential pathways for the maintenance worker scenario:

- direct radiation exposure;
- drinking water;
- particulate inhalation; and
- direct ingestion.

Other exposure pathways are not applicable and were disabled for the purpose of modeling the dose potential for this scenario. The following table identifies the pathways that have been retained and provides an explanation for those that were not:

Pathway	Retained	Comments
Direct Exposure	Yes	The source term in the restricted area produces penetrating gamma radiation. Exposure from direct radiation via this pathway is expected to be the significant contributor to the overall dose potential.
Particulate Inhalation	Yes	Allowance is made for soils containing radiological constituents of the source being liberated and suspended in the breathing air of the maintenance worker, even though the worker will not come in contact with the consolidated materials under the engineered barrier.
Radon	No	Radon is specifically excluded from consideration within the framework of the governing regulations. In addition, was included. is not a significant producer of radon.

[262] Mechanical equipment usage will be limited on the surface of the engineered barrier. Mechanized equipment such as a "four wheel ATV" or light tracked equipment may be used. Heavy equipment that may cause damage to the cover and/or the vegetation will be specifically prohibited.

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary 6
Summary of Pathway Selections 11
Contaminated Zone and Total Dose Summary 12
Total Dose Components
Time = 0.000E+00 13
Time = 1.000E+00 14
Time = 1.000E+01 15
Time = 1.000E+02 16
Time = 3.000E+02 17
Time = 5.000E+02 18
Time = 7.000E+02 19
Time = 9.000E+02 20
Time = 1.000E+03 21
Dose/Source Ratios Summed Over All Pathways 22
Single Radionuclide Soil Guidelines 23
Dose Per Nuclide Summed Over All Pathways 24
Soil Concentration Per Nuclide 25

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	*DCF's for external ground radiation, (mrem/yr)/(pCi/g)*			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)

A-1	Ra-223	(Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224	(Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226	(Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219	(Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220	(Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222	(Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227	(Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228	(Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230	(Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231	(Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232	(Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234	(Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207	(Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208	(Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210	(Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234	(Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235	(Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238	(Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D		6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231		1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D		2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D		8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D		5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D		3.454E-01	3.420E-01	DCF2(6)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2(12)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3(2)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(5)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(6)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(7)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(8)
D-1	U-234	2.830E-04	2.830E-04	DCF3(9)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(10)
D-1	U-238	2.550E-04	2.550E-04	DCF3(11)
D-1	U-238+D	2.687E-04	2.550E-04	DCF3(12)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)

D-34	Ac-227+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34					
D-34	Pa-231	, plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pa-231	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(2,3)
D-34					
D-34	Pb-210+D	, plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34					
D-34	Ra-226+D	, plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(4,1)
D-34	Ra-226+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Ra-226+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,3)
D-34					
D-34	Ra-228+D	, plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-228+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-228+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34					
D-34	Th-228+D	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Th-228+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Th-228+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34					
D-34	Th-230	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Th-230	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Th-230	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(7,3)
D-34					

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter		Current Value#	Base Case*	Parameter Name
D-34	Th-232	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(8,1)
D-34	Th-232	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(8,2)
D-34	Th-232	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(8,3)
D-34					
D-34	U-234	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-234	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-234	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34					
D-34	U-235+D	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-235+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-235+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)
D-34					
D-34	U-238	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,1)
D-34	U-238	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(11,2)
D-34	U-238	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(11,3)
D-34					
D-34	U-238+D	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(12,1)
D-34	U-238+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(12,2)
D-34	U-238+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(12,3)
D-5	Bioaccumulation factors, fresh water, L/kg:				
D-5	Ac-227+D	, fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D	, crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)

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 D-5  ³                                                    ³            ³            ³
 D-5  ³ Pa-231     , fish                                  ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  2,1)
 D-5  ³ Pa-231     , crustacea and mollusks                ³ 1.100E+02 ³ 1.100E+02 ³ BIOFAC(  2,2)
 D-5  ³                                                    ³            ³            ³
 D-5  ³ Pb-210+D   , fish                                  ³ 3.000E+02 ³ 3.000E+02 ³ BIOFAC(  3,1)
 D-5  ³ Pb-210+D   , crustacea and mollusks                ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  3,2)
 D-5  ³                                                    ³            ³            ³
 D-5  ³ Ra-226+D   , fish                                  ³ 5.000E+01 ³ 5.000E+01 ³ BIOFAC(  4,1)
 D-5  ³ Ra-226+D   , crustacea and mollusks                ³ 2.500E+02 ³ 2.500E+02 ³ BIOFAC(  4,2)
 D-5  ³                                                    ³            ³            ³
 D-5  ³ Ra-228+D   , fish                                  ³ 5.000E+01 ³ 5.000E+01 ³ BIOFAC(  5,1)
 D-5  ³ Ra-228+D   , crustacea and mollusks                ³ 2.500E+02 ³ 2.500E+02 ³ BIOFAC(  5,2)
 D-5  ³                                                    ³            ³            ³
 D-5  ³ Th-228+D   , fish                                  ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  6,1)
 D-5  ³ Th-228+D   , crustacea and mollusks                ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  6,2)
 D-5  ³                                                    ³            ³            ³
 D-5  ³ Th-230     , fish                                  ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  7,1)
 D-5  ³ Th-230     , crustacea and mollusks                ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  7,2)
 D-5  ³                                                    ³            ³            ³
 D-5  ³ Th-232     , fish                                  ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  8,1)
 D-5  ³ Th-232     , crustacea and mollusks                ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  8,2)
 D-5  ³                                                    ³            ³            ³
 D-5  ³ U-234      , fish                                  ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  9,1)
 D-5  ³ U-234      , crustacea and mollusks                ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC(  9,2)
 D-5  ³                                                    ³            ³            ³
 D-5  ³ U-235+D    , fish                                  ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC( 10,1)
 D-5  ³ U-235+D    , crustacea and mollusks                ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC( 10,2)
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Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

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0     ³                                                   ³  Current  ³   Base    ³  Parameter
 Menu ³                          Parameter                ³   Value#  ³   Case*   ³    Name
ÄÄÄ
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R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	5.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	7.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	9.000E+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): Ac-227	8.000E-01	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Pa-231	8.000E-01	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.200E+01	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.200E+01	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	4.400E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	4.400E+00	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Th-230	1.200E+01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Th-232	4.400E+00	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-234	1.200E+01	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): U-235	8.000E-01	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): U-238	1.200E+01	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L): Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Pa-231	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(11)
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	4.050E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.250E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	7.300E-01	5.000E-01	---	EVAPTR

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Precipitation (m/yr)	1.050E+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)	2.770E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.510E+00	1.500E+00	---	DENSAQ

R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.830E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	9.500E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.000E-03	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	4.530E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.900E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.510E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.300E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	3.830E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.050E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	9.500E+03	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.772E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.268E-03	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.619E-03	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.532E-04	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(5)

R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.532E-04	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,1)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.121E-04	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,1)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.121E-04	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.121E-04	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.890E-03	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.890E-03	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,1)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.890E-03	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	3.000E-05	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	5.000E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	2.500E-01	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)	1.600E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	1.400E+01	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	9.200E+01	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	6.300E+01	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	5.400E+00	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	9.000E-01	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)	5.100E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	5.000E-01	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	-1	-1	0.100E+01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.100E+01	FMILK
R019	Livestock fodder intake for meat (kg/day)	6.800E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	5.500E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	5.000E-01	5.000E-01	---	LSI

R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	1.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	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

Site-Specific Parameter Summary (continued)

0 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	1	---	---	KYMAX

Summary of Pathway Selections

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

Contaminated Zone Dimensions

Area: 244000.00 square meters
Thickness: 0.15 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations, pCi/g

Ac-227	8.000E-01
Pa-231	8.000E-01
Pb-210	1.200E+01
Ra-226	1.200E+01
Ra-228	4.400E+00
Th-228	4.400E+00
Th-230	1.200E+01
Th-232	4.400E+00
U-234	1.200E+01
U-235	8.000E-01
U-238	1.200E+01

0

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

t (years):	0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
TDOSE(t):	1.462E+02	1.455E+02	1.396E+02	7.106E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

M(t): 5.846E+00 5.820E+00 5.585E+00 2.842E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00

0Maximum TDOSE(t): 1.462E+02 mrem/yr at t = 0.000E+00 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 = 0.000E+00 years
0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	8.804E-01	0.0060	6.783E-02	0.0005	0.000E+00	0.0000	4.213E-01	0.0029	7.727E-03	0.0001	1.116E-02	0.0001	3.175E-01	0.0022
Pa-231	9.879E-02	0.0007	1.421E-02	0.0001	0.000E+00	0.0000	1.233E+00	0.0084	1.636E+00	0.0112	2.481E-03	0.0000	2.362E-01	0.0016
Pb-210	4.191E-02	0.0003	3.508E-03	0.0000	0.000E+00	0.0000	1.241E+01	0.0849	2.646E+00	0.0181	1.397E+00	0.0096	2.340E+00	0.0160
Ra-226	6.734E+01	0.4607	1.377E-03	0.0000	0.000E+00	0.0000	9.392E+00	0.0643	9.992E-01	0.0068	1.284E+00	0.0088	4.688E-01	0.0032
Ra-228	1.601E+01	0.1095	3.281E-03	0.0000	0.000E+00	0.0000	3.485E+00	0.0238	3.634E-01	0.0025	4.756E-01	0.0033	1.781E-01	0.0012
Th-228	1.800E+01	0.1232	1.636E-02	0.0001	0.000E+00	0.0000	4.335E-02	0.0003	9.590E-03	0.0001	6.970E-04	0.0000	8.143E-02	0.0006
Th-230	2.315E-02	0.0002	5.018E-02	0.0003	0.000E+00	0.0000	9.741E-02	0.0007	2.130E-02	0.0001	1.787E-03	0.0000	1.795E-01	0.0012
Th-232	9.199E-01	0.0063	9.271E-02	0.0006	0.000E+00	0.0000	3.754E-01	0.0026	5.663E-02	0.0004	2.925E-02	0.0002	3.383E-01	0.0023
U-234	2.845E-03	0.0000	2.022E-02	0.0001	0.000E+00	0.0000	1.224E-01	0.0008	3.816E-02	0.0003	9.726E-02	0.0007	9.220E-02	0.0006
U-235	3.458E-01	0.0024	1.256E-03	0.0000	0.000E+00	0.0000	7.720E-03	0.0001	2.419E-03	0.0000	6.126E-03	0.0000	5.809E-03	0.0000
U-238	9.705E-01	0.0066	1.808E-02	0.0001	0.000E+00	0.0000	1.162E-01	0.0008	3.624E-02	0.0002	9.235E-02	0.0006	8.754E-02	0.0006
Total	1.046E+02	0.7159	2.890E-01	0.0020	0.000E+00	0.0000	2.770E+01	0.1895	5.816E+00	0.0398	3.398E+00	0.0232	4.326E+00	0.0296

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

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.
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	0.000E+00	0.0000	1.706E+00	0.0117
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	0.000E+00	0.0000	3.221E+00	0.0220
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	0.000E+00	0.0000	1.883E+01	0.1289
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	7.948E+01	0.5438
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	0.000E+00	0.0000	2.051E+01	0.1403
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	0.000E+00	0.0000	1.815E+01	0.1242
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.733E-01	0.0026
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	1.812E+00	0.0124
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.731E-01	0.0026
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.691E-01	0.0025
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.321E+00	0.0090
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	1.462E+02	1.0000

0*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
0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.

Ac-227	8.494E-01	0.0058	6.509E-02	0.0004	0.000E+00	0.0000	4.043E-01	0.0028	7.415E-03	0.0001	1.071E-02	0.0001	3.046E-01	0.0021
Pa-231	1.259E-01	0.0009	1.618E-02	0.0001	0.000E+00	0.0000	1.235E+00	0.0085	1.622E+00	0.0112	2.807E-03	0.0000	2.439E-01	0.0017
Pb-210	4.041E-02	0.0003	3.363E-03	0.0000	0.000E+00	0.0000	1.189E+01	0.0817	2.536E+00	0.0174	1.339E+00	0.0092	2.243E+00	0.0154
Ra-226	6.714E+01	0.4614	1.473E-03	0.0000	0.000E+00	0.0000	9.704E+00	0.0667	1.074E+00	0.0074	1.317E+00	0.0091	5.363E-01	0.0037
Ra-228	1.928E+01	0.1325	7.522E-03	0.0001	0.000E+00	0.0000	3.083E+00	0.0212	3.232E-01	0.0022	4.189E-01	0.0029	1.798E-01	0.0012
Th-228	1.250E+01	0.0859	1.131E-02	0.0001	0.000E+00	0.0000	2.997E-02	0.0002	6.630E-03	0.0000	4.818E-04	0.0000	5.629E-02	0.0004
Th-230	5.220E-02	0.0004	4.984E-02	0.0003	0.000E+00	0.0000	1.008E-01	0.0007	2.160E-02	0.0001	2.332E-03	0.0000	1.785E-01	0.0012
Th-232	3.066E+00	0.0211	9.274E-02	0.0006	0.000E+00	0.0000	7.648E-01	0.0053	9.676E-02	0.0007	8.224E-02	0.0006	3.576E-01	0.0025
U-234	2.817E-03	0.0000	1.989E-02	0.0001	0.000E+00	0.0000	1.204E-01	0.0008	3.754E-02	0.0003	9.566E-02	0.0007	9.068E-02	0.0006
U-235	3.421E-01	0.0024	1.236E-03	0.0000	0.000E+00	0.0000	7.620E-03	0.0001	2.413E-03	0.0000	6.025E-03	0.0000	5.719E-03	0.0000
U-238	9.594E-01	0.0066	1.778E-02	0.0001	0.000E+00	0.0000	1.143E-01	0.0008	3.565E-02	0.0002	9.083E-02	0.0006	8.610E-02	0.0006
Total	1.044E+02	0.7172	2.864E-01	0.0020	0.000E+00	0.0000	2.746E+01	0.1887	5.763E+00	0.0396	3.366E+00	0.0231	4.283E+00	0.0294

0

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

0 Water Dependent Pathways

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.
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	0.000E+00	0.0000	1.642E+00	0.0113
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	0.000E+00	0.0000	3.247E+00	0.0223
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	0.000E+00	0.0000	1.805E+01	0.1241
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	7.977E+01	0.5482
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	0.000E+00	0.0000	2.329E+01	0.1601
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	0.000E+00	0.0000	1.260E+01	0.0866
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.053E-01	0.0028
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	4.460E+00	0.0307
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.670E-01	0.0025
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.651E-01	0.0025
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.304E+00	0.0090
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	1.455E+02	1.0000

0*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+01 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	6.144E-01	0.0044	4.478E-02	0.0003	0.000E+00	0.0000	2.781E-01	0.0020	5.101E-03	0.0000	7.369E-03	0.0001	2.096E-01	0.0015
Pa-231	3.261E-01	0.0023	2.978E-02	0.0002	0.000E+00	0.0000	1.229E+00	0.0088	1.495E+00	0.0107	5.033E-03	0.0000	2.941E-01	0.0021
Pb-210	2.915E-02	0.0002	2.291E-03	0.0000	0.000E+00	0.0000	8.102E+00	0.0580	1.728E+00	0.0124	9.121E-01	0.0065	1.528E+00	0.0109
Ra-226	6.530E+01	0.4677	2.127E-03	0.0000	0.000E+00	0.0000	1.171E+01	0.0839	1.569E+00	0.0112	1.529E+00	0.0109	1.003E+00	0.0072
Ra-228	1.182E+01	0.0847	7.135E-03	0.0001	0.000E+00	0.0000	9.882E-01	0.0071	1.051E-01	0.0008	1.328E-01	0.0010	8.058E-02	0.0006
Th-228	4.674E-01	0.0033	4.066E-04	0.0000	0.000E+00	0.0000	1.078E-03	0.0000	2.384E-04	0.0000	1.733E-05	0.0000	2.024E-03	0.0000
Th-230	3.064E-01	0.0022	4.673E-02	0.0003	0.000E+00	0.0000	1.354E-01	0.0010	2.533E-02	0.0002	7.606E-03	0.0001	1.703E-01	0.0012
Th-232	2.171E+01	0.1555	9.706E-02	0.0007	0.000E+00	0.0000	2.644E+00	0.0189	2.944E-01	0.0021	3.373E-01	0.0024	4.739E-01	0.0034
U-234	2.584E-03	0.0000	1.710E-02	0.0001	0.000E+00	0.0000	1.035E-01	0.0007	3.227E-02	0.0002	8.221E-02	0.0006	7.794E-02	0.0006
U-235	3.103E-01	0.0022	1.066E-03	0.0000	0.000E+00	0.0000	6.767E-03	0.0000	2.349E-03	0.0000	5.179E-03	0.0000	4.963E-03	0.0000
U-238	8.643E-01	0.0062	1.528E-02	0.0001	0.000E+00	0.0000	9.824E-02	0.0007	3.064E-02	0.0002	7.806E-02	0.0006	7.400E-02	0.0005
Total	1.017E+02	0.7288	2.638E-01	0.0019	0.000E+00	0.0000	2.530E+01	0.1812	5.287E+00	0.0379	3.096E+00	0.0222	3.918E+00	0.0281

0

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

0 Water Dependent Pathways

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	1.159E+00	0.0083
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	0.000E+00	0.0000	3.379E+00	0.0242
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	0.000E+00	0.0000	1.230E+01	0.0881
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	8.111E+01	0.5810
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	0.000E+00	0.0000	1.314E+01	0.0941
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	0.000E+00	0.0000	4.712E-01	0.0034
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.918E-01	0.0050
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	2.555E+01	0.1830
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.156E-01	0.0023
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.306E-01	0.0024
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.161E+00	0.0083
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	1.396E+02	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 08/07/2009 13:00 Page 16
Summary : SMC Farm Family Controls Fail Unrestricted Area
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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0 Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Ac-227	1.827E-02	0.0003	7.054E-04	0.0000	0.000E+00	0.0000	4.384E-03	0.0001	8.043E-05	0.0000	1.161E-04	0.0000	3.301E-03	0.0000
Pa-231	4.891E-01	0.0069	2.064E-02	0.0003	0.000E+00	0.0000	4.300E-01	0.0061	4.334E-01	0.0061	3.436E-03	0.0000	1.413E-01	0.0020
Pb-210	9.674E-04	0.0000	3.270E-05	0.0000	0.000E+00	0.0000	1.157E-01	0.0016	2.469E-02	0.0003	1.302E-02	0.0002	2.182E-02	0.0003
Ra-226	3.649E+01	0.5136	1.348E-03	0.0000	0.000E+00	0.0000	6.157E+00	0.0866	1.006E+00	0.0142	7.626E-01	0.0107	7.617E-01	0.0107
Ra-228	1.399E-04	0.0000	5.170E-08	0.0000	0.000E+00	0.0000	6.611E-06	0.0000	7.048E-07	0.0000	8.871E-07	0.0000	5.582E-07	0.0000
Th-228	1.859E-15	0.0000	9.759E-19	0.0000	0.000E+00	0.0000	2.588E-18	0.0000	5.727E-19	0.0000	4.159E-20	0.0000	4.859E-18	0.0000
Th-230	1.641E+00	0.0231	1.630E-02	0.0002	0.000E+00	0.0000	2.681E-01	0.0038	4.368E-02	0.0006	3.031E-02	0.0004	8.495E-02	0.0012
Th-232	1.985E+01	0.2794	3.641E-02	0.0005	0.000E+00	0.0000	1.265E+00	0.0178	1.393E-01	0.0020	1.637E-01	0.0023	1.937E-01	0.0027
U-234	1.443E-03	0.0000	2.499E-03	0.0000	0.000E+00	0.0000	1.517E-02	0.0002	4.719E-03	0.0001	1.199E-02	0.0002	1.139E-02	0.0002
U-235	9.075E-02	0.0013	1.799E-04	0.0000	0.000E+00	0.0000	1.555E-03	0.0000	9.399E-04	0.0000	7.587E-04	0.0000	8.995E-04	0.0000
U-238	2.322E-01	0.0033	2.228E-03	0.0000	0.000E+00	0.0000	1.432E-02	0.0002	4.469E-03	0.0001	1.138E-02	0.0002	1.078E-02	0.0002
Total	5.882E+01	0.8278	8.035E-02	0.0011	0.000E+00	0.0000	8.271E+00	0.1164	1.658E+00	0.0233	9.973E-01	0.0140	1.230E+00	0.0173

0

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

0 Water Dependent Pathways

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	2.685E-02	0.0004
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	0.000E+00	0.0000	1.518E+00	0.0214
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	0.000E+00	0.0000	1.762E-01	0.0025
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	4.518E+01	0.6359
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	0.000E+00	0.0000	1.487E-04	0.0000

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	0.000E+00	0.0000	1.868E-15	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.085E+00	0.0293
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	2.165E+01	0.3047
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.721E-02	0.0007
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	9.508E-02	0.0013
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.754E-01	0.0039
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	7.106E+01	1.0000

0*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 = 3.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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 = 5.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years
0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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 = 7.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000

Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 7.000E+02 years
Water Dependent Pathways

0

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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 = 9.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

0

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.000E+02 years
Water Dependent Pathways

0

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T* Limit = 180 days 08/07/2009 13:00 Page 21

Summary : SMC Farm Family Controls Fail Unrestricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109804.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

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

0 Water Dependent Pathways

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

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

0 Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
Ac-227+D	Ac-227+D	1.000E+00	2.132E+00	2.052E+00	1.449E+00	3.357E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pa-231	Pa-231	1.000E+00	3.986E+00	3.951E+00	3.641E+00	1.078E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pa-231	Ac-227+D	1.000E+00	3.987E-02	1.070E-01	5.828E-01	8.197E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pa-231	äDSR(j)		4.026E+00	4.058E+00	4.224E+00	1.897E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pb-210+D	Pb-210+D	1.000E+00	1.570E+00	1.505E+00	1.025E+00	1.469E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Ra-226+D	Ra-226+D	1.000E+00	6.595E+00	6.571E+00	6.351E+00	3.340E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Pb-210+D	1.000E+00	2.840E-02	7.644E-02	4.082E-01	4.251E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	äDSR(j)		6.623E+00	6.648E+00	6.759E+00	3.765E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Ra-228+D	Ra-228+D	1.000E+00	3.896E+00	3.441E+00	1.124E+00	1.151E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	7.657E-01	1.852E+00	1.861E+00	2.229E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	äDSR(j)		4.662E+00	5.293E+00	2.986E+00	3.380E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-228+D	Th-228+D	1.000E+00	4.126E+00	2.864E+00	1.071E-01	4.246E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	2.969E-02	2.949E-02	2.769E-02	9.943E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Ra-226+D	1.000E+00	1.413E-03	4.254E-03	2.896E-02	1.496E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	Pb-210+D	1.000E+00	4.385E-06	2.722E-05	9.967E-04	1.415E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	äDSR(j)		3.111E-02	3.377E-02	5.765E-02	1.737E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-232	Th-232	1.000E+00	1.449E-01	1.439E-01	1.349E-01	4.713E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-232	Ra-228+D	1.000E+00	2.349E-01	6.742E-01	2.857E+00	2.125E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-232	Th-228+D	1.000E+00	3.213E-02	1.956E-01	2.816E+00	2.749E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-232	äDSR(j)		4.119E-01	1.014E+00	5.808E+00	4.921E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0U-234	U-234	1.000E+00	3.109E-02	3.058E-02	2.629E-02	3.874E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Th-230	1.000E+00	1.385E-07	4.014E-07	2.494E-06	5.754E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Ra-226+D	1.000E+00	4.202E-09	2.952E-08	1.325E-06	5.059E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Pb-210+D	1.000E+00	1.033E-11	1.364E-10	3.185E-08	4.061E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	äDSR(j)		3.109E-02	3.058E-02	2.630E-02	3.934E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0U-235+D	U-235+D	1.000E+00	4.614E-01	4.563E-01	4.124E-01	1.163E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-235+D	Pa-231	1.000E+00	3.877E-05	1.209E-04	7.742E-04	1.602E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-235+D	Ac-227+D	1.000E+00	3.028E-07	1.858E-06	6.721E-05	9.569E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-235+D	äDSR(j)		4.614E-01	4.564E-01	4.132E-01	1.189E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0U-238	U-238	5.400E-05	1.504E-06	1.479E-06	1.271E-06	1.861E-07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0U-238+D	U-238+D	9.999E-01	1.101E-01	1.087E-01	9.671E-02	2.295E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	U-234	9.999E-01	4.395E-08	1.299E-07	7.825E-07	1.104E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Th-230	9.999E-01	1.340E-13	8.948E-13	3.659E-11	6.891E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Ra-226+D	9.999E-01	2.958E-15	4.456E-14	1.294E-11	4.100E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	Pb-210+D	9.999E-01	6.079E-18	1.650E-16	2.402E-13	2.833E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238+D	äDSR(j)		1.101E-01	1.087E-01	9.671E-02	2.295E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

The DSR includes contributions from associated (half-life ó 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03

Ac-227	1.172E+01	1.218E+01	1.725E+01	7.448E+02	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13
Pa-231	6.210E+00	6.160E+00	5.919E+00	1.318E+01	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10
Pb-210	1.593E+01	1.662E+01	2.439E+01	1.702E+03	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13
Ra-226	3.774E+00	3.761E+00	3.699E+00	6.640E+00	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11
Ra-228	5.363E+00	4.723E+00	8.373E+00	7.397E+05	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14
Th-228	6.060E+00	8.729E+00	2.335E+02	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	8.036E+02	7.402E+02	4.337E+02	1.439E+02	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10
Th-232	6.070E+01	2.466E+01	4.305E+00	5.080E+00	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05
U-234	8.041E+02	8.175E+02	9.507E+02	6.354E+03	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09
U-235	5.418E+01	5.478E+01	6.050E+01	2.103E+02	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06
U-238	2.271E+02	2.300E+02	2.585E+02	1.089E+03	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05
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*At specific activity limit

0

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

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	8.000E-01	0.000E+00	2.132E+00	1.172E+01	2.132E+00	1.172E+01
Pa-231	8.000E-01	14.81 ñ 0.03	4.244E+00	5.891E+00	4.026E+00	6.210E+00
Pb-210	1.200E+01	0.000E+00	1.570E+00	1.593E+01	1.570E+00	1.593E+01
Ra-226	1.200E+01	12.17 ñ 0.02	6.763E+00	3.696E+00	6.623E+00	3.774E+00
Ra-228	4.400E+00	2.158 ñ 0.004	5.494E+00	4.550E+00	4.662E+00	5.363E+00
Th-228	4.400E+00	0.000E+00	4.126E+00	6.060E+00	4.126E+00	6.060E+00
Th-230	1.200E+01	86.5 ñ 0.2	1.790E-01	1.396E+02	3.111E-02	8.036E+02
Th-232	4.400E+00	29.45 ñ 0.06	7.985E+00	3.131E+00	4.119E-01	6.070E+01
U-234	1.200E+01	0.000E+00	3.109E-02	8.041E+02	3.109E-02	8.041E+02
U-235	8.000E-01	0.000E+00	4.614E-01	5.418E+01	4.614E-01	5.418E+01
U-238	1.200E+01	0.000E+00	1.101E-01	2.271E+02	1.101E-01	2.271E+02
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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+00	1.706E+00	1.642E+00	1.159E+00	2.685E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ac-227	Pa-231	1.000E+00	3.189E-02	8.558E-02	4.663E-01	6.558E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ac-227	U-235	1.000E+00	2.422E-07	1.487E-06	5.377E-05	7.655E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ac-227	äDOSE(j)		1.738E+00	1.727E+00	1.626E+00	6.834E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pa-231	Pa-231	1.000E+00	3.189E+00	3.161E+00	2.913E+00	8.622E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pa-231	U-235	1.000E+00	3.101E-05	9.669E-05	6.193E-04	1.282E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pa-231	äDOSE(j)		3.189E+00	3.161E+00	2.913E+00	8.634E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Pb-210	Pb-210	1.000E+00	1.883E+01	1.805E+01	1.230E+01	1.762E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Ra-226	1.000E+00	3.408E-01	9.173E-01	4.899E+00	5.102E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	Th-230	1.000E+00	5.262E-05	3.267E-04	1.196E-02	1.697E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-234	1.000E+00	1.240E-10	1.637E-09	3.823E-07	4.873E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	U-238	9.999E-01	7.295E-17	1.980E-15	2.882E-12	3.400E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pb-210	äDOSE(j)		1.918E+01	1.897E+01	1.721E+01	5.448E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Ra-226	Ra-226	1.000E+00	7.914E+01	7.885E+01	7.621E+01	4.008E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	Th-230	1.000E+00	1.695E-02	5.104E-02	3.475E-01	1.795E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	U-234	1.000E+00	5.042E-08	3.543E-07	1.590E-05	6.071E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Ra-226	U-238	9.999E-01	3.550E-14	5.347E-13	1.553E-10	4.920E-08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-226	äDOSE(j)		7.916E+01	7.891E+01	7.656E+01	4.188E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Ra-228	Ra-228	1.000E+00	1.714E+01	1.514E+01	4.947E+00	5.062E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228	Th-232	1.000E+00	1.033E+00	2.966E+00	1.257E+01	9.350E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228	äDOSE(j)		1.818E+01	1.811E+01	1.752E+01	9.350E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-228	Ra-228	1.000E+00	3.369E+00	8.147E+00	8.190E+00	9.808E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-228	1.000E+00	1.815E+01	1.260E+01	4.712E-01	1.868E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	1.414E-01	8.606E-01	1.239E+01	1.209E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	äDOSE(j)		2.166E+01	2.161E+01	2.105E+01	1.209E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	3.563E-01	3.539E-01	3.323E-01	1.193E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-234	1.000E+00	1.662E-06	4.817E-06	2.993E-05	6.905E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	U-238	9.999E-01	1.608E-12	1.074E-11	4.391E-10	8.269E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-230	äDOSE(j)		3.563E-01	3.539E-01	3.323E-01	1.194E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-232	Th-232	1.000E+00	6.375E-01	6.331E-01	5.937E-01	2.074E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0U-234	U-234	1.000E+00	3.731E-01	3.670E-01	3.155E-01	4.649E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	U-238	9.999E-01	5.274E-07	1.559E-06	9.390E-06	1.325E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	äDOSE(j)		3.731E-01	3.670E-01	3.155E-01	4.650E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0U-235	U-235	1.000E+00	3.691E-01	3.650E-01	3.299E-01	9.304E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0U-238	U-238	5.400E-05	1.805E-05	1.775E-05	1.526E-05	2.233E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238	U-238	9.999E-01	1.321E+00	1.304E+00	1.161E+00	2.754E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238	äDOSE(j)		1.321E+00	1.304E+00	1.161E+00	2.754E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ffffffff	ffffffff	ffffffffff	ffffffffff	ffffffffff	ffffffffff	ffffffffff	ffffffffff	ffffffffff	ffffffffff	ffffffffff	ffffffffff

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+00	8.000E-01	7.728E-01	5.660E-01	2.513E-02	2.478E-05	2.445E-08	2.411E-11	2.378E-14	7.470E-16
Ac-227	Pa-231	1.000E+00	0.000E+00	2.500E-02	2.127E-01	6.020E-01	3.965E-01	2.508E-01	1.587E-01	1.004E-01	7.985E-02
Ac-227	U-235	1.000E+00	0.000E+00	2.653E-07	2.311E-05	6.992E-04	9.563E-04	6.779E-04	4.390E-04	2.791E-04	2.221E-04
Ac-227	äS(j):		8.000E-01	7.978E-01	7.787E-01	6.279E-01	3.975E-01	2.515E-01	1.591E-01	1.007E-01	8.007E-02
0Pa-231	Pa-231	1.000E+00	8.000E-01	7.982E-01	7.819E-01	6.363E-01	4.025E-01	2.546E-01	1.611E-01	1.019E-01	8.106E-02
Pa-231	U-235	1.000E+00	0.000E+00	1.682E-05	1.593E-04	9.430E-04	1.006E-03	6.931E-04	4.463E-04	2.834E-04	2.255E-04
Pa-231	äS(j):		8.000E-01	7.982E-01	7.821E-01	6.372E-01	4.035E-01	2.553E-01	1.615E-01	1.022E-01	8.128E-02
0Pb-210	Pb-210	1.000E+00	1.200E+01	1.158E+01	8.397E+00	3.378E-01	2.677E-04	2.122E-07	1.681E-10	1.332E-13	3.751E-15
Pb-210	Ra-226	1.000E+00	0.000E+00	3.663E-01	3.124E+00	9.574E+00	8.437E+00	7.210E+00	6.160E+00	5.264E+00	4.866E+00
Pb-210	Th-230	1.000E+00	0.000E+00	7.981E-05	7.173E-03	3.162E-01	1.073E+00	1.688E+00	2.180E+00	2.569E+00	2.729E+00
Pb-210	U-234	1.000E+00	0.000E+00	2.396E-10	2.162E-07	9.032E-05	6.580E-04	1.256E-03	1.757E-03	2.158E-03	2.325E-03
Pb-210	U-238	9.999E-01	0.000E+00	1.699E-16	1.537E-12	6.267E-09	1.112E-07	2.763E-07	4.315E-07	5.603E-07	6.147E-07
Pb-210	äS(j):		1.200E+01	1.195E+01	1.153E+01	1.023E+01	9.511E+00	8.899E+00	8.342E+00	7.834E+00	7.597E+00
0Ra-226	Ra-226	1.000E+00	1.200E+01	1.199E+01	1.191E+01	1.109E+01	9.478E+00	8.099E+00	6.920E+00	5.913E+00	5.466E+00
Ra-226	Th-230	1.000E+00	0.000E+00	5.196E-03	5.172E-02	4.944E-01	1.342E+00	2.027E+00	2.574E+00	3.005E+00	3.183E+00
Ra-226	U-234	1.000E+00	0.000E+00	2.331E-08	2.257E-06	1.666E-04	8.571E-04	1.532E-03	2.090E-03	2.536E-03	2.721E-03
Ra-226	U-238	9.999E-01	0.000E+00	2.200E-14	2.100E-11	1.344E-08	1.523E-07	3.440E-07	5.186E-07	6.621E-07	7.225E-07
Ra-226	äS(j):		1.200E+01	1.200E+01	1.196E+01	1.159E+01	1.082E+01	1.013E+01	9.496E+00	8.921E+00	8.652E+00
0Ra-228	Ra-228	1.000E+00	4.400E+00	3.899E+00	1.313E+00	2.471E-05	7.790E-16	2.456E-26	7.744E-37	0.000E+00	0.000E+00
Ra-228	Th-232	1.000E+00	0.000E+00	4.995E-01	3.074E+00	4.303E+00	4.124E+00	3.953E+00	3.788E+00	3.631E+00	3.555E+00
Ra-228	äS(j):		4.400E+00	4.398E+00	4.387E+00	4.303E+00	4.124E+00	3.953E+00	3.788E+00	3.631E+00	3.555E+00
0Th-228	Ra-228	1.000E+00	0.000E+00	1.255E+00	1.794E+00	3.705E-05	1.168E-15	3.683E-26	1.161E-36	0.000E+00	0.000E+00
Th-228	Th-228	1.000E+00	4.400E+00	3.062E+00	1.172E-01	7.926E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	8.201E-02	2.477E+00	4.303E+00	4.124E+00	3.953E+00	3.788E+00	3.631E+00	3.555E+00
Th-228	äS(j):		4.400E+00	4.399E+00	4.388E+00	4.303E+00	4.124E+00	3.953E+00	3.788E+00	3.631E+00	3.555E+00
0Th-230	Th-230	1.000E+00	1.200E+01	1.200E+01	1.197E+01	1.174E+01	1.123E+01	1.074E+01	1.028E+01	9.835E+00	9.620E+00
Th-230	U-234	1.000E+00	0.000E+00	1.075E-04	1.027E-03	6.772E-03	9.878E-03	9.921E-03	9.557E-03	9.152E-03	8.953E-03

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 Th-230  U-238   9.999E-01    0.000E+00 1.521E-10 1.433E-08 8.075E-07 2.408E-06 2.796E-06 2.780E-06 2.680E-06 2.623E-06
 Th-230  äS(j):               1.200E+01 1.200E+01 1.197E+01 1.174E+01 1.124E+01 1.075E+01 1.029E+01 9.844E+00 9.629E+00
0Th-232  Th-232  1.000E+00    4.400E+00 4.399E+00 4.391E+00 4.308E+00 4.129E+00 3.957E+00 3.793E+00 3.635E+00 3.559E+00
0U-234   U-234   1.000E+00    1.200E+01 1.188E+01 1.087E+01 4.462E+00 6.170E-01 8.532E-02 1.180E-02 1.631E-03 6.067E-04
 U-234   U-238   9.999E-01    0.000E+00 3.368E-05 3.081E-04 1.265E-03 5.250E-04 1.210E-04 2.344E-05 4.168E-06 1.722E-06
 U-234   äS(j):               1.200E+01 1.188E+01 1.087E+01 4.464E+00 6.176E-01 8.544E-02 1.182E-02 1.636E-03 6.084E-04
0U-235   U-235   1.000E+00    8.000E-01 7.921E-01 7.247E-01 2.976E-01 4.117E-02 5.696E-03 7.881E-04 1.090E-04 4.056E-05
0U-238   U-238   5.400E-05    6.480E-04 6.416E-04 5.870E-04 2.410E-04 3.335E-05 4.614E-06 6.384E-07 8.832E-08 3.285E-08
 U-238   U-238   9.999E-01    1.200E+01 1.188E+01 1.087E+01 4.463E+00 6.175E-01 8.544E-02 1.182E-02 1.636E-03 6.084E-04
 U-238   äS(j):               1.200E+01 1.188E+01 1.087E+01 4.464E+00 6.176E-01 8.544E-02 1.182E-02 1.636E-03 6.084E-04
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 THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time =  295.52 seconds
 Total water/soil iteration failures = 2.700E+01.
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Table of Contents
ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ

Part I: Mixture Sums and Single Radionuclide Guidelines
ÍÍ

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary 6
Summary of Pathway Selections 12
Contaminated Zone and Total Dose Summary 13
Total Dose Components
Time = 0.000E+00 14
Time = 1.000E+00 15
Time = 1.000E+01 16
Time = 1.000E+02 17
Time = 3.000E+02 18
Time = 5.000E+02 19
Time = 7.000E+02 20
Time = 9.000E+02 21
Time = 1.000E+03 22
Dose/Source Ratios Summed Over All Pathways 23
Single Radionuclide Soil Guidelines 24
Dose Per Nuclide Summed Over All Pathways 25
Soil Concentration Per Nuclide 26

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)

A-1	Po-210	(Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211	(Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214	(Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215	(Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216	(Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218	(Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)
A-1	Ra-223	(Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224	(Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226	(Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219	(Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220	(Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222	(Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227	(Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228	(Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230	(Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231	(Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232	(Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234	(Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207	(Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208	(Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210	(Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234	(Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235	(Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238	(Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D		6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231		1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D		2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D		8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D		5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D		3.454E-01	3.420E-01	DCF2(6)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2(12)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)

D-1	Pa-231	1.060E-02	1.060E-02	DCF3(2)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(5)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(6)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(7)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(8)
D-1	U-234	2.830E-04	2.830E-04	DCF3(9)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(10)
D-1	U-238	2.550E-04	2.550E-04	DCF3(11)
D-1	U-238+D	2.687E-04	2.550E-04	DCF3(12)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(2,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(4,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(7,3)
D-34				

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(8,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(8,2)

D-34	Th-232	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(8,3)
D-34					
D-34	U-234	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-234	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-234	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34					
D-34	U-235+D	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-235+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-235+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)
D-34					
D-34	U-238	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,1)
D-34	U-238	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(11,2)
D-34	U-238	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(11,3)
D-34					
D-34	U-238+D	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(12,1)
D-34	U-238+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(12,2)
D-34	U-238+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(12,3)
D-5	Bioaccumulation factors, fresh water, L/kg:				
D-5	Ac-227+D	, fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D	, crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5					
D-5	Pa-231	, fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231	, crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5					
D-5	Pb-210+D	, fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D	, crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5					
D-5	Ra-226+D	, fish	5.000E+01	5.000E+01	BIOFAC(4,1)
D-5	Ra-226+D	, crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(4,2)
D-5					
D-5	Ra-228+D	, fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-228+D	, crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5					
D-5	Th-228+D	, fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-228+D	, crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5					
D-5	Th-230	, fish	1.000E+02	1.000E+02	BIOFAC(7,1)
D-5	Th-230	, crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(7,2)
D-5					
D-5	Th-232	, fish	1.000E+02	1.000E+02	BIOFAC(8,1)
D-5	Th-232	, crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(8,2)
D-5					
D-5	U-234	, fish	1.000E+01	1.000E+01	BIOFAC(9,1)
D-5	U-234	, crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5					
D-5	U-235+D	, fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-235+D	, crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(11,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(11,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(12,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(12,2)

#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.

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)	2.210E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	4.500E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	4.700E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+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)	1.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	5.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	7.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	9.000E+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): Ac-227	1.100E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Pa-231	1.100E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	2.240E+01	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	2.240E+01	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	3.840E+01	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	3.840E+01	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Th-230	1.580E+01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Th-232	3.840E+01	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-234	1.580E+01	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): U-235	1.100E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): U-238	1.580E+01	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L): Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Pa-231	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(5)

R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(11)
R013	Cover depth (m)	1.830E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	1.920E+00	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	1.500E-04	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	2.240E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.500E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.600E-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-02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.430E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.300E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	7.300E-01	5.000E-01	---	EVAPTR

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Precipitation (m/yr)	1.050E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	9.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	2.770E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.510E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.830E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	9.500E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.000E-03	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	4.530E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	2	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.500E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.696E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.600E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.890E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)

R015	Unsat. zone 1, soil-specific b parameter	1.060E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	4.750E+03	1.000E+01	---	HCUZ(1)
R015	Unsat. zone 2, thickness (m)	1.900E+00	0.000E+00	---	H(2)
R015	Unsat. zone 2, soil density (g/cm**3)	1.510E+00	1.500E+00	---	DENSUZ(2)
R015	Unsat. zone 2, total porosity	4.300E-01	4.000E-01	---	TPUZ(2)
R015	Unsat. zone 2, effective porosity	3.830E-01	2.000E-01	---	EPUZ(2)
R015	Unsat. zone 2, field capacity	2.000E-01	2.000E-01	---	FCUZ(2)
R015	Unsat. zone 2, soil-specific b parameter	4.050E+00	5.300E+00	---	BUZ(2)
R015	Unsat. zone 2, hydraulic conductivity (m/yr)	9.500E+03	1.000E+01	---	HCUZ(2)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Unsaturated zone 2 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,2)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.248E-06	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,1)
R016	Unsaturated zone 2 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,2)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.112E-06	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,1)
R016	Unsaturated zone 2 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,2)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.041E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	3.480E+03	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.082E-07	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	6.595E+03	7.000E+01	---	DCNUCC(5)

R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.264E-07	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	5.483E+04	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.130E-08	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	5.483E+04	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.130E-08	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	5.483E+04	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.130E-08	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.598E+04	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.759E-07	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	1.598E+04	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.759E-07	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)

R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	1.598E+04	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.759E-07	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R017	Inhalation rate (m**3/yr)	not used	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	not used	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	not used	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	not used	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	5.000E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	2.500E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	not used	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)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
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)	1.600E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	1.400E+01	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)	5.100E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	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	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E-01	-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)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	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	1.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	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)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	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	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	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	2.500E-01	2.500E-01	---	RWET(1)

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

Site-Specific Parameter Summary (continued)

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

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TITL ³ Maximum number of integration points for dose    ³     17    ³    ---    ³              ---              ³ LYMAX
TITL ³ Maximum number of integration points for risk    ³      1    ³    ---    ³              ---              ³ KYMAX
ÍÍÍ
```

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

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

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

0 Water Dependent Pathways

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.

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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0

Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T½ Limit = 180 days 07/26/2009 16:10 Page 16
Summary : SMC Suburban Resident Area 8 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109608.RAD

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

0

Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000

Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 16:10 Page 17
Summary : SMC Suburban Resident Area 8 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109608.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ

Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T½ Limit = 180 days 07/26/2009 16:10 Page 18
Summary : SMC Suburban Resident Area 8 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109608.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water	Fish	Radon	Plant	Meat	Milk	All Pathways*

Radio- Nuclide														
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 16:10 Page 19

Summary : SMC Suburban Resident Area 8 Controls Fail Unrestricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109608.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 = 5.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

0 Water Dependent Pathways

0

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 16:10 Page 20

Summary : SMC Suburban Resident Area 8 Controls Fail Unrestricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109608.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 = 7.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 7.000E+02 years

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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 = 9.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.000E+02 years

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Suburban Resident Area 8 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109608.RAD

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

0 Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

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

0 Parent Product Thread DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)

(i)	(j)	Fraction	0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ
Ac-227+D	Ac-227+D	1.000E+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
0Pa-231	Pa-231	1.000E+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	Ac-227+D	1.000E+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	äDSR(j)		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
0Pb-210+D	Pb-210+D	1.000E+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
0Ra-226+D	Ra-226+D	1.000E+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+D	Pb-210+D	1.000E+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+D	äDSR(j)		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
0Ra-228+D	Ra-228+D	1.000E+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+D	Th-228+D	1.000E+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+D	äDSR(j)		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
0Th-228+D	Th-228+D	1.000E+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
0Th-230	Th-230	1.000E+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-230	Ra-226+D	1.000E+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-230	Pb-210+D	1.000E+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-230	äDSR(j)		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
0Th-232	Th-232	1.000E+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	Ra-228+D	1.000E+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	Th-228+D	1.000E+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	äDSR(j)		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
0U-234	U-234	1.000E+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-234	Th-230	1.000E+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-234	Ra-226+D	1.000E+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-234	Pb-210+D	1.000E+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-234	äDSR(j)		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
0U-235+D	U-235+D	1.000E+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+D	Pa-231	1.000E+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+D	Ac-227+D	1.000E+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+D	äDSR(j)		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
0U-238	U-238	5.400E-05	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
0U-238+D	U-238+D	9.999E-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
U-238+D	U-234	9.999E-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
U-238+D	Th-230	9.999E-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
U-238+D	Ra-226+D	9.999E-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
U-238+D	Pb-210+D	9.999E-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
U-238+D	äDSR(j)		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
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The DSR includes contributions from associated (half-life ó 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide

(i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ
Ac-227	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13
Pa-231	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10
Pb-210	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13

Ra-226	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11
Ra-228	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14
Th-228	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10
Th-232	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05
U-234	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09
U-235	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06
U-238	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05
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*At specific activity limit

0

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

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	1.100E+00	0.000E+00	0.000E+00	*7.232E+13	0.000E+00	*7.232E+13
Pa-231	1.100E+00	0.000E+00	0.000E+00	*4.723E+10	0.000E+00	*4.723E+10
Pb-210	2.240E+01	0.000E+00	0.000E+00	*7.634E+13	0.000E+00	*7.634E+13
Ra-226	2.240E+01	0.000E+00	0.000E+00	*9.885E+11	0.000E+00	*9.885E+11
Ra-228	3.840E+01	0.000E+00	0.000E+00	*2.726E+14	0.000E+00	*2.726E+14
Th-228	3.840E+01	0.000E+00	0.000E+00	*8.195E+14	0.000E+00	*8.195E+14
Th-230	1.580E+01	0.000E+00	0.000E+00	*2.018E+10	0.000E+00	*2.018E+10
Th-232	3.840E+01	0.000E+00	0.000E+00	*1.097E+05	0.000E+00	*1.097E+05
U-234	1.580E+01	0.000E+00	0.000E+00	*6.247E+09	0.000E+00	*6.247E+09
U-235	1.100E+00	0.000E+00	0.000E+00	*2.161E+06	0.000E+00	*2.161E+06
U-238	1.580E+01	0.000E+00	0.000E+00	*3.361E+05	0.000E+00	*3.361E+05
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*At specific activity limit

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

0Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+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	Pa-231	1.000E+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	U-235	1.000E+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	äDOSE(j)		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
0Pa-231	Pa-231	1.000E+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	U-235	1.000E+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	äDOSE(j)		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
0Pb-210	Pb-210	1.000E+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	Ra-226	1.000E+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	Th-230	1.000E+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	U-234	1.000E+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

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 Pb-210  U-238   9.999E-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
 Pb-210  äDOSE(j)            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
0Ra-226  Ra-226  1.000E+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  Th-230  1.000E+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  U-234   1.000E+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  U-238   9.999E-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
 Ra-226  äDOSE(j)            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
0Ra-228  Ra-228  1.000E+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  Th-232  1.000E+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  äDOSE(j)            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
0Th-228  Ra-228  1.000E+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  Th-228  1.000E+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  Th-232  1.000E+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  äDOSE(j)            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
0Th-230  Th-230  1.000E+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-230  U-234   1.000E+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-230  U-238   9.999E-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
 Th-230  äDOSE(j)            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
0Th-232  Th-232  1.000E+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
0U-234   U-234   1.000E+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-234   U-238   9.999E-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
 U-234   äDOSE(j)            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
0U-235   U-235   1.000E+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
0U-238   U-238   5.400E-05    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-238   U-238   9.999E-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
 U-238   äDOSE(j)            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
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 THF(i) is the thread fraction of the parent nuclide.
1RESRAD, Version 6.4      T« Limit = 180 days        07/26/2009  16:10  Page  26
 Summary : SMC Suburban Resident Area 8 Controls Fail Unrestricted Area
 File    : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109608.RAD

                                   Individual Nuclide Soil Concentration
                                 Parent Nuclide and Branch Fraction Indicated
0Nuclide Parent   THF(i)                                   S(j,t), pCi/g
   (j)     (i)              t= 0.000E+00 1.000E+00 1.000E+01 1.000E+02 3.000E+02 5.000E+02 7.000E+02 9.000E+02 1.000E+03
 ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄ    ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ
 Ac-227  Ac-227  1.000E+00    1.100E+00 1.066E+00 8.000E-01 4.556E-02 7.813E-05 1.340E-07 2.298E-10 3.942E-13 1.632E-14
 Ac-227  Pa-231  1.000E+00    0.000E+00 3.447E-02 2.999E-01 1.052E+00 1.092E+00 1.086E+00 1.081E+00 1.075E+00 1.072E+00
 Ac-227  U-235   1.000E+00    0.000E+00 3.666E-07 3.341E-05 1.625E-03 6.228E-03 1.084E-02 1.542E-02 1.998E-02 2.225E-02
 Ac-227  äS(j):              1.100E+00 1.100E+00 1.100E+00 1.099E+00 1.098E+00 1.097E+00 1.096E+00 1.095E+00 1.094E+00
0Pa-231  Pa-231  1.000E+00    1.100E+00 1.100E+00 1.100E+00 1.097E+00 1.091E+00 1.086E+00 1.080E+00 1.074E+00 1.071E+00
 Pa-231  U-235   1.000E+00    0.000E+00 2.327E-05 2.327E-04 2.324E-03 6.955E-03 1.156E-02 1.614E-02 2.070E-02 2.297E-02
 Pa-231  äS(j):              1.100E+00 1.100E+00 1.100E+00 1.099E+00 1.098E+00 1.097E+00 1.096E+00 1.095E+00 1.094E+00
0Pb-210  Pb-210  1.000E+00    2.240E+01 2.171E+01 1.641E+01 9.997E-01 1.991E-03 3.967E-06 7.902E-09 1.574E-11 7.025E-13
 Pb-210  Ra-226  1.000E+00    0.000E+00 6.854E-01 5.970E+00 2.073E+01 1.993E+01 1.828E+01 1.676E+01 1.537E+01 1.471E+01
 Pb-210  Th-230  1.000E+00    0.000E+00 1.053E-04 9.601E-03 4.657E-01 1.727E+00 2.889E+00 3.953E+00 4.926E+00 5.381E+00
 Pb-210  U-234   1.000E+00    0.000E+00 3.167E-10 2.955E-07 1.686E-04 2.152E-03 6.321E-03 1.249E-02 2.049E-02 2.512E-02
 Pb-210  U-238   9.999E-01    0.000E+00 2.248E-16 2.127E-12 1.341E-08 5.639E-07 2.867E-06 8.109E-06 1.737E-05 2.383E-05
 Pb-210  äS(j):              2.240E+01 2.240E+01 2.239E+01 2.220E+01 2.167E+01 2.118E+01 2.073E+01 2.031E+01 2.012E+01
0Ra-226  Ra-226  1.000E+00    2.240E+01 2.239E+01 2.230E+01 2.145E+01 1.967E+01 1.803E+01 1.653E+01 1.516E+01 1.451E+01
 Ra-226  Th-230  1.000E+00    0.000E+00 6.843E-03 6.830E-02 6.695E-01 1.923E+00 3.069E+00 4.118E+00 5.078E+00 5.526E+00
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 Ra-226  U-234   1.000E+00    0.000E+00 3.080E-08 3.076E-06 3.036E-04 2.653E-03 7.159E-03 1.364E-02 2.192E-02 2.668E-02
 Ra-226  U-238   9.999E-01    0.000E+00 2.911E-14 2.908E-11 2.879E-08 7.604E-07 3.444E-06 9.251E-06 1.925E-05 2.613E-05
 Ra-226  äS(j):               2.240E+01 2.240E+01 2.237E+01 2.212E+01 2.159E+01 2.111E+01 2.066E+01 2.026E+01 2.007E+01
0Ra-228  Ra-228  1.000E+00    3.840E+01 3.404E+01 1.150E+01 2.234E-04 7.557E-15 2.557E-25 8.651E-36 0.000E+00 0.000E+00
 Ra-228  Th-232  1.000E+00    0.000E+00 4.361E+00 2.690E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01
 Ra-228  äS(j):               3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01
0Th-228  Ra-228  1.000E+00    0.000E+00 1.096E+01 1.570E+01 3.347E-04 1.133E-14 3.832E-25 1.296E-35 0.000E+00 0.000E+00
 Th-228  Th-228  1.000E+00    3.840E+01 2.673E+01 1.025E+00 7.065E-15 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 Th-228  Th-232  1.000E+00    0.000E+00 7.159E-01 2.167E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01
 Th-228  äS(j):               3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01
0Th-230  Th-230  1.000E+00    1.580E+01 1.580E+01 1.580E+01 1.579E+01 1.576E+01 1.573E+01 1.570E+01 1.567E+01 1.566E+01
 Th-230  U-234   1.000E+00    0.000E+00 1.422E-04 1.422E-03 1.421E-02 4.259E-02 7.090E-02 9.914E-02 1.273E-01 1.414E-01
 Th-230  U-238   9.999E-01    0.000E+00 2.016E-10 2.016E-08 2.015E-06 1.812E-05 5.030E-05 9.850E-05 1.627E-04 2.008E-04
 Th-230  äS(j):               1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01
0Th-232  Th-232  1.000E+00    3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01
0U-234   U-234   1.000E+00    1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.579E+01 1.578E+01 1.577E+01 1.576E+01 1.575E+01
 U-234   U-238   9.999E-01    0.000E+00 4.479E-05 4.479E-04 4.478E-03 1.343E-02 2.238E-02 3.132E-02 4.025E-02 4.472E-02
 U-234   äS(j):               1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01
0U-235   U-235   1.000E+00    1.100E+00 1.100E+00 1.100E+00 1.100E+00 1.100E+00 1.100E+00 1.100E+00 1.100E+00 1.100E+00
0U-238   U-238   5.400E-05    8.532E-04 8.532E-04 8.532E-04 8.532E-04 8.532E-04 8.531E-04 8.531E-04 8.531E-04 8.530E-04
 U-238   U-238   9.999E-01    1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01
 U-238   äS(j):               1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01
 ÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ    ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ
 THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time =   52.45 seconds
```

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary 6
Summary of Pathway Selections 12
Contaminated Zone and Total Dose Summary 13
Total Dose Components
Time = 0.000E+00 14
Time = 1.000E+00 15
Time = 1.000E+01 16
Time = 1.000E+02 17
Time = 3.000E+02 18
Time = 5.000E+02 19
Time = 7.000E+02 20
Time = 9.000E+02 21
Time = 1.000E+03 22
Dose/Source Ratios Summed Over All Pathways 23
Single Radionuclide Soil Guidelines 24
Dose Per Nuclide Summed Over All Pathways 25
Soil Concentration Per Nuclide 26

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)

A-1	Po-210	(Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211	(Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214	(Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215	(Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216	(Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218	(Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)
A-1	Ra-223	(Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224	(Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226	(Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219	(Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220	(Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222	(Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227	(Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228	(Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230	(Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231	(Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232	(Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234	(Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207	(Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208	(Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210	(Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234	(Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235	(Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238	(Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D		6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231		1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D		2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D		8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D		5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D		3.454E-01	3.420E-01	DCF2(6)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2(12)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)

```
D-1  ³ Pa-231                                                    ³ 1.060E-02 ³ 1.060E-02 ³ DCF3(  2)
D-1  ³ Pb-210+D                                                  ³ 7.276E-03 ³ 5.370E-03 ³ DCF3(  3)
D-1  ³ Ra-226+D                                                  ³ 1.321E-03 ³ 1.320E-03 ³ DCF3(  4)
D-1  ³ Ra-228+D                                                  ³ 1.442E-03 ³ 1.440E-03 ³ DCF3(  5)
D-1  ³ Th-228+D                                                  ³ 8.086E-04 ³ 3.960E-04 ³ DCF3(  6)
D-1  ³ Th-230                                                    ³ 5.480E-04 ³ 5.480E-04 ³ DCF3(  7)
D-1  ³ Th-232                                                    ³ 2.730E-03 ³ 2.730E-03 ³ DCF3(  8)
D-1  ³ U-234                                                     ³ 2.830E-04 ³ 2.830E-04 ³ DCF3(  9)
D-1  ³ U-235+D                                                   ³ 2.673E-04 ³ 2.660E-04 ³ DCF3( 10)
D-1  ³ U-238                                                     ³ 2.550E-04 ³ 2.550E-04 ³ DCF3( 11)
D-1  ³ U-238+D                                                   ³ 2.687E-04 ³ 2.550E-04 ³ DCF3( 12)
     ³                                                           ³           ³           ³
D-34 ³ Food transfer factors:                                    ³           ³           ³
D-34 ³ Ac-227+D  , plant/soil concentration ratio, dimensionless ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  1,1)
D-34 ³ Ac-227+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,2)
D-34 ³ Ac-227+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)  ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,3)
D-34 ³                                                           ³           ³           ³
D-34 ³ Pa-231    , plant/soil concentration ratio, dimensionless ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  2,1)
D-34 ³ Pa-231    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 5.000E-03 ³ 5.000E-03 ³ RTF(  2,2)
D-34 ³ Pa-231    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)  ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  2,3)
D-34 ³                                                           ³           ³           ³
D-34 ³ Pb-210+D  , plant/soil concentration ratio, dimensionless ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  3,1)
D-34 ³ Pb-210+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 8.000E-04 ³ 8.000E-04 ³ RTF(  3,2)
D-34 ³ Pb-210+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)  ³ 3.000E-04 ³ 3.000E-04 ³ RTF(  3,3)
D-34 ³                                                           ³           ³           ³
D-34 ³ Ra-226+D  , plant/soil concentration ratio, dimensionless ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  4,1)
D-34 ³ Ra-226+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,2)
D-34 ³ Ra-226+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,3)
D-34 ³                                                           ³           ³           ³
D-34 ³ Ra-228+D  , plant/soil concentration ratio, dimensionless ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  5,1)
D-34 ³ Ra-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,2)
D-34 ³ Ra-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,3)
D-34 ³                                                           ³           ³           ³
D-34 ³ Th-228+D  , plant/soil concentration ratio, dimensionless ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  6,1)
D-34 ³ Th-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  6,2)
D-34 ³ Th-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)  ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  6,3)
D-34 ³                                                           ³           ³           ³
D-34 ³ Th-230    , plant/soil concentration ratio, dimensionless ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  7,1)
D-34 ³ Th-230    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  7,2)
D-34 ³ Th-230    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)  ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  7,3)
D-34 ³                                                           ³           ³           ³
```


Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

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0    ³                                                           ³  Current  ³   Base    ³  Parameter
Menu ³                          Parameter                        ³   Value#  ³   Case*   ³    Name
ÄÄÄ
```

D-34	Th-232	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(8,3)
D-34					
D-34	U-234	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-234	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-234	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34					
D-34	U-235+D	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-235+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-235+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)
D-34					
D-34	U-238	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,1)
D-34	U-238	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(11,2)
D-34	U-238	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(11,3)
D-34					
D-34	U-238+D	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(12,1)
D-34	U-238+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(12,2)
D-34	U-238+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(12,3)
D-5	Bioaccumulation factors, fresh water, L/kg:				
D-5	Ac-227+D	, fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D	, crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5					
D-5	Pa-231	, fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231	, crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5					
D-5	Pb-210+D	, fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D	, crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5					
D-5	Ra-226+D	, fish	5.000E+01	5.000E+01	BIOFAC(4,1)
D-5	Ra-226+D	, crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(4,2)
D-5					
D-5	Ra-228+D	, fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-228+D	, crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5					
D-5	Th-228+D	, fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-228+D	, crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5					
D-5	Th-230	, fish	1.000E+02	1.000E+02	BIOFAC(7,1)
D-5	Th-230	, crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(7,2)
D-5					
D-5	Th-232	, fish	1.000E+02	1.000E+02	BIOFAC(8,1)
D-5	Th-232	, crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(8,2)
D-5					
D-5	U-234	, fish	1.000E+01	1.000E+01	BIOFAC(9,1)
D-5	U-234	, crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5					
D-5	U-235+D	, fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-235+D	, crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(11,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(11,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(12,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(12,2)

#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.

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)	1.700E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	4.500E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	1.300E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+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)	1.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	5.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	7.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	9.000E+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): Ac-227	7.100E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Pa-231	7.100E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.320E+02	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.320E+02	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	1.854E+02	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	1.854E+02	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Th-230	1.019E+02	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Th-232	1.854E+02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-234	1.019E+02	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): U-235	7.100E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): U-238	1.019E+02	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L): Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Pa-231	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(5)

R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(11)
R013	Cover depth (m)	1.830E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	1.920E+00	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	1.500E-04	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	2.240E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.500E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.600E-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-02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.430E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.300E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	7.300E-01	5.000E-01	---	EVAPTR

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Precipitation (m/yr)	1.050E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	9.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	2.770E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.510E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.830E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	9.500E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.000E-03	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	4.530E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	2	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.500E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.696E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.600E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.890E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)

R015	Unsat. zone 1, soil-specific b parameter	1.060E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	4.750E+03	1.000E+01	---	HCUZ(1)
R015	Unsat. zone 2, thickness (m)	1.900E+00	0.000E+00	---	H(2)
R015	Unsat. zone 2, soil density (g/cm**3)	1.510E+00	1.500E+00	---	DENSUZ(2)
R015	Unsat. zone 2, total porosity	4.300E-01	4.000E-01	---	TPUZ(2)
R015	Unsat. zone 2, effective porosity	3.830E-01	2.000E-01	---	EPUZ(2)
R015	Unsat. zone 2, field capacity	2.000E-01	2.000E-01	---	FCUZ(2)
R015	Unsat. zone 2, soil-specific b parameter	4.050E+00	5.300E+00	---	BUZ(2)
R015	Unsat. zone 2, hydraulic conductivity (m/yr)	9.500E+03	1.000E+01	---	HCUZ(2)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Unsaturated zone 2 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,2)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.248E-06	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,1)
R016	Unsaturated zone 2 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,2)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.112E-06	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,1)
R016	Unsaturated zone 2 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,2)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.041E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	1.606E+05	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.751E-08	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	1.956E+04	7.000E+01	---	DCNUCC(5)

R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.438E-07	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	6.180E+04	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.551E-08	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	6.180E+04	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.551E-08	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	6.180E+04	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.551E-08	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	3.087E+05	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.111E-09	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	3.087E+05	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.111E-09	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)

R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	3.087E+05	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.111E-09	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R017	Inhalation rate (m**3/yr)	not used	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	not used	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	not used	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	not used	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	5.000E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	2.500E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	not used	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)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
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)	1.600E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	1.400E+01	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)	5.100E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	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	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E-01	-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)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	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	1.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	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)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	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	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	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	2.500E-01	2.500E-01	---	RWET(1)

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

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
0					

```
TITL ³ Maximum number of integration points for dose    ³     17    ³    ---    ³              ---              ³ LYMAX
TITL ³ Maximum number of integration points for risk    ³      1    ³    ---    ³              ---              ³ KYMAX
ÍÍÍ
```

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ

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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 16:07 Page 16
Summary : SMC Suburban Resident Area 7 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109607.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000

Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T½ Limit = 180 days 07/26/2009 16:07 Page 17
Summary : SMC Suburban Resident Area 7 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109607.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ

Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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 = 3.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water	Fish	Radon	Plant	Meat	Milk	All Pathways*

Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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 = 5.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

0 Water Dependent Pathways

Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 16:07 Page 20

Summary : SMC Suburban Resident Area 7 Controls Fail Unrestricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109607.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 = 7.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 7.000E+02 years

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Suburban Resident Area 7 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109607.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 = 9.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.000E+02 years

0 Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Suburban Resident Area 7 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109607.RAD

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

0 Radio-	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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

0 Radio-	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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

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

0 Parent Product Thread DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)

(i)	(j)	Fraction	0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
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Ac-227+D	Ac-227+D	1.000E+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
0Pa-231	Pa-231	1.000E+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	Ac-227+D	1.000E+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	äDSR(j)		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
0Pb-210+D	Pb-210+D	1.000E+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
0Ra-226+D	Ra-226+D	1.000E+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+D	Pb-210+D	1.000E+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+D	äDSR(j)		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
0Ra-228+D	Ra-228+D	1.000E+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+D	Th-228+D	1.000E+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+D	äDSR(j)		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
0Th-228+D	Th-228+D	1.000E+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
0Th-230	Th-230	1.000E+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-230	Ra-226+D	1.000E+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-230	Pb-210+D	1.000E+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-230	äDSR(j)		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
0Th-232	Th-232	1.000E+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	Ra-228+D	1.000E+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	Th-228+D	1.000E+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	äDSR(j)		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
0U-234	U-234	1.000E+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-234	Th-230	1.000E+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-234	Ra-226+D	1.000E+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-234	Pb-210+D	1.000E+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-234	äDSR(j)		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
0U-235+D	U-235+D	1.000E+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+D	Pa-231	1.000E+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+D	Ac-227+D	1.000E+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+D	äDSR(j)		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
0U-238	U-238	5.400E-05	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
0U-238+D	U-238+D	9.999E-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
U-238+D	U-234	9.999E-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
U-238+D	Th-230	9.999E-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
U-238+D	Ra-226+D	9.999E-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
U-238+D	Pb-210+D	9.999E-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
U-238+D	äDSR(j)		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
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The DSR includes contributions from associated (half-life ó 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
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Ac-227	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13
Pa-231	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10
Pb-210	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13

Ra-226	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11
Ra-228	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14
Th-228	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10
Th-232	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05
U-234	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09
U-235	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06
U-238	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05
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*At specific activity limit

0

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

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
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Ac-227	7.100E+00	0.000E+00	0.000E+00	*7.232E+13	0.000E+00	*7.232E+13
Pa-231	7.100E+00	0.000E+00	0.000E+00	*4.723E+10	0.000E+00	*4.723E+10
Pb-210	1.320E+02	0.000E+00	0.000E+00	*7.634E+13	0.000E+00	*7.634E+13
Ra-226	1.320E+02	0.000E+00	0.000E+00	*9.885E+11	0.000E+00	*9.885E+11
Ra-228	1.854E+02	0.000E+00	0.000E+00	*2.726E+14	0.000E+00	*2.726E+14
Th-228	1.854E+02	0.000E+00	0.000E+00	*8.195E+14	0.000E+00	*8.195E+14
Th-230	1.019E+02	0.000E+00	0.000E+00	*2.018E+10	0.000E+00	*2.018E+10
Th-232	1.854E+02	0.000E+00	0.000E+00	*1.097E+05	0.000E+00	*1.097E+05
U-234	1.019E+02	0.000E+00	0.000E+00	*6.247E+09	0.000E+00	*6.247E+09
U-235	7.100E+00	0.000E+00	0.000E+00	*2.161E+06	0.000E+00	*2.161E+06
U-238	1.019E+02	0.000E+00	0.000E+00	*3.361E+05	0.000E+00	*3.361E+05
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*At specific activity limit

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

0Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
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Ac-227	Ac-227	1.000E+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	Pa-231	1.000E+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	U-235	1.000E+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	äDOSE(j)		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
0Pa-231	Pa-231	1.000E+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	U-235	1.000E+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	äDOSE(j)		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
0Pb-210	Pb-210	1.000E+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	Ra-226	1.000E+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	Th-230	1.000E+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	U-234	1.000E+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	U-238	9.999E-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
Pb-210	äDOSE(j)		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
0Ra-226	Ra-226	1.000E+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	Th-230	1.000E+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	U-234	1.000E+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	U-238	9.999E-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
Ra-226	äDOSE(j)		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
0Ra-228	Ra-228	1.000E+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	Th-232	1.000E+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	äDOSE(j)		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
0Th-228	Ra-228	1.000E+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	Th-228	1.000E+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	Th-232	1.000E+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	äDOSE(j)		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
0Th-230	Th-230	1.000E+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-230	U-234	1.000E+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-230	U-238	9.999E-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
Th-230	äDOSE(j)		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
0Th-232	Th-232	1.000E+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
0U-234	U-234	1.000E+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-234	U-238	9.999E-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
U-234	äDOSE(j)		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
0U-235	U-235	1.000E+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
0U-238	U-238	5.400E-05	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-238	U-238	9.999E-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
U-238	äDOSE(j)		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
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+00	7.100E+00	6.877E+00	5.164E+00	2.940E-01	5.043E-04	8.649E-07	1.483E-09	2.544E-12	1.054E-13
Ac-227	Pa-231	1.000E+00	0.000E+00	2.225E-01	1.936E+00	6.792E+00	7.048E+00	7.012E+00	6.975E+00	6.938E+00	6.920E+00
Ac-227	U-235	1.000E+00	0.000E+00	2.366E-06	2.156E-04	1.049E-02	4.020E-02	6.995E-02	9.954E-02	1.290E-01	1.436E-01
Ac-227	äS(j):		7.100E+00	7.100E+00	7.100E+00	7.096E+00	7.089E+00	7.082E+00	7.075E+00	7.067E+00	7.064E+00
0Pa-231	Pa-231	1.000E+00	7.100E+00	7.100E+00	7.098E+00	7.081E+00	7.044E+00	7.007E+00	6.971E+00	6.934E+00	6.916E+00
Pa-231	U-235	1.000E+00	0.000E+00	1.502E-04	1.502E-03	1.500E-02	4.489E-02	7.462E-02	1.042E-01	1.336E-01	1.483E-01
Pa-231	äS(j):		7.100E+00	7.100E+00	7.100E+00	7.096E+00	7.089E+00	7.082E+00	7.075E+00	7.068E+00	7.064E+00
0Pb-210	Pb-210	1.000E+00	1.320E+02	1.280E+02	9.672E+01	5.891E+00	1.174E-02	2.338E-05	4.656E-08	9.275E-11	4.140E-12
Pb-210	Ra-226	1.000E+00	0.000E+00	4.039E+00	3.518E+01	1.222E+02	1.175E+02	1.078E+02	9.881E+01	9.061E+01	8.677E+01
Pb-210	Th-230	1.000E+00	0.000E+00	6.789E-04	6.192E-02	3.004E+00	1.114E+01	1.864E+01	2.550E+01	3.178E+01	3.472E+01
Pb-210	U-234	1.000E+00	0.000E+00	2.043E-09	1.906E-06	1.088E-03	1.388E-02	4.077E-02	8.057E-02	1.322E-01	1.621E-01
Pb-210	U-238	9.999E-01	0.000E+00	1.450E-15	1.372E-11	8.646E-08	3.637E-06	1.849E-05	5.231E-05	1.121E-04	1.537E-04
Pb-210	äS(j):		1.320E+02	1.320E+02	1.320E+02	1.311E+02	1.287E+02	1.264E+02	1.244E+02	1.225E+02	1.216E+02
0Ra-226	Ra-226	1.000E+00	1.320E+02	1.319E+02	1.314E+02	1.264E+02	1.159E+02	1.063E+02	9.747E+01	8.938E+01	8.559E+01
Ra-226	Th-230	1.000E+00	0.000E+00	4.414E-02	4.405E-01	4.318E+00	1.240E+01	1.980E+01	2.657E+01	3.276E+01	3.565E+01

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 Ra-226  U-234   1.000E+00    0.000E+00 1.987E-07 1.984E-05 1.958E-03 1.711E-02 4.618E-02 8.797E-02 1.414E-01 1.721E-01
 Ra-226  U-238   9.999E-01    0.000E+00 1.877E-13 1.875E-10 1.857E-07 4.904E-06 2.222E-05 5.967E-05 1.242E-04 1.685E-04
 Ra-226  äS(j):               1.320E+02 1.320E+02 1.319E+02 1.307E+02 1.283E+02 1.261E+02 1.241E+02 1.223E+02 1.214E+02
0Ra-228  Ra-228  1.000E+00    1.854E+02 1.643E+02 5.554E+01 1.078E-03 3.649E-14 1.235E-24 4.178E-35 0.000E+00 0.000E+00
 Ra-228  Th-232  1.000E+00    0.000E+00 2.105E+01 1.299E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02
 Ra-228  äS(j):               1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02
0Th-228  Ra-228  1.000E+00    0.000E+00 5.289E+01 7.581E+01 1.616E-03 5.468E-14 1.850E-24 6.261E-35 0.000E+00 0.000E+00
 Th-228  Th-228  1.000E+00    1.854E+02 1.290E+02 4.950E+00 3.411E-14 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 Th-228  Th-232  1.000E+00    0.000E+00 3.457E+00 1.046E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02
 Th-228  äS(j):               1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02
0Th-230  Th-230  1.000E+00    1.019E+02 1.019E+02 1.019E+02 1.018E+02 1.016E+02 1.014E+02 1.013E+02 1.011E+02 1.010E+02
 Th-230  U-234   1.000E+00    0.000E+00 9.173E-04 9.172E-03 9.167E-02 2.747E-01 4.573E-01 6.394E-01 8.212E-01 9.119E-01
 Th-230  U-238   9.999E-01    0.000E+00 1.300E-09 1.300E-07 1.300E-05 1.169E-04 3.244E-04 6.353E-04 1.049E-03 1.295E-03
 Th-230  äS(j):               1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02
0Th-232  Th-232  1.000E+00    1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02
0U-234   U-234   1.000E+00    1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.018E+02 1.018E+02 1.017E+02 1.016E+02 1.016E+02
 U-234   U-238   9.999E-01    0.000E+00 2.889E-04 2.889E-03 2.888E-02 8.662E-02 1.443E-01 2.020E-01 2.596E-01 2.885E-01
 U-234   äS(j):               1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02
0U-235   U-235   1.000E+00    7.100E+00 7.100E+00 7.100E+00 7.100E+00 7.100E+00 7.100E+00 7.100E+00 7.100E+00 7.100E+00
0U-238   U-238   5.400E-05    5.503E-03 5.503E-03 5.503E-03 5.503E-03 5.503E-03 5.503E-03 5.503E-03 5.503E-03 5.503E-03
 U-238   U-238   9.999E-01    1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02
 U-238   äS(j):               1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02
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 THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time =   52.79 seconds
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Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary 6
Summary of Pathway Selections 12
Contaminated Zone and Total Dose Summary 13
Total Dose Components
Time = 0.000E+00 14
Time = 1.000E+00 15
Time = 1.000E+01 16
Time = 1.000E+02 17
Time = 3.000E+02 18
Time = 5.000E+02 19
Time = 7.000E+02 20
Time = 9.000E+02 21
Time = 1.000E+03 22
Dose/Source Ratios Summed Over All Pathways 23
Single Radionuclide Soil Guidelines 24
Dose Per Nuclide Summed Over All Pathways 25
Soil Concentration Per Nuclide 26

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)

A-1	Po-210	(Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211	(Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214	(Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215	(Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216	(Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218	(Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)
A-1	Ra-223	(Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224	(Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226	(Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219	(Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220	(Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222	(Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227	(Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228	(Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230	(Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231	(Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232	(Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234	(Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207	(Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208	(Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210	(Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234	(Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235	(Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238	(Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D		6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231		1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D		2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D		8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D		5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D		3.454E-01	3.420E-01	DCF2(6)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2(12)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)

D-1	Pa-231	1.060E-02	1.060E-02	DCF3(2)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(5)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(6)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(7)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(8)
D-1	U-234	2.830E-04	2.830E-04	DCF3(9)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(10)
D-1	U-238	2.550E-04	2.550E-04	DCF3(11)
D-1	U-238+D	2.687E-04	2.550E-04	DCF3(12)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(2,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(4,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(7,3)
D-34				

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(8,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(8,2)

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D-34 ³ Th-232     , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  8,3)
D-34 ³                                                              ³           ³           ³
D-34 ³ U-234      , plant/soil concentration ratio, dimensionless   ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  9,1)
D-34 ³ U-234      , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 3.400E-04 ³ 3.400E-04 ³ RTF(  9,2)
D-34 ³ U-234      , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 6.000E-04 ³ 6.000E-04 ³ RTF(  9,3)
D-34 ³                                                              ³           ³           ³
D-34 ³ U-235+D    , plant/soil concentration ratio, dimensionless   ³ 2.500E-03 ³ 2.500E-03 ³ RTF( 10,1)
D-34 ³ U-235+D    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 3.400E-04 ³ 3.400E-04 ³ RTF( 10,2)
D-34 ³ U-235+D    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 6.000E-04 ³ 6.000E-04 ³ RTF( 10,3)
D-34 ³                                                              ³           ³           ³
D-34 ³ U-238      , plant/soil concentration ratio, dimensionless   ³ 2.500E-03 ³ 2.500E-03 ³ RTF( 11,1)
D-34 ³ U-238      , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 3.400E-04 ³ 3.400E-04 ³ RTF( 11,2)
D-34 ³ U-238      , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 6.000E-04 ³ 6.000E-04 ³ RTF( 11,3)
D-34 ³                                                              ³           ³           ³
D-34 ³ U-238+D    , plant/soil concentration ratio, dimensionless   ³ 2.500E-03 ³ 2.500E-03 ³ RTF( 12,1)
D-34 ³ U-238+D    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 3.400E-04 ³ 3.400E-04 ³ RTF( 12,2)
D-34 ³ U-238+D    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 6.000E-04 ³ 6.000E-04 ³ RTF( 12,3)
     ³                                                              ³           ³           ³
D-5  ³ Bioaccumulation factors, fresh water, L/kg:                  ³           ³           ³
D-5  ³ Ac-227+D   , fish                                            ³ 1.500E+01 ³ 1.500E+01 ³ BIOFAC(  1,1)
D-5  ³ Ac-227+D   , crustacea and mollusks                          ³ 1.000E+03 ³ 1.000E+03 ³ BIOFAC(  1,2)
D-5  ³                                                              ³           ³           ³
D-5  ³ Pa-231     , fish                                            ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  2,1)
D-5  ³ Pa-231     , crustacea and mollusks                          ³ 1.100E+02 ³ 1.100E+02 ³ BIOFAC(  2,2)
D-5  ³                                                              ³           ³           ³
D-5  ³ Pb-210+D   , fish                                            ³ 3.000E+02 ³ 3.000E+02 ³ BIOFAC(  3,1)
D-5  ³ Pb-210+D   , crustacea and mollusks                          ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  3,2)
D-5  ³                                                              ³           ³           ³
D-5  ³ Ra-226+D   , fish                                            ³ 5.000E+01 ³ 5.000E+01 ³ BIOFAC(  4,1)
D-5  ³ Ra-226+D   , crustacea and mollusks                          ³ 2.500E+02 ³ 2.500E+02 ³ BIOFAC(  4,2)
D-5  ³                                                              ³           ³           ³
D-5  ³ Ra-228+D   , fish                                            ³ 5.000E+01 ³ 5.000E+01 ³ BIOFAC(  5,1)
D-5  ³ Ra-228+D   , crustacea and mollusks                          ³ 2.500E+02 ³ 2.500E+02 ³ BIOFAC(  5,2)
D-5  ³                                                              ³           ³           ³
D-5  ³ Th-228+D   , fish                                            ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  6,1)
D-5  ³ Th-228+D   , crustacea and mollusks                          ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  6,2)
D-5  ³                                                              ³           ³           ³
D-5  ³ Th-230     , fish                                            ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  7,1)
D-5  ³ Th-230     , crustacea and mollusks                          ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  7,2)
D-5  ³                                                              ³           ³           ³
D-5  ³ Th-232     , fish                                            ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  8,1)
D-5  ³ Th-232     , crustacea and mollusks                          ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  8,2)
D-5  ³                                                              ³           ³           ³
D-5  ³ U-234      , fish                                            ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  9,1)
D-5  ³ U-234      , crustacea and mollusks                          ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC(  9,2)
D-5  ³                                                              ³           ³           ³
D-5  ³ U-235+D    , fish                                            ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC( 10,1)
D-5  ³ U-235+D    , crustacea and mollusks                          ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC( 10,2)
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Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(11,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(11,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(12,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(12,2)

#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.

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)	3.400E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	4.500E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	1.840E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+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)	1.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	5.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	7.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	9.000E+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): Ac-227	1.010E+01	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Pa-231	1.010E+01	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.851E+02	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.851E+02	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	8.365E+02	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	8.365E+02	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Th-230	1.444E+02	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Th-232	8.365E+02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-234	1.444E+02	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): U-235	1.010E+01	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): U-238	1.444E+02	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L): Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Pa-231	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(5)

R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(11)
R013	Cover depth (m)	1.830E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	1.920E+00	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	1.500E-04	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	2.240E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.500E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.600E-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-02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.430E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.300E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	7.300E-01	5.000E-01	---	EVAPTR

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Precipitation (m/yr)	1.050E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	9.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	2.770E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.510E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.830E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	9.500E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.000E-03	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	4.530E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	2	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.500E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.696E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.600E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.890E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)

R015	Unsat. zone 1, soil-specific b parameter	1.060E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	4.750E+03	1.000E+01	---	HCUZ(1)
R015	Unsat. zone 2, thickness (m)	1.900E+00	0.000E+00	---	H(2)
R015	Unsat. zone 2, soil density (g/cm**3)	1.510E+00	1.500E+00	---	DENSUZ(2)
R015	Unsat. zone 2, total porosity	4.300E-01	4.000E-01	---	TPUZ(2)
R015	Unsat. zone 2, effective porosity	3.830E-01	2.000E-01	---	EPUZ(2)
R015	Unsat. zone 2, field capacity	2.000E-01	2.000E-01	---	FCUZ(2)
R015	Unsat. zone 2, soil-specific b parameter	4.050E+00	5.300E+00	---	BUZ(2)
R015	Unsat. zone 2, hydraulic conductivity (m/yr)	9.500E+03	1.000E+01	---	HCUZ(2)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Unsaturated zone 2 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,2)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.248E-06	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,1)
R016	Unsaturated zone 2 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,2)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.112E-06	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,1)
R016	Unsaturated zone 2 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,2)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.041E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	3.028E+04	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.288E-08	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	2.807E+05	7.000E+01	---	DCNUCC(5)

R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.002E-08	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	2.483E+05	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.133E-08	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	2.483E+05	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.133E-08	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	2.483E+05	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.133E-08	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	4.669E+05	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.023E-09	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	4.669E+05	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.023E-09	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)

R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	4.669E+05	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.023E-09	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R017	Inhalation rate (m**3/yr)	not used	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	not used	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	not used	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	not used	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	5.000E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	2.500E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	not used	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)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
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)	1.600E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	1.400E+01	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)	5.100E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	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	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E-01	-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)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	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	1.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	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)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	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	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	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	2.500E-01	2.500E-01	---	RWET(1)

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

Site-Specific Parameter Summary (continued)

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

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TITL ³ Maximum number of integration points for dose    ³     17    ³    ---    ³              ---              ³ LYMAX
TITL ³ Maximum number of integration points for risk    ³      1    ³    ---    ³              ---              ³ KYMAX
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As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

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

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

0 Water Dependent Pathways

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.

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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T½ Limit = 180 days 07/26/2009 16:05 Page 16

Summary : SMC Suburban Resident Area 6 Controls Fail Unrestricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109606.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000

Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*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+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ

Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0 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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 16:05 Page 18
Summary : SMC Suburban Resident Area 6 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109606.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0 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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0 Water Fish Radon Plant Meat Milk All Pathways*

Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 16:05 Page 19

Summary : SMC Suburban Resident Area 6 Controls Fail Unrestricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109606.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 = 5.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

0 Water Dependent Pathways

0

Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 16:05 Page 20

Summary : SMC Suburban Resident Area 6 Controls Fail Unrestricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109606.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 = 7.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 7.000E+02 years

0 Water Dependent Pathways

0

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*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 = 9.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.000E+02 years

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
íííííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Suburban Resident Area 6 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109606.RAD

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

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

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

0 Parent Product Thread DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)

(i)	(j)	Fraction	0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227+D	Ac-227+D	1.000E+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
0Pa-231	Pa-231	1.000E+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	Ac-227+D	1.000E+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	äDSR(j)		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
0Pb-210+D	Pb-210+D	1.000E+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
0Ra-226+D	Ra-226+D	1.000E+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+D	Pb-210+D	1.000E+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+D	äDSR(j)		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
0Ra-228+D	Ra-228+D	1.000E+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+D	Th-228+D	1.000E+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+D	äDSR(j)		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
0Th-228+D	Th-228+D	1.000E+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
0Th-230	Th-230	1.000E+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-230	Ra-226+D	1.000E+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-230	Pb-210+D	1.000E+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-230	äDSR(j)		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
0Th-232	Th-232	1.000E+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	Ra-228+D	1.000E+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	Th-228+D	1.000E+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	äDSR(j)		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
0U-234	U-234	1.000E+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-234	Th-230	1.000E+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-234	Ra-226+D	1.000E+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-234	Pb-210+D	1.000E+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-234	äDSR(j)		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
0U-235+D	U-235+D	1.000E+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+D	Pa-231	1.000E+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+D	Ac-227+D	1.000E+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+D	äDSR(j)		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
0U-238	U-238	5.400E-05	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
0U-238+D	U-238+D	9.999E-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
U-238+D	U-234	9.999E-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
U-238+D	Th-230	9.999E-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
U-238+D	Ra-226+D	9.999E-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
U-238+D	Pb-210+D	9.999E-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
U-238+D	äDSR(j)		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
ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ

The DSR includes contributions from associated (half-life ó 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide

(i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13
Pa-231	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10
Pb-210	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13

Ra-226	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11
Ra-228	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14
Th-228	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10
Th-232	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05
U-234	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09
U-235	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06
U-238	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ

*At specific activity limit

0

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

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	1.010E+01	0.000E+00	0.000E+00	*7.232E+13	0.000E+00	*7.232E+13
Pa-231	1.010E+01	0.000E+00	0.000E+00	*4.723E+10	0.000E+00	*4.723E+10
Pb-210	1.851E+02	0.000E+00	0.000E+00	*7.634E+13	0.000E+00	*7.634E+13
Ra-226	1.851E+02	0.000E+00	0.000E+00	*9.885E+11	0.000E+00	*9.885E+11
Ra-228	8.365E+02	0.000E+00	0.000E+00	*2.726E+14	0.000E+00	*2.726E+14
Th-228	8.365E+02	0.000E+00	0.000E+00	*8.195E+14	0.000E+00	*8.195E+14
Th-230	1.444E+02	0.000E+00	0.000E+00	*2.018E+10	0.000E+00	*2.018E+10
Th-232	8.365E+02	0.000E+00	0.000E+00	*1.097E+05	0.000E+00	*1.097E+05
U-234	1.444E+02	0.000E+00	0.000E+00	*6.247E+09	0.000E+00	*6.247E+09
U-235	1.010E+01	0.000E+00	0.000E+00	*2.161E+06	0.000E+00	*2.161E+06
U-238	1.444E+02	0.000E+00	0.000E+00	*3.361E+05	0.000E+00	*3.361E+05
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ

*At specific activity limit

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

0Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+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	Pa-231	1.000E+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	U-235	1.000E+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	äDOSE(j)		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
0Pa-231	Pa-231	1.000E+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	U-235	1.000E+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	äDOSE(j)		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
0Pb-210	Pb-210	1.000E+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	Ra-226	1.000E+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	Th-230	1.000E+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	U-234	1.000E+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	U-238	9.999E-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
Pb-210	äDOSE(j)		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
0Ra-226	Ra-226	1.000E+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	Th-230	1.000E+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	U-234	1.000E+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	U-238	9.999E-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
Ra-226	äDOSE(j)		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
0Ra-228	Ra-228	1.000E+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	Th-232	1.000E+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	äDOSE(j)		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
0Th-228	Ra-228	1.000E+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	Th-228	1.000E+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	Th-232	1.000E+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	äDOSE(j)		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
0Th-230	Th-230	1.000E+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-230	U-234	1.000E+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-230	U-238	9.999E-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
Th-230	äDOSE(j)		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
0Th-232	Th-232	1.000E+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
0U-234	U-234	1.000E+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-234	U-238	9.999E-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
U-234	äDOSE(j)		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
0U-235	U-235	1.000E+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
0U-238	U-238	5.400E-05	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-238	U-238	9.999E-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
U-238	äDOSE(j)		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
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
			S(j,t), pCi/g								
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+00	1.010E+01	9.783E+00	7.346E+00	4.183E-01	7.174E-04	1.230E-06	2.110E-09	3.619E-12	1.499E-13
Ac-227	Pa-231	1.000E+00	0.000E+00	3.165E-01	2.753E+00	9.661E+00	1.003E+01	9.974E+00	9.922E+00	9.870E+00	9.844E+00
Ac-227	U-235	1.000E+00	0.000E+00	3.366E-06	3.067E-04	1.492E-02	5.718E-02	9.950E-02	1.416E-01	1.835E-01	2.043E-01
Ac-227	äS(j):		1.010E+01	1.010E+01	1.010E+01	1.009E+01	1.008E+01	1.007E+01	1.006E+01	1.005E+01	1.005E+01
0Pa-231	Pa-231	1.000E+00	1.010E+01	1.010E+01	1.010E+01	1.007E+01	1.002E+01	9.968E+00	9.916E+00	9.864E+00	9.838E+00
Pa-231	U-235	1.000E+00	0.000E+00	2.137E-04	2.137E-03	2.134E-02	6.386E-02	1.062E-01	1.482E-01	1.901E-01	2.109E-01
Pa-231	äS(j):		1.010E+01	1.010E+01	1.010E+01	1.009E+01	1.008E+01	1.007E+01	1.006E+01	1.005E+01	1.005E+01
0Pb-210	Pb-210	1.000E+00	1.851E+02	1.794E+02	1.356E+02	8.261E+00	1.646E-02	3.278E-05	6.529E-08	1.301E-10	5.805E-12
Pb-210	Ra-226	1.000E+00	0.000E+00	5.664E+00	4.934E+01	1.713E+02	1.648E+02	1.511E+02	1.386E+02	1.271E+02	1.217E+02
Pb-210	Th-230	1.000E+00	0.000E+00	9.621E-04	8.775E-02	4.256E+00	1.578E+01	2.641E+01	3.614E+01	4.504E+01	4.920E+01
Pb-210	U-234	1.000E+00	0.000E+00	2.894E-09	2.701E-06	1.541E-03	1.967E-02	5.778E-02	1.142E-01	1.873E-01	2.296E-01
Pb-210	U-238	9.999E-01	0.000E+00	2.054E-15	1.944E-11	1.225E-07	5.154E-06	2.621E-05	7.412E-05	1.588E-04	2.178E-04
Pb-210	äS(j):		1.851E+02	1.851E+02	1.851E+02	1.838E+02	1.806E+02	1.776E+02	1.748E+02	1.723E+02	1.711E+02
0Ra-226	Ra-226	1.000E+00	1.851E+02	1.850E+02	1.843E+02	1.773E+02	1.625E+02	1.490E+02	1.367E+02	1.253E+02	1.200E+02
Ra-226	Th-230	1.000E+00	0.000E+00	6.254E-02	6.242E-01	6.119E+00	1.757E+01	2.806E+01	3.765E+01	4.642E+01	5.052E+01

Ra-226	U-234	1.000E+00	0.000E+00	2.815E-07	2.811E-05	2.774E-03	2.425E-02	6.544E-02	1.247E-01	2.004E-01	2.439E-01
Ra-226	U-238	9.999E-01	0.000E+00	2.660E-13	2.658E-10	2.631E-07	6.950E-06	3.148E-05	8.456E-05	1.760E-04	2.388E-04
Ra-226	äS(j):		1.851E+02	1.851E+02	1.849E+02	1.834E+02	1.801E+02	1.772E+02	1.744E+02	1.719E+02	1.708E+02
0Ra-228	Ra-228	1.000E+00	8.365E+02	7.415E+02	2.506E+02	4.866E-03	1.646E-13	5.571E-24	1.885E-34	0.000E+00	0.000E+00
Ra-228	Th-232	1.000E+00	0.000E+00	9.500E+01	5.859E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02
Ra-228	äS(j):		8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02
0Th-228	Ra-228	1.000E+00	0.000E+00	2.386E+02	3.420E+02	7.292E-03	2.467E-13	8.349E-24	2.825E-34	0.000E+00	0.000E+00
Th-228	Th-228	1.000E+00	8.365E+02	5.823E+02	2.233E+01	1.539E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.560E+01	4.721E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02
Th-228	äS(j):		8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02
0Th-230	Th-230	1.000E+00	1.444E+02	1.444E+02	1.444E+02	1.443E+02	1.440E+02	1.438E+02	1.435E+02	1.432E+02	1.431E+02
Th-230	U-234	1.000E+00	0.000E+00	1.300E-03	1.300E-02	1.299E-01	3.893E-01	6.480E-01	9.061E-01	1.164E+00	1.292E+00
Th-230	U-238	9.999E-01	0.000E+00	1.842E-09	1.842E-07	1.842E-05	1.656E-04	4.597E-04	9.003E-04	1.487E-03	1.835E-03
Th-230	äS(j):		1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02
0Th-232	Th-232	1.000E+00	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02
0U-234	U-234	1.000E+00	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.443E+02	1.442E+02	1.441E+02	1.440E+02	1.440E+02
U-234	U-238	9.999E-01	0.000E+00	4.093E-04	4.093E-03	4.093E-02	1.228E-01	2.045E-01	2.863E-01	3.679E-01	4.088E-01
U-234	äS(j):		1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02
0U-235	U-235	1.000E+00	1.010E+01	1.010E+01	1.010E+01	1.010E+01	1.010E+01	1.010E+01	1.010E+01	1.010E+01	1.010E+01
0U-238	U-238	5.400E-05	7.798E-03	7.798E-03	7.798E-03	7.798E-03	7.798E-03	7.798E-03	7.798E-03	7.798E-03	7.798E-03
U-238	U-238	9.999E-01	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02
U-238	äS(j):		1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02
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THF(i) is the thread fraction of the parent nuclide.

0RESCALC.EXE execution time = 52.55 seconds

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary 6
Summary of Pathway Selections 12
Contaminated Zone and Total Dose Summary 13
Total Dose Components
Time = 0.000E+00 14
Time = 1.000E+00 15
Time = 1.000E+01 16
Time = 1.000E+02 17
Time = 3.000E+02 18
Time = 5.000E+02 19
Time = 7.000E+02 20
Time = 9.000E+02 21
Time = 1.000E+03 22
Dose/Source Ratios Summed Over All Pathways 23
Single Radionuclide Soil Guidelines 24
Dose Per Nuclide Summed Over All Pathways 25
Soil Concentration Per Nuclide 26

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)

A-1	Ra-223	(Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224	(Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226	(Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219	(Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220	(Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222	(Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227	(Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228	(Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230	(Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231	(Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232	(Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234	(Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207	(Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208	(Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210	(Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234	(Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235	(Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238	(Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D		6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231		1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D		2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D		8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D		5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D		3.454E-01	3.420E-01	DCF2(6)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2(12)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3(2)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(5)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(6)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(7)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(8)
D-1	U-234	2.830E-04	2.830E-04	DCF3(9)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(10)
D-1	U-238	2.550E-04	2.550E-04	DCF3(11)
D-1	U-238+D	2.687E-04	2.550E-04	DCF3(12)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)

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D-34 ³ Ac-227+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,2)
D-34 ³ Ac-227+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Pa-231    , plant/soil concentration ratio, dimensionless  ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  2,1)
D-34 ³ Pa-231    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 5.000E-03 ³ 5.000E-03 ³ RTF(  2,2)
D-34 ³ Pa-231    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  2,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Pb-210+D  , plant/soil concentration ratio, dimensionless  ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  3,1)
D-34 ³ Pb-210+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 8.000E-04 ³ 8.000E-04 ³ RTF(  3,2)
D-34 ³ Pb-210+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 3.000E-04 ³ 3.000E-04 ³ RTF(  3,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Ra-226+D  , plant/soil concentration ratio, dimensionless  ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  4,1)
D-34 ³ Ra-226+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,2)
D-34 ³ Ra-226+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Ra-228+D  , plant/soil concentration ratio, dimensionless  ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  5,1)
D-34 ³ Ra-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,2)
D-34 ³ Ra-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Th-228+D  , plant/soil concentration ratio, dimensionless  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  6,1)
D-34 ³ Th-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  6,2)
D-34 ³ Th-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  6,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Th-230    , plant/soil concentration ratio, dimensionless  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  7,1)
D-34 ³ Th-230    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  7,2)
D-34 ³ Th-230    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  7,3)
D-34 ³                                                            ³           ³           ³
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Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

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0      ³                                                          ³  Current  ³   Base    ³  Parameter
Menu   ³                          Parameter                       ³   Value#  ³   Case*   ³    Name
ÄÄÄ
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D-5  ³                                                    ³           ³           ³
D-5  ³ Pa-231     , fish                                  ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  2,1)
D-5  ³ Pa-231     , crustacea and mollusks                ³ 1.100E+02 ³ 1.100E+02 ³ BIOFAC(  2,2)
D-5  ³                                                    ³           ³           ³
D-5  ³ Pb-210+D   , fish                                  ³ 3.000E+02 ³ 3.000E+02 ³ BIOFAC(  3,1)
D-5  ³ Pb-210+D   , crustacea and mollusks                ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  3,2)
D-5  ³                                                    ³           ³           ³
D-5  ³ Ra-226+D   , fish                                  ³ 5.000E+01 ³ 5.000E+01 ³ BIOFAC(  4,1)
D-5  ³ Ra-226+D   , crustacea and mollusks                ³ 2.500E+02 ³ 2.500E+02 ³ BIOFAC(  4,2)
D-5  ³                                                    ³           ³           ³
D-5  ³ Ra-228+D   , fish                                  ³ 5.000E+01 ³ 5.000E+01 ³ BIOFAC(  5,1)
D-5  ³ Ra-228+D   , crustacea and mollusks                ³ 2.500E+02 ³ 2.500E+02 ³ BIOFAC(  5,2)
D-5  ³                                                    ³           ³           ³
D-5  ³ Th-228+D   , fish                                  ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  6,1)
D-5  ³ Th-228+D   , crustacea and mollusks                ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  6,2)
D-5  ³                                                    ³           ³           ³
D-5  ³ Th-230     , fish                                  ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  7,1)
D-5  ³ Th-230     , crustacea and mollusks                ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  7,2)
D-5  ³                                                    ³           ³           ³
D-5  ³ Th-232     , fish                                  ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  8,1)
D-5  ³ Th-232     , crustacea and mollusks                ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  8,2)
D-5  ³                                                    ³           ³           ³
D-5  ³ U-234      , fish                                  ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  9,1)
D-5  ³ U-234      , crustacea and mollusks                ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC(  9,2)
D-5  ³                                                    ³           ³           ³
D-5  ³ U-235+D    , fish                                  ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC( 10,1)
D-5  ³ U-235+D    , crustacea and mollusks                ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC( 10,2)
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Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

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0    ³                                                    ³  Current  ³   Base    ³  Parameter
Menu ³                          Parameter                 ³  Value#   ³  Case*    ³    Name
ÄÄÄ
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R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	5.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	7.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	9.000E+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): Ac-227	7.000E-01	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Pa-231	7.000E-01	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	2.360E+01	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	2.360E+01	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	2.700E+01	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	2.700E+01	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Th-230	1.050E+01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Th-232	2.700E+01	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-234	1.050E+01	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): U-235	7.000E-01	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): U-238	1.050E+01	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L): Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Pa-231	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(11)
R013	Cover depth (m)	1.830E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	1.920E+00	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	1.500E-04	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	2.240E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.500E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.600E-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-02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.430E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.300E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	7.300E-01	5.000E-01	---	EVAPTR

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Precipitation (m/yr)	1.050E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	9.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	2.770E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.510E+00	1.500E+00	---	DENSAQ

R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.830E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	9.500E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.000E-03	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	4.530E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	2	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.500E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.696E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.600E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.890E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.060E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	4.750E+03	1.000E+01	---	HCUZ(1)
R015	Unsat. zone 2, thickness (m)	1.900E+00	0.000E+00	---	H(2)
R015	Unsat. zone 2, soil density (g/cm**3)	1.510E+00	1.500E+00	---	DENSUZ(2)
R015	Unsat. zone 2, total porosity	4.300E-01	4.000E-01	---	TPUZ(2)
R015	Unsat. zone 2, effective porosity	3.830E-01	2.000E-01	---	EPUZ(2)
R015	Unsat. zone 2, field capacity	2.000E-01	2.000E-01	---	FCUZ(2)
R015	Unsat. zone 2, soil-specific b parameter	4.050E+00	5.300E+00	---	BUZ(2)
R015	Unsat. zone 2, hydraulic conductivity (m/yr)	9.500E+03	1.000E+01	---	HCUZ(2)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Unsaturated zone 2 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,2)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.248E-06	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,1)
R016	Unsaturated zone 2 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,2)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.112E-06	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,1)
R016	Unsaturated zone 2 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,2)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.041E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	1.646E+05	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.709E-08	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	1.093E+04	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.574E-07	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	1.912E+04	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.471E-07	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	1.912E+04	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.471E-07	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	1.912E+04	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.471E-07	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.393E+04	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.019E-07	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	1.393E+04	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,2)

R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.019E-07	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	1.393E+04	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.019E-07	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R017	Inhalation rate (m**3/yr)	not used	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	not used	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	not used	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	not used	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	5.000E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	2.500E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	not used	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)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
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)	1.600E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	1.400E+01	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)	5.100E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	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	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E-01	-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)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	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	1.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	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)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	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	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	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	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	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	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN

C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

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

9 -- radon ³ suppressed
Find peak pathway doses ³ active

Contaminated Zone Dimensions

Area:	850.00 square meters
Thickness:	4.50 meters
Cover Depth:	1.83 meters

Initial Soil Concentrations, pCi/g

Ac-227	7.000E-01
Pa-231	7.000E-01
Pb-210	2.360E+01
Ra-226	2.360E+01
Ra-228	2.700E+01
Th-228	2.700E+01
Th-230	1.050E+01
Th-232	2.700E+01
U-234	1.050E+01
U-235	7.000E-01
U-238	1.050E+01

0

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

t (years):	0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
TDOSE(t):	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
M(t):	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

0Maximum TDOSE(t): 0.000E+00 mrem/yr at t = 0.000E+00 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 = 0.000E+00 years
0 Water Independent Pathways (Inhalation excludes radon)
0

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years
0 Water Dependent Pathways
0

Radio-	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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 16:03 Page 15

Summary : SMC Suburban Resident Area 5 Controls Fail Unrestricted Area

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

0 Water Independent Pathways (Inhalation excludes radon)

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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+01 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.

ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0

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.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 16:03 Page 18
Summary : SMC Suburban Resident Area 5 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109605.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0

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.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ

Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0 Radio-	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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 16:03 Page 19
Summary : SMC Suburban Resident Area 5 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109605.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 = 5.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0 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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

0 Water Dependent Pathways

0 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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000

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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*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 = 7.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 7.000E+02 years
0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*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 = 9.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.000E+02 years
0 Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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
0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000

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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0 Radio-	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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 16:03 Page 23
Summary : SMC Suburban Resident Area 5 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109605.RAD

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

0 Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
Ac-227+D	Ac-227+D	1.000E+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
0Pa-231	Pa-231	1.000E+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	Ac-227+D	1.000E+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	äDSR(j)		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
0Pb-210+D	Pb-210+D	1.000E+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
0Ra-226+D	Ra-226+D	1.000E+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+D	Pb-210+D	1.000E+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+D	äDSR(j)		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
0Ra-228+D	Ra-228+D	1.000E+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+D	Th-228+D	1.000E+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+D	äDSR(j)		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
0Th-228+D	Th-228+D	1.000E+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
0Th-230	Th-230	1.000E+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-230	Ra-226+D	1.000E+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-230	Pb-210+D	1.000E+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-230	äDSR(j)		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
0Th-232	Th-232	1.000E+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	Ra-228+D	1.000E+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	Th-228+D	1.000E+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	äDSR(j)		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

0U-234	U-234	1.000E+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-234	Th-230	1.000E+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-234	Ra-226+D	1.000E+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-234	Pb-210+D	1.000E+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-234	äDSR(j)		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
0U-235+D	U-235+D	1.000E+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+D	Pa-231	1.000E+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+D	Ac-227+D	1.000E+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+D	äDSR(j)		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
0U-238	U-238	5.400E-05	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
0U-238+D	U-238+D	9.999E-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
U-238+D	U-234	9.999E-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
U-238+D	Th-230	9.999E-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
U-238+D	Ra-226+D	9.999E-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
U-238+D	Pb-210+D	9.999E-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
U-238+D	äDSR(j)		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
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The DSR includes contributions from associated (half-life ó 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide

(i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
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Ac-227	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13
Pa-231	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10
Pb-210	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13
Ra-226	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11
Ra-228	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14
Th-228	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10
Th-232	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05
U-234	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09
U-235	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06
U-238	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05
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*At specific activity limit

0

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

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
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Ac-227	7.000E-01	0.000E+00	0.000E+00	*7.232E+13	0.000E+00	*7.232E+13
Pa-231	7.000E-01	0.000E+00	0.000E+00	*4.723E+10	0.000E+00	*4.723E+10
Pb-210	2.360E+01	0.000E+00	0.000E+00	*7.634E+13	0.000E+00	*7.634E+13
Ra-226	2.360E+01	0.000E+00	0.000E+00	*9.885E+11	0.000E+00	*9.885E+11
Ra-228	2.700E+01	0.000E+00	0.000E+00	*2.726E+14	0.000E+00	*2.726E+14
Th-228	2.700E+01	0.000E+00	0.000E+00	*8.195E+14	0.000E+00	*8.195E+14
Th-230	1.050E+01	0.000E+00	0.000E+00	*2.018E+10	0.000E+00	*2.018E+10
Th-232	2.700E+01	0.000E+00	0.000E+00	*1.097E+05	0.000E+00	*1.097E+05
U-234	1.050E+01	0.000E+00	0.000E+00	*6.247E+09	0.000E+00	*6.247E+09
U-235	7.000E-01	0.000E+00	0.000E+00	*2.161E+06	0.000E+00	*2.161E+06
U-238	1.050E+01	0.000E+00	0.000E+00	*3.361E+05	0.000E+00	*3.361E+05

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*At specific activity limit

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

0Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
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Ac-227	Ac-227	1.000E+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	Pa-231	1.000E+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	U-235	1.000E+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	äDOSE(j)		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
0Pa-231	Pa-231	1.000E+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	U-235	1.000E+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	äDOSE(j)		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
0Pb-210	Pb-210	1.000E+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	Ra-226	1.000E+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	Th-230	1.000E+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	U-234	1.000E+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	U-238	9.999E-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
Pb-210	äDOSE(j)		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
0Ra-226	Ra-226	1.000E+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	Th-230	1.000E+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	U-234	1.000E+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	U-238	9.999E-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
Ra-226	äDOSE(j)		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
0Ra-228	Ra-228	1.000E+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	Th-232	1.000E+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	äDOSE(j)		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
0Th-228	Ra-228	1.000E+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	Th-228	1.000E+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	Th-232	1.000E+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	äDOSE(j)		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
0Th-230	Th-230	1.000E+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-230	U-234	1.000E+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-230	U-238	9.999E-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
Th-230	äDOSE(j)		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
0Th-232	Th-232	1.000E+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
0U-234	U-234	1.000E+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-234	U-238	9.999E-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
U-234	äDOSE(j)		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
0U-235	U-235	1.000E+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
0U-238	U-238	5.400E-05	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-238	U-238	9.999E-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
U-238	äDOSE(j)		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
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THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03

ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+00	7.000E-01	6.781E-01	5.091E-01	2.899E-02	4.972E-05	8.528E-08	1.463E-10	2.508E-13	1.039E-14
Ac-227	Pa-231	1.000E+00	0.000E+00	2.193E-02	1.908E-01	6.696E-01	6.949E-01	6.913E-01	6.877E-01	6.841E-01	6.823E-01
Ac-227	U-235	1.000E+00	0.000E+00	2.333E-07	2.126E-05	1.034E-03	3.963E-03	6.896E-03	9.813E-03	1.272E-02	1.416E-02
Ac-227	äS(j):		7.000E-01	7.000E-01	7.000E-01	6.996E-01	6.989E-01	6.982E-01	6.975E-01	6.968E-01	6.964E-01
0Pa-231	Pa-231	1.000E+00	7.000E-01	7.000E-01	6.998E-01	6.982E-01	6.945E-01	6.909E-01	6.872E-01	6.836E-01	6.819E-01
Pa-231	U-235	1.000E+00	0.000E+00	1.481E-05	1.481E-04	1.479E-03	4.426E-03	7.357E-03	1.027E-02	1.317E-02	1.462E-02
Pa-231	äS(j):		7.000E-01	7.000E-01	7.000E-01	6.996E-01	6.989E-01	6.982E-01	6.975E-01	6.968E-01	6.965E-01
0Pb-210	Pb-210	1.000E+00	2.360E+01	2.288E+01	1.729E+01	1.053E+00	2.098E-03	4.179E-06	8.325E-09	1.658E-11	7.401E-13
Pb-210	Ra-226	1.000E+00	0.000E+00	7.221E-01	6.290E+00	2.184E+01	2.101E+01	1.927E+01	1.767E+01	1.620E+01	1.551E+01
Pb-210	Th-230	1.000E+00	0.000E+00	6.996E-05	6.381E-03	3.095E-01	1.148E+00	1.921E+00	2.628E+00	3.275E+00	3.577E+00
Pb-210	U-234	1.000E+00	0.000E+00	2.105E-10	1.964E-07	1.121E-04	1.430E-03	4.201E-03	8.301E-03	1.362E-02	1.670E-02
Pb-210	U-238	9.999E-01	0.000E+00	1.494E-16	1.413E-12	8.909E-09	3.748E-07	1.905E-06	5.389E-06	1.155E-05	1.584E-05
Pb-210	äS(j):		2.360E+01	2.360E+01	2.359E+01	2.321E+01	2.216E+01	2.119E+01	2.030E+01	1.949E+01	1.911E+01
0Ra-226	Ra-226	1.000E+00	2.360E+01	2.359E+01	2.350E+01	2.260E+01	2.072E+01	1.900E+01	1.743E+01	1.598E+01	1.530E+01
Ra-226	Th-230	1.000E+00	0.000E+00	4.548E-03	4.539E-02	4.450E-01	1.278E+00	2.040E+00	2.737E+00	3.375E+00	3.674E+00
Ra-226	U-234	1.000E+00	0.000E+00	2.047E-08	2.044E-06	2.017E-04	1.763E-03	4.758E-03	9.064E-03	1.457E-02	1.774E-02
Ra-226	U-238	9.999E-01	0.000E+00	1.934E-14	1.932E-11	1.913E-08	5.053E-07	2.289E-06	6.148E-06	1.279E-05	1.737E-05
Ra-226	äS(j):		2.360E+01	2.359E+01	2.354E+01	2.304E+01	2.200E+01	2.105E+01	2.017E+01	1.937E+01	1.899E+01
0Ra-228	Ra-228	1.000E+00	2.700E+01	2.393E+01	8.088E+00	1.571E-04	5.314E-15	1.798E-25	6.084E-36	0.000E+00	0.000E+00
Ra-228	Th-232	1.000E+00	0.000E+00	3.066E+00	1.891E+01	2.700E+01	2.700E+01	2.700E+01	2.700E+01	2.700E+01	2.700E+01
Ra-228	äS(j):		2.700E+01	2.700E+01	2.700E+01	2.700E+01	2.700E+01	2.700E+01	2.700E+01	2.700E+01	2.700E+01
0Th-228	Ra-228	1.000E+00	0.000E+00	7.703E+00	1.104E+01	2.354E-04	7.964E-15	2.694E-25	9.117E-36	0.000E+00	0.000E+00
Th-228	Th-228	1.000E+00	2.700E+01	1.879E+01	7.208E-01	4.968E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	5.034E-01	1.524E+01	2.700E+01	2.700E+01	2.700E+01	2.700E+01	2.700E+01	2.700E+01
Th-228	äS(j):		2.700E+01	2.700E+01	2.700E+01	2.700E+01	2.700E+01	2.700E+01	2.700E+01	2.700E+01	2.700E+01
0Th-230	Th-230	1.000E+00	1.050E+01	1.050E+01	1.050E+01	1.049E+01	1.047E+01	1.045E+01	1.043E+01	1.041E+01	1.040E+01
Th-230	U-234	1.000E+00	0.000E+00	9.452E-05	9.451E-04	9.446E-03	2.830E-02	4.712E-02	6.588E-02	8.460E-02	9.395E-02
Th-230	U-238	9.999E-01	0.000E+00	1.340E-10	1.340E-08	1.339E-06	1.204E-05	3.342E-05	6.546E-05	1.081E-04	1.334E-04
Th-230	äS(j):		1.050E+01	1.050E+01	1.050E+01	1.050E+01	1.050E+01	1.050E+01	1.050E+01	1.050E+01	1.050E+01
0Th-232	Th-232	1.000E+00	2.700E+01	2.700E+01	2.700E+01	2.700E+01	2.700E+01	2.700E+01	2.700E+01	2.700E+01	2.700E+01
0U-234	U-234	1.000E+00	1.050E+01	1.050E+01	1.050E+01	1.050E+01	1.049E+01	1.048E+01	1.048E+01	1.047E+01	1.047E+01
U-234	U-238	9.999E-01	0.000E+00	2.977E-05	2.976E-04	2.976E-03	8.925E-03	1.487E-02	2.081E-02	2.675E-02	2.972E-02
U-234	äS(j):		1.050E+01	1.050E+01	1.050E+01	1.050E+01	1.050E+01	1.050E+01	1.050E+01	1.050E+01	1.050E+01
0U-235	U-235	1.000E+00	7.000E-01	7.000E-01	7.000E-01	7.000E-01	7.000E-01	6.999E-01	6.999E-01	6.999E-01	6.999E-01
0U-238	U-238	5.400E-05	5.670E-04	5.670E-04	5.670E-04	5.670E-04	5.670E-04	5.669E-04	5.669E-04	5.669E-04	5.669E-04
U-238	U-238	9.999E-01	1.050E+01	1.050E+01	1.050E+01	1.050E+01	1.050E+01	1.050E+01	1.050E+01	1.050E+01	1.050E+01
U-238	äS(j):		1.050E+01	1.050E+01	1.050E+01	1.050E+01	1.050E+01	1.050E+01	1.050E+01	1.050E+01	1.050E+01
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THF(i) is the thread fraction of the parent nuclide.

0RESCALC.EXE execution time = 52.38 seconds

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary 6
Summary of Pathway Selections 12
Contaminated Zone and Total Dose Summary 13
Total Dose Components
Time = 0.000E+00 14
Time = 1.000E+00 15
Time = 1.000E+01 16
Time = 1.000E+02 17
Time = 3.000E+02 18
Time = 5.000E+02 19
Time = 7.000E+02 20
Time = 9.000E+02 21
Time = 1.000E+03 22
Dose/Source Ratios Summed Over All Pathways 23
Single Radionuclide Soil Guidelines 24
Dose Per Nuclide Summed Over All Pathways 25
Soil Concentration Per Nuclide 26

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)

A-1	Pb-212	(Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214	(Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)
A-1	Po-210	(Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211	(Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214	(Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215	(Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216	(Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218	(Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)
A-1	Ra-223	(Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224	(Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226	(Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219	(Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220	(Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222	(Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227	(Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228	(Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230	(Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231	(Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232	(Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234	(Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207	(Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208	(Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210	(Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234	(Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235	(Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238	(Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D		6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231		1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D		2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D		8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D		5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D		3.454E-01	3.420E-01	DCF2(6)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)

```
B-1  ³ U-238+D                                                  ³ 1.180E-01 ³ 1.180E-01 ³ DCF2( 12)
     ³                                                          ³           ³           ³
D-1  ³ Dose conversion factors for ingestion, mrem/pCi:         ³           ³           ³
D-1  ³ Ac-227+D                                                 ³ 1.480E-02 ³ 1.410E-02 ³ DCF3(  1)
D-1  ³ Pa-231                                                   ³ 1.060E-02 ³ 1.060E-02 ³ DCF3(  2)
D-1  ³ Pb-210+D                                                 ³ 7.276E-03 ³ 5.370E-03 ³ DCF3(  3)
D-1  ³ Ra-226+D                                                 ³ 1.321E-03 ³ 1.320E-03 ³ DCF3(  4)
D-1  ³ Ra-228+D                                                 ³ 1.442E-03 ³ 1.440E-03 ³ DCF3(  5)
D-1  ³ Th-228+D                                                 ³ 8.086E-04 ³ 3.960E-04 ³ DCF3(  6)
D-1  ³ Th-230                                                   ³ 5.480E-04 ³ 5.480E-04 ³ DCF3(  7)
D-1  ³ Th-232                                                   ³ 2.730E-03 ³ 2.730E-03 ³ DCF3(  8)
D-1  ³ U-234                                                    ³ 2.830E-04 ³ 2.830E-04 ³ DCF3(  9)
D-1  ³ U-235+D                                                  ³ 2.673E-04 ³ 2.660E-04 ³ DCF3( 10)
D-1  ³ U-238                                                    ³ 2.550E-04 ³ 2.550E-04 ³ DCF3( 11)
D-1  ³ U-238+D                                                  ³ 2.687E-04 ³ 2.550E-04 ³ DCF3( 12)
     ³                                                          ³           ³           ³
D-34 ³ Food transfer factors:                                   ³           ³           ³
D-34 ³ Ac-227+D  , plant/soil concentration ratio, dimensionless ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  1,1)
D-34 ³ Ac-227+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,2)
D-34 ³ Ac-227+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,3)
D-34 ³                                                          ³           ³           ³
D-34 ³ Pa-231    , plant/soil concentration ratio, dimensionless ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  2,1)
D-34 ³ Pa-231    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 5.000E-03 ³ 5.000E-03 ³ RTF(  2,2)
D-34 ³ Pa-231    , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  2,3)
D-34 ³                                                          ³           ³           ³
D-34 ³ Pb-210+D  , plant/soil concentration ratio, dimensionless ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  3,1)
D-34 ³ Pb-210+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 8.000E-04 ³ 8.000E-04 ³ RTF(  3,2)
D-34 ³ Pb-210+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 3.000E-04 ³ 3.000E-04 ³ RTF(  3,3)
D-34 ³                                                          ³           ³           ³
D-34 ³ Ra-226+D  , plant/soil concentration ratio, dimensionless ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  4,1)
D-34 ³ Ra-226+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,2)
D-34 ³ Ra-226+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,3)
D-34 ³                                                          ³           ³           ³
D-34 ³ Ra-228+D  , plant/soil concentration ratio, dimensionless ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  5,1)
D-34 ³ Ra-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,2)
D-34 ³ Ra-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,3)
D-34 ³                                                          ³           ³           ³
D-34 ³ Th-228+D  , plant/soil concentration ratio, dimensionless ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  6,1)
D-34 ³ Th-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  6,2)
D-34 ³ Th-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  6,3)
D-34 ³                                                          ³           ³           ³
D-34 ³ Th-230    , plant/soil concentration ratio, dimensionless ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  7,1)
D-34 ³ Th-230    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  7,2)
D-34 ³ Th-230    , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  7,3)
D-34 ³                                                          ³           ³           ³
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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(8,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(8,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(8,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(11,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(11,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(12,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(12,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(12,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(4,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(4,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(7,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(7,2)
D-5				
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(8,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(8,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(9,1)

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 D-5  ³ U-234      , crustacea and mollusks                        ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC(  9,2)
 D-5  ³                                                            ³           ³           ³
 D-5  ³ U-235+D    , fish                                          ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC( 10,1)
 D-5  ³ U-235+D    , crustacea and mollusks                        ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC( 10,2)
1RESRAD, Version 6.4      T« Limit = 180 days        07/26/2009  16:00  Page   5
 Summary : SMC Suburban Resident Area 4 Controls Fail Unrestricted Area
 File    : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109604.RAD

                    Dose Conversion Factor (and Related) Parameter Summary (continued)
                                          Dose Library: FGR 11
0     ³                                                           ³  Current  ³   Base    ³  Parameter
 Menu ³                          Parameter                        ³   Value#  ³   Case*   ³    Name
ÄÄÄ
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R012	Initial principal radionuclide (pCi/g):	Th-230	1.778E+02	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g):	Th-232	4.505E+02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g):	U-234	2.463E+02	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g):	U-235	1.720E+01	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g):	U-238	2.463E+02	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L):	Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L):	Pa-231	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L):	Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L):	Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L):	Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L):	Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L):	Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L):	Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L):	U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L):	U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L):	U-238	not used	0.000E+00	---	W1(11)
R013	Cover depth (m)		1.830E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)		1.920E+00	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)		1.500E-04	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)		2.240E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)		1.500E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity		3.600E-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-02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter		4.430E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)		4.300E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)		not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient		7.300E-01	5.000E-01	---	EVAPTR

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Precipitation (m/yr)	1.050E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	9.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	2.770E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.510E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.830E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	9.500E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.000E-03	2.000E-02	---	HGWT

R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	4.530E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	2	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.500E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.696E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.600E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.890E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.060E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	4.750E+03	1.000E+01	---	HCUZ(1)
R015	Unsat. zone 2, thickness (m)	1.900E+00	0.000E+00	---	H(2)
R015	Unsat. zone 2, soil density (g/cm**3)	1.510E+00	1.500E+00	---	DENSUZ(2)
R015	Unsat. zone 2, total porosity	4.300E-01	4.000E-01	---	TPUZ(2)
R015	Unsat. zone 2, effective porosity	3.830E-01	2.000E-01	---	EPUZ(2)
R015	Unsat. zone 2, field capacity	2.000E-01	2.000E-01	---	FCUZ(2)
R015	Unsat. zone 2, soil-specific b parameter	4.050E+00	5.300E+00	---	BUZ(2)
R015	Unsat. zone 2, hydraulic conductivity (m/yr)	9.500E+03	1.000E+01	---	HCUZ(2)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Unsaturated zone 2 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,2)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.248E-06	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,1)
R016	Unsaturated zone 2 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,2)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.112E-06	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,1)
R016	Unsaturated zone 2 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,2)

R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.041E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	7.100E+03	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.961E-07	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	1.051E+04	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.676E-07	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	1.561E+05	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.802E-08	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	1.561E+05	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.802E-08	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	1.561E+05	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.802E-08	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

Site-Specific Parameter Summary (continued)

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

R016	Distribution coefficients for U-234			
R016	Contaminated zone (cm**3/g)	7.672E+05	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.666E-09	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	7.672E+05	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.666E-09	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	7.672E+05	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.666E-09	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R017	Inhalation rate (m**3/yr)	not used	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	not used	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	not used	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	not used	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	5.000E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	2.500E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	not used	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)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
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)	1.600E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	1.400E+01	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)	5.100E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	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	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E-01	-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)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	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	1.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)

R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	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)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	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	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	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	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	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	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV

R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

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

Contaminated Zone Dimensions

Area: 5100.00 square meters

Initial Soil Concentrations, pCi/g

Ac-227	1.720E+01

Thickness:	4.50 meters	Pa-231	1.720E+01
Cover Depth:	1.83 meters	Pb-210	1.778E+02
		Ra-226	1.778E+02
		Ra-228	4.505E+02
		Th-228	4.505E+02
		Th-230	1.778E+02
		Th-232	4.505E+02
		U-234	2.463E+02
		U-235	1.720E+01
		U-238	2.463E+02

0

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

t (years):	0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
TDOSE(t):	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
M(t):	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

0Maximum TDOSE(t): 0.000E+00 mrem/yr at t = 0.000E+00 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 = 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-														
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-														
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T½ Limit = 180 days 07/26/2009 16:00 Page 16

Summary : SMC Suburban Resident Area 4 Controls Fail Unrestricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109604.RAD

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

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 16:00 Page 17

Summary : SMC Suburban Resident Area 4 Controls Fail Unrestricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109604.RAD

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

0 Water Dependent Pathways

0

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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 = 3.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Suburban Resident Area 4 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109604.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 = 5.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years
0 Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Suburban Resident Area 4 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109604.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 = 7.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

As mrem/yr and Fraction of Total Dose At t = 7.000E+02 years

0 Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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 = 9.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground	Inhalation	Radon	Plant	Meat	Milk	Soil

Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.000E+02 years

0 Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 16:00 Page 23
Summary : SMC Suburban Resident Area 4 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109604.RAD

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

0 Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
Ac-227+D	Ac-227+D	1.000E+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
0Pa-231	Pa-231	1.000E+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	Ac-227+D	1.000E+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	äDSR(j)		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
0Pb-210+D	Pb-210+D	1.000E+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
0Ra-226+D	Ra-226+D	1.000E+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+D	Pb-210+D	1.000E+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+D	äDSR(j)		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

0Ra-228+D	Ra-228+D	1.000E+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+D	Th-228+D	1.000E+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+D	äDSR(j)		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
0Th-228+D	Th-228+D	1.000E+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
0Th-230	Th-230	1.000E+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-230	Ra-226+D	1.000E+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-230	Pb-210+D	1.000E+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-230	äDSR(j)		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
0Th-232	Th-232	1.000E+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	Ra-228+D	1.000E+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	Th-228+D	1.000E+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	äDSR(j)		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
0U-234	U-234	1.000E+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-234	Th-230	1.000E+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-234	Ra-226+D	1.000E+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-234	Pb-210+D	1.000E+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-234	äDSR(j)		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
0U-235+D	U-235+D	1.000E+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+D	Pa-231	1.000E+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+D	Ac-227+D	1.000E+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+D	äDSR(j)		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
0U-238	U-238	5.400E-05	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
0U-238+D	U-238+D	9.999E-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
U-238+D	U-234	9.999E-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
U-238+D	Th-230	9.999E-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
U-238+D	Ra-226+D	9.999E-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
U-238+D	Pb-210+D	9.999E-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
U-238+D	äDSR(j)		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
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The DSR includes contributions from associated (half-life ó 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
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Ac-227	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13
Pa-231	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10
Pb-210	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13
Ra-226	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11
Ra-228	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14
Th-228	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10
Th-232	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05
U-234	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09
U-235	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06
U-238	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05

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 *At specific activity limit
0
            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
0Nuclide  Initial        tmin       DSR(i,tmin) G(i,tmin) DSR(i,tmax) G(i,tmax)
   (i)    (pCi/g)       (years)                  (pCi/g)               (pCi/g)
 ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄ
 Ac-227  1.720E+01     0.000E+00      0.000E+00 *7.232E+13  0.000E+00 *7.232E+13
 Pa-231  1.720E+01     0.000E+00      0.000E+00 *4.723E+10  0.000E+00 *4.723E+10
 Pb-210  1.778E+02     0.000E+00      0.000E+00 *7.634E+13  0.000E+00 *7.634E+13
 Ra-226  1.778E+02     0.000E+00      0.000E+00 *9.885E+11  0.000E+00 *9.885E+11
 Ra-228  4.505E+02     0.000E+00      0.000E+00 *2.726E+14  0.000E+00 *2.726E+14
 Th-228  4.505E+02     0.000E+00      0.000E+00 *8.195E+14  0.000E+00 *8.195E+14
 Th-230  1.778E+02     0.000E+00      0.000E+00 *2.018E+10  0.000E+00 *2.018E+10
 Th-232  4.505E+02     0.000E+00      0.000E+00 *1.097E+05  0.000E+00 *1.097E+05
 U-234   2.463E+02     0.000E+00      0.000E+00 *6.247E+09  0.000E+00 *6.247E+09
 U-235   1.720E+01     0.000E+00      0.000E+00 *2.161E+06  0.000E+00 *2.161E+06
 U-238   2.463E+02     0.000E+00      0.000E+00 *3.361E+05  0.000E+00 *3.361E+05
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 *At specific activity limit
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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+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	Pa-231	1.000E+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	U-235	1.000E+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	äDOSE(j)		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
0Pa-231	Pa-231	1.000E+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	U-235	1.000E+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	äDOSE(j)		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
0Pb-210	Pb-210	1.000E+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	Ra-226	1.000E+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	Th-230	1.000E+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	U-234	1.000E+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	U-238	9.999E-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
Pb-210	äDOSE(j)		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
0Ra-226	Ra-226	1.000E+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	Th-230	1.000E+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	U-234	1.000E+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	U-238	9.999E-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

Ra-226	äDOSE(j)		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
0Ra-228	Ra-228	1.000E+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	Th-232	1.000E+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	äDOSE(j)		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
0Th-228	Ra-228	1.000E+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	Th-228	1.000E+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	Th-232	1.000E+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	äDOSE(j)		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
0Th-230	Th-230	1.000E+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-230	U-234	1.000E+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-230	U-238	9.999E-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
Th-230	äDOSE(j)		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
0Th-232	Th-232	1.000E+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
0U-234	U-234	1.000E+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-234	U-238	9.999E-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
U-234	äDOSE(j)		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
0U-235	U-235	1.000E+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
0U-238	U-238	5.400E-05	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-238	U-238	9.999E-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
U-238	äDOSE(j)		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
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THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+00	1.720E+01	1.666E+01	1.251E+01	7.123E-01	1.222E-03	2.095E-06	3.594E-09	6.164E-12	2.553E-13
Ac-227	Pa-231	1.000E+00	0.000E+00	5.389E-01	4.689E+00	1.645E+01	1.707E+01	1.699E+01	1.690E+01	1.681E+01	1.676E+01
Ac-227	U-235	1.000E+00	0.000E+00	5.732E-06	5.223E-04	2.540E-02	9.738E-02	1.694E-01	2.411E-01	3.125E-01	3.480E-01
Ac-227	äS(j):		1.720E+01	1.720E+01	1.720E+01	1.719E+01	1.717E+01	1.716E+01	1.714E+01	1.712E+01	1.711E+01
0Pa-231	Pa-231	1.000E+00	1.720E+01	1.720E+01	1.720E+01	1.715E+01	1.706E+01	1.698E+01	1.689E+01	1.680E+01	1.675E+01
Pa-231	U-235	1.000E+00	0.000E+00	3.639E-04	3.639E-03	3.634E-02	1.087E-01	1.808E-01	2.524E-01	3.237E-01	3.592E-01
Pa-231	äS(j):		1.720E+01	1.720E+01	1.720E+01	1.719E+01	1.717E+01	1.716E+01	1.714E+01	1.712E+01	1.711E+01
0Pb-210	Pb-210	1.000E+00	1.778E+02	1.724E+02	1.303E+02	7.935E+00	1.581E-02	3.149E-05	6.272E-08	1.249E-10	5.576E-12
Pb-210	Ra-226	1.000E+00	0.000E+00	5.440E+00	4.739E+01	1.646E+02	1.583E+02	1.451E+02	1.331E+02	1.220E+02	1.168E+02
Pb-210	Th-230	1.000E+00	0.000E+00	1.185E-03	1.080E-01	5.241E+00	1.943E+01	3.252E+01	4.449E+01	5.545E+01	6.057E+01
Pb-210	U-234	1.000E+00	0.000E+00	4.937E-09	4.607E-06	2.629E-03	3.355E-02	9.854E-02	1.947E-01	3.194E-01	3.917E-01
Pb-210	U-238	9.999E-01	0.000E+00	3.504E-15	3.315E-11	2.090E-07	8.791E-06	4.470E-05	1.264E-04	2.709E-04	3.715E-04
Pb-210	äS(j):		1.778E+02	1.778E+02	1.778E+02	1.777E+02	1.777E+02	1.777E+02	1.778E+02	1.778E+02	1.778E+02
0Ra-226	Ra-226	1.000E+00	1.778E+02	1.777E+02	1.770E+02	1.703E+02	1.561E+02	1.431E+02	1.313E+02	1.204E+02	1.152E+02
Ra-226	Th-230	1.000E+00	0.000E+00	7.701E-02	7.686E-01	7.535E+00	2.164E+01	3.454E+01	4.635E+01	5.715E+01	6.220E+01
Ra-226	U-234	1.000E+00	0.000E+00	4.802E-07	4.795E-05	4.732E-03	4.136E-02	1.116E-01	2.126E-01	3.417E-01	4.161E-01
Ra-226	U-238	9.999E-01	0.000E+00	4.538E-13	4.533E-10	4.488E-07	1.185E-05	5.370E-05	1.442E-04	3.001E-04	4.074E-04
Ra-226	äS(j):		1.778E+02	1.778E+02	1.778E+02	1.778E+02	1.778E+02	1.778E+02	1.778E+02	1.778E+02	1.779E+02
0Ra-228	Ra-228	1.000E+00	4.505E+02	3.993E+02	1.349E+02	2.620E-03	8.866E-14	3.000E-24	1.015E-34	0.000E+00	0.000E+00

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 Ra-228  Th-232  1.000E+00    0.000E+00 5.116E+01 3.156E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02
 Ra-228  äS(j):              4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02
0Th-228  Ra-228  1.000E+00    0.000E+00 1.285E+02 1.842E+02 3.927E-03 1.329E-13 4.496E-24 1.521E-34 0.000E+00 0.000E+00
 Th-228  Th-228  1.000E+00    4.505E+02 3.136E+02 1.203E+01 8.289E-14 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 Th-228  Th-232  1.000E+00    0.000E+00 8.399E+00 2.543E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02
 Th-228  äS(j):              4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02
0Th-230  Th-230  1.000E+00    1.778E+02 1.778E+02 1.778E+02 1.776E+02 1.773E+02 1.770E+02 1.767E+02 1.764E+02 1.762E+02
 Th-230  U-234   1.000E+00    0.000E+00 2.217E-03 2.217E-02 2.216E-01 6.640E-01 1.105E+00 1.546E+00 1.985E+00 2.204E+00
 Th-230  U-238   9.999E-01    0.000E+00 3.143E-09 3.142E-07 3.141E-05 2.825E-04 7.841E-04 1.536E-03 2.536E-03 3.130E-03
 Th-230  äS(j):              1.778E+02 1.778E+02 1.778E+02 1.779E+02 1.780E+02 1.781E+02 1.782E+02 1.783E+02 1.784E+02
0Th-232  Th-232  1.000E+00    4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02
0U-234   U-234   1.000E+00    2.463E+02 2.463E+02 2.463E+02 2.462E+02 2.461E+02 2.460E+02 2.458E+02 2.457E+02 2.456E+02
 U-234   U-238   9.999E-01    0.000E+00 6.982E-04 6.982E-03 6.981E-02 2.094E-01 3.489E-01 4.883E-01 6.276E-01 6.972E-01
 U-234   äS(j):              2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02
0U-235   U-235   1.000E+00    1.720E+01 1.720E+01 1.720E+01 1.720E+01 1.720E+01 1.720E+01 1.720E+01 1.720E+01 1.720E+01
0U-238   U-238   5.400E-05    1.330E-02 1.330E-02 1.330E-02 1.330E-02 1.330E-02 1.330E-02 1.330E-02 1.330E-02 1.330E-02
 U-238   U-238   9.999E-01    2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02
 U-238   äS(j):              2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02
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 THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time =   52.83 seconds
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Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary 6
Summary of Pathway Selections 12
Contaminated Zone and Total Dose Summary 13
Total Dose Components
Time = 0.000E+00 14
Time = 1.000E+00 15
Time = 1.000E+01 16
Time = 1.000E+02 17
Time = 3.000E+02 18
Time = 5.000E+02 19
Time = 7.000E+02 20
Time = 9.000E+02 21
Time = 1.000E+03 22
Dose/Source Ratios Summed Over All Pathways 23
Single Radionuclide Soil Guidelines 24
Dose Per Nuclide Summed Over All Pathways 25
Soil Concentration Per Nuclide 26

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)

A-1	Ra-223	(Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224	(Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226	(Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219	(Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220	(Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222	(Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227	(Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228	(Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230	(Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231	(Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232	(Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234	(Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207	(Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208	(Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210	(Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234	(Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235	(Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238	(Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D		6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231		1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D		2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D		8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D		5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D		3.454E-01	3.420E-01	DCF2(6)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2(12)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3(2)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(5)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(6)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(7)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(8)
D-1	U-234	2.830E-04	2.830E-04	DCF3(9)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(10)
D-1	U-238	2.550E-04	2.550E-04	DCF3(11)
D-1	U-238+D	2.687E-04	2.550E-04	DCF3(12)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)

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D-34 ³ Ac-227+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,2)
D-34 ³ Ac-227+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Pa-231    , plant/soil concentration ratio, dimensionless  ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  2,1)
D-34 ³ Pa-231    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 5.000E-03 ³ 5.000E-03 ³ RTF(  2,2)
D-34 ³ Pa-231    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  2,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Pb-210+D  , plant/soil concentration ratio, dimensionless  ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  3,1)
D-34 ³ Pb-210+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 8.000E-04 ³ 8.000E-04 ³ RTF(  3,2)
D-34 ³ Pb-210+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 3.000E-04 ³ 3.000E-04 ³ RTF(  3,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Ra-226+D  , plant/soil concentration ratio, dimensionless  ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  4,1)
D-34 ³ Ra-226+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,2)
D-34 ³ Ra-226+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Ra-228+D  , plant/soil concentration ratio, dimensionless  ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  5,1)
D-34 ³ Ra-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,2)
D-34 ³ Ra-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Th-228+D  , plant/soil concentration ratio, dimensionless  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  6,1)
D-34 ³ Th-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  6,2)
D-34 ³ Th-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  6,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Th-230    , plant/soil concentration ratio, dimensionless  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  7,1)
D-34 ³ Th-230    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  7,2)
D-34 ³ Th-230    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  7,3)
D-34 ³                                                            ³           ³           ³
```


Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

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0        ³                                                        ³  Current  ³   Base    ³  Parameter
 Menu    ³                    Parameter                           ³   Value#  ³   Case*   ³    Name
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 D-5  ³                                                          ³           ³           ³
 D-5  ³ Pa-231     , fish                                        ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  2,1)
 D-5  ³ Pa-231     , crustacea and mollusks                      ³ 1.100E+02 ³ 1.100E+02 ³ BIOFAC(  2,2)
 D-5  ³                                                          ³           ³           ³
 D-5  ³ Pb-210+D   , fish                                        ³ 3.000E+02 ³ 3.000E+02 ³ BIOFAC(  3,1)
 D-5  ³ Pb-210+D   , crustacea and mollusks                      ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  3,2)
 D-5  ³                                                          ³           ³           ³
 D-5  ³ Ra-226+D   , fish                                        ³ 5.000E+01 ³ 5.000E+01 ³ BIOFAC(  4,1)
 D-5  ³ Ra-226+D   , crustacea and mollusks                      ³ 2.500E+02 ³ 2.500E+02 ³ BIOFAC(  4,2)
 D-5  ³                                                          ³           ³           ³
 D-5  ³ Ra-228+D   , fish                                        ³ 5.000E+01 ³ 5.000E+01 ³ BIOFAC(  5,1)
 D-5  ³ Ra-228+D   , crustacea and mollusks                      ³ 2.500E+02 ³ 2.500E+02 ³ BIOFAC(  5,2)
 D-5  ³                                                          ³           ³           ³
 D-5  ³ Th-228+D   , fish                                        ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  6,1)
 D-5  ³ Th-228+D   , crustacea and mollusks                      ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  6,2)
 D-5  ³                                                          ³           ³           ³
 D-5  ³ Th-230     , fish                                        ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  7,1)
 D-5  ³ Th-230     , crustacea and mollusks                      ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  7,2)
 D-5  ³                                                          ³           ³           ³
 D-5  ³ Th-232     , fish                                        ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  8,1)
 D-5  ³ Th-232     , crustacea and mollusks                      ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  8,2)
 D-5  ³                                                          ³           ³           ³
 D-5  ³ U-234      , fish                                        ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  9,1)
 D-5  ³ U-234      , crustacea and mollusks                      ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC(  9,2)
 D-5  ³                                                          ³           ³           ³
 D-5  ³ U-235+D    , fish                                        ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC( 10,1)
 D-5  ³ U-235+D    , crustacea and mollusks                      ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC( 10,2)
1RESRAD, Version 6.4      T« Limit = 180 days        07/26/2009  15:58  Page    5
 Summary : SMC Suburban Resident Area 3 Controls Fail Unrestricted Area
 File    : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109603.RAD
```

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

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0     ³                                                          ³  Current  ³   Base    ³  Parameter
 Menu ³                          Parameter                       ³   Value#  ³   Case*   ³    Name
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R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	5.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	7.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	9.000E+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): Ac-227	1.690E+01	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Pa-231	1.690E+01	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	2.640E+02	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	2.640E+02	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	4.173E+02	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	4.173E+02	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Th-230	2.408E+02	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Th-232	4.173E+02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-234	2.408E+02	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): U-235	1.690E+01	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): U-238	2.408E+02	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L): Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Pa-231	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(11)
R013	Cover depth (m)	1.830E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	1.920E+00	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	1.500E-04	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	2.240E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.500E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.600E-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-02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.430E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.300E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	7.300E-01	5.000E-01	---	EVAPTR

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Precipitation (m/yr)	1.050E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	9.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	2.770E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.510E+00	1.500E+00	---	DENSAQ

R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.830E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	9.500E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.000E-03	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	4.530E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	2	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.500E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.696E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.600E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.890E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.060E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	4.750E+03	1.000E+01	---	HCUZ(1)
R015	Unsat. zone 2, thickness (m)	1.900E+00	0.000E+00	---	H(2)
R015	Unsat. zone 2, soil density (g/cm**3)	1.510E+00	1.500E+00	---	DENSUZ(2)
R015	Unsat. zone 2, total porosity	4.300E-01	4.000E-01	---	TPUZ(2)
R015	Unsat. zone 2, effective porosity	3.830E-01	2.000E-01	---	EPUZ(2)
R015	Unsat. zone 2, field capacity	2.000E-01	2.000E-01	---	FCUZ(2)
R015	Unsat. zone 2, soil-specific b parameter	4.050E+00	5.300E+00	---	BUZ(2)
R015	Unsat. zone 2, hydraulic conductivity (m/yr)	9.500E+03	1.000E+01	---	HCUZ(2)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Unsaturated zone 2 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,2)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.248E-06	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,1)
R016	Unsaturated zone 2 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,2)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.112E-06	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,1)
R016	Unsaturated zone 2 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,2)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.041E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

R016	Distribution coefficients for Ra-226			
R016	Contaminated zone (cm**3/g)	1.604E+03	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.753E-06	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	1.257E+04	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.238E-07	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	1.391E+05	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.022E-08	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	1.391E+05	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.022E-08	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	1.391E+05	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.022E-08	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	7.297E+05	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.854E-09	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	7.297E+05	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,2)

R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.854E-09	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	7.297E+05	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.854E-09	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R017	Inhalation rate (m**3/yr)	not used	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	not used	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	not used	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	not used	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	5.000E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	2.500E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	not used	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)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
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)	1.600E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	1.400E+01	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)	5.100E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	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	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E-01	-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)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	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	1.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	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)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	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	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	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	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	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	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN

C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

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

9 -- radon ³ suppressed
Find peak pathway doses ³ active
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Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 15:58 Page 15

Summary : SMC Suburban Resident Area 3 Controls Fail Unrestricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109603.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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 15:58 Page 16
Summary : SMC Suburban Resident Area 3 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109603.RAD

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

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 15:58 Page 17
Summary : SMC Suburban Resident Area 3 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109603.RAD

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

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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 = 3.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

0

Water Dependent Pathways

0

Radio-	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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 15:58 Page 19
Summary : SMC Suburban Resident Area 3 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109603.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 = 5.000E+02 years

0

Water Independent Pathways (Inhalation excludes radon)

0

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

0

Water Dependent Pathways

0

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000

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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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 = 7.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 7.000E+02 years
0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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 = 9.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.000E+02 years
0 Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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
0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000

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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0

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.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ïïïïïïï	ïïïïïïïïï	ïïïïïï	ïïïïïïïïï	ïïïïïï	ïïïïïïïïï	ïïïïïï	ïïïïïïïïï	ïïïïïï	ïïïïïïïïï	ïïïïïï	ïïïïïïïïï	ïïïïïï	ïïïïïïïïï	ïïïïïï
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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 15:58 Page 23
Summary : SMC Suburban Resident Area 3 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109603.RAD

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

0 Parent	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)								
(i)	(j)	Fraction	0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227+D	Ac-227+D	1.000E+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
0Pa-231	Pa-231	1.000E+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	Ac-227+D	1.000E+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	äDSR(j)		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
0Pb-210+D	Pb-210+D	1.000E+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
0Ra-226+D	Ra-226+D	1.000E+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+D	Pb-210+D	1.000E+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+D	äDSR(j)		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
0Ra-228+D	Ra-228+D	1.000E+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+D	Th-228+D	1.000E+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+D	äDSR(j)		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
0Th-228+D	Th-228+D	1.000E+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
0Th-230	Th-230	1.000E+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-230	Ra-226+D	1.000E+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-230	Pb-210+D	1.000E+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-230	äDSR(j)		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
0Th-232	Th-232	1.000E+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	Ra-228+D	1.000E+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	Th-228+D	1.000E+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	äDSR(j)		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

0U-234	U-234	1.000E+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-234	Th-230	1.000E+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-234	Ra-226+D	1.000E+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-234	Pb-210+D	1.000E+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-234	äDSR(j)		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
0U-235+D	U-235+D	1.000E+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+D	Pa-231	1.000E+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+D	Ac-227+D	1.000E+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+D	äDSR(j)		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
0U-238	U-238	5.400E-05	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
0U-238+D	U-238+D	9.999E-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
U-238+D	U-234	9.999E-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
U-238+D	Th-230	9.999E-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
U-238+D	Ra-226+D	9.999E-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
U-238+D	Pb-210+D	9.999E-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
U-238+D	äDSR(j)		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
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The DSR includes contributions from associated (half-life ó 180 days) daughters.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 15:58 Page 24

Summary : SMC Suburban Resident Area 3 Controls Fail Unrestricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109603.RAD

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ
Ac-227	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13
Pa-231	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10
Pb-210	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13
Ra-226	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11
Ra-228	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14
Th-228	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10
Th-232	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05
U-234	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09
U-235	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06
U-238	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05
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*At specific activity limit

0

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

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ
Ac-227	1.690E+01	0.000E+00	0.000E+00	*7.232E+13	0.000E+00	*7.232E+13
Pa-231	1.690E+01	0.000E+00	0.000E+00	*4.723E+10	0.000E+00	*4.723E+10
Pb-210	2.640E+02	0.000E+00	0.000E+00	*7.634E+13	0.000E+00	*7.634E+13
Ra-226	2.640E+02	0.000E+00	0.000E+00	*9.885E+11	0.000E+00	*9.885E+11
Ra-228	4.173E+02	0.000E+00	0.000E+00	*2.726E+14	0.000E+00	*2.726E+14
Th-228	4.173E+02	0.000E+00	0.000E+00	*8.195E+14	0.000E+00	*8.195E+14
Th-230	2.408E+02	0.000E+00	0.000E+00	*2.018E+10	0.000E+00	*2.018E+10
Th-232	4.173E+02	0.000E+00	0.000E+00	*1.097E+05	0.000E+00	*1.097E+05
U-234	2.408E+02	0.000E+00	0.000E+00	*6.247E+09	0.000E+00	*6.247E+09
U-235	1.690E+01	0.000E+00	0.000E+00	*2.161E+06	0.000E+00	*2.161E+06
U-238	2.408E+02	0.000E+00	0.000E+00	*3.361E+05	0.000E+00	*3.361E+05

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*At specific activity limit

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

0Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+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	Pa-231	1.000E+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	U-235	1.000E+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	äDOSE(j)		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
0Pa-231	Pa-231	1.000E+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	U-235	1.000E+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	äDOSE(j)		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
0Pb-210	Pb-210	1.000E+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	Ra-226	1.000E+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	Th-230	1.000E+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	U-234	1.000E+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	U-238	9.999E-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
Pb-210	äDOSE(j)		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
0Ra-226	Ra-226	1.000E+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	Th-230	1.000E+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	U-234	1.000E+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	U-238	9.999E-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
Ra-226	äDOSE(j)		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
0Ra-228	Ra-228	1.000E+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	Th-232	1.000E+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	äDOSE(j)		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
0Th-228	Ra-228	1.000E+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	Th-228	1.000E+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	Th-232	1.000E+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	äDOSE(j)		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
0Th-230	Th-230	1.000E+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-230	U-234	1.000E+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-230	U-238	9.999E-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
Th-230	äDOSE(j)		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
0Th-232	Th-232	1.000E+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
0U-234	U-234	1.000E+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-234	U-238	9.999E-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
U-234	äDOSE(j)		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
0U-235	U-235	1.000E+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
0U-238	U-238	5.400E-05	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-238	U-238	9.999E-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
U-238	äDOSE(j)		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
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THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03

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Ac-227	Ac-227	1.000E+00	1.690E+01	1.637E+01	1.229E+01	6.999E-01	1.200E-03	2.059E-06	3.531E-09	6.056E-12	2.508E-13
Ac-227	Pa-231	1.000E+00	0.000E+00	5.295E-01	4.607E+00	1.617E+01	1.678E+01	1.669E+01	1.660E+01	1.652E+01	1.647E+01
Ac-227	U-235	1.000E+00	0.000E+00	5.632E-06	5.132E-04	2.496E-02	9.568E-02	1.665E-01	2.369E-01	3.070E-01	3.419E-01
Ac-227	äS(j):		1.690E+01	1.690E+01	1.690E+01	1.689E+01	1.687E+01	1.686E+01	1.684E+01	1.682E+01	1.681E+01
0Pa-231	Pa-231	1.000E+00	1.690E+01	1.690E+01	1.690E+01	1.686E+01	1.677E+01	1.668E+01	1.659E+01	1.651E+01	1.646E+01
Pa-231	U-235	1.000E+00	0.000E+00	3.576E-04	3.575E-03	3.571E-02	1.069E-01	1.776E-01	2.480E-01	3.180E-01	3.529E-01
Pa-231	äS(j):		1.690E+01	1.690E+01	1.690E+01	1.689E+01	1.687E+01	1.686E+01	1.684E+01	1.682E+01	1.681E+01
0Pb-210	Pb-210	1.000E+00	2.640E+02	2.559E+02	1.934E+02	1.178E+01	2.347E-02	4.675E-05	9.313E-08	1.855E-10	8.279E-12
Pb-210	Ra-226	1.000E+00	0.000E+00	8.078E+00	7.037E+01	2.443E+02	2.349E+02	2.153E+02	1.974E+02	1.810E+02	1.732E+02
Pb-210	Th-230	1.000E+00	0.000E+00	1.604E-03	1.463E-01	7.097E+00	2.631E+01	4.403E+01	6.023E+01	7.505E+01	8.198E+01
Pb-210	U-234	1.000E+00	0.000E+00	4.827E-09	4.504E-06	2.570E-03	3.280E-02	9.632E-02	1.903E-01	3.122E-01	3.828E-01
Pb-210	U-238	9.999E-01	0.000E+00	3.426E-15	3.241E-11	2.043E-07	8.594E-06	4.369E-05	1.236E-04	2.648E-04	3.631E-04
Pb-210	äS(j):		2.640E+02	2.640E+02	2.640E+02	2.632E+02	2.613E+02	2.595E+02	2.578E+02	2.563E+02	2.556E+02
0Ra-226	Ra-226	1.000E+00	2.640E+02	2.639E+02	2.629E+02	2.528E+02	2.317E+02	2.124E+02	1.947E+02	1.785E+02	1.709E+02
Ra-226	Th-230	1.000E+00	0.000E+00	1.043E-01	1.041E+00	1.020E+01	2.930E+01	4.677E+01	6.275E+01	7.736E+01	8.418E+01
Ra-226	U-234	1.000E+00	0.000E+00	4.695E-07	4.688E-05	4.626E-03	4.043E-02	1.091E-01	2.078E-01	3.340E-01	4.066E-01
Ra-226	U-238	9.999E-01	0.000E+00	4.436E-13	4.432E-10	4.388E-07	1.159E-05	5.249E-05	1.410E-04	2.933E-04	3.981E-04
Ra-226	äS(j):		2.640E+02	2.640E+02	2.639E+02	2.630E+02	2.610E+02	2.593E+02	2.577E+02	2.562E+02	2.555E+02
0Ra-228	Ra-228	1.000E+00	4.173E+02	3.699E+02	1.250E+02	2.427E-03	8.213E-14	2.779E-24	9.403E-35	0.000E+00	0.000E+00
Ra-228	Th-232	1.000E+00	0.000E+00	4.739E+01	2.923E+02	4.173E+02	4.173E+02	4.173E+02	4.173E+02	4.173E+02	4.173E+02
Ra-228	äS(j):		4.173E+02	4.173E+02	4.173E+02	4.173E+02	4.173E+02	4.173E+02	4.173E+02	4.173E+02	4.173E+02
0Th-228	Ra-228	1.000E+00	0.000E+00	1.191E+02	1.706E+02	3.638E-03	1.231E-13	4.165E-24	1.409E-34	0.000E+00	0.000E+00
Th-228	Th-228	1.000E+00	4.173E+02	2.905E+02	1.114E+01	7.678E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	7.780E+00	2.355E+02	4.173E+02	4.173E+02	4.173E+02	4.173E+02	4.173E+02	4.173E+02
Th-228	äS(j):		4.173E+02	4.173E+02	4.173E+02	4.173E+02	4.173E+02	4.173E+02	4.173E+02	4.173E+02	4.173E+02
0Th-230	Th-230	1.000E+00	2.408E+02	2.408E+02	2.408E+02	2.406E+02	2.401E+02	2.397E+02	2.393E+02	2.389E+02	2.386E+02
Th-230	U-234	1.000E+00	0.000E+00	2.168E-03	2.168E-02	2.166E-01	6.491E-01	1.081E+00	1.511E+00	1.941E+00	2.155E+00
Th-230	U-238	9.999E-01	0.000E+00	3.072E-09	3.072E-07	3.071E-05	2.762E-04	7.666E-04	1.501E-03	2.480E-03	3.060E-03
Th-230	äS(j):		2.408E+02	2.408E+02	2.408E+02	2.408E+02	2.408E+02	2.408E+02	2.408E+02	2.408E+02	2.408E+02
0Th-232	Th-232	1.000E+00	4.173E+02	4.173E+02	4.173E+02	4.173E+02	4.173E+02	4.173E+02	4.173E+02	4.173E+02	4.173E+02
0U-234	U-234	1.000E+00	2.408E+02	2.408E+02	2.408E+02	2.407E+02	2.406E+02	2.405E+02	2.403E+02	2.402E+02	2.401E+02
U-234	U-238	9.999E-01	0.000E+00	6.826E-04	6.826E-03	6.825E-02	2.047E-01	3.411E-01	4.774E-01	6.136E-01	6.817E-01
U-234	äS(j):		2.408E+02	2.408E+02	2.408E+02	2.408E+02	2.408E+02	2.408E+02	2.408E+02	2.408E+02	2.408E+02
0U-235	U-235	1.000E+00	1.690E+01	1.690E+01	1.690E+01	1.690E+01	1.690E+01	1.690E+01	1.690E+01	1.690E+01	1.690E+01
0U-238	U-238	5.400E-05	1.300E-02	1.300E-02	1.300E-02	1.300E-02	1.300E-02	1.300E-02	1.300E-02	1.300E-02	1.300E-02
U-238	U-238	9.999E-01	2.408E+02	2.408E+02	2.408E+02	2.408E+02	2.408E+02	2.408E+02	2.408E+02	2.408E+02	2.408E+02
U-238	äS(j):		2.408E+02	2.408E+02	2.408E+02	2.408E+02	2.408E+02	2.408E+02	2.408E+02	2.408E+02	2.408E+02
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THF(i) is the thread fraction of the parent nuclide.

0RESCALC.EXE execution time = 52.58 seconds

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary 6
Summary of Pathway Selections 12
Contaminated Zone and Total Dose Summary 13
Total Dose Components
Time = 0.000E+00 14
Time = 1.000E+00 15
Time = 1.000E+01 16
Time = 1.000E+02 17
Time = 3.000E+02 18
Time = 5.000E+02 19
Time = 7.000E+02 20
Time = 9.000E+02 21
Time = 1.000E+03 22
Dose/Source Ratios Summed Over All Pathways 23
Single Radionuclide Soil Guidelines 24
Dose Per Nuclide Summed Over All Pathways 25
Soil Concentration Per Nuclide 26

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)

A-1	Pb-212	(Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214	(Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)
A-1	Po-210	(Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211	(Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214	(Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215	(Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216	(Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218	(Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)
A-1	Ra-223	(Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224	(Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226	(Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219	(Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220	(Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222	(Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227	(Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228	(Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230	(Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231	(Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232	(Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234	(Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207	(Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208	(Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210	(Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234	(Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235	(Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238	(Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D		6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231		1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D		2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D		8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D		5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D		3.454E-01	3.420E-01	DCF2(6)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)

B-1	U-238+D	1.180E-01	1.180E-01	DCF2(12)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3(2)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(5)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(6)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(7)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(8)
D-1	U-234	2.830E-04	2.830E-04	DCF3(9)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(10)
D-1	U-238	2.550E-04	2.550E-04	DCF3(11)
D-1	U-238+D	2.687E-04	2.550E-04	DCF3(12)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(2,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(4,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(7,3)
D-34				

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(8,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(8,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(8,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)

D-34	U-234	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-234	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34					
D-34	U-235+D	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-235+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-235+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)
D-34					
D-34	U-238	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,1)
D-34	U-238	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(11,2)
D-34	U-238	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(11,3)
D-34					
D-34	U-238+D	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(12,1)
D-34	U-238+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(12,2)
D-34	U-238+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(12,3)
D-5	Bioaccumulation factors, fresh water, L/kg:				
D-5	Ac-227+D	, fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D	, crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5					
D-5	Pa-231	, fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231	, crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5					
D-5	Pb-210+D	, fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D	, crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5					
D-5	Ra-226+D	, fish	5.000E+01	5.000E+01	BIOFAC(4,1)
D-5	Ra-226+D	, crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(4,2)
D-5					
D-5	Ra-228+D	, fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-228+D	, crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5					
D-5	Th-228+D	, fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-228+D	, crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5					
D-5	Th-230	, fish	1.000E+02	1.000E+02	BIOFAC(7,1)
D-5	Th-230	, crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(7,2)
D-5					
D-5	Th-232	, fish	1.000E+02	1.000E+02	BIOFAC(8,1)
D-5	Th-232	, crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(8,2)
D-5					
D-5	U-234	, fish	1.000E+01	1.000E+01	BIOFAC(9,1)
D-5	U-234	, crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5					
D-5	U-235+D	, fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-235+D	, crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

0 Menu	Parameter		Current Value#	Base Case*	Parameter Name
D-5	U-238	, fish	1.000E+01	1.000E+01	BIOFAC(11,1)
D-5	U-238	, crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(11,2)
D-5					
D-5	U-238+D	, fish	1.000E+01	1.000E+01	BIOFAC(12,1)
D-5	U-238+D	, crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(12,2)

Site-Specific Parameter Summary

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.900E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	4.500E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	1.700E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+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)	1.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	5.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	7.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	9.000E+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): Ac-227	2.000E-01	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Pa-231	2.000E-01	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.900E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.900E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	3.500E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	3.500E+00	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Th-230	2.900E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Th-232	3.500E+00	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-234	2.900E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): U-235	2.000E-01	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): U-238	2.900E+00	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L): Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Pa-231	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(11)
R013	Cover depth (m)	1.830E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	1.920E+00	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	1.500E-04	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	2.240E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.500E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.600E-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-02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.430E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.300E+00	2.000E+00	---	WIND

R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	7.300E-01	5.000E-01	---	EVAPTR

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Precipitation (m/yr)	1.050E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	9.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	2.770E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.510E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.830E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	9.500E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.000E-03	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	4.530E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	2	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.500E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.696E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.600E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.890E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.060E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	4.750E+03	1.000E+01	---	HCUZ(1)
R015	Unsat. zone 2, thickness (m)	1.900E+00	0.000E+00	---	H(2)
R015	Unsat. zone 2, soil density (g/cm**3)	1.510E+00	1.500E+00	---	DENSUZ(2)
R015	Unsat. zone 2, total porosity	4.300E-01	4.000E-01	---	TPUZ(2)
R015	Unsat. zone 2, effective porosity	3.830E-01	2.000E-01	---	EPUZ(2)
R015	Unsat. zone 2, field capacity	2.000E-01	2.000E-01	---	FCUZ(2)
R015	Unsat. zone 2, soil-specific b parameter	4.050E+00	5.300E+00	---	BUZ(2)
R015	Unsat. zone 2, hydraulic conductivity (m/yr)	9.500E+03	1.000E+01	---	HCUZ(2)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Unsaturated zone 2 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,2)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.248E-06	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,1)
R016	Unsaturated zone 2 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,2)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS(2)

R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.112E-06	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,1)
R016	Unsaturated zone 2 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,2)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.041E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	5.030E+04	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.591E-08	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	1.099E+05	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.560E-08	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	1.680E+04	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.674E-07	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	1.680E+04	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.674E-07	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	1.680E+04	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.674E-07	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.393E+04	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.019E-07	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	1.393E+04	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.019E-07	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	1.393E+04	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.019E-07	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R017	Inhalation rate (m**3/yr)	not used	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	not used	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	not used	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	not used	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	5.000E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	2.500E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	not used	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)

Site-Specific Parameter Summary (continued)

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

R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
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)	1.600E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	1.400E+01	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)	5.100E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	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	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E-01	-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)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	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	1.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	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)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

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

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

Site-Specific Parameter Summary (continued)

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

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TITL ³ Maximum number of integration points for dose    ³     17    ³    ---    ³              ---              ³ LYMAX
TITL ³ Maximum number of integration points for risk    ³      1    ³    ---    ³              ---              ³ KYMAX
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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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0

Radio-	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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 15:57 Page 15
Summary : SMC Suburban Resident Area 2 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109602.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years
0
Water Dependent Pathways
0

Radio-	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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.
1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 15:57 Page 16
Summary : SMC Suburban Resident Area 2 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109602.RAD

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

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

Radio-	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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000

Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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+02 years
0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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 = 3.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0 Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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 = 5.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0 Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 15:57 Page 20
Summary : SMC Suburban Resident Area 2 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109602.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 = 7.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 7.000E+02 years

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.

ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 15:57 Page 21
Summary : SMC Suburban Resident Area 2 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109602.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 = 9.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.000E+02 years

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ

Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*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
0 Water Independent Pathways (Inhalation excludes radon)

0 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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

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

0 Radio-	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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

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

0 Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
Ac-227+D	Ac-227+D	1.000E+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
0Pa-231	Pa-231	1.000E+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	Ac-227+D	1.000E+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	äDSR(j)		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
0Pb-210+D	Pb-210+D	1.000E+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
0Ra-226+D	Ra-226+D	1.000E+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+D	Pb-210+D	1.000E+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+D	äDSR(j)		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
0Ra-228+D	Ra-228+D	1.000E+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+D	Th-228+D	1.000E+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+D	äDSR(j)		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
0Th-228+D	Th-228+D	1.000E+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
0Th-230	Th-230	1.000E+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-230	Ra-226+D	1.000E+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-230	Pb-210+D	1.000E+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-230	äDSR(j)		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
0Th-232	Th-232	1.000E+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	Ra-228+D	1.000E+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	Th-228+D	1.000E+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	äDSR(j)		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
0U-234	U-234	1.000E+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-234	Th-230	1.000E+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-234	Ra-226+D	1.000E+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-234	Pb-210+D	1.000E+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-234	äDSR(j)		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
0U-235+D	U-235+D	1.000E+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+D	Pa-231	1.000E+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+D	Ac-227+D	1.000E+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+D	äDSR(j)		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
0U-238	U-238	5.400E-05	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
0U-238+D	U-238+D	9.999E-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	0.000E+00
U-238+D	U-234	9.999E-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	0.000E+00
U-238+D	Th-230	9.999E-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	0.000E+00
U-238+D	Ra-226+D	9.999E-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	0.000E+00
U-238+D	Pb-210+D	9.999E-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	0.000E+00
U-238+D	äDSR(j)		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

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The DSR includes contributions from associated (half-life ó 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide

(i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13
Pa-231	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10
Pb-210	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13
Ra-226	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11
Ra-228	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14
Th-228	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10
Th-232	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05
U-234	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09
U-235	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06
U-238	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05
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*At specific activity limit

0

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

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Ac-227	2.000E-01	0.000E+00	0.000E+00	*7.232E+13	0.000E+00	*7.232E+13
Pa-231	2.000E-01	0.000E+00	0.000E+00	*4.723E+10	0.000E+00	*4.723E+10
Pb-210	1.900E+00	0.000E+00	0.000E+00	*7.634E+13	0.000E+00	*7.634E+13
Ra-226	1.900E+00	0.000E+00	0.000E+00	*9.885E+11	0.000E+00	*9.885E+11
Ra-228	3.500E+00	0.000E+00	0.000E+00	*2.726E+14	0.000E+00	*2.726E+14
Th-228	3.500E+00	0.000E+00	0.000E+00	*8.195E+14	0.000E+00	*8.195E+14
Th-230	2.900E+00	0.000E+00	0.000E+00	*2.018E+10	0.000E+00	*2.018E+10
Th-232	3.500E+00	0.000E+00	0.000E+00	*1.097E+05	0.000E+00	*1.097E+05
U-234	2.900E+00	0.000E+00	0.000E+00	*6.247E+09	0.000E+00	*6.247E+09
U-235	2.000E-01	0.000E+00	0.000E+00	*2.161E+06	0.000E+00	*2.161E+06
U-238	2.900E+00	0.000E+00	0.000E+00	*3.361E+05	0.000E+00	*3.361E+05

*At specific activity limit

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

0Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
Ac-227	Ac-227	1.000E+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	Pa-231	1.000E+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	U-235	1.000E+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	äDOSE(j)		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
0Pa-231	Pa-231	1.000E+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	U-235	1.000E+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	äDOSE(j)		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
0Pb-210	Pb-210	1.000E+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	Ra-226	1.000E+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	Th-230	1.000E+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	U-234	1.000E+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	U-238	9.999E-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
Pb-210	äDOSE(j)		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
0Ra-226	Ra-226	1.000E+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	Th-230	1.000E+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	U-234	1.000E+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	U-238	9.999E-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
Ra-226	äDOSE(j)		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
0Ra-228	Ra-228	1.000E+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	Th-232	1.000E+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	äDOSE(j)		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
0Th-228	Ra-228	1.000E+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	Th-228	1.000E+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	Th-232	1.000E+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	äDOSE(j)		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
0Th-230	Th-230	1.000E+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-230	U-234	1.000E+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-230	U-238	9.999E-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
Th-230	äDOSE(j)		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

0Th-232	Th-232	1.000E+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
0U-234	U-234	1.000E+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-234	U-238	9.999E-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	0.000E+00
U-234	äDOSE(j)		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
0U-235	U-235	1.000E+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
0U-238	U-238	5.400E-05	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-238	U-238	9.999E-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	0.000E+00
U-238	äDOSE(j)		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
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THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+00	2.000E-01	1.937E-01	1.455E-01	8.283E-03	1.421E-05	2.436E-08	4.179E-11	7.167E-14	2.968E-15
Ac-227	Pa-231	1.000E+00	0.000E+00	6.267E-03	5.452E-02	1.913E-01	1.985E-01	1.975E-01	1.965E-01	1.954E-01	1.949E-01
Ac-227	U-235	1.000E+00	0.000E+00	6.665E-08	6.074E-06	2.954E-04	1.132E-03	1.970E-03	2.804E-03	3.633E-03	4.046E-03
Ac-227	äS(j):		2.000E-01	2.000E-01	2.000E-01	1.999E-01	1.997E-01	1.995E-01	1.993E-01	1.991E-01	1.990E-01
0Pa-231	Pa-231	1.000E+00	2.000E-01	2.000E-01	1.999E-01	1.995E-01	1.984E-01	1.974E-01	1.964E-01	1.953E-01	1.948E-01
Pa-231	U-235	1.000E+00	0.000E+00	4.232E-06	4.231E-05	4.226E-04	1.264E-03	2.102E-03	2.935E-03	3.763E-03	4.176E-03
Pa-231	äS(j):		2.000E-01	2.000E-01	2.000E-01	1.999E-01	1.997E-01	1.995E-01	1.993E-01	1.991E-01	1.990E-01
0Pb-210	Pb-210	1.000E+00	1.900E+00	1.842E+00	1.392E+00	8.480E-02	1.689E-04	3.365E-07	6.702E-10	1.335E-12	5.958E-14
Pb-210	Ra-226	1.000E+00	0.000E+00	5.814E-02	5.064E-01	1.759E+00	1.691E+00	1.551E+00	1.422E+00	1.304E+00	1.249E+00
Pb-210	Th-230	1.000E+00	0.000E+00	1.932E-05	1.762E-03	8.548E-02	3.169E-01	5.304E-01	7.258E-01	9.044E-01	9.880E-01
Pb-210	U-234	1.000E+00	0.000E+00	5.813E-11	5.424E-08	3.095E-05	3.951E-04	1.160E-03	2.293E-03	3.761E-03	4.611E-03
Pb-210	U-238	9.999E-01	0.000E+00	4.126E-17	3.903E-13	2.461E-09	1.035E-07	5.263E-07	1.488E-06	3.189E-06	4.374E-06
Pb-210	äS(j):		1.900E+00	1.900E+00	1.900E+00	1.929E+00	2.009E+00	2.083E+00	2.150E+00	2.212E+00	2.241E+00
0Ra-226	Ra-226	1.000E+00	1.900E+00	1.899E+00	1.892E+00	1.819E+00	1.668E+00	1.530E+00	1.403E+00	1.286E+00	1.232E+00
Ra-226	Th-230	1.000E+00	0.000E+00	1.256E-03	1.254E-02	1.229E-01	3.529E-01	5.634E-01	7.560E-01	9.322E-01	1.015E+00
Ra-226	U-234	1.000E+00	0.000E+00	5.654E-09	5.646E-07	5.572E-05	4.870E-04	1.314E-03	2.503E-03	4.024E-03	4.899E-03
Ra-226	U-238	9.999E-01	0.000E+00	5.343E-15	5.337E-12	5.284E-09	1.396E-07	6.323E-07	1.698E-06	3.533E-06	4.796E-06
Ra-226	äS(j):		1.900E+00	1.900E+00	1.904E+00	1.942E+00	2.022E+00	2.095E+00	2.161E+00	2.223E+00	2.251E+00
0Ra-228	Ra-228	1.000E+00	3.500E+00	3.103E+00	1.048E+00	2.036E-05	6.889E-16	2.331E-26	7.887E-37	0.000E+00	0.000E+00
Ra-228	Th-232	1.000E+00	0.000E+00	3.975E-01	2.452E+00	3.500E+00	3.500E+00	3.500E+00	3.500E+00	3.499E+00	3.499E+00
Ra-228	äS(j):		3.500E+00	3.500E+00	3.500E+00	3.500E+00	3.500E+00	3.500E+00	3.500E+00	3.499E+00	3.499E+00
0Th-228	Ra-228	1.000E+00	0.000E+00	9.985E-01	1.431E+00	3.051E-05	1.032E-15	3.493E-26	1.182E-36	0.000E+00	0.000E+00
Th-228	Th-228	1.000E+00	3.500E+00	2.436E+00	9.344E-02	6.440E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	6.525E-02	1.975E+00	3.500E+00	3.500E+00	3.500E+00	3.500E+00	3.499E+00	3.499E+00
Th-228	äS(j):		3.500E+00	3.500E+00	3.500E+00	3.500E+00	3.500E+00	3.500E+00	3.500E+00	3.499E+00	3.499E+00
0Th-230	Th-230	1.000E+00	2.900E+00	2.900E+00	2.900E+00	2.897E+00	2.892E+00	2.887E+00	2.881E+00	2.876E+00	2.874E+00
Th-230	U-234	1.000E+00	0.000E+00	2.611E-05	2.610E-04	2.609E-03	7.817E-03	1.301E-02	1.820E-02	2.337E-02	2.595E-02
Th-230	U-238	9.999E-01	0.000E+00	3.700E-11	3.700E-09	3.699E-07	3.326E-06	9.231E-06	1.808E-05	2.986E-05	3.685E-05
Th-230	äS(j):		2.900E+00	2.900E+00	2.900E+00	2.900E+00	2.900E+00	2.900E+00	2.900E+00	2.900E+00	2.900E+00
0Th-232	Th-232	1.000E+00	3.500E+00	3.500E+00	3.500E+00	3.500E+00	3.500E+00	3.500E+00	3.500E+00	3.499E+00	3.499E+00
0U-234	U-234	1.000E+00	2.900E+00	2.900E+00	2.900E+00	2.899E+00	2.897E+00	2.896E+00	2.894E+00	2.892E+00	2.891E+00
U-234	U-238	9.999E-01	0.000E+00	8.221E-06	8.221E-05	8.220E-04	2.465E-03	4.107E-03	5.748E-03	7.388E-03	8.208E-03
U-234	äS(j):		2.900E+00	2.900E+00	2.900E+00	2.900E+00	2.900E+00	2.900E+00	2.900E+00	2.899E+00	2.899E+00
0U-235	U-235	1.000E+00	2.000E-01	2.000E-01	2.000E-01	2.000E-01	2.000E-01	2.000E-01	2.000E-01	2.000E-01	2.000E-01
0U-238	U-238	5.400E-05	1.566E-04	1.566E-04	1.566E-04	1.566E-04	1.566E-04	1.566E-04	1.566E-04	1.566E-04	1.566E-04
U-238	U-238	9.999E-01	2.900E+00	2.900E+00	2.900E+00	2.900E+00	2.900E+00	2.900E+00	2.899E+00	2.899E+00	2.899E+00
U-238	äS(j):		2.900E+00	2.900E+00	2.900E+00	2.900E+00	2.900E+00	2.900E+00	2.900E+00	2.899E+00	2.899E+00
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ

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

0RESCALC.EXE execution time = 52.36 seconds

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary 6
Summary of Pathway Selections 12
Contaminated Zone and Total Dose Summary 13
Total Dose Components
Time = 0.000E+00 14
Time = 1.000E+00 15
Time = 1.000E+01 16
Time = 1.000E+02 17
Time = 3.000E+02 18
Time = 5.000E+02 19
Time = 7.000E+02 20
Time = 9.000E+02 21
Time = 1.000E+03 22
Dose/Source Ratios Summed Over All Pathways 23
Single Radionuclide Soil Guidelines 24
Dose Per Nuclide Summed Over All Pathways 25
Soil Concentration Per Nuclide 26

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)

A-1	Pb-212	(Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214	(Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)
A-1	Po-210	(Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211	(Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214	(Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215	(Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216	(Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218	(Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)
A-1	Ra-223	(Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224	(Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226	(Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219	(Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220	(Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222	(Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227	(Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228	(Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230	(Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231	(Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232	(Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234	(Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207	(Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208	(Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210	(Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234	(Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235	(Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238	(Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D		6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231		1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D		2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D		8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D		5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D		3.454E-01	3.420E-01	DCF2(6)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)

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B-1  ³ U-238+D                                                  ³ 1.180E-01 ³ 1.180E-01 ³ DCF2( 12)
     ³                                                          ³           ³           ³
D-1  ³ Dose conversion factors for ingestion, mrem/pCi:         ³           ³           ³
D-1  ³ Ac-227+D                                                 ³ 1.480E-02 ³ 1.410E-02 ³ DCF3(  1)
D-1  ³ Pa-231                                                   ³ 1.060E-02 ³ 1.060E-02 ³ DCF3(  2)
D-1  ³ Pb-210+D                                                 ³ 7.276E-03 ³ 5.370E-03 ³ DCF3(  3)
D-1  ³ Ra-226+D                                                 ³ 1.321E-03 ³ 1.320E-03 ³ DCF3(  4)
D-1  ³ Ra-228+D                                                 ³ 1.442E-03 ³ 1.440E-03 ³ DCF3(  5)
D-1  ³ Th-228+D                                                 ³ 8.086E-04 ³ 3.960E-04 ³ DCF3(  6)
D-1  ³ Th-230                                                   ³ 5.480E-04 ³ 5.480E-04 ³ DCF3(  7)
D-1  ³ Th-232                                                   ³ 2.730E-03 ³ 2.730E-03 ³ DCF3(  8)
D-1  ³ U-234                                                    ³ 2.830E-04 ³ 2.830E-04 ³ DCF3(  9)
D-1  ³ U-235+D                                                  ³ 2.673E-04 ³ 2.660E-04 ³ DCF3( 10)
D-1  ³ U-238                                                    ³ 2.550E-04 ³ 2.550E-04 ³ DCF3( 11)
D-1  ³ U-238+D                                                  ³ 2.687E-04 ³ 2.550E-04 ³ DCF3( 12)
     ³                                                          ³           ³           ³
D-34 ³ Food transfer factors:                                   ³           ³           ³
D-34 ³ Ac-227+D  , plant/soil concentration ratio, dimensionless ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  1,1)
D-34 ³ Ac-227+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,2)
D-34 ³ Ac-227+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,3)
D-34 ³                                                          ³           ³           ³
D-34 ³ Pa-231    , plant/soil concentration ratio, dimensionless ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  2,1)
D-34 ³ Pa-231    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 5.000E-03 ³ 5.000E-03 ³ RTF(  2,2)
D-34 ³ Pa-231    , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  2,3)
D-34 ³                                                          ³           ³           ³
D-34 ³ Pb-210+D  , plant/soil concentration ratio, dimensionless ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  3,1)
D-34 ³ Pb-210+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 8.000E-04 ³ 8.000E-04 ³ RTF(  3,2)
D-34 ³ Pb-210+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 3.000E-04 ³ 3.000E-04 ³ RTF(  3,3)
D-34 ³                                                          ³           ³           ³
D-34 ³ Ra-226+D  , plant/soil concentration ratio, dimensionless ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  4,1)
D-34 ³ Ra-226+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,2)
D-34 ³ Ra-226+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,3)
D-34 ³                                                          ³           ³           ³
D-34 ³ Ra-228+D  , plant/soil concentration ratio, dimensionless ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  5,1)
D-34 ³ Ra-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,2)
D-34 ³ Ra-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,3)
D-34 ³                                                          ³           ³           ³
D-34 ³ Th-228+D  , plant/soil concentration ratio, dimensionless ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  6,1)
D-34 ³ Th-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  6,2)
D-34 ³ Th-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  6,3)
D-34 ³                                                          ³           ³           ³
D-34 ³ Th-230    , plant/soil concentration ratio, dimensionless ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  7,1)
D-34 ³ Th-230    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  7,2)
D-34 ³ Th-230    , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  7,3)
D-34 ³                                                          ³           ³           ³
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Dose Conversion Factor (and Related) Parameter Summary (continued)

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(8,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(8,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(8,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(11,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(11,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(12,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(12,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(12,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(4,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(4,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(7,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(7,2)
D-5				
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(8,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(8,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(9,1)

D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(11,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(11,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(12,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(12,2)

#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.

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)	2.550E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	4.500E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	5.050E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+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)	1.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	5.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	7.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	9.000E+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): Ac-227	3.000E-01	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Pa-231	3.000E-01	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.500E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.500E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	2.800E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	2.800E+00	0.000E+00	---	S1(6)

R012	Initial principal radionuclide (pCi/g):	Th-230	4.900E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g):	Th-232	2.800E+00	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g):	U-234	4.900E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g):	U-235	3.000E-01	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g):	U-238	4.900E+00	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L):	Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L):	Pa-231	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L):	Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L):	Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L):	Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L):	Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L):	Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L):	Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L):	U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L):	U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L):	U-238	not used	0.000E+00	---	W1(11)
R013	Cover depth (m)		1.830E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)		1.920E+00	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)		1.500E-04	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)		2.240E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)		1.500E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity		3.600E-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-02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter		4.430E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)		4.300E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)		not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient		7.300E-01	5.000E-01	---	EVAPTR

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Precipitation (m/yr)	1.050E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	9.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	2.770E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.510E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.830E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	9.500E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.000E-03	2.000E-02	---	HGWT

R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	4.530E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	2	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.500E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.696E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.600E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.890E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.060E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	4.750E+03	1.000E+01	---	HCUZ(1)
R015	Unsat. zone 2, thickness (m)	1.900E+00	0.000E+00	---	H(2)
R015	Unsat. zone 2, soil density (g/cm**3)	1.510E+00	1.500E+00	---	DENSUZ(2)
R015	Unsat. zone 2, total porosity	4.300E-01	4.000E-01	---	TPUZ(2)
R015	Unsat. zone 2, effective porosity	3.830E-01	2.000E-01	---	EPUZ(2)
R015	Unsat. zone 2, field capacity	2.000E-01	2.000E-01	---	FCUZ(2)
R015	Unsat. zone 2, soil-specific b parameter	4.050E+00	5.300E+00	---	BUZ(2)
R015	Unsat. zone 2, hydraulic conductivity (m/yr)	9.500E+03	1.000E+01	---	HCUZ(2)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Unsaturated zone 2 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,2)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.248E-06	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,1)
R016	Unsaturated zone 2 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,2)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.112E-06	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,1)
R016	Unsaturated zone 2 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,2)

R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.041E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	5.030E+04	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.591E-08	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	1.099E+05	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.560E-08	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	1.680E+04	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.674E-07	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	1.680E+04	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.674E-07	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	1.680E+04	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.674E-07	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

Site-Specific Parameter Summary (continued)

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

R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.393E+04	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.019E-07	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	1.393E+04	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.019E-07	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	1.393E+04	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.019E-07	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R017	Inhalation rate (m**3/yr)	not used	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	not used	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	not used	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	not used	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	5.000E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	2.500E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	not used	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)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
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)	1.600E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	1.400E+01	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)	5.100E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	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	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E-01	-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)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	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	1.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)

R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	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)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	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	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	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	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	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	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV

R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

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

Contaminated Zone Dimensions

Area: 2550.00 square meters

Initial Soil Concentrations, pCi/g

Ac-227 3.000E-01

Thickness:	4.50 meters	Pa-231	3.000E-01
Cover Depth:	1.83 meters	Pb-210	1.500E+00
		Ra-226	1.500E+00
		Ra-228	2.800E+00
		Th-228	2.800E+00
		Th-230	4.900E+00
		Th-232	2.800E+00
		U-234	4.900E+00
		U-235	3.000E-01
		U-238	4.900E+00

0

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

t (years):	0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
TDOSE(t):	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
M(t):	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

0Maximum TDOSE(t): 0.000E+00 mrem/yr at t = 0.000E+00 years

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 15:54 Page 14
Summary : SMC Suburban Resident Area 1 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109601.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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-														
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-														
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.

ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*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
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T½ Limit = 180 days 07/26/2009 15:54 Page 16

Summary : SMC Suburban Resident Area 1 Controls Fail Unrestricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109601.RAD

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

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 15:54 Page 17

Summary : SMC Suburban Resident Area 1 Controls Fail Unrestricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109601.RAD

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-														
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-														
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Suburban Resident Area 1 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109601.RAD

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

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Suburban Resident Area 1 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109601.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 = 5.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years
0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Suburban Resident Area 1 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109601.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 = 7.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0 Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

As mrem/yr and Fraction of Total Dose At t = 7.000E+02 years

0 Water Dependent Pathways

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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 = 9.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0 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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.000E+02 years

0 Water Dependent Pathways

0

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 15:54 Page 22
Summary : SMC Suburban Resident Area 1 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109601.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-	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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 15:54 Page 23
Summary : SMC Suburban Resident Area 1 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109601.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	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
Ac-227+D	Ac-227+D	1.000E+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
0Pa-231	Pa-231	1.000E+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	Ac-227+D	1.000E+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	äDSR(j)		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
0Pb-210+D	Pb-210+D	1.000E+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
0Ra-226+D	Ra-226+D	1.000E+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+D	Pb-210+D	1.000E+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+D	äDSR(j)		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

0Ra-228+D	Ra-228+D	1.000E+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+D	Th-228+D	1.000E+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+D	äDSR(j)		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
0Th-228+D	Th-228+D	1.000E+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
0Th-230	Th-230	1.000E+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-230	Ra-226+D	1.000E+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-230	Pb-210+D	1.000E+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-230	äDSR(j)		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
0Th-232	Th-232	1.000E+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	Ra-228+D	1.000E+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	Th-228+D	1.000E+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	äDSR(j)		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
0U-234	U-234	1.000E+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-234	Th-230	1.000E+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-234	Ra-226+D	1.000E+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-234	Pb-210+D	1.000E+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-234	äDSR(j)		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
0U-235+D	U-235+D	1.000E+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+D	Pa-231	1.000E+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+D	Ac-227+D	1.000E+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+D	äDSR(j)		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
0U-238	U-238	5.400E-05	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
0U-238+D	U-238+D	9.999E-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	0.000E+00
U-238+D	U-234	9.999E-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	0.000E+00
U-238+D	Th-230	9.999E-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	0.000E+00
U-238+D	Ra-226+D	9.999E-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	0.000E+00
U-238+D	Pb-210+D	9.999E-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	0.000E+00
U-238+D	äDSR(j)		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

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The DSR includes contributions from associated (half-life ó 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13
Pa-231	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10
Pb-210	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13
Ra-226	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11
Ra-228	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14
Th-228	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10
Th-232	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05
U-234	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09
U-235	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06
U-238	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05

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 *At specific activity limit
0
            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
0Nuclide  Initial        tmin       DSR(i,tmin) G(i,tmin) DSR(i,tmax) G(i,tmax)
   (i)    (pCi/g)       (years)                  (pCi/g)                (pCi/g)
 ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄ
 Ac-227  3.000E-01     0.000E+00      0.000E+00 *7.232E+13  0.000E+00 *7.232E+13
 Pa-231  3.000E-01     0.000E+00      0.000E+00 *4.723E+10  0.000E+00 *4.723E+10
 Pb-210  1.500E+00     0.000E+00      0.000E+00 *7.634E+13  0.000E+00 *7.634E+13
 Ra-226  1.500E+00     0.000E+00      0.000E+00 *9.885E+11  0.000E+00 *9.885E+11
 Ra-228  2.800E+00     0.000E+00      0.000E+00 *2.726E+14  0.000E+00 *2.726E+14
 Th-228  2.800E+00     0.000E+00      0.000E+00 *8.195E+14  0.000E+00 *8.195E+14
 Th-230  4.900E+00     0.000E+00      0.000E+00 *2.018E+10  0.000E+00 *2.018E+10
 Th-232  2.800E+00     0.000E+00      0.000E+00 *1.097E+05  0.000E+00 *1.097E+05
 U-234   4.900E+00     0.000E+00      0.000E+00 *6.247E+09  0.000E+00 *6.247E+09
 U-235   3.000E-01     0.000E+00      0.000E+00 *2.161E+06  0.000E+00 *2.161E+06
 U-238   4.900E+00     0.000E+00      0.000E+00 *3.361E+05  0.000E+00 *3.361E+05
 ÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ  ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ  ÍÍÍÍÍÍÍÍÍÍ  ÍÍÍÍÍÍÍÍÍÍ  ÍÍÍÍÍÍÍÍÍÍ  ÍÍÍÍÍÍÍÍÍÍ
 *At specific activity limit

1RESRAD, Version 6.4      T« Limit = 180 days        07/26/2009  15:54  Page  25
 Summary : SMC Suburban Resident Area 1 Controls Fail Unrestricted Area
 File    : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109601.RAD

                          Individual Nuclide Dose Summed Over All Pathways
                            Parent Nuclide and Branch Fraction Indicated
0Nuclide Parent   THF(i)                                  DOSE(j,t), mrem/yr
   (j)     (i)            t= 0.000E+00 1.000E+00 1.000E+01 1.000E+02 3.000E+02 5.000E+02 7.000E+02 9.000E+02 1.000E+03
 ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄ   ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ
 Ac-227  Ac-227  1.000E+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  Pa-231  1.000E+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  U-235   1.000E+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  äDOSE(j)            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
0Pa-231  Pa-231  1.000E+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  U-235   1.000E+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  äDOSE(j)            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
0Pb-210  Pb-210  1.000E+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  Ra-226  1.000E+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  Th-230  1.000E+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  U-234   1.000E+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  U-238   9.999E-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
 Pb-210  äDOSE(j)            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
0Ra-226  Ra-226  1.000E+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  Th-230  1.000E+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  U-234   1.000E+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  U-238   9.999E-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
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Ra-226	äDOSE(j)		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
0Ra-228	Ra-228	1.000E+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	Th-232	1.000E+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	äDOSE(j)		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
0Th-228	Ra-228	1.000E+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	Th-228	1.000E+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	Th-232	1.000E+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	äDOSE(j)		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
0Th-230	Th-230	1.000E+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-230	U-234	1.000E+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-230	U-238	9.999E-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
Th-230	äDOSE(j)		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
0Th-232	Th-232	1.000E+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
0U-234	U-234	1.000E+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-234	U-238	9.999E-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
U-234	äDOSE(j)		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
0U-235	U-235	1.000E+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
0U-238	U-238	5.400E-05	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-238	U-238	9.999E-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
U-238	äDOSE(j)		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
íííííííí	íííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+00	3.000E-01	2.906E-01	2.182E-01	1.242E-02	2.131E-05	3.655E-08	6.268E-11	1.075E-13	4.452E-15
Ac-227	Pa-231	1.000E+00	0.000E+00	9.400E-03	8.178E-02	2.870E-01	2.978E-01	2.963E-01	2.947E-01	2.932E-01	2.924E-01
Ac-227	U-235	1.000E+00	0.000E+00	9.997E-08	9.111E-06	4.431E-04	1.698E-03	2.955E-03	4.206E-03	5.449E-03	6.069E-03
Ac-227	äS(j):		3.000E-01	3.000E-01	3.000E-01	2.998E-01	2.995E-01	2.992E-01	2.989E-01	2.986E-01	2.985E-01
0Pa-231	Pa-231	1.000E+00	3.000E-01	3.000E-01	2.999E-01	2.992E-01	2.976E-01	2.961E-01	2.945E-01	2.930E-01	2.922E-01
Pa-231	U-235	1.000E+00	0.000E+00	6.347E-06	6.347E-05	6.339E-04	1.897E-03	3.153E-03	4.402E-03	5.645E-03	6.264E-03
Pa-231	äS(j):		3.000E-01	3.000E-01	3.000E-01	2.998E-01	2.995E-01	2.992E-01	2.989E-01	2.986E-01	2.985E-01
0Pb-210	Pb-210	1.000E+00	1.500E+00	1.454E+00	1.099E+00	6.695E-02	1.334E-04	2.656E-07	5.291E-10	1.054E-12	4.704E-14
Pb-210	Ra-226	1.000E+00	0.000E+00	4.590E-02	3.998E-01	1.388E+00	1.335E+00	1.224E+00	1.123E+00	1.030E+00	9.860E-01
Pb-210	Th-230	1.000E+00	0.000E+00	3.265E-05	2.978E-03	1.444E-01	5.355E-01	8.962E-01	1.226E+00	1.528E+00	1.669E+00
Pb-210	U-234	1.000E+00	0.000E+00	9.822E-11	9.165E-08	5.230E-05	6.676E-04	1.960E-03	3.874E-03	6.354E-03	7.792E-03
Pb-210	U-238	9.999E-01	0.000E+00	6.972E-17	6.595E-13	4.157E-09	1.749E-07	8.892E-07	2.515E-06	5.389E-06	7.391E-06
Pb-210	äS(j):		1.500E+00	1.500E+00	1.502E+00	1.600E+00	1.872E+00	2.123E+00	2.353E+00	2.564E+00	2.663E+00
0Ra-226	Ra-226	1.000E+00	1.500E+00	1.499E+00	1.494E+00	1.436E+00	1.317E+00	1.208E+00	1.108E+00	1.016E+00	9.726E-01
Ra-226	Th-230	1.000E+00	0.000E+00	2.122E-03	2.118E-02	2.076E-01	5.963E-01	9.520E-01	1.277E+00	1.575E+00	1.714E+00
Ra-226	U-234	1.000E+00	0.000E+00	9.553E-09	9.540E-07	9.414E-05	8.228E-04	2.220E-03	4.230E-03	6.798E-03	8.277E-03
Ra-226	U-238	9.999E-01	0.000E+00	9.027E-15	9.018E-12	8.929E-09	2.358E-07	1.068E-06	2.869E-06	5.970E-06	8.104E-06
Ra-226	äS(j):		1.500E+00	1.501E+00	1.515E+00	1.644E+00	1.914E+00	2.162E+00	2.389E+00	2.598E+00	2.695E+00
0Ra-228	Ra-228	1.000E+00	2.800E+00	2.482E+00	8.387E-01	1.629E-05	5.511E-16	1.865E-26	6.310E-37	0.000E+00	0.000E+00

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 Ra-228  Th-232  1.000E+00    0.000E+00 3.180E-01 1.961E+00 2.800E+00 2.800E+00 2.800E+00 2.800E+00 2.800E+00 2.800E+00
 Ra-228  äS(j):              2.800E+00 2.800E+00 2.800E+00 2.800E+00 2.800E+00 2.800E+00 2.800E+00 2.800E+00 2.800E+00
0Th-228  Ra-228  1.000E+00    0.000E+00 7.988E-01 1.145E+00 2.441E-05 8.259E-16 2.795E-26 9.456E-37 0.000E+00 0.000E+00
 Th-228  Th-228  1.000E+00    2.800E+00 1.949E+00 7.475E-02 5.152E-16 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 Th-228  Th-232  1.000E+00    0.000E+00 5.220E-02 1.580E+00 2.800E+00 2.800E+00 2.800E+00 2.800E+00 2.800E+00 2.800E+00
 Th-228  äS(j):              2.800E+00 2.800E+00 2.800E+00 2.800E+00 2.800E+00 2.800E+00 2.800E+00 2.800E+00 2.800E+00
0Th-230  Th-230  1.000E+00    4.900E+00 4.900E+00 4.900E+00 4.896E+00 4.887E+00 4.878E+00 4.869E+00 4.860E+00 4.855E+00
 Th-230  U-234   1.000E+00    0.000E+00 4.411E-05 4.411E-04 4.408E-03 1.321E-02 2.199E-02 3.074E-02 3.948E-02 4.384E-02
 Th-230  U-238   9.999E-01    0.000E+00 6.252E-11 6.252E-09 6.249E-07 5.620E-06 1.560E-05 3.055E-05 5.045E-05 6.226E-05
 Th-230  äS(j):              4.900E+00 4.900E+00 4.900E+00 4.900E+00 4.900E+00 4.900E+00 4.899E+00 4.899E+00 4.899E+00
0Th-232  Th-232  1.000E+00    2.800E+00 2.800E+00 2.800E+00 2.800E+00 2.800E+00 2.800E+00 2.800E+00 2.800E+00 2.800E+00
0U-234   U-234   1.000E+00    4.900E+00 4.900E+00 4.900E+00 4.899E+00 4.896E+00 4.893E+00 4.890E+00 4.887E+00 4.885E+00
 U-234   U-238   9.999E-01    0.000E+00 1.389E-05 1.389E-04 1.389E-03 4.165E-03 6.940E-03 9.712E-03 1.248E-02 1.387E-02
 U-234   äS(j):              4.900E+00 4.900E+00 4.900E+00 4.900E+00 4.900E+00 4.900E+00 4.899E+00 4.899E+00 4.899E+00
0U-235   U-235   1.000E+00    3.000E-01 3.000E-01 3.000E-01 3.000E-01 3.000E-01 3.000E-01 3.000E-01 2.999E-01 2.999E-01
0U-238   U-238   5.400E-05    2.646E-04 2.646E-04 2.646E-04 2.646E-04 2.646E-04 2.646E-04 2.646E-04 2.646E-04 2.645E-04
 U-238   U-238   9.999E-01    4.900E+00 4.900E+00 4.900E+00 4.900E+00 4.899E+00 4.899E+00 4.899E+00 4.899E+00 4.899E+00
 U-238   äS(j):              4.900E+00 4.900E+00 4.900E+00 4.900E+00 4.900E+00 4.900E+00 4.899E+00 4.899E+00 4.899E+00
 íííííííí íííííííí íííííííííí    íííííííííí íííííííííí íííííííííí íííííííííí íííííííííí íííííííííí íííííííííí íííííííííí íííííííííí
 THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time =   52.45 seconds
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Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary 6
Summary of Pathway Selections 12
Contaminated Zone and Total Dose Summary 13
Total Dose Components
Time = 0.000E+00 14
Time = 1.000E+00 15
Time = 1.000E+01 16
Time = 1.000E+02 17
Time = 3.000E+02 18
Time = 5.000E+02 19
Time = 7.000E+02 20
Time = 9.000E+02 21
Time = 1.000E+03 22
Dose/Source Ratios Summed Over All Pathways 23
Single Radionuclide Soil Guidelines 24
Dose Per Nuclide Summed Over All Pathways 25
Soil Concentration Per Nuclide 26

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)

A-1	Po-210	(Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211	(Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214	(Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215	(Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216	(Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218	(Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)
A-1	Ra-223	(Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224	(Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226	(Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219	(Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220	(Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222	(Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227	(Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228	(Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230	(Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231	(Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232	(Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234	(Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207	(Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208	(Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210	(Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234	(Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235	(Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238	(Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D		6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231		1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D		2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D		8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D		5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D		3.454E-01	3.420E-01	DCF2(6)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2(12)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)

D-1	Pa-231	1.060E-02	1.060E-02	DCF3(2)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(5)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(6)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(7)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(8)
D-1	U-234	2.830E-04	2.830E-04	DCF3(9)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(10)
D-1	U-238	2.550E-04	2.550E-04	DCF3(11)
D-1	U-238+D	2.687E-04	2.550E-04	DCF3(12)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(2,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(4,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(7,3)
D-34				

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(8,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(8,2)

```
D-34 ³ Th-232    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  8,3)
D-34 ³                                                             ³           ³           ³
D-34 ³ U-234     , plant/soil concentration ratio, dimensionless   ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  9,1)
D-34 ³ U-234     , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 3.400E-04 ³ 3.400E-04 ³ RTF(  9,2)
D-34 ³ U-234     , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 6.000E-04 ³ 6.000E-04 ³ RTF(  9,3)
D-34 ³                                                             ³           ³           ³
D-34 ³ U-235+D   , plant/soil concentration ratio, dimensionless   ³ 2.500E-03 ³ 2.500E-03 ³ RTF( 10,1)
D-34 ³ U-235+D   , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 3.400E-04 ³ 3.400E-04 ³ RTF( 10,2)
D-34 ³ U-235+D   , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 6.000E-04 ³ 6.000E-04 ³ RTF( 10,3)
D-34 ³                                                             ³           ³           ³
D-34 ³ U-238     , plant/soil concentration ratio, dimensionless   ³ 2.500E-03 ³ 2.500E-03 ³ RTF( 11,1)
D-34 ³ U-238     , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 3.400E-04 ³ 3.400E-04 ³ RTF( 11,2)
D-34 ³ U-238     , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 6.000E-04 ³ 6.000E-04 ³ RTF( 11,3)
D-34 ³                                                             ³           ³           ³
D-34 ³ U-238+D   , plant/soil concentration ratio, dimensionless   ³ 2.500E-03 ³ 2.500E-03 ³ RTF( 12,1)
D-34 ³ U-238+D   , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 3.400E-04 ³ 3.400E-04 ³ RTF( 12,2)
D-34 ³ U-238+D   , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 6.000E-04 ³ 6.000E-04 ³ RTF( 12,3)
     ³                                                             ³           ³           ³
D-5  ³ Bioaccumulation factors, fresh water, L/kg:                 ³           ³           ³
D-5  ³ Ac-227+D  , fish                                            ³ 1.500E+01 ³ 1.500E+01 ³ BIOFAC(  1,1)
D-5  ³ Ac-227+D  , crustacea and mollusks                          ³ 1.000E+03 ³ 1.000E+03 ³ BIOFAC(  1,2)
D-5  ³                                                             ³           ³           ³
D-5  ³ Pa-231    , fish                                            ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  2,1)
D-5  ³ Pa-231    , crustacea and mollusks                          ³ 1.100E+02 ³ 1.100E+02 ³ BIOFAC(  2,2)
D-5  ³                                                             ³           ³           ³
D-5  ³ Pb-210+D  , fish                                            ³ 3.000E+02 ³ 3.000E+02 ³ BIOFAC(  3,1)
D-5  ³ Pb-210+D  , crustacea and mollusks                          ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  3,2)
D-5  ³                                                             ³           ³           ³
D-5  ³ Ra-226+D  , fish                                            ³ 5.000E+01 ³ 5.000E+01 ³ BIOFAC(  4,1)
D-5  ³ Ra-226+D  , crustacea and mollusks                          ³ 2.500E+02 ³ 2.500E+02 ³ BIOFAC(  4,2)
D-5  ³                                                             ³           ³           ³
D-5  ³ Ra-228+D  , fish                                            ³ 5.000E+01 ³ 5.000E+01 ³ BIOFAC(  5,1)
D-5  ³ Ra-228+D  , crustacea and mollusks                          ³ 2.500E+02 ³ 2.500E+02 ³ BIOFAC(  5,2)
D-5  ³                                                             ³           ³           ³
D-5  ³ Th-228+D  , fish                                            ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  6,1)
D-5  ³ Th-228+D  , crustacea and mollusks                          ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  6,2)
D-5  ³                                                             ³           ³           ³
D-5  ³ Th-230    , fish                                            ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  7,1)
D-5  ³ Th-230    , crustacea and mollusks                          ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  7,2)
D-5  ³                                                             ³           ³           ³
D-5  ³ Th-232    , fish                                            ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  8,1)
D-5  ³ Th-232    , crustacea and mollusks                          ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  8,2)
D-5  ³                                                             ³           ³           ³
D-5  ³ U-234     , fish                                            ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  9,1)
D-5  ³ U-234     , crustacea and mollusks                          ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC(  9,2)
D-5  ³                                                             ³           ³           ³
D-5  ³ U-235+D   , fish                                            ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC( 10,1)
D-5  ³ U-235+D   , crustacea and mollusks                          ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC( 10,2)
```

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(11,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(11,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(12,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(12,2)

#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.

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)	6.800E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	4.500E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	2.610E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+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)	1.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	5.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	7.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	9.000E+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): Ac-227	1.600E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Pa-231	1.600E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	6.040E+01	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	6.040E+01	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	5.040E+01	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	5.040E+01	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Th-230	2.270E+01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Th-232	5.040E+01	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-234	2.270E+01	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): U-235	1.600E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): U-238	2.270E+01	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L): Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Pa-231	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(5)

R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(11)
R013	Cover depth (m)	1.830E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	1.920E+00	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	1.500E-04	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	2.240E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.500E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.600E-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-02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.430E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.300E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	7.300E-01	5.000E-01	---	EVAPTR

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Precipitation (m/yr)	1.050E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	9.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	2.770E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.510E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.830E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	9.500E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.000E-03	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	4.530E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	2	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.500E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.696E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.600E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.890E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)

R015	Unsat. zone 1, soil-specific b parameter	1.060E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	4.750E+03	1.000E+01	---	HCUZ(1)
R015	Unsat. zone 2, thickness (m)	1.900E+00	0.000E+00	---	H(2)
R015	Unsat. zone 2, soil density (g/cm**3)	1.510E+00	1.500E+00	---	DENSUZ(2)
R015	Unsat. zone 2, total porosity	4.300E-01	4.000E-01	---	TPUZ(2)
R015	Unsat. zone 2, effective porosity	3.830E-01	2.000E-01	---	EPUZ(2)
R015	Unsat. zone 2, field capacity	2.000E-01	2.000E-01	---	FCUZ(2)
R015	Unsat. zone 2, soil-specific b parameter	4.050E+00	5.300E+00	---	BUZ(2)
R015	Unsat. zone 2, hydraulic conductivity (m/yr)	9.500E+03	1.000E+01	---	HCUZ(2)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Unsaturated zone 2 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,2)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.248E-06	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,1)
R016	Unsaturated zone 2 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,2)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.112E-06	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,1)
R016	Unsaturated zone 2 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,2)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.041E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	1.341E+05	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.097E-08	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	1.440E+04	7.000E+01	---	DCNUCC(5)

R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.953E-07	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	5.483E+04	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.130E-08	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	5.483E+04	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.130E-08	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	5.483E+04	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.130E-08	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.598E+04	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.759E-07	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	1.598E+04	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.759E-07	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)

R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	1.598E+04	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.759E-07	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R017	Inhalation rate (m**3/yr)	not used	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	not used	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	not used	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	not used	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	5.000E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	2.500E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	not used	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)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
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)	1.600E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	1.400E+01	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)	5.100E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	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	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E-01	-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)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	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	1.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	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)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	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	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	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	2.500E-01	2.500E-01	---	RWET(1)

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

Site-Specific Parameter Summary (continued)

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

```
TITL ³ Maximum number of integration points for dose    ³     17    ³    ---    ³              ---              ³ LYMAX
TITL ³ Maximum number of integration points for risk    ³      1    ³    ---    ³              ---              ³ KYMAX
ÍÍÍ
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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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

*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.

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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 16:12 Page 16
Summary : SMC Suburban Resident Area 9 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109609.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000

Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 16:12 Page 17
Summary : SMC Suburban Resident Area 9 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109609.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ

Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 16:12 Page 18
Summary : SMC Suburban Resident Area 9 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109609.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water	Fish	Radon	Plant	Meat	Milk	All Pathways*

Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/26/2009 16:12 Page 19

Summary : SMC Suburban Resident Area 9 Controls Fail Unrestricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109609.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 = 5.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

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

As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

0 Water Dependent Pathways

0

Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T½ Limit = 180 days 07/26/2009 16:12 Page 20
Summary : SMC Suburban Resident Area 9 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109609.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 = 7.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 7.000E+02 years
0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*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 = 9.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.000E+02 years

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Suburban Resident Area 9 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109609.RAD

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

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

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

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Suburban Resident Area 9 Controls Fail Unrestricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109609.RAD

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

0 Parent Product Thread DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)

(i)	(j)	Fraction	0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227+D	Ac-227+D	1.000E+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
0Pa-231	Pa-231	1.000E+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	Ac-227+D	1.000E+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	äDSR(j)		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
0Pb-210+D	Pb-210+D	1.000E+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
0Ra-226+D	Ra-226+D	1.000E+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+D	Pb-210+D	1.000E+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+D	äDSR(j)		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
0Ra-228+D	Ra-228+D	1.000E+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+D	Th-228+D	1.000E+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+D	äDSR(j)		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
0Th-228+D	Th-228+D	1.000E+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
0Th-230	Th-230	1.000E+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-230	Ra-226+D	1.000E+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-230	Pb-210+D	1.000E+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-230	äDSR(j)		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
0Th-232	Th-232	1.000E+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	Ra-228+D	1.000E+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	Th-228+D	1.000E+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	äDSR(j)		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
0U-234	U-234	1.000E+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-234	Th-230	1.000E+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-234	Ra-226+D	1.000E+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-234	Pb-210+D	1.000E+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-234	äDSR(j)		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
0U-235+D	U-235+D	1.000E+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+D	Pa-231	1.000E+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+D	Ac-227+D	1.000E+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+D	äDSR(j)		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
0U-238	U-238	5.400E-05	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
0U-238+D	U-238+D	9.999E-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
U-238+D	U-234	9.999E-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
U-238+D	Th-230	9.999E-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
U-238+D	Ra-226+D	9.999E-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
U-238+D	Pb-210+D	9.999E-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
U-238+D	äDSR(j)		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
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The DSR includes contributions from associated (half-life ó 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide

(i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ
Ac-227	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13
Pa-231	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10
Pb-210	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13

Ra-226	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11
Ra-228	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14
Th-228	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10
Th-232	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05
U-234	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09
U-235	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06
U-238	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ

*At specific activity limit

0

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

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	1.600E+00	0.000E+00	0.000E+00	*7.232E+13	0.000E+00	*7.232E+13
Pa-231	1.600E+00	0.000E+00	0.000E+00	*4.723E+10	0.000E+00	*4.723E+10
Pb-210	6.040E+01	0.000E+00	0.000E+00	*7.634E+13	0.000E+00	*7.634E+13
Ra-226	6.040E+01	0.000E+00	0.000E+00	*9.885E+11	0.000E+00	*9.885E+11
Ra-228	5.040E+01	0.000E+00	0.000E+00	*2.726E+14	0.000E+00	*2.726E+14
Th-228	5.040E+01	0.000E+00	0.000E+00	*8.195E+14	0.000E+00	*8.195E+14
Th-230	2.270E+01	0.000E+00	0.000E+00	*2.018E+10	0.000E+00	*2.018E+10
Th-232	5.040E+01	0.000E+00	0.000E+00	*1.097E+05	0.000E+00	*1.097E+05
U-234	2.270E+01	0.000E+00	0.000E+00	*6.247E+09	0.000E+00	*6.247E+09
U-235	1.600E+00	0.000E+00	0.000E+00	*2.161E+06	0.000E+00	*2.161E+06
U-238	2.270E+01	0.000E+00	0.000E+00	*3.361E+05	0.000E+00	*3.361E+05
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*At specific activity limit

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

0Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+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	Pa-231	1.000E+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	U-235	1.000E+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	äDOSE(j)		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
0Pa-231	Pa-231	1.000E+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	U-235	1.000E+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	äDOSE(j)		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
0Pb-210	Pb-210	1.000E+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	Ra-226	1.000E+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	Th-230	1.000E+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	U-234	1.000E+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	U-238	9.999E-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
Pb-210	äDOSE(j)		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
0Ra-226	Ra-226	1.000E+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	Th-230	1.000E+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	U-234	1.000E+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	U-238	9.999E-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
Ra-226	äDOSE(j)		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
0Ra-228	Ra-228	1.000E+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	Th-232	1.000E+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	äDOSE(j)		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
0Th-228	Ra-228	1.000E+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	Th-228	1.000E+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	Th-232	1.000E+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	äDOSE(j)		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
0Th-230	Th-230	1.000E+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-230	U-234	1.000E+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-230	U-238	9.999E-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
Th-230	äDOSE(j)		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
0Th-232	Th-232	1.000E+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
0U-234	U-234	1.000E+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-234	U-238	9.999E-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
U-234	äDOSE(j)		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
0U-235	U-235	1.000E+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
0U-238	U-238	5.400E-05	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-238	U-238	9.999E-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
U-238	äDOSE(j)		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
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THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+00	1.600E+00	1.550E+00	1.164E+00	6.626E-02	1.136E-04	1.949E-07	3.343E-10	5.734E-13	2.374E-14
Ac-227	Pa-231	1.000E+00	0.000E+00	5.013E-02	4.362E-01	1.531E+00	1.588E+00	1.580E+00	1.572E+00	1.564E+00	1.559E+00
Ac-227	U-235	1.000E+00	0.000E+00	5.332E-07	4.859E-05	2.363E-03	9.058E-03	1.576E-02	2.243E-02	2.906E-02	3.237E-02
Ac-227	äS(j):		1.600E+00	1.600E+00	1.600E+00	1.599E+00	1.597E+00	1.596E+00	1.594E+00	1.593E+00	1.592E+00
0Pa-231	Pa-231	1.000E+00	1.600E+00	1.600E+00	1.600E+00	1.596E+00	1.587E+00	1.579E+00	1.571E+00	1.563E+00	1.559E+00
Pa-231	U-235	1.000E+00	0.000E+00	3.385E-05	3.385E-04	3.381E-03	1.012E-02	1.682E-02	2.348E-02	3.011E-02	3.341E-02
Pa-231	äS(j):		1.600E+00	1.600E+00	1.600E+00	1.599E+00	1.598E+00	1.596E+00	1.594E+00	1.593E+00	1.592E+00
0Pb-210	Pb-210	1.000E+00	6.040E+01	5.855E+01	4.426E+01	2.696E+00	5.370E-03	1.070E-05	2.131E-08	4.244E-11	1.894E-12
Pb-210	Ra-226	1.000E+00	0.000E+00	1.848E+00	1.610E+01	5.590E+01	5.376E+01	4.931E+01	4.521E+01	4.146E+01	3.970E+01
Pb-210	Th-230	1.000E+00	0.000E+00	1.512E-04	1.379E-02	6.691E-01	2.481E+00	4.152E+00	5.681E+00	7.080E+00	7.734E+00
Pb-210	U-234	1.000E+00	0.000E+00	4.550E-10	4.246E-07	2.423E-04	3.093E-03	9.082E-03	1.795E-02	2.944E-02	3.610E-02
Pb-210	U-238	9.999E-01	0.000E+00	3.230E-16	3.055E-12	1.926E-08	8.102E-07	4.120E-06	1.165E-05	2.497E-05	3.424E-05
Pb-210	äS(j):		6.040E+01	6.040E+01	6.037E+01	5.927E+01	5.625E+01	5.347E+01	5.091E+01	4.857E+01	4.747E+01
0Ra-226	Ra-226	1.000E+00	6.040E+01	6.037E+01	6.014E+01	5.784E+01	5.304E+01	4.864E+01	4.460E+01	4.090E+01	3.916E+01
Ra-226	Th-230	1.000E+00	0.000E+00	9.832E-03	9.812E-02	9.620E-01	2.763E+00	4.411E+00	5.918E+00	7.297E+00	7.942E+00

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 Ra-226  U-234   1.000E+00    0.000E+00 4.426E-08 4.420E-06 4.361E-04 3.812E-03 1.029E-02 1.960E-02 3.150E-02 3.835E-02
 Ra-226  U-238   9.999E-01    0.000E+00 4.182E-14 4.178E-11 4.136E-08 1.093E-06 4.949E-06 1.329E-05 2.766E-05 3.754E-05
 Ra-226  äS(j):               6.040E+01 6.038E+01 6.024E+01 5.880E+01 5.580E+01 5.306E+01 5.054E+01 4.823E+01 4.714E+01
0Ra-228  Ra-228  1.000E+00    5.040E+01 4.468E+01 1.510E+01 2.932E-04 9.920E-15 3.356E-25 1.136E-35 0.000E+00 0.000E+00
 Ra-228  Th-232  1.000E+00    0.000E+00 5.724E+00 3.530E+01 5.040E+01 5.040E+01 5.040E+01 5.040E+01 5.040E+01 5.040E+01
 Ra-228  äS(j):               5.040E+01 5.040E+01 5.040E+01 5.040E+01 5.040E+01 5.040E+01 5.040E+01 5.040E+01 5.040E+01
0Th-228  Ra-228  1.000E+00    0.000E+00 1.438E+01 2.061E+01 4.393E-04 1.487E-14 5.030E-25 1.702E-35 0.000E+00 0.000E+00
 Th-228  Th-228  1.000E+00    5.040E+01 3.508E+01 1.346E+00 9.273E-15 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 Th-228  Th-232  1.000E+00    0.000E+00 9.397E-01 2.845E+01 5.040E+01 5.040E+01 5.040E+01 5.040E+01 5.040E+01 5.040E+01
 Th-228  äS(j):               5.040E+01 5.040E+01 5.040E+01 5.040E+01 5.040E+01 5.040E+01 5.040E+01 5.040E+01 5.040E+01
0Th-230  Th-230  1.000E+00    2.270E+01 2.270E+01 2.270E+01 2.268E+01 2.264E+01 2.260E+01 2.256E+01 2.252E+01 2.250E+01
 Th-230  U-234   1.000E+00    0.000E+00 2.043E-04 2.043E-03 2.042E-02 6.119E-02 1.019E-01 1.424E-01 1.829E-01 2.031E-01
 Th-230  U-238   9.999E-01    0.000E+00 2.896E-10 2.896E-08 2.895E-06 2.604E-05 7.226E-05 1.415E-04 2.337E-04 2.885E-04
 Th-230  äS(j):               2.270E+01 2.270E+01 2.270E+01 2.270E+01 2.270E+01 2.270E+01 2.270E+01 2.270E+01 2.270E+01
0Th-232  Th-232  1.000E+00    5.040E+01 5.040E+01 5.040E+01 5.040E+01 5.040E+01 5.040E+01 5.040E+01 5.040E+01 5.040E+01
0U-234   U-234   1.000E+00    2.270E+01 2.270E+01 2.270E+01 2.269E+01 2.268E+01 2.267E+01 2.265E+01 2.264E+01 2.263E+01
 U-234   U-238   9.999E-01    0.000E+00 6.435E-05 6.435E-04 6.434E-03 1.930E-02 3.215E-02 4.499E-02 5.783E-02 6.425E-02
 U-234   äS(j):               2.270E+01 2.270E+01 2.270E+01 2.270E+01 2.270E+01 2.270E+01 2.270E+01 2.270E+01 2.270E+01
0U-235   U-235   1.000E+00    1.600E+00 1.600E+00 1.600E+00 1.600E+00 1.600E+00 1.600E+00 1.600E+00 1.600E+00 1.600E+00
0U-238   U-238   5.400E-05    1.226E-03 1.226E-03 1.226E-03 1.226E-03 1.226E-03 1.226E-03 1.226E-03 1.226E-03 1.226E-03
 U-238   U-238   9.999E-01    2.270E+01 2.270E+01 2.270E+01 2.270E+01 2.270E+01 2.270E+01 2.270E+01 2.270E+01 2.269E+01
 U-238   äS(j):               2.270E+01 2.270E+01 2.270E+01 2.270E+01 2.270E+01 2.270E+01 2.270E+01 2.270E+01 2.270E+01
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 THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time =   53.02 seconds
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Plant Ingestion	No	Ingestion of plant foods addresses those plant foods grown in the restricted area or irrigated with water from the restricted area. Since the maintenance worker does not eat edible plant parts grown on site for food consumption, this pathway is not applicable.
Drinking Water	Yes	Surface water on site is unfit for consumption as drinking water. No on-site sources of ground water have been developed for drinking water. Nonetheless, at regulator request, this pathway was included.
Meat Ingestion	No	Ingestion of meat from animals culled from the site is not an applicable pathway for on-site workers.
Milk Ingestion	No	Milk ingestion is not an applicable pathway because milk cows will not graze within the restricted area.
Aquatic Foods Ingestion	No	There are no surface water ponds in the restricted area capable of hosting a fish population; furthermore, ingestion of fish from an on-site source is not an applicable pathway for on-site workers.
Direct Ingestion	Yes	Maintenance workers is assumed to ingest residual radioactivity while in the restricted area through incidental oral contact with their hands.

The potential for exposure to radon gas was eliminated from this assessment based upon regulatory guidance. The NRC documented their concurrence with this approach in the Statement of Consideration for the License Termination Rule:[263]

> *"Following the approach taken in the proposed rule, this final rule includes radiological criteria for residual radioactivity that is distinguishable from background. Because of natural transport of radon gas in outdoor areas due to diffusion and air currents, doses from exposure to radon in outside areas due to radium in the soil are negligible... Therefore, in implementing the final rule, licensees will not be expected to demonstrate that radon from licensed activities is indistinguishable from background on a site-specific basis..."*

Furthermore, measurements of radon emanation rate from the various materials that will be consolidated under the engineered barrier (see the Source Term Document in Appendix 19.2 of the DP) shows the dose potential from this pathway to be a negligible contributor.

7.4 Key Parameters Justification

A number of input parameters were selected for use for the dose modeling of this scenario. The following is a justification for those that are key to the analysis:

- Indoor Time Fraction - The total time spent indoors by the maintenance worker is assumed to be 0 hours. It is assumed that all of the worker's time is spent in the restricted area, which is outdoors with no habitable structures. This assumption maximizes the radiation dose.

- Outdoor Time Fraction - It is assumed that the inspection and maintenance will require up to 24 hours per year since the engineered barrier will be installed in a

[263] U.S. Nuclear Regulatory Commission, *Radiological Criteria for License Termination*, Federal Register, Volume 62, Number 139, July 21, 1997.

manner that minimizes erosion and enhances the growth of vegetation on its surface. From SMC's experience at its Cambridge, Ohio site, where barrier inspection and maintenance has been on-going for many years for footprint that is significantly larger than the one proposed for the SMC facility and more maintenance-intensive (i.e., they are covered with vegetation rather than rock), this is a realistic value.[264,265] Once established, the inspection and maintenance efforts are likely to require minimal time within the restricted area.

- Outdoor Fraction - The outdoor fraction, 0.003, is derived by dividing 24 hours by the total number of hours in a year, 8,760 hours. For purposes of the sensitivity analysis, the probabilistic distribution ranges to twice as much as two (2) times the central tendency value. The radiation dose decreases as the maintenance worker spends less time on the Restricted area.

- Inhalation Rate -The inhalation rate for the maintenance worker is assumed to be equivalent to that of an adult male performing light work, for an average of 8,400 cubic meters per year. This is the RESRAD default parameter for inhalation rate based on geometric mean rate for short term exposure to adult males.[266] It is conservatively high because it assumed that the maintenance worker is assigned to inspect the cover and not likely to be involved in a work intensive activity routinely over the course of the inspection. The radiation dose associated with this value decreases as the inhalation rate drops.

- Mass loading for inhalation - The value selected for the analysis was the RESRAD default value.[267] The mass loading in air describes the airborne dust loading

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[264] See the SMC-Cambridge Radiation Protection Program Plan, RSP-001, for specifications on the routine maintenance and inspection activities for the West Pile.

[265] The following is a brief description of the maintenance/surveillance activities that have taken place at Cambridge for both of the caps:

> East Slag Pile - The East Slag Pile at Cambridge, capped in June of 2006, has undergone no maintenance to date. Quarterly inspections of the 2.5-acre cap consume 10 minutes of a single person's time to traverse the cap surface, for a total of 40 minutes per year. It is envisaged the cap will be mown annually, which is estimated to consume two hours of a single person's time using a tractor-towed mower.
>
> West Slag Pile - The West Slag Pile at Cambridge, capped in the summer of 2004, covers almost 10 acres. Erosion repairs were made between capping and vegetation growth to address the result of poor weather at that time. In addition, the cap has been mown annually and inspected quarterly. Erosion repairs and mowing consumed two (2) eight-hour days for two people in 2005 and 2006. No further erosion repairs are envisaged for 2007. Annual mowing requires four hours for a single person on a tractor-towed mower. Quarterly inspections consume 30 minutes for one person, for a total of two hours per year.

Mowing and erosion repairs should not be an issue at the SMC facility once decommissioning is complete due to the presence of the rock cover. Most of the maintenance effort will be dedicated to inspection, with fewer (if any) erosion repairs as compared to that for the Cambridge site to date. Currently inspections/mowing of the East Slag Pile (2.5 acres) are estimated to consume less than three (3) hours per year while inspections/mowing of the West Slag Pile (approximately 10 acres) are estimated to consume approximately 16 hours per year. Table 7.6.2 of the DP assumes 32 hours per year for surveillance/maintenance of the rock-covered Newfield cap, which is significantly smaller in size (approximately 3.5 acres) than the West Slag Pile cap.

[266] U.S. Environmental Protection Agency, *Exposure Factors Handbook, Volume I, General Factors*, EPA 600/P-95-002Fa, August, 1997.

[267] Argonne National Laboratory, *User's Manual for RESRAD Version 6*, July, 2001.

conditions on the site and it is assumed that the maintenance worker is working on top of the engineered barrier and not exposed to the airborne dust from the slag.

- Soil ingestion Rate - The maintenance worker is assumed to ingest residual radioactivity as a result of incidental contact with engineered barrier. The value selected, 18.3 grams per year, is 50% of the RESRAD default value because the maintenance worker is engaged in non contact intensive activities and does not come in contact with the consolidated material. The maintenance worker does not eat any animals or vegetables from the site, and does not drink any surface water or ground water.[268]

- Evapotranspiration Coefficient - The cover is designed to minimize the infiltration of water. RESRAD uses two parameters, evapotranspiration and the runoff coefficient, to estimate the rate of infiltration of water. Infiltration was determined to be 0.028 meters per year for the "As Designed Condition" of the engineered barrier at the SMC facility.[269] Given that infiltration rate, the evapotranspiration and the runoff coefficients were calculated as described by NUREG-6697.[270] Additional information on this coefficient is provided in Section 3.2, above.

- Drinking Water - There is sufficient justification for excluding the ground water exposure pathway from the dose assessments as described in Section 3.3, above. It is unreasonable to assume that future industrial operations at the SMC facility would drill and maintain their own on-site drinking water well when a source of municipal water is readily available.[271] In most cases, the parameters used as input to the dose assessments for the various scenarios were selected based upon NRC recommendations that they be conservative yet realistic to conditions at the site.[272] This pathway was evaluated nonetheless in response to regulatory or public input.

Given the pathways described in Section 7.3, above, the following is a listing of the input parameters used for this exposure scenario:

[268] Drinking water is provided by a publicly-owned water system where there is testing for compliance with drinking water standards for radionuclides, and there are no surface water sources or ground water wells inside of the restricted area.
[269] Infiltration and Evapotranspiration Model Assumptions, November 11, 2008.
[270] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
[271] This assumption was deemed valid by the NRC recently by the agency's approval of the decommissioning plan for the in-situ disposal of thorium slag in the SCA Hartley & Hartley Landfill (ADAMS Accession No. ML060370014).
[272] U.S. Nuclear Regulatory Commission, *Results of the License Termination Rule Analysis*, SECY-03-0069, May 2, 2003.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Dose Conversion Factors	DCFX(n)	millirem/pCi	All DCFs used are RESRAD defaults			D	S	RESRAD defaults from FGR#11 and FGR#12, derived using ICRP 30 dosimetry model.[273,274] Short-lived (<180 days) radioactive progeny isotopes are accounted for through the use of the "parent+D" DCFs.
Area of Contaminated Zone	AREA	m2	See Section 3.1.2	Triangular	The values in Section 3.1.2 are adjusted ±20%	S	S	The Restricted area was characterized as nine (9) different areas, each with different slag and impacted solids and the associated chemical and physical characteristics. The area of each section is described in Section 3.1.2.
Thickness of Contaminated Zone	THICK0	m	4.5m	Triangular	Range 3.6 to 5.4 m	S	S	The Restricted area volume was characterized as none (9) different areas. The total volume of the Restricted area was based on existing elevations determined during aerial photography in 2005 and assumed base elevations for the restricted area. For the purpose of the radiation dose modeling, each area was modeled as a cylinder with a consistent height and the area adjusted as described above. Information about the volume of the Restricted area is described in Section 3.1.2.
Length Parallel to Aquifer Flow, Area 4	LCZPAQ	m	See Section 3.1.2	Triangular	The values in Section 3.1.2 are adjusted ±20%	S	S	The RESRAD default value is derived as the square root of the area of the contaminated zone[275]. Ground water flows at an angle from NE to SW through the Restricted area, such that the length of the total pile parallel to aquifer flow will be approximately 135.7 m. Using existing site conditions (before consolidation and cap construction), this value is greater, approximately 200 m. This value was adjusted for each area as described in Section 3.1.2.
Basic Radiation dose limit	BRDL	mrem TEDE	25			D	S	
Time since placement of material	TI	yr	0			D	S	
Calculation Times	T(n)	Yrs.	1 10 100 300 500 700 900 1000	NA		--	--	Evaluation at these time segments allows for consideration of the potential for conditions at the Site to evolve from the initial conditions specified (e.g., soil erosion impacts the cover thickness) and projects the changing Site conditions to the required 1000-year outlook.[276,277]

[273] U.S. Environmental Protection Agency, *Limiting Values of Radionuclide Intake and Air Concentrations and Dose Conversion Factors for Inhalation, Submersion, and Ingestion*, Federal Guidance Report Number 11, EPA 520/1-88-020, September, 1988.
[274] U.S. Environmental Protection Agency, *External Exposure to Radionuclides in Air, Water and Soil*, Federal Guidance Report Number 12, EPA 402 R-93-081, September, 1993.
[275] Argonne National Laboratory, *Data Collection Handbook to Support Modeling Impacts of Radioactive Material in Soil*, April, 1993.
[276] U.S. Nuclear Regulatory Commission, *Radiological Criteria for License Termination*, Volume 62, Federal Register, page 39058, July 21, 1997.
[277] U.S. Nuclear Regulatory Commission, *NMSS Decommissioning Standard Review Plan*, NUREG-1727, September, 2000.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Actinium-227	S(1)	pCi/g	See Section 3.1.2	Point Estimate		--	--	The Restricted area was characterized as nine (9) different areas, each with different slag and impacted solids and the associated levels of radioactivity.[278] The activity for each isotope in each section of the Restricted area is described in Section 3.1.2. The corresponding radiation dose for each area is added to calculate the total dose likely to be encountered from the Restricted area.
Protactinium-231	S(2)	pCi/g		Point Estimate		--	--	
Lead-210	S1(3)	pCi/g		Point Estimate		--	--	
Radium-226	S1(4)	pCi/g		Point Estimate		--	--	
Radium-228	S1(5)	pCi/g		Point Estimate		--	--	
Thorium-228	S1 (6)	pCi/g		Point Estimate		--	--	
Thorium-230	S1(7)	pCi/g		Point Estimate		--	--	
Thorium-232	S1(8)	pCi/g		Point Estimate		--	--	
Uranium-234	S1(9)	pCi/g		Point Estimate		--	--	
Uranium-235	S1(10)	pCi/g		Point Estimate		--	--	
Uranium-238	S1(11)	pCi/g	See Section 3.1.2	Point Estimate		--	--	The Restricted area was characterized as nine (9) different areas, each with different slag and impacted solids and the associated levels of radioactivity. The activity for each isotope in each section of the Restricted area is described in Section 3.1.2. The corresponding radiation dose for each area is added to calculate the total dose likely to be encountered from the Restricted area.
Concentration in ground water	W1(n)	pCi/L	0	-				
Cover Depth (thickness)	COVER0	m	1.83	Triangular	Range: 1.3 to 3.7	S	S	The engineered barrier will be installed over the slag in the Restricted area with a thickness of 1.85 meters(72 inches) as shown in the preliminary design.[279] The minimum thickness was estimated as if the cover soil was completely removed, ignoring the protection provided by the stone on top of the cover soil. Two layers of stone covers the clay barrier.
Cover Density	DENSCV	g/cm3	1.92	Truncated Normal	μNormal 1.92 σNormal : 0.23 Quantile, min;0.05 Quantile, max:0.95	S	S	Density for clay-bearing materials was estimated to range from 130 to 140 pounds per cubic foot (pcf) or 2.08 to 2.24 g/cm3. It is estimated that the other materials proposed for the engineered barrier have densities ranging from 100 to 110 pcf or 1.60 to 1.76 gm/cm3. Since the clay makes up half of the total cover thickness, a conservative estimate for the effective density estimated to be 1.92.

[278] Shieldalloy Metallurgical Corporation, *Source Term Document for the Newfield Restricted Area*, Report No. 94005/G-29359.
[279] Shieldalloy Metallurgical Corporation, *Decommissioning Plan*, Appendix B, Draft, July 25, 2008.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Cover Erosion Rate	VCV	m/yr	1.5x10-4	Triangular	Min 0.0 Max 3.0x10-4	S	S	The erosion of the cover is designed in order to be minimal over the 1,000 year time frame. The elements of the engineered cover are described in Section 3.1.2. For the purposes of conservatism, a value of 1.5x10-4 m/yr was assigned as a function of the erosion of the slag, as defined by the NRC for other slag materials.[280]
Contaminated Zone Density	DENS CZ	g/cm3	2..24	Triangular	Min 1.6 Max 2.32	S	S	The density of the slag and baghouse dust was measured by the analytical laboratory.[281]
Contaminated Zone Erosion Rate	VCZ	m/yr	1.5x10-5	Triangular	Min 8x10-6 Max 3x10-4	S	I	The erosion of the slag was assumed to be 10x less than that of the cover. The boulders located in the Restricted area are not likely to erode over the 1,000 year period of time.
Contaminated Zone Total Porosity	TPCZ	Unitless 0 to 1	0.36	Bounded Normal	Std Dev 0.07 Min 0.144 Max 0.576	D	I	The total porosity was selected from NUREG 6697 for silty clayey, Appendix C.[282] Additional information about the chemical and physical properties of the slag is provided in the ER.[283]
Contaminated Zone Field Capacity	FCCZ	Unitless, 0 to 1	0.2	Point Estimate		D	I	Field capacity is defined as the residual water content and is a ratio of the volume of water retained in the soil sample to the total volume of the sample. The field capacity was not measured previously. The RESRAD default was selected.
Contaminated Zone Hydraulic Conductivity	HCCZ	m/yr	0.01	Lognormal-B	Lower Quantile, 0.00506 Upper Quantile, 16.6	S	I	The RESRAD default for silty clayey was selected from NUREG 6697, Appendix C.[284] Additional information about the chemical and physical properties of the slag is provided in the Environmental Report.
Contaminated Zone B-Parameter	BCZ	Unitless	4.43	Bounded Lognormal-N	μNormal : 1.06 σNormal 0.66 min: 0.5 Max: 30	D	I	The value for silty clayey was determined to be representative of the contaminated zone.[285]
Average Annual Wind Speed	WIND	m/sec	4.25	Bounded Lognormal-N	μNormal : 1.445 σNormal : 0.2419 Min: 1.4 Max: 13.0	D	I	RESRAD Default. The thirty year (1961-1990) site- specific annual average value (4.3 m/s) is nearly equal to the RESRAD default value.[286]
Humidity in air	HUMID	g/m3						Not used

[280] US Nuclear Regulatory Commission, *Characterization of Radioactive Slags*, NUREG 1703, October, 2004.
[281] Berger, C. (IEM), written communication to D. R. Smith (SMC), *Radionuclide Leachability from Newfield Slag*, September 16, 2005.
[282] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
[283] Environmental Report, Appendix 19.1 of the DP.
[284] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
[285] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
[286] National Climate Data Center, *Local Climatological Data, Annual Summary with Comparative Data for Philadelphia, Pennsylvania*, 2000.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Evapo transpiration Coefficient	EVAPTR	Unitless, 0 to 1	0.73	Triangular	Range: 0.37 to 1.0	S	I	Evapotranspiration coefficient was calculated according to the construction of the engineered cover and multiple layers.[287] The infiltration rate was calculated as described by the NUREG 6697 and the evapotranspiration coefficient was derived in order to match the infiltration rate.[288]
Precipitation Rate	PRECIP	m/year	1.05	Point Estimate		S	S	The nearest climatological stations are located in Atlantic City and Philadelphia. The annual average precipitation for Atlantic City is 41.3 inches per year while the average annual precipitation for Philadelphia is 41.42 inches.[289],[290] 1.05 m/yr corresponds to these values.
Irrigation Rate	RI	m/year	0	Point Estimate		S	S	As the site will be rock-covered, a grass cover is not required and no irrigation waters will be applied.
Irrigation mode	IDITCH	unitless	Overhead					Not used. As the site will be rock-covered, a grass cover is not required and no irrigation waters will be applied.
Runoff Coefficient	RUNOFF	Unitless, 0 to 1	0.9	Uniform	Range: 0.75 to 1.0	S	S	The runoff coefficient was calculated according to the construction of the engineered cover and multiple layers.[291] The infiltration rate was calculated as described by the NUREG 6697. The runoff coefficient and evapotranspiration coefficient were derived in order to match the infiltration rate.[292]
Watershed Area for Nearby Stream or Pond	WAREA	m2	2.77x106	Point Estimate		S	I	Assumed to be 690 acres and represents the low lying areas adjacent to the Restricted area[293]. The watershed area is used to calculate dilution factors for contaminant concentrations in surface water bodies in the vicinity of the site. The larger the watershed area, the greater volume through which dilution is possible. While there is no pathway for humans to drink surface water, animals may use the pond for their water supply. The greater the dilution, the lower the radiation dose.
Accuracy for water/soil computations	EPS	unitless	0.001			D	I	

[287] Infiltration and Evapotranspiration Model Assumptions, November 11, 2008.
[288] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
[289] National Climate Data Center, *Local Climatological Data, Annual Summary with Comparative Data for Atlantic City, New Jersey*, 2006.
[290] National Climate Data Center, *Local Climatological Data, Annual Summary with Comparative Data for Philadelphia, Pennsylvania*, 2006.
[291] Infiltration and Evapotranspiration Model Assumptions, November 11, 2008
[292] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
[293] Shieldalloy Metallurgical Corporation, *Decommissioning Plan for the SMC facility*, Appendix E, Report Number 94005/G-28247, Rev 1b.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Density, Saturated Zone	DENS AQ	g/cm3	1.51	Bounded Normal	Std Dev 0.159 Min 1.019 Max 2.002	S	I	Saturated soils beneath pile are characterized as fine to medium sand and fine to coarse sand (based on boring logs for wells MW-12D and MW-13D) and silty sand with gravel and gravel (based on boring log for well MW-11S).[294],[295] Applicable bulk densities range from 1.60 for dry sand to 1.73 for dry sand and gravel.[296]
Total Porosity Saturated Zone	TPSZ	Unitless, 0 to 1	0.43	Bounded Normal	Std Dev 0.06 Min 0.244 Max 0.615	D	I	Based on the saturated soils descriptions above, applicable total porosity values cited in Kresic are 0.25-0.40 for non-uniform sand and 0.25-0.35 for gravelly sand. RESRAD value for coarse sand was selected as it is the sand type defined in RESRAD Table E.8 with total porosity values closest to those cited above.[297]
Effective Porosity, Saturated Zone	EPSZ	Unitless, 0 to 1	0.383	Bounded Normal	Std Dev 0.06 Min 0.195 Max 0.572	D	I	Effective porosity of non-uniform sands and gravels, and their mixtures, is up to 10% less than total porosity.[298] For range of total porosity above (0.25-0.40), effective porosity range is 0.225-0.36. RESRAD default value for coarse sand was selected as it is the sand type defined in RESRAD Table E.8 with effective porosity values closest to those cited above and its selection is consistent with the material used to represent total porosity.
Field Capacity, Saturated Zone	FCSZ	Unitless, 0 to 1	Not used			D	I	The value "field capacity" does not apply to saturated soils.
Hydraulic Conductivity, Saturated Zone	HCSZ	m/yr	9,500	Triangular	Min 8,600 Max 10,400	S	I	During previous hydrogeological studies at the site, a pumping test of the Layne well indicated a T of 82,000 gpd/ft (Weston, 1972), and a recovery test of P4 (IWC4) indicated T of 90,400 gpd/ft (Woodward-Moorehouse, 1974), or K of 78 to 93 ft/day for the Cohansey sand, depending on formation thickness assumed (130 to 140 feet).[299],[300] The average of 85.5 ft/day (9,500 m/yr) is used as the central tendancy value.

[294] TRC Environmental Consultants, Inc., *Final Focused Feasibility Study Report, Ground Water Remediation*, Project Number 13248-N51, Windsor, Connecticut, Revision 2, February 1994.
[295] TRC Environmental Consultants, Inc., *Remedial Investigation Technical Report*, Project Number 7650-N51, Windsor, Connecticut, April, 1992.
[296] T. Glover, *Pocket Reference, 2nd Edition*, Sequoia Publishing, Inc Littleton, Colorado, page 542, 1995.
[297] Kresic, N., *Quantitative Solutions in Hydrogeology and Groundwater Modeling*, New York: Lewis Publishers, page 461, 1997.
[298] Kresic, N., *Quantitative Solutions in Hydrogeology and Groundwater Modeling*, New York: Lewis Publishers, page 461, 1997.
[299] Roy F. Weston, Inc., 1972. *Hydrogeologic Investigation of Ground Water Contamination, Interim Report*. Prepared for Shieldalloy Corporation, Newfield, New Jersey.
[300] Woodward-Moorehouse and Associates, Inc. and Woodward-Envicon, Inc., *Preliminary Report, Groundwater Contamination Study, Phase II*, Prepared for Shieldalloy Corporation, Newfield, New Jersey, 1974.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Hydraulic Gradient	HGWT	Unitless	0.004	Bounded Lognormal-N	μNormal : -5.11 σNormal : 1.77 min: 0 .00007 max: 0.5	S	I	The RI references a hydraulic gradient of 0.004 ft/ft based on Figure 15 (pg 48-49) as measured between wells SC-12D and A. If measured from the far eastern well to the far southwestern well, a gradient of 0.002 ft/ft is calculated.[301] The 0.004 gradient measured between wells A and SC-12D is more representative of the gradient in the immediate vicinity of the Restricted area. The value is also representative of the gradient towards a potable well, should one be located close to the Restricted area.
Saturated Zone B-Parameter	BSZ	Unitless	4.05	Bounded Lognormal-N	μNormal : 1.06 σNormal : 0.66 Min: 0.5 Max: 30	D	I	RESRAD default value for generic soil was selected. The value and distribution represents a weighted average of the distributions for the individual soil classes.[302]
Water table drop rate	VWT	m/yr	0					
Well pump intake depth	DWIB WT	m (below the water table)	10			D	I	RESRAD default value was used.
Model: Nondispersion (ND) or Mass balance (MB)	MODE L	unitless	Mass Balance			D	I	
Well pumping rate	UW	m3/yr	453			D	I	RESRAD default value was used for estimate of water source. The default is typical for a Agricultural Farm Family and expected to be much lower for the exposure scenarios at Newfield.
Number of unsaturated zone strata	NS	unitless	2					Two unsaturated zones are present underneath the Restricted area and the restricted area. One layer, directly underneath the Restricted area contains some slag and impacted soils. A second layer, contains only non impacted soil.
Thickness Unsaturated Layer 1	H(1)	m	1.5	Triangular	Min 0.8 Max 2.2	S	S	The average thickness of the unsaturated zone underneath the Restricted area contains slag, impacted soil and non imp-acted soil. The thickness of this layer, or fill, was estimated from borings reported by TRC in 2008.[303]
Thickness Unsaturated Layer 2	H(2)	m	1.9	Triangular	Min 0.9 Max 3.7	S	S	The average thickness of the unsaturated zone was estimated from well locations in the vicinity of the restricted area based on wells 11S, 12S, and 13S. Measurements were made by SMC for six years (from January 2001 through April 2007, measured each quarter). A total of 26 data points were summarized for each well.

[301] TRC Environmental Consultants, Inc., *Remedial Investigation Technical Report*, Project Number 7650-N51, Windsor, Connecticut, April, 1992.
[302] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
[303] Geotechnical Investigation information.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Density, Unsaturated Layer 1	DENS UZ(1)	g/cm3	1.696	Bounded Normal	Std Dev 0.185 Min 1.123 Max 2.269	S	S	The density selected is typical of siltey clay. The unsaturated soils beneath pile contain impacted soil, slag and other solids, non native to the unsaturated zone. The density of this layer is greater than the density found in the native unsaturated layer.
Density, Unsaturated Layer 2	DENS UZ(2)	g/cm3	1.51	Bounded Normal	Std Dev 0.159 Min 1.019 Max 2.002	D,S	S	The density selected is typical of native sand (RESRAD default). Unsaturated soils beneath pile are characterized as fine to medium sand and fine to coarse sand (based on boring logs for wells MW-12D and MW-13D) and silty sand with gravel (based on boring log for well MW-11S). Applicable bulk densities range from 1.60 for dry sand to 1.73 for dry sand and gravel.[304]
Total Porosity Unsaturated Layer 1	TPUZ(1)	Unitless 0 to 1	0.36	Bounded Normal	Std Dev 0.07 Min 0.144 Max 0.576	D	I	The porosity of this fill layer is lower than the values reported for the native soil because of the presence of impacted soil, slag and other non native solids. The values selected for this layer are the lower end of the range provided for the type of soil.
Total Porosity Unsaturated Layer 2	TPUZ(2)	Unitless 0 to 1	0.43	Bounded Normal	Std Dev 0.06 Min 0.245 Max 0.615	D	I	Values for total porosity are reported to be 0.25-0.40 for non-uniform sand and 0.25-0.35 for gravelly sand.[305] RESRAD value for coarse sand was selected as it is the sand type defined in NUREG 6697, Appendix C, Table 3.2-1 with total porosity values closest to those cited above.[306]
Effective Porosity of Unsaturated Layer 1	EPUZ(1)	Unitless, 0 to 1	0.289	Bounded Normal	Std Dev 0.074 Min 0.062 Max 0.517	D	I	The porosity of this fill layer is lower than the values reported for the native soil. Also according to Kresic (1997), the presence of fines, i.e., silts and clays, significantly reduces effective porosity. The values selected for this layer are the lower end of the range provided for the type of soil.

[304] T. Glover, *Pocket Reference, 2nd Edition*, Sequoia Publishing, Inc Littleton, Colorado, page 542, 1995.
[305] Kresic, N., *Quantitative Solutions in Hydrogeology and Groundwater Modeling*, New York: Lewis Publishers, page 461, 1997.
[306] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Effective Porosity of Unsaturated Layer 2	EPUZ(2)	Unitless, 0 to 1	0.383	Bounded Normal	Std Dev 0.06 Min 0.195 Max 0.572	D	I	Effective porosity of non-uniform sands and gravels, and their mixtures, is up to 10% less than total porosity; for range of total porosity above (0.25-0.40), effective porosity range is 0.225-0.36.[307],[308] Also according to Kresic (1997), the presence of fines, i.e., silts and clays, significantly reduces effective porosity. However, limited amounts of silt and clay are expected in the sands and gravels of the Bridgeton Formation. Value for sand was selected from NUREG 6697, Appendix C, Table 3.3-1 as it is the sand type with effective porosity values closest to those cited above and its selection is consistent with the material used to represent total porosity.[309]
Field Capacity Unsaturated Layer 1	FCUZ (1)	Unitless, 0 to 1	0.2	Point Estimate		D	I	The field capacity is used to calculate the volumetric water capacity of the contaminated zone and unsaturated zone. The value, FCUZ, is used when the calculated capacity is lower than the set value.[310] The reported field capacity for sand is about 0.10 and ranges up to about 0.18 for fine sand (Fetter, 1994). Consequently, a value of 0.2 is much higher than expected for the site. Field capacity is not a single value, but is time-dependent (Fetter, 1994; Delleur, 1999).[311,312]
Field Capacity Unsaturated Layer 2	FCUZ (2)	Unitless, 0 to 1	0.2	Point Estimate		D	I	The reported field capacity for sand is about 0.10 and ranges up to about 0.18 for fine sand (Fetter, 1994). Consequently, a value of 0.2 is much higher than expected for the site. Field capacity is not a single value, but is time-dependent (Fetter, 1994; Delleur, 1999).[313,314]
Unsaturated Layer 1, B-Parameter	BUZ(1)	Unitless	1.06	Bounded Lognormal-N	μNormal : 1.06 σNormal : 0.66 Min: 0.5 Max: 30	D	I	The unsaturated soils beneath pile contain impacted soil, slag and other solids, non native to the unsaturated zone. The b parameter is different than the parameter expected for the native unsaturated layer. The value for generic soil was selected. The value and distribution represents a weighted average of the distributions for the individual soil classes.[315]

[307] Kresic, N., 1997. Quantitative Solutions in Hydrogeology and Groundwater Modeling, New York: Lewis Publishers, 461 p.
[308] Kresic, N., 1997. Quantitative Solutions in Hydrogeology and Groundwater Modeling, New York: Lewis Publishers, 461 p.
[309] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
[310] Argonne National Laboratory, *User's Manual for RESRAD Version 6*, Appendix E, July, 2001
[311] Delleur, J.W., The Handbook of Groundwater Engineering, New York: CRC Press, 1999.
[312] Fetter, C.W., 1994. Applied Hydrogeology. New York: Macmillan College Publishing Company, 691 p.
[313] Delleur, J.W., The Handbook of Groundwater Engineering, New York: CRC Press, 1999.
[314] Fetter, C.W., 1994. Applied Hydrogeology. New York: Macmillan College Publishing Company, 691 p.
[315] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Unsaturated Layer 2, B-Parameter	BUZ(2)	Unitless	4.05	Bounded Lognormal-N	μNormal : 1.06 σNormal : 0.66 Min: 0.5 Max: 30	D	I	The RESRAD default value for generic soil was selected. The value and distribution represents a weighted average of the distributions for the individual soil classes.[316]
Hydraulic Conductivity Unsaturated Layer 1	HCUZ (1)	m/yr	4,750	Triangular	Min 200 Max 9,500	S	I	The Bridgeton Formation overlies the Cohansey Sand beneath the Restricted area.[317] The Bridgeton Formation is the unsaturated layer directly beneath the slag, generally consisting of fine sand with variable percentages of silt and clay and traces of fine gravel. This layer also contains fine slag, impacted soil, and other non native solids such as concrete. The soil containing slag and other non native materials may be reworked from heavy equipment operation. The average hydraulic conductivity of Layer 1 is probably lower than the Layer 2 hydraulic conductivity due to the finer grain size of Layer 1 and compaction by the heavy equipment. The range of values is typical of a range of soil types evaluated in NUREG 6697, Appendix C, Table 3.4-1.[318]
Hydraulic Conductivity Unsaturated Layer 2	HCUZ (2)	m/yr	9,500	Triangular	Min 8,600 Max 10,400	S	I	The unsaturated, upper part of the Cohansey Sand consists of fine sand, fine-medium sand, medium-coarse sand, and coarse sand with variable percentages of silt and fine gravel. Aquifer testing of wells completed in the upper Cohansey Sand provides data for the hydraulic conductivity. A pumping test of the Layne well indicated a transmissivity of 82,000 gpd/ft (Weston, 1972), and a recovery test of P4 (also referred to as 1WC4) indicated a transmissivity of 90,400 gpd/ft (Woodward-Moorehouse, 1974).[319,320,321] The equivalent hydraulic conductivity is 78 to 93 ft/day, depending on the assumed formation thickness (130 to 140 feet). The average hydraulic conductivity of 85.5 ft/day (9,500 m/yr) is used as the central tendency value.
Distribution coefficients for Thorium								

316 U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
317 Newell, W. L., et al, *Surficial Geologic Map of Central and Southern New Jersey*, U.S. Geological Survey, Miscellaneous Geologic Investigations Series, Map I 2540 D, 2000.
318 U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000.
319 TRC Environmental Consultants, Inc., *Remedial Investigation Technical Report*, Project Number 7650-N51, Windsor, Connecticut, April, 1992.
320 Roy F. Weston, Inc., *Hydrogeologic Investigation of Ground Water Contamination, Interim Report*, Prepared for Shieldalloy Corporation, Newfield, New Jersey, 1972.
321 Woodward-Moorehouse and Associates, Inc. and Woodward-Envicon, Inc., *Preliminary Report, Groundwater Contamination Study, Phase II*. Prepared for Shieldalloy Corporation, Newfield, New Jersey, 1974.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Thorium Kd contaminated zone	DCAC T(n)	cm3/g	See Section 3.1.3			S	S	The Restricted area was characterized as nine (9) different areas, each with different slag and impacted solids and the associated partition coefficients.[322] The partition coefficient, Kd, for each element in each section of the Restricted area is described in Section 3.1.3. The corresponding radiation dose for each area is added to calculate the total dose likely to be encountered from the Restricted area.
Thorium Kd unsaturated zone, Layer 1	DCAC TU(1)	cm3/g	5,884	Triangular	Min 207 Max 150,000	D	S	Literature values were selected for both unsaturated zones, using the lower range of values.[323] No allowances were made for the presence of fill in the first layer of the unsaturated zone (Layer 1).
Thorium Kd unsaturated zone, Layer 2	DCAC TU(1) (2)	cm3/g	5,884	Triangular	Min 207 Max 150,000	D	S	Literature values were selected for both unsaturated zones, using the lower range of values.[324]
Thorium Kd saturated zone	DCAC TS	cm3/g	5,884	Triangular	Min 207 Max 150,000	D	S	Literature values were selected for the saturated zones, using the lower range of values.[325]
Leach rate	ALEA CH(1)	/yr						Not used
Solubility constant	SOLU BK(1)	unitless						Not used
Distribution coefficients for Uranium								
Uranium Kd contaminated zone	DCAC TC(n)	cm3/g	See Section 3.1.3			S	S	The Restricted area was characterized as nine (9) different areas, each with different slag and impacted solids and the associated partition coefficients.[326] The partition coefficient, Kd, for each element in each section of the Restricted area is described in Section 3.1.3. The corresponding radiation dose for each area is added to calculate the total dose likely to be encountered from the Restricted area.
Uranium Kd unsaturated zone, Layer 1	DCAC TU(1)	cm3/g	126	Triangular	Min 0.03 Max 2,200	D	S	Literature values were selected for both unsaturated zones, using the lower range of values.[327] No allowances were made for the presence of fill in the first layer of the unsaturated zone (Layer 1).
Uranium Kd unsaturated zone, Layer 2	DCAC TU(2)	cm3/g	126	Triangular	Min 0.03 Max 2,200	D	S	Literature values were selected for both unsaturated zones, using the lower range of values.[328]

[322] Shieldalloy Metallurgical Corporation, *Source Term Document for the Newfield Restricted Area*, Report No. 94005/G-29359.
[323] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[324] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[325] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[326] Shieldalloy Metallurgical Corporation, *Source Term Document for the Newfield Restricted Area*, Report No. 94005/G-29359.
[327] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[328] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Uranium Kd saturated zone	DCAC TS	cm3/g	126	Triangular	Min 0.03 Max 2,200	D	S	Literature values were selected for the saturated zones, using the lower range of values.[329]
Leach rate	ALEA CH(2)	/yr						Not used
Solubility constant	SOLU BK(2)	unitless						Not used
Distribution coefficients for Radium								
Radium Kd contaminated zone	DCAC T(n)	cm3/g	See Section 3.1.3			S	S	The Restricted area was characterized as nine (9) different areas, each with different slag and impacted solids and the associated partition coefficients.[330] The partition coefficient, Kd, for each element in each section of the Restricted area is described in Section 3.1.3. The corresponding radiation dose for each area is added to calculate the total dose likely to be encountered from the Restricted area.
Radium Kd unsaturated zone, Layer 1	DCAC TU(1)	cm3/g	3,533	Triangular	Min 57 Max 21,000	D	S	Literature values were selected for both unsaturated zones, using the lower range of values.[331] No allowances were made for the presence of fill in the first layer of the unsaturated zone (Layer 1).
Radium Kd unsaturated zone, Layer 2	DCAC T(2)	cm3/g	3,533	Triangular	Min 57 Max 21,000	D	S	Literature values were selected for both unsaturated zones, using the lower range of values.[332]
Radium Kd saturated zone	DCAC TS	cm3/g	3,533	Triangular	Min 57 Max 21,000	D	S	Literature values were selected for the saturated zones, using the lower range of values.[333]
Leach rate	ALEA CH(3)	/yr						Not used
Solubility constant	SOLU BK(3)	unitless						Not used
Distribution coefficients for Lead								
Lead Kd contaminated zone	DCAC TC (n)	cm3/g	270	Triangular	Min 19 Max 1,405	D	S	Literature values were selected for the leaching of lead from the slag.[334] The corresponding radiation dose for each area is added to calculate the total dose likely to be encountered from the Restricted area.

[329] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[330] Shieldalloy Metallurgical Corporation, *Source Term Document for the Newfield Restricted Area*, Report No. 94005/G-29359.
[331] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[332] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[333] U.S. Nuclear Regulatory Commission, *Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes*, Appendix C, NUREG 6697, December, 2000
[334] Sheppard and Thibault, *Default Soil Solid/Liquid Partition Coefficients, K_dS, for Four Major Soil Types: A Compendium*, Health Physics Journal, Volume 59, Number 4, page 471 - 482, October, 1990.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Lead Kd unsaturated zone , Layer 1	DCACTU(1)	cm3/g	270	Triangular	Min 19 Max 1,405	D	S	Literature values were selected for both unsaturated zones, using the lower range of values.[335] No allowances were made for the presence of fill in the first layer of the unsaturated zone (Layer 1).
Lead Kd unsaturated zone , Layer 2	DCACTU(2)	cm3/g	270	Triangular	Min 19 Max 1,405	D	S	Literature values were selected for both unsaturated zones, using the lower range of values.[336]
Lead Kd saturated zone	DCACTS	cm3/g	270	Triangular	Min 19 Max 1,405	S	S	Literature values were selected for the saturated zones, using the lower range of values.[337]
Leach rate	ALEACH(4)	/yr						Not used
Solubility constant	SOLUBK(4)	unitless						Not used
Inhalation Rate	INHALR	m3/yr	8,400	Triangular	Range: 4380 to 131,00	D	I	Inhalation rate based on geometric mean rate for short term exposure to adult males.[338]
Mass Loading for Inhalation	MLINH	g/m3	0.00003	Continuous Linear	0.000000 - 0.0000 0.000008 - 0.0151 0.000016 - 0.1365 0.000030 - 0.8119 0.000040 - 0.9495 0.000060 - 0.9937 0.000076 - 0.9983 0.000100 - 1.0000	D	I	Mass loading in air describes the airborne dust loading conditions on the site.[339]
Exposure duration	ED	yr	30			D	S	
Shielding factor, inhalation	SHF3	unitless	0.4			D	I	
Shielding factor, external gamma	SHF1	unitless	0.27	Bounded Lognormal-N	μNormal : -1.3 σNormal : 0.59 Min: 0.044 Max: 1	S	S	Not used. No time spent indoors.

335 Sheppard and Thibault, 1990.
336 Sheppard and Thibault, 1990.
337 Sheppard and Thibault, 1990.
338 U.S. Environmental Protection Agency, *Exposure Factors Handbook, Volume I, General Factors*, EPA 600/P-95-002Fa, August, 1997.
339 Argonne National Laboratory, *User's Manual for RESRAD Version 6*, July, 2001.

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Exposure Frequency (Total)	EF	Days per year	4	EF and ET are not input parameters used by RESRAD. They are presented here to disclose the calculation used to arrive at the parameters RESRAD uses to account for exposure frequency, FIND & FOTD		--	--	Assumes four (4) days per year that the maintenance worker inspects the cover, which is consistent with the cover inspection schedule currently in place at SMC's Cambridge facility.
Exposure Time	ET	hours per day	6			--	--	Conservatively assumes that each day six (6) hours long.
Indoor Time Fraction	FIND	Unitless, 0 to 1	0	Point Estimate		O	S	The fraction of a total year (8,760hr) that is spent indoors on site. Assumes that all exposures occur outdoors. There are no habitable structures on the site.
Outdoor Time Fraction	FOTD	Unitless, 0 to 1	0.003	Triangular	Range: 0 to 0.005	O	S	The fraction of a total year (8760hr) that is spent outdoors on Site. Equals 24 hrs outdoors on Site divided by 8760 hours. The probabilistic distribution ranges to twice the CT value.
Fruits, vegetables and grain consumption	DIET(1)	kg/yr						Not used
Leafy vegetable consumption	DIET(2)	kg/yr						Not used
Milk consumption	DIET(3)	L/yr						Not used
Meat and poultry consumption	DIET(4)	Kg/yr						Not used
Fish consumption	DIET(5)	Kg/yr						Not used
Other seafood consumption	DIET(6)	Kg/yr						Not used
Soil Ingestion Rate	SOIL	g/y	0			D	I	The industrial worker does not enter the fenced Restricted area. There is no direct contact with the soil inside the fence.
Drinking water intake	DWI	L/yr	410			D	I	
Contamination fraction of drinking water	FDW	unitless	1					
Contamination fraction of household water	FHHW	unitless						Not used
Contamination fraction of livestock water	FLW	unitless						Not used
Contamination fraction of irrigation water	FIRW	unitless						Not used

Parameter			Central Tendency Value	Description of Parameter Distribution		Classification (D=RESRAD Default; S-Site-specific; O=Other)	Impact on Resulting Dose (I=Insignificant; S=Significant and requires justification or explanation)	Justification, Source or Other Information
Description	Code	Unit		Distribution	Range & Fit			
Contamination fraction of aquatic food	FR9	unitless						Not used
Contamination fraction of plant food	FPLANT	unitless						Not used
Contamination fraction of meat	FMEAT	unitless						Not used
Contamination fraction of milk	FMILK	unitless						Not used
Depth of Soil Mixing Layer	DM	m	0.15	Triangular	Range: 0 to 0.6	D	I	Value based on conceptual site model for surface soil.[340] The cover includes a stone layer which maximizes drainage and minimizes intrusion by root penetration and burrowing animals. As long as the cover is maintained, there is no uptake by plants.
Depth of Roots	DROOT	m	0.9	Lognormal-N	μNormal : 1.9 σNormal : 0.6	D	I	The engineered cover includes a layer of a dense clay material at a depth of 3 feet (1 m) that is designed to shed water and is covered by a layer of stone intended to preclude roots penetration and burrowing animals. The fit of the lognormal-N distribution allows for root depths of up to approximately 1 meter. As long as the cover is maintained, there is no uptake by plants.

7.5 Results

The radiation dose potential for a maintenance worker who periodically inspects and maintains the engineered barrier was performed. The driving exposure pathway for this scenario was external radiation exposure, contributing 100% of the dose in year 1,000 after decommissioning is complete. The following is a summary of the modeling results:

Restricted area Area Number	Peak of the Mean Annual Dose (mrem TEDE)	Annual Dose, 50th percentile (mrem TEDE)	Annual Dose, 90th percentile (mrem TEDE)	Annual Dose, 95th percentile (mrem TEDE)	Maximum Annual Dose (mrem TEDE)	Deterministic Annual Dose (mrem TEDE)
1	10-9	10-12	10-9	10-9	5x10-8	10-11
2	10-9	10-12	10-9	10-9	6x10-8	10-10
3	10-7	10-10	10-7	10-7	7x10-6	10-8
4	10-7	10-10	10-7	10-7	7x10-6	10-8
5	10-9	10-11	10-8	10-8	4x10-7	10-10
6	10-7	10-10	10-7	10-6	1x10-5	10-8
7	10-8	10-11	10-8	10-7	3x10-6	10-9

[340] U.S. Nuclear Regulatory Commission, *Residual Radioactive Contamination from Decommissioning: Parameter Analysis*, NUREG/CR-5512, Vol.3, October 1999.

Restricted area Area Number	Peak of the Mean Annual Dose (mrem TEDE)	Annual Dose, 50th percentile (mrem TEDE)	Annual Dose, 90th percentile (mrem TEDE)	Annual Dose, 95th percentile (mrem TEDE)	Maximum Annual Dose (mrem TEDE)	Deterministic Annual Dose (mrem TEDE)
8	10-8	10-11	10-8	10-9	6x10-7	10-9
9	10-8	10-11	10-8	10-8	8x10-7	10-9
Sum of all areas	3x10-7	4x10-10	3x10-7	1x10-6	2x10-5	6x10-8

The pages that follow are the RESRAD summary reports for this scenario.

8 INDUSTRIAL WORKER PACKAGE (NEXT TO RESTRICTED AREA)

8.1 General Information

The SMC facility will have access restrictions (i.e., fences, placarding) in place which will effectively discourage trespassers on the restricted portion of the site. It is anticipated that these access restrictions will remain in place at least over the near term. Industrial use of the SMC property is reasonable and likely given the site and general area characteristics, as well as the existing light industrial land use at properties abutting the property. Therefore, the industrial worker scenario formed the basis for DCGL development for the unrestricted area of the SMC facility. However, there will be no restrictions on where within the unrestricted area the industrial work might take place, including immediately next to the restricted area boundary.

The industrial worker's dose potential must remain below 25 millirem TEDE within the unrestricted area regardless of whether institutional and engineering controls are in place within the restricted area or not. Therefore, his dose potential must be evaluated under conditions of controls failing.

8.2 Critical Group Description

It is possible that a future use of the property may place a hypothetical worker in close proximity to the restricted area (i.e., next to it but not inside of the restricted area). The industrial worker will go to work each day, but at no time will the worker enter the fenced restricted area. His presumed presence in close proximity to the engineered barrier means he could be impacted by those materials. This individual will work at the location next to the restricted area five (5) days per week and fifty (50) weeks per year, and the work day will last for eight (8) hours, with a fraction of that time spent outdoors. Under conditions of all controls failing for the restricted area, the industrial worker present in the unrestricted area only forms the critical group.

8.3 Applicable Exposure Pathways

RESRAD identifies the following potential pathways for the industrial worker scenario from the source term that is within the restricted area:

- direct radiation exposure;
- drinking water; and
- particulate inhalation.

Other exposure pathways are not applicable and were disabled for the purpose of modeling the exposure potential for this scenario. The following table identifies the pathways that have been retained and provides an explanation for those that were not:

Pathway	Retained	Comments
Direct Exposure	Yes	The source term produces penetrating radiation. Direct exposure is expected to be the significant contributor to the overall potential dose. External radiation dose to the critical group under the "all controls fail" condition was modeled using Microshield because the RESRAD computer code does not model direct exposure at a lateral distance form the source term.

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary 6
Summary of Pathway Selections 12
Contaminated Zone and Total Dose Summary 13
Total Dose Components
Time = 0.000E+00 14
Time = 1.000E+00 15
Time = 1.000E+01 16
Time = 1.000E+02 17
Time = 3.000E+02 18
Time = 5.000E+02 19
Time = 7.000E+02 20
Time = 9.000E+02 21
Time = 1.000E+03 22
Dose/Source Ratios Summed Over All Pathways 23
Single Radionuclide Soil Guidelines 24
Dose Per Nuclide Summed Over All Pathways 25
Soil Concentration Per Nuclide 26

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)

A-1	Pb-212	(Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214	(Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)
A-1	Po-210	(Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211	(Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214	(Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215	(Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216	(Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218	(Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)
A-1	Ra-223	(Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224	(Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226	(Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219	(Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220	(Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222	(Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227	(Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228	(Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230	(Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231	(Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232	(Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234	(Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207	(Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208	(Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210	(Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234	(Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235	(Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238	(Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D		6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231		1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D		2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D		8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D		5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D		3.454E-01	3.420E-01	DCF2(6)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)

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B-1  ³ U-238+D                                                    ³ 1.180E-01 ³ 1.180E-01 ³ DCF2( 12)
     ³                                                            ³           ³           ³
D-1  ³ Dose conversion factors for ingestion, mrem/pCi:           ³           ³           ³
D-1  ³ Ac-227+D                                                   ³ 1.480E-02 ³ 1.410E-02 ³ DCF3(  1)
D-1  ³ Pa-231                                                     ³ 1.060E-02 ³ 1.060E-02 ³ DCF3(  2)
D-1  ³ Pb-210+D                                                   ³ 7.276E-03 ³ 5.370E-03 ³ DCF3(  3)
D-1  ³ Ra-226+D                                                   ³ 1.321E-03 ³ 1.320E-03 ³ DCF3(  4)
D-1  ³ Ra-228+D                                                   ³ 1.442E-03 ³ 1.440E-03 ³ DCF3(  5)
D-1  ³ Th-228+D                                                   ³ 8.086E-04 ³ 3.960E-04 ³ DCF3(  6)
D-1  ³ Th-230                                                     ³ 5.480E-04 ³ 5.480E-04 ³ DCF3(  7)
D-1  ³ Th-232                                                     ³ 2.730E-03 ³ 2.730E-03 ³ DCF3(  8)
D-1  ³ U-234                                                      ³ 2.830E-04 ³ 2.830E-04 ³ DCF3(  9)
D-1  ³ U-235+D                                                    ³ 2.673E-04 ³ 2.660E-04 ³ DCF3( 10)
D-1  ³ U-238                                                      ³ 2.550E-04 ³ 2.550E-04 ³ DCF3( 11)
D-1  ³ U-238+D                                                    ³ 2.687E-04 ³ 2.550E-04 ³ DCF3( 12)
     ³                                                            ³           ³           ³
D-34 ³ Food transfer factors:                                     ³           ³           ³
D-34 ³ Ac-227+D  , plant/soil concentration ratio, dimensionless  ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  1,1)
D-34 ³ Ac-227+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,2)
D-34 ³ Ac-227+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Pa-231    , plant/soil concentration ratio, dimensionless  ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  2,1)
D-34 ³ Pa-231    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 5.000E-03 ³ 5.000E-03 ³ RTF(  2,2)
D-34 ³ Pa-231    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  2,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Pb-210+D  , plant/soil concentration ratio, dimensionless  ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  3,1)
D-34 ³ Pb-210+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 8.000E-04 ³ 8.000E-04 ³ RTF(  3,2)
D-34 ³ Pb-210+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 3.000E-04 ³ 3.000E-04 ³ RTF(  3,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Ra-226+D  , plant/soil concentration ratio, dimensionless  ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  4,1)
D-34 ³ Ra-226+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,2)
D-34 ³ Ra-226+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Ra-228+D  , plant/soil concentration ratio, dimensionless  ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  5,1)
D-34 ³ Ra-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,2)
D-34 ³ Ra-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Th-228+D  , plant/soil concentration ratio, dimensionless  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  6,1)
D-34 ³ Th-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  6,2)
D-34 ³ Th-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  6,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Th-230    , plant/soil concentration ratio, dimensionless  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  7,1)
D-34 ³ Th-230    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  7,2)
D-34 ³ Th-230    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  7,3)
D-34 ³                                                            ³           ³           ³
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Dose Conversion Factor (and Related) Parameter Summary (continued)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(8,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(8,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(8,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(11,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(11,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(12,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(12,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(12,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(4,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(4,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(7,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(7,2)
D-5				
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(8,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(8,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(9,1)

D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(11,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(11,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(12,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(12,2)

#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.

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)	2.550E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	4.500E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	5.050E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+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)	1.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	5.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	7.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	9.000E+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): Ac-227	3.000E-01	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Pa-231	3.000E-01	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.500E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.500E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	2.800E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	2.800E+00	0.000E+00	---	S1(6)

R012	Initial principal radionuclide (pCi/g):	Th-230	4.900E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g):	Th-232	2.800E+00	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g):	U-234	4.900E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g):	U-235	3.000E-01	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g):	U-238	4.900E+00	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L):	Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L):	Pa-231	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L):	Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L):	Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L):	Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L):	Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L):	Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L):	Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L):	U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L):	U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L):	U-238	not used	0.000E+00	---	W1(11)
R013	Cover depth (m)		1.830E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)		1.920E+00	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)		1.500E-04	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)		2.240E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)		1.500E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity		3.600E-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-02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter		4.430E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)		4.300E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)		not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient		7.300E-01	5.000E-01	---	EVAPTR

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Precipitation (m/yr)	1.050E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	9.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	2.770E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.510E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.830E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	9.500E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.000E-03	2.000E-02	---	HGWT

R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	2	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.500E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.696E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.600E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.890E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.060E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	4.750E+03	1.000E+01	---	HCUZ(1)
R015	Unsat. zone 2, thickness (m)	1.900E+00	0.000E+00	---	H(2)
R015	Unsat. zone 2, soil density (g/cm**3)	1.510E+00	1.500E+00	---	DENSUZ(2)
R015	Unsat. zone 2, total porosity	4.300E-01	4.000E-01	---	TPUZ(2)
R015	Unsat. zone 2, effective porosity	3.830E-01	2.000E-01	---	EPUZ(2)
R015	Unsat. zone 2, field capacity	2.000E-01	2.000E-01	---	FCUZ(2)
R015	Unsat. zone 2, soil-specific b parameter	4.050E+00	5.300E+00	---	BUZ(2)
R015	Unsat. zone 2, hydraulic conductivity (m/yr)	9.500E+03	1.000E+01	---	HCUZ(2)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Unsaturated zone 2 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,2)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.248E-06	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,1)
R016	Unsaturated zone 2 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,2)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.112E-06	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,1)
R016	Unsaturated zone 2 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,2)

R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.041E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	5.030E+04	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.591E-08	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	1.099E+05	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.560E-08	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	1.680E+04	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.674E-07	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	1.680E+04	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.674E-07	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	1.680E+04	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.674E-07	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

Site-Specific Parameter Summary (continued)

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

R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.393E+04	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.019E-07	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	1.393E+04	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.019E-07	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	1.393E+04	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.019E-07	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	3.000E-05	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	2.700E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.000E-03	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)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
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)	2.000E-01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	2.300E+00	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	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	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)

R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV

R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	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	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Contaminated Zone Dimensions

Area: 2550.00 square meters

Initial Soil Concentrations, pCi/g

Ac-227 3.000E-01

Thickness:	4.50 meters	Pa-231	3.000E-01
Cover Depth:	1.83 meters	Pb-210	1.500E+00
		Ra-226	1.500E+00
		Ra-228	2.800E+00
		Th-228	2.800E+00
		Th-230	4.900E+00
		Th-232	2.800E+00
		U-234	4.900E+00
		U-235	3.000E-01
		U-238	4.900E+00

0

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

t (years):	0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
TDOSE(t):	1.544E-11	1.547E-11	1.572E-11	1.854E-11	2.672E-11	3.851E-11	5.553E-11	8.007E-11	9.617E-11
M(t):	6.176E-13	6.187E-13	6.290E-13	7.414E-13	1.069E-12	1.540E-12	2.221E-12	3.203E-12	3.847E-12

0Maximum TDOSE(t): 9.617E-11 mrem/yr at t = 1.000E+03 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 = 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-														
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	5.966E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	9.869E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.974E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.449E-13	0.0094	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	2.374E-12	0.1538	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	1.282E-11	0.8304	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.026E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	9.944E-14	0.0064	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	3.079E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	6.019E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	3.482E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	1.544E-11	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-														
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	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	0.000E+00	0.0000	5.966E-19	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	0.000E+00	0.0000	9.869E-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	0.000E+00	0.0000	3.974E-21	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	0.000E+00	0.0000	1.449E-13	0.0094
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	0.000E+00	0.0000	2.374E-12	0.1538
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	0.000E+00	0.0000	1.282E-11	0.8304
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E-16	0.0000
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	9.944E-14	0.0064
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.079E-22	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	0.000E+00	0.0000	6.019E-25	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.482E-17	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.544E-11	1.0000

0*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

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	5.795E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	2.864E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.863E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.452E-13	0.0094	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	5.773E-12	0.3732	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	8.941E-12	0.5780	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.083E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	6.092E-13	0.0394	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	2.159E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.013E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	3.491E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	1.547E-11	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

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

0 Water Dependent Pathways

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.
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	0.000E+00	0.0000	5.795E-19	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	0.000E+00	0.0000	2.864E-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	0.000E+00	0.0000	3.863E-21	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	0.000E+00	0.0000	1.452E-13	0.0094
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	0.000E+00	0.0000	5.773E-12	0.3732
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	0.000E+00	0.0000	8.941E-12	0.5780
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.083E-16	0.0000
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	6.092E-13	0.0394
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.159E-21	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	0.000E+00	0.0000	1.013E-24	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.491E-17	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.547E-11	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T½ Limit = 180 days 07/25/2009 16:40 Page 16
Summary : SMC Maintenance Worker Area 1 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109201.RAD

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

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Ac-227	4.461E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	1.773E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	2.989E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.474E-13	0.0094	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	6.063E-12	0.3856	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	3.486E-13	0.0222	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.196E-15	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	9.164E-12	0.5828	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	1.039E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	2.140E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	3.573E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	1.572E-11	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	4.461E-19	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	0.000E+00	0.0000	1.773E-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	0.000E+00	0.0000	2.989E-21	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	0.000E+00	0.0000	1.474E-13	0.0094
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	0.000E+00	0.0000	6.063E-12	0.3856
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	0.000E+00	0.0000	3.486E-13	0.0222
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.196E-15	0.0001

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	9.164E-12	0.5828
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.039E-19	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	0.000E+00	0.0000	2.140E-23	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.573E-17	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.572E-11	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T* Limit = 180 days 07/25/2009 16:40 Page 17

Summary : SMC Maintenance Worker Area 1 Controls in Place Restricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109201.RAD

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	3.259E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	7.657E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	2.299E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.722E-13	0.0093	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	1.506E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	2.828E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.502E-14	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.834E-11	0.9893	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	1.140E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.191E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	4.504E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	1.854E-11	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	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	0.000E+00	0.0000	3.259E-20	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	0.000E+00	0.0000	7.657E-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	0.000E+00	0.0000	2.299E-22	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	0.000E+00	0.0000	1.722E-13	0.0093
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	0.000E+00	0.0000	1.506E-16	0.0000
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	0.000E+00	0.0000	2.828E-27	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.502E-14	0.0014
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	1.834E-11	0.9893
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.140E-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	0.000E+00	0.0000	1.191E-21	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.504E-17	0.0000

Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.854E-11	1.0000

0*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 = 3.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	9.725E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	1.382E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	7.690E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.433E-13	0.0091	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	7.324E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.103E-13	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	2.636E-11	0.9868	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	1.525E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	7.897E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	7.540E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	2.672E-11	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	9.725E-23	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	0.000E+00	0.0000	1.382E-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	0.000E+00	0.0000	7.690E-25	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	0.000E+00	0.0000	2.433E-13	0.0091
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	0.000E+00	0.0000	7.324E-27	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.103E-13	0.0041
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	2.636E-11	0.9868
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.525E-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	0.000E+00	0.0000	7.897E-21	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.540E-17	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	2.672E-11	1.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Maintenance Worker Area 1 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109201.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 = 5.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0 Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Ac-227	2.902E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	2.392E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	2.572E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	3.436E-13	0.0089	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.711E-13	0.0070	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	3.790E-11	0.9840	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	6.330E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	2.389E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.264E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	3.851E-11	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years
0 Water Dependent Pathways

0 Radio-Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	2.902E-25	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	0.000E+00	0.0000	2.392E-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	0.000E+00	0.0000	2.572E-27	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	0.000E+00	0.0000	3.436E-13	0.0089
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.711E-13	0.0070
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	3.790E-11	0.9840
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.330E-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	0.000E+00	0.0000	2.389E-20	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.264E-16	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	3.851E-11	1.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Maintenance Worker Area 1 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109201.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 = 7.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	8.662E-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	0.000E+00	0.0000
Pa-231	4.141E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	8.605E-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	0.000E+00	0.0000
Ra-226	4.853E-13	0.0087	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	5.602E-13	0.0101	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	5.448E-11	0.9811	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	1.856E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	5.915E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	2.122E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	5.553E-11	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

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

As mrem/yr and Fraction of Total Dose At t = 7.000E+02 years

0 Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	8.662E-28	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	0.000E+00	0.0000	4.141E-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	0.000E+00	0.0000	8.605E-30	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	0.000E+00	0.0000	4.853E-13	0.0087
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.602E-13	0.0101
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	5.448E-11	0.9811
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.856E-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	0.000E+00	0.0000	5.915E-20	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.122E-16	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	5.553E-11	1.0000

0*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 = 9.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground	Inhalation	Radon	Plant	Meat	Milk	Soil

Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	2.585E-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	0.000E+00	0.0000
Pa-231	7.170E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	6.855E-13	0.0086	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.064E-12	0.0133	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	7.832E-11	0.9781	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	4.594E-15	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.334E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	3.571E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	8.007E-11	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.000E+02 years

0 Water Dependent Pathways

0

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.
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	0.000E+00	0.0000	2.585E-30	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	0.000E+00	0.0000	7.170E-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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	6.855E-13	0.0086
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.064E-12	0.0133
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	7.832E-11	0.9781
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.594E-15	0.0001
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.334E-19	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.571E-16	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	8.007E-11	1.0000

0*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

0 Water Independent Pathways (Inhalation excludes radon)

0

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.
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	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	9.435E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	8.147E-13	0.0085	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.437E-12	0.0149	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	9.391E-11	0.9765	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	6.942E-15	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.959E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	4.636E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	9.617E-11	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	9.435E-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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	8.147E-13	0.0085
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.437E-12	0.0149
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	9.391E-11	0.9765
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.942E-15	0.0001
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.959E-19	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.636E-16	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.617E-11	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 16:40 Page 23
Summary : SMC Maintenance Worker Area 1 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109201.RAD

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

0 Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
Ac-227+D	Ac-227+D	1.000E+00	1.989E-18	1.932E-18	1.487E-18	1.086E-19	3.242E-22	9.674E-25	2.887E-27	8.618E-30	4.709E-31
0Pa-231	Pa-231	1.000E+00	1.061E-21	1.064E-21	1.096E-21	1.477E-21	2.867E-21	5.563E-21	1.079E-20	2.095E-20	2.918E-20
Pa-231	Ac-227+D	1.000E+00	3.184E-20	9.441E-20	5.901E-19	2.551E-18	4.603E-18	7.968E-18	1.379E-17	2.388E-17	3.142E-17
Pa-231	äDSR(j)		3.290E-20	9.547E-20	5.912E-19	2.552E-18	4.606E-18	7.974E-18	1.380E-17	2.390E-17	3.145E-17
0Pb-210+D	Pb-210+D	1.000E+00	2.650E-21	2.575E-21	1.993E-21	1.532E-22	5.126E-25	1.715E-27	5.736E-30	1.919E-32	1.110E-33
0Ra-226+D	Ra-226+D	1.000E+00	9.661E-14	9.678E-14	9.829E-14	1.148E-13	1.622E-13	2.291E-13	3.236E-13	4.570E-13	5.432E-13
Ra-226+D	Pb-210+D	1.000E+00	4.140E-23	1.228E-22	7.671E-22	3.229E-21	5.212E-21	8.027E-21	1.236E-20	1.904E-20	2.362E-20
Ra-226+D	äDSR(j)		9.661E-14	9.678E-14	9.829E-14	1.148E-13	1.622E-13	2.291E-13	3.236E-13	4.570E-13	5.432E-13

0Ra-228+D	Ra-228+D	1.000E+00	3.327E-15	2.956E-15	1.021E-15	2.458E-20	1.341E-30	7.321E-41	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	8.445E-13	2.059E-12	2.164E-12	5.375E-17	2.614E-27	1.272E-37	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	äDSR(j)		8.478E-13	2.062E-12	2.165E-12	5.377E-17	2.616E-27	1.272E-37	0.000E+00	0.000E+00	0.000E+00
0Th-228+D	Th-228+D	1.000E+00	4.579E-12	3.193E-12	1.245E-13	1.010E-27	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	9.156E-35	9.205E-35	9.662E-35	1.567E-34	4.594E-34	1.346E-33	3.946E-33	1.157E-32	1.980E-32
Th-230	Ra-226+D	1.000E+00	2.094E-17	6.291E-17	4.481E-16	5.107E-15	2.252E-14	5.533E-14	1.143E-13	2.171E-13	2.933E-13
Th-230	Pb-210+D	1.000E+00	5.996E-27	4.169E-26	1.842E-24	1.035E-22	6.412E-22	1.801E-21	4.136E-21	8.654E-21	1.225E-20
Th-230	äDSR(j)		2.094E-17	6.291E-17	4.481E-16	5.107E-15	2.252E-14	5.533E-14	1.143E-13	2.171E-13	2.933E-13
0Th-232	Th-232	1.000E+00	2.329E-38	2.343E-38	2.472E-38	4.239E-38	1.405E-37	4.654E-37	1.542E-36	5.111E-36	9.303E-36
Th-232	Ra-228+D	1.000E+00	2.046E-16	5.838E-16	2.596E-15	4.485E-15	7.234E-15	1.167E-14	1.882E-14	3.035E-14	3.855E-14
Th-232	Th-228+D	1.000E+00	3.531E-14	2.170E-13	3.270E-12	6.545E-12	9.408E-12	1.352E-11	1.944E-11	2.794E-11	3.350E-11
Th-232	äDSR(j)		3.552E-14	2.176E-13	3.273E-12	6.549E-12	9.415E-12	1.353E-11	1.946E-11	2.797E-11	3.354E-11
0U-234	U-234	1.000E+00	2.179E-36	2.191E-36	2.304E-36	3.808E-36	1.163E-35	3.555E-35	1.086E-34	3.318E-34	5.799E-34
U-234	Th-230	1.000E+00	4.125E-40	1.243E-39	9.133E-39	1.419E-37	1.244E-36	6.076E-36	2.494E-35	9.401E-35	1.789E-34
U-234	Ra-226+D	1.000E+00	6.283E-23	4.406E-22	2.121E-20	2.327E-18	3.112E-17	1.292E-16	3.789E-16	9.377E-16	1.417E-15
U-234	Pb-210+D	1.000E+00	1.352E-32	2.018E-31	5.970E-29	3.769E-26	8.007E-25	3.943E-24	1.308E-23	3.601E-23	5.721E-23
U-234	äDSR(j)		6.283E-23	4.406E-22	2.121E-20	2.327E-18	3.112E-17	1.292E-16	3.789E-16	9.377E-16	1.417E-15
0U-235+D	U-235+D	1.000E+00	1.770E-24	1.777E-24	1.842E-24	2.633E-24	5.831E-24	1.291E-23	2.858E-23	6.329E-23	9.417E-23
U-235+D	Pa-231	1.000E+00	1.123E-26	3.378E-26	2.436E-25	3.146E-24	1.830E-23	5.930E-23	1.615E-22	4.038E-22	6.258E-22
U-235+D	Ac-227+D	1.000E+00	2.252E-25	1.566E-24	6.924E-23	3.963E-21	2.630E-20	7.957E-20	1.970E-19	4.441E-19	6.524E-19
U-235+D	äDSR(j)		2.006E-24	3.376E-24	7.133E-23	3.969E-21	2.632E-20	7.964E-20	1.972E-19	4.446E-19	6.532E-19
0U-238	U-238	5.400E-05	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
0U-238+D	U-238+D	9.999E-01	7.106E-18	7.124E-18	7.291E-18	9.191E-18	1.538E-17	2.573E-17	4.306E-17	7.206E-17	9.322E-17
U-238+D	U-234	9.999E-01	3.091E-42	9.319E-42	6.858E-41	1.085E-39	9.915E-39	5.047E-38	2.159E-37	8.480E-37	1.647E-36
U-238+D	Th-230	9.999E-01	0.000E+00	2.803E-45	1.359E-43	2.021E-41	5.301E-40	4.314E-39	2.479E-38	1.202E-37	2.542E-37
U-238+D	Ra-226+D	9.999E-01	4.454E-29	6.692E-28	2.108E-25	2.218E-22	8.935E-21	6.222E-20	2.572E-19	8.239E-19	1.388E-18
U-238+D	Pb-210+D	9.999E-01	7.673E-39	2.371E-37	4.524E-34	3.012E-30	2.102E-28	1.790E-27	8.496E-27	3.055E-26	5.430E-26
U-238+D	äDSR(j)		7.106E-18	7.124E-18	7.291E-18	9.191E-18	1.539E-17	2.579E-17	4.332E-17	7.288E-17	9.461E-17
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The DSR includes contributions from associated (half-life ó 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13
Pa-231	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10
Pb-210	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13
Ra-226	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11
Ra-228	2.949E+13	1.213E+13	1.155E+13	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14
Th-228	5.460E+12	7.829E+12	2.008E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10
Th-232	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05
U-234	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09
U-235	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06
U-238	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05

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ÍÍÍÍÍÍÍ     ÍÍÍÍÍÍÍÍÍ   ÍÍÍÍÍÍÍÍÍ   ÍÍÍÍÍÍÍÍÍ   ÍÍÍÍÍÍÍÍÍ   ÍÍÍÍÍÍÍÍÍ   ÍÍÍÍÍÍÍÍÍ   ÍÍÍÍÍÍÍÍÍ   ÍÍÍÍÍÍÍÍÍ   ÍÍÍÍÍÍÍÍÍ
 *At specific activity limit
0
             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 = 1.000E+03 years
0Nuclide  Initial          tmin       DSR(i,tmin) G(i,tmin) DSR(i,tmax) G(i,tmax)
   (i)    (pCi/g)        (years)                  (pCi/g)               (pCi/g)
 ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄ
 Ac-227  3.000E-01     0.000E+00      1.989E-18 *7.232E+13  0.000E+00 *7.232E+13
 Pa-231  3.000E-01     1.000E+03      3.145E-17 *4.723E+10  3.145E-17 *4.723E+10
 Pb-210  1.500E+00     0.000E+00      2.650E-21 *7.634E+13  0.000E+00 *7.634E+13
 Ra-226  1.500E+00     1.000E+03      5.432E-13 *9.885E+11  5.432E-13 *9.885E+11
 Ra-228  2.800E+00    4.112 ñ 0.008   3.173E-12  7.878E+12  0.000E+00 *2.726E+14
 Th-228  2.800E+00     0.000E+00      4.579E-12  5.460E+12  0.000E+00 *8.195E+14
 Th-230  4.900E+00     1.000E+03      2.933E-13 *2.018E+10  2.933E-13 *2.018E+10
 Th-232  2.800E+00     1.000E+03      3.354E-11 *1.097E+05  3.354E-11 *1.097E+05
 U-234   4.900E+00     1.000E+03      1.417E-15 *6.247E+09  1.417E-15 *6.247E+09
 U-235   3.000E-01     1.000E+03      6.532E-19 *2.161E+06  6.532E-19 *2.161E+06
 U-238   4.900E+00     1.000E+03      9.461E-17 *3.361E+05  9.461E-17 *3.361E+05
 ÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ  ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ  ÍÍÍÍÍÍÍÍÍ  ÍÍÍÍÍÍÍÍÍ  ÍÍÍÍÍÍÍÍÍ  ÍÍÍÍÍÍÍÍÍ
 *At specific activity limit

1RESRAD, Version 6.4      T« Limit = 180 days        07/25/2009  16:40  Page  25
 Summary : SMC Maintenance Worker Area 1 Controls in Place Restricted Area
 File    : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109201.RAD

                          Individual Nuclide Dose Summed Over All Pathways
                           Parent Nuclide and Branch Fraction Indicated
0Nuclide Parent   THF(i)                                  DOSE(j,t), mrem/yr
   (j)     (i)            t= 0.000E+00 1.000E+00 1.000E+01 1.000E+02 3.000E+02 5.000E+02 7.000E+02 9.000E+02 1.000E+03
 ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄ   ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ
 Ac-227  Ac-227  1.000E+00   5.966E-19 5.795E-19 4.461E-19 3.259E-20 9.725E-23 2.902E-25 8.662E-28 2.585E-30 0.000E+00
 Ac-227  Pa-231  1.000E+00   9.551E-21 2.832E-20 1.770E-19 7.653E-19 1.381E-18 2.390E-18 4.138E-18 7.164E-18 9.426E-18
 Ac-227  U-235   1.000E+00   6.756E-26 4.697E-25 2.077E-23 1.189E-21 7.890E-21 2.387E-20 5.909E-20 1.332E-19 1.957E-19
 Ac-227  äDOSE(j)            6.061E-19 6.078E-19 6.231E-19 7.991E-19 1.389E-18 2.414E-18 4.197E-18 7.297E-18 9.622E-18
0Pa-231  Pa-231  1.000E+00   3.182E-22 3.193E-22 3.289E-22 4.432E-22 8.601E-22 1.669E-21 3.238E-21 6.284E-21 8.753E-21
 Pa-231  U-235   1.000E+00   3.368E-27 1.013E-26 7.309E-26 9.438E-25 5.490E-24 1.779E-23 4.844E-23 1.211E-22 1.877E-22
 Pa-231  äDOSE(j)            3.182E-22 3.193E-22 3.290E-22 4.442E-22 8.656E-22 1.687E-21 3.287E-21 6.405E-21 8.941E-21
0Pb-210  Pb-210  1.000E+00   3.974E-21 3.863E-21 2.989E-21 2.299E-22 7.690E-25 2.572E-27 8.605E-30 0.000E+00 0.000E+00
 Pb-210  Ra-226  1.000E+00   6.211E-23 1.842E-22 1.151E-21 4.844E-21 7.818E-21 1.204E-20 1.854E-20 2.855E-20 3.543E-20
 Pb-210  Th-230  1.000E+00   2.938E-26 2.043E-25 9.027E-24 5.071E-22 3.142E-21 8.823E-21 2.027E-20 4.241E-20 6.003E-20
 Pb-210  U-234   1.000E+00   0.000E+00 0.000E+00 2.925E-28 1.847E-25 3.924E-24 1.932E-23 6.407E-23 1.764E-22 2.803E-22
 Pb-210  U-238   9.999E-01   0.000E+00 0.000E+00 0.000E+00 1.476E-29 1.030E-27 8.773E-27 4.163E-26 1.497E-25 2.661E-25
 Pb-210  äDOSE(j)            4.037E-21 4.047E-21 4.148E-21 5.581E-21 1.096E-20 2.088E-20 3.887E-20 7.114E-20 9.574E-20
0Ra-226  Ra-226  1.000E+00   1.449E-13 1.452E-13 1.474E-13 1.722E-13 2.433E-13 3.436E-13 4.853E-13 6.855E-13 8.147E-13
 Ra-226  Th-230  1.000E+00   1.026E-16 3.083E-16 2.196E-15 2.502E-14 1.103E-13 2.711E-13 5.602E-13 1.064E-12 1.437E-12
 Ra-226  U-234   1.000E+00   3.079E-22 2.159E-21 1.039E-19 1.140E-17 1.525E-16 6.330E-16 1.856E-15 4.594E-15 6.942E-15
 Ra-226  U-238   9.999E-01   2.182E-28 3.279E-27 1.033E-24 1.087E-21 4.378E-20 3.049E-19 1.260E-18 4.037E-18 6.800E-18
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Ra-226	äDOSE(j)		1.450E-13	1.455E-13	1.496E-13	1.973E-13	3.538E-13	6.154E-13	1.047E-12	1.754E-12	2.259E-12
0Ra-228	Ra-228	1.000E+00	9.315E-15	8.277E-15	2.858E-15	6.882E-20	3.756E-30	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228	Th-232	1.000E+00	5.730E-16	1.635E-15	7.270E-15	1.256E-14	2.026E-14	3.267E-14	5.269E-14	8.499E-14	1.079E-13
Ra-228	äDOSE(j)		9.888E-15	9.912E-15	1.013E-14	1.256E-14	2.026E-14	3.267E-14	5.269E-14	8.499E-14	1.079E-13
0Th-228	Ra-228	1.000E+00	2.365E-12	5.764E-12	6.060E-12	1.505E-16	7.320E-27	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-228	1.000E+00	1.282E-11	8.941E-12	3.486E-13	2.828E-27	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	9.887E-14	6.076E-13	9.156E-12	1.833E-11	2.634E-11	3.786E-11	5.443E-11	7.824E-11	9.380E-11
Th-228	äDOSE(j)		1.528E-11	1.531E-11	1.556E-11	1.833E-11	2.634E-11	3.786E-11	5.443E-11	7.824E-11	9.380E-11
0Th-230	Th-230	1.000E+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-230	U-234	1.000E+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-230	U-238	9.999E-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
Th-230	äDOSE(j)		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
0Th-232	Th-232	1.000E+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
0U-234	U-234	1.000E+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-234	U-238	9.999E-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
U-234	äDOSE(j)		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
0U-235	U-235	1.000E+00	5.309E-25	5.331E-25	5.525E-25	7.900E-25	1.749E-24	3.873E-24	8.575E-24	1.899E-23	2.825E-23
0U-238	U-238	5.400E-05	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-238	U-238	9.999E-01	3.482E-17	3.491E-17	3.573E-17	4.504E-17	7.535E-17	1.261E-16	2.110E-16	3.531E-16	4.568E-16
U-238	äDOSE(j)		3.482E-17	3.491E-17	3.573E-17	4.504E-17	7.535E-17	1.261E-16	2.110E-16	3.531E-16	4.568E-16
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+00	3.000E-01	2.906E-01	2.182E-01	1.242E-02	2.131E-05	3.655E-08	6.268E-11	1.075E-13	4.452E-15
Ac-227	Pa-231	1.000E+00	0.000E+00	9.400E-03	8.178E-02	2.870E-01	2.978E-01	2.963E-01	2.947E-01	2.932E-01	2.924E-01
Ac-227	U-235	1.000E+00	0.000E+00	9.997E-08	9.111E-06	4.431E-04	1.698E-03	2.955E-03	4.206E-03	5.449E-03	6.069E-03
Ac-227	äS(j):		3.000E-01	3.000E-01	3.000E-01	2.998E-01	2.995E-01	2.992E-01	2.989E-01	2.986E-01	2.985E-01
0Pa-231	Pa-231	1.000E+00	3.000E-01	3.000E-01	2.999E-01	2.992E-01	2.976E-01	2.961E-01	2.945E-01	2.930E-01	2.922E-01
Pa-231	U-235	1.000E+00	0.000E+00	6.347E-06	6.347E-05	6.339E-04	1.897E-03	3.153E-03	4.402E-03	5.645E-03	6.264E-03
Pa-231	äS(j):		3.000E-01	3.000E-01	3.000E-01	2.998E-01	2.995E-01	2.992E-01	2.989E-01	2.986E-01	2.985E-01
0Pb-210	Pb-210	1.000E+00	1.500E+00	1.454E+00	1.099E+00	6.695E-02	1.334E-04	2.656E-07	5.291E-10	1.054E-12	4.704E-14
Pb-210	Ra-226	1.000E+00	0.000E+00	4.590E-02	3.998E-01	1.388E+00	1.335E+00	1.224E+00	1.123E+00	1.030E+00	9.860E-01
Pb-210	Th-230	1.000E+00	0.000E+00	3.265E-05	2.978E-03	1.444E-01	5.355E-01	8.962E-01	1.226E+00	1.528E+00	1.669E+00
Pb-210	U-234	1.000E+00	0.000E+00	9.822E-11	9.165E-08	5.230E-05	6.676E-04	1.960E-03	3.874E-03	6.354E-03	7.792E-03
Pb-210	U-238	9.999E-01	0.000E+00	6.972E-17	6.595E-13	4.157E-09	1.749E-07	8.892E-07	2.515E-06	5.389E-06	7.391E-06
Pb-210	äS(j):		1.500E+00	1.500E+00	1.502E+00	1.600E+00	1.872E+00	2.123E+00	2.353E+00	2.564E+00	2.663E+00
0Ra-226	Ra-226	1.000E+00	1.500E+00	1.499E+00	1.494E+00	1.436E+00	1.317E+00	1.208E+00	1.108E+00	1.016E+00	9.726E-01
Ra-226	Th-230	1.000E+00	0.000E+00	2.122E-03	2.118E-02	2.076E-01	5.963E-01	9.520E-01	1.277E+00	1.575E+00	1.714E+00
Ra-226	U-234	1.000E+00	0.000E+00	9.553E-09	9.540E-07	9.414E-05	8.228E-04	2.220E-03	4.230E-03	6.798E-03	8.277E-03
Ra-226	U-238	9.999E-01	0.000E+00	9.027E-15	9.018E-12	8.929E-09	2.358E-07	1.068E-06	2.869E-06	5.970E-06	8.104E-06
Ra-226	äS(j):		1.500E+00	1.501E+00	1.515E+00	1.644E+00	1.914E+00	2.162E+00	2.389E+00	2.598E+00	2.695E+00
0Ra-228	Ra-228	1.000E+00	2.800E+00	2.482E+00	8.387E-01	1.629E-05	5.511E-16	1.865E-26	6.310E-37	0.000E+00	0.000E+00

Ra-228	Th-232	1.000E+00	0.000E+00	3.180E-01	1.961E+00	2.800E+00	2.800E+00	2.800E+00	2.800E+00	2.800E+00	2.800E+00
Ra-228	äS(j):		2.800E+00	2.800E+00	2.800E+00	2.800E+00	2.800E+00	2.800E+00	2.800E+00	2.800E+00	2.800E+00
0Th-228	Ra-228	1.000E+00	0.000E+00	7.988E-01	1.145E+00	2.441E-05	8.259E-16	2.795E-26	9.456E-37	0.000E+00	0.000E+00
Th-228	Th-228	1.000E+00	2.800E+00	1.949E+00	7.475E-02	5.152E-16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	5.220E-02	1.580E+00	2.800E+00	2.800E+00	2.800E+00	2.800E+00	2.800E+00	2.800E+00
Th-228	äS(j):		2.800E+00	2.800E+00	2.800E+00	2.800E+00	2.800E+00	2.800E+00	2.800E+00	2.800E+00	2.800E+00
0Th-230	Th-230	1.000E+00	4.900E+00	4.900E+00	4.900E+00	4.896E+00	4.887E+00	4.878E+00	4.869E+00	4.860E+00	4.855E+00
Th-230	U-234	1.000E+00	0.000E+00	4.411E-05	4.411E-04	4.408E-03	1.321E-02	2.199E-02	3.074E-02	3.948E-02	4.384E-02
Th-230	U-238	9.999E-01	0.000E+00	6.252E-11	6.252E-09	6.249E-07	5.620E-06	1.560E-05	3.055E-05	5.045E-05	6.226E-05
Th-230	äS(j):		4.900E+00	4.900E+00	4.900E+00	4.900E+00	4.900E+00	4.900E+00	4.899E+00	4.899E+00	4.899E+00
0Th-232	Th-232	1.000E+00	2.800E+00	2.800E+00	2.800E+00	2.800E+00	2.800E+00	2.800E+00	2.800E+00	2.800E+00	2.800E+00
0U-234	U-234	1.000E+00	4.900E+00	4.900E+00	4.900E+00	4.899E+00	4.896E+00	4.893E+00	4.890E+00	4.887E+00	4.885E+00
U-234	U-238	9.999E-01	0.000E+00	1.389E-05	1.389E-04	1.389E-03	4.165E-03	6.940E-03	9.712E-03	1.248E-02	1.387E-02
U-234	äS(j):		4.900E+00	4.900E+00	4.900E+00	4.900E+00	4.900E+00	4.900E+00	4.899E+00	4.899E+00	4.899E+00
0U-235	U-235	1.000E+00	3.000E-01	3.000E-01	3.000E-01	3.000E-01	3.000E-01	3.000E-01	3.000E-01	2.999E-01	2.999E-01
0U-238	U-238	5.400E-05	2.646E-04	2.646E-04	2.646E-04	2.646E-04	2.646E-04	2.646E-04	2.646E-04	2.646E-04	2.645E-04
U-238	U-238	9.999E-01	4.900E+00	4.900E+00	4.900E+00	4.900E+00	4.899E+00	4.899E+00	4.899E+00	4.899E+00	4.899E+00
U-238	äS(j):		4.900E+00	4.900E+00	4.900E+00	4.900E+00	4.900E+00	4.900E+00	4.899E+00	4.899E+00	4.899E+00
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ

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

0RESCALC.EXE execution time = 68.42 seconds

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary 6
Summary of Pathway Selections 12
Contaminated Zone and Total Dose Summary 13
Total Dose Components
Time = 0.000E+00 14
Time = 1.000E+00 15
Time = 1.000E+01 16
Time = 1.000E+02 17
Time = 3.000E+02 18
Time = 5.000E+02 19
Time = 7.000E+02 20
Time = 9.000E+02 21
Time = 1.000E+03 22
Dose/Source Ratios Summed Over All Pathways 23
Single Radionuclide Soil Guidelines 24
Dose Per Nuclide Summed Over All Pathways 25
Soil Concentration Per Nuclide 26

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)

A-1	Pb-212	(Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214	(Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)
A-1	Po-210	(Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211	(Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214	(Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215	(Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216	(Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218	(Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)
A-1	Ra-223	(Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224	(Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226	(Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219	(Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220	(Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222	(Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227	(Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228	(Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230	(Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231	(Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232	(Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234	(Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207	(Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208	(Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210	(Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234	(Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235	(Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238	(Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D		6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231		1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D		2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D		8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D		5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D		3.454E-01	3.420E-01	DCF2(6)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)

```
B-1  ³ U-238+D                                                    ³ 1.180E-01 ³ 1.180E-01 ³ DCF2( 12)
     ³                                                            ³           ³           ³
D-1  ³ Dose conversion factors for ingestion, mrem/pCi:           ³           ³           ³
D-1  ³ Ac-227+D                                                   ³ 1.480E-02 ³ 1.410E-02 ³ DCF3(  1)
D-1  ³ Pa-231                                                     ³ 1.060E-02 ³ 1.060E-02 ³ DCF3(  2)
D-1  ³ Pb-210+D                                                   ³ 7.276E-03 ³ 5.370E-03 ³ DCF3(  3)
D-1  ³ Ra-226+D                                                   ³ 1.321E-03 ³ 1.320E-03 ³ DCF3(  4)
D-1  ³ Ra-228+D                                                   ³ 1.442E-03 ³ 1.440E-03 ³ DCF3(  5)
D-1  ³ Th-228+D                                                   ³ 8.086E-04 ³ 3.960E-04 ³ DCF3(  6)
D-1  ³ Th-230                                                     ³ 5.480E-04 ³ 5.480E-04 ³ DCF3(  7)
D-1  ³ Th-232                                                     ³ 2.730E-03 ³ 2.730E-03 ³ DCF3(  8)
D-1  ³ U-234                                                      ³ 2.830E-04 ³ 2.830E-04 ³ DCF3(  9)
D-1  ³ U-235+D                                                    ³ 2.673E-04 ³ 2.660E-04 ³ DCF3( 10)
D-1  ³ U-238                                                      ³ 2.550E-04 ³ 2.550E-04 ³ DCF3( 11)
D-1  ³ U-238+D                                                    ³ 2.687E-04 ³ 2.550E-04 ³ DCF3( 12)
     ³                                                            ³           ³           ³
D-34 ³ Food transfer factors:                                     ³           ³           ³
D-34 ³ Ac-227+D  , plant/soil concentration ratio, dimensionless  ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  1,1)
D-34 ³ Ac-227+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,2)
D-34 ³ Ac-227+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Pa-231    , plant/soil concentration ratio, dimensionless  ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  2,1)
D-34 ³ Pa-231    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 5.000E-03 ³ 5.000E-03 ³ RTF(  2,2)
D-34 ³ Pa-231    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  2,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Pb-210+D  , plant/soil concentration ratio, dimensionless  ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  3,1)
D-34 ³ Pb-210+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 8.000E-04 ³ 8.000E-04 ³ RTF(  3,2)
D-34 ³ Pb-210+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 3.000E-04 ³ 3.000E-04 ³ RTF(  3,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Ra-226+D  , plant/soil concentration ratio, dimensionless  ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  4,1)
D-34 ³ Ra-226+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,2)
D-34 ³ Ra-226+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Ra-228+D  , plant/soil concentration ratio, dimensionless  ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  5,1)
D-34 ³ Ra-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,2)
D-34 ³ Ra-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Th-228+D  , plant/soil concentration ratio, dimensionless  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  6,1)
D-34 ³ Th-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  6,2)
D-34 ³ Th-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  6,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Th-230    , plant/soil concentration ratio, dimensionless  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  7,1)
D-34 ³ Th-230    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  7,2)
D-34 ³ Th-230    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  7,3)
D-34 ³                                                            ³           ³           ³
```


Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(8,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(8,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(8,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(11,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(11,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(12,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(12,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(12,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(4,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(4,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(7,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(7,2)
D-5				
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(8,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(8,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(9,1)

```
 D-5  ³ U-234      , crustacea and mollusks                        ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC(  9,2)
 D-5  ³                                                            ³           ³           ³
 D-5  ³ U-235+D    , fish                                          ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC( 10,1)
 D-5  ³ U-235+D    , crustacea and mollusks                        ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC( 10,2)
1RESRAD, Version 6.4      T« Limit = 180 days        07/25/2009  17:27  Page   5
 Summary : SMC Maintenance Worker Area 8 Controls in Place Restricted Area
 File    : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109208.RAD

                    Dose Conversion Factor (and Related) Parameter Summary (continued)
                                          Dose Library: FGR 11
0     ³                                                           ³  Current  ³   Base    ³  Parameter
 Menu ³                          Parameter                        ³   Value#  ³  Case*    ³    Name
ÄÄÄ
```

R012	Initial principal radionuclide (pCi/g):	Th-230	1.580E+01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g):	Th-232	3.840E+01	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g):	U-234	1.580E+01	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g):	U-235	1.100E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g):	U-238	1.580E+01	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L):	Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L):	Pa-231	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L):	Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L):	Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L):	Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L):	Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L):	Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L):	Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L):	U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L):	U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L):	U-238	not used	0.000E+00	---	W1(11)
R013	Cover depth (m)		1.830E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)		1.920E+00	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)		1.500E-04	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)		2.240E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)		1.500E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity		3.600E-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-02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter		4.430E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)		4.300E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)		not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient		7.300E-01	5.000E-01	---	EVAPTR

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Precipitation (m/yr)	1.050E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	9.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	2.770E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.510E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.830E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	9.500E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.000E-03	2.000E-02	---	HGWT

R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	2	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.500E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.696E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.600E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.890E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.060E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	4.750E+03	1.000E+01	---	HCUZ(1)
R015	Unsat. zone 2, thickness (m)	1.900E+00	0.000E+00	---	H(2)
R015	Unsat. zone 2, soil density (g/cm**3)	1.510E+00	1.500E+00	---	DENSUZ(2)
R015	Unsat. zone 2, total porosity	4.300E-01	4.000E-01	---	TPUZ(2)
R015	Unsat. zone 2, effective porosity	3.830E-01	2.000E-01	---	EPUZ(2)
R015	Unsat. zone 2, field capacity	2.000E-01	2.000E-01	---	FCUZ(2)
R015	Unsat. zone 2, soil-specific b parameter	4.050E+00	5.300E+00	---	BUZ(2)
R015	Unsat. zone 2, hydraulic conductivity (m/yr)	9.500E+03	1.000E+01	---	HCUZ(2)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Unsaturated zone 2 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,2)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.248E-06	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,1)
R016	Unsaturated zone 2 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,2)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.112E-06	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,1)
R016	Unsaturated zone 2 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,2)

R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.041E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	3.480E+03	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.082E-07	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	6.595E+03	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.264E-07	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	5.483E+04	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.130E-08	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	5.483E+04	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.130E-08	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	5.483E+04	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.130E-08	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

Site-Specific Parameter Summary (continued)

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

R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.598E+04	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.759E-07	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	1.598E+04	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.759E-07	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	1.598E+04	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.759E-07	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	3.000E-05	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	2.700E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.000E-03	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)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
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)	2.000E-01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	2.300E+00	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	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	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)

R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV

R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	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	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g	
Area: 2210.00 square meters	Ac-227	1.100E+00

Thickness:	4.50 meters	Pa-231	1.100E+00
Cover Depth:	1.83 meters	Pb-210	2.240E+01
		Ra-226	2.240E+01
		Ra-228	3.840E+01
		Th-228	3.840E+01
		Th-230	1.580E+01
		Th-232	3.840E+01
		U-234	1.580E+01
		U-235	1.100E+00
		U-238	1.580E+01

0

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

t (years):	0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
TDOSE(t):	2.119E-10	2.123E-10	2.158E-10	2.541E-10	3.655E-10	5.258E-10	7.563E-10	1.088E-09	1.305E-09
M(t):	8.477E-12	8.492E-12	8.632E-12	1.017E-11	1.462E-11	2.103E-11	3.025E-11	4.352E-11	5.219E-11

0Maximum TDOSE(t): 1.305E-09 mrem/yr at t = 1.000E+03 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 = 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	2.187E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	3.619E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	5.935E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.164E-12	0.0102	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	3.256E-11	0.1536	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	1.758E-10	0.8297	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.308E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.364E-12	0.0064	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	9.928E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	2.207E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.123E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	2.119E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.

ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	2.187E-18	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	0.000E+00	0.0000	3.619E-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	0.000E+00	0.0000	5.935E-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	0.000E+00	0.0000	2.164E-12	0.0102
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	0.000E+00	0.0000	3.256E-11	0.1536
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	0.000E+00	0.0000	1.758E-10	0.8297
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.308E-16	0.0000
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	1.364E-12	0.0064
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.928E-22	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	0.000E+00	0.0000	2.207E-24	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.123E-16	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.119E-10	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 17:27 Page 15

Summary : SMC Maintenance Worker Area 8 Controls in Place Restricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109208.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Ac-227	2.125E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	1.050E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	5.768E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.168E-12	0.0102	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	7.917E-11	0.3729	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	1.226E-10	0.5775	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	9.940E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	8.355E-12	0.0394	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	6.961E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	3.714E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.126E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	2.123E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	2.125E-18	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	0.000E+00	0.0000	1.050E-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	0.000E+00	0.0000	5.768E-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	0.000E+00	0.0000	2.168E-12	0.0102
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	0.000E+00	0.0000	7.917E-11	0.3729
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	0.000E+00	0.0000	1.226E-10	0.5775
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.940E-16	0.0000
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	8.355E-12	0.0394
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.961E-21	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	0.000E+00	0.0000	3.714E-24	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.126E-16	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.123E-10	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 17:27 Page 16

Summary : SMC Maintenance Worker Area 8 Controls in Place Restricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109208.RAD

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

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

0 Water Independent Pathways (Inhalation excludes radon)

0

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.
Ac-227	1.636E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	6.503E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	4.463E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.202E-12	0.0102	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	8.315E-11	0.3853	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	4.780E-12	0.0222	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	7.080E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.257E-10	0.5823	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	3.351E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	7.846E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.152E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	2.158E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

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

0 Water Dependent Pathways

0

Radio-	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.
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	0.000E+00	0.0000	1.636E-18	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	0.000E+00	0.0000	6.503E-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	0.000E+00	0.0000	4.463E-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	0.000E+00	0.0000	2.202E-12	0.0102
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	0.000E+00	0.0000	8.315E-11	0.3853
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	0.000E+00	0.0000	4.780E-12	0.0222
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.080E-15	0.0000

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	1.257E-10	0.5823
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.351E-19	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	0.000E+00	0.0000	7.846E-23	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.152E-16	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.158E-10	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 17:27 Page 17

Summary : SMC Maintenance Worker Area 8 Controls in Place Restricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109208.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Ac-227	1.195E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	2.808E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.433E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.572E-12	0.0101	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	2.065E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	3.879E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	8.069E-14	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	2.515E-10	0.9896	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	3.677E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	4.366E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.452E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	2.541E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	1.195E-19	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	0.000E+00	0.0000	2.808E-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	0.000E+00	0.0000	3.433E-21	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	0.000E+00	0.0000	2.572E-12	0.0101
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	0.000E+00	0.0000	2.065E-15	0.0000
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	0.000E+00	0.0000	3.879E-26	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.069E-14	0.0003
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	2.515E-10	0.9896
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.677E-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	0.000E+00	0.0000	4.366E-21	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.452E-16	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	2.541E-10	1.0000

0*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 = 3.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	3.566E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	5.066E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.148E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	3.632E-12	0.0099	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	1.004E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.557E-13	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	3.615E-10	0.9891	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	4.917E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	2.896E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	2.431E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	3.655E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	3.566E-22	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	0.000E+00	0.0000	5.066E-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	0.000E+00	0.0000	1.148E-23	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	0.000E+00	0.0000	3.632E-12	0.0099
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	0.000E+00	0.0000	1.004E-25	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.557E-13	0.0010
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	3.615E-10	0.9891
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.917E-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	0.000E+00	0.0000	2.896E-20	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.431E-16	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	3.655E-10	1.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Maintenance Worker Area 8 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109208.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 = 5.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	1.064E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	8.771E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.841E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	5.129E-12	0.0098	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	8.741E-13	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	5.198E-10	0.9886	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	2.041E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	8.760E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	4.075E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	5.258E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years
0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	1.064E-24	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	0.000E+00	0.0000	8.771E-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	0.000E+00	0.0000	3.841E-26	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	0.000E+00	0.0000	5.129E-12	0.0098
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.741E-13	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	0.000E+00	0.0000	5.198E-10	0.9886
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.041E-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	0.000E+00	0.0000	8.760E-20	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.075E-16	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	5.258E-10	1.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Maintenance Worker Area 8 Controls in Place Restricted Area
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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 = 7.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0 Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Ac-227	3.176E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	1.518E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.285E-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	0.000E+00	0.0000
Ra-226	7.244E-12	0.0096	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.806E-12	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	7.472E-10	0.9880	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	5.985E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	2.169E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	6.844E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	7.563E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

As mrem/yr and Fraction of Total Dose At t = 7.000E+02 years

0 Water Dependent Pathways

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	3.176E-27	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	0.000E+00	0.0000	1.518E-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	0.000E+00	0.0000	1.285E-28	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	0.000E+00	0.0000	7.244E-12	0.0096
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.806E-12	0.0024
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	7.472E-10	0.9880
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.985E-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	0.000E+00	0.0000	2.169E-19	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.844E-16	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	7.563E-10	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T½ Limit = 180 days 07/25/2009 17:27 Page 21

Summary : SMC Maintenance Worker Area 8 Controls in Place Restricted Area

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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 = 9.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0 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.
Ac-227	9.480E-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	0.000E+00	0.0000
Pa-231	2.629E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.023E-11	0.0094	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.430E-12	0.0032	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.074E-09	0.9874	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	1.481E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	4.890E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.152E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	1.088E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.000E+02 years

0 Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	9.480E-30	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	0.000E+00	0.0000	2.629E-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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	1.023E-11	0.0094
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.430E-12	0.0032
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	1.074E-09	0.9874
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.481E-14	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	0.000E+00	0.0000	4.890E-19	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.152E-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	1.088E-09	1.0000

0*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

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	3.459E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.216E-11	0.0093	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	4.632E-12	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.288E-09	0.9871	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	2.238E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	7.185E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.495E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	1.305E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0

Water Dependent Pathways

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	3.459E-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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	1.216E-11	0.0093
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.632E-12	0.0035
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	1.288E-09	0.9871
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.238E-14	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	0.000E+00	0.0000	7.185E-19	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.495E-15	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.305E-09	1.0000

0*Sum of all water independent and dependent pathways.

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

0 Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
Ac-227+D	Ac-227+D	1.000E+00	1.989E-18	1.932E-18	1.487E-18	1.086E-19	3.242E-22	9.674E-25	2.887E-27	8.618E-30	4.709E-31
0Pa-231	Pa-231	1.000E+00	1.061E-21	1.064E-21	1.096E-21	1.477E-21	2.867E-21	5.563E-21	1.079E-20	2.095E-20	2.918E-20
Pa-231	Ac-227+D	1.000E+00	3.184E-20	9.441E-20	5.901E-19	2.551E-18	4.603E-18	7.968E-18	1.379E-17	2.388E-17	3.142E-17
Pa-231	äDSR(j)		3.290E-20	9.547E-20	5.912E-19	2.552E-18	4.606E-18	7.974E-18	1.380E-17	2.390E-17	3.145E-17
0Pb-210+D	Pb-210+D	1.000E+00	2.650E-21	2.575E-21	1.993E-21	1.532E-22	5.126E-25	1.715E-27	5.736E-30	1.919E-32	1.110E-33
0Ra-226+D	Ra-226+D	1.000E+00	9.661E-14	9.678E-14	9.829E-14	1.148E-13	1.621E-13	2.290E-13	3.234E-13	4.567E-13	5.428E-13
Ra-226+D	Pb-210+D	1.000E+00	4.140E-23	1.228E-22	7.671E-22	3.229E-21	5.211E-21	8.024E-21	1.235E-20	1.902E-20	2.360E-20
Ra-226+D	äDSR(j)		9.661E-14	9.678E-14	9.829E-14	1.148E-13	1.621E-13	2.290E-13	3.234E-13	4.567E-13	5.428E-13

0Ra-228+D	Ra-228+D	1.000E+00	3.327E-15	2.956E-15	1.021E-15	2.458E-20	1.341E-30	7.320E-41	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	8.445E-13	2.059E-12	2.164E-12	5.375E-17	2.614E-27	1.271E-37	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	äDSR(j)		8.478E-13	2.062E-12	2.165E-12	5.377E-17	2.615E-27	1.272E-37	0.000E+00	0.000E+00	0.000E+00
0Th-228+D	Th-228+D	1.000E+00	4.579E-12	3.193E-12	1.245E-13	1.010E-27	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	9.156E-35	9.205E-35	9.662E-35	1.567E-34	4.594E-34	1.346E-33	3.946E-33	1.157E-32	1.980E-32
Th-230	Ra-226+D	1.000E+00	2.094E-17	6.291E-17	4.481E-16	5.107E-15	2.251E-14	5.533E-14	1.143E-13	2.171E-13	2.932E-13
Th-230	Pb-210+D	1.000E+00	5.996E-27	4.169E-26	1.842E-24	1.035E-22	6.411E-22	1.800E-21	4.135E-21	8.652E-21	1.225E-20
Th-230	äDSR(j)		2.094E-17	6.291E-17	4.481E-16	5.107E-15	2.251E-14	5.533E-14	1.143E-13	2.171E-13	2.932E-13
0Th-232	Th-232	1.000E+00	2.329E-38	2.343E-38	2.472E-38	4.239E-38	1.405E-37	4.655E-37	1.542E-36	5.111E-36	9.304E-36
Th-232	Ra-228+D	1.000E+00	2.046E-16	5.838E-16	2.596E-15	4.485E-15	7.234E-15	1.167E-14	1.882E-14	3.036E-14	3.855E-14
Th-232	Th-228+D	1.000E+00	3.531E-14	2.170E-13	3.270E-12	6.545E-12	9.408E-12	1.352E-11	1.944E-11	2.794E-11	3.350E-11
Th-232	äDSR(j)		3.552E-14	2.176E-13	3.273E-12	6.549E-12	9.415E-12	1.354E-11	1.946E-11	2.797E-11	3.354E-11
0U-234	U-234	1.000E+00	2.179E-36	2.191E-36	2.304E-36	3.808E-36	1.163E-35	3.555E-35	1.086E-34	3.318E-34	5.799E-34
U-234	Th-230	1.000E+00	4.125E-40	1.243E-39	9.133E-39	1.419E-37	1.244E-36	6.076E-36	2.494E-35	9.402E-35	1.789E-34
U-234	Ra-226+D	1.000E+00	6.283E-23	4.406E-22	2.121E-20	2.327E-18	3.112E-17	1.292E-16	3.788E-16	9.375E-16	1.416E-15
U-234	Pb-210+D	1.000E+00	1.352E-32	2.018E-31	5.970E-29	3.769E-26	8.007E-25	3.943E-24	1.307E-23	3.600E-23	5.720E-23
U-234	äDSR(j)		6.283E-23	4.406E-22	2.121E-20	2.327E-18	3.112E-17	1.292E-16	3.788E-16	9.375E-16	1.416E-15
0U-235+D	U-235+D	1.000E+00	1.770E-24	1.777E-24	1.842E-24	2.633E-24	5.831E-24	1.291E-23	2.858E-23	6.329E-23	9.417E-23
U-235+D	Pa-231	1.000E+00	1.123E-26	3.378E-26	2.436E-25	3.146E-24	1.830E-23	5.930E-23	1.615E-22	4.038E-22	6.258E-22
U-235+D	Ac-227+D	1.000E+00	2.252E-25	1.566E-24	6.924E-23	3.963E-21	2.630E-20	7.957E-20	1.970E-19	4.441E-19	6.525E-19
U-235+D	äDSR(j)		2.006E-24	3.376E-24	7.133E-23	3.969E-21	2.632E-20	7.964E-20	1.972E-19	4.446E-19	6.532E-19
0U-238	U-238	5.400E-05	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
0U-238+D	U-238+D	9.999E-01	7.106E-18	7.124E-18	7.291E-18	9.191E-18	1.538E-17	2.573E-17	4.306E-17	7.206E-17	9.322E-17
U-238+D	U-234	9.999E-01	3.091E-42	9.319E-42	6.858E-41	1.085E-39	9.915E-39	5.047E-38	2.159E-37	8.480E-37	1.647E-36
U-238+D	Th-230	9.999E-01	0.000E+00	2.803E-45	1.359E-43	2.021E-41	5.301E-40	4.314E-39	2.479E-38	1.202E-37	2.542E-37
U-238+D	Ra-226+D	9.999E-01	4.454E-29	6.692E-28	2.108E-25	2.218E-22	8.934E-21	6.222E-20	2.572E-19	8.238E-19	1.388E-18
U-238+D	Pb-210+D	9.999E-01	7.673E-39	2.371E-37	4.524E-34	3.012E-30	2.101E-28	1.790E-27	8.495E-27	3.055E-26	5.429E-26
U-238+D	äDSR(j)		7.106E-18	7.124E-18	7.291E-18	9.191E-18	1.539E-17	2.579E-17	4.332E-17	7.288E-17	9.461E-17
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The DSR includes contributions from associated (half-life ó 180 days) daughters.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 17:27 Page 24
Summary : SMC Maintenance Worker Area 8 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109208.RAD

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13
Pa-231	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10
Pb-210	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13
Ra-226	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11
Ra-228	2.949E+13	1.213E+13	1.155E+13	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14
Th-228	5.460E+12	7.829E+12	2.008E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10
Th-232	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05
U-234	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09
U-235	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06
U-238	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05

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*At specific activity limit

0

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 = 1.000E+03 years

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	1.100E+00	0.000E+00	1.989E-18	*7.232E+13	0.000E+00	*7.232E+13
Pa-231	1.100E+00	1.000E+03	3.145E-17	*4.723E+10	3.145E-17	*4.723E+10
Pb-210	2.240E+01	0.000E+00	2.650E-21	*7.634E+13	0.000E+00	*7.634E+13
Ra-226	2.240E+01	1.000E+03	5.428E-13	*9.885E+11	5.428E-13	*9.885E+11
Ra-228	3.840E+01	4.112 ñ 0.008	3.173E-12	7.878E+12	0.000E+00	*2.726E+14
Th-228	3.840E+01	0.000E+00	4.579E-12	5.460E+12	0.000E+00	*8.195E+14
Th-230	1.580E+01	1.000E+03	2.932E-13	*2.018E+10	2.932E-13	*2.018E+10
Th-232	3.840E+01	1.000E+03	3.354E-11	*1.097E+05	3.354E-11	*1.097E+05
U-234	1.580E+01	1.000E+03	1.416E-15	*6.247E+09	1.416E-15	*6.247E+09
U-235	1.100E+00	1.000E+03	6.532E-19	*2.161E+06	6.532E-19	*2.161E+06
U-238	1.580E+01	1.000E+03	9.461E-17	*3.361E+05	9.461E-17	*3.361E+05
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*At specific activity limit

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

0Nuclide (j)	Parent (i)	THF(i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
			DOSE(j,t), mrem/yr								
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+00	2.187E-18	2.125E-18	1.636E-18	1.195E-19	3.566E-22	1.064E-24	3.176E-27	9.480E-30	0.000E+00
Ac-227	Pa-231	1.000E+00	3.502E-20	1.038E-19	6.491E-19	2.806E-18	5.063E-18	8.765E-18	1.517E-17	2.627E-17	3.456E-17
Ac-227	U-235	1.000E+00	2.477E-25	1.722E-24	7.617E-23	4.360E-21	2.893E-20	8.753E-20	2.167E-19	4.885E-19	7.177E-19
Ac-227	äDOSE(j)		2.223E-18	2.229E-18	2.285E-18	2.930E-18	5.093E-18	8.852E-18	1.539E-17	2.676E-17	3.528E-17
0Pa-231	Pa-231	1.000E+00	1.167E-21	1.171E-21	1.206E-21	1.625E-21	3.154E-21	6.119E-21	1.187E-20	2.304E-20	3.210E-20
Pa-231	U-235	1.000E+00	1.235E-26	3.716E-26	2.680E-25	3.460E-24	2.013E-23	6.523E-23	1.776E-22	4.442E-22	6.884E-22
Pa-231	äDOSE(j)		1.167E-21	1.171E-21	1.206E-21	1.629E-21	3.174E-21	6.185E-21	1.205E-20	2.349E-20	3.278E-20
0Pb-210	Pb-210	1.000E+00	5.935E-20	5.768E-20	4.463E-20	3.433E-21	1.148E-23	3.841E-26	1.285E-28	0.000E+00	0.000E+00
Pb-210	Ra-226	1.000E+00	9.275E-22	2.750E-21	1.718E-20	7.233E-20	1.167E-19	1.797E-19	2.767E-19	4.261E-19	5.288E-19
Pb-210	Th-230	1.000E+00	9.474E-26	6.587E-25	2.911E-23	1.635E-21	1.013E-20	2.845E-20	6.534E-20	1.367E-19	1.935E-19
Pb-210	U-234	1.000E+00	0.000E+00	0.000E+00	9.433E-28	5.954E-25	1.265E-23	6.229E-23	2.066E-22	5.688E-22	9.038E-22
Pb-210	U-238	9.999E-01	0.000E+00	0.000E+00	0.000E+00	4.759E-29	3.320E-27	2.829E-26	1.342E-25	4.827E-25	8.578E-25
Pb-210	äDOSE(j)		6.028E-20	6.043E-20	6.184E-20	7.740E-20	1.269E-19	2.082E-19	3.423E-19	5.634E-19	7.232E-19
0Ra-226	Ra-226	1.000E+00	2.164E-12	2.168E-12	2.202E-12	2.572E-12	3.632E-12	5.129E-12	7.244E-12	1.023E-11	1.216E-11
Ra-226	Th-230	1.000E+00	3.308E-16	9.940E-16	7.080E-15	8.069E-14	3.557E-13	8.741E-13	1.806E-12	3.430E-12	4.632E-12
Ra-226	U-234	1.000E+00	9.928E-22	6.961E-21	3.351E-19	3.677E-17	4.917E-16	2.041E-15	5.985E-15	1.481E-14	2.238E-14
Ra-226	U-238	9.999E-01	7.037E-28	1.057E-26	3.331E-24	3.505E-21	1.412E-19	9.830E-19	4.063E-18	1.302E-17	2.192E-17

Ra-226	äDOSE(j)		2.164E-12	2.169E-12	2.209E-12	2.652E-12	3.988E-12	6.005E-12	9.056E-12	1.367E-11	1.681E-11
0Ra-228	Ra-228	1.000E+00	1.278E-13	1.135E-13	3.919E-14	9.438E-19	5.150E-29	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228	Th-232	1.000E+00	7.858E-15	2.242E-14	9.970E-14	1.722E-13	2.778E-13	4.481E-13	7.227E-13	1.166E-12	1.480E-12
Ra-228	äDOSE(j)		1.356E-13	1.359E-13	1.389E-13	1.722E-13	2.778E-13	4.481E-13	7.227E-13	1.166E-12	1.480E-12
0Th-228	Ra-228	1.000E+00	3.243E-11	7.905E-11	8.311E-11	2.064E-15	1.004E-25	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-228	1.000E+00	1.758E-10	1.226E-10	4.780E-12	3.879E-26	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	1.356E-12	8.332E-12	1.256E-10	2.513E-10	3.613E-10	5.193E-10	7.465E-10	1.073E-09	1.287E-09
Th-228	äDOSE(j)		2.096E-10	2.100E-10	2.135E-10	2.513E-10	3.613E-10	5.193E-10	7.465E-10	1.073E-09	1.287E-09
0Th-230	Th-230	1.000E+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-230	U-234	1.000E+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-230	U-238	9.999E-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
Th-230	äDOSE(j)		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
0Th-232	Th-232	1.000E+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
0U-234	U-234	1.000E+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-234	U-238	9.999E-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
U-234	äDOSE(j)		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
0U-235	U-235	1.000E+00	1.947E-24	1.955E-24	2.026E-24	2.897E-24	6.414E-24	1.420E-23	3.144E-23	6.962E-23	1.036E-22
0U-238	U-238	5.400E-05	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-238	U-238	9.999E-01	1.123E-16	1.126E-16	1.152E-16	1.452E-16	2.430E-16	4.066E-16	6.803E-16	1.139E-15	1.473E-15
U-238	äDOSE(j)		1.123E-16	1.126E-16	1.152E-16	1.452E-16	2.430E-16	4.066E-16	6.803E-16	1.139E-15	1.473E-15
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+00	1.100E+00	1.066E+00	8.000E-01	4.556E-02	7.813E-05	1.340E-07	2.298E-10	3.942E-13	1.632E-14
Ac-227	Pa-231	1.000E+00	0.000E+00	3.447E-02	2.999E-01	1.052E+00	1.092E+00	1.086E+00	1.081E+00	1.075E+00	1.072E+00
Ac-227	U-235	1.000E+00	0.000E+00	3.666E-07	3.341E-05	1.625E-03	6.228E-03	1.084E-02	1.542E-02	1.998E-02	2.225E-02
Ac-227	äS(j):		1.100E+00	1.100E+00	1.100E+00	1.099E+00	1.098E+00	1.097E+00	1.096E+00	1.095E+00	1.094E+00
0Pa-231	Pa-231	1.000E+00	1.100E+00	1.100E+00	1.100E+00	1.097E+00	1.091E+00	1.086E+00	1.080E+00	1.074E+00	1.071E+00
Pa-231	U-235	1.000E+00	0.000E+00	2.327E-05	2.327E-04	2.324E-03	6.955E-03	1.156E-02	1.614E-02	2.070E-02	2.297E-02
Pa-231	äS(j):		1.100E+00	1.100E+00	1.100E+00	1.099E+00	1.098E+00	1.097E+00	1.096E+00	1.095E+00	1.094E+00
0Pb-210	Pb-210	1.000E+00	2.240E+01	2.171E+01	1.641E+01	9.997E-01	1.991E-03	3.967E-06	7.902E-09	1.574E-11	7.025E-13
Pb-210	Ra-226	1.000E+00	0.000E+00	6.854E-01	5.970E+00	2.073E+01	1.993E+01	1.828E+01	1.676E+01	1.537E+01	1.471E+01
Pb-210	Th-230	1.000E+00	0.000E+00	1.053E-04	9.601E-03	4.657E-01	1.727E+00	2.889E+00	3.953E+00	4.926E+00	5.381E+00
Pb-210	U-234	1.000E+00	0.000E+00	3.167E-10	2.955E-07	1.686E-04	2.152E-03	6.321E-03	1.249E-02	2.049E-02	2.512E-02
Pb-210	U-238	9.999E-01	0.000E+00	2.248E-16	2.127E-12	1.341E-08	5.639E-07	2.867E-06	8.109E-06	1.737E-05	2.383E-05
Pb-210	äS(j):		2.240E+01	2.240E+01	2.239E+01	2.220E+01	2.167E+01	2.118E+01	2.073E+01	2.031E+01	2.012E+01
0Ra-226	Ra-226	1.000E+00	2.240E+01	2.239E+01	2.230E+01	2.145E+01	1.967E+01	1.803E+01	1.653E+01	1.516E+01	1.451E+01
Ra-226	Th-230	1.000E+00	0.000E+00	6.843E-03	6.830E-02	6.695E-01	1.923E+00	3.069E+00	4.118E+00	5.078E+00	5.526E+00
Ra-226	U-234	1.000E+00	0.000E+00	3.080E-08	3.076E-06	3.036E-04	2.653E-03	7.159E-03	1.364E-02	2.192E-02	2.668E-02
Ra-226	U-238	9.999E-01	0.000E+00	2.911E-14	2.908E-11	2.879E-08	7.604E-07	3.444E-06	9.251E-06	1.925E-05	2.613E-05
Ra-226	äS(j):		2.240E+01	2.240E+01	2.237E+01	2.212E+01	2.159E+01	2.111E+01	2.066E+01	2.026E+01	2.007E+01
0Ra-228	Ra-228	1.000E+00	3.840E+01	3.404E+01	1.150E+01	2.234E-04	7.557E-15	2.557E-25	8.651E-36	0.000E+00	0.000E+00

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 Ra-228  Th-232  1.000E+00    0.000E+00 4.361E+00 2.690E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01
 Ra-228  äS(j):              3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01
0Th-228  Ra-228  1.000E+00    0.000E+00 1.096E+01 1.570E+01 3.347E-04 1.133E-14 3.832E-25 1.296E-35 0.000E+00 0.000E+00
 Th-228  Th-228  1.000E+00    3.840E+01 2.673E+01 1.025E+00 7.065E-15 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 Th-228  Th-232  1.000E+00    0.000E+00 7.159E-01 2.167E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01
 Th-228  äS(j):              3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01
0Th-230  Th-230  1.000E+00    1.580E+01 1.580E+01 1.580E+01 1.579E+01 1.576E+01 1.573E+01 1.570E+01 1.567E+01 1.566E+01
 Th-230  U-234   1.000E+00    0.000E+00 1.422E-04 1.422E-03 1.421E-02 4.259E-02 7.090E-02 9.914E-02 1.273E-01 1.414E-01
 Th-230  U-238   9.999E-01    0.000E+00 2.016E-10 2.016E-08 2.015E-06 1.812E-05 5.030E-05 9.850E-05 1.627E-04 2.008E-04
 Th-230  äS(j):              1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01
0Th-232  Th-232  1.000E+00    3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01 3.840E+01
0U-234   U-234   1.000E+00    1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.579E+01 1.578E+01 1.577E+01 1.576E+01 1.575E+01
 U-234   U-238   9.999E-01    0.000E+00 4.479E-05 4.479E-04 4.478E-03 1.343E-02 2.238E-02 3.132E-02 4.025E-02 4.472E-02
 U-234   äS(j):              1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01
0U-235   U-235   1.000E+00    1.100E+00 1.100E+00 1.100E+00 1.100E+00 1.100E+00 1.100E+00 1.100E+00 1.100E+00 1.100E+00
0U-238   U-238   5.400E-05    8.532E-04 8.532E-04 8.532E-04 8.532E-04 8.532E-04 8.531E-04 8.531E-04 8.531E-04 8.530E-04
 U-238   U-238   9.999E-01    1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01
 U-238   äS(j):              1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01 1.580E+01
 ÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ   ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ
 THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time =   68.62 seconds
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Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary 6
Summary of Pathway Selections 12
Contaminated Zone and Total Dose Summary 13
Total Dose Components
Time = 0.000E+00 14
Time = 1.000E+00 15
Time = 1.000E+01 16
Time = 1.000E+02 17
Time = 3.000E+02 18
Time = 5.000E+02 19
Time = 7.000E+02 20
Time = 9.000E+02 21
Time = 1.000E+03 22
Dose/Source Ratios Summed Over All Pathways 23
Single Radionuclide Soil Guidelines 24
Dose Per Nuclide Summed Over All Pathways 25
Soil Concentration Per Nuclide 26

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)

A-1	Pb-212	(Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214	(Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)
A-1	Po-210	(Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211	(Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214	(Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215	(Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216	(Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218	(Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)
A-1	Ra-223	(Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224	(Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226	(Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219	(Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220	(Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222	(Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227	(Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228	(Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230	(Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231	(Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232	(Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234	(Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207	(Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208	(Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210	(Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234	(Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235	(Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238	(Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D		6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231		1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D		2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D		8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D		5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D		3.454E-01	3.420E-01	DCF2(6)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)

```
B-1  ³ U-238+D                                                    ³ 1.180E-01 ³ 1.180E-01 ³ DCF2( 12)
     ³                                                            ³           ³           ³
D-1  ³ Dose conversion factors for ingestion, mrem/pCi:            ³           ³           ³
D-1  ³ Ac-227+D                                                    ³ 1.480E-02 ³ 1.410E-02 ³ DCF3(  1)
D-1  ³ Pa-231                                                      ³ 1.060E-02 ³ 1.060E-02 ³ DCF3(  2)
D-1  ³ Pb-210+D                                                    ³ 7.276E-03 ³ 5.370E-03 ³ DCF3(  3)
D-1  ³ Ra-226+D                                                    ³ 1.321E-03 ³ 1.320E-03 ³ DCF3(  4)
D-1  ³ Ra-228+D                                                    ³ 1.442E-03 ³ 1.440E-03 ³ DCF3(  5)
D-1  ³ Th-228+D                                                    ³ 8.086E-04 ³ 3.960E-04 ³ DCF3(  6)
D-1  ³ Th-230                                                      ³ 5.480E-04 ³ 5.480E-04 ³ DCF3(  7)
D-1  ³ Th-232                                                      ³ 2.730E-03 ³ 2.730E-03 ³ DCF3(  8)
D-1  ³ U-234                                                       ³ 2.830E-04 ³ 2.830E-04 ³ DCF3(  9)
D-1  ³ U-235+D                                                     ³ 2.673E-04 ³ 2.660E-04 ³ DCF3( 10)
D-1  ³ U-238                                                       ³ 2.550E-04 ³ 2.550E-04 ³ DCF3( 11)
D-1  ³ U-238+D                                                     ³ 2.687E-04 ³ 2.550E-04 ³ DCF3( 12)
     ³                                                            ³           ³           ³
D-34 ³ Food transfer factors:                                      ³           ³           ³
D-34 ³ Ac-227+D  , plant/soil concentration ratio, dimensionless   ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  1,1)
D-34 ³ Ac-227+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,2)
D-34 ³ Ac-227+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,3)
D-34 ³                                                             ³           ³           ³
D-34 ³ Pa-231    , plant/soil concentration ratio, dimensionless   ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  2,1)
D-34 ³ Pa-231    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 5.000E-03 ³ 5.000E-03 ³ RTF(  2,2)
D-34 ³ Pa-231    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  2,3)
D-34 ³                                                             ³           ³           ³
D-34 ³ Pb-210+D  , plant/soil concentration ratio, dimensionless   ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  3,1)
D-34 ³ Pb-210+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 8.000E-04 ³ 8.000E-04 ³ RTF(  3,2)
D-34 ³ Pb-210+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 3.000E-04 ³ 3.000E-04 ³ RTF(  3,3)
D-34 ³                                                             ³           ³           ³
D-34 ³ Ra-226+D  , plant/soil concentration ratio, dimensionless   ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  4,1)
D-34 ³ Ra-226+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,2)
D-34 ³ Ra-226+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,3)
D-34 ³                                                             ³           ³           ³
D-34 ³ Ra-228+D  , plant/soil concentration ratio, dimensionless   ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  5,1)
D-34 ³ Ra-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,2)
D-34 ³ Ra-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,3)
D-34 ³                                                             ³           ³           ³
D-34 ³ Th-228+D  , plant/soil concentration ratio, dimensionless   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  6,1)
D-34 ³ Th-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  6,2)
D-34 ³ Th-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  6,3)
D-34 ³                                                             ³           ³           ³
D-34 ³ Th-230    , plant/soil concentration ratio, dimensionless   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  7,1)
D-34 ³ Th-230    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)   ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  7,2)
D-34 ³ Th-230    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)    ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  7,3)
D-34 ³                                                             ³           ³           ³
```

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(8,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(8,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(8,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(11,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(11,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(12,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(12,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(12,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(4,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(4,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(7,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(7,2)
D-5				
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(8,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(8,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(9,1)

D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(11,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(11,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(12,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(12,2)

#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.

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)	1.700E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	4.500E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	1.300E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+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)	1.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	5.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	7.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	9.000E+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): Ac-227	7.100E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Pa-231	7.100E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.320E+02	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.320E+02	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	1.854E+02	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	1.854E+02	0.000E+00	---	S1(6)

R012	Initial principal radionuclide (pCi/g):	Th-230	1.019E+02	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g):	Th-232	1.854E+02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g):	U-234	1.019E+02	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g):	U-235	7.100E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g):	U-238	1.019E+02	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L):	Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L):	Pa-231	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L):	Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L):	Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L):	Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L):	Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L):	Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L):	Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L):	U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L):	U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L):	U-238	not used	0.000E+00	---	W1(11)
R013	Cover depth (m)		1.830E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)		1.920E+00	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)		1.500E-04	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)		2.240E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)		1.500E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity		3.600E-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-02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter		4.430E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)		4.300E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)		not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient		7.300E-01	5.000E-01	---	EVAPTR

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Precipitation (m/yr)	1.050E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	9.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	2.770E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.510E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.830E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	9.500E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.000E-03	2.000E-02	---	HGWT

R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	2	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.500E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.696E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.600E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.890E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.060E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	4.750E+03	1.000E+01	---	HCUZ(1)
R015	Unsat. zone 2, thickness (m)	1.900E+00	0.000E+00	---	H(2)
R015	Unsat. zone 2, soil density (g/cm**3)	1.510E+00	1.500E+00	---	DENSUZ(2)
R015	Unsat. zone 2, total porosity	4.300E-01	4.000E-01	---	TPUZ(2)
R015	Unsat. zone 2, effective porosity	3.830E-01	2.000E-01	---	EPUZ(2)
R015	Unsat. zone 2, field capacity	2.000E-01	2.000E-01	---	FCUZ(2)
R015	Unsat. zone 2, soil-specific b parameter	4.050E+00	5.300E+00	---	BUZ(2)
R015	Unsat. zone 2, hydraulic conductivity (m/yr)	9.500E+03	1.000E+01	---	HCUZ(2)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Unsaturated zone 2 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,2)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.248E-06	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,1)
R016	Unsaturated zone 2 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,2)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.112E-06	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,1)
R016	Unsaturated zone 2 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,2)

R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.041E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	1.606E+05	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.751E-08	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	1.956E+04	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.438E-07	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	6.180E+04	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.551E-08	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	6.180E+04	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.551E-08	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	6.180E+04	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.551E-08	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

Site-Specific Parameter Summary (continued)

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

R016	Distribution coefficients for U-234			
R016	Contaminated zone (cm**3/g)	3.087E+05	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.111E-09	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	3.087E+05	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.111E-09	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	3.087E+05	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.111E-09	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	3.000E-05	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	2.700E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.000E-03	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)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
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)	2.000E-01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	2.300E+00	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	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	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)

R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV

R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	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	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g	
Area: 170.00 square meters	Ac-227	7.100E+00

Thickness:	4.50 meters	Pa-231	7.100E+00
Cover Depth:	1.83 meters	Pb-210	1.320E+02
		Ra-226	1.320E+02
		Ra-228	1.854E+02
		Th-228	1.854E+02
		Th-230	1.019E+02
		Th-232	1.854E+02
		U-234	1.019E+02
		U-235	7.100E+00
		U-238	1.019E+02

0

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

t (years):	0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
TDOSE(t):	1.025E-09	1.027E-09	1.044E-09	1.230E-09	1.769E-09	2.545E-09	3.662E-09	5.269E-09	6.320E-09
M(t):	4.102E-11	4.109E-11	4.177E-11	4.920E-11	7.077E-11	1.018E-10	1.465E-10	2.108E-10	2.528E-10

0Maximum TDOSE(t): 6.320E-09 mrem/yr at t = 1.000E+03 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 = 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	1.412E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	2.336E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.498E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.275E-11	0.0124	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	1.572E-10	0.1533	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	8.490E-10	0.8279	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.133E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	6.585E-12	0.0064	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	6.403E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.424E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	7.241E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	1.025E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

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.

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	0.000E+00	0.0000	1.412E-17	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	0.000E+00	0.0000	2.336E-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	0.000E+00	0.0000	3.498E-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	0.000E+00	0.0000	1.275E-11	0.0124
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	0.000E+00	0.0000	1.572E-10	0.1533
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	0.000E+00	0.0000	8.490E-10	0.8279
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.133E-15	0.0000
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	6.585E-12	0.0064
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.403E-21	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	0.000E+00	0.0000	1.424E-23	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.241E-16	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.025E-09	1.0000

0*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
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	1.371E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	6.778E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.399E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.277E-11	0.0124	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	3.822E-10	0.3721	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	5.920E-10	0.5762	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	6.411E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	4.034E-11	0.0393	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	4.490E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	2.397E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	7.259E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	1.027E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	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	0.000E+00	0.0000	1.371E-17	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	0.000E+00	0.0000	6.778E-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	0.000E+00	0.0000	3.399E-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	0.000E+00	0.0000	1.277E-11	0.0124
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	0.000E+00	0.0000	3.822E-10	0.3721
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	0.000E+00	0.0000	5.920E-10	0.5762
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.411E-15	0.0000
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	4.034E-11	0.0393
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.490E-20	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	0.000E+00	0.0000	2.397E-23	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.259E-16	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.027E-09	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 17:02 Page 16

Summary : SMC Maintenance Worker Area 7 Controls in Place Restricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109207.RAD

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

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Ac-227	1.056E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	4.197E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	2.630E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.297E-11	0.0124	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	4.014E-10	0.3844	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	2.308E-11	0.0221	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	4.566E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	6.068E-10	0.5810	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	2.161E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	5.064E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	7.430E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	1.044E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	1.056E-17	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	0.000E+00	0.0000	4.197E-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	0.000E+00	0.0000	2.630E-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	0.000E+00	0.0000	1.297E-11	0.0124
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	0.000E+00	0.0000	4.014E-10	0.3844
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	0.000E+00	0.0000	2.308E-11	0.0221
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.566E-14	0.0000

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	6.068E-10	0.5810
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.161E-18	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	0.000E+00	0.0000	5.064E-22	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.430E-16	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.044E-09	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T½ Limit = 180 days 07/25/2009 17:02 Page 17

Summary : SMC Maintenance Worker Area 7 Controls in Place Restricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109207.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	7.713E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	1.812E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	2.023E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.516E-11	0.0123	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	9.969E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	1.873E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	5.204E-13	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.214E-09	0.9872	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	2.371E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	2.818E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	9.366E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	1.230E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	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	0.000E+00	0.0000	7.713E-19	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	0.000E+00	0.0000	1.812E-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	0.000E+00	0.0000	2.023E-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	0.000E+00	0.0000	1.516E-11	0.0123
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	0.000E+00	0.0000	9.969E-15	0.0000
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	0.000E+00	0.0000	1.873E-25	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.204E-13	0.0004
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	1.214E-09	0.9872
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.371E-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	0.000E+00	0.0000	2.818E-20	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.366E-16	0.0000

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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.230E-09	1.0000

0*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 = 3.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Ac-227	2.302E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	3.270E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	6.767E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.141E-11	0.0121	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	4.849E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.295E-12	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.746E-09	0.9866	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	3.171E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.869E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.568E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	1.769E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	2.302E-21	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	0.000E+00	0.0000	3.270E-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	0.000E+00	0.0000	6.767E-23	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	0.000E+00	0.0000	2.141E-11	0.0121
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	0.000E+00	0.0000	4.849E-25	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.295E-12	0.0013
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	1.746E-09	0.9866
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.171E-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	0.000E+00	0.0000	1.869E-19	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.568E-15	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.769E-09	1.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Maintenance Worker Area 7 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109207.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 = 5.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0 Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Ac-227	6.869E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	5.661E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	2.264E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	3.024E-11	0.0119	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	5.639E-12	0.0022	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	2.509E-09	0.9859	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	1.317E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	5.655E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	2.629E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	2.545E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years
0 Water Dependent Pathways

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	6.869E-24	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	0.000E+00	0.0000	5.661E-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	0.000E+00	0.0000	2.264E-25	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	0.000E+00	0.0000	3.024E-11	0.0119
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.639E-12	0.0022
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	2.509E-09	0.9859
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.317E-14	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	0.000E+00	0.0000	5.655E-19	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.629E-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	2.545E-09	1.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Maintenance Worker Area 7 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109207.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 = 7.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0 Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Ac-227	2.050E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	9.801E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	7.572E-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	0.000E+00	0.0000
Ra-226	4.271E-11	0.0117	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.165E-11	0.0032	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	3.608E-09	0.9851	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	3.861E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.400E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	4.414E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	3.662E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

As mrem/yr and Fraction of Total Dose At t = 7.000E+02 years

0 Water Dependent Pathways

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	2.050E-26	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	0.000E+00	0.0000	9.801E-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	0.000E+00	0.0000	7.572E-28	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	0.000E+00	0.0000	4.271E-11	0.0117
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.165E-11	0.0032
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	3.608E-09	0.9851
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.861E-14	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	0.000E+00	0.0000	1.400E-18	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.414E-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	3.662E-09	1.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Maintenance Worker Area 7 Controls in Place Restricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109207.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 = 9.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0 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.
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Ac-227	6.119E-29	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	1.697E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	6.033E-11	0.0114	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.213E-11	0.0042	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	5.186E-09	0.9843	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	9.556E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	3.157E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	7.428E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	5.269E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.000E+02 years

0 Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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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	0.000E+00	0.0000	6.119E-29	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	0.000E+00	0.0000	1.697E-16	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	6.033E-11	0.0114
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.213E-11	0.0042
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	5.186E-09	0.9843
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.556E-14	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	0.000E+00	0.0000	3.157E-18	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.428E-15	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.269E-09	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 17:02 Page 22
Summary : SMC Maintenance Worker Area 7 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109207.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

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.
ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	2.233E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	7.170E-11	0.0113	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.988E-11	0.0047	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	6.219E-09	0.9839	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	1.444E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	4.638E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	9.642E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	6.320E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	2.233E-16	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	7.170E-11	0.0113
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.988E-11	0.0047
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	6.219E-09	0.9839
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.444E-13	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	0.000E+00	0.0000	4.638E-18	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.642E-15	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.320E-09	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T½ Limit = 180 days 07/25/2009 17:02 Page 23
Summary : SMC Maintenance Worker Area 7 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109207.RAD

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

0 Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
Ac-227+D	Ac-227+D	1.000E+00	1.989E-18	1.932E-18	1.487E-18	1.086E-19	3.242E-22	9.674E-25	2.887E-27	8.618E-30	4.709E-31
0Pa-231	Pa-231	1.000E+00	1.061E-21	1.064E-21	1.096E-21	1.477E-21	2.867E-21	5.563E-21	1.079E-20	2.095E-20	2.918E-20
Pa-231	Ac-227+D	1.000E+00	3.184E-20	9.441E-20	5.901E-19	2.551E-18	4.603E-18	7.968E-18	1.379E-17	2.388E-17	3.142E-17
Pa-231	äDSR(j)		3.290E-20	9.547E-20	5.912E-19	2.552E-18	4.606E-18	7.974E-18	1.380E-17	2.390E-17	3.145E-17
0Pb-210+D	Pb-210+D	1.000E+00	2.650E-21	2.575E-21	1.993E-21	1.532E-22	5.126E-25	1.715E-27	5.736E-30	1.919E-32	1.110E-33
0Ra-226+D	Ra-226+D	1.000E+00	9.661E-14	9.678E-14	9.829E-14	1.148E-13	1.622E-13	2.291E-13	3.236E-13	4.570E-13	5.432E-13
Ra-226+D	Pb-210+D	1.000E+00	4.140E-23	1.228E-22	7.671E-22	3.229E-21	5.212E-21	8.027E-21	1.236E-20	1.904E-20	2.362E-20
Ra-226+D	äDSR(j)		9.661E-14	9.678E-14	9.829E-14	1.148E-13	1.622E-13	2.291E-13	3.236E-13	4.570E-13	5.432E-13

0Ra-228+D	Ra-228+D	1.000E+00	3.327E-15	2.956E-15	1.021E-15	2.458E-20	1.341E-30	7.321E-41	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	8.445E-13	2.059E-12	2.164E-12	5.375E-17	2.614E-27	1.272E-37	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	äDSR(j)		8.478E-13	2.062E-12	2.165E-12	5.377E-17	2.616E-27	1.272E-37	0.000E+00	0.000E+00	0.000E+00
0Th-228+D	Th-228+D	1.000E+00	4.579E-12	3.193E-12	1.245E-13	1.010E-27	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	9.156E-35	9.205E-35	9.662E-35	1.567E-34	4.594E-34	1.346E-33	3.946E-33	1.157E-32	1.980E-32
Th-230	Ra-226+D	1.000E+00	2.094E-17	6.291E-17	4.481E-16	5.107E-15	2.252E-14	5.534E-14	1.143E-13	2.171E-13	2.933E-13
Th-230	Pb-210+D	1.000E+00	5.996E-27	4.169E-26	1.842E-24	1.035E-22	6.412E-22	1.801E-21	4.136E-21	8.655E-21	1.225E-20
Th-230	äDSR(j)		2.094E-17	6.291E-17	4.481E-16	5.107E-15	2.252E-14	5.534E-14	1.143E-13	2.171E-13	2.933E-13
0Th-232	Th-232	1.000E+00	2.329E-38	2.343E-38	2.472E-38	4.239E-38	1.405E-37	4.655E-37	1.542E-36	5.111E-36	9.304E-36
Th-232	Ra-228+D	1.000E+00	2.046E-16	5.838E-16	2.596E-15	4.485E-15	7.234E-15	1.167E-14	1.882E-14	3.036E-14	3.855E-14
Th-232	Th-228+D	1.000E+00	3.531E-14	2.170E-13	3.270E-12	6.545E-12	9.408E-12	1.352E-11	1.944E-11	2.794E-11	3.350E-11
Th-232	äDSR(j)		3.552E-14	2.176E-13	3.273E-12	6.549E-12	9.415E-12	1.354E-11	1.946E-11	2.797E-11	3.354E-11
0U-234	U-234	1.000E+00	2.179E-36	2.191E-36	2.304E-36	3.808E-36	1.164E-35	3.555E-35	1.086E-34	3.318E-34	5.800E-34
U-234	Th-230	1.000E+00	4.125E-40	1.243E-39	9.133E-39	1.419E-37	1.244E-36	6.076E-36	2.494E-35	9.402E-35	1.789E-34
U-234	Ra-226+D	1.000E+00	6.283E-23	4.406E-22	2.121E-20	2.327E-18	3.112E-17	1.292E-16	3.789E-16	9.378E-16	1.417E-15
U-234	Pb-210+D	1.000E+00	1.352E-32	2.018E-31	5.970E-29	3.769E-26	8.008E-25	3.943E-24	1.308E-23	3.601E-23	5.722E-23
U-234	äDSR(j)		6.283E-23	4.406E-22	2.121E-20	2.327E-18	3.112E-17	1.292E-16	3.789E-16	9.378E-16	1.417E-15
0U-235+D	U-235+D	1.000E+00	1.770E-24	1.777E-24	1.842E-24	2.634E-24	5.831E-24	1.291E-23	2.859E-23	6.330E-23	9.419E-23
U-235+D	Pa-231	1.000E+00	1.123E-26	3.378E-26	2.436E-25	3.146E-24	1.830E-23	5.930E-23	1.615E-22	4.039E-22	6.259E-22
U-235+D	Ac-227+D	1.000E+00	2.252E-25	1.566E-24	6.924E-23	3.963E-21	2.630E-20	7.957E-20	1.970E-19	4.441E-19	6.525E-19
U-235+D	äDSR(j)		2.006E-24	3.376E-24	7.133E-23	3.969E-21	2.633E-20	7.964E-20	1.972E-19	4.446E-19	6.532E-19
0U-238	U-238	5.400E-05	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
0U-238+D	U-238+D	9.999E-01	7.106E-18	7.124E-18	7.291E-18	9.191E-18	1.538E-17	2.573E-17	4.306E-17	7.207E-17	9.324E-17
U-238+D	U-234	9.999E-01	3.091E-42	9.319E-42	6.858E-41	1.085E-39	9.916E-39	5.047E-38	2.159E-37	8.482E-37	1.647E-36
U-238+D	Th-230	9.999E-01	0.000E+00	2.803E-45	1.359E-43	2.021E-41	5.301E-40	4.315E-39	2.480E-38	1.202E-37	2.542E-37
U-238+D	Ra-226+D	9.999E-01	4.454E-29	6.692E-28	2.108E-25	2.218E-22	8.935E-21	6.222E-20	2.572E-19	8.240E-19	1.388E-18
U-238+D	Pb-210+D	9.999E-01	7.673E-39	2.371E-37	4.524E-34	3.012E-30	2.102E-28	1.790E-27	8.497E-27	3.056E-26	5.430E-26
U-238+D	äDSR(j)		7.106E-18	7.124E-18	7.291E-18	9.191E-18	1.539E-17	2.580E-17	4.332E-17	7.289E-17	9.463E-17
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The DSR includes contributions from associated (half-life ó 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
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Ac-227	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13
Pa-231	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10
Pb-210	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13
Ra-226	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11
Ra-228	2.949E+13	1.213E+13	1.155E+13	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14
Th-228	5.460E+12	7.829E+12	2.008E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10
Th-232	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05
U-234	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09
U-235	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06
U-238	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05

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*At specific activity limit

0

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 = 1.000E+03 years

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	7.100E+00	0.000E+00	1.989E-18	*7.232E+13	0.000E+00	*7.232E+13
Pa-231	7.100E+00	1.000E+03	3.145E-17	*4.723E+10	3.145E-17	*4.723E+10
Pb-210	1.320E+02	0.000E+00	2.650E-21	*7.634E+13	0.000E+00	*7.634E+13
Ra-226	1.320E+02	1.000E+03	5.432E-13	*9.885E+11	5.432E-13	*9.885E+11
Ra-228	1.854E+02	4.112 ñ 0.008	3.173E-12	7.878E+12	0.000E+00	*2.726E+14
Th-228	1.854E+02	0.000E+00	4.579E-12	5.460E+12	0.000E+00	*8.195E+14
Th-230	1.019E+02	1.000E+03	2.933E-13	*2.018E+10	2.933E-13	*2.018E+10
Th-232	1.854E+02	1.000E+03	3.354E-11	*1.097E+05	3.354E-11	*1.097E+05
U-234	1.019E+02	1.000E+03	1.417E-15	*6.247E+09	1.417E-15	*6.247E+09
U-235	7.100E+00	1.000E+03	6.532E-19	*2.161E+06	6.532E-19	*2.161E+06
U-238	1.019E+02	1.000E+03	9.463E-17	*3.361E+05	9.463E-17	*3.361E+05
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*At specific activity limit

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

0Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+00	1.412E-17	1.371E-17	1.056E-17	7.713E-19	2.302E-21	6.869E-24	2.050E-26	6.119E-29	0.000E+00
Ac-227	Pa-231	1.000E+00	2.260E-19	6.703E-19	4.189E-18	1.811E-17	3.268E-17	5.657E-17	9.793E-17	1.695E-16	2.231E-16
Ac-227	U-235	1.000E+00	1.599E-24	1.112E-23	4.916E-22	2.814E-20	1.867E-19	5.650E-19	1.399E-18	3.153E-18	4.633E-18
Ac-227	äDOSE(j)		1.435E-17	1.439E-17	1.475E-17	1.891E-17	3.287E-17	5.714E-17	9.933E-17	1.727E-16	2.277E-16
0Pa-231	Pa-231	1.000E+00	7.531E-21	7.556E-21	7.784E-21	1.049E-20	2.036E-20	3.950E-20	7.664E-20	1.487E-19	2.072E-19
Pa-231	U-235	1.000E+00	7.971E-26	2.398E-25	1.730E-24	2.234E-23	1.299E-22	4.210E-22	1.146E-21	2.867E-21	4.444E-21
Pa-231	äDOSE(j)		7.531E-21	7.556E-21	7.786E-21	1.051E-20	2.049E-20	3.992E-20	7.779E-20	1.516E-19	2.116E-19
0Pb-210	Pb-210	1.000E+00	3.498E-19	3.399E-19	2.630E-19	2.023E-20	6.767E-23	2.264E-25	7.572E-28	0.000E+00	0.000E+00
Pb-210	Ra-226	1.000E+00	5.465E-21	1.621E-20	1.013E-19	4.263E-19	6.880E-19	1.060E-18	1.632E-18	2.513E-18	3.118E-18
Pb-210	Th-230	1.000E+00	6.110E-25	4.248E-24	1.877E-22	1.055E-20	6.534E-20	1.835E-19	4.215E-19	8.820E-19	1.248E-18
Pb-210	U-234	1.000E+00	0.000E+00	0.000E+00	6.084E-27	3.840E-24	8.160E-23	4.018E-22	1.333E-21	3.670E-21	5.831E-21
Pb-210	U-238	9.999E-01	0.000E+00	0.000E+00	0.000E+00	3.069E-28	2.142E-26	1.825E-25	8.658E-25	3.114E-24	5.534E-24
Pb-210	äDOSE(j)		3.552E-19	3.561E-19	3.645E-19	4.571E-19	7.535E-19	1.243E-18	2.055E-18	3.398E-18	4.372E-18
0Ra-226	Ra-226	1.000E+00	1.275E-11	1.277E-11	1.297E-11	1.516E-11	2.141E-11	3.024E-11	4.271E-11	6.033E-11	7.170E-11
Ra-226	Th-230	1.000E+00	2.133E-15	6.411E-15	4.566E-14	5.204E-13	2.295E-12	5.639E-12	1.165E-11	2.213E-11	2.988E-11
Ra-226	U-234	1.000E+00	6.403E-21	4.490E-20	2.161E-18	2.371E-16	3.171E-15	1.317E-14	3.861E-14	9.556E-14	1.444E-13
Ra-226	U-238	9.999E-01	4.538E-27	6.819E-26	2.149E-23	2.260E-20	9.105E-19	6.341E-18	2.621E-17	8.396E-17	1.414E-16

Ra-226	äDOSE(j)		1.275E-11	1.278E-11	1.302E-11	1.568E-11	2.371E-11	3.589E-11	5.440E-11	8.255E-11	1.017E-10
0Ra-228	Ra-228	1.000E+00	6.168E-13	5.481E-13	1.892E-13	4.557E-18	2.487E-28	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228	Th-232	1.000E+00	3.794E-14	1.082E-13	4.813E-13	8.315E-13	1.341E-12	2.163E-12	3.489E-12	5.628E-12	7.148E-12
Ra-228	äDOSE(j)		6.547E-13	6.563E-13	6.706E-13	8.315E-13	1.341E-12	2.163E-12	3.489E-12	5.628E-12	7.148E-12
0Th-228	Ra-228	1.000E+00	1.566E-10	3.817E-10	4.013E-10	9.965E-15	4.847E-25	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-228	1.000E+00	8.490E-10	5.920E-10	2.308E-11	1.873E-25	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	6.547E-12	4.023E-11	6.063E-10	1.213E-09	1.744E-09	2.507E-09	3.604E-09	5.181E-09	6.212E-09
Th-228	äDOSE(j)		1.012E-09	1.014E-09	1.031E-09	1.213E-09	1.744E-09	2.507E-09	3.604E-09	5.181E-09	6.212E-09
0Th-230	Th-230	1.000E+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-230	U-234	1.000E+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-230	U-238	9.999E-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
Th-230	äDOSE(j)		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
0Th-232	Th-232	1.000E+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
0U-234	U-234	1.000E+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-234	U-238	9.999E-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
U-234	äDOSE(j)		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
0U-235	U-235	1.000E+00	1.257E-23	1.262E-23	1.308E-23	1.870E-23	4.140E-23	9.167E-23	2.030E-22	4.494E-22	6.687E-22
0U-238	U-238	5.400E-05	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-238	U-238	9.999E-01	7.241E-16	7.259E-16	7.430E-16	9.366E-16	1.567E-15	2.622E-15	4.388E-15	7.344E-15	9.501E-15
U-238	äDOSE(j)		7.241E-16	7.259E-16	7.430E-16	9.366E-16	1.567E-15	2.622E-15	4.388E-15	7.344E-15	9.501E-15
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THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+00	7.100E+00	6.877E+00	5.164E+00	2.940E-01	5.043E-04	8.649E-07	1.483E-09	2.544E-12	1.054E-13
Ac-227	Pa-231	1.000E+00	0.000E+00	2.225E-01	1.936E+00	6.792E+00	7.048E+00	7.012E+00	6.975E+00	6.938E+00	6.920E+00
Ac-227	U-235	1.000E+00	0.000E+00	2.366E-06	2.156E-04	1.049E-02	4.020E-02	6.995E-02	9.954E-02	1.290E-01	1.436E-01
Ac-227	äS(j):		7.100E+00	7.100E+00	7.100E+00	7.096E+00	7.089E+00	7.082E+00	7.075E+00	7.067E+00	7.064E+00
0Pa-231	Pa-231	1.000E+00	7.100E+00	7.100E+00	7.098E+00	7.081E+00	7.044E+00	7.007E+00	6.971E+00	6.934E+00	6.916E+00
Pa-231	U-235	1.000E+00	0.000E+00	1.502E-04	1.502E-03	1.500E-02	4.489E-02	7.462E-02	1.042E-01	1.336E-01	1.483E-01
Pa-231	äS(j):		7.100E+00	7.100E+00	7.100E+00	7.096E+00	7.089E+00	7.082E+00	7.075E+00	7.068E+00	7.064E+00
0Pb-210	Pb-210	1.000E+00	1.320E+02	1.280E+02	9.672E+01	5.891E+00	1.174E-02	2.338E-05	4.656E-08	9.275E-11	4.140E-12
Pb-210	Ra-226	1.000E+00	0.000E+00	4.039E+00	3.518E+01	1.222E+02	1.175E+02	1.078E+02	9.881E+01	9.061E+01	8.677E+01
Pb-210	Th-230	1.000E+00	0.000E+00	6.789E-04	6.192E-02	3.004E+00	1.114E+01	1.864E+01	2.550E+01	3.178E+01	3.472E+01
Pb-210	U-234	1.000E+00	0.000E+00	2.043E-09	1.906E-06	1.088E-03	1.388E-02	4.077E-02	8.057E-02	1.322E-01	1.621E-01
Pb-210	U-238	9.999E-01	0.000E+00	1.450E-15	1.372E-11	8.646E-08	3.637E-06	1.849E-05	5.231E-05	1.121E-04	1.537E-04
Pb-210	äS(j):		1.320E+02	1.320E+02	1.320E+02	1.311E+02	1.287E+02	1.264E+02	1.244E+02	1.225E+02	1.216E+02
0Ra-226	Ra-226	1.000E+00	1.320E+02	1.319E+02	1.314E+02	1.264E+02	1.159E+02	1.063E+02	9.747E+01	8.938E+01	8.559E+01
Ra-226	Th-230	1.000E+00	0.000E+00	4.414E-02	4.405E-01	4.318E+00	1.240E+01	1.980E+01	2.657E+01	3.276E+01	3.565E+01
Ra-226	U-234	1.000E+00	0.000E+00	1.987E-07	1.984E-05	1.958E-03	1.711E-02	4.618E-02	8.797E-02	1.414E-01	1.721E-01
Ra-226	U-238	9.999E-01	0.000E+00	1.877E-13	1.875E-10	1.857E-07	4.904E-06	2.222E-05	5.967E-05	1.242E-04	1.685E-04
Ra-226	äS(j):		1.320E+02	1.320E+02	1.319E+02	1.307E+02	1.283E+02	1.261E+02	1.241E+02	1.223E+02	1.214E+02
0Ra-228	Ra-228	1.000E+00	1.854E+02	1.643E+02	5.554E+01	1.078E-03	3.649E-14	1.235E-24	4.178E-35	0.000E+00	0.000E+00

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 Ra-228  Th-232  1.000E+00    0.000E+00 2.105E+01 1.299E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02
 Ra-228  äS(j):              1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02
0Th-228  Ra-228  1.000E+00    0.000E+00 5.289E+01 7.581E+01 1.616E-03 5.468E-14 1.850E-24 6.261E-35 0.000E+00 0.000E+00
 Th-228  Th-228  1.000E+00    1.854E+02 1.290E+02 4.950E+00 3.411E-14 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 Th-228  Th-232  1.000E+00    0.000E+00 3.457E+00 1.046E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02
 Th-228  äS(j):              1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02
0Th-230  Th-230  1.000E+00    1.019E+02 1.019E+02 1.019E+02 1.018E+02 1.016E+02 1.014E+02 1.013E+02 1.011E+02 1.010E+02
 Th-230  U-234   1.000E+00    0.000E+00 9.173E-04 9.172E-03 9.167E-02 2.747E-01 4.573E-01 6.394E-01 8.212E-01 9.119E-01
 Th-230  U-238   9.999E-01    0.000E+00 1.300E-09 1.300E-07 1.300E-05 1.169E-04 3.244E-04 6.353E-04 1.049E-03 1.295E-03
 Th-230  äS(j):              1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02
0Th-232  Th-232  1.000E+00    1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02 1.854E+02
0U-234   U-234   1.000E+00    1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.018E+02 1.018E+02 1.017E+02 1.016E+02 1.016E+02
 U-234   U-238   9.999E-01    0.000E+00 2.889E-04 2.889E-03 2.888E-02 8.662E-02 1.443E-01 2.020E-01 2.596E-01 2.885E-01
 U-234   äS(j):              1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02
0U-235   U-235   1.000E+00    7.100E+00 7.100E+00 7.100E+00 7.100E+00 7.100E+00 7.100E+00 7.100E+00 7.100E+00 7.100E+00
0U-238   U-238   5.400E-05    5.503E-03 5.503E-03 5.503E-03 5.503E-03 5.503E-03 5.503E-03 5.503E-03 5.503E-03 5.503E-03
 U-238   U-238   9.999E-01    1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02
 U-238   äS(j):              1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02 1.019E+02
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 THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time =   68.53 seconds
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Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary 6
Summary of Pathway Selections 12
Contaminated Zone and Total Dose Summary 13
Total Dose Components
Time = 0.000E+00 14
Time = 1.000E+00 15
Time = 1.000E+01 16
Time = 1.000E+02 17
Time = 3.000E+02 18
Time = 5.000E+02 19
Time = 7.000E+02 20
Time = 9.000E+02 21
Time = 1.000E+03 22
Dose/Source Ratios Summed Over All Pathways 23
Single Radionuclide Soil Guidelines 24
Dose Per Nuclide Summed Over All Pathways 25
Soil Concentration Per Nuclide 26

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)

A-1	Ra-223	(Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224	(Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226	(Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219	(Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220	(Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222	(Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227	(Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228	(Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230	(Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231	(Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232	(Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234	(Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207	(Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208	(Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210	(Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234	(Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235	(Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238	(Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D		6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231		1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D		2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D		8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D		5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D		3.454E-01	3.420E-01	DCF2(6)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2(12)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3(2)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(5)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(6)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(7)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(8)
D-1	U-234	2.830E-04	2.830E-04	DCF3(9)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(10)
D-1	U-238	2.550E-04	2.550E-04	DCF3(11)
D-1	U-238+D	2.687E-04	2.550E-04	DCF3(12)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)

D-34	Ac-227+D	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34					
D-34	Pa-231	plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pa-231	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(2,3)
D-34					
D-34	Pb-210+D	plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34					
D-34	Ra-226+D	plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(4,1)
D-34	Ra-226+D	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Ra-226+D	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,3)
D-34					
D-34	Ra-228+D	plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-228+D	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-228+D	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34					
D-34	Th-228+D	plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Th-228+D	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Th-228+D	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34					
D-34	Th-230	plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Th-230	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Th-230	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(7,3)
D-34					

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter		Current Value#	Base Case*	Parameter Name
D-34	Th-232	plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(8,1)
D-34	Th-232	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(8,2)
D-34	Th-232	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(8,3)
D-34					
D-34	U-234	plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-234	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-234	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34					
D-34	U-235+D	plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-235+D	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-235+D	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)
D-34					
D-34	U-238	plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,1)
D-34	U-238	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(11,2)
D-34	U-238	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(11,3)
D-34					
D-34	U-238+D	plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(12,1)
D-34	U-238+D	beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(12,2)
D-34	U-238+D	milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(12,3)
D-5	Bioaccumulation factors, fresh water, L/kg:				
D-5	Ac-227+D	fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D	crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)

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 D-5  ³                                                          ³           ³           ³
 D-5  ³ Pa-231     , fish                                        ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  2,1)
 D-5  ³ Pa-231     , crustacea and mollusks                      ³ 1.100E+02 ³ 1.100E+02 ³ BIOFAC(  2,2)
 D-5  ³                                                          ³           ³           ³
 D-5  ³ Pb-210+D   , fish                                        ³ 3.000E+02 ³ 3.000E+02 ³ BIOFAC(  3,1)
 D-5  ³ Pb-210+D   , crustacea and mollusks                      ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  3,2)
 D-5  ³                                                          ³           ³           ³
 D-5  ³ Ra-226+D   , fish                                        ³ 5.000E+01 ³ 5.000E+01 ³ BIOFAC(  4,1)
 D-5  ³ Ra-226+D   , crustacea and mollusks                      ³ 2.500E+02 ³ 2.500E+02 ³ BIOFAC(  4,2)
 D-5  ³                                                          ³           ³           ³
 D-5  ³ Ra-228+D   , fish                                        ³ 5.000E+01 ³ 5.000E+01 ³ BIOFAC(  5,1)
 D-5  ³ Ra-228+D   , crustacea and mollusks                      ³ 2.500E+02 ³ 2.500E+02 ³ BIOFAC(  5,2)
 D-5  ³                                                          ³           ³           ³
 D-5  ³ Th-228+D   , fish                                        ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  6,1)
 D-5  ³ Th-228+D   , crustacea and mollusks                      ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  6,2)
 D-5  ³                                                          ³           ³           ³
 D-5  ³ Th-230     , fish                                        ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  7,1)
 D-5  ³ Th-230     , crustacea and mollusks                      ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  7,2)
 D-5  ³                                                          ³           ³           ³
 D-5  ³ Th-232     , fish                                        ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  8,1)
 D-5  ³ Th-232     , crustacea and mollusks                      ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  8,2)
 D-5  ³                                                          ³           ³           ³
 D-5  ³ U-234      , fish                                        ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  9,1)
 D-5  ³ U-234      , crustacea and mollusks                      ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC(  9,2)
 D-5  ³                                                          ³           ³           ³
 D-5  ³ U-235+D    , fish                                        ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC( 10,1)
 D-5  ³ U-235+D    , crustacea and mollusks                      ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC( 10,2)
1RESRAD, Version 6.4      T« Limit = 180 days        07/25/2009  16:59  Page   5
 Summary : SMC Maintenance Worker Area 6 Controls in Place Restricted Area
 File    : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109206.RAD
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Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

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0     ³                                                          ³  Current  ³   Base    ³  Parameter
 Menu ³                          Parameter                       ³  Value#   ³   Case*   ³    Name
ÄÄÄ
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R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	5.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	7.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	9.000E+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): Ac-227	1.010E+01	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Pa-231	1.010E+01	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.851E+02	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.851E+02	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	8.365E+02	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	8.365E+02	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Th-230	1.444E+02	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Th-232	8.365E+02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-234	1.444E+02	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): U-235	1.010E+01	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): U-238	1.444E+02	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L): Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Pa-231	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(11)
R013	Cover depth (m)	1.830E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	1.920E+00	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	1.500E-04	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	2.240E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.500E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.600E-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-02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.430E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.300E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	7.300E-01	5.000E-01	---	EVAPTR

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Precipitation (m/yr)	1.050E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	9.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	2.770E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.510E+00	1.500E+00	---	DENSAQ

R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.830E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	9.500E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.000E-03	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	2	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.500E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.696E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.600E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.890E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.060E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	4.750E+03	1.000E+01	---	HCUZ(1)
R015	Unsat. zone 2, thickness (m)	1.900E+00	0.000E+00	---	H(2)
R015	Unsat. zone 2, soil density (g/cm**3)	1.510E+00	1.500E+00	---	DENSUZ(2)
R015	Unsat. zone 2, total porosity	4.300E-01	4.000E-01	---	TPUZ(2)
R015	Unsat. zone 2, effective porosity	3.830E-01	2.000E-01	---	EPUZ(2)
R015	Unsat. zone 2, field capacity	2.000E-01	2.000E-01	---	FCUZ(2)
R015	Unsat. zone 2, soil-specific b parameter	4.050E+00	5.300E+00	---	BUZ(2)
R015	Unsat. zone 2, hydraulic conductivity (m/yr)	9.500E+03	1.000E+01	---	HCUZ(2)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Unsaturated zone 2 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,2)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.248E-06	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,1)
R016	Unsaturated zone 2 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,2)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.112E-06	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,1)
R016	Unsaturated zone 2 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,2)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.041E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

R016	Distribution coefficients for Ra-226			
R016	Contaminated zone (cm**3/g)	3.028E+04	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.288E-08	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	2.807E+05	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.002E-08	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	2.483E+05	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.133E-08	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	2.483E+05	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.133E-08	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	2.483E+05	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.133E-08	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	4.669E+05	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.023E-09	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	4.669E+05	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,2)

R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.023E-09	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	4.669E+05	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.023E-09	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	3.000E-05	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	2.700E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.000E-03	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)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
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)	2.000E-01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	2.300E+00	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	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	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN

C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	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	active
8 -- soil ingestion	active

9 -- radon ³ suppressed
Find peak pathway doses ³ active

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	340.00 square meters	Ac-227	1.010E+01
Thickness:	4.50 meters	Pa-231	1.010E+01
Cover Depth:	1.83 meters	Pb-210	1.851E+02
		Ra-226	1.851E+02
		Ra-228	8.365E+02
		Th-228	8.365E+02
		Th-230	1.444E+02
		Th-232	8.365E+02
		U-234	1.444E+02
		U-235	1.010E+01
		U-238	1.444E+02

0

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

t (years):	0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
TDOSE(t):	4.587E-09	4.596E-09	4.671E-09	5.501E-09	7.909E-09	1.137E-08	1.635E-08	2.352E-08	2.820E-08
M(t):	1.835E-10	1.838E-10	1.869E-10	2.200E-10	3.164E-10	4.549E-10	6.542E-10	9.407E-10	1.128E-09

0Maximum TDOSE(t): 2.820E-08 mrem/yr at t = 1.000E+03 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 = 0.000E+00 years
0 Water Independent Pathways (Inhalation excludes radon)

0 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.
Ac-227	2.009E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	3.323E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	4.904E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.788E-11	0.0039	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	7.092E-10	0.1546	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	3.830E-09	0.8350	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.023E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	2.971E-11	0.0065	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	9.073E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	2.026E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.026E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	4.587E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Radio-	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.
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	0.000E+00	0.0000	2.009E-17	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	0.000E+00	0.0000	3.323E-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	0.000E+00	0.0000	4.904E-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	0.000E+00	0.0000	1.788E-11	0.0039
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	0.000E+00	0.0000	7.092E-10	0.1546
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	0.000E+00	0.0000	3.830E-09	0.8350
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.023E-15	0.0000
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	2.971E-11	0.0065
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.073E-21	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	0.000E+00	0.0000	2.026E-23	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E-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	4.587E-09	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 16:59 Page 15

Summary : SMC Maintenance Worker Area 6 Controls in Place Restricted Area

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

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio-	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.
Ac-227	1.951E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	9.643E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	4.767E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.791E-11	0.0039	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	1.725E-09	0.3753	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	2.671E-09	0.5812	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	9.085E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.820E-10	0.0396	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	6.362E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	3.410E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.029E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	4.596E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0

Radio-	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.
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	0.000E+00	0.0000	1.951E-17	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	0.000E+00	0.0000	9.643E-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	0.000E+00	0.0000	4.767E-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	0.000E+00	0.0000	1.791E-11	0.0039
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	0.000E+00	0.0000	1.725E-09	0.3753
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	0.000E+00	0.0000	2.671E-09	0.5812
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.085E-15	0.0000
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	1.820E-10	0.0396
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.362E-20	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	0.000E+00	0.0000	3.410E-23	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.029E-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	4.596E-09	1.0000

0*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+01 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	1.502E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	5.971E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.688E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.819E-11	0.0039	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	1.811E-09	0.3877	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	1.041E-10	0.0223	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	6.471E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	2.738E-09	0.5861	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	3.063E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	7.204E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.053E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	4.671E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	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	0.000E+00	0.0000	1.502E-17	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	0.000E+00	0.0000	5.971E-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	0.000E+00	0.0000	3.688E-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	0.000E+00	0.0000	1.819E-11	0.0039
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	0.000E+00	0.0000	1.811E-09	0.3877
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	0.000E+00	0.0000	1.041E-10	0.0223
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.471E-14	0.0000
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	2.738E-09	0.5861
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.063E-18	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	0.000E+00	0.0000	7.204E-22	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.053E-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	4.671E-09	1.0000

0*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+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.

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Ac-227	1.097E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	2.578E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	2.837E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.125E-11	0.0039	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	4.498E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	8.450E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	7.375E-13	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	5.479E-09	0.9960	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	3.360E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	4.009E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.327E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	5.501E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0 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.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	1.097E-18	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	0.000E+00	0.0000	2.578E-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	0.000E+00	0.0000	2.837E-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	0.000E+00	0.0000	2.125E-11	0.0039
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	0.000E+00	0.0000	4.498E-14	0.0000
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	0.000E+00	0.0000	8.450E-25	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.375E-13	0.0001
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	5.479E-09	0.9960
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.360E-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	0.000E+00	0.0000	4.009E-20	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.327E-15	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.501E-09	1.0000

0*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 = 3.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0 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.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Ac-227	3.274E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	4.652E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	9.489E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	3.002E-11	0.0038	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	2.188E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.252E-12	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	7.876E-09	0.9958	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	4.494E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	2.659E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	2.222E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ

Total	7.909E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

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.
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	0.000E+00	0.0000	3.274E-21	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	0.000E+00	0.0000	4.652E-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	0.000E+00	0.0000	9.489E-23	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	0.000E+00	0.0000	3.002E-11	0.0038
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	0.000E+00	0.0000	2.188E-24	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.252E-12	0.0004
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	7.876E-09	0.9958
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.494E-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	0.000E+00	0.0000	2.659E-19	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.222E-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	7.909E-09	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T½ Limit = 180 days 07/25/2009 16:59 Page 19
Summary : SMC Maintenance Worker Area 6 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109206.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 = 5.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	9.771E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	8.053E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.174E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	4.240E-11	0.0037	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	7.990E-12	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.132E-08	0.9956	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	1.866E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	8.044E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	3.725E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	1.137E-08	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

0 Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	9.771E-24	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	0.000E+00	0.0000	8.053E-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	0.000E+00	0.0000	3.174E-25	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	0.000E+00	0.0000	4.240E-11	0.0037

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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.990E-12	0.0007
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	1.132E-08	0.9956
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.866E-14	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	0.000E+00	0.0000	8.044E-19	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.725E-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	1.137E-08	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 16:59 Page 20

Summary : SMC Maintenance Worker Area 6 Controls in Place Restricted Area

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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 = 7.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0

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.
Ac-227	2.916E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	1.394E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.062E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	5.989E-11	0.0037	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.651E-11	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.628E-08	0.9953	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	5.471E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.992E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	6.256E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	1.635E-08	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

As mrem/yr and Fraction of Total Dose At t = 7.000E+02 years

0 Water Dependent Pathways

0

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.
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	0.000E+00	0.0000	2.916E-26	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	0.000E+00	0.0000	1.394E-16	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	0.000E+00	0.0000	1.062E-27	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	0.000E+00	0.0000	5.989E-11	0.0037
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.651E-11	0.0010
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	1.628E-08	0.9953
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.471E-14	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	0.000E+00	0.0000	1.992E-18	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.256E-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	1.635E-08	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 16:59 Page 21

Summary : SMC Maintenance Worker Area 6 Controls in Place Restricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109206.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 = 9.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	8.704E-29	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	2.414E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	8.459E-11	0.0036	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.135E-11	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	2.340E-08	0.9951	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	1.354E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	4.491E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.053E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	2.352E-08	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.000E+02 years
0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	8.704E-29	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	0.000E+00	0.0000	2.414E-16	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	8.459E-11	0.0036
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.135E-11	0.0013
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	2.340E-08	0.9951
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.354E-13	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	0.000E+00	0.0000	4.491E-18	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.053E-14	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	2.352E-08	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T* Limit = 180 days 07/25/2009 16:59 Page 22
Summary : SMC Maintenance Worker Area 6 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109206.RAD

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

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	3.176E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.005E-10	0.0036	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000

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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	4.235E-11	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	2.806E-08	0.9949	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	2.046E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	6.598E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.366E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	2.820E-08	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0

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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	3.176E-16	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	1.005E-10	0.0036
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.235E-11	0.0015
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	2.806E-08	0.9949
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.046E-13	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	0.000E+00	0.0000	6.598E-18	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.366E-14	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.820E-08	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 16:59 Page 23
Summary : SMC Maintenance Worker Area 6 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109206.RAD

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

0 Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
Ac-227+D	Ac-227+D	1.000E+00	1.989E-18	1.932E-18	1.487E-18	1.086E-19	3.242E-22	9.674E-25	2.887E-27	8.618E-30	4.709E-31
0Pa-231	Pa-231	1.000E+00	1.061E-21	1.064E-21	1.096E-21	1.477E-21	2.867E-21	5.563E-21	1.079E-20	2.095E-20	2.918E-20
Pa-231	Ac-227+D	1.000E+00	3.184E-20	9.441E-20	5.901E-19	2.551E-18	4.603E-18	7.968E-18	1.379E-17	2.388E-17	3.142E-17
Pa-231	äDSR(j)		3.290E-20	9.547E-20	5.912E-19	2.552E-18	4.606E-18	7.974E-18	1.380E-17	2.390E-17	3.145E-17
0Pb-210+D	Pb-210+D	1.000E+00	2.650E-21	2.575E-21	1.993E-21	1.532E-22	5.126E-25	1.715E-27	5.736E-30	1.919E-32	1.110E-33
0Ra-226+D	Ra-226+D	1.000E+00	9.661E-14	9.678E-14	9.829E-14	1.148E-13	1.622E-13	2.291E-13	3.236E-13	4.570E-13	5.431E-13
Ra-226+D	Pb-210+D	1.000E+00	4.140E-23	1.228E-22	7.671E-22	3.229E-21	5.212E-21	8.027E-21	1.236E-20	1.903E-20	2.362E-20
Ra-226+D	äDSR(j)		9.661E-14	9.678E-14	9.829E-14	1.148E-13	1.622E-13	2.291E-13	3.236E-13	4.570E-13	5.431E-13
0Ra-228+D	Ra-228+D	1.000E+00	3.327E-15	2.956E-15	1.021E-15	2.458E-20	1.341E-30	7.321E-41	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	8.445E-13	2.059E-12	2.164E-12	5.375E-17	2.614E-27	1.272E-37	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	äDSR(j)		8.478E-13	2.062E-12	2.165E-12	5.377E-17	2.616E-27	1.272E-37	0.000E+00	0.000E+00	0.000E+00
0Th-228+D	Th-228+D	1.000E+00	4.579E-12	3.193E-12	1.245E-13	1.010E-27	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	9.156E-35	9.205E-35	9.662E-35	1.567E-34	4.594E-34	1.347E-33	3.947E-33	1.157E-32	1.980E-32
Th-230	Ra-226+D	1.000E+00	2.094E-17	6.291E-17	4.481E-16	5.107E-15	2.252E-14	5.534E-14	1.143E-13	2.171E-13	2.933E-13
Th-230	Pb-210+D	1.000E+00	5.996E-27	4.169E-26	1.842E-24	1.035E-22	6.412E-22	1.801E-21	4.136E-21	8.655E-21	1.225E-20
Th-230	äDSR(j)		2.094E-17	6.291E-17	4.481E-16	5.107E-15	2.252E-14	5.534E-14	1.143E-13	2.171E-13	2.933E-13
0Th-232	Th-232	1.000E+00	2.329E-38	2.343E-38	2.472E-38	4.239E-38	1.405E-37	4.655E-37	1.542E-36	5.111E-36	9.304E-36
Th-232	Ra-228+D	1.000E+00	2.046E-16	5.838E-16	2.596E-15	4.485E-15	7.234E-15	1.167E-14	1.882E-14	3.036E-14	3.856E-14
Th-232	Th-228+D	1.000E+00	3.531E-14	2.170E-13	3.270E-12	6.545E-12	9.408E-12	1.352E-11	1.944E-11	2.794E-11	3.350E-11
Th-232	äDSR(j)		3.552E-14	2.176E-13	3.273E-12	6.549E-12	9.415E-12	1.354E-11	1.946E-11	2.798E-11	3.354E-11

0U-234	U-234	1.000E+00	2.179E-36	2.191E-36	2.304E-36	3.808E-36	1.164E-35	3.555E-35	1.086E-34	3.318E-34	5.800E-34
U-234	Th-230	1.000E+00	4.125E-40	1.243E-39	9.133E-39	1.419E-37	1.244E-36	6.076E-36	2.494E-35	9.403E-35	1.789E-34
U-234	Ra-226+D	1.000E+00	6.283E-23	4.406E-22	2.121E-20	2.327E-18	3.112E-17	1.292E-16	3.789E-16	9.377E-16	1.417E-15
U-234	Pb-210+D	1.000E+00	1.352E-32	2.018E-31	5.970E-29	3.769E-26	8.008E-25	3.943E-24	1.308E-23	3.601E-23	5.722E-23
U-234	äDSR(j)		6.283E-23	4.406E-22	2.121E-20	2.327E-18	3.112E-17	1.292E-16	3.789E-16	9.377E-16	1.417E-15
0U-235+D	U-235+D	1.000E+00	1.770E-24	1.777E-24	1.842E-24	2.634E-24	5.831E-24	1.291E-23	2.859E-23	6.330E-23	9.419E-23
U-235+D	Pa-231	1.000E+00	1.123E-26	3.378E-26	2.436E-25	3.146E-24	1.830E-23	5.930E-23	1.615E-22	4.039E-22	6.259E-22
U-235+D	Ac-227+D	1.000E+00	2.252E-25	1.566E-24	6.924E-23	3.963E-21	2.630E-20	7.957E-20	1.970E-19	4.441E-19	6.525E-19
U-235+D	äDSR(j)		2.006E-24	3.376E-24	7.133E-23	3.969E-21	2.633E-20	7.964E-20	1.972E-19	4.446E-19	6.532E-19
0U-238	U-238	5.400E-05	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
0U-238+D	U-238+D	9.999E-01	7.106E-18	7.124E-18	7.291E-18	9.191E-18	1.538E-17	2.573E-17	4.306E-17	7.207E-17	9.324E-17
U-238+D	U-234	9.999E-01	3.091E-42	9.319E-42	6.858E-41	1.085E-39	9.916E-39	5.047E-38	2.159E-37	8.482E-37	1.647E-36
U-238+D	Th-230	9.999E-01	0.000E+00	2.803E-45	1.359E-43	2.021E-41	5.301E-40	4.315E-39	2.480E-38	1.202E-37	2.542E-37
U-238+D	Ra-226+D	9.999E-01	4.454E-29	6.692E-28	2.108E-25	2.218E-22	8.935E-21	6.222E-20	2.572E-19	8.240E-19	1.388E-18
U-238+D	Pb-210+D	9.999E-01	7.673E-39	2.371E-37	4.524E-34	3.012E-30	2.102E-28	1.790E-27	8.497E-27	3.056E-26	5.430E-26
U-238+D	äDSR(j)		7.106E-18	7.124E-18	7.291E-18	9.191E-18	1.539E-17	2.580E-17	4.332E-17	7.289E-17	9.463E-17

The DSR includes contributions from associated (half-life ó 180 days) daughters.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 16:59 Page 24
Summary : SMC Maintenance Worker Area 6 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109206.RAD

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
Ac-227	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13
Pa-231	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10
Pb-210	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13
Ra-226	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11
Ra-228	2.949E+13	1.213E+13	1.155E+13	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14
Th-228	5.460E+12	7.829E+12	2.008E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10
Th-232	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05
U-234	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09
U-235	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06
U-238	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05

*At specific activity limit

0

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 = 1.000E+03 years

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Ac-227	1.010E+01	0.000E+00	1.989E-18	*7.232E+13	0.000E+00	*7.232E+13
Pa-231	1.010E+01	1.000E+03	3.145E-17	*4.723E+10	3.145E-17	*4.723E+10
Pb-210	1.851E+02	0.000E+00	2.650E-21	*7.634E+13	0.000E+00	*7.634E+13
Ra-226	1.851E+02	1.000E+03	5.431E-13	*9.885E+11	5.431E-13	*9.885E+11
Ra-228	8.365E+02	4.112 ñ 0.008	3.173E-12	7.878E+12	0.000E+00	*2.726E+14
Th-228	8.365E+02	0.000E+00	4.579E-12	5.460E+12	0.000E+00	*8.195E+14
Th-230	1.444E+02	1.000E+03	2.933E-13	*2.018E+10	2.933E-13	*2.018E+10
Th-232	8.365E+02	1.000E+03	3.354E-11	*1.097E+05	3.354E-11	*1.097E+05
U-234	1.444E+02	1.000E+03	1.417E-15	*6.247E+09	1.417E-15	*6.247E+09
U-235	1.010E+01	1.000E+03	6.532E-19	*2.161E+06	6.532E-19	*2.161E+06
U-238	1.444E+02	1.000E+03	9.463E-17	*3.361E+05	9.463E-17	*3.361E+05

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*At specific activity limit

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

0Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
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Ac-227	Ac-227	1.000E+00	2.009E-17	1.951E-17	1.502E-17	1.097E-18	3.274E-21	9.771E-24	2.916E-26	8.704E-29	0.000E+00
Ac-227	Pa-231	1.000E+00	3.216E-19	9.535E-19	5.960E-18	2.577E-17	4.649E-17	8.048E-17	1.393E-16	2.412E-16	3.173E-16
Ac-227	U-235	1.000E+00	2.274E-24	1.581E-23	6.994E-22	4.003E-20	2.656E-19	8.037E-19	1.990E-18	4.486E-18	6.590E-18
Ac-227	äDOSE(j)		2.041E-17	2.046E-17	2.098E-17	2.690E-17	4.676E-17	8.128E-17	1.413E-16	2.457E-16	3.239E-16
0Pa-231	Pa-231	1.000E+00	1.071E-20	1.075E-20	1.107E-20	1.492E-20	2.896E-20	5.619E-20	1.090E-19	2.116E-19	2.947E-19
Pa-231	U-235	1.000E+00	1.134E-25	3.412E-25	2.461E-24	3.177E-23	1.848E-22	5.989E-22	1.631E-21	4.079E-21	6.321E-21
Pa-231	äDOSE(j)		1.071E-20	1.075E-20	1.108E-20	1.495E-20	2.914E-20	5.679E-20	1.107E-19	2.156E-19	3.010E-19
0Pb-210	Pb-210	1.000E+00	4.904E-19	4.767E-19	3.688E-19	2.837E-20	9.489E-23	3.174E-25	1.062E-27	0.000E+00	0.000E+00
Pb-210	Ra-226	1.000E+00	7.664E-21	2.273E-20	1.420E-19	5.978E-19	9.647E-19	1.486E-18	2.288E-18	3.523E-18	4.372E-18
Pb-210	Th-230	1.000E+00	8.658E-25	6.020E-24	2.660E-22	1.494E-20	9.259E-20	2.600E-19	5.973E-19	1.250E-18	1.769E-18
Pb-210	U-234	1.000E+00	0.000E+00	0.000E+00	8.621E-27	5.442E-24	1.156E-22	5.694E-22	1.888E-21	5.200E-21	8.262E-21
Pb-210	U-238	9.999E-01	0.000E+00	0.000E+00	0.000E+00	4.349E-28	3.035E-26	2.585E-25	1.227E-24	4.413E-24	7.841E-24
Pb-210	äDOSE(j)		4.981E-19	4.994E-19	5.111E-19	6.411E-19	1.058E-18	1.746E-18	2.887E-18	4.778E-18	6.150E-18
0Ra-226	Ra-226	1.000E+00	1.788E-11	1.791E-11	1.819E-11	2.125E-11	3.002E-11	4.240E-11	5.989E-11	8.459E-11	1.005E-10
Ra-226	Th-230	1.000E+00	3.023E-15	9.085E-15	6.471E-14	7.375E-13	3.252E-12	7.990E-12	1.651E-11	3.135E-11	4.235E-11
Ra-226	U-234	1.000E+00	9.073E-21	6.362E-20	3.063E-18	3.360E-16	4.494E-15	1.866E-14	5.471E-14	1.354E-13	2.046E-13
Ra-226	U-238	9.999E-01	6.431E-27	9.663E-26	3.045E-23	3.203E-20	1.290E-18	8.985E-18	3.714E-17	1.190E-16	2.004E-16
Ra-226	äDOSE(j)		1.789E-11	1.792E-11	1.826E-11	2.199E-11	3.327E-11	5.041E-11	7.645E-11	1.161E-10	1.431E-10
0Ra-228	Ra-228	1.000E+00	2.783E-12	2.473E-12	8.538E-13	2.056E-17	1.122E-27	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228	Th-232	1.000E+00	1.712E-13	4.884E-13	2.172E-12	3.752E-12	6.052E-12	9.761E-12	1.574E-11	2.539E-11	3.225E-11
Ra-228	äDOSE(j)		2.954E-12	2.961E-12	3.026E-12	3.752E-12	6.052E-12	9.761E-12	1.574E-11	2.539E-11	3.225E-11
0Th-228	Ra-228	1.000E+00	7.064E-10	1.722E-09	1.810E-09	4.496E-14	2.187E-24	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-228	1.000E+00	3.830E-09	2.671E-09	1.041E-10	8.450E-25	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	2.954E-11	1.815E-10	2.735E-09	5.475E-09	7.870E-09	1.131E-08	1.626E-08	2.338E-08	2.803E-08
Th-228	äDOSE(j)		4.566E-09	4.575E-09	4.650E-09	5.475E-09	7.870E-09	1.131E-08	1.626E-08	2.338E-08	2.803E-08
0Th-230	Th-230	1.000E+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-230	U-234	1.000E+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-230	U-238	9.999E-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
Th-230	äDOSE(j)		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
0Th-232	Th-232	1.000E+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
0U-234	U-234	1.000E+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-234	U-238	9.999E-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
U-234	äDOSE(j)		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
0U-235	U-235	1.000E+00	1.788E-23	1.795E-23	1.860E-23	2.660E-23	5.889E-23	1.304E-22	2.887E-22	6.393E-22	9.513E-22
0U-238	U-238	5.400E-05	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-238	U-238	9.999E-01	1.026E-15	1.029E-15	1.053E-15	1.327E-15	2.221E-15	3.716E-15	6.218E-15	1.041E-14	1.346E-14
U-238	äDOSE(j)		1.026E-15	1.029E-15	1.053E-15	1.327E-15	2.221E-15	3.716E-15	6.218E-15	1.041E-14	1.346E-14
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THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03

ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+00	1.010E+01	9.783E+00	7.346E+00	4.183E-01	7.174E-04	1.230E-06	2.110E-09	3.619E-12	1.499E-13
Ac-227	Pa-231	1.000E+00	0.000E+00	3.165E-01	2.753E+00	9.661E+00	1.003E+01	9.974E+00	9.922E+00	9.870E+00	9.844E+00
Ac-227	U-235	1.000E+00	0.000E+00	3.366E-06	3.067E-04	1.492E-02	5.718E-02	9.950E-02	1.416E-01	1.835E-01	2.043E-01
Ac-227	äS(j):		1.010E+01	1.010E+01	1.010E+01	1.009E+01	1.008E+01	1.007E+01	1.006E+01	1.005E+01	1.005E+01
0Pa-231	Pa-231	1.000E+00	1.010E+01	1.010E+01	1.010E+01	1.007E+01	1.002E+01	9.968E+00	9.916E+00	9.864E+00	9.838E+00
Pa-231	U-235	1.000E+00	0.000E+00	2.137E-04	2.137E-03	2.134E-02	6.386E-02	1.062E-01	1.482E-01	1.901E-01	2.109E-01
Pa-231	äS(j):		1.010E+01	1.010E+01	1.010E+01	1.009E+01	1.008E+01	1.007E+01	1.006E+01	1.005E+01	1.005E+01
0Pb-210	Pb-210	1.000E+00	1.851E+02	1.794E+02	1.356E+02	8.261E+00	1.646E-02	3.278E-05	6.529E-08	1.301E-10	5.805E-12
Pb-210	Ra-226	1.000E+00	0.000E+00	5.664E+00	4.934E+01	1.713E+02	1.648E+02	1.511E+02	1.386E+02	1.271E+02	1.217E+02
Pb-210	Th-230	1.000E+00	0.000E+00	9.621E-04	8.775E-02	4.256E+00	1.578E+01	2.641E+01	3.614E+01	4.504E+01	4.920E+01
Pb-210	U-234	1.000E+00	0.000E+00	2.894E-09	2.701E-06	1.541E-03	1.967E-02	5.778E-02	1.142E-01	1.873E-01	2.296E-01
Pb-210	U-238	9.999E-01	0.000E+00	2.054E-15	1.944E-11	1.225E-07	5.154E-06	2.621E-05	7.412E-05	1.588E-04	2.178E-04
Pb-210	äS(j):		1.851E+02	1.851E+02	1.851E+02	1.838E+02	1.806E+02	1.776E+02	1.748E+02	1.723E+02	1.711E+02
0Ra-226	Ra-226	1.000E+00	1.851E+02	1.850E+02	1.843E+02	1.773E+02	1.625E+02	1.490E+02	1.367E+02	1.253E+02	1.200E+02
Ra-226	Th-230	1.000E+00	0.000E+00	6.254E-02	6.242E-01	6.119E+00	1.757E+01	2.806E+01	3.765E+01	4.642E+01	5.052E+01
Ra-226	U-234	1.000E+00	0.000E+00	2.815E-07	2.811E-05	2.774E-03	2.425E-02	6.544E-02	1.247E-01	2.004E-01	2.439E-01
Ra-226	U-238	9.999E-01	0.000E+00	2.660E-13	2.658E-10	2.631E-07	6.950E-06	3.148E-05	8.456E-05	1.760E-04	2.388E-04
Ra-226	äS(j):		1.851E+02	1.851E+02	1.849E+02	1.834E+02	1.801E+02	1.772E+02	1.744E+02	1.719E+02	1.708E+02
0Ra-228	Ra-228	1.000E+00	8.365E+02	7.415E+02	2.506E+02	4.866E-03	1.646E-13	5.571E-24	1.885E-34	0.000E+00	0.000E+00
Ra-228	Th-232	1.000E+00	0.000E+00	9.500E+01	5.859E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02
Ra-228	äS(j):		8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02
0Th-228	Ra-228	1.000E+00	0.000E+00	2.386E+02	3.420E+02	7.292E-03	2.467E-13	8.349E-24	2.825E-34	0.000E+00	0.000E+00
Th-228	Th-228	1.000E+00	8.365E+02	5.823E+02	2.233E+01	1.539E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	1.560E+01	4.721E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02
Th-228	äS(j):		8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02
0Th-230	Th-230	1.000E+00	1.444E+02	1.444E+02	1.444E+02	1.443E+02	1.440E+02	1.438E+02	1.435E+02	1.432E+02	1.431E+02
Th-230	U-234	1.000E+00	0.000E+00	1.300E-03	1.300E-02	1.299E-01	3.893E-01	6.480E-01	9.061E-01	1.164E+00	1.292E+00
Th-230	U-238	9.999E-01	0.000E+00	1.842E-09	1.842E-07	1.842E-05	1.656E-04	4.597E-04	9.003E-04	1.487E-03	1.835E-03
Th-230	äS(j):		1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02
0Th-232	Th-232	1.000E+00	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02	8.365E+02
0U-234	U-234	1.000E+00	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.443E+02	1.442E+02	1.441E+02	1.440E+02	1.440E+02
U-234	U-238	9.999E-01	0.000E+00	4.093E-04	4.093E-03	4.093E-02	1.228E-01	2.045E-01	2.863E-01	3.679E-01	4.088E-01
U-234	äS(j):		1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02
0U-235	U-235	1.000E+00	1.010E+01	1.010E+01	1.010E+01	1.010E+01	1.010E+01	1.010E+01	1.010E+01	1.010E+01	1.010E+01
0U-238	U-238	5.400E-05	7.798E-03	7.798E-03	7.798E-03	7.798E-03	7.798E-03	7.798E-03	7.798E-03	7.798E-03	7.798E-03
U-238	U-238	9.999E-01	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02
U-238	äS(j):		1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02	1.444E+02
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ

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

0RESCALC.EXE execution time = 68.52 seconds

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary 6
Summary of Pathway Selections 12
Contaminated Zone and Total Dose Summary 13
Total Dose Components
Time = 0.000E+00 14
Time = 1.000E+00 15
Time = 1.000E+01 16
Time = 1.000E+02 17
Time = 3.000E+02 18
Time = 5.000E+02 19
Time = 7.000E+02 20
Time = 9.000E+02 21
Time = 1.000E+03 22
Dose/Source Ratios Summed Over All Pathways 23
Single Radionuclide Soil Guidelines 24
Dose Per Nuclide Summed Over All Pathways 25
Soil Concentration Per Nuclide 26

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)

A-1	Po-210	(Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211	(Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214	(Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215	(Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216	(Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218	(Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)
A-1	Ra-223	(Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224	(Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226	(Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219	(Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220	(Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222	(Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227	(Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228	(Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230	(Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231	(Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232	(Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234	(Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207	(Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208	(Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210	(Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234	(Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235	(Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238	(Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D		6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231		1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D		2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D		8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D		5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D		3.454E-01	3.420E-01	DCF2(6)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2(12)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)

D-1	Pa-231	1.060E-02	1.060E-02	DCF3(2)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(5)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(6)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(7)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(8)
D-1	U-234	2.830E-04	2.830E-04	DCF3(9)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(10)
D-1	U-238	2.550E-04	2.550E-04	DCF3(11)
D-1	U-238+D	2.687E-04	2.550E-04	DCF3(12)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(2,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(4,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(7,3)
D-34				

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(8,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(8,2)

```
D-34 ³ Th-232     , milk/livestock-intake ratio, (pCi/L)/(pCi/d)     ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  8,3)
D-34 ³                                                               ³           ³           ³
D-34 ³ U-234      , plant/soil concentration ratio, dimensionless    ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  9,1)
D-34 ³ U-234      , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)    ³ 3.400E-04 ³ 3.400E-04 ³ RTF(  9,2)
D-34 ³ U-234      , milk/livestock-intake ratio, (pCi/L)/(pCi/d)     ³ 6.000E-04 ³ 6.000E-04 ³ RTF(  9,3)
D-34 ³                                                               ³           ³           ³
D-34 ³ U-235+D    , plant/soil concentration ratio, dimensionless    ³ 2.500E-03 ³ 2.500E-03 ³ RTF( 10,1)
D-34 ³ U-235+D    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)    ³ 3.400E-04 ³ 3.400E-04 ³ RTF( 10,2)
D-34 ³ U-235+D    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)     ³ 6.000E-04 ³ 6.000E-04 ³ RTF( 10,3)
D-34 ³                                                               ³           ³           ³
D-34 ³ U-238      , plant/soil concentration ratio, dimensionless    ³ 2.500E-03 ³ 2.500E-03 ³ RTF( 11,1)
D-34 ³ U-238      , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)    ³ 3.400E-04 ³ 3.400E-04 ³ RTF( 11,2)
D-34 ³ U-238      , milk/livestock-intake ratio, (pCi/L)/(pCi/d)     ³ 6.000E-04 ³ 6.000E-04 ³ RTF( 11,3)
D-34 ³                                                               ³           ³           ³
D-34 ³ U-238+D    , plant/soil concentration ratio, dimensionless    ³ 2.500E-03 ³ 2.500E-03 ³ RTF( 12,1)
D-34 ³ U-238+D    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)    ³ 3.400E-04 ³ 3.400E-04 ³ RTF( 12,2)
D-34 ³ U-238+D    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)     ³ 6.000E-04 ³ 6.000E-04 ³ RTF( 12,3)
     ³                                                               ³           ³           ³
D-5  ³ Bioaccumulation factors, fresh water, L/kg:                   ³           ³           ³
D-5  ³ Ac-227+D   , fish                                             ³ 1.500E+01 ³ 1.500E+01 ³ BIOFAC(  1,1)
D-5  ³ Ac-227+D   , crustacea and mollusks                           ³ 1.000E+03 ³ 1.000E+03 ³ BIOFAC(  1,2)
D-5  ³                                                               ³           ³           ³
D-5  ³ Pa-231     , fish                                             ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  2,1)
D-5  ³ Pa-231     , crustacea and mollusks                           ³ 1.100E+02 ³ 1.100E+02 ³ BIOFAC(  2,2)
D-5  ³                                                               ³           ³           ³
D-5  ³ Pb-210+D   , fish                                             ³ 3.000E+02 ³ 3.000E+02 ³ BIOFAC(  3,1)
D-5  ³ Pb-210+D   , crustacea and mollusks                           ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  3,2)
D-5  ³                                                               ³           ³           ³
D-5  ³ Ra-226+D   , fish                                             ³ 5.000E+01 ³ 5.000E+01 ³ BIOFAC(  4,1)
D-5  ³ Ra-226+D   , crustacea and mollusks                           ³ 2.500E+02 ³ 2.500E+02 ³ BIOFAC(  4,2)
D-5  ³                                                               ³           ³           ³
D-5  ³ Ra-228+D   , fish                                             ³ 5.000E+01 ³ 5.000E+01 ³ BIOFAC(  5,1)
D-5  ³ Ra-228+D   , crustacea and mollusks                           ³ 2.500E+02 ³ 2.500E+02 ³ BIOFAC(  5,2)
D-5  ³                                                               ³           ³           ³
D-5  ³ Th-228+D   , fish                                             ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  6,1)
D-5  ³ Th-228+D   , crustacea and mollusks                           ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  6,2)
D-5  ³                                                               ³           ³           ³
D-5  ³ Th-230     , fish                                             ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  7,1)
D-5  ³ Th-230     , crustacea and mollusks                           ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  7,2)
D-5  ³                                                               ³           ³           ³
D-5  ³ Th-232     , fish                                             ³ 1.000E+02 ³ 1.000E+02 ³ BIOFAC(  8,1)
D-5  ³ Th-232     , crustacea and mollusks                           ³ 5.000E+02 ³ 5.000E+02 ³ BIOFAC(  8,2)
D-5  ³                                                               ³           ³           ³
D-5  ³ U-234      , fish                                             ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC(  9,1)
D-5  ³ U-234      , crustacea and mollusks                           ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC(  9,2)
D-5  ³                                                               ³           ³           ³
D-5  ³ U-235+D    , fish                                             ³ 1.000E+01 ³ 1.000E+01 ³ BIOFAC( 10,1)
D-5  ³ U-235+D    , crustacea and mollusks                           ³ 6.000E+01 ³ 6.000E+01 ³ BIOFAC( 10,2)
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Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(11,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(11,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(12,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(12,2)

#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.

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)	8.500E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	4.500E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	2.920E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+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)	1.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	5.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	7.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	9.000E+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): Ac-227	7.000E-01	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Pa-231	7.000E-01	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	2.360E+01	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	2.360E+01	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	2.700E+01	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	2.700E+01	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Th-230	1.050E+01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Th-232	2.700E+01	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-234	1.050E+01	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): U-235	7.000E-01	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): U-238	1.050E+01	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L): Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Pa-231	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(5)

R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(11)
R013	Cover depth (m)	1.830E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	1.920E+00	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	1.500E-04	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	2.240E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.500E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.600E-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-02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.430E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.300E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	7.300E-01	5.000E-01	---	EVAPTR

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Precipitation (m/yr)	1.050E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	9.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	2.770E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.510E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.830E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	9.500E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.000E-03	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	2	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.500E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.696E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.600E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.890E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)

R015	Unsat. zone 1, soil-specific b parameter	1.060E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	4.750E+03	1.000E+01	---	HCUZ(1)
R015	Unsat. zone 2, thickness (m)	1.900E+00	0.000E+00	---	H(2)
R015	Unsat. zone 2, soil density (g/cm**3)	1.510E+00	1.500E+00	---	DENSUZ(2)
R015	Unsat. zone 2, total porosity	4.300E-01	4.000E-01	---	TPUZ(2)
R015	Unsat. zone 2, effective porosity	3.830E-01	2.000E-01	---	EPUZ(2)
R015	Unsat. zone 2, field capacity	2.000E-01	2.000E-01	---	FCUZ(2)
R015	Unsat. zone 2, soil-specific b parameter	4.050E+00	5.300E+00	---	BUZ(2)
R015	Unsat. zone 2, hydraulic conductivity (m/yr)	9.500E+03	1.000E+01	---	HCUZ(2)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Unsaturated zone 2 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,2)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.248E-06	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,1)
R016	Unsaturated zone 2 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,2)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.112E-06	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,1)
R016	Unsaturated zone 2 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,2)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.041E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	1.646E+05	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.709E-08	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	1.093E+04	7.000E+01	---	DCNUCC(5)

R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.574E-07	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	1.912E+04	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.471E-07	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	1.912E+04	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.471E-07	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	1.912E+04	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.471E-07	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.393E+04	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.019E-07	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	1.393E+04	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.019E-07	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)

R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	1.393E+04	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(11)
R016	Leach rate\(/yr)	0.000E+00	0.000E+00	2.019E-07	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	3.000E-05	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	2.700E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.000E-03	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)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
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)	2.000E-01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	2.300E+00	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	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	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)

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

Site-Specific Parameter Summary (continued)

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

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TITL ³ Maximum number of integration points for dose    ³     17    ³    ---    ³              ---              ³ LYMAX
TITL ³ Maximum number of integration points for risk    ³      1    ³    ---    ³              ---              ³ KYMAX
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As mrem/yr and Fraction of Total Dose At t = 0.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0 Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Ac-227	1.392E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	2.303E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	6.253E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.280E-12	0.0152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	2.289E-11	0.1528	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	1.236E-10	0.8255	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.198E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	9.589E-13	0.0064	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	6.597E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.404E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	7.461E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	1.498E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

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

0 Water Dependent Pathways

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	1.392E-18	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	0.000E+00	0.0000	2.303E-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	0.000E+00	0.0000	6.253E-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	0.000E+00	0.0000	2.280E-12	0.0152
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	0.000E+00	0.0000	2.289E-11	0.1528
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	0.000E+00	0.0000	1.236E-10	0.8255
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.198E-16	0.0000
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	9.589E-13	0.0064
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.597E-22	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	0.000E+00	0.0000	1.404E-24	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.461E-17	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.498E-10	1.0000

0*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

0 Water Independent Pathways (Inhalation excludes radon)

0 Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.

Ac-227	1.352E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	6.683E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	6.077E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.284E-12	0.0152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	5.567E-11	0.3710	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	8.621E-11	0.5746	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	6.606E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	5.874E-12	0.0392	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	4.626E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	2.364E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	7.480E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	1.500E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

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.
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	0.000E+00	0.0000	1.352E-18	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	0.000E+00	0.0000	6.683E-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	0.000E+00	0.0000	6.077E-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	0.000E+00	0.0000	2.284E-12	0.0152
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	0.000E+00	0.0000	5.567E-11	0.3710
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	0.000E+00	0.0000	8.621E-11	0.5746
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.606E-16	0.0000
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	5.874E-12	0.0392
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.626E-21	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	0.000E+00	0.0000	2.364E-24	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.480E-17	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.500E-10	1.0000

0*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+01 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	1.041E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	4.138E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	4.702E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.320E-12	0.0152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	5.846E-11	0.3833	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	3.361E-12	0.0220	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Th-230	4.705E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	8.836E-11	0.5794	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	2.227E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	4.993E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	7.656E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	1.525E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	1.041E-18	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	0.000E+00	0.0000	4.138E-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	0.000E+00	0.0000	4.702E-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	0.000E+00	0.0000	2.320E-12	0.0152
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	0.000E+00	0.0000	5.846E-11	0.3833
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	0.000E+00	0.0000	3.361E-12	0.0220
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.705E-15	0.0000
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	8.836E-11	0.5794
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.227E-19	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	0.000E+00	0.0000	4.993E-23	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.656E-17	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.525E-10	1.0000

0*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+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Ac-227	7.604E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	1.787E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.617E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.710E-12	0.0151	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	1.452E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	2.727E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	5.362E-14	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.768E-10	0.9846	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	2.443E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	2.778E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	9.651E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ

Total	1.796E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	7.604E-20	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	0.000E+00	0.0000	1.787E-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	0.000E+00	0.0000	3.617E-21	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	0.000E+00	0.0000	2.710E-12	0.0151
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	0.000E+00	0.0000	1.452E-15	0.0000
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	0.000E+00	0.0000	2.727E-26	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.362E-14	0.0003
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	1.768E-10	0.9846
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.443E-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	0.000E+00	0.0000	2.778E-21	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.651E-17	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.796E-10	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T½ Limit = 180 days 07/25/2009 16:55 Page 18
Summary : SMC Maintenance Worker Area 5 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109205.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Ac-227	2.269E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	3.224E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.210E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	3.827E-12	0.0148	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	7.062E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.364E-13	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	2.542E-10	0.9843	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	3.268E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.843E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.616E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	2.583E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water	Fish	Radon	Plant	Meat	Milk	All Pathways*

Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	2.269E-22	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	0.000E+00	0.0000	3.224E-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	0.000E+00	0.0000	1.210E-23	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	0.000E+00	0.0000	3.827E-12	0.0148
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	0.000E+00	0.0000	7.062E-26	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.364E-13	0.0009
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	2.542E-10	0.9843
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.268E-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	0.000E+00	0.0000	1.843E-20	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.616E-16	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	2.583E-10	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T* Limit = 180 days 07/25/2009 16:55 Page 19

Summary : SMC Maintenance Worker Area 5 Controls in Place Restricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109205.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 = 5.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0

Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Ac-227	6.772E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	5.582E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	4.047E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	5.406E-12	0.0146	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	5.810E-13	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	3.654E-10	0.9839	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	1.357E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	5.575E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	2.708E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	3.714E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

0 Water Dependent Pathways

0

Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	6.772E-25	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	0.000E+00	0.0000	5.582E-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	0.000E+00	0.0000	4.047E-26	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	0.000E+00	0.0000	5.406E-12	0.0146
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.810E-13	0.0016
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	3.654E-10	0.9839
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.357E-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	0.000E+00	0.0000	5.575E-20	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.708E-16	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.714E-10	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 16:55 Page 20

Summary : SMC Maintenance Worker Area 5 Controls in Place Restricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109205.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 = 7.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Ac-227	2.021E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	9.663E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.354E-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	0.000E+00	0.0000
Ra-226	7.636E-12	0.0143	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.201E-12	0.0022	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	5.253E-10	0.9834	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	3.978E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.380E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	4.548E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	5.342E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 7.000E+02 years

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	2.021E-27	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	0.000E+00	0.0000	9.663E-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	0.000E+00	0.0000	1.354E-28	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	0.000E+00	0.0000	7.636E-12	0.0143
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.201E-12	0.0022
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	5.253E-10	0.9834
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.978E-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	0.000E+00	0.0000	1.380E-19	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.548E-16	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.342E-10	1.0000

0*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 = 9.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Ac-227	6.033E-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	0.000E+00	0.0000
Pa-231	1.673E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.079E-11	0.0140	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.280E-12	0.0030	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	7.552E-10	0.9830	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	9.846E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	3.112E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	7.653E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	7.683E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.000E+02 years
0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	6.033E-30	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	0.000E+00	0.0000	1.673E-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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	1.079E-11	0.0140
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.280E-12	0.0030
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	7.552E-10	0.9830
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.846E-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	0.000E+00	0.0000	3.112E-19	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.653E-16	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.683E-10	1.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Maintenance Worker Area 5 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109205.RAD

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

0 Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
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	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	2.201E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.282E-11	0.0139	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.079E-12	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	9.055E-10	0.9827	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	1.488E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	4.572E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	9.934E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	9.215E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	2.201E-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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	1.282E-11	0.0139
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.079E-12	0.0033
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	9.055E-10	0.9827
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.488E-14	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	0.000E+00	0.0000	4.572E-19	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.934E-16	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	9.215E-10	1.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Maintenance Worker Area 5 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109205.RAD

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

0 Parent Product Thread DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)

(i)	(j)	Fraction	0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
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Ac-227+D	*Ac-227+D*	*1.000E+00*	*1.989E-18*	*1.932E-18*	*1.487E-18*	*1.086E-19*	*3.242E-22*	*9.674E-25*	*2.887E-27*	*8.618E-30*	*4.709E-31*
0Pa-231	Pa-231	1.000E+00	1.061E-21	1.064E-21	1.096E-21	1.477E-21	2.867E-21	5.563E-21	1.079E-20	2.095E-20	2.918E-20
Pa-231	Ac-227+D	1.000E+00	3.184E-20	9.441E-20	5.901E-19	2.551E-18	4.603E-18	7.968E-18	1.379E-17	2.388E-17	3.142E-17
Pa-231	äDSR(j)		3.290E-20	9.547E-20	5.912E-19	2.552E-18	4.606E-18	7.974E-18	1.380E-17	2.390E-17	3.145E-17
0Pb-210+D	Pb-210+D	1.000E+00	2.650E-21	2.575E-21	1.993E-21	1.532E-22	5.126E-25	1.715E-27	5.736E-30	1.919E-32	1.110E-33
0Ra-226+D	Ra-226+D	1.000E+00	9.661E-14	9.678E-14	9.829E-14	1.148E-13	1.622E-13	2.291E-13	3.236E-13	4.570E-13	5.432E-13
Ra-226+D	Pb-210+D	1.000E+00	4.140E-23	1.228E-22	7.671E-22	3.229E-21	5.212E-21	8.027E-21	1.236E-20	1.904E-20	2.362E-20
Ra-226+D	äDSR(j)		9.661E-14	9.678E-14	9.829E-14	1.148E-13	1.622E-13	2.291E-13	3.236E-13	4.570E-13	5.432E-13
0Ra-228+D	Ra-228+D	1.000E+00	3.327E-15	2.956E-15	1.021E-15	2.458E-20	1.341E-30	7.320E-41	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	8.445E-13	2.059E-12	2.164E-12	5.375E-17	2.614E-27	1.271E-37	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	äDSR(j)		8.478E-13	2.062E-12	2.165E-12	5.377E-17	2.615E-27	1.272E-37	0.000E+00	0.000E+00	0.000E+00
0Th-228+D	Th-228+D	1.000E+00	4.579E-12	3.193E-12	1.245E-13	1.010E-27	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	9.156E-35	9.205E-35	9.662E-35	1.567E-34	4.594E-34	1.346E-33	3.946E-33	1.157E-32	1.980E-32
Th-230	Ra-226+D	1.000E+00	2.094E-17	6.291E-17	4.481E-16	5.107E-15	2.252E-14	5.533E-14	1.143E-13	2.171E-13	2.933E-13
Th-230	Pb-210+D	1.000E+00	5.996E-27	4.169E-26	1.842E-24	1.035E-22	6.412E-22	1.801E-21	4.136E-21	8.655E-21	1.225E-20
Th-230	äDSR(j)		2.094E-17	6.291E-17	4.481E-16	5.107E-15	2.252E-14	5.533E-14	1.143E-13	2.171E-13	2.933E-13
0Th-232	Th-232	1.000E+00	2.329E-38	2.343E-38	2.472E-38	4.239E-38	1.405E-37	4.654E-37	1.542E-36	5.111E-36	9.303E-36
Th-232	Ra-228+D	1.000E+00	2.046E-16	5.838E-16	2.596E-15	4.485E-15	7.234E-15	1.167E-14	1.882E-14	3.035E-14	3.855E-14
Th-232	Th-228+D	1.000E+00	3.531E-14	2.170E-13	3.270E-12	6.545E-12	9.408E-12	1.352E-11	1.944E-11	2.794E-11	3.350E-11
Th-232	äDSR(j)		3.552E-14	2.176E-13	3.273E-12	6.549E-12	9.415E-12	1.353E-11	1.946E-11	2.797E-11	3.354E-11
0U-234	U-234	1.000E+00	2.179E-36	2.191E-36	2.304E-36	3.808E-36	1.163E-35	3.555E-35	1.086E-34	3.318E-34	5.799E-34
U-234	Th-230	1.000E+00	4.125E-40	1.243E-39	9.133E-39	1.419E-37	1.244E-36	6.076E-36	2.494E-35	9.401E-35	1.789E-34
U-234	Ra-226+D	1.000E+00	6.283E-23	4.406E-22	2.121E-20	2.327E-18	3.112E-17	1.292E-16	3.789E-16	9.377E-16	1.417E-15
U-234	Pb-210+D	1.000E+00	1.352E-32	2.018E-31	5.970E-29	3.769E-26	8.007E-25	3.943E-24	1.308E-23	3.601E-23	5.721E-23
U-234	äDSR(j)		6.283E-23	4.406E-22	2.121E-20	2.327E-18	3.112E-17	1.292E-16	3.789E-16	9.377E-16	1.417E-15
0U-235+D	U-235+D	1.000E+00	1.770E-24	1.777E-24	1.842E-24	2.633E-24	5.831E-24	1.291E-23	2.858E-23	6.329E-23	9.417E-23
U-235+D	Pa-231	1.000E+00	1.123E-26	3.378E-26	2.436E-25	3.146E-24	1.830E-23	5.930E-23	1.615E-22	4.038E-22	6.258E-22
U-235+D	Ac-227+D	1.000E+00	2.252E-25	1.566E-24	6.924E-23	3.963E-21	2.630E-20	7.957E-20	1.970E-19	4.441E-19	6.524E-19
U-235+D	äDSR(j)		2.006E-24	3.376E-24	7.133E-23	3.969E-21	2.632E-20	7.964E-20	1.972E-19	4.446E-19	6.532E-19
0U-238	U-238	5.400E-05	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
0U-238+D	U-238+D	9.999E-01	7.106E-18	7.124E-18	7.291E-18	9.191E-18	1.538E-17	2.573E-17	4.306E-17	7.206E-17	9.322E-17
U-238+D	U-234	9.999E-01	3.091E-42	9.319E-42	6.858E-41	1.085E-39	9.915E-39	5.047E-38	2.159E-37	8.480E-37	1.647E-36
U-238+D	Th-230	9.999E-01	0.000E+00	2.803E-45	1.359E-43	2.021E-41	5.301E-40	4.314E-39	2.479E-38	1.202E-37	2.542E-37
U-238+D	Ra-226+D	9.999E-01	4.454E-29	6.692E-28	2.108E-25	2.218E-22	8.935E-21	6.222E-20	2.572E-19	8.239E-19	1.388E-18
U-238+D	Pb-210+D	9.999E-01	7.673E-39	2.371E-37	4.524E-34	3.012E-30	2.102E-28	1.790E-27	8.496E-27	3.055E-26	5.430E-26
U-238+D	äDSR(j)		7.106E-18	7.124E-18	7.291E-18	9.191E-18	1.539E-17	2.579E-17	4.332E-17	7.288E-17	9.461E-17
ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ

The DSR includes contributions from associated (half-life ó 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide

(i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
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Ac-227	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13
Pa-231	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10
Pb-210	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13

Ra-226	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11
Ra-228	2.949E+13	1.213E+13	1.155E+13	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14
Th-228	5.460E+12	7.829E+12	2.008E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10
Th-232	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05
U-234	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09
U-235	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06
U-238	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ

*At specific activity limit

0

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 = 1.000E+03 years

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
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Ac-227	7.000E-01	0.000E+00	1.989E-18	*7.232E+13	0.000E+00	*7.232E+13
Pa-231	7.000E-01	1.000E+03	3.145E-17	*4.723E+10	3.145E-17	*4.723E+10
Pb-210	2.360E+01	0.000E+00	2.650E-21	*7.634E+13	0.000E+00	*7.634E+13
Ra-226	2.360E+01	1.000E+03	5.432E-13	*9.885E+11	5.432E-13	*9.885E+11
Ra-228	2.700E+01	4.112 ñ 0.008	3.173E-12	7.878E+12	0.000E+00	*2.726E+14
Th-228	2.700E+01	0.000E+00	4.579E-12	5.460E+12	0.000E+00	*8.195E+14
Th-230	1.050E+01	1.000E+03	2.933E-13	*2.018E+10	2.933E-13	*2.018E+10
Th-232	2.700E+01	1.000E+03	3.354E-11	*1.097E+05	3.354E-11	*1.097E+05
U-234	1.050E+01	1.000E+03	1.417E-15	*6.247E+09	1.417E-15	*6.247E+09
U-235	7.000E-01	1.000E+03	6.532E-19	*2.161E+06	6.532E-19	*2.161E+06
U-238	1.050E+01	1.000E+03	9.461E-17	*3.361E+05	9.461E-17	*3.361E+05
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ

*At specific activity limit

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

0Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
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Ac-227	Ac-227	1.000E+00	1.392E-18	1.352E-18	1.041E-18	7.604E-20	2.269E-22	6.772E-25	2.021E-27	6.033E-30	0.000E+00
Ac-227	Pa-231	1.000E+00	2.229E-20	6.609E-20	4.130E-19	1.786E-18	3.222E-18	5.578E-18	9.655E-18	1.672E-17	2.199E-17
Ac-227	U-235	1.000E+00	1.576E-25	1.096E-24	4.847E-23	2.774E-21	1.841E-20	5.570E-20	1.379E-19	3.109E-19	4.567E-19
Ac-227	äDOSE(j)		1.414E-18	1.418E-18	1.454E-18	1.865E-18	3.241E-18	5.633E-18	9.793E-18	1.703E-17	2.245E-17
0Pa-231	Pa-231	1.000E+00	7.425E-22	7.449E-22	7.675E-22	1.034E-21	2.007E-21	3.894E-21	7.556E-21	1.466E-20	2.042E-20
Pa-231	U-235	1.000E+00	7.859E-27	2.365E-26	1.705E-25	2.202E-24	1.281E-23	4.151E-23	1.130E-22	2.827E-22	4.381E-22
Pa-231	äDOSE(j)		7.425E-22	7.450E-22	7.677E-22	1.036E-21	2.020E-21	3.936E-21	7.669E-21	1.495E-20	2.086E-20
0Pb-210	Pb-210	1.000E+00	6.253E-20	6.077E-20	4.702E-20	3.617E-21	1.210E-23	4.047E-26	1.354E-28	0.000E+00	0.000E+00
Pb-210	Ra-226	1.000E+00	9.771E-22	2.898E-21	1.810E-20	7.621E-20	1.230E-19	1.894E-19	2.917E-19	4.493E-19	5.575E-19
Pb-210	Th-230	1.000E+00	6.296E-26	4.377E-25	1.934E-23	1.087E-21	6.732E-21	1.891E-20	4.343E-20	9.087E-20	1.286E-19
Pb-210	U-234	1.000E+00	0.000E+00	0.000E+00	6.269E-28	3.957E-25	8.408E-24	4.140E-23	1.373E-22	3.781E-22	6.007E-22

Pb-210	U-238	9.999E-01	0.000E+00	0.000E+00	0.000E+00	3.163E-29	2.207E-27	1.880E-26	8.921E-26	3.208E-25	5.701E-25
Pb-210	äDOSE(j)		6.351E-20	6.367E-20	6.515E-20	8.092E-20	1.298E-19	2.084E-19	3.353E-19	5.405E-19	6.867E-19
0Ra-226	Ra-226	1.000E+00	2.280E-12	2.284E-12	2.320E-12	2.710E-12	3.827E-12	5.406E-12	7.636E-12	1.079E-11	1.282E-11
Ra-226	Th-230	1.000E+00	2.198E-16	6.606E-16	4.705E-15	5.362E-14	2.364E-13	5.810E-13	1.201E-12	2.280E-12	3.079E-12
Ra-226	U-234	1.000E+00	6.597E-22	4.626E-21	2.227E-19	2.443E-17	3.268E-16	1.357E-15	3.978E-15	9.846E-15	1.488E-14
Ra-226	U-238	9.999E-01	4.676E-28	7.027E-27	2.214E-24	2.329E-21	9.381E-20	6.533E-19	2.700E-18	8.651E-18	1.457E-17
Ra-226	äDOSE(j)		2.280E-12	2.285E-12	2.324E-12	2.763E-12	4.064E-12	5.989E-12	8.841E-12	1.308E-11	1.591E-11
0Ra-228	Ra-228	1.000E+00	8.983E-14	7.982E-14	2.756E-14	6.636E-19	3.622E-29	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228	Th-232	1.000E+00	5.525E-15	1.576E-14	7.010E-14	1.211E-13	1.953E-13	3.150E-13	5.081E-13	8.196E-13	1.041E-12
Ra-228	äDOSE(j)		9.535E-14	9.558E-14	9.766E-14	1.211E-13	1.953E-13	3.150E-13	5.081E-13	8.196E-13	1.041E-12
0Th-228	Ra-228	1.000E+00	2.280E-11	5.559E-11	5.844E-11	1.451E-15	7.058E-26	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-228	1.000E+00	1.236E-10	8.621E-11	3.361E-12	2.727E-26	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	9.534E-13	5.859E-12	8.829E-11	1.767E-10	2.540E-10	3.651E-10	5.248E-10	7.544E-10	9.045E-10
Th-228	äDOSE(j)		1.474E-10	1.477E-10	1.501E-10	1.767E-10	2.540E-10	3.651E-10	5.248E-10	7.544E-10	9.045E-10
0Th-230	Th-230	1.000E+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-230	U-234	1.000E+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-230	U-238	9.999E-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
Th-230	äDOSE(j)		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
0Th-232	Th-232	1.000E+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
0U-234	U-234	1.000E+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-234	U-238	9.999E-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
U-234	äDOSE(j)		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
0U-235	U-235	1.000E+00	1.239E-24	1.244E-24	1.289E-24	1.843E-24	4.082E-24	9.037E-24	2.001E-23	4.430E-23	6.592E-23
0U-238	U-238	5.400E-05	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-238	U-238	9.999E-01	7.461E-17	7.480E-17	7.656E-17	9.651E-17	1.615E-16	2.702E-16	4.521E-16	7.566E-16	9.788E-16
U-238	äDOSE(j)		7.461E-17	7.480E-17	7.656E-17	9.651E-17	1.615E-16	2.702E-16	4.521E-16	7.566E-16	9.788E-16
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+00	7.000E-01	6.781E-01	5.091E-01	2.899E-02	4.972E-05	8.528E-08	1.463E-10	2.508E-13	1.039E-14
Ac-227	Pa-231	1.000E+00	0.000E+00	2.193E-02	1.908E-01	6.696E-01	6.949E-01	6.913E-01	6.877E-01	6.841E-01	6.823E-01
Ac-227	U-235	1.000E+00	0.000E+00	2.333E-07	2.126E-05	1.034E-03	3.963E-03	6.896E-03	9.813E-03	1.272E-02	1.416E-02
Ac-227	äS(j):		7.000E-01	7.000E-01	7.000E-01	6.996E-01	6.989E-01	6.982E-01	6.975E-01	6.968E-01	6.964E-01
0Pa-231	Pa-231	1.000E+00	7.000E-01	7.000E-01	6.998E-01	6.982E-01	6.945E-01	6.909E-01	6.872E-01	6.836E-01	6.819E-01
Pa-231	U-235	1.000E+00	0.000E+00	1.481E-05	1.481E-04	1.479E-03	4.426E-03	7.357E-03	1.027E-02	1.317E-02	1.462E-02
Pa-231	äS(j):		7.000E-01	7.000E-01	7.000E-01	6.996E-01	6.989E-01	6.982E-01	6.975E-01	6.968E-01	6.965E-01
0Pb-210	Pb-210	1.000E+00	2.360E+01	2.288E+01	1.729E+01	1.053E+00	2.098E-03	4.179E-06	8.325E-09	1.658E-11	7.401E-13
Pb-210	Ra-226	1.000E+00	0.000E+00	7.221E-01	6.290E+00	2.184E+01	2.101E+01	1.927E+01	1.767E+01	1.620E+01	1.551E+01
Pb-210	Th-230	1.000E+00	0.000E+00	6.996E-05	6.381E-03	3.095E-01	1.148E+00	1.921E+00	2.628E+00	3.275E+00	3.577E+00
Pb-210	U-234	1.000E+00	0.000E+00	2.105E-10	1.964E-07	1.121E-04	1.430E-03	4.201E-03	8.301E-03	1.362E-02	1.670E-02
Pb-210	U-238	9.999E-01	0.000E+00	1.494E-16	1.413E-12	8.909E-09	3.748E-07	1.905E-06	5.389E-06	1.155E-05	1.584E-05
Pb-210	äS(j):		2.360E+01	2.360E+01	2.359E+01	2.321E+01	2.216E+01	2.119E+01	2.030E+01	1.949E+01	1.911E+01
0Ra-226	Ra-226	1.000E+00	2.360E+01	2.359E+01	2.350E+01	2.260E+01	2.072E+01	1.900E+01	1.743E+01	1.598E+01	1.530E+01
Ra-226	Th-230	1.000E+00	0.000E+00	4.548E-03	4.539E-02	4.450E-01	1.278E+00	2.040E+00	2.737E+00	3.375E+00	3.674E+00

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 Ra-226  U-234   1.000E+00    0.000E+00 2.047E-08 2.044E-06 2.017E-04 1.763E-03 4.758E-03 9.064E-03 1.457E-02 1.774E-02
 Ra-226  U-238   9.999E-01    0.000E+00 1.934E-14 1.932E-11 1.913E-08 5.053E-07 2.289E-06 6.148E-06 1.279E-05 1.737E-05
 Ra-226  äS(j):               2.360E+01 2.359E+01 2.354E+01 2.304E+01 2.200E+01 2.105E+01 2.017E+01 1.937E+01 1.899E+01
0Ra-228  Ra-228  1.000E+00    2.700E+01 2.393E+01 8.088E+00 1.571E-04 5.314E-15 1.798E-25 6.084E-36 0.000E+00 0.000E+00
 Ra-228  Th-232  1.000E+00    0.000E+00 3.066E+00 1.891E+01 2.700E+01 2.700E+01 2.700E+01 2.700E+01 2.700E+01 2.700E+01
 Ra-228  äS(j):               2.700E+01 2.700E+01 2.700E+01 2.700E+01 2.700E+01 2.700E+01 2.700E+01 2.700E+01 2.700E+01
0Th-228  Ra-228  1.000E+00    0.000E+00 7.703E+00 1.104E+01 2.354E-04 7.964E-15 2.694E-25 9.117E-36 0.000E+00 0.000E+00
 Th-228  Th-228  1.000E+00    2.700E+01 1.879E+01 7.208E-01 4.968E-15 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 Th-228  Th-232  1.000E+00    0.000E+00 5.034E-01 1.524E+01 2.700E+01 2.700E+01 2.700E+01 2.700E+01 2.700E+01 2.700E+01
 Th-228  äS(j):               2.700E+01 2.700E+01 2.700E+01 2.700E+01 2.700E+01 2.700E+01 2.700E+01 2.700E+01 2.700E+01
0Th-230  Th-230  1.000E+00    1.050E+01 1.050E+01 1.050E+01 1.049E+01 1.047E+01 1.045E+01 1.043E+01 1.041E+01 1.040E+01
 Th-230  U-234   1.000E+00    0.000E+00 9.452E-05 9.451E-04 9.446E-03 2.830E-02 4.712E-02 6.588E-02 8.460E-02 9.395E-02
 Th-230  U-238   9.999E-01    0.000E+00 1.340E-10 1.340E-08 1.339E-06 1.204E-05 3.342E-05 6.546E-05 1.081E-04 1.334E-04
 Th-230  äS(j):               1.050E+01 1.050E+01 1.050E+01 1.050E+01 1.050E+01 1.050E+01 1.050E+01 1.050E+01 1.050E+01
0Th-232  Th-232  1.000E+00    2.700E+01 2.700E+01 2.700E+01 2.700E+01 2.700E+01 2.700E+01 2.700E+01 2.700E+01 2.700E+01
0U-234   U-234   1.000E+00    1.050E+01 1.050E+01 1.050E+01 1.050E+01 1.049E+01 1.048E+01 1.048E+01 1.047E+01 1.047E+01
 U-234   U-238   9.999E-01    0.000E+00 2.977E-05 2.976E-04 2.976E-03 8.925E-03 1.487E-02 2.081E-02 2.675E-02 2.972E-02
 U-234   äS(j):               1.050E+01 1.050E+01 1.050E+01 1.050E+01 1.050E+01 1.050E+01 1.050E+01 1.050E+01 1.050E+01
0U-235   U-235   1.000E+00    7.000E-01 7.000E-01 7.000E-01 7.000E-01 7.000E-01 6.999E-01 6.999E-01 6.999E-01 6.999E-01
0U-238   U-238   5.400E-05    5.670E-04 5.670E-04 5.670E-04 5.670E-04 5.670E-04 5.669E-04 5.669E-04 5.669E-04 5.669E-04
 U-238   U-238   9.999E-01    1.050E+01 1.050E+01 1.050E+01 1.050E+01 1.050E+01 1.050E+01 1.050E+01 1.050E+01 1.050E+01
 U-238   äS(j):               1.050E+01 1.050E+01 1.050E+01 1.050E+01 1.050E+01 1.050E+01 1.050E+01 1.050E+01 1.050E+01
 ïïïïïïï ïïïïïïï ïïïïïïïïï    ïïïïïïïïï ïïïïïïïïï ïïïïïïïïï ïïïïïïïïï ïïïïïïïïï ïïïïïïïïï ïïïïïïïïï ïïïïïïïïï
 THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time =   68.78 seconds
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Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary 6
Summary of Pathway Selections 12
Contaminated Zone and Total Dose Summary 13
Total Dose Components
Time = 0.000E+00 14
Time = 1.000E+00 15
Time = 1.000E+01 16
Time = 1.000E+02 17
Time = 3.000E+02 18
Time = 5.000E+02 19
Time = 7.000E+02 20
Time = 9.000E+02 21
Time = 1.000E+03 22
Dose/Source Ratios Summed Over All Pathways 23
Single Radionuclide Soil Guidelines 24
Dose Per Nuclide Summed Over All Pathways 25
Soil Concentration Per Nuclide 26

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)

A-1	Pb-212	(Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214	(Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)
A-1	Po-210	(Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211	(Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214	(Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215	(Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216	(Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218	(Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)
A-1	Ra-223	(Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224	(Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226	(Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219	(Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220	(Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222	(Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227	(Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228	(Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230	(Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231	(Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232	(Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234	(Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207	(Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208	(Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210	(Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234	(Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235	(Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238	(Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D		6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231		1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D		2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D		8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D		5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D		3.454E-01	3.420E-01	DCF2(6)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)

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B-1  ³ U-238+D                                                    ³ 1.180E-01 ³ 1.180E-01 ³ DCF2( 12)
     ³                                                            ³           ³           ³
D-1  ³ Dose conversion factors for ingestion, mrem/pCi:           ³           ³           ³
D-1  ³ Ac-227+D                                                   ³ 1.480E-02 ³ 1.410E-02 ³ DCF3(  1)
D-1  ³ Pa-231                                                     ³ 1.060E-02 ³ 1.060E-02 ³ DCF3(  2)
D-1  ³ Pb-210+D                                                   ³ 7.276E-03 ³ 5.370E-03 ³ DCF3(  3)
D-1  ³ Ra-226+D                                                   ³ 1.321E-03 ³ 1.320E-03 ³ DCF3(  4)
D-1  ³ Ra-228+D                                                   ³ 1.442E-03 ³ 1.440E-03 ³ DCF3(  5)
D-1  ³ Th-228+D                                                   ³ 8.086E-04 ³ 3.960E-04 ³ DCF3(  6)
D-1  ³ Th-230                                                     ³ 5.480E-04 ³ 5.480E-04 ³ DCF3(  7)
D-1  ³ Th-232                                                     ³ 2.730E-03 ³ 2.730E-03 ³ DCF3(  8)
D-1  ³ U-234                                                      ³ 2.830E-04 ³ 2.830E-04 ³ DCF3(  9)
D-1  ³ U-235+D                                                    ³ 2.673E-04 ³ 2.660E-04 ³ DCF3( 10)
D-1  ³ U-238                                                      ³ 2.550E-04 ³ 2.550E-04 ³ DCF3( 11)
D-1  ³ U-238+D                                                    ³ 2.687E-04 ³ 2.550E-04 ³ DCF3( 12)
     ³                                                            ³           ³           ³
D-34 ³ Food transfer factors:                                     ³           ³           ³
D-34 ³ Ac-227+D  , plant/soil concentration ratio, dimensionless  ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  1,1)
D-34 ³ Ac-227+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,2)
D-34 ³ Ac-227+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Pa-231    , plant/soil concentration ratio, dimensionless  ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  2,1)
D-34 ³ Pa-231    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 5.000E-03 ³ 5.000E-03 ³ RTF(  2,2)
D-34 ³ Pa-231    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  2,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Pb-210+D  , plant/soil concentration ratio, dimensionless  ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  3,1)
D-34 ³ Pb-210+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 8.000E-04 ³ 8.000E-04 ³ RTF(  3,2)
D-34 ³ Pb-210+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 3.000E-04 ³ 3.000E-04 ³ RTF(  3,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Ra-226+D  , plant/soil concentration ratio, dimensionless  ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  4,1)
D-34 ³ Ra-226+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,2)
D-34 ³ Ra-226+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Ra-228+D  , plant/soil concentration ratio, dimensionless  ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  5,1)
D-34 ³ Ra-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,2)
D-34 ³ Ra-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Th-228+D  , plant/soil concentration ratio, dimensionless  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  6,1)
D-34 ³ Th-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  6,2)
D-34 ³ Th-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  6,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Th-230    , plant/soil concentration ratio, dimensionless  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  7,1)
D-34 ³ Th-230    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  7,2)
D-34 ³ Th-230    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  7,3)
D-34 ³                                                            ³           ³           ³
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Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(8,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(8,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(8,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(11,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(11,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(12,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(12,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(12,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(4,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(4,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(7,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(7,2)
D-5				
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(8,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(8,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(9,1)

D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(11,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(11,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(12,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(12,2)

#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.

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)	5.100E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	4.500E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	7.140E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+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)	1.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	5.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	7.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	9.000E+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): Ac-227	1.720E+01	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Pa-231	1.720E+01	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.778E+02	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.778E+02	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	4.505E+02	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	4.505E+02	0.000E+00	---	S1(6)

R012	Initial principal radionuclide (pCi/g):	Th-230	1.778E+02	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g):	Th-232	4.505E+02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g):	U-234	2.463E+02	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g):	U-235	1.720E+01	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g):	U-238	2.463E+02	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L):	Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L):	Pa-231	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L):	Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L):	Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L):	Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L):	Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L):	Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L):	Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L):	U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L):	U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L):	U-238	not used	0.000E+00	---	W1(11)
R013	Cover depth (m)		1.830E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)		1.920E+00	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)		1.500E-04	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)		2.240E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)		1.500E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity		3.600E-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-02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter		4.430E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)		4.300E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)		not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient		7.300E-01	5.000E-01	---	EVAPTR

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Precipitation (m/yr)	1.050E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	9.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	2.770E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.510E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.830E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	9.500E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.000E-03	2.000E-02	---	HGWT

R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	2	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.500E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.696E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.600E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.890E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.060E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	4.750E+03	1.000E+01	---	HCUZ(1)
R015	Unsat. zone 2, thickness (m)	1.900E+00	0.000E+00	---	H(2)
R015	Unsat. zone 2, soil density (g/cm**3)	1.510E+00	1.500E+00	---	DENSUZ(2)
R015	Unsat. zone 2, total porosity	4.300E-01	4.000E-01	---	TPUZ(2)
R015	Unsat. zone 2, effective porosity	3.830E-01	2.000E-01	---	EPUZ(2)
R015	Unsat. zone 2, field capacity	2.000E-01	2.000E-01	---	FCUZ(2)
R015	Unsat. zone 2, soil-specific b parameter	4.050E+00	5.300E+00	---	BUZ(2)
R015	Unsat. zone 2, hydraulic conductivity (m/yr)	9.500E+03	1.000E+01	---	HCUZ(2)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Unsaturated zone 2 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,2)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.248E-06	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,1)
R016	Unsaturated zone 2 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,2)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.112E-06	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,1)
R016	Unsaturated zone 2 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,2)

R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.041E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	7.100E+03	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.961E-07	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	1.051E+04	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.676E-07	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	1.561E+05	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.802E-08	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	1.561E+05	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.802E-08	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	1.561E+05	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.802E-08	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

Site-Specific Parameter Summary (continued)

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

R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	7.672E+05	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.666E-09	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	7.672E+05	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.666E-09	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	7.672E+05	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.666E-09	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	3.000E-05	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	2.700E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.000E-03	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)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
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)	2.000E-01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	2.300E+00	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	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	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)

R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV

R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	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	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g	
Area: 5100.00 square meters	Ac-227	1.720E+01

Thickness:	4.50 meters	Pa-231	1.720E+01
Cover Depth:	1.83 meters	Pb-210	1.778E+02
		Ra-226	1.778E+02
		Ra-228	4.505E+02
		Th-228	4.505E+02
		Th-230	1.778E+02
		Th-232	4.505E+02
		U-234	2.463E+02
		U-235	1.720E+01
		U-238	2.463E+02

0

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

t (years):	0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
TDOSE(t):	2.478E-09	2.483E-09	2.523E-09	2.972E-09	4.274E-09	6.148E-09	8.844E-09	1.272E-08	1.526E-08
M(t):	9.912E-11	9.930E-11	1.009E-10	1.189E-10	1.710E-10	2.459E-10	3.538E-10	5.089E-10	6.104E-10

0Maximum TDOSE(t): 1.526E-08 mrem/yr at t = 1.000E+03 years
1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 16:52 Page 14
Summary : SMC Maintenance Worker Area 4 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109204.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
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Nuclide														
Ac-227	3.420E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	5.658E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	4.711E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.718E-11	0.0069	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	3.820E-10	0.1541	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	2.063E-09	0.8325	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.722E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.600E-11	0.0065	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	1.548E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	3.451E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.750E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	2.478E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Nuclide														

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	0.000E+00	0.0000	3.420E-17	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	0.000E+00	0.0000	5.658E-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	0.000E+00	0.0000	4.711E-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	0.000E+00	0.0000	1.718E-11	0.0069
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	0.000E+00	0.0000	3.820E-10	0.1541
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	0.000E+00	0.0000	2.063E-09	0.8325
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.722E-15	0.0000
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	1.600E-11	0.0065
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.548E-20	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	0.000E+00	0.0000	3.451E-23	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.750E-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	2.478E-09	1.0000

0*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
0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	3.322E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	1.642E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	4.579E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.721E-11	0.0069	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	9.288E-10	0.3741	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	1.439E-09	0.5795	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.119E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	9.801E-11	0.0395	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	1.085E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	5.808E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.755E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	2.483E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

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

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.
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	0.000E+00	0.0000	3.322E-17	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	0.000E+00	0.0000	1.642E-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	0.000E+00	0.0000	4.579E-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	0.000E+00	0.0000	1.721E-11	0.0069
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	0.000E+00	0.0000	9.288E-10	0.3741
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	0.000E+00	0.0000	1.439E-09	0.5795
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.119E-14	0.0000
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	9.801E-11	0.0395
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.085E-19	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	0.000E+00	0.0000	5.808E-23	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.755E-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	2.483E-09	1.0000

0*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+01 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	2.558E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	1.017E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.543E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.748E-11	0.0069	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	9.755E-10	0.3866	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	5.608E-11	0.0222	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	7.967E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.474E-09	0.5843	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	5.224E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.227E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.796E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	2.523E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	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	0.000E+00	0.0000	2.558E-17	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	0.000E+00	0.0000	1.017E-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	0.000E+00	0.0000	3.543E-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	0.000E+00	0.0000	1.748E-11	0.0069
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	0.000E+00	0.0000	9.755E-10	0.3866
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	0.000E+00	0.0000	5.608E-11	0.0222
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.967E-14	0.0000

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	1.474E-09	0.5843
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.224E-18	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	0.000E+00	0.0000	1.227E-21	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.796E-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	2.523E-09	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 16:52 Page 17

Summary : SMC Maintenance Worker Area 4 Controls in Place Restricted Area

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0

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.
Ac-227	1.868E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	4.390E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	2.725E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.041E-11	0.0069	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	2.422E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	4.551E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	9.080E-13	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	2.950E-09	0.9928	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	5.732E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	6.827E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	2.264E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	2.972E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

0 Water Dependent Pathways

0

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.
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	0.000E+00	0.0000	1.868E-18	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	0.000E+00	0.0000	4.390E-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	0.000E+00	0.0000	2.725E-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	0.000E+00	0.0000	2.041E-11	0.0069
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	0.000E+00	0.0000	2.422E-14	0.0000
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	0.000E+00	0.0000	4.551E-25	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.080E-13	0.0003
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	2.950E-09	0.9928
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.732E-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	0.000E+00	0.0000	6.827E-20	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.264E-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	2.972E-09	1.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Maintenance Worker Area 4 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109204.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	5.576E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	7.922E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	9.115E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.883E-11	0.0067	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	1.178E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	4.003E-12	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	4.242E-09	0.9923	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	7.665E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	4.528E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	3.790E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	4.274E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	5.576E-21	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	0.000E+00	0.0000	7.922E-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	0.000E+00	0.0000	9.115E-23	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	0.000E+00	0.0000	2.883E-11	0.0067
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	0.000E+00	0.0000	1.178E-24	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.003E-12	0.0009
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	4.242E-09	0.9923
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.665E-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	0.000E+00	0.0000	4.528E-19	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.790E-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	4.274E-09	1.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Maintenance Worker Area 4 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109204.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 = 5.000E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Ac-227	1.664E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	1.371E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.049E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	4.072E-11	0.0066	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	9.838E-12	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	6.098E-09	0.9918	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	3.182E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.370E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	6.354E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	6.148E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years
Water Dependent Pathways

Radio-Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	1.664E-23	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	0.000E+00	0.0000	1.371E-16	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	0.000E+00	0.0000	3.049E-25	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	0.000E+00	0.0000	4.072E-11	0.0066
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.838E-12	0.0016
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	6.098E-09	0.9918
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.182E-14	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	0.000E+00	0.0000	1.370E-18	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.354E-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	6.148E-09	1.0000

*Sum of all water independent and dependent pathways.

Summary : SMC Maintenance Worker Area 4 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109204.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 = 7.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Ac-227	4.966E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	2.374E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.020E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	5.752E-11	0.0065	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.033E-11	0.0023	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	8.766E-09	0.9912	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	9.332E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	3.392E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.067E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	8.844E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

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

As mrem/yr and Fraction of Total Dose At t = 7.000E+02 years

0 Water Dependent Pathways

Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	4.966E-26	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	0.000E+00	0.0000	2.374E-16	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	0.000E+00	0.0000	1.020E-27	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	0.000E+00	0.0000	5.752E-11	0.0065
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.033E-11	0.0023
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	8.766E-09	0.9912
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.332E-14	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	0.000E+00	0.0000	3.392E-18	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.067E-14	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	8.844E-09	1.0000

0*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 = 9.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground	Inhalation	Radon	Plant	Meat	Milk	Soil

Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	1.482E-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	0.000E+00	0.0000
Pa-231	4.111E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	8.123E-11	0.0064	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.860E-11	0.0030	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.260E-08	0.9906	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	2.309E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	7.647E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.795E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	1.272E-08	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.000E+02 years

0 Water Dependent Pathways

0

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.
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	0.000E+00	0.0000	1.482E-28	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	0.000E+00	0.0000	4.111E-16	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	8.123E-11	0.0064
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.860E-11	0.0030
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	1.260E-08	0.9906
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.309E-13	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	0.000E+00	0.0000	7.647E-18	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.795E-14	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.272E-08	1.0000

0*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

0 Water Independent Pathways (Inhalation excludes radon)

0

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.
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	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	5.409E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	9.654E-11	0.0063	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	5.214E-11	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.511E-08	0.9902	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	3.489E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.124E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	2.331E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	1.526E-08	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0

Radio-	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.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	5.409E-16	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	9.654E-11	0.0063
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.214E-11	0.0034
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	1.511E-08	0.9902
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.489E-13	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	0.000E+00	0.0000	1.124E-17	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.331E-14	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.526E-08	1.0000

0*Sum of all water independent and dependent pathways.

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

0 Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
Ac-227+D	Ac-227+D	1.000E+00	1.989E-18	1.932E-18	1.487E-18	1.086E-19	3.242E-22	9.674E-25	2.887E-27	8.618E-30	4.709E-31
0Pa-231	Pa-231	1.000E+00	1.061E-21	1.064E-21	1.096E-21	1.477E-21	2.867E-21	5.563E-21	1.079E-20	2.095E-20	2.918E-20
Pa-231	Ac-227+D	1.000E+00	3.184E-20	9.441E-20	5.901E-19	2.551E-18	4.603E-18	7.968E-18	1.379E-17	2.388E-17	3.142E-17
Pa-231	äDSR(j)		3.290E-20	9.547E-20	5.912E-19	2.552E-18	4.606E-18	7.974E-18	1.380E-17	2.390E-17	3.145E-17
0Pb-210+D	Pb-210+D	1.000E+00	2.650E-21	2.575E-21	1.993E-21	1.532E-22	5.126E-25	1.715E-27	5.736E-30	1.919E-32	1.110E-33
0Ra-226+D	Ra-226+D	1.000E+00	9.661E-14	9.678E-14	9.829E-14	1.148E-13	1.622E-13	2.290E-13	3.235E-13	4.569E-13	5.430E-13
Ra-226+D	Pb-210+D	1.000E+00	4.140E-23	1.228E-22	7.671E-22	3.229E-21	5.211E-21	8.026E-21	1.236E-20	1.903E-20	2.361E-20
Ra-226+D	äDSR(j)		9.661E-14	9.678E-14	9.829E-14	1.148E-13	1.622E-13	2.290E-13	3.235E-13	4.569E-13	5.430E-13

0Ra-228+D	Ra-228+D	1.000E+00	3.327E-15	2.956E-15	1.021E-15	2.458E-20	1.341E-30	7.320E-41	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	8.445E-13	2.059E-12	2.164E-12	5.375E-17	2.614E-27	1.271E-37	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	äDSR(j)		8.478E-13	2.062E-12	2.165E-12	5.377E-17	2.615E-27	1.272E-37	0.000E+00	0.000E+00	0.000E+00
0Th-228+D	Th-228+D	1.000E+00	4.579E-12	3.193E-12	1.245E-13	1.010E-27	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	9.156E-35	9.205E-35	9.662E-35	1.567E-34	4.594E-34	1.347E-33	3.947E-33	1.157E-32	1.980E-32
Th-230	Ra-226+D	1.000E+00	2.094E-17	6.291E-17	4.481E-16	5.107E-15	2.252E-14	5.533E-14	1.143E-13	2.171E-13	2.932E-13
Th-230	Pb-210+D	1.000E+00	5.996E-27	4.169E-26	1.842E-24	1.035E-22	6.412E-22	1.801E-21	4.136E-21	8.654E-21	1.225E-20
Th-230	äDSR(j)		2.094E-17	6.291E-17	4.481E-16	5.107E-15	2.252E-14	5.533E-14	1.143E-13	2.171E-13	2.932E-13
0Th-232	Th-232	1.000E+00	2.329E-38	2.343E-38	2.472E-38	4.239E-38	1.405E-37	4.655E-37	1.542E-36	5.111E-36	9.304E-36
Th-232	Ra-228+D	1.000E+00	2.046E-16	5.838E-16	2.596E-15	4.485E-15	7.234E-15	1.167E-14	1.882E-14	3.036E-14	3.856E-14
Th-232.	Th-228+D	1.000E+00	3.531E-14	2.170E-13	3.270E-12	6.545E-12	9.408E-12	1.352E-11	1.944E-11	2.794E-11	3.350E-11
Th-232	äDSR(j)		3.552E-14	2.176E-13	3.273E-12	6.549E-12	9.415E-12	1.354E-11	1.946E-11	2.798E-11	3.354E-11
0U-234	U-234	1.000E+00	2.179E-36	2.191E-36	2.304E-36	3.808E-36	1.164E-35	3.555E-35	1.086E-34	3.318E-34	5.800E-34
U-234	Th-230	1.000E+00	4.125E-40	1.243E-39	9.133E-39	1.419E-37	1.244E-36	6.076E-36	2.494E-35	9.403E-35	1.789E-34
U-234	Ra-226+D	1.000E+00	6.283E-23	4.406E-22	2.121E-20	2.327E-18	3.112E-17	1.292E-16	3.789E-16	9.377E-16	1.417E-15
U-234	Pb-210+D	1.000E+00	1.352E-32	2.018E-31	5.970E-29	3.769E-26	8.007E-25	3.943E-24	1.308E-23	3.601E-23	5.721E-23
U-234	äDSR(j)		6.283E-23	4.406E-22	2.121E-20	2.327E-18	3.112E-17	1.292E-16	3.789E-16	9.377E-16	1.417E-15
0U-235+D	U-235+D	1.000E+00	1.770E-24	1.777E-24	1.842E-24	2.634E-24	5.831E-24	1.291E-23	2.859E-23	6.330E-23	9.419E-23
U-235+D	Pa-231	1.000E+00	1.123E-26	3.378E-26	2.436E-25	3.146E-24	1.830E-23	5.930E-23	1.615E-22	4.039E-22	6.259E-22
U-235+D	Ac-227+D	1.000E+00	2.252E-25	1.566E-24	6.924E-23	3.963E-21	2.630E-20	7.957E-20	1.970E-19	4.441E-19	6.525E-19
U-235+D	äDSR(j)		2.006E-24	3.376E-24	7.133E-23	3.969E-21	2.633E-20	7.964E-20	1.972E-19	4.446E-19	6.532E-19
0U-238	U-238	5.400E-05	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
0U-238+D	U-238+D	9.999E-01	7.106E-18	7.124E-18	7.291E-18	9.191E-18	1.538E-17	2.573E-17	4.306E-17	7.207E-17	9.324E-17
U-238+D	U-234	9.999E-01	3.091E-42	9.319E-42	6.858E-41	1.085E-39	9.916E-39	5.047E-38	2.159E-37	8.482E-37	1.647E-36
U-238+D	Th-230	9.999E-01	0.000E+00	2.803E-45	1.359E-43	2.021E-41	5.301E-40	4.315E-39	2.480E-38	1.202E-37	2.542E-37
U-238+D	Ra-226+D	9.999E-01	4.454E-29	6.692E-28	2.108E-25	2.218E-22	8.935E-21	6.222E-20	2.572E-19	8.239E-19	1.388E-18
U-238+D	Pb-210+D	9.999E-01	7.673E-39	2.371E-37	4.524E-34	3.012E-30	2.102E-28	1.790E-27	8.496E-27	3.056E-26	5.430E-26
U-238+D	äDSR(j)		7.106E-18	7.124E-18	7.291E-18	9.191E-18	1.539E-17	2.580E-17	4.332E-17	7.289E-17	9.463E-17
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The DSR includes contributions from associated (half-life ó 180 days) daughters.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 16:52 Page 24
Summary : SMC Maintenance Worker Area 4 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109204.RAD

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ
Ac-227	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13
Pa-231	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10
Pb-210	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13
Ra-226	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11
Ra-228	2.949E+13	1.213E+13	1.155E+13	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14
Th-228	5.460E+12	7.829E+12	2.008E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10
Th-232	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05
U-234	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09
U-235	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06
U-238	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05

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 *At specific activity limit
0
            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 = 1.000E+03 years
0Nuclide  Initial    tmin       DSR(i,tmin) G(i,tmin) DSR(i,tmax) G(i,tmax)
   (i)    (pCi/g)   (years)                  (pCi/g)              (pCi/g)
 ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ
 Ac-227  1.720E+01   0.000E+00   1.989E-18 *7.232E+13  0.000E+00 *7.232E+13
 Pa-231  1.720E+01   1.000E+03   3.145E-17 *4.723E+10  3.145E-17 *4.723E+10
 Pb-210  1.778E+02   0.000E+00   2.650E-21 *7.634E+13  0.000E+00 *7.634E+13
 Ra-226  1.778E+02   1.000E+03   5.430E-13 *9.885E+11  5.430E-13 *9.885E+11
 Ra-228  4.505E+02  4.112 ñ 0.008 3.173E-12  7.878E+12  0.000E+00 *2.726E+14
 Th-228  4.505E+02   0.000E+00   4.579E-12  5.460E+12  0.000E+00 *8.195E+14
 Th-230  1.778E+02   1.000E+03   2.932E-13 *2.018E+10  2.932E-13 *2.018E+10
 Th-232  4.505E+02   1.000E+03   3.354E-11 *1.097E+05  3.354E-11 *1.097E+05
 U-234   2.463E+02   1.000E+03   1.417E-15 *6.247E+09  1.417E-15 *6.247E+09
 U-235   1.720E+01   1.000E+03   6.532E-19 *2.161E+06  6.532E-19 *2.161E+06
 U-238   2.463E+02   1.000E+03   9.463E-17 *3.361E+05  9.463E-17 *3.361E+05
 ÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ
 *At specific activity limit

1RESRAD, Version 6.4      T« Limit = 180 days        07/25/2009  16:52  Page  25
 Summary : SMC Maintenance Worker Area 4 Controls in Place Restricted Area
 File    : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109204.RAD

                          Individual Nuclide Dose Summed Over All Pathways
                            Parent Nuclide and Branch Fraction Indicated
0Nuclide Parent   THF(i)                                  DOSE(j,t), mrem/yr
  (j)     (i)             t= 0.000E+00 1.000E+00 1.000E+01 1.000E+02 3.000E+02 5.000E+02 7.000E+02 9.000E+02 1.000E+03
 ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ   ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ
 Ac-227  Ac-227  1.000E+00   3.420E-17 3.322E-17 2.558E-17 1.868E-18 5.576E-21 1.664E-23 4.966E-26 1.482E-28 0.000E+00
 Ac-227  Pa-231  1.000E+00   5.476E-19 1.624E-18 1.015E-17 4.388E-17 7.917E-17 1.370E-16 2.372E-16 4.107E-16 5.404E-16
 Ac-227  U-235   1.000E+00   3.873E-24 2.693E-23 1.191E-21 6.817E-20 4.524E-19 1.369E-18 3.388E-18 7.639E-18 1.122E-17
 Ac-227  äDOSE(j)            3.475E-17 3.485E-17 3.573E-17 4.581E-17 7.963E-17 1.384E-16 2.406E-16 4.184E-16 5.516E-16
0Pa-231  Pa-231  1.000E+00   1.824E-20 1.830E-20 1.886E-20 2.541E-20 4.931E-20 9.569E-20 1.857E-19 3.603E-19 5.019E-19
 Pa-231  U-235   1.000E+00   1.931E-25 5.810E-25 4.190E-24 5.411E-23 3.148E-22 1.020E-21 2.777E-21 6.946E-21 1.076E-20
 Pa-231  äDOSE(j)            1.824E-20 1.830E-20 1.886E-20 2.547E-20 4.963E-20 9.671E-20 1.884E-19 3.672E-19 5.126E-19
0Pb-210  Pb-210  1.000E+00   4.711E-19 4.579E-19 3.543E-19 2.725E-20 9.115E-23 3.049E-25 1.020E-27 0.000E+00 0.000E+00
 Pb-210  Ra-226  1.000E+00   7.362E-21 2.183E-20 1.364E-19 5.742E-19 9.266E-19 1.427E-18 2.197E-18 3.384E-18 4.199E-18
 Pb-210  Th-230  1.000E+00   1.066E-24 7.413E-24 3.276E-22 1.840E-20 1.140E-19 3.201E-19 7.353E-19 1.539E-18 2.178E-18
 Pb-210  U-234   1.000E+00   0.000E+00 0.000E+00 1.470E-26 9.282E-24 1.972E-22 9.712E-22 3.221E-21 8.869E-21 1.409E-20
 Pb-210  U-238   9.999E-01   0.000E+00 0.000E+00 0.000E+00 7.419E-28 5.176E-26 4.410E-25 2.093E-24 7.526E-24 1.337E-23
 Pb-210  äDOSE(j)            4.785E-19 4.797E-19 4.910E-19 6.198E-19 1.041E-18 1.748E-18 2.936E-18 4.931E-18 6.391E-18
0Ra-226  Ra-226  1.000E+00   1.718E-11 1.721E-11 1.748E-11 2.041E-11 2.883E-11 4.072E-11 5.752E-11 8.123E-11 9.654E-11
 Ra-226  Th-230  1.000E+00   3.722E-15 1.119E-14 7.967E-14 9.080E-13 4.003E-12 9.838E-12 2.033E-11 3.860E-11 5.214E-11
 Ra-226  U-234   1.000E+00   1.548E-20 1.085E-19 5.224E-18 5.732E-16 7.665E-15 3.182E-14 9.332E-14 2.309E-13 3.489E-13
 Ra-226  U-238   9.999E-01   1.097E-26 1.648E-25 5.193E-23 5.463E-20 2.201E-18 1.533E-17 6.335E-17 2.029E-16 3.418E-16
```

Ra-226	äDOSE(j)		1.718E-11	1.722E-11	1.756E-11	2.132E-11	3.284E-11	5.059E-11	7.794E-11	1.201E-10	1.490E-10
0Ra-228	Ra-228	1.000E+00	1.499E-12	1.332E-12	4.598E-13	1.107E-17	6.043E-28	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228	Th-232	1.000E+00	9.219E-14	2.630E-13	1.170E-12	2.021E-12	3.259E-12	5.257E-12	8.479E-12	1.368E-11	1.737E-11
Ra-228	äDOSE(j)		1.591E-12	1.595E-12	1.629E-12	2.021E-12	3.259E-12	5.257E-12	8.479E-12	1.368E-11	1.737E-11
0Th-228	Ra-228	1.000E+00	3.805E-10	9.275E-10	9.750E-10	2.421E-14	1.178E-24	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-228	1.000E+00	2.063E-09	1.439E-09	5.608E-11	4.551E-25	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	1.591E-11	9.775E-11	1.473E-09	2.948E-09	4.238E-09	6.093E-09	8.758E-09	1.259E-08	1.509E-08
Th-228	äDOSE(j)		2.459E-09	2.464E-09	2.504E-09	2.948E-09	4.238E-09	6.093E-09	8.758E-09	1.259E-08	1.509E-08
0Th-230	Th-230	1.000E+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-230	U-234	1.000E+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-230	U-238	9.999E-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
Th-230	äDOSE(j)		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
0Th-232	Th-232	1.000E+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
0U-234	U-234	1.000E+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-234	U-238	9.999E-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
U-234	äDOSE(j)		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
0U-235	U-235	1.000E+00	3.044E-23	3.056E-23	3.168E-23	4.530E-23	1.003E-22	2.221E-22	4.917E-22	1.089E-21	1.620E-21
0U-238	U-238	5.400E-05	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-238	U-238	9.999E-01	1.750E-15	1.755E-15	1.796E-15	2.264E-15	3.788E-15	6.338E-15	1.061E-14	1.775E-14	2.296E-14
U-238	äDOSE(j)		1.750E-15	1.755E-15	1.796E-15	2.264E-15	3.788E-15	6.338E-15	1.061E-14	1.775E-14	2.296E-14
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THF(i) is the thread fraction of the parent nuclide.

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
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Ac-227	Ac-227	1.000E+00	1.720E+01	1.666E+01	1.251E+01	7.123E-01	1.222E-03	2.095E-06	3.594E-09	6.164E-12	2.553E-13
Ac-227	Pa-231	1.000E+00	0.000E+00	5.389E-01	4.689E+00	1.645E+01	1.707E+01	1.699E+01	1.690E+01	1.681E+01	1.676E+01
Ac-227	U-235	1.000E+00	0.000E+00	5.732E-06	5.223E-04	2.540E-02	9.738E-02	1.694E-01	2.411E-01	3.125E-01	3.480E-01
Ac-227	äS(j):		1.720E+01	1.720E+01	1.720E+01	1.719E+01	1.717E+01	1.716E+01	1.714E+01	1.712E+01	1.711E+01
0Pa-231	Pa-231	1.000E+00	1.720E+01	1.720E+01	1.720E+01	1.715E+01	1.706E+01	1.698E+01	1.689E+01	1.680E+01	1.675E+01
Pa-231	U-235	1.000E+00	0.000E+00	3.639E-04	3.639E-03	3.634E-02	1.087E-01	1.808E-01	2.524E-01	3.237E-01	3.592E-01
Pa-231	äS(j):		1.720E+01	1.720E+01	1.720E+01	1.719E+01	1.717E+01	1.716E+01	1.714E+01	1.712E+01	1.711E+01
0Pb-210	Pb-210	1.000E+00	1.778E+02	1.724E+02	1.303E+02	7.935E+00	1.581E-02	3.149E-05	6.272E-08	1.249E-10	5.576E-12
Pb-210	Ra-226	1.000E+00	0.000E+00	5.440E+00	4.739E+01	1.646E+02	1.583E+02	1.451E+02	1.331E+02	1.220E+02	1.168E+02
Pb-210	Th-230	1.000E+00	0.000E+00	1.185E-03	1.080E-01	5.241E+00	1.943E+01	3.252E+01	4.449E+01	5.545E+01	6.057E+01
Pb-210	U-234	1.000E+00	0.000E+00	4.937E-09	4.607E-06	2.629E-03	3.355E-02	9.854E-02	1.947E-01	3.194E-01	3.917E-01
Pb-210	U-238	9.999E-01	0.000E+00	3.504E-15	3.315E-11	2.090E-07	8.791E-06	4.470E-05	1.264E-04	2.709E-04	3.715E-04
Pb-210	äS(j):		1.778E+02	1.778E+02	1.778E+02	1.777E+02	1.777E+02	1.777E+02	1.778E+02	1.778E+02	1.778E+02
0Ra-226	Ra-226	1.000E+00	1.778E+02	1.777E+02	1.770E+02	1.703E+02	1.561E+02	1.431E+02	1.313E+02	1.204E+02	1.152E+02
Ra-226	Th-230	1.000E+00	0.000E+00	7.701E-02	7.686E-01	7.535E+00	2.164E+01	3.454E+01	4.635E+01	5.715E+01	6.220E+01
Ra-226	U-234	1.000E+00	0.000E+00	4.802E-07	4.795E-05	4.732E-03	4.136E-02	1.116E-01	2.126E-01	3.417E-01	4.161E-01
Ra-226	U-238	9.999E-01	0.000E+00	4.538E-13	4.533E-10	4.488E-07	1.185E-05	5.370E-05	1.442E-04	3.001E-04	4.074E-04
Ra-226	äS(j):		1.778E+02	1.778E+02	1.778E+02	1.778E+02	1.778E+02	1.778E+02	1.778E+02	1.778E+02	1.779E+02
0Ra-228	Ra-228	1.000E+00	4.505E+02	3.993E+02	1.349E+02	2.620E-03	8.866E-14	3.000E-24	1.015E-34	0.000E+00	0.000E+00

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 Ra-228  Th-232  1.000E+00    0.000E+00 5.116E+01 3.156E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02
 Ra-228  äS(j):              4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02
0Th-228  Ra-228  1.000E+00    0.000E+00 1.285E+02 1.842E+02 3.927E-03 1.329E-13 4.496E-24 1.521E-34 0.000E+00 0.000E+00
 Th-228  Th-228  1.000E+00    4.505E+02 3.136E+02 1.203E+01 8.289E-14 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 Th-228  Th-232  1.000E+00    0.000E+00 8.399E+00 2.543E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02
 Th-228  äS(j):              4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02
0Th-230  Th-230  1.000E+00    1.778E+02 1.778E+02 1.778E+02 1.776E+02 1.773E+02 1.770E+02 1.767E+02 1.764E+02 1.762E+02
 Th-230  U-234   1.000E+00    0.000E+00 2.217E-03 2.217E-02 2.216E-01 6.640E-01 1.105E+00 1.546E+00 1.985E+00 2.204E+00
 Th-230  U-238   9.999E-01    0.000E+00 3.143E-09 3.142E-07 3.141E-05 2.825E-04 7.841E-04 1.536E-03 2.536E-03 3.130E-03
 Th-230  äS(j):              1.778E+02 1.778E+02 1.778E+02 1.779E+02 1.780E+02 1.781E+02 1.782E+02 1.783E+02 1.784E+02
0Th-232  Th-232  1.000E+00    4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02 4.505E+02
0U-234   U-234   1.000E+00    2.463E+02 2.463E+02 2.463E+02 2.462E+02 2.461E+02 2.460E+02 2.458E+02 2.457E+02 2.456E+02
 U-234   U-238   9.999E-01    0.000E+00 6.982E-04 6.982E-03 6.981E-02 2.094E-01 3.489E-01 4.883E-01 6.276E-01 6.972E-01
 U-234   äS(j):              2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02
0U-235   U-235   1.000E+00    1.720E+01 1.720E+01 1.720E+01 1.720E+01 1.720E+01 1.720E+01 1.720E+01 1.720E+01 1.720E+01
0U-238   U-238   5.400E-05    1.330E-02 1.330E-02 1.330E-02 1.330E-02 1.330E-02 1.330E-02 1.330E-02 1.330E-02 1.330E-02
 U-238   U-238   9.999E-01    2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02
 U-238   äS(j):              2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02 2.463E+02
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 THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time =   68.77 seconds
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Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary 6
Summary of Pathway Selections 12
Contaminated Zone and Total Dose Summary 13
Total Dose Components
Time = 0.000E+00 14
Time = 1.000E+00 15
Time = 1.000E+01 16
Time = 1.000E+02 17
Time = 3.000E+02 18
Time = 5.000E+02 19
Time = 7.000E+02 20
Time = 9.000E+02 21
Time = 1.000E+03 22
Dose/Source Ratios Summed Over All Pathways 23
Single Radionuclide Soil Guidelines 24
Dose Per Nuclide Summed Over All Pathways 25
Soil Concentration Per Nuclide 26

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)

A-1	Pb-212	(Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214	(Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)
A-1	Po-210	(Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211	(Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214	(Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215	(Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216	(Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218	(Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)
A-1	Ra-223	(Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224	(Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226	(Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219	(Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220	(Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222	(Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227	(Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228	(Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230	(Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231	(Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232	(Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234	(Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207	(Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208	(Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210	(Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234	(Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235	(Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238	(Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D		6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231		1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D		2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D		8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D		5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D		3.454E-01	3.420E-01	DCF2(6)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)

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B-1  ³ U-238+D                                                    ³ 1.180E-01 ³ 1.180E-01 ³ DCF2( 12)
     ³                                                            ³           ³           ³
D-1  ³ Dose conversion factors for ingestion, mrem/pCi:           ³           ³           ³
D-1  ³ Ac-227+D                                                   ³ 1.480E-02 ³ 1.410E-02 ³ DCF3(  1)
D-1  ³ Pa-231                                                     ³ 1.060E-02 ³ 1.060E-02 ³ DCF3(  2)
D-1  ³ Pb-210+D                                                   ³ 7.276E-03 ³ 5.370E-03 ³ DCF3(  3)
D-1  ³ Ra-226+D                                                   ³ 1.321E-03 ³ 1.320E-03 ³ DCF3(  4)
D-1  ³ Ra-228+D                                                   ³ 1.442E-03 ³ 1.440E-03 ³ DCF3(  5)
D-1  ³ Th-228+D                                                   ³ 8.086E-04 ³ 3.960E-04 ³ DCF3(  6)
D-1  ³ Th-230                                                     ³ 5.480E-04 ³ 5.480E-04 ³ DCF3(  7)
D-1  ³ Th-232                                                     ³ 2.730E-03 ³ 2.730E-03 ³ DCF3(  8)
D-1  ³ U-234                                                      ³ 2.830E-04 ³ 2.830E-04 ³ DCF3(  9)
D-1  ³ U-235+D                                                    ³ 2.673E-04 ³ 2.660E-04 ³ DCF3( 10)
D-1  ³ U-238                                                      ³ 2.550E-04 ³ 2.550E-04 ³ DCF3( 11)
D-1  ³ U-238+D                                                    ³ 2.687E-04 ³ 2.550E-04 ³ DCF3( 12)
     ³                                                            ³           ³           ³
D-34 ³ Food transfer factors:                                     ³           ³           ³
D-34 ³ Ac-227+D  , plant/soil concentration ratio, dimensionless  ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  1,1)
D-34 ³ Ac-227+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,2)
D-34 ³ Ac-227+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Pa-231    , plant/soil concentration ratio, dimensionless  ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  2,1)
D-34 ³ Pa-231    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 5.000E-03 ³ 5.000E-03 ³ RTF(  2,2)
D-34 ³ Pa-231    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  2,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Pb-210+D  , plant/soil concentration ratio, dimensionless  ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  3,1)
D-34 ³ Pb-210+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 8.000E-04 ³ 8.000E-04 ³ RTF(  3,2)
D-34 ³ Pb-210+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 3.000E-04 ³ 3.000E-04 ³ RTF(  3,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Ra-226+D  , plant/soil concentration ratio, dimensionless  ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  4,1)
D-34 ³ Ra-226+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,2)
D-34 ³ Ra-226+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Ra-228+D  , plant/soil concentration ratio, dimensionless  ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  5,1)
D-34 ³ Ra-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,2)
D-34 ³ Ra-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Th-228+D  , plant/soil concentration ratio, dimensionless  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  6,1)
D-34 ³ Th-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  6,2)
D-34 ³ Th-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  6,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Th-230    , plant/soil concentration ratio, dimensionless  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  7,1)
D-34 ³ Th-230    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  7,2)
D-34 ³ Th-230    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  7,3)
D-34 ³                                                            ³           ³           ³
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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(8,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(8,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(8,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(11,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(11,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(12,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(12,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(12,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(4,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(4,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(7,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(7,2)
D-5				
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(8,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(8,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(9,1)

D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(11,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(11,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(12,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(12,2)

#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.

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)	8.710E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	4.500E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	2.950E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+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)	1.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	5.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	7.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	9.000E+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): Ac-227	1.690E+01	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Pa-231	1.690E+01	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	2.640E+02	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	2.640E+02	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	4.173E+02	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	4.173E+02	0.000E+00	---	S1(6)

R012	Initial principal radionuclide (pCi/g):	Th-230	2.408E+02	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g):	Th-232	4.173E+02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g):	U-234	2.408E+02	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g):	U-235	1.690E+01	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g):	U-238	2.408E+02	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L):	Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L):	Pa-231	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L):	Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L):	Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L):	Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L):	Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L):	Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L):	Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L):	U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L):	U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L):	U-238	not used	0.000E+00	---	W1(11)
R013	Cover depth (m)		1.830E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)		1.920E+00	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)		1.500E-04	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)		2.240E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)		1.500E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity		3.600E-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-02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter		4.430E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)		4.300E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)		not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient		7.300E-01	5.000E-01	---	EVAPTR

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Precipitation (m/yr)	1.050E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	9.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	2.770E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.510E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.830E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	9.500E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.000E-03	2.000E-02	---	HGWT

R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	2	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.500E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.696E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.600E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.890E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.060E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	4.750E+03	1.000E+01	---	HCUZ(1)
R015	Unsat. zone 2, thickness (m)	1.900E+00	0.000E+00	---	H(2)
R015	Unsat. zone 2, soil density (g/cm**3)	1.510E+00	1.500E+00	---	DENSUZ(2)
R015	Unsat. zone 2, total porosity	4.300E-01	4.000E-01	---	TPUZ(2)
R015	Unsat. zone 2, effective porosity	3.830E-01	2.000E-01	---	EPUZ(2)
R015	Unsat. zone 2, field capacity	2.000E-01	2.000E-01	---	FCUZ(2)
R015	Unsat. zone 2, soil-specific b parameter	4.050E+00	5.300E+00	---	BUZ(2)
R015	Unsat. zone 2, hydraulic conductivity (m/yr)	9.500E+03	1.000E+01	---	HCUZ(2)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Unsaturated zone 2 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,2)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.248E-06	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,1)
R016	Unsaturated zone 2 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,2)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.112E-06	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,1)
R016	Unsaturated zone 2 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,2)

R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.041E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	1.604E+03	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.753E-06	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	1.257E+04	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.238E-07	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	1.391E+05	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.022E-08	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	1.391E+05	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.022E-08	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	1.391E+05	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.022E-08	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

Site-Specific Parameter Summary (continued)

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

R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	7.297E+05	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.854E-09	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	7.297E+05	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.854E-09	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	7.297E+05	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.854E-09	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	3.000E-05	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	2.700E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.000E-03	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)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
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)	2.000E-01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	2.300E+00	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	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	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)

R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV

R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	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	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g	
Area: 871.00 square meters	Ac-227	1.690E+01

Thickness:	4.50 meters	Pa-231	1.690E+01
Cover Depth:	1.83 meters	Pb-210	2.640E+02
		Ra-226	2.640E+02
		Ra-228	4.173E+02
		Th-228	4.173E+02
		Th-230	2.408E+02
		Th-232	4.173E+02
		U-234	2.408E+02
		U-235	1.690E+01
		U-238	2.408E+02

0

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

t (years):	0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
TDOSE(t):	2.305E-09	2.309E-09	2.347E-09	2.765E-09	3.977E-09	5.722E-09	8.233E-09	1.185E-08	1.421E-08
M(t):	9.220E-11	9.237E-11	9.389E-11	1.106E-10	1.591E-10	2.289E-10	3.293E-10	4.739E-10	5.685E-10

0Maximum TDOSE(t): 1.421E-08 mrem/yr at t = 1.000E+03 years
1RESRAD, Version 6.4 T½ Limit = 180 days 07/25/2009 16:49 Page 14
Summary : SMC Maintenance Worker Area 3 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109203.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
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	3.361E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	5.560E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	6.995E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.550E-11	0.0111	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	3.538E-10	0.1535	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	1.911E-09	0.8290	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	5.041E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.482E-11	0.0064	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	1.513E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	3.391E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.711E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	2.305E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.

ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	3.361E-17	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	0.000E+00	0.0000	5.560E-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	0.000E+00	0.0000	6.995E-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	0.000E+00	0.0000	2.550E-11	0.0111
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	0.000E+00	0.0000	3.538E-10	0.1535
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	0.000E+00	0.0000	1.911E-09	0.8290
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.041E-15	0.0000
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	1.482E-11	0.0064
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.513E-20	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	0.000E+00	0.0000	3.391E-23	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.711E-15	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.305E-09	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 16:49 Page 15

Summary : SMC Maintenance Worker Area 3 Controls in Place Restricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109203.RAD

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Ac-227	3.264E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	1.613E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	6.798E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.555E-11	0.0111	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	8.603E-10	0.3726	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	1.332E-09	0.5770	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.515E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	9.079E-11	0.0393	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	1.061E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	5.706E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.715E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	2.309E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	3.264E-17	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	0.000E+00	0.0000	1.613E-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	0.000E+00	0.0000	6.798E-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	0.000E+00	0.0000	2.555E-11	0.0111
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	0.000E+00	0.0000	8.603E-10	0.3726
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	0.000E+00	0.0000	1.332E-09	0.5770
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.515E-14	0.0000
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	9.079E-11	0.0393
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.061E-19	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	0.000E+00	0.0000	5.706E-23	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.715E-15	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.309E-09	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 16:49 Page 16

Summary : SMC Maintenance Worker Area 3 Controls in Place Restricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109203.RAD

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

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Ac-227	2.513E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	9.990E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	5.260E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.595E-11	0.0111	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	9.036E-10	0.3849	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	5.195E-11	0.0221	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.079E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.366E-09	0.5818	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	5.107E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.205E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.756E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	2.347E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	2.513E-17	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	0.000E+00	0.0000	9.990E-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	0.000E+00	0.0000	5.260E-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	0.000E+00	0.0000	2.595E-11	0.0111
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	0.000E+00	0.0000	9.036E-10	0.3849
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	0.000E+00	0.0000	5.195E-11	0.0221
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.079E-13	0.0000

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	1.366E-09	0.5818
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.107E-18	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	0.000E+00	0.0000	1.205E-21	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.756E-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	2.347E-09	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 16:49 Page 17

Summary : SMC Maintenance Worker Area 3 Controls in Place Restricted Area.

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109203.RAD

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	1.836E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	4.314E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	4.046E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	3.031E-11	0.0110	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	2.244E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	4.215E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.230E-12	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	2.733E-09	0.9886	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	5.603E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	6.708E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	2.213E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	2.765E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	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	0.000E+00	0.0000	1.836E-18	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	0.000E+00	0.0000	4.314E-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	0.000E+00	0.0000	4.046E-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	0.000E+00	0.0000	3.031E-11	0.0110
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	0.000E+00	0.0000	2.244E-14	0.0000
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	0.000E+00	0.0000	4.215E-25	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.230E-12	0.0004
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	2.733E-09	0.9886
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.603E-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	0.000E+00	0.0000	6.708E-20	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.213E-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	2.765E-09	1.0000

0*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 = 3.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	5.478E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	7.784E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.353E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	4.279E-11	0.0108	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	1.091E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	5.421E-12	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	3.929E-09	0.9879	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	7.493E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	4.449E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	3.705E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	3.977E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

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

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	5.478E-21	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	0.000E+00	0.0000	7.784E-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	0.000E+00	0.0000	1.353E-22	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	0.000E+00	0.0000	4.279E-11	0.0108
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	0.000E+00	0.0000	1.091E-24	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.421E-12	0.0014
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	3.929E-09	0.9879
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.493E-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	0.000E+00	0.0000	4.449E-19	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.705E-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	3.977E-09	1.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Maintenance Worker Area 3 Controls in Place Restricted Area
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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 = 5.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	1.635E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	1.348E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	4.527E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	6.042E-11	0.0106	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.332E-11	0.0023	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	5.648E-09	0.9871	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	3.110E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.346E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	6.212E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	5.722E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years
0 Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	1.635E-23	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	0.000E+00	0.0000	1.348E-16	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	0.000E+00	0.0000	4.527E-25	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	0.000E+00	0.0000	6.042E-11	0.0106
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.332E-11	0.0023
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	5.648E-09	0.9871
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.110E-14	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	0.000E+00	0.0000	1.346E-18	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.212E-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	5.722E-09	1.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Maintenance Worker Area 3 Controls in Place Restricted Area
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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 = 7.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	4.880E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	2.333E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.514E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	8.532E-11	0.0104	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.752E-11	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	8.120E-09	0.9863	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	9.120E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	3.332E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.043E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	8.233E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

As mrem/yr and Fraction of Total Dose At t = 7.000E+02 years

0 Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	4.880E-26	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	0.000E+00	0.0000	2.333E-16	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	0.000E+00	0.0000	1.514E-27	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	0.000E+00	0.0000	8.532E-11	0.0104
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.752E-11	0.0033
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	8.120E-09	0.9863
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.120E-14	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	0.000E+00	0.0000	3.332E-18	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.043E-14	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	8.233E-09	1.0000

0*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 = 9.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground	Inhalation	Radon	Plant	Meat	Milk	Soil

Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	1.456E-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	0.000E+00	0.0000
Pa-231	4.039E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.205E-10	0.0102	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	5.225E-11	0.0044	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.167E-08	0.9854	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	2.257E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	7.514E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.755E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	1.185E-08	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.000E+02 years

0 Water Dependent Pathways

0

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.
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	0.000E+00	0.0000	1.456E-28	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	0.000E+00	0.0000	4.039E-16	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	1.205E-10	0.0102
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.225E-11	0.0044
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	1.167E-08	0.9854
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.257E-13	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	0.000E+00	0.0000	7.514E-18	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.755E-14	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.185E-08	1.0000

0*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

0 Water Independent Pathways (Inhalation excludes radon)

0

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.
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	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	5.315E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.432E-10	0.0101	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	7.057E-11	0.0050	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.400E-08	0.9849	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	3.410E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.104E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	2.279E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	1.421E-08	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0 Radio-	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.
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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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	5.315E-16	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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	1.432E-10	0.0101
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.057E-11	0.0050
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	1.400E-08	0.9849
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.410E-13	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	0.000E+00	0.0000	1.104E-17	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.279E-14	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.421E-08	1.0000

0*Sum of all water independent and dependent pathways.

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

0 Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
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Ac-227+D	Ac-227+D	1.000E+00	1.989E-18	1.932E-18	1.487E-18	1.086E-19	3.242E-22	9.674E-25	2.887E-27	8.618E-30	4.709E-31
0Pa-231	Pa-231	1.000E+00	1.061E-21	1.064E-21	1.096E-21	1.477E-21	2.867E-21	5.563E-21	1.079E-20	2.095E-20	2.918E-20
Pa-231	Ac-227+D	1.000E+00	3.184E-20	9.441E-20	5.901E-19	2.551E-18	4.603E-18	7.968E-18	1.379E-17	2.388E-17	3.142E-17
Pa-231	äDSR(j)		3.290E-20	9.547E-20	5.912E-19	2.552E-18	4.606E-18	7.974E-18	1.380E-17	2.390E-17	3.145E-17
0Pb-210+D	Pb-210+D	1.000E+00	2.650E-21	2.575E-21	1.993E-21	1.532E-22	5.126E-25	1.715E-27	5.736E-30	1.919E-32	1.110E-33
0Ra-226+D	Ra-226+D	1.000E+00	9.661E-14	9.678E-14	9.829E-14	1.148E-13	1.621E-13	2.289E-13	3.232E-13	4.563E-13	5.422E-13
Ra-226+D	Pb-210+D	1.000E+00	4.140E-23	1.228E-22	7.671E-22	3.229E-21	5.210E-21	8.020E-21	1.235E-20	1.901E-20	2.358E-20
Ra-226+D	äDSR(j)		9.661E-14	9.678E-14	9.829E-14	1.148E-13	1.621E-13	2.289E-13	3.232E-13	4.563E-13	5.422E-13

0Ra-228+D	Ra-228+D	1.000E+00	3.327E-15	2.956E-15	1.021E-15	2.458E-20	1.341E-30	7.320E-41	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	8.445E-13	2.059E-12	2.164E-12	5.375E-17	2.614E-27	1.271E-37	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	äDSR(j)		8.478E-13	2.062E-12	2.165E-12	5.377E-17	2.615E-27	1.272E-37	0.000E+00	0.000E+00	0.000E+00
0Th-228+D	Th-228+D	1.000E+00	4.579E-12	3.193E-12	1.245E-13	1.010E-27	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	9.156E-35	9.205E-35	9.662E-35	1.567E-34	4.594E-34	1.347E-33	3.947E-33	1.157E-32	1.980E-32
Th-230	Ra-226+D	1.000E+00	2.094E-17	6.291E-17	4.481E-16	5.107E-15	2.251E-14	5.531E-14	1.143E-13	2.170E-13	2.930E-13
Th-230	Pb-210+D	1.000E+00	5.996E-27	4.169E-26	1.842E-24	1.035E-22	6.411E-22	1.800E-21	4.134E-21	8.649E-21	1.224E-20
Th-230	äDSR(j)		2.094E-17	6.291E-17	4.481E-16	5.107E-15	2.251E-14	5.531E-14	1.143E-13	2.170E-13	2.930E-13
0Th-232	Th-232	1.000E+00	2.329E-38	2.343E-38	2.472E-38	4.239E-38	1.405E-37	4.655E-37	1.542E-36	5.111E-36	9.304E-36
Th-232	Ra-228+D	1.000E+00	2.046E-16	5.838E-16	2.596E-15	4.485E-15	7.234E-15	1.167E-14	1.882E-14	3.036E-14	3.856E-14
Th-232	Th-228+D	1.000E+00	3.531E-14	2.170E-13	3.270E-12	6.545E-12	9.408E-12	1.352E-11	1.944E-11	2.794E-11	3.350E-11
Th-232	äDSR(j)		3.552E-14	2.176E-13	3.273E-12	6.549E-12	9.415E-12	1.354E-11	1.946E-11	2.798E-11	3.354E-11
0U-234	U-234	1.000E+00	2.179E-36	2.191E-36	2.304E-36	3.808E-36	1.164E-35	3.555E-35	1.086E-34	3.318E-34	5.800E-34
U-234	Th-230	1.000E+00	4.125E-40	1.243E-39	9.133E-39	1.419E-37	1.244E-36	6.076E-36	2.494E-35	9.403E-35	1.789E-34
U-234	Ra-226+D	1.000E+00	6.283E-23	4.406E-22	2.121E-20	2.327E-18	3.112E-17	1.292E-16	3.788E-16	9.373E-16	1.416E-15
U-234	Pb-210+D	1.000E+00	1.352E-32	2.018E-31	5.970E-29	3.769E-26	8.006E-25	3.942E-24	1.307E-23	3.600E-23	5.719E-23
U-234	äDSR(j)		6.283E-23	4.406E-22	2.121E-20	2.327E-18	3.112E-17	1.292E-16	3.788E-16	9.373E-16	1.416E-15
0U-235+D	U-235+D	1.000E+00	1.770E-24	1.777E-24	1.842E-24	2.634E-24	5.831E-24	1.291E-23	2.859E-23	6.330E-23	9.419E-23
U-235+D	Pa-231	1.000E+00	1.123E-26	3.378E-26	2.436E-25	3.146E-24	1.830E-23	5.930E-23	1.615E-22	4.039E-22	6.259E-22
U-235+D	Ac-227+D	1.000E+00	2.252E-25	1.566E-24	6.924E-23	3.963E-21	2.630E-20	7.957E-20	1.970E-19	4.441E-19	6.525E-19
U-235+D	äDSR(j)		2.006E-24	3.376E-24	7.133E-23	3.969E-21	2.633E-20	7.964E-20	1.972E-19	4.446E-19	6.532E-19
0U-238	U-238	5.400E-05	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
0U-238+D	U-238+D	9.999E-01	7.106E-18	7.124E-18	7.291E-18	9.191E-18	1.538E-17	2.573E-17	4.306E-17	7.207E-17	9.324E-17
U-238+D	U-234	9.999E-01	3.091E-42	9.319E-42	6.858E-41	1.085E-39	9.916E-39	5.047E-38	2.159E-37	8.482E-37	1.647E-36
U-238+D	Th-230	9.999E-01	0.000E+00	2.803E-45	1.359E-43	2.021E-41	5.301E-40	4.315E-39	2.480E-38	1.202E-37	2.542E-37
U-238+D	Ra-226+D	9.999E-01	4.454E-29	6.692E-28	2.108E-25	2.218E-22	8.934E-21	6.221E-20	2.571E-19	8.237E-19	1.387E-18
U-238+D	Pb-210+D	9.999E-01	7.673E-39	2.371E-37	4.524E-34	3.012E-30	2.101E-28	1.790E-27	8.494E-27	3.055E-26	5.428E-26
U-238+D	äDSR(j)		7.106E-18	7.124E-18	7.291E-18	9.191E-18	1.539E-17	2.580E-17	4.332E-17	7.289E-17	9.463E-17
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The DSR includes contributions from associated (half-life ó 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
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Ac-227	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13
Pa-231	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10
Pb-210	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13
Ra-226	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11
Ra-228	2.949E+13	1.213E+13	1.155E+13	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14
Th-228	5.460E+12	7.829E+12	2.008E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10
Th-232	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05
U-234	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09
U-235	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06
U-238	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05

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 *At specific activity limit
0
            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 = 1.000E+03 years
0Nuclide  Initial        tmin       DSR(i,tmin) G(i,tmin) DSR(i,tmax) G(i,tmax)
   (i)    (pCi/g)       (years)                  (pCi/g)               (pCi/g)
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 Ac-227  1.690E+01     0.000E+00      1.989E-18 *7.232E+13  0.000E+00 *7.232E+13
 Pa-231  1.690E+01     1.000E+03      3.145E-17 *4.723E+10  3.145E-17 *4.723E+10
 Pb-210  2.640E+02     0.000E+00      2.650E-21 *7.634E+13  0.000E+00 *7.634E+13
 Ra-226  2.640E+02     1.000E+03      5.422E-13 *9.885E+11  5.422E-13 *9.885E+11
 Ra-228  4.173E+02    4.112 ñ 0.008   3.173E-12  7.878E+12  0.000E+00 *2.726E+14
 Th-228  4.173E+02     0.000E+00      4.579E-12  5.460E+12  0.000E+00 *8.195E+14
 Th-230  2.408E+02     1.000E+03      2.930E-13 *2.018E+10  2.930E-13 *2.018E+10
 Th-232  4.173E+02     1.000E+03      3.354E-11 *1.097E+05  3.354E-11 *1.097E+05
 U-234   2.408E+02     1.000E+03      1.416E-15 *6.247E+09  1.416E-15 *6.247E+09
 U-235   1.690E+01     1.000E+03      6.532E-19 *2.161E+06  6.532E-19 *2.161E+06
 U-238   2.408E+02     1.000E+03      9.463E-17 *3.361E+05  9.463E-17 *3.361E+05
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 *At specific activity limit

1RESRAD, Version 6.4      T« Limit = 180 days        07/25/2009  16:49  Page  25
 Summary : SMC Maintenance Worker Area 3 Controls in Place Restricted Area
 File    : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109203.RAD
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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+00	3.361E-17	3.264E-17	2.513E-17	1.836E-18	5.478E-21	1.635E-23	4.880E-26	1.456E-28	0.000E+00
Ac-227	Pa-231	1.000E+00	5.380E-19	1.595E-18	9.972E-18	4.311E-17	7.779E-17	1.347E-16	2.331E-16	4.036E-16	5.310E-16
Ac-227	U-235	1.000E+00	3.806E-24	2.646E-23	1.170E-21	6.698E-20	4.445E-19	1.345E-18	3.329E-18	7.506E-18	1.103E-17
Ac-227	äDOSE(j)		3.415E-17	3.424E-17	3.510E-17	4.501E-17	7.824E-17	1.360E-16	2.364E-16	4.111E-16	5.420E-16
0Pa-231	Pa-231	1.000E+00	1.793E-20	1.798E-20	1.853E-20	2.497E-20	4.845E-20	9.402E-20	1.824E-19	3.540E-19	4.931E-19
Pa-231	U-235	1.000E+00	1.897E-25	5.709E-25	4.117E-24	5.317E-23	3.093E-22	1.002E-21	2.729E-21	6.825E-21	1.058E-20
Pa-231	äDOSE(j)		1.793E-20	1.799E-20	1.853E-20	2.502E-20	4.876E-20	9.502E-20	1.852E-19	3.608E-19	5.037E-19
0Pb-210	Pb-210	1.000E+00	6.995E-19	6.798E-19	5.260E-19	4.046E-20	1.353E-22	4.527E-25	1.514E-27	0.000E+00	0.000E+00
Pb-210	Ra-226	1.000E+00	1.093E-20	3.241E-20	2.025E-19	8.525E-19	1.375E-18	2.117E-18	3.260E-18	5.018E-18	6.226E-18
Pb-210	Th-230	1.000E+00	1.444E-24	1.004E-23	4.436E-22	2.492E-20	1.544E-19	4.334E-19	9.955E-19	2.083E-18	2.948E-18
Pb-210	U-234	1.000E+00	0.000E+00	0.000E+00	1.438E-26	9.075E-24	1.928E-22	9.493E-22	3.148E-21	8.668E-21	1.377E-20
Pb-210	U-238	9.999E-01	0.000E+00	0.000E+00	0.000E+00	7.253E-28	5.060E-26	4.311E-25	2.045E-24	7.356E-24	1.307E-23
Pb-210	äDOSE(j)		7.104E-19	7.123E-19	7.290E-19	9.178E-19	1.530E-18	2.552E-18	4.258E-18	7.109E-18	9.188E-18
0Ra-226	Ra-226	1.000E+00	2.550E-11	2.555E-11	2.595E-11	3.031E-11	4.279E-11	6.042E-11	8.532E-11	1.205E-10	1.432E-10
Ra-226	Th-230	1.000E+00	5.041E-15	1.515E-14	1.079E-13	1.230E-12	5.421E-12	1.332E-11	2.752E-11	5.225E-11	7.057E-11
Ra-226	U-234	1.000E+00	1.513E-20	1.061E-19	5.107E-18	5.603E-16	7.493E-15	3.110E-14	9.120E-14	2.257E-13	3.410E-13
Ra-226	U-238	9.999E-01	1.072E-26	1.611E-25	5.077E-23	5.341E-20	2.151E-18	1.498E-17	6.192E-17	1.983E-16	3.341E-16

Ra-226	äDOSE(j)		2.551E-11	2.556E-11	2.606E-11	3.154E-11	4.822E-11	7.377E-11	1.129E-10	1.729E-10	2.141E-10
0Ra-228	Ra-228	1.000E+00	1.388E-12	1.234E-12	4.259E-13	1.026E-17	5.597E-28	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228	Th-232	1.000E+00	8.539E-14	2.436E-13	1.083E-12	1.872E-12	3.019E-12	4.869E-12	7.854E-12	1.267E-11	1.609E-11
Ra-228	äDOSE(j)		1.474E-12	1.477E-12	1.509E-12	1.872E-12	3.019E-12	4.869E-12	7.854E-12	1.267E-11	1.609E-11
0Th-228	Ra-228	1.000E+00	3.524E-10	8.591E-10	9.031E-10	2.243E-14	1.091E-24	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-228	1.000E+00	1.911E-09	1.332E-09	5.195E-11	4.215E-25	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	1.474E-11	9.055E-11	1.365E-09	2.731E-09	3.926E-09	5.644E-09	8.112E-09	1.166E-08	1.398E-08
Th-228	äDOSE(j)		2.278E-09	2.282E-09	2.320E-09	2.731E-09	3.926E-09	5.644E-09	8.112E-09	1.166E-08	1.398E-08
0Th-230	Th-230	1.000E+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-230	U-234	1.000E+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-230	U-238	9.999E-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
Th-230	äDOSE(j)		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
0Th-232	Th-232	1.000E+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
0U-234	U-234	1.000E+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-234	U-238	9.999E-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
U-234	äDOSE(j)		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
0U-235	U-235	1.000E+00	2.991E-23	3.003E-23	3.112E-23	4.451E-23	9.854E-23	2.182E-22	4.831E-22	1.070E-21	1.592E-21
0U-238	U-238	5.400E-05	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-238	U-238	9.999E-01	1.711E-15	1.715E-15	1.756E-15	2.213E-15	3.703E-15	6.197E-15	1.037E-14	1.735E-14	2.245E-14
U-238	äDOSE(j)		1.711E-15	1.715E-15	1.756E-15	2.213E-15	3.703E-15	6.197E-15	1.037E-14	1.735E-14	2.245E-14
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
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Ac-227	Ac-227	1.000E+00	1.690E+01	1.637E+01	1.229E+01	6.999E-01	1.200E-03	2.059E-06	3.531E-09	6.056E-12	2.508E-13
Ac-227	Pa-231	1.000E+00	0.000E+00	5.295E-01	4.607E+00	1.617E+01	1.678E+01	1.669E+01	1.660E+01	1.652E+01	1.647E+01
Ac-227	U-235	1.000E+00	0.000E+00	5.632E-06	5.132E-04	2.496E-02	9.568E-02	1.665E-01	2.369E-01	3.070E-01	3.419E-01
Ac-227	äS(j):		1.690E+01	1.690E+01	1.690E+01	1.689E+01	1.687E+01	1.686E+01	1.684E+01	1.682E+01	1.681E+01
0Pa-231	Pa-231	1.000E+00	1.690E+01	1.690E+01	1.690E+01	1.686E+01	1.677E+01	1.668E+01	1.659E+01	1.651E+01	1.646E+01
Pa-231	U-235	1.000E+00	0.000E+00	3.576E-04	3.575E-03	3.571E-02	1.069E-01	1.776E-01	2.480E-01	3.180E-01	3.529E-01
Pa-231	äS(j):		1.690E+01	1.690E+01	1.690E+01	1.689E+01	1.687E+01	1.686E+01	1.684E+01	1.682E+01	1.681E+01
0Pb-210	Pb-210	1.000E+00	2.640E+02	2.559E+02	1.934E+02	1.178E+01	2.347E-02	4.675E-05	9.313E-08	1.855E-10	8.279E-12
Pb-210	Ra-226	1.000E+00	0.000E+00	8.078E+00	7.037E+01	2.443E+02	2.349E+02	2.153E+02	1.974E+02	1.810E+02	1.732E+02
Pb-210	Th-230	1.000E+00	0.000E+00	1.604E-03	1.463E-01	7.097E+00	2.631E+01	4.403E+01	6.023E+01	7.505E+01	8.198E+01
Pb-210	U-234	1.000E+00	0.000E+00	4.827E-09	4.504E-06	2.570E-03	3.280E-02	9.632E-02	1.903E-01	3.122E-01	3.828E-01
Pb-210	U-238	9.999E-01	0.000E+00	3.426E-15	3.241E-11	2.043E-07	8.594E-06	4.369E-05	1.236E-04	2.648E-04	3.631E-04
Pb-210	äS(j):		2.640E+02	2.640E+02	2.640E+02	2.632E+02	2.613E+02	2.595E+02	2.578E+02	2.563E+02	2.556E+02
0Ra-226	Ra-226	1.000E+00	2.640E+02	2.639E+02	2.629E+02	2.528E+02	2.317E+02	2.124E+02	1.947E+02	1.785E+02	1.709E+02
Ra-226	Th-230	1.000E+00	0.000E+00	1.043E-01	1.041E+00	1.020E+01	2.930E+01	4.677E+01	6.275E+01	7.736E+01	8.418E+01
Ra-226	U-234	1.000E+00	0.000E+00	4.695E-07	4.688E-05	4.626E-03	4.043E-02	1.091E-01	2.078E-01	3.340E-01	4.066E-01
Ra-226	U-238	9.999E-01	0.000E+00	4.436E-13	4.432E-10	4.388E-07	1.159E-05	5.249E-05	1.410E-04	2.933E-04	3.981E-04
Ra-226	äS(j):		2.640E+02	2.640E+02	2.639E+02	2.630E+02	2.610E+02	2.593E+02	2.577E+02	2.562E+02	2.555E+02
0Ra-228	Ra-228	1.000E+00	4.173E+02	3.699E+02	1.250E+02	2.427E-03	8.213E-14	2.779E-24	9.403E-35	0.000E+00	0.000E+00

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 Ra-228  Th-232  1.000E+00    0.000E+00 4.739E+01 2.923E+02 4.173E+02 4.173E+02 4.173E+02 4.173E+02 4.173E+02 4.173E+02
 Ra-228  äS(j):              4.173E+02 4.173E+02 4.173E+02 4.173E+02 4.173E+02 4.173E+02 4.173E+02 4.173E+02 4.173E+02
0Th-228  Ra-228  1.000E+00    0.000E+00 1.191E+02 1.706E+02 3.638E-03 1.231E-13 4.165E-24 1.409E-34 0.000E+00 0.000E+00
 Th-228  Th-228  1.000E+00    4.173E+02 2.905E+02 1.114E+01 7.678E-14 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 Th-228  Th-232  1.000E+00    0.000E+00 7.780E+00 2.355E+02 4.173E+02 4.173E+02 4.173E+02 4.173E+02 4.173E+02 4.173E+02
 Th-228  äS(j):              4.173E+02 4.173E+02 4.173E+02 4.173E+02 4.173E+02 4.173E+02 4.173E+02 4.173E+02 4.173E+02
0Th-230  Th-230  1.000E+00    2.408E+02 2.408E+02 2.408E+02 2.406E+02 2.401E+02 2.397E+02 2.393E+02 2.389E+02 2.386E+02
 Th-230  U-234   1.000E+00    0.000E+00 2.168E-03 2.168E-02 2.166E-01 6.491E-01 1.081E+00 1.511E+00 1.941E+00 2.155E+00
 Th-230  U-238   9.999E-01    0.000E+00 3.072E-09 3.072E-07 3.071E-05 2.762E-04 7.666E-04 1.501E-03 2.480E-03 3.060E-03
 Th-230  äS(j):              2.408E+02 2.408E+02 2.408E+02 2.408E+02 2.408E+02 2.408E+02 2.408E+02 2.408E+02 2.408E+02
0Th-232  Th-232  1.000E+00    4.173E+02 4.173E+02 4.173E+02 4.173E+02 4.173E+02 4.173E+02 4.173E+02 4.173E+02 4.173E+02
0U-234   U-234   1.000E+00    2.408E+02 2.408E+02 2.408E+02 2.407E+02 2.406E+02 2.405E+02 2.403E+02 2.402E+02 2.401E+02
 U-234   U-238   9.999E-01    0.000E+00 6.826E-04 6.826E-03 6.825E-02 2.047E-01 3.411E-01 4.774E-01 6.136E-01 6.817E-01
 U-234   äS(j):              2.408E+02 2.408E+02 2.408E+02 2.408E+02 2.408E+02 2.408E+02 2.408E+02 2.408E+02 2.408E+02
0U-235   U-235   1.000E+00    1.690E+01 1.690E+01 1.690E+01 1.690E+01 1.690E+01 1.690E+01 1.690E+01 1.690E+01 1.690E+01
0U-238   U-238   5.400E-05    1.300E-02 1.300E-02 1.300E-02 1.300E-02 1.300E-02 1.300E-02 1.300E-02 1.300E-02 1.300E-02
 U-238   U-238   9.999E-01    2.408E+02 2.408E+02 2.408E+02 2.408E+02 2.408E+02 2.408E+02 2.408E+02 2.408E+02 2.408E+02
 U-238   äS(j):              2.408E+02 2.408E+02 2.408E+02 2.408E+02 2.408E+02 2.408E+02 2.408E+02 2.408E+02 2.408E+02
 ÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ   ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ
 THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time =   68.84 seconds
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Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary 6
Summary of Pathway Selections 12
Contaminated Zone and Total Dose Summary 13
Total Dose Components
Time = 0.000E+00 14
Time = 1.000E+00 15
Time = 1.000E+01 16
Time = 1.000E+02 17
Time = 3.000E+02 18
Time = 5.000E+02 19
Time = 7.000E+02 20
Time = 9.000E+02 21
Time = 1.000E+03 22
Dose/Source Ratios Summed Over All Pathways 23
Single Radionuclide Soil Guidelines 24
Dose Per Nuclide Summed Over All Pathways 25
Soil Concentration Per Nuclide 26

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)

A-1	Pb-212	(Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214	(Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)
A-1	Po-210	(Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211	(Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214	(Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215	(Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216	(Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218	(Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)
A-1	Ra-223	(Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224	(Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226	(Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219	(Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220	(Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222	(Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227	(Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228	(Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230	(Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231	(Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232	(Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234	(Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207	(Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208	(Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210	(Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234	(Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235	(Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238	(Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D		6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231		1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D		2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D		8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D		5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D		3.454E-01	3.420E-01	DCF2(6)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)

```
B-1  ³ U-238+D                                                    ³ 1.180E-01 ³ 1.180E-01 ³ DCF2( 12)
     ³                                                            ³           ³           ³
D-1  ³ Dose conversion factors for ingestion, mrem/pCi:           ³           ³           ³
D-1  ³ Ac-227+D                                                   ³ 1.480E-02 ³ 1.410E-02 ³ DCF3(  1)
D-1  ³ Pa-231                                                     ³ 1.060E-02 ³ 1.060E-02 ³ DCF3(  2)
D-1  ³ Pb-210+D                                                   ³ 7.276E-03 ³ 5.370E-03 ³ DCF3(  3)
D-1  ³ Ra-226+D                                                   ³ 1.321E-03 ³ 1.320E-03 ³ DCF3(  4)
D-1  ³ Ra-228+D                                                   ³ 1.442E-03 ³ 1.440E-03 ³ DCF3(  5)
D-1  ³ Th-228+D                                                   ³ 8.086E-04 ³ 3.960E-04 ³ DCF3(  6)
D-1  ³ Th-230                                                     ³ 5.480E-04 ³ 5.480E-04 ³ DCF3(  7)
D-1  ³ Th-232                                                     ³ 2.730E-03 ³ 2.730E-03 ³ DCF3(  8)
D-1  ³ U-234                                                      ³ 2.830E-04 ³ 2.830E-04 ³ DCF3(  9)
D-1  ³ U-235+D                                                    ³ 2.673E-04 ³ 2.660E-04 ³ DCF3( 10)
D-1  ³ U-238                                                      ³ 2.550E-04 ³ 2.550E-04 ³ DCF3( 11)
D-1  ³ U-238+D                                                    ³ 2.687E-04 ³ 2.550E-04 ³ DCF3( 12)
     ³                                                            ³           ³           ³
D-34 ³ Food transfer factors:                                     ³           ³           ³
D-34 ³ Ac-227+D  , plant/soil concentration ratio, dimensionless  ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  1,1)
D-34 ³ Ac-227+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,2)
D-34 ³ Ac-227+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 2.000E-05 ³ 2.000E-05 ³ RTF(  1,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Pa-231    , plant/soil concentration ratio, dimensionless  ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  2,1)
D-34 ³ Pa-231    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 5.000E-03 ³ 5.000E-03 ³ RTF(  2,2)
D-34 ³ Pa-231    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  2,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Pb-210+D  , plant/soil concentration ratio, dimensionless  ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  3,1)
D-34 ³ Pb-210+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 8.000E-04 ³ 8.000E-04 ³ RTF(  3,2)
D-34 ³ Pb-210+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 3.000E-04 ³ 3.000E-04 ³ RTF(  3,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Ra-226+D  , plant/soil concentration ratio, dimensionless  ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  4,1)
D-34 ³ Ra-226+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,2)
D-34 ³ Ra-226+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Ra-228+D  , plant/soil concentration ratio, dimensionless  ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  5,1)
D-34 ³ Ra-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,2)
D-34 ³ Ra-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Th-228+D  , plant/soil concentration ratio, dimensionless  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  6,1)
D-34 ³ Th-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  6,2)
D-34 ³ Th-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  6,3)
D-34 ³                                                            ³           ³           ³
D-34 ³ Th-230    , plant/soil concentration ratio, dimensionless  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  7,1)
D-34 ³ Th-230    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)  ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  7,2)
D-34 ³ Th-230    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)   ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  7,3)
D-34 ³                                                            ³           ³           ³
```


Dose Conversion Factor (and Related) Parameter Summary (continued)

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(8,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(8,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(8,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(11,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(11,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(12,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(12,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(12,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(4,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(4,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(7,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(7,2)
D-5				
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(8,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(8,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(9,1)

D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(11,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(11,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(12,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(12,2)

#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.

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)	2.900E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	4.500E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	1.700E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+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)	1.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	5.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	7.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	9.000E+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): Ac-227	2.000E-01	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Pa-231	2.000E-01	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.900E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.900E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	3.500E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	3.500E+00	0.000E+00	---	S1(6)

R012	Initial principal radionuclide (pCi/g):	Th-230	2.900E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g):	Th-232	3.500E+00	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g):	U-234	2.900E+00	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g):	U-235	2.000E-01	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g):	U-238	2.900E+00	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L):	Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L):	Pa-231	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L):	Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L):	Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L):	Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L):	Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L):	Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L):	Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L):	U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L):	U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L):	U-238	not used	0.000E+00	---	W1(11)
R013	Cover depth (m)		1.830E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)		1.920E+00	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)		1.500E-04	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)		2.240E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)		1.500E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity		3.600E-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-02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter		4.430E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)		4.300E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)		not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient		7.300E-01	5.000E-01	---	EVAPTR

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Precipitation (m/yr)	1.050E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	9.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	2.770E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.510E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.830E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	9.500E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.000E-03	2.000E-02	---	HGWT

R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	2	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.500E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.696E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.600E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.890E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.060E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	4.750E+03	1.000E+01	---	HCUZ(1)
R015	Unsat. zone 2, thickness (m)	1.900E+00	0.000E+00	---	H(2)
R015	Unsat. zone 2, soil density (g/cm**3)	1.510E+00	1.500E+00	---	DENSUZ(2)
R015	Unsat. zone 2, total porosity	4.300E-01	4.000E-01	---	TPUZ(2)
R015	Unsat. zone 2, effective porosity	3.830E-01	2.000E-01	---	EPUZ(2)
R015	Unsat. zone 2, field capacity	2.000E-01	2.000E-01	---	FCUZ(2)
R015	Unsat. zone 2, soil-specific b parameter	4.050E+00	5.300E+00	---	BUZ(2)
R015	Unsat. zone 2, hydraulic conductivity (m/yr)	9.500E+03	1.000E+01	---	HCUZ(2)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Unsaturated zone 2 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,2)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.248E-06	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,1)
R016	Unsaturated zone 2 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,2)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.112E-06	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,1)
R016	Unsaturated zone 2 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,2)

R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.041E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	5.030E+04	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.591E-08	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	1.099E+05	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.560E-08	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	1.680E+04	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.674E-07	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	1.680E+04	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.674E-07	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	1.680E+04	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.674E-07	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

Site-Specific Parameter Summary (continued)

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

R016	Distribution coefficients for U-234			
R016	Contaminated zone (cm**3/g)	1.393E+04	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.019E-07	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	1.393E+04	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.019E-07	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	1.393E+04	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.019E-07	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	3.000E-05	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	2.700E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.000E-03	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)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
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)	2.000E-01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	2.300E+00	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	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	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)

R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV

R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	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	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	active

Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g	
Area: 290.00 square meters	Ac-227	2.000E-01

Thickness:	4.50 meters	Pa-231	2.000E-01
Cover Depth:	1.83 meters	Pb-210	1.900E+00
		Ra-226	1.900E+00
		Ra-228	3.500E+00
		Th-228	3.500E+00
		Th-230	2.900E+00
		Th-232	3.500E+00
		U-234	2.900E+00
		U-235	2.000E-01
		U-238	2.900E+00

0

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

t (years):	0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
TDOSE(t):	1.930E-11	1.934E-11	1.966E-11	2.316E-11	3.333E-11	4.797E-11	6.905E-11	9.940E-11	1.193E-10
M(t):	7.721E-13	7.735E-13	7.863E-13	9.262E-13	1.333E-12	1.919E-12	2.762E-12	3.976E-12	4.771E-12

0Maximum TDOSE(t): 1.193E-10 mrem/yr at t = 1.000E+03 years
1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 16:46 Page 14
Summary : SMC Maintenance Worker Area 2 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109202.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
0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	3.977E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	6.579E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	5.034E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.836E-13	0.0095	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	2.967E-12	0.1537	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	1.603E-11	0.8303	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	6.071E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.243E-13	0.0064	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	1.822E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	4.012E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	2.061E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	1.930E-11	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

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.

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	0.000E+00	0.0000	3.977E-19	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	0.000E+00	0.0000	6.579E-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	0.000E+00	0.0000	5.034E-21	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	0.000E+00	0.0000	1.836E-13	0.0095
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	0.000E+00	0.0000	2.967E-12	0.1537
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	0.000E+00	0.0000	1.603E-11	0.8303
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.071E-17	0.0000
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	1.243E-13	0.0064
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.822E-22	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	0.000E+00	0.0000	4.012E-25	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.061E-17	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.930E-11	1.0000

0*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

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	3.863E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	1.909E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	4.893E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.839E-13	0.0095	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	7.216E-12	0.3732	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	1.118E-11	0.5779	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.825E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	7.615E-13	0.0394	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	1.278E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	6.753E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	2.066E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	1.934E-11	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

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.
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	0.000E+00	0.0000	3.863E-19	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	0.000E+00	0.0000	1.909E-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	0.000E+00	0.0000	4.893E-21	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	0.000E+00	0.0000	1.839E-13	0.0095
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	0.000E+00	0.0000	7.216E-12	0.3732
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	0.000E+00	0.0000	1.118E-11	0.5779
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.825E-16	0.0000
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	7.615E-13	0.0394
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.278E-21	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	0.000E+00	0.0000	6.753E-25	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.066E-17	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.934E-11	1.0000

0*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+01 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Ac-227	2.974E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	1.182E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.786E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.868E-13	0.0095	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	7.579E-12	0.3855	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	4.357E-13	0.0222	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.300E-15	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.145E-11	0.5827	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	6.151E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.427E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	2.114E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	1.966E-11	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	2.974E-19	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	0.000E+00	0.0000	1.182E-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	0.000E+00	0.0000	3.786E-21	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	0.000E+00	0.0000	1.868E-13	0.0095
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	0.000E+00	0.0000	7.579E-12	0.3855
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	0.000E+00	0.0000	4.357E-13	0.0222
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.300E-15	0.0001

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	1.145E-11	0.5827
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.151E-20	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	0.000E+00	0.0000	1.427E-23	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.114E-17	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.966E-11	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T* Limit = 180 days 07/25/2009 16:46 Page 17

Summary : SMC Maintenance Worker Area 2 Controls in Place Restricted Area

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0

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.
ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Ac-227	2.173E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	5.105E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	2.912E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.182E-13	0.0094	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	1.882E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	3.535E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.481E-14	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	2.292E-11	0.9899	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	6.749E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	7.938E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	2.665E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	2.316E-11	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

0 Water Dependent Pathways

0

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.
ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
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	0.000E+00	0.0000	2.173E-20	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	0.000E+00	0.0000	5.105E-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	0.000E+00	0.0000	2.912E-22	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	0.000E+00	0.0000	2.182E-13	0.0094
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	0.000E+00	0.0000	1.882E-16	0.0000
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	0.000E+00	0.0000	3.535E-27	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.481E-14	0.0006
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	2.292E-11	0.9899
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.749E-18	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	0.000E+00	0.0000	7.938E-22	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.665E-17	0.0000

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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.316E-11	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 16:46 Page 18

Summary : SMC Maintenance Worker Area 2 Controls in Place Restricted Area

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

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

0 Water Independent Pathways (Inhalation excludes radon)

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.
Ac-227	6.483E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	9.212E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	9.740E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	3.081E-13	0.0092	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	9.155E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	6.530E-14	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	3.295E-11	0.9888	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	9.025E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	5.265E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	4.462E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	3.333E-11	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

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

0 Water Dependent Pathways

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.
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	0.000E+00	0.0000	6.483E-23	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	0.000E+00	0.0000	9.212E-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	0.000E+00	0.0000	9.740E-25	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	0.000E+00	0.0000	3.081E-13	0.0092
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	0.000E+00	0.0000	9.155E-27	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.530E-14	0.0020
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	3.295E-11	0.9888
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.025E-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	0.000E+00	0.0000	5.265E-21	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.462E-17	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	3.333E-11	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 16:46 Page 19

Summary : SMC Maintenance Worker Area 2 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109202.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 = 5.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Nuclide														
Ac-227	1.935E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	1.595E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.258E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	4.352E-13	0.0091	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.605E-13	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	4.737E-11	0.9876	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	3.747E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.593E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	7.480E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	4.797E-11	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years
0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Nuclide														
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	0.000E+00	0.0000	1.935E-25	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	0.000E+00	0.0000	1.595E-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	0.000E+00	0.0000	3.258E-27	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	0.000E+00	0.0000	4.352E-13	0.0091
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.605E-13	0.0033
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	4.737E-11	0.9876
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.747E-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	0.000E+00	0.0000	1.593E-20	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.480E-17	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	4.797E-11	1.0000

0*Sum of all water independent and dependent pathways.

Summary : SMC Maintenance Worker Area 2 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109202.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 = 7.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0

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.
Ac-227	5.775E-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	0.000E+00	0.0000
Pa-231	2.761E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.090E-29	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	6.148E-13	0.0089	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	3.316E-13	0.0048	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	6.810E-11	0.9863	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	1.099E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	3.943E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.256E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	6.905E-11	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

As mrem/yr and Fraction of Total Dose At t = 7.000E+02 years

0 Water Dependent Pathways

0

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.
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	0.000E+00	0.0000	5.775E-28	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	0.000E+00	0.0000	2.761E-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	0.000E+00	0.0000	1.090E-29	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	0.000E+00	0.0000	6.148E-13	0.0089
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.316E-13	0.0048
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	6.810E-11	0.9863
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.099E-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	0.000E+00	0.0000	3.943E-20	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.256E-16	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	6.905E-11	1.0000

0*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 = 9.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground	Inhalation	Radon	Plant	Meat	Milk	Soil

Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	1.724E-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	0.000E+00	0.0000
Pa-231	4.780E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	8.683E-13	0.0087	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	6.296E-13	0.0063	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	9.790E-11	0.9849	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	2.719E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	8.891E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	2.114E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	9.940E-11	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.000E+02 years

0 Water Dependent Pathways

Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	1.724E-30	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	0.000E+00	0.0000	4.780E-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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	8.683E-13	0.0087
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.296E-13	0.0063
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	9.790E-11	0.9849
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.719E-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	0.000E+00	0.0000	8.891E-20	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.114E-16	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	9.940E-11	1.0000

0*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

0 Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
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	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	6.290E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.032E-12	0.0087	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	8.504E-13	0.0071	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.174E-10	0.9842	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	4.108E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.306E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	2.744E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	1.193E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	6.290E-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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	1.032E-12	0.0087
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.504E-13	0.0071
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	1.174E-10	0.9842
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.108E-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	0.000E+00	0.0000	1.306E-19	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.744E-16	0.0000
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.193E-10	1.0000

0*Sum of all water independent and dependent pathways.

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

0 Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
Ac-227+D	Ac-227+D	1.000E+00	1.989E-18	1.932E-18	1.487E-18	1.086E-19	3.242E-22	9.674E-25	2.887E-27	8.618E-30	4.709E-31
0Pa-231	Pa-231	1.000E+00	1.061E-21	1.064E-21	1.096E-21	1.477E-21	2.867E-21	5.563E-21	1.079E-20	2.095E-20	2.918E-20
Pa-231	Ac-227+D	1.000E+00	3.184E-20	9.441E-20	5.901E-19	2.551E-18	4.603E-18	7.968E-18	1.379E-17	2.388E-17	3.142E-17
Pa-231	äDSR(j)		3.290E-20	9.547E-20	5.912E-19	2.552E-18	4.606E-18	7.974E-18	1.380E-17	2.390E-17	3.145E-17
0Pb-210+D	Pb-210+D	1.000E+00	2.650E-21	2.575E-21	1.993E-21	1.532E-22	5.126E-25	1.715E-27	5.736E-30	1.919E-32	1.110E-33
0Ra-226+D	Ra-226+D	1.000E+00	9.661E-14	9.678E-14	9.829E-14	1.148E-13	1.622E-13	2.291E-13	3.236E-13	4.570E-13	5.432E-13
Ra-226+D	Pb-210+D	1.000E+00	4.140E-23	1.228E-22	7.671E-22	3.229E-21	5.212E-21	8.027E-21	1.236E-20	1.904E-20	2.362E-20
Ra-226+D	äDSR(j)		9.661E-14	9.678E-14	9.829E-14	1.148E-13	1.622E-13	2.291E-13	3.236E-13	4.570E-13	5.432E-13

0Ra-228+D	Ra-228+D	1.000E+00	3.327E-15	2.956E-15	1.021E-15	2.458E-20	1.341E-30	7.321E-41	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	8.445E-13	2.059E-12	2.164E-12	5.375E-17	2.614E-27	1.272E-37	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	äDSR(j)		8.478E-13	2.062E-12	2.165E-12	5.377E-17	2.616E-27	1.272E-37	0.000E+00	0.000E+00	0.000E+00
0Th-228+D	Th-228+D	1.000E+00	4.579E-12	3.193E-12	1.245E-13	1.010E-27	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	9.156E-35	9.205E-35	9.662E-35	1.567E-34	4.594E-34	1.346E-33	3.946E-33	1.157E-32	1.980E-32
Th-230	Ra-226+D	1.000E+00	2.094E-17	6.291E-17	4.481E-16	5.107E-15	2.252E-14	5.533E-14	1.143E-13	2.171E-13	2.933E-13
Th-230	Pb-210+D	1.000E+00	5.996E-27	4.169E-26	1.842E-24	1.035E-22	6.412E-22	1.801E-21	4.136E-21	8.654E-21	1.225E-20
Th-230	äDSR(j)		2.094E-17	6.291E-17	4.481E-16	5.107E-15	2.252E-14	5.533E-14	1.143E-13	2.171E-13	2.933E-13
0Th-232	Th-232	1.000E+00	2.329E-38	2.343E-38	2.472E-38	4.239E-38	1.405E-37	4.654E-37	1.542E-36	5.111E-36	9.303E-36
Th-232	Ra-228+D	1.000E+00	2.046E-16	5.838E-16	2.596E-15	4.485E-15	7.234E-15	1.167E-14	1.882E-14	3.035E-14	3.855E-14
Th-232	Th-228+D	1.000E+00	3.531E-14	2.170E-13	3.270E-12	6.545E-12	9.408E-12	1.352E-11	1.944E-11	2.794E-11	3.350E-11
Th-232	äDSR(j)		3.552E-14	2.176E-13	3.273E-12	6.549E-12	9.415E-12	1.353E-11	1.946E-11	2.797E-11	3.354E-11
0U-234	U-234	1.000E+00	2.179E-36	2.191E-36	2.304E-36	3.808E-36	1.163E-35	3.555E-35	1.086E-34	3.318E-34	5.799E-34
U-234	Th-230	1.000E+00	4.125E-40	1.243E-39	9.133E-39	1.419E-37	1.244E-36	6.076E-36	2.494E-35	9.401E-35	1.789E-34
U-234	Ra-226+D	1.000E+00	6.283E-23	4.406E-22	2.121E-20	2.327E-18	3.112E-17	1.292E-16	3.789E-16	9.377E-16	1.417E-15
U-234	Pb-210+D	1.000E+00	1.352E-32	2.018E-31	5.970E-29	3.769E-26	8.007E-25	3.943E-24	1.308E-23	3.601E-23	5.721E-23
U-234	äDSR(j)		6.283E-23	4.406E-22	2.121E-20	2.327E-18	3.112E-17	1.292E-16	3.789E-16	9.377E-16	1.417E-15
0U-235+D	U-235+D	1.000E+00	1.770E-24	1.777E-24	1.842E-24	2.633E-24	5.831E-24	1.291E-23	2.858E-23	6.329E-23	9.417E-23
U-235+D	Pa-231	1.000E+00	1.123E-26	3.378E-26	2.436E-25	3.146E-24	1.830E-23	5.930E-23	1.615E-22	4.038E-22	6.258E-22
U-235+D	Ac-227+D	1.000E+00	2.252E-25	1.566E-24	6.924E-23	3.963E-21	2.630E-20	7.957E-20	1.970E-19	4.441E-19	6.524E-19
U-235+D	äDSR(j)		2.006E-24	3.376E-24	7.133E-23	3.969E-21	2.632E-20	7.964E-20	1.972E-19	4.446E-19	6.532E-19
0U-238	U-238	5.400E-05	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
0U-238+D	U-238+D	9.999E-01	7.106E-18	7.124E-18	7.291E-18	9.191E-18	1.538E-17	2.573E-17	4.306E-17	7.206E-17	9.322E-17
U-238+D	U-234	9.999E-01	3.091E-42	9.319E-42	6.858E-41	1.085E-39	9.915E-39	5.047E-38	2.159E-37	8.480E-37	1.647E-36
U-238+D	Th-230	9.999E-01	0.000E+00	2.803E-45	1.359E-43	2.021E-41	5.301E-40	4.314E-39	2.479E-38	1.202E-37	2.542E-37
U-238+D	Ra-226+D	9.999E-01	4.454E-29	6.692E-28	2.108E-25	2.218E-22	8.935E-21	6.222E-20	2.572E-19	8.239E-19	1.388E-18
U-238+D	Pb-210+D	9.999E-01	7.673E-39	2.371E-37	4.524E-34	3.012E-30	2.102E-28	1.790E-27	8.496E-27	3.055E-26	5.430E-26
U-238+D	äDSR(j)		7.106E-18	7.124E-18	7.291E-18	9.191E-18	1.539E-17	2.579E-17	4.332E-17	7.288E-17	9.461E-17
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The DSR includes contributions from associated (half-life ó 180 days) daughters.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 16:46 Page 24
Summary : SMC Maintenance Worker Area 2 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109202.RAD

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide (i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
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Ac-227	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13
Pa-231	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10
Pb-210	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13
Ra-226	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11
Ra-228	2.949E+13	1.213E+13	1.155E+13	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14
Th-228	5.460E+12	7.829E+12	2.008E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10
Th-232	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05
U-234	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09
U-235	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06
U-238	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05

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*At specific activity limit

0

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 = 1.000E+03 years

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
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Ac-227	2.000E-01	0.000E+00	1.989E-18	*7.232E+13	0.000E+00	*7.232E+13
Pa-231	2.000E-01	1.000E+03	3.145E-17	*4.723E+10	3.145E-17	*4.723E+10
Pb-210	1.900E+00	0.000E+00	2.650E-21	*7.634E+13	0.000E+00	*7.634E+13
Ra-226	1.900E+00	1.000E+03	5.432E-13	*9.885E+11	5.432E-13	*9.885E+11
Ra-228	3.500E+00	4.112 ñ 0.008	3.173E-12	7.878E+12	0.000E+00	*2.726E+14
Th-228	3.500E+00	0.000E+00	4.579E-12	5.460E+12	0.000E+00	*8.195E+14
Th-230	2.900E+00	1.000E+03	2.933E-13	*2.018E+10	2.933E-13	*2.018E+10
Th-232	3.500E+00	1.000E+03	3.354E-11	*1.097E+05	3.354E-11	*1.097E+05
U-234	2.900E+00	1.000E+03	1.417E-15	*6.247E+09	1.417E-15	*6.247E+09
U-235	2.000E-01	1.000E+03	6.532E-19	*2.161E+06	6.532E-19	*2.161E+06
U-238	2.900E+00	1.000E+03	9.461E-17	*3.361E+05	9.461E-17	*3.361E+05
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*At specific activity limit

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

0Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
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Ac-227	Ac-227	1.000E+00	3.977E-19	3.863E-19	2.974E-19	2.173E-20	6.483E-23	1.935E-25	5.775E-28	1.724E-30	0.000E+00
Ac-227	Pa-231	1.000E+00	6.367E-21	1.888E-20	1.180E-19	5.102E-19	9.206E-19	1.594E-18	2.759E-18	4.776E-18	6.284E-18
Ac-227	U-235	1.000E+00	4.504E-26	3.132E-25	1.385E-23	7.927E-22	5.260E-21	1.591E-20	3.940E-20	8.882E-20	1.305E-19
Ac-227	äDOSE(j)		4.041E-19	4.052E-19	4.154E-19	5.327E-19	9.259E-19	1.610E-18	2.798E-18	4.865E-18	6.414E-18
0Pa-231	Pa-231	1.000E+00	2.121E-22	2.128E-22	2.193E-22	2.955E-22	5.734E-22	1.113E-21	2.159E-21	4.189E-21	5.836E-21
Pa-231	U-235	1.000E+00	2.245E-27	6.756E-27	4.872E-26	6.292E-25	3.660E-24	1.186E-23	3.229E-23	8.076E-23	1.252E-22
Pa-231	äDOSE(j)		2.121E-22	2.128E-22	2.193E-22	2.961E-22	5.771E-22	1.124E-21	2.191E-21	4.270E-21	5.961E-21
0Pb-210	Pb-210	1.000E+00	5.034E-21	4.893E-21	3.786E-21	2.912E-22	9.740E-25	3.258E-27	1.090E-29	0.000E+00	0.000E+00
Pb-210	Ra-226	1.000E+00	7.867E-23	2.333E-22	1.457E-21	6.136E-21	9.903E-21	1.525E-20	2.349E-20	3.617E-20	4.488E-20
Pb-210	Th-230	1.000E+00	1.739E-26	1.209E-25	5.343E-24	3.001E-22	1.859E-21	5.222E-21	1.199E-20	2.510E-20	3.553E-20
Pb-210	U-234	1.000E+00	0.000E+00	0.000E+00	1.731E-28	1.093E-25	2.322E-24	1.143E-23	3.792E-23	1.044E-22	1.659E-22
Pb-210	U-238	9.999E-01	0.000E+00	0.000E+00	0.000E+00	8.735E-30	6.094E-28	5.192E-27	2.464E-26	8.861E-26	1.575E-25
Pb-210	äDOSE(j)		5.113E-21	5.126E-21	5.249E-21	6.727E-21	1.177E-20	2.048E-20	3.552E-20	6.137E-20	8.057E-20
0Ra-226	Ra-226	1.000E+00	1.836E-13	1.839E-13	1.868E-13	2.182E-13	3.081E-13	4.352E-13	6.148E-13	8.683E-13	1.032E-12
Ra-226	Th-230	1.000E+00	6.071E-17	1.825E-16	1.300E-15	1.481E-14	6.530E-14	1.605E-13	3.316E-13	6.296E-13	8.504E-13
Ra-226	U-234	1.000E+00	1.822E-22	1.278E-21	6.151E-20	6.749E-18	9.025E-17	3.747E-16	1.099E-15	2.719E-15	4.108E-15
Ra-226	U-238	9.999E-01	1.292E-28	1.941E-27	6.115E-25	6.433E-22	2.591E-20	1.804E-19	7.458E-19	2.389E-18	4.024E-18

Ra-226	äDOSE(j)		1.836E-13	1.841E-13	1.881E-13	2.330E-13	3.735E-13	5.961E-13	9.474E-13	1.501E-12	1.887E-12
0Ra-228	Ra-228	1.000E+00	1.164E-14	1.035E-14	3.572E-15	8.602E-20	4.695E-30	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228	Th-232	1.000E+00	7.162E-16	2.043E-15	9.087E-15	1.570E-14	2.532E-14	4.084E-14	6.587E-14	1.062E-13	1.349E-13
Ra-228	äDOSE(j)		1.236E-14	1.239E-14	1.266E-14	1.570E-14	2.532E-14	4.084E-14	6.587E-14	1.062E-13	1.349E-13
0Th-228	Ra-228	1.000E+00	2.956E-12	7.206E-12	7.575E-12	1.881E-16	9.150E-27	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-228	1.000E+00	1.603E-11	1.118E-11	4.357E-13	3.535E-27	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	1.236E-13	7.594E-13	1.145E-11	2.291E-11	3.293E-11	4.733E-11	6.803E-11	9.779E-11	1.172E-10
Th-228	äDOSE(j)		1.911E-11	1.914E-11	1.946E-11	2.291E-11	3.293E-11	4.733E-11	6.803E-11	9.779E-11	1.172E-10
0Th-230	Th-230	1.000E+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-230	U-234	1.000E+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-230	U-238	9.999E-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
Th-230	äDOSE(j)		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
0Th-232	Th-232	1.000E+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
0U-234	U-234	1.000E+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-234	U-238	9.999E-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
U-234	äDOSE(j)		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
0U-235	U-235	1.000E+00	3.540E-25	3.554E-25	3.683E-25	5.267E-25	1.166E-24	2.582E-24	5.717E-24	1.266E-23	1.883E-23
0U-238	U-238	5.400E-05	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-238	U-238	9.999E-01	2.061E-17	2.066E-17	2.114E-17	2.665E-17	4.460E-17	7.462E-17	1.249E-16	2.090E-16	2.703E-16
U-238	äDOSE(j)		2.061E-17	2.066E-17	2.114E-17	2.665E-17	4.460E-17	7.462E-17	1.249E-16	2.090E-16	2.703E-16
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+00	2.000E-01	1.937E-01	1.455E-01	8.283E-03	1.421E-05	2.436E-08	4.179E-11	7.167E-14	2.968E-15
Ac-227	Pa-231	1.000E+00	0.000E+00	6.267E-03	5.452E-02	1.913E-01	1.985E-01	1.975E-01	1.965E-01	1.954E-01	1.949E-01
Ac-227	U-235	1.000E+00	0.000E+00	6.665E-08	6.074E-06	2.954E-04	1.132E-03	1.970E-03	2.804E-03	3.633E-03	4.046E-03
Ac-227	äS(j):		2.000E-01	2.000E-01	2.000E-01	1.999E-01	1.997E-01	1.995E-01	1.993E-01	1.991E-01	1.990E-01
0Pa-231	Pa-231	1.000E+00	2.000E-01	2.000E-01	1.999E-01	1.995E-01	1.984E-01	1.974E-01	1.964E-01	1.953E-01	1.948E-01
Pa-231	U-235	1.000E+00	0.000E+00	4.232E-06	4.231E-05	4.226E-04	1.264E-03	2.102E-03	2.935E-03	3.763E-03	4.176E-03
Pa-231	äS(j):		2.000E-01	2.000E-01	2.000E-01	1.999E-01	1.997E-01	1.995E-01	1.993E-01	1.991E-01	1.990E-01
0Pb-210	Pb-210	1.000E+00	1.900E+00	1.842E+00	1.392E+00	8.480E-02	1.689E-04	3.365E-07	6.702E-10	1.335E-12	5.958E-14
Pb-210	Ra-226	1.000E+00	0.000E+00	5.814E-02	5.064E-01	1.759E+00	1.691E+00	1.551E+00	1.422E+00	1.304E+00	1.249E+00
Pb-210	Th-230	1.000E+00	0.000E+00	1.932E-05	1.762E-03	8.548E-02	3.169E-01	5.304E-01	7.258E-01	9.044E-01	9.880E-01
Pb-210	U-234	1.000E+00	0.000E+00	5.813E-11	5.424E-08	3.095E-05	3.951E-04	1.160E-03	2.293E-03	3.761E-03	4.611E-03
Pb-210	U-238	9.999E-01	0.000E+00	4.126E-17	3.903E-13	2.461E-09	1.035E-07	5.263E-07	1.488E-06	3.189E-06	4.374E-06
Pb-210	äS(j):		1.900E+00	1.900E+00	1.900E+00	1.929E+00	2.009E+00	2.083E+00	2.150E+00	2.212E+00	2.241E+00
0Ra-226	Ra-226	1.000E+00	1.900E+00	1.899E+00	1.892E+00	1.819E+00	1.668E+00	1.530E+00	1.403E+00	1.286E+00	1.232E+00
Ra-226	Th-230	1.000E+00	0.000E+00	1.256E-03	1.254E-02	1.229E-01	3.529E-01	5.634E-01	7.560E-01	9.322E-01	1.015E+00
Ra-226	U-234	1.000E+00	0.000E+00	5.654E-09	5.646E-07	5.572E-05	4.870E-04	1.314E-03	2.503E-03	4.024E-03	4.899E-03
Ra-226	U-238	9.999E-01	0.000E+00	5.343E-15	5.337E-12	5.284E-09	1.396E-07	6.323E-07	1.698E-06	3.533E-06	4.796E-06
Ra-226	äS(j):		1.900E+00	1.900E+00	1.904E+00	1.942E+00	2.022E+00	2.095E+00	2.161E+00	2.223E+00	2.251E+00
0Ra-228	Ra-228	1.000E+00	3.500E+00	3.103E+00	1.048E+00	2.036E-05	6.889E-16	2.331E-26	7.887E-37	0.000E+00	0.000E+00

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 Ra-228  Th-232  1.000E+00    0.000E+00 3.975E-01 2.452E+00 3.500E+00 3.500E+00 3.500E+00 3.500E+00 3.499E+00 3.499E+00
 Ra-228  äS(j):              3.500E+00 3.500E+00 3.500E+00 3.500E+00 3.500E+00 3.500E+00 3.500E+00 3.499E+00 3.499E+00
0Th-228  Ra-228  1.000E+00    0.000E+00 9.985E-01 1.431E+00 3.051E-05 1.032E-15 3.493E-26 1.182E-36 0.000E+00 0.000E+00
 Th-228  Th-228  1.000E+00    3.500E+00 2.436E+00 9.344E-02 6.440E-16 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
 Th-228  Th-232  1.000E+00    0.000E+00 6.525E-02 1.975E+00 3.500E+00 3.500E+00 3.500E+00 3.500E+00 3.499E+00 3.499E+00
 Th-228  äS(j):              3.500E+00 3.500E+00 3.500E+00 3.500E+00 3.500E+00 3.500E+00 3.500E+00 3.499E+00 3.499E+00
0Th-230  Th-230  1.000E+00    2.900E+00 2.900E+00 2.900E+00 2.897E+00 2.892E+00 2.887E+00 2.881E+00 2.876E+00 2.874E+00
 Th-230  U-234   1.000E+00    0.000E+00 2.611E-05 2.610E-04 2.609E-03 7.817E-03 1.301E-02 1.820E-02 2.337E-02 2.595E-02
 Th-230  U-238   9.999E-01    0.000E+00 3.700E-11 3.700E-09 3.699E-07 3.326E-06 9.231E-06 1.808E-05 2.986E-05 3.685E-05
 Th-230  äS(j):              2.900E+00 2.900E+00 2.900E+00 2.900E+00 2.900E+00 2.900E+00 2.900E+00 2.900E+00 2.900E+00
0Th-232  Th-232  1.000E+00    3.500E+00 3.500E+00 3.500E+00 3.500E+00 3.500E+00 3.500E+00 3.500E+00 3.499E+00 3.499E+00
0U-234   U-234   1.000E+00    2.900E+00 2.900E+00 2.900E+00 2.899E+00 2.897E+00 2.896E+00 2.894E+00 2.892E+00 2.891E+00
 U-234   U-238   9.999E-01    0.000E+00 8.221E-06 8.221E-05 8.220E-04 2.465E-03 4.107E-03 5.748E-03 7.388E-03 8.208E-03
 U-234   äS(j):              2.900E+00 2.900E+00 2.900E+00 2.900E+00 2.900E+00 2.900E+00 2.900E+00 2.899E+00 2.899E+00
0U-235   U-235   1.000E+00    2.000E-01 2.000E-01 2.000E-01 2.000E-01 2.000E-01 2.000E-01 2.000E-01 2.000E-01 2.000E-01
0U-238   U-238   5.400E-05    1.566E-04 1.566E-04 1.566E-04 1.566E-04 1.566E-04 1.566E-04 1.566E-04 1.566E-04 1.566E-04
 U-238   U-238   9.999E-01    2.900E+00 2.900E+00 2.900E+00 2.900E+00 2.900E+00 2.900E+00 2.899E+00 2.899E+00 2.899E+00
 U-238   äS(j):              2.900E+00 2.900E+00 2.900E+00 2.900E+00 2.900E+00 2.900E+00 2.900E+00 2.899E+00 2.899E+00
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 THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time =   68.33 seconds
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Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ... 2
Site-Specific Parameter Summary 6
Summary of Pathway Selections 12
Contaminated Zone and Total Dose Summary 13
Total Dose Components
Time = 0.000E+00 14
Time = 1.000E+00 15
Time = 1.000E+01 16
Time = 1.000E+02 17
Time = 3.000E+02 18
Time = 5.000E+02 19
Time = 7.000E+02 20
Time = 9.000E+02 21
Time = 1.000E+03 22
Dose/Source Ratios Summed Over All Pathways 23
Single Radionuclide Soil Guidelines 24
Dose Per Nuclide Summed Over All Pathways 25
Soil Concentration Per Nuclide 26

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1(1)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(2)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(5)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(6)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(7)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(8)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(9)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(10)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(11)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(12)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(13)

A-1	Pb-212	(Source: FGR 12)	7.043E-01	7.043E-01	DCF1(14)
A-1	Pb-214	(Source: FGR 12)	1.341E+00	1.341E+00	DCF1(15)
A-1	Po-210	(Source: FGR 12)	5.231E-05	5.231E-05	DCF1(16)
A-1	Po-211	(Source: FGR 12)	4.764E-02	4.764E-02	DCF1(17)
A-1	Po-212	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(18)
A-1	Po-214	(Source: FGR 12)	5.138E-04	5.138E-04	DCF1(19)
A-1	Po-215	(Source: FGR 12)	1.016E-03	1.016E-03	DCF1(20)
A-1	Po-216	(Source: FGR 12)	1.042E-04	1.042E-04	DCF1(21)
A-1	Po-218	(Source: FGR 12)	5.642E-05	5.642E-05	DCF1(22)
A-1	Ra-223	(Source: FGR 12)	6.034E-01	6.034E-01	DCF1(23)
A-1	Ra-224	(Source: FGR 12)	5.119E-02	5.119E-02	DCF1(24)
A-1	Ra-226	(Source: FGR 12)	3.176E-02	3.176E-02	DCF1(25)
A-1	Ra-228	(Source: FGR 12)	0.000E+00	0.000E+00	DCF1(26)
A-1	Rn-219	(Source: FGR 12)	3.083E-01	3.083E-01	DCF1(27)
A-1	Rn-220	(Source: FGR 12)	2.298E-03	2.298E-03	DCF1(28)
A-1	Rn-222	(Source: FGR 12)	2.354E-03	2.354E-03	DCF1(29)
A-1	Th-227	(Source: FGR 12)	5.212E-01	5.212E-01	DCF1(30)
A-1	Th-228	(Source: FGR 12)	7.940E-03	7.940E-03	DCF1(31)
A-1	Th-230	(Source: FGR 12)	1.209E-03	1.209E-03	DCF1(32)
A-1	Th-231	(Source: FGR 12)	3.643E-02	3.643E-02	DCF1(33)
A-1	Th-232	(Source: FGR 12)	5.212E-04	5.212E-04	DCF1(34)
A-1	Th-234	(Source: FGR 12)	2.410E-02	2.410E-02	DCF1(35)
A-1	Tl-207	(Source: FGR 12)	1.980E-02	1.980E-02	DCF1(36)
A-1	Tl-208	(Source: FGR 12)	2.298E+01	2.298E+01	DCF1(37)
A-1	Tl-210	(Source: no data)	0.000E+00	-2.000E+00	DCF1(38)
A-1	U-234	(Source: FGR 12)	4.017E-04	4.017E-04	DCF1(39)
A-1	U-235	(Source: FGR 12)	7.211E-01	7.211E-01	DCF1(40)
A-1	U-238	(Source: FGR 12)	1.031E-04	1.031E-04	DCF1(41)
B-1	Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D		6.724E+00	6.700E+00	DCF2(1)
B-1	Pa-231		1.280E+00	1.280E+00	DCF2(2)
B-1	Pb-210+D		2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D		8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D		5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D		3.454E-01	3.420E-01	DCF2(6)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(10)
B-1	U-238	1.180E-01	1.180E-01	DCF2(11)

B-1	U-238+D	1.180E-01	1.180E-01	DCF2(12)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3(2)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(5)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(6)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(7)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(8)
D-1	U-234	2.830E-04	2.830E-04	DCF3(9)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(10)
D-1	U-238	2.550E-04	2.550E-04	DCF3(11)
D-1	U-238+D	2.687E-04	2.550E-04	DCF3(12)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(2,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(4,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(4,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(6,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(7,3)
D-34				

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(8,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(8,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(8,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(9,1)

D-34	U-234	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(9,2)
D-34	U-234	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(9,3)
D-34					
D-34	U-235+D	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(10,1)
D-34	U-235+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(10,2)
D-34	U-235+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(10,3)
D-34					
D-34	U-238	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,1)
D-34	U-238	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(11,2)
D-34	U-238	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(11,3)
D-34					
D-34	U-238+D	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(12,1)
D-34	U-238+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(12,2)
D-34	U-238+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(12,3)
D-5	Bioaccumulation factors, fresh water, L/kg:				
D-5	Ac-227+D	, fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D	, crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5					
D-5	Pa-231	, fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231	, crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5					
D-5	Pb-210+D	, fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D	, crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5					
D-5	Ra-226+D	, fish	5.000E+01	5.000E+01	BIOFAC(4,1)
D-5	Ra-226+D	, crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(4,2)
D-5					
D-5	Ra-228+D	, fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-228+D	, crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5					
D-5	Th-228+D	, fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-228+D	, crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5					
D-5	Th-230	, fish	1.000E+02	1.000E+02	BIOFAC(7,1)
D-5	Th-230	, crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(7,2)
D-5					
D-5	Th-232	, fish	1.000E+02	1.000E+02	BIOFAC(8,1)
D-5	Th-232	, crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(8,2)
D-5					
D-5	U-234	, fish	1.000E+01	1.000E+01	BIOFAC(9,1)
D-5	U-234	, crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5					
D-5	U-235+D	, fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-235+D	, crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

0 Menu	Parameter		Current Value#	Base Case*	Parameter Name
D-5	U-238	, fish	1.000E+01	1.000E+01	BIOFAC(11,1)
D-5	U-238	, crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(11,2)
D-5					
D-5	U-238+D	, fish	1.000E+01	1.000E+01	BIOFAC(12,1)
D-5	U-238+D	, crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(12,2)

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)	6.800E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	4.500E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	2.610E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+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)	1.000E+01	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+02	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+02	3.000E+01	---	T(5)
R011	Times for calculations (yr)	5.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	7.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	9.000E+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): Ac-227	1.600E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Pa-231	1.600E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	6.040E+01	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	6.040E+01	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	5.040E+01	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	5.040E+01	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Th-230	2.270E+01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Th-232	5.040E+01	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-234	2.270E+01	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): U-235	1.600E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): U-238	2.270E+01	0.000E+00	---	S1(11)
R012	Concentration in groundwater (pCi/L): Ac-227	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Pa-231	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(11)
R013	Cover depth (m)	1.830E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	1.920E+00	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	1.500E-04	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	2.240E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.500E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.600E-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-02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.430E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.300E+00	2.000E+00	---	WIND

R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evaporatranspiration coefficient	7.300E-01	5.000E-01	---	EVAPTR

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Precipitation (m/yr)	1.050E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	0.000E+00	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	9.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	2.770E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.510E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.830E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	9.500E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.000E-03	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	2	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.500E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.696E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.600E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.890E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.060E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	4.750E+03	1.000E+01	---	HCUZ(1)
R015	Unsat. zone 2, thickness (m)	1.900E+00	0.000E+00	---	H(2)
R015	Unsat. zone 2, soil density (g/cm**3)	1.510E+00	1.500E+00	---	DENSUZ(2)
R015	Unsat. zone 2, total porosity	4.300E-01	4.000E-01	---	TPUZ(2)
R015	Unsat. zone 2, effective porosity	3.830E-01	2.000E-01	---	EPUZ(2)
R015	Unsat. zone 2, field capacity	2.000E-01	2.000E-01	---	FCUZ(2)
R015	Unsat. zone 2, soil-specific b parameter	4.050E+00	5.300E+00	---	BUZ(2)
R015	Unsat. zone 2, hydraulic conductivity (m/yr)	9.500E+03	1.000E+01	---	HCUZ(2)
R016	Distribution coefficients for Ac-227				
R016	Contaminated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,1)
R016	Unsaturated zone 2 (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCU(1,2)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.248E-06	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Pa-231				
R016	Contaminated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,1)
R016	Unsaturated zone 2 (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCU(2,2)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS(2)

R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.112E-06	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,1)
R016	Unsaturated zone 2 (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCU(3,2)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.041E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	1.341E+05	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(4,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.097E-08	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	1.440E+04	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,1)
R016	Unsaturated zone 2 (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCU(5,2)
R016	Saturated zone (cm**3/g)	3.533E+03	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.953E-07	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	5.483E+04	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(6,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.130E-08	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	5.483E+04	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(7,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.130E-08	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	5.483E+04	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,1)
R016	Unsaturated zone 2 (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCU(8,2)
R016	Saturated zone (cm**3/g)	5.884E+03	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.130E-08	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

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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 U-234				
R016	Contaminated zone (cm**3/g)	1.598E+04	5.000E+01	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(9,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.759E-07	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	1.598E+04	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(10,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.759E-07	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	1.598E+04	5.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,1)
R016	Unsaturated zone 2 (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCU(11,2)
R016	Saturated zone (cm**3/g)	1.260E+02	5.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.759E-07	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	3.000E-05	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	2.700E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	3.000E-03	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)

Site-Specific Parameter Summary (continued)

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

R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
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)	2.000E-01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	2.300E+00	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	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	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
0					

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

Site-Specific Parameter Summary (continued)

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

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TITL ³ Maximum number of integration points for dose    ³    17    ³    ---    ³              ---              ³ LYMAX
TITL ³ Maximum number of integration points for risk    ³     1    ³    ---    ³              ---              ³ KYMAX
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Pa-231	5.264E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.600E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	5.835E-12	0.0208	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	4.273E-11	0.1520	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	2.308E-10	0.8209	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	4.752E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.790E-12	0.0064	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	1.426E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	3.210E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.613E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	2.811E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0

Water Dependent Pathways

0

Radio-	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.
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	0.000E+00	0.0000	3.182E-18	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	0.000E+00	0.0000	5.264E-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	0.000E+00	0.0000	1.600E-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	0.000E+00	0.0000	5.835E-12	0.0208
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	0.000E+00	0.0000	4.273E-11	0.1520
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	0.000E+00	0.0000	2.308E-10	0.8209
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.752E-16	0.0000
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	1.790E-12	0.0064
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.426E-21	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	0.000E+00	0.0000	3.210E-24	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.613E-16	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	2.811E-10	1.0000

0*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

0

Water Independent Pathways (Inhalation excludes radon)

0

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.
Ac-227	3.091E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	1.528E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.555E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	5.845E-12	0.0208	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	1.039E-10	0.3689	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	1.609E-10	0.5714	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.428E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.097E-11	0.0389	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	1.000E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	5.402E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.617E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	2.817E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	3.091E-18	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	0.000E+00	0.0000	1.528E-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	0.000E+00	0.0000	1.555E-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	0.000E+00	0.0000	5.845E-12	0.0208
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	0.000E+00	0.0000	1.039E-10	0.3689
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	0.000E+00	0.0000	1.609E-10	0.5714
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.428E-15	0.0000
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	1.097E-11	0.0389
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.000E-20	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	0.000E+00	0.0000	5.402E-24	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.617E-16	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	2.817E-10	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T½ Limit = 180 days 07/25/2009 17:34 Page 16
Summary : SMC Maintenance Worker Area 9 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109209.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Ac-227	2.379E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	9.458E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.203E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	5.937E-12	0.0207	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	1.091E-10	0.3812	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	6.274E-12	0.0219	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.017E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.649E-10	0.5761	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	4.815E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.141E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.655E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	2.863E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	2.379E-18	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	0.000E+00	0.0000	9.458E-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	0.000E+00	0.0000	1.203E-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	0.000E+00	0.0000	5.937E-12	0.0207
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	0.000E+00	0.0000	1.091E-10	0.3812
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	0.000E+00	0.0000	6.274E-12	0.0219

Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.017E-14	0.0000
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	1.649E-10	0.5761
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.815E-19	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	0.000E+00	0.0000	1.141E-22	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.655E-16	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	2.863E-10	1.0000

0*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+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	1.738E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	4.084E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	9.256E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	6.935E-12	0.0206	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	2.710E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	5.091E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.159E-13	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	3.301E-10	0.9791	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	5.282E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	6.350E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	2.086E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	3.371E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	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	0.000E+00	0.0000	1.738E-19	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	0.000E+00	0.0000	4.084E-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	0.000E+00	0.0000	9.256E-21	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	0.000E+00	0.0000	6.935E-12	0.0206
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	0.000E+00	0.0000	2.710E-15	0.0000
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	0.000E+00	0.0000	5.091E-26	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.159E-13	0.0003
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	3.301E-10	0.9791
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.282E-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	0.000E+00	0.0000	6.350E-21	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.086E-16	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	3.371E-10	1.0000

0*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 = 3.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0 Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Ac-227	5.187E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	7.369E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.096E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	9.796E-12	0.0202	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	1.318E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	5.111E-13	0.0011	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	4.745E-10	0.9787	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	7.065E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	4.212E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	3.493E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	4.848E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
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	0.000E+00	0.0000	5.187E-22	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	0.000E+00	0.0000	7.369E-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	0.000E+00	0.0000	3.096E-23	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	0.000E+00	0.0000	9.796E-12	0.0202
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	0.000E+00	0.0000	1.318E-25	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.111E-13	0.0011
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	4.745E-10	0.9787
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.065E-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	0.000E+00	0.0000	4.212E-20	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.493E-16	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	4.848E-10	1.0000

0*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 = 5.000E+02 years
0 Water Independent Pathways (Inhalation excludes radon)

0 Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Ac-227	1.548E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	1.276E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	1.036E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.384E-11	0.0198	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	1.256E-12	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Th-232	6.822E-10	0.9784	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	2.933E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.274E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	5.855E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	6.973E-10	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

0 Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	1.548E-24	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	0.000E+00	0.0000	1.276E-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	0.000E+00	0.0000	1.036E-25	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	0.000E+00	0.0000	1.384E-11	0.0198
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.256E-12	0.0018
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	6.822E-10	0.9784
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.933E-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	0.000E+00	0.0000	1.274E-19	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.855E-16	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	6.973E-10	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 17:34 Page 20
Summary : SMC Maintenance Worker Area 9 Controls in Place Restricted Area
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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 = 7.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ac-227	4.620E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	2.209E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	3.465E-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	0.000E+00	0.0000
Ra-226	1.954E-11	0.0195	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	2.596E-12	0.0026	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	9.807E-10	0.9779	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	8.601E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	3.155E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	9.833E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	1.003E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 7.000E+02 years

0 Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.

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	0.000E+00	0.0000	4.620E-27	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	0.000E+00	0.0000	2.209E-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	0.000E+00	0.0000	3.465E-28	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	0.000E+00	0.0000	1.954E-11	0.0195
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.596E-12	0.0026
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	9.807E-10	0.9779
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.601E-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	0.000E+00	0.0000	3.155E-19	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.833E-16	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.003E-09	1.0000

0*Sum of all water independent and dependent pathways.

1RESRAD, Version 6.4 T« Limit = 180 days 07/25/2009 17:34 Page 21

Summary : SMC Maintenance Worker Area 9 Controls in Place Restricted Area

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109209.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 = 9.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

0

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.
Ac-227	1.379E-29	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	3.824E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.760E-11	0.0191	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	4.929E-12	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.410E-09	0.9774	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	2.129E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	7.113E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	1.654E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	1.442E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.000E+02 years

0 Water Dependent Pathways

0

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.
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	0.000E+00	0.0000	1.379E-29	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	0.000E+00	0.0000	3.824E-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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	2.760E-11	0.0191
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.929E-12	0.0034
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	1.410E-09	0.9774
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.129E-14	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	0.000E+00	0.0000	7.113E-19	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.654E-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	1.442E-09	1.0000

0*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
0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	0.0000
Pa-231	5.032E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	3.281E-11	0.0190	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	6.657E-12	0.0038	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	1.691E-09	0.9772	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	3.216E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-235	1.045E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	2.148E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	1.730E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

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

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	5.032E-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	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	3.281E-11	0.0190
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	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.657E-12	0.0038
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	1.691E-09	0.9772
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.216E-14	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	0.000E+00	0.0000	1.045E-18	0.0000
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.148E-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	1.730E-09	1.0000

0*Sum of all water independent and dependent pathways.

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

0 Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
Ac-227+D	Ac-227+D	1.000E+00	1.989E-18	1.932E-18	1.487E-18	1.086E-19	3.242E-22	9.674E-25	2.887E-27	8.618E-30	4.709E-31
0Pa-231	Pa-231	1.000E+00	1.061E-21	1.064E-21	1.096E-21	1.477E-21	2.867E-21	5.563E-21	1.079E-20	2.095E-20	2.918E-20

Pa-231	Ac-227+D	1.000E+00	3.184E-20	9.441E-20	5.901E-19	2.551E-18	4.603E-18	7.968E-18	1.379E-17	2.388E-17	3.142E-17
Pa-231	äDSR(j)		3.290E-20	9.547E-20	5.912E-19	2.552E-18	4.606E-18	7.974E-18	1.380E-17	2.390E-17	3.145E-17
0Pb-210+D	Pb-210+D	1.000E+00	2.650E-21	2.575E-21	1.993E-21	1.532E-22	5.126E-25	1.715E-27	5.736E-30	1.919E-32	1.110E-33
0Ra-226+D	Ra-226+D	1.000E+00	9.661E-14	9.678E-14	9.829E-14	1.148E-13	1.622E-13	2.291E-13	3.236E-13	4.570E-13	5.432E-13
Ra-226+D	Pb-210+D	1.000E+00	4.140E-23	1.228E-22	7.671E-22	3.229E-21	5.212E-21	8.027E-21	1.236E-20	1.904E-20	2.362E-20
Ra-226+D	äDSR(j)		9.661E-14	9.678E-14	9.829E-14	1.148E-13	1.622E-13	2.291E-13	3.236E-13	4.570E-13	5.432E-13
0Ra-228+D	Ra-228+D	1.000E+00	3.327E-15	2.956E-15	1.021E-15	2.458E-20	1.341E-30	7.321E-41	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	8.445E-13	2.059E-12	2.164E-12	5.375E-17	2.614E-27	1.271E-37	0.000E+00	0.000E+00	0.000E+00
Ra-228+D	äDSR(j)		8.478E-13	2.062E-12	2.165E-12	5.377E-17	2.616E-27	1.272E-37	0.000E+00	0.000E+00	0.000E+00
0Th-228+D	Th-228+D	1.000E+00	4.579E-12	3.193E-12	1.245E-13	1.010E-27	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	9.156E-35	9.205E-35	9.662E-35	1.567E-34	4.594E-34	1.346E-33	3.946E-33	1.157E-32	1.980E-32
Th-230	Ra-226+D	1.000E+00	2.094E-17	6.291E-17	4.481E-16	5.107E-15	2.252E-14	5.534E-14	1.143E-13	2.171E-13	2.933E-13
Th-230	Pb-210+D	1.000E+00	5.996E-27	4.169E-26	1.842E-24	1.035E-22	6.412E-22	1.801E-21	4.136E-21	8.655E-21	1.225E-20
Th-230	äDSR(j)		2.094E-17	6.291E-17	4.481E-16	5.107E-15	2.252E-14	5.534E-14	1.143E-13	2.171E-13	2.933E-13
0Th-232	Th-232	1.000E+00	2.329E-38	2.343E-38	2.472E-38	4.239E-38	1.405E-37	4.655E-37	1.542E-36	5.111E-36	9.304E-36
Th-232	Ra-228+D	1.000E+00	2.046E-16	5.838E-16	2.596E-15	4.485E-15	7.234E-15	1.167E-14	1.882E-14	3.036E-14	3.855E-14
Th-232	Th-228+D	1.000E+00	3.531E-14	2.170E-13	3.270E-12	6.545E-12	9.408E-12	1.352E-11	1.944E-11	2.794E-11	3.350E-11
Th-232	äDSR(j)		3.552E-14	2.176E-13	3.273E-12	6.549E-12	9.415E-12	1.354E-11	1.946E-11	2.797E-11	3.354E-11
0U-234	U-234	1.000E+00	2.179E-36	2.191E-36	2.304E-36	3.808E-36	1.163E-35	3.555E-35	1.086E-34	3.318E-34	5.799E-34
U-234	Th-230	1.000E+00	4.125E-40	1.243E-39	9.133E-39	1.419E-37	1.244E-36	6.076E-36	2.494E-35	9.402E-35	1.789E-34
U-234	Ra-226+D	1.000E+00	6.283E-23	4.406E-22	2.121E-20	2.327E-18	3.112E-17	1.292E-16	3.789E-16	9.377E-16	1.417E-15
U-234	Pb-210+D	1.000E+00	1.352E-32	2.018E-31	5.970E-29	3.769E-26	8.008E-25	3.943E-24	1.308E-23	3.601E-23	5.722E-23
U-234	äDSR(j)		6.283E-23	4.406E-22	2.121E-20	2.327E-18	3.112E-17	1.292E-16	3.789E-16	9.377E-16	1.417E-15
0U-235+D	U-235+D	1.000E+00	1.770E-24	1.777E-24	1.842E-24	2.633E-24	5.831E-24	1.291E-23	2.858E-23	6.329E-23	9.417E-23
U-235+D	Pa-231	1.000E+00	1.123E-26	3.378E-26	2.436E-25	3.146E-24	1.830E-23	5.930E-23	1.615E-22	4.038E-22	6.258E-22
U-235+D	Ac-227+D	1.000E+00	2.252E-25	1.566E-24	6.924E-23	3.963E-21	2.630E-20	7.957E-20	1.970E-19	4.441E-19	6.525E-19
U-235+D	äDSR(j)		2.006E-24	3.376E-24	7.133E-23	3.969E-21	2.632E-20	7.964E-20	1.972E-19	4.446E-19	6.532E-19
0U-238	U-238	5.400E-05	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
0U-238+D	U-238+D	9.999E-01	7.106E-18	7.124E-18	7.291E-18	9.191E-18	1.538E-17	2.573E-17	4.306E-17	7.206E-17	9.322E-17
U-238+D	U-234	9.999E-01	3.091E-42	9.319E-42	6.858E-41	1.085E-39	9.915E-39	5.047E-38	2.159E-37	8.480E-37	1.647E-36
U-238+D	Th-230	9.999E-01	0.000E+00	2.803E-45	1.359E-43	2.021E-41	5.301E-40	4.314E-39	2.479E-38	1.202E-37	2.542E-37
U-238+D	Ra-226+D	9.999E-01	4.454E-29	6.692E-28	2.108E-25	2.218E-22	8.935E-21	6.222E-20	2.572E-19	8.239E-19	1.388E-18
U-238+D	Pb-210+D	9.999E-01	7.673E-39	2.371E-37	4.524E-34	3.012E-30	2.102E-28	1.790E-27	8.496E-27	3.056E-26	5.430E-26
U-238+D	äDSR(j)		7.106E-18	7.124E-18	7.291E-18	9.191E-18	1.539E-17	2.579E-17	4.332E-17	7.288E-17	9.461E-17
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The DSR includes contributions from associated (half-life ó 180 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

0Nuclide

(i)	t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
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Ac-227	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13	*7.232E+13
Pa-231	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10	*4.723E+10
Pb-210	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13	*7.634E+13
Ra-226	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11	*9.885E+11
Ra-228	2.949E+13	1.213E+13	1.155E+13	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14	*2.726E+14
Th-228	5.460E+12	7.829E+12	2.008E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10	*2.018E+10
Th-232	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05	*1.097E+05
U-234	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09	*6.247E+09
U-235	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06	*2.161E+06
U-238	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05	*3.361E+05
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*At specific activity limit

0

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 = 1.000E+03 years

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Ac-227	1.600E+00	0.000E+00	1.989E-18	*7.232E+13	0.000E+00	*7.232E+13
Pa-231	1.600E+00	1.000E+03	3.145E-17	*4.723E+10	3.145E-17	*4.723E+10
Pb-210	6.040E+01	0.000E+00	2.650E-21	*7.634E+13	0.000E+00	*7.634E+13
Ra-226	6.040E+01	1.000E+03	5.432E-13	*9.885E+11	5.432E-13	*9.885E+11
Ra-228	5.040E+01	4.112 ñ 0.008	3.173E-12	7.878E+12	0.000E+00	*2.726E+14
Th-228	5.040E+01	0.000E+00	4.579E-12	5.460E+12	0.000E+00	*8.195E+14
Th-230	2.270E+01	1.000E+03	2.933E-13	*2.018E+10	2.933E-13	*2.018E+10
Th-232	5.040E+01	1.000E+03	3.354E-11	*1.097E+05	3.354E-11	*1.097E+05
U-234	2.270E+01	1.000E+03	1.417E-15	*6.247E+09	1.417E-15	*6.247E+09
U-235	1.600E+00	1.000E+03	6.532E-19	*2.161E+06	6.532E-19	*2.161E+06
U-238	2.270E+01	1.000E+03	9.461E-17	*3.361E+05	9.461E-17	*3.361E+05

*At specific activity limit

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

0Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
Ac-227	Ac-227	1.000E+00	3.182E-18	3.091E-18	2.379E-18	1.738E-19	5.187E-22	1.548E-24	4.620E-27	1.379E-29	0.000E+00
Ac-227	Pa-231	1.000E+00	5.094E-20	1.511E-19	9.441E-19	4.082E-18	7.365E-18	1.275E-17	2.207E-17	3.821E-17	5.027E-17
Ac-227	U-235	1.000E+00	3.603E-25	2.505E-24	1.108E-22	6.341E-21	4.208E-20	1.273E-19	3.152E-19	7.106E-19	1.044E-18
Ac-227	äDOSE(j)		3.233E-18	3.242E-18	3.323E-18	4.262E-18	7.407E-18	1.288E-17	2.238E-17	3.892E-17	5.132E-17
0Pa-231	Pa-231	1.000E+00	1.697E-21	1.703E-21	1.754E-21	2.364E-21	4.587E-21	8.901E-21	1.727E-20	3.351E-20	4.669E-20
Pa-231	U-235	1.000E+00	1.796E-26	5.405E-26	3.898E-25	5.033E-24	2.928E-23	9.488E-23	2.583E-22	6.461E-22	1.001E-21
Pa-231	äDOSE(j)		1.697E-21	1.703E-21	1.755E-21	2.369E-21	4.616E-21	8.996E-21	1.753E-20	3.416E-20	4.769E-20
0Pb-210	Pb-210	1.000E+00	1.600E-19	1.555E-19	1.203E-19	9.256E-21	3.096E-23	1.036E-25	3.465E-28	0.000E+00	0.000E+00
Pb-210	Ra-226	1.000E+00	2.501E-21	7.416E-21	4.633E-20	1.951E-19	3.148E-19	4.848E-19	7.466E-19	1.150E-18	1.427E-18
Pb-210	Th-230	1.000E+00	1.361E-25	9.464E-25	4.182E-23	2.349E-21	1.456E-20	4.088E-20	9.389E-20	1.965E-19	2.781E-19
Pb-210	U-234	1.000E+00	0.000E+00	0.000E+00	1.355E-27	8.555E-25	1.818E-23	8.951E-23	2.968E-22	8.174E-22	1.299E-21
Pb-210	U-238	9.999E-01	0.000E+00	0.000E+00	0.000E+00	6.837E-29	4.771E-27	4.064E-26	1.929E-25	6.936E-25	1.233E-24
Pb-210	äDOSE(j)		1.625E-19	1.630E-19	1.667E-19	2.067E-19	3.294E-19	5.258E-19	8.408E-19	1.347E-18	1.706E-18
0Ra-226	Ra-226	1.000E+00	5.835E-12	5.845E-12	5.937E-12	6.935E-12	9.796E-12	1.384E-11	1.954E-11	2.760E-11	3.281E-11
Ra-226	Th-230	1.000E+00	4.752E-16	1.428E-15	1.017E-14	1.159E-13	5.111E-13	1.256E-12	2.596E-12	4.929E-12	6.657E-12
Ra-226	U-234	1.000E+00	1.426E-21	1.000E-20	4.815E-19	5.282E-17	7.065E-16	2.933E-15	8.601E-15	2.129E-14	3.216E-14
Ra-226	U-238	9.999E-01	1.011E-27	1.519E-26	4.786E-24	5.035E-21	2.028E-19	1.412E-18	5.838E-18	1.870E-17	3.150E-17
Ra-226	äDOSE(j)		5.836E-12	5.847E-12	5.947E-12	7.051E-12	1.031E-11	1.510E-11	2.215E-11	3.256E-11	3.950E-11
0Ra-228	Ra-228	1.000E+00	1.677E-13	1.490E-13	5.144E-14	1.239E-18	6.760E-29	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ra-228	Th-232	1.000E+00	1.031E-14	2.943E-14	1.309E-13	2.260E-13	3.646E-13	5.881E-13	9.486E-13	1.530E-12	1.943E-12
Ra-228	äDOSE(j)		1.780E-13	1.784E-13	1.823E-13	2.260E-13	3.646E-13	5.881E-13	9.486E-13	1.530E-12	1.943E-12
0Th-228	Ra-228	1.000E+00	4.256E-11	1.038E-10	1.091E-10	2.709E-15	1.318E-25	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-228	1.000E+00	2.308E-10	1.609E-10	6.274E-12	5.091E-26	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	1.780E-12	1.094E-11	1.648E-10	3.299E-10	4.742E-10	6.816E-10	9.798E-10	1.408E-09	1.689E-09
Th-228	äDOSE(j)		2.751E-10	2.756E-10	2.802E-10	3.299E-10	4.742E-10	6.816E-10	9.798E-10	1.408E-09	1.689E-09
0Th-230	Th-230	1.000E+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-230	U-234	1.000E+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-230	U-238	9.999E-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
Th-230	äDOSE(j)		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

0Th-232	Th-232	1.000E+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
0U-234	U-234	1.000E+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-234	U-238	9.999E-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
U-234	äDOSE(j)		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
0U-235	U-235	1.000E+00	2.832E-24	2.843E-24	2.947E-24	4.214E-24	9.329E-24	2.066E-23	4.573E-23	1.013E-22	1.507E-22
0U-238	U-238	5.400E-05	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-238	U-238	9.999E-01	1.613E-16	1.617E-16	1.655E-16	2.086E-16	3.491E-16	5.841E-16	9.774E-16	1.636E-15	2.116E-15
U-238	äDOSE(j)		1.613E-16	1.617E-16	1.655E-16	2.086E-16	3.491E-16	5.841E-16	9.774E-16	1.636E-15	2.116E-15
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ

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

1RESRAD, Version 6.4 T½ Limit = 180 days 07/25/2009 17:34 Page 26
Summary : SMC Maintenance Worker Area 9 Controls in Place Restricted Area
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\2109209.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	1.000E+01	1.000E+02	3.000E+02	5.000E+02	7.000E+02	9.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Ac-227	Ac-227	1.000E+00	1.600E+00	1.550E+00	1.164E+00	6.626E-02	1.136E-04	1.949E-07	3.343E-10	5.734E-13	2.374E-14
Ac-227	Pa-231	1.000E+00	0.000E+00	5.013E-02	4.362E-01	1.531E+00	1.588E+00	1.580E+00	1.572E+00	1.564E+00	1.559E+00
Ac-227	U-235	1.000E+00	0.000E+00	5.332E-07	4.859E-05	2.363E-03	9.058E-03	1.576E-02	2.243E-02	2.906E-02	3.237E-02
Ac-227	äS(j):		1.600E+00	1.600E+00	1.600E+00	1.599E+00	1.597E+00	1.596E+00	1.594E+00	1.593E+00	1.592E+00
0Pa-231	Pa-231	1.000E+00	1.600E+00	1.600E+00	1.600E+00	1.596E+00	1.587E+00	1.579E+00	1.571E+00	1.563E+00	1.559E+00
Pa-231	U-235	1.000E+00	0.000E+00	3.385E-05	3.385E-04	3.381E-03	1.012E-02	1.682E-02	2.348E-02	3.011E-02	3.341E-02
Pa-231	äS(j):		1.600E+00	1.600E+00	1.600E+00	1.599E+00	1.598E+00	1.596E+00	1.594E+00	1.593E+00	1.592E+00
0Pb-210	Pb-210	1.000E+00	6.040E+01	5.855E+01	4.426E+01	2.696E+00	5.370E-03	1.070E-05	2.131E-08	4.244E-11	1.894E-12
Pb-210	Ra-226	1.000E+00	0.000E+00	1.848E+00	1.610E+01	5.590E+01	5.376E+01	4.931E+01	4.521E+01	4.146E+01	3.970E+01
Pb-210	Th-230	1.000E+00	0.000E+00	1.512E-04	1.379E-02	6.691E-01	2.481E+00	4.152E+00	5.681E+00	7.080E+00	7.734E+00
Pb-210	U-234	1.000E+00	0.000E+00	4.550E-10	4.246E-07	2.423E-04	3.093E-03	9.082E-03	1.795E-02	2.944E-02	3.610E-02
Pb-210	U-238	9.999E-01	0.000E+00	3.230E-16	3.055E-12	1.926E-08	8.102E-07	4.120E-06	1.165E-05	2.497E-05	3.424E-05
Pb-210	äS(j):		6.040E+01	6.040E+01	6.037E+01	5.927E+01	5.625E+01	5.347E+01	5.091E+01	4.857E+01	4.747E+01
0Ra-226	Ra-226	1.000E+00	6.040E+01	6.037E+01	6.014E+01	5.784E+01	5.304E+01	4.864E+01	4.460E+01	4.090E+01	3.916E+01
Ra-226	Th-230	1.000E+00	0.000E+00	9.832E-03	9.812E-02	9.620E-01	2.763E+00	4.411E+00	5.918E+00	7.297E+00	7.942E+00
Ra-226	U-234	1.000E+00	0.000E+00	4.426E-08	4.420E-06	4.361E-04	3.812E-03	1.029E-02	1.960E-02	3.150E-02	3.835E-02
Ra-226	U-238	9.999E-01	0.000E+00	4.182E-14	4.178E-11	4.136E-08	1.093E-06	4.949E-06	1.329E-05	2.766E-05	3.754E-05
Ra-226	äS(j):		6.040E+01	6.038E+01	6.024E+01	5.880E+01	5.580E+01	5.306E+01	5.054E+01	4.823E+01	4.714E+01
0Ra-228	Ra-228	1.000E+00	5.040E+01	4.468E+01	1.510E+01	2.932E-04	9.920E-15	3.356E-25	1.136E-35	0.000E+00	0.000E+00
Ra-228	Th-232	1.000E+00	0.000E+00	5.724E+00	3.530E+01	5.040E+01	5.040E+01	5.040E+01	5.040E+01	5.040E+01	5.040E+01
Ra-228	äS(j):		5.040E+01	5.040E+01	5.040E+01	5.040E+01	5.040E+01	5.040E+01	5.040E+01	5.040E+01	5.040E+01
0Th-228	Ra-228	1.000E+00	0.000E+00	1.438E+01	2.061E+01	4.393E-04	1.487E-14	5.030E-25	1.702E-35	0.000E+00	0.000E+00
Th-228	Th-228	1.000E+00	5.040E+01	3.508E+01	1.346E+00	9.273E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	9.397E-01	2.845E+01	5.040E+01	5.040E+01	5.040E+01	5.040E+01	5.040E+01	5.040E+01
Th-228	äS(j):		5.040E+01	5.040E+01	5.040E+01	5.040E+01	5.040E+01	5.040E+01	5.040E+01	5.040E+01	5.040E+01
0Th-230	Th-230	1.000E+00	2.270E+01	2.270E+01	2.270E+01	2.268E+01	2.264E+01	2.260E+01	2.256E+01	2.252E+01	2.250E+01
Th-230	U-234	1.000E+00	0.000E+00	2.043E-04	2.043E-03	2.042E-02	6.119E-02	1.019E-01	1.424E-01	1.829E-01	2.031E-01
Th-230	U-238	9.999E-01	0.000E+00	2.896E-10	2.896E-08	2.895E-06	2.604E-05	7.226E-05	1.415E-04	2.337E-04	2.885E-04
Th-230	äS(j):		2.270E+01	2.270E+01	2.270E+01	2.270E+01	2.270E+01	2.270E+01	2.270E+01	2.270E+01	2.270E+01
0Th-232	Th-232	1.000E+00	5.040E+01	5.040E+01	5.040E+01	5.040E+01	5.040E+01	5.040E+01	5.040E+01	5.040E+01	5.040E+01
0U-234	U-234	1.000E+00	2.270E+01	2.270E+01	2.270E+01	2.269E+01	2.268E+01	2.267E+01	2.265E+01	2.264E+01	2.263E+01
U-234	U-238	9.999E-01	0.000E+00	6.435E-05	6.435E-04	6.434E-03	1.930E-02	3.215E-02	4.499E-02	5.783E-02	6.425E-02
U-234	äS(j):		2.270E+01	2.270E+01	2.270E+01	2.270E+01	2.270E+01	2.270E+01	2.270E+01	2.270E+01	2.270E+01
0U-235	U-235	1.000E+00	1.600E+00	1.600E+00	1.600E+00	1.600E+00	1.600E+00	1.600E+00	1.600E+00	1.600E+00	1.600E+00
0U-238	U-238	5.400E-05	1.226E-03	1.226E-03	1.226E-03	1.226E-03	1.226E-03	1.226E-03	1.226E-03	1.226E-03	1.226E-03
U-238	U-238	9.999E-01	2.270E+01	2.270E+01	2.270E+01	2.270E+01	2.270E+01	2.270E+01	2.270E+01	2.270E+01	2.269E+01
U-238	äS(j):		2.270E+01	2.270E+01	2.270E+01	2.270E+01	2.270E+01	2.270E+01	2.270E+01	2.270E+01	2.270E+01
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THF(i) is the thread fraction of the parent nuclide.

0RESCALC.EXE execution time = 68.66 seconds