



DEPARTMENT OF THE ARMY
US ARMY RESEARCH, DEVELOPMENT AND ENGINEERING COMMAND
ARMAMENT RESEARCH, DEVELOPMENT AND ENGINEERING CENTER
PICATINNY ARSENAL, NEW JERSEY 07806-5000

L3

10 July 2014

RDAR-EIS-SF-RPO

REC RG 1 07 18 '14 AM 06:40

MEMORANDUM FOR NUCLEAR REGULATORY COMMISSION; REGION I,
ATTN: MS. LAURIE KAUFFMAN

SUB-348
04006377

SUBJECT: Response to NRC Request for Additional Information dtd 10 June 2014;
Area 1222 Radiological Release

1. Area 1222, also known as "the Gorge", is presently considered potentially contaminated with Depleted Uranium. As stated in our SUB 348 source materials license renewal application dated 20 June 2011, limited research and development testing with depleted uranium containing items was conducted in this test area 40 to 45 years ago. A small amount of radium contamination, most likely a fragment of a luminescent gauge or dial, was also found in the area during a survey performed in 2001.
2. The US Army Joint Munitions Command (JMC) has contracted Bering Sea Environmental, LLC (BSEn) doing business as (dba) Aleut World Solutions (AWS) to write a work plan that describes the methods proposed for site remediation, and the performance of final status radiological surveys and sampling in accordance with the guideline set forth in the Multi Agency Radiation Survey and Site Investigation Manual (MARSSIM).
3. The final objective of the MARSSIM final status survey and sampling in Area 1222 is for final release in accordance with the unrestricted release criteria outlined in 10 CFR Part 20.1402. The final status survey is also considering the unrestricted radiological released criteria issued by the New Jersey Department of Environmental Protection (NJDEP).
4. ARDEC requested NRC review and approval of the original release plan on 23 July 2013. On 10 June 2014, the NRC forwarded a third request for additional information (RAI).
5. The attached memorandum from AWS addresses each of the NRC comments associated with the RAI and should be considered a supplement to revision 5 of the MARSSIM Final Status Survey and Sampling Work Plan. The memorandum includes Decommissioning and Decontamination (D&D) and RESRAD data runs. Upon review of the responses and concurrence from the NRC, the work plan will be updated accordingly and forwarded.



RDAR-EIQ-SF-RPO

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6. The Point of Contact for this memorandum is the undersigned at 973.724.8842
or richard.w.lamoreaux.civ@mail.mil.



RICHARD W. LAMOREAUX
Radiation Safety Officer, ARDEC

Enclosure: AWS Memorandum dtd 9 July 2014

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MEMORANDUM

To: Mr. Richard Lamoreaux, RSO ARDEC, Picatinny Arsenal
From: Daniel M. Spicuzza, AWS Project Manager
Date: July 9, 2014

RE: Telephone Conversation Follow-up and 3rd Request for Additional Information from the NRC

The comments requiring additional information requested in the above referenced email dated 10 June 2014 are provided below with a response/resolution to each of the comments:

1) Comment: In a previous RAI, dated March 20, 2014, we asked for your rationale regarding certain site-specific parameters used in RESRAD. All but one parameter, the "Radius of shape factor array", was provided. Please provide a rationale for the "Radius of shape factor array" parameter.

Response: The "Radius of shape factor array" is provided with the RESRAD input and output files in Attachment 1 of this memo and will be provided in Attachment 1 of the next revision of the Marssim Final Status Survey and Sampling Plan.

2) Comment: The screening values proposed for the buildings require further justification.

Basis: The licensee has proposed to apply the screening values for structures, tools and equipment surfaces as defined in Fuel Cycle Policy and Guidance Directive FC 83-23, entitled "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Materials" (NRC, 1987).

The screening values in FC 83-23 are listed below.

- a. 5,000 dpm (83 Bq) per 100 cm² beta-gamma, averaged over 1 m².
- b. 15,000 dpm (250 Bq) per 100 cm² beta-gamma, maximum[1].



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- c. 1,000 dpm (17 Bq) per 100 cm² beta-gamma, removable[2].
- d. 100 dpm (2 Bq) per 100 cm² alpha, averaged over 1 m².
- e. 300 dpm (5 Bq) per 100 cm² alpha, maximum.
- f. 20 dpm (0.3 Bq) per 100 cm² alpha, removable.

[1] The maximum contamination level applies to an area of no more than 100 cm².

[2] The amount of removable radioactive material per 100 cm² of surface area should be determined by wiping that area with dry filter or soft "absorbent" paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionally and the entire surface should be wiped.

Where surface contamination by both alpha- and beta-gamma-emitting nuclides exists, the limits should apply independently. Since the radionuclides of concern (ROCs) for the site all emit alpha particles, the contamination would be limited to the 300 dpm (5 Bq) per 100 cm², maximum.

Although the screening values in FC 83-23 were used for release of buildings and materials in the past, they were superseded with the implementation of the Licensed Termination Rule in subpart E of 10 CFR Part 20, issued July 21, 1997. As described in the "Supplemental Information on the Implementation of the Final Rule on Radiological Criteria for License Termination" published in the Federal Register on November 18, 1988 (63 FR 64132) and December 7, 1999 (64 FR 68395), these guidelines were superseded by DG-4006, "Demonstrating Compliance with the Radiological Criteria for License Termination", which is now superseded by NUREG-1757, "Consolidated Decommissioning Guidance." The FC 83-23 guidance is not dose-based and therefore its use requires additional justification that it meets the dose criteria in 10 CFR Part 20 Subpart E.

NUREG 1757, Vol. 2, Appendix H contains guidance on the use of acceptable screening criteria that is dose-based and will meet the 10 CFR 20 Subpart E limit of 0.25 mSv/y (25 mrem/y). Table H.1 includes acceptable levels for common beta-gamma emitters for building surface radioactivity. Note that Table H.1 does not include the ROCs because it does not include alpha-emitters. Acceptable screening values for additional radionuclides are provided in NUREG/CR-5512 Vol. 3, "Residual Radioactive Contamination from Decommissioning, Parameter Analysis, Draft Report for Comment", including acceptable



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screening values for Ra-226, U-234, U-235 and U-238. These values are replicated in Table 1.

Table 1. NUREG/CR-5512 Vol. 3 Screening values in Table 5.19.

DCGL NUREG 5512 screening values in Table 5.19 $P_{crit} = 0.90$

Ra-226:1120

U-234: 90.6

U-235:97.6

U-238:101

Use of the values in Table 5.19 of NUREG/CR-5512 Vol. 3 for P_{crit} of 0.90 would be an acceptable approach. Note that these screening values listed for the uranium isotopes are less than 300 dpm/100 cm². Further guidance is provided in NUREG-1720, "Re-Evaluation of the Indoor Resuspension Factor for the Screening Analysis of the Building Occupancy Scenario for NRC's License Termination Rule" on use of a revised resuspension factor for the screening analysis of the building occupancy scenario for NRC's License Termination Rule. Use of the revised resuspension factor could derive DCGLs greater than the screening values.

The licensee must demonstrate that the residual radioactivity in building structures, systems and components, along with all other media at the site (e.g., soils) is in compliance with the applicable criteria (e.g., for unrestricted use, doses must not exceed 0.25 mSv/y (25 mrem/y) and must be ALARA). The licensee must perform dose assessments using acceptable codes (or use NRC-approved screening dose assessments) to demonstrate compliance with the dose criteria.

Path Forward:

Please choose one of the following options:

Option A: If the licensee wishes to use the FC 83-23 values proposed, the license must demonstrate that these values are equal to or more conservative than a DCGL based on 25 mrem. To demonstrate that the FC 83-23 values are acceptable, the licensee may calculate site-specific DCGLs for building surfaces using either RESRAD BUILD or DandD code, (Version 2.1 or more recent). The use of draft NUREG-1720, and the revised re-suspension factor in this guidance, for site-specific calculation using the



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DandD code is an acceptable approach. Site-specific parameter values should be justified and input/output reports for the computer code should be included in the response.

Option B: If the licensee wishes to use site-specific values as opposed to the FC 83-23 values, the licensee may use the site-specific DCGLs for building surfaces derived as explained in Option A.

Option C: If the licensee does not wish to use the FC 83-23 values proposed or site-specific derived DCGLs, the licensee can choose to apply the screening DCGLs for the building surfaces for Ra-226, U-234, U-235, and U-238 found in Table 5.19 NUREG/CR-5512, Vol. 3 for Pcrit value of 0.90.

Response: The screening values in FC 83-23 will be used for equipment and tools that are removed from the site and will not apply to structures.

The largest structure that is to remain on site is a blast shield which has a total surface area of 38 square meters and is constructed of steel. Based upon the number of calculated samples of 14, the calculated spacing of the triangular grid sampling pattern is 1.5 meters and the area in between sampling points is approximately 2 square meters.

The DCGL's and area factors for structure surfaces were calculated using the DandD Version 2.1 modeling code. All default input parameters were used with the exception of the "Area of Contamination" and the "Resuspension Factor". The Resuspension Factor of 10^{-6} m^{-1} in accordance with NUREG-1720 recommendations was used in all of the calculations.

A value of 300 dpm/100cm² for Ra-226 was used as the input distribution value for the calculations. The resulting calculated dose of 5.1 mrem/yr is in compliance with the NJDEP dose based release criteria of 15 mrem/yr established at N.J.A.C 7:28-12.8

Table 1 presents a summary of the calculations for Ra-226. The DandD Version 2.1 input/output files are presented in Attachment 1 of this memorandum.

A value of 600 dpm/100cm² for depleted uranium was used as the input distribution value for the calculations. Three separate input values for U-234, U-235, and U-238 using different values for isotopic abundance by activity for depleted uranium were used. They were:

International Atomic Energy Agency (IAEA) values for isotopic abundance by activity for depleted uranium of 15.2 % for U-234, 1.1% for U-235, and 83.7% for U-238 the individual activity input levels were:



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- U-234: 91dpm/100cm²
- U-235: 6 dpm/100cm²
- U-238: 502 dpm/100cm²

International Atomic Energy Agency (IAEA) values for isotopic abundance by activity for natural uranium of 48.8 % for U-234, 2.4% for U-235, and 48.8% for U-238 the individual activity input levels were:

- U-234: 293dpm/100cm²
- U-235: 14 dpm/100cm²
- U-238: 293 dpm/100cm²

Values used in the decommissioning of Building 611B at the Picatinny Arsenal of 30.5 % for U-234, 1.3% for U-235, and 68.2% for U-238 the individual activity input levels were:

- U-234: 183 dpm/100cm²
- U-235: 8 dpm/100cm²
- U-238: 409 dpm/100cm²

The resulting calculated dose of 11.3 mrem/yr that was calculated using the conservative IAEA input values for natural uranium is in compliance with the NJDEP dose based release criteria of 15 mrem/yr established at N.J.A.C 7:28-12.8

Tables 2, 3, and 4 present a summary of the calculations for depleted uranium. The DandD Version 2.1 input/output files are presented in Attachment 1 of this memorandum.

Table 1 Ra-226 DandD Run Summary Table

Activity Concentration in dpm/100cm²	Contaminated Area in Square Meters	Dose in millirem/yr	Area Factor
300	38	5.1	
300	10	5.1	1
300	2	0.8	6.3



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Table 2 DandD Run Summary Table Using IAEA Values for Depleted Uranium

Activity Concentration in dpm/100cm ²	Contaminated Area in Square Meters	Dose in millirem/yr	Area Factor
600	38	11	
600	10	11	1
600	2	2.2	5.0

Table 3 DandD Run Summary Table Using IAEA Values for Natural Uranium

Activity Concentration in dpm/100cm ²	Contaminated Area in Square Meters	Dose in millirem/yr	Area Factor
600	38	11.3	
600	10	11.3	1
600	2	2.3	4.9

Table 4 DandD Run Summary Table Using Building 611B Values

Activity Concentration in dpm/100cm ²	Contaminated Area in Square Meters	Dose in millirem/yr	Area Factor
600	38	11.1	
600	10	11.1	1
600	2	2.2	5

3) Comment: The licensee should provide site-specific area factors and corresponding DCGLEMCs for building surfaces and soil.

Basis: Section 7.12 of the licensee's submittal discusses area factors. It notes that "Interpolating into Table 5.6 of MARSSIM gives an area factor for 11.5 m² of 10.7 for 238U." However, Table 5.6 of MARSSIM includes the footnote that "the values listed in Table 5.6 are for illustrative purposes only," and to "consult regulatory guidance to determine area factors to be used for compliance demonstration." Because Table 5.6 values are for illustrative purposes only, the use of Table 5.6 for determining area factors is inappropriate. Instead, the licensee should follow guidance in NUREG 1757, Vol. 2, Revision 1, Appendix I, Section I.3.3.3.5 to derive site-specific area factors.

As stated in NUREG 1757, Vol. 2, Revision 1, Appendix I, "One method for determining values for the DCGLEMC is to modify the DCGLW using a correction factor (i.e., area factor) that accounts for the difference in area and the resulting change in dose. The area



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factor is the magnitude by which the concentration within the small area of elevated activity can exceed DCGLW while maintaining compliance with the release criterion.”

One way of obtaining area factors is to use the RESRAD code to calculate the dose for a given input activity and entire contaminated area size. Then the code is run for successively smaller contaminated area sizes and the resultant dose rates recorded. The area factor for the specific contaminant is the dose rate for the smaller area by the initial dose rate for the original area. The calculation can be performed for the desired number of contaminant areas. Note that the length parallel to the aquifer flow should also be changed when changing the area of the contaminated zone. The licensee may propose modifying the exposure pathways to account for the effect on the critical group’s activities of a smaller area. For example, it may also be argued that the fraction of food originating from these smaller contaminant zones should also be changed, or that the exposure time should be modified. The licensee should justify all parameter changes from their default values.

Path Forward:

Provide site-specific area factors and corresponding DCGLEMC values for building surfaces and soil following guidance in NUREG 1757, Vol. 2, Revision 1 Appendix I. Calculating area factors using RESRAD, RESRAD-BUILD, and/or DandD Version 2.1 codes is an acceptable approach. Site-specific parameter values should be justified and input/output reports for the computer code should be included in the response.

Response: RESRAD Version 6.5 was used to develop the area factors for soil for Ra-226, U-234, U-235, and U-238. All RESRAD Version 6.5 default parameters were used with the exception of the “Area of the Contaminated Zone” and the “Length Parallel to Aquifer Flow”. Tables 5, 6, 7, and 8 below present summaries of the RESRAD Version 6.5 runs and the calculated area factors. The RESRAD version 6.5 input and output reports are presented in Attachment 2 of this memorandum.

Table 5 Ra-226 RESRAD Run Summary Table

Size in Square Meters	Length Parallel to Aquifer Flow in Meters	Dose in millirem/yr	Area Factor
2200	71	13.5	
1250	50	13.4	1
10	5	2.5	5.4



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Table 6 U-234 RESRAD Run Summary Table

Size in Square Meters	Length Parallel to Aquifer Flow in Meters	Dose in millirem/yr	Area Factor
2200	71	13.2	
1250	50	13.2	1
10	5	0.8	17

Table 7 U-235 RESRAD Run Summary Table

Size in Square Meters	Length Parallel to Aquifer Flow in Meters	Dose in millirem/yr	Area Factor
2200	71	13.3	
1250	50	13.3	1
10	5	0.7	19

Table 8 U-238 RESRAD Run Summary Table

Size in Square Meters	Length Parallel to Aquifer Flow in Meters	Dose in millirem/yr	Area Factor
2200	71	12.4	
1250	50	12.3	1
10	5	0.7	17.7

The following text will be inserted into Section 7.12 of the Work Plan:

For example, the scan MDC for ²²⁶Ra has been determined to be 2.8 pCi/g. The area in between the 14 sampling points calculated above for the open detonation pit area is 11.5 m². Interpolating into Table 3 gives an area factor for 11.5 m² of 5.3 for ²²⁶Ra. This results in a DCGL_{EMC} = (DCGL_W) = 1(5.3) = 5.3 pCi/g. The scan MDC of 2.8 pCi/g is less than the DCGL_{EMC} so no additional samples will be needed in order to find elevated areas of activity.

For example, the scan MDC for ²³⁸U has been determined to be 56 pCi/g. The area in between the 14 sampling points calculated above for the open detonation pit area is 11.5 m². Interpolating into Table 4 gives an area factor for 11.5 m² of 17.6 for ²³⁸U. This results in a DCGL_{EMC} = (DCGL_W) = 17(17.6) = 299 pCi/g. The scan MDC of 56 pCi/g is less than the DCGL_{EMC} so no additional samples will be needed in order to find elevated areas of activity.



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The following text will be inserted into Section 7.12 of the Work Plan:

For example, the scan MDC for ^{226}Ra (gross alpha scan surveys) has been determined to be 310 dpm/100cm². The area in between the 14 sampling points calculated above for the largest structure to remain on site is 2.0 m². Interpolating into Table 1 gives an area factor for 2.0 m² of 5.1 for ^{226}Ra . This results in a $\text{DCGL}_{\text{EMC}} = (\text{DCGL}_W) = 300(5.1) = 1,530 \text{ dpm/100cm}^2$. The scan MDC of 300 dpm/100cm² is less than the DCGL_{EMC} so no additional samples will be needed in order to find elevated areas of activity.

For example, the scan MDC for ^{238}U (gross alpha scan surveys) has been determined to be 310 dpm/100cm². The area in between the 14 sampling points calculated above for the largest structure to remain on site is 2 m². Interpolating into Table 2 gives an area factor for 2.0 m² of 5.0 for ^{238}U . This results in a $\text{DCGL}_{\text{EMC}} = (\text{DCGL}_W) = 600(5.0) = 3,000 \text{ dpm/100cm}^2$. The scan MDC of 310 dpm/100cm² is less than the DCGL_{EMC} so no additional samples will be needed in order to find elevated areas of activity.

Sections 8.9 and 8.10 will be added to the Area 1222 (Gorge) MARSSIM Final Status Survey and Sampling Plan to read as follows:

8.9 RADIOLOGICAL SURVEY METHODS (REMAINING BUILDING STRUCTURES)

8.9.1 Summary

The remaining building structures will be 100 % gross alpha/beta scan surveyed. Systematic gross alpha/beta direct measurements will also be collected on these structures.

8.9.2 Gross Alpha/Beta Scans of Building Structures

Surface scan surveys for alpha and beta radiation will be conducted with Ludlum Model 43-89 large area scintillation probes or equivalent, and/or Ludlum Model 43-37 large area gas proportional probes, coupled to Ludlum Model 2360 Data Loggers. The probes have 0.8 mg/cm² or 1.2 mg/cm² thick Mylar windows. The detector will be moved over the surface being surveyed at a rate of 0.5 to 1.0 cm per second. The



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detector will be held within 1/4" of the surface being surveyed. Audible indicators will be used during the surveys.

8.9.3 Gross Alpha/Beta Direct Measurements of Building Structures

Direct surface contamination surveys for alpha and beta radiation will be conducted with Ludlum Model 43-89 large area scintillation probes and/or Ludlum Model 43-37 large area gas proportional probes coupled to Ludlum Model 2360 Data Loggers or equivalent. The probes have 0.8 mg/cm² or 1.2 mg/cm² thick Mylar windows. Direct measurements will be conducted with the detector on contact with the surface for a period of 1 to 2 minutes.

8.10 DETECTION SENSITIVITY—STATIC AND SCAN MINIMUM DETECTABLE CONCENTRATION (MDC), GROSS ALPHA-GROSS BETA SURVEYS

8.10.1 Determination of Instrument Efficiency (ϵ_i) for Alpha and Beta Surface Activity Measurements

The instrument efficiency (ϵ_i) will be determined during calibration and is defined as the ratio between the net count rate (in counts per minute (cpm)) of the instrument and the surface emission rate of the calibration source for a specified geometry. The surface emission rate is the 2π particle fluence that is affected by both the attenuation and backscatter of the radiation emitted from the calibration source. Equation 1 will be used to calculate the instrument efficiency in counts per particle, although efficiency is typically reported as having no units or unitless.

Equation 1

$$\epsilon_i = \frac{R_{S+B} - R_B}{q_{2\pi} \left(\frac{W_A}{S_A} \right)}$$



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Where,

R_{S+B} = the gross count rate of the calibration measurement (cpm)

R_B = the background count rate in cpm

$q_{2\pi}$ = surface emission rate of the calibration source (NIST traceable)

W_A = Active Area of the detector window (cm²)

S_A = Area of the source (cm²)

Note: This equation assumes that the dimensions of the calibration source are sufficient to cover the window of the instrument detector. If the dimensions of the calibration source are smaller than the detector's window, set W_A equal to the dimensions of the calibration source, i.e., set the quotient of W_A and S_A equal to 1.

The instrument efficiency is determined during calibration by obtaining static counts with the detector over a calibration source that has a National Institute of Standards and Technology (NIST) traceable surface emission rate. The 2π particle fluence rate is corrected for decay, attenuation and scatter, then; the surface emission rate of the source must be corrected for the area subtended by the probe. Factors that can also affect the instruments efficiency are discussed below:

Calibration Sources: The calibration sources selected emit alpha or beta radiation with energies similar to those expected from the contaminant in the field, i.e., similar to the expected radionuclide(s) of concern.

Source Geometry Factors: The instrument efficiency is determined with a calibration source equal to or greater than the area of the probe.

Source-to-Detector Distance: The detector is calibrated at a source-to-detector distance that is the same as the detector-to-surface distance used in the field.



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Window Density Thickness: The detector is calibrated with a probe window density thickness that is the same as the probe window density thickness used in the field.

Detector-Related Factors - Ambient Conditions: The variation between ambient conditions such as the temperature, pressure, and humidity between calibration and field use, corrections to the detector's response were considered. None were noted.

8.10.2 Static MDC for Gross Alpha-Beta Surveys

The static MDC is the level of radioactivity, on a surface, that is practically achievable by the overall measurement process. The conventional equation, Equation 2 below, will be used to calculate instrument MDCs in dpm per 100 cm² when the background and sample are counted for the same time intervals.

Equation 2

$$MDC = \frac{3 + 4.65\sqrt{C_B * T_B}}{\varepsilon_i \varepsilon_s \frac{W_A}{100 \text{ cm}^2} T_B}$$

where;

C_B = background count rate (cpm)

T_B = background counting time (min)

ε_i = instrument efficiency (count per particle)

ε_s = contaminated surface efficiency (particle per disintegration)

W_A = area of the detector window (cm²)

If the background and sample are counted for different time intervals, Equation 3 below will be used to calculate the MDC in dpm per 100 cm².

Equation 3



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$$MDC = \frac{3 + 3.29 \sqrt{R_B T_{S+B} \left(1 + \frac{T_{S+B}}{T_B} \right)}}{\epsilon_i \epsilon_s \frac{W_A}{100 \text{ cm}^2} T_{S+B}}$$

Where;

R_B = background count rate (cpm)

T_B = background counting time (min)

T_{S+B} = sample counting time (min)

ε_i = the instrument efficiency (count per particle)

ε_s = the contaminated surface efficiency (particle per disintegration)

W_A = the area of the detector window (cm²)

8.10.3 Surface Efficiency (ε_s) for Surface Activity Measurements

The surface efficiency term in Equation 2 is used to determine the 4π total efficiency for a particular surface and condition. Suitable values are based on the radiation and radiation energy, and are primarily impacted by the backscatter and self-absorption characteristics of the surface on which the contamination exists in the field. Backscatter is most affected by the energy of the radiation and the density of the surface material. Self-absorption characteristics or attenuation are also a function of the radiation's energy and surface condition. Surfaces typically encountered in the field include concrete, wood, dry wall, plaster, carpet, and metal. Surface conditions include both physical effects, such as scabbled concrete, and the effect of surface coatings, i.e., dust, paint, rust, water, and oil.

In the absence of experimentally determined surface efficiencies, ISO-7503-1 and NUREG 1507, provide conservative recommendations for surface efficiencies. ISO-7503-1, recommends a surface efficiency of 0.5 for maximum



beta energies exceeding 0.5 MeV, and to use a surface efficiency of 0.25 for beta energies between 0.15 and 0.4 MeV and for alpha emitters (ISO, 1998), (NRC, 1997). NUREG-1507 provides surface efficiencies based on studies performed primarily at ORISE. In general, NUREG-1507 indicates that the ISO rule-of-thumb for surface efficiencies is conservative, particularly for beta-emitting radionuclides with end-point energies between 0.25 MeV and 0.4 MeV.

The surface condition on the structures are metal surfaces that are slightly covered with dust and rust. The surface efficiency for alpha emitters used in accordance with ISO-7503-1 under these conditions is 0.25 and for beta emitters is 0.25.

8.10.4 Probe Area Correction factor for Surface Activity Measurements

In Equation 2, W_A is the size of the “active” area of the detector window. If the area of the detector window (cm^2) does not equal 100 cm^2 , it is necessary to convert the detector response to units of dpm per 100 cm^2 .

8.10.5 Scanning Minimum Detectable Count Rate, (MDCR)

The minimum detectable number of net source counts in the scan interval, for an ideal observer, is arrived at by multiplying the square root of the number of background counts (in the scan interval) by the detectability value associated with the desired performance (as reflected in d') as shown in Equation 4 below.

Equation 4

$$MDCR = d' \sqrt{b_i} \times 60/i$$

where,

d' = index of sensitivity (α and β error) – MARSSIM Table 6.5



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b_i = number of background counts in scan time interval (count)

i = scan or observation interval (s) (time that a typical source remains under the probe during the scan)

8.10.6 Scan MDC for Gross Beta Surveys

The scan MDC will be determined from the minimum detectable count rate (MDCR) by applying conversion factors that account for detector and surface characteristics and surveyor efficiency. As discussed above, the MDCR accounts for the background level, performance criteria (d'), and observation interval. The observation interval during scanning is the actual time that the detector can respond to the contamination source. This interval depends on the scan speed, detector size in the direction of the scan, and area of elevated activity.

The scan MDC for structure surveys will be calculated using Equation 5 below.

Equation 5

$$\text{Scan MDC} = \frac{\text{MDCR}}{\sqrt{p} \epsilon_i \epsilon_s \frac{W_A}{100 \text{ cm}^2}}$$

Where;

MDCR = discussed in Section 8.10.5

p = surveyor efficiency factor

ϵ_i = instrument efficiency (count per particle)

ϵ_s = contaminated surface efficiency (particles per disintegration)



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W_A = area of the detector window (cm²)

8.10.7 Scan MDC for Gross Alpha Surveys

Using the following equation (Abelquist, 2001), one can calculate the activity of a 100 cm² “hot spot” with a 90 % probability of detection using Equation 6 below.

Equation 6

$$\alpha \text{ scanMDC} = \frac{[-\ln(1 - P(n \geq 1))]60}{t \epsilon_s \epsilon_i}$$

Where

t = dwell time over source (seconds)
 ϵ_i = Instrument efficiency (counts per particle)
 ϵ_s = contaminated surface efficiency (particles per disintegration)

Based upon an Instrument Efficiency (ϵ_i) of 30% and a Surface Efficiency Factor (ϵ_s) of 0.25. The estimated scan MDC for the gross alpha surveys is ~ 310 dpm/100cm².

Following NJDEP and NRC approval of the responses, the appropriate sections of the Area 1222 (Gorge) MARSSIM Final Status Survey and Sampling Plan will be updated with the responses above.

If you have any questions please do not hesitate to contact me at (412) 824-2333.

Sincerely,

Daniel Spicuzza



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AWS Project Manager

Cc: Mr. William Haney, AWS Field Operations Manager

Mr. Joe Hart, JMC Health Physicist



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Attachment 1

DandD Version 2.1 Input/Output Files



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Attachment 2

RESRAD Version 6.5 Input/Output Files



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MEMORANDUM

To: Mr. Richard Lamoreaux, RSO ARDEC, Picatinny Arsenal
From: Daniel M. Spicuzza, AWS Project Manager
Date: June 27, 2014

RE: Telephone Conversation Follow-up and 3rd Request for Additional Information from the NRC

The comments requiring additional information requested in the above referenced email dated 10 June 2014 are provided below with a response/resolution to each of the comments:

1) Comment: In a previous RAI, dated March 20, 2014, we asked for your rationale regarding certain site-specific parameters used in RESRAD. All but one parameter, the "Radius of shape factor array", was provided. Please provide a rationale for the "Radius of shape factor array" parameter.

Response: The "Radius of shape factor array" is provided with the RESRAD input and output files in Attachment 1 of this memo and will be provided in Attachment 1 of the next revision of the Marssim Final Status Survey and Sampling Plan.

2) Comment: The screening values proposed for the buildings require further justification.

Basis: The licensee has proposed to apply the screening values for structures, tools and equipment surfaces as defined in Fuel Cycle Policy and Guidance Directive FC 83-23, entitled "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Materials" (NRC, 1987).

The screening values in FC 83-23 are listed below.

- a. 5,000 dpm (83 Bq) per 100 cm² beta-gamma, averaged over 1 m².
- b. 15,000 dpm (250 Bq) per 100 cm² beta-gamma, maximum[1].



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- c. 1,000 dpm (17 Bq) per 100 cm² beta-gamma, removable[2].
- d. 100 dpm (2 Bq) per 100 cm² alpha, averaged over 1 m².
- e. 300 dpm (5 Bq) per 100 cm² alpha, maximum.
- f. 20 dpm (0.3 Bq) per 100 cm² alpha, removable.

[1] The maximum contamination level applies to an area of no more than 100 cm².

[2] The amount of removable radioactive material per 100 cm² of surface area should be determined by wiping that area with dry filter or soft "absorbent" paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionally and the entire surface should be wiped.

Where surface contamination by both alpha- and beta-gamma-emitting nuclides exists, the limits should apply independently. Since the radionuclides of concern (ROCs) for the site all emit alpha particles, the contamination would be limited to the 300 dpm (5 Bq) per 100 cm², maximum.

Although the screening values in FC 83-23 were used for release of buildings and materials in the past, they were superseded with the implementation of the Licensed Termination Rule in subpart E of 10 CFR Part 20, issued July 21, 1997. As described in the "Supplemental Information on the Implementation of the Final Rule on Radiological Criteria for License Termination" published in the Federal Register on November 18, 1988 (63 FR 64132) and December 7, 1999 (64 FR 68395), these guidelines were superseded by DG-4006, "Demonstrating Compliance with the Radiological Criteria for License Termination", which is now superseded by NUREG-1757, "Consolidated Decommissioning Guidance." The FC 83-23 guidance is not dose-based and therefore its use requires additional justification that it meets the dose criteria in 10 CFR Part 20 Subpart E.

NUREG 1757, Vol. 2, Appendix H contains guidance on the use of acceptable screening criteria that is dose-based and will meet the 10 CFR 20 Subpart E limit of 0.25 mSv/y (25 mrem/y). Table H.1 includes acceptable levels for common beta-gamma emitters for building surface radioactivity. Note that Table H.1 does not include the ROCs because it does not include alpha-emitters. Acceptable screening values for additional radionuclides are provided in NUREG/CR-5512 Vol. 3, "Residual Radioactive Contamination from Decommissioning, Parameter Analysis, Draft Report for Comment", including acceptable



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screening values for Ra-226, U-234, U-235 and U-238. These values are replicated in Table 1.

Table 1. NUREG/CR-5512 Vol. 3 Screening values in Table 5.19.

DCGL NUREG 5512 screening values in Table 5.19 $P_{crit} = 0.90$

Ra-226:1120

U-234: 90.6

U-235:97.6

U-238:101

Use of the values in Table 5.19 of NUREG/CR-5512 Vol. 3 for P_{crit} of 0.90 would be an acceptable approach. Note that these screening values listed for the uranium isotopes are less than 300 dpm/100 cm². Further guidance is provided in NUREG-1720, "Re-Evaluation of the Indoor Resuspension Factor for the Screening Analysis of the Building Occupancy Scenario for NRC's License Termination Rule" on use of a revised resuspension factor for the screening analysis of the building occupancy scenario for NRC's License Termination Rule. Use of the revised resuspension factor could derive DCGLs greater than the screening values.

The licensee must demonstrate that the residual radioactivity in building structures, systems and components, along with all other media at the site (e.g., soils) is in compliance with the applicable criteria (e.g., for unrestricted use, doses must not exceed 0.25 mSv/y (25 mrem/y) and must be ALARA). The licensee must perform dose assessments using acceptable codes (or use NRC-approved screening dose assessments) to demonstrate compliance with the dose criteria.

Path Forward:

Please choose one of the following options:

Option A: If the licensee wishes to use the FC 83-23 values proposed, the license must demonstrate that these values are equal to or more conservative than a DCGL based on 25 mrem. To demonstrate that the FC 83-23 values are acceptable, the licensee may calculate site-specific DCGLs for building surfaces using either RESRAD BUILD or DandD code, (Version 2.1 or more recent). The use of draft NUREG-1720, and the revised re-suspension factor in this guidance, for site-specific calculation using the



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DandD code is an acceptable approach. Site-specific parameter values should be justified and input/output reports for the computer code should be included in the response.

Option B: If the licensee wishes to use site-specific values as opposed to the FC 83-23 values, the licensee may use the site-specific DCGLs for building surfaces derived as explained in Option A.

Option C: If the licensee does not wish to use the FC 83-23 values proposed or site-specific derived DCGLs, the licensee can choose to apply the screening DCGLs for the building surfaces for Ra-226, U-234, U-235, and U-238 found in Table 5.19 NUREG/CR-5512, Vol. 3 for Pcrit value of 0.90.

Response: The screening values in FC 83-23 will be used for equipment and tools that are removed from the site and will not apply to building structures.

The largest structure that is to remain on site is a blast shield which has a total surface area of 38 square meters and is constructed of steel. Based upon the number of calculated samples of 14, the calculated spacing of the triangular grid sampling pattern is 1.5 meters and the area in between sampling points is approximately 2 square meters.

The DCGL's and area factors for structure surfaces were calculated using the DandD Version 2.1 modeling code. All default input parameters were used with the exception of the "Area of Contamination" and the "Resuspension Factor". The Resuspension Factor of 10^{-6} m^{-1} in accordance with NUREG-1720 recommendations was used in all of the calculations.

A value of 300 dpm/100cm² for Ra-226 was used as the input distribution value for the calculations. The resulting calculated dose of 5.1 mrem/yr is in compliance with the NJDEP dose based release criteria of 15 mrem/yr established at N.J.A.C 7:28-12.8

Table 1 presents a summary of the calculations for Ra-226. The DandD Version 2.1 input/output files are presented in Attachment 1 of this memorandum.

A value of 600 dpm/100cm² for depleted uranium was used as the input distribution value for the calculations. Using the International Atomic Energy Agency (IAEA) values for isotopic abundance by activity for depleted uranium of 15.2 % for U-234, 1.1% for U-235, and 83.7% for U-238 the individual activity levels were:

- U-234: 91dpm/100cm²
- U-235: 6 dpm/100cm²
- U-238: 502 dpm/100cm²



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The resulting calculated dose of 11 mrem/yr is in compliance with the NJDEP dose based release criteria of 15 mrem/yr established at N.J.A.C 7:28-12.8

Table 2 presents a summary of the calculations for depleted uranium. The DandD Version 2.1 input/output files are presented in Attachment 1 of this memorandum.

Table 1 Ra-226 DandD Run Summary Table

Activity Concentration in dpm/100cm ²	Contaminated Area in Square Meters	Dose in millirem/yr	Area Factor
300	38	5.1	
300	10	5.1	1
300	5	2.6	1.9
300	2	1	5.1

Table 2 DU DandD Run Summary Table

Activity Concentration in dpm/100cm ²	Contaminated Area in Square Meters	Dose in millirem/yr	Area Factor
600	38	11	
600	10	11	1
600	5	5.4	2.0
600	2	2.2	5.0

3) Comment: The licensee should provide site-specific area factors and corresponding DCGLEMCs for building surfaces and soil.

Basis: Section 7.12 of the licensee's submittal discusses area factors. It notes that "Interpolating into Table 5.6 of MARSSIM gives an area factor for 11.5 m2 of 10.7 for 238U." However, Table 5.6 of MARSSIM includes the footnote that "the values listed in Table 5.6 are for illustrative purposes only," and to "consult regulatory guidance to determine area factors to be used for compliance demonstration." Because Table 5.6 values are for illustrative purposes only, the use of Table 5.6 for determining area factors is inappropriate. Instead, the licensee should follow guidance in NUREG 1757, Vol. 2, Revision 1, Appendix I, Section I.3.3.3.5 to derive site-specific area factors.

As stated in NUREG 1757, Vol. 2, Revision 1, Appendix I, "One method for determining values for the DCGLEMC is to modify the DCGLW using a correction factor (i.e., area



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factor) that accounts for the difference in area and the resulting change in dose. The area factor is the magnitude by which the concentration within the small area of elevated activity can exceed DCGLW while maintaining compliance with the release criterion.”

One way of obtaining area factors is to use the RESRAD code to calculate the dose for a given input activity and entire contaminated area size. Then the code is run for successively smaller contaminated area sizes and the resultant dose rates recorded. The area factor for the specific contaminant is the dose rate for the smaller area by the initial dose rate for the original area. The calculation can be performed for the desired number of contaminant areas. Note that the length parallel to the aquifer flow should also be changed when changing the area of the contaminated zone. The licensee may propose modifying the exposure pathways to account for the effect on the critical group's activities of a smaller area. For example, it may also be argued that the fraction of food originating from these smaller contaminant zones should also be changed, or that the exposure time should be modified. The licensee should justify all parameter changes from their default values.

Path Forward:

Provide site-specific area factors and corresponding DCGLEMC values for building surfaces and soil following guidance in NUREG 1757, Vol. 2, Revision 1 Appendix I. Calculating area factors using RESRAD, RESRAD-BUILD, and/or DandD Version 2.1 codes is an acceptable approach. Site-specific parameter values should be justified and input/output reports for the computer code should be included in the response.

Response: RESRAD Version 6.5 was used to develop the area factors for soil for Ra-226 and U-238. All RESRAD Version 6.5 default parameters were used with the exception of the “Area of the Contaminated Zone” and the “Length Parallel to Aquifer Flow”. Tables 3 and 4 below present summaries of the RESRAD Version 6.5 runs and corresponding area factors. The RESRAD version 6.5 input and output reports are presented in Attachment 2 of this memorandum.



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Table 3 Ra-226 RESRAD Run Summary Table

Size in Square Meters	Length Parallel to Aquifer Flow in Meters	Dose in millirem/yr	Area Factor
2200	71	13.5	
1250	50	13.4	1
550	35	9.5	1.4
200	20	6.6	2.0
100	13	5.5	2.4
50	10	4.7	2.9
10	5	2.5	5.4
3	3	1	13.5

Table 4 U-238 RESRAD Run Summary Table

Size in Square Meters	Length Parallel to Aquifer Flow in Meters	Dose in millirem/yr	Area Factor
2200	71	12.4	
1250	50	12.3	1
550	35	11.9	1
200	20	2.3	5.4
100	13	1.4	8.9
50	10	1.2	10.3
10	5	0.7	17.7
3	3	0.3	41.3

The following text will be inserted into Section 7.12 of the Work Plan:

For example, the scan MDC for ²²⁶Ra has been determined to be 2.8 pCi/g. The area in between the 14 sampling points calculated above for the open detonation pit area is 11.5 m². Interpolating into Table 3 gives an area factor for 11.5 m² of 5.3 for ²²⁶Ra. This results in a DCGL_{EMC} = (DCGL_W) = 1(5.3) = 5.3 pCi/g. The scan MDC of 2.8 pCi/g is less than the DCGL_{EMC} so no additional samples will be needed in order to find elevated areas of activity.

For example, the scan MDC for ²³⁸U has been determined to be 56 pCi/g. The area in between the 14 sampling points calculated above for the open detonation pit area is 11.5 m². Interpolating into Table 4 gives an area factor for 11.5 m² of 17.6 for ²³⁸U.



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This results in a $DCGL_{EMC} = (DCGL_W) = 17(17.6) = 299$ pCi/g. The scan MDC of 56 pCi/g is less than the $DCGL_{EMC}$ so no additional samples will be needed in order to find elevated areas of activity.

The following text will be inserted into Section 7.12 of the Work Plan:

For example, the scan MDC for ^{226}Ra (gross alpha scan surveys) has been determined to be 310 dpm/100cm². The area in between the 14 sampling points calculated above for the largest structure to remain on site is 2.0 m². Interpolating into Table 1 gives an area factor for 2.0 m² of 5.1 for ^{226}Ra . This results in a $DCGL_{EMC} = (DCGL_W) = 300(5.1) = 1,530$ dpm/100cm². The scan MDC of 300 dpm/100cm² is less than the $DCGL_{EMC}$ so no additional samples will be needed in order to find elevated areas of activity.

For example, the scan MDC for ^{238}U (gross alpha scan surveys) has been determined to be 310 dpm/100cm². The area in between the 14 sampling points calculated above for the largest structure to remain on site is 2 m². Interpolating into Table 2 gives an area factor for 2.0 m² of 5.0 for ^{238}U . This results in a $DCGL_{EMC} = (DCGL_W) = 600(5.0) = 3,000$ dpm/100cm². The scan MDC of 310 dpm/100cm² is less than the $DCGL_{EMC}$ so no additional samples will be needed in order to find elevated areas of activity.

Sections 8.9 and 8.10 will be added to the Area 1222 (Gorge) MARSSIM Final Status Survey and Sampling Plan to read as follows:

8.9 RADIOLOGICAL SURVEY METHODS (REMAINING BUILDING STRUCTURES)

8.9.1 Summary

The remaining building structures will be 100 % gross alpha/beta scan surveyed. Systematic gross alpha/beta direct measurements will also be collected on these structures.

8.9.2 Gross Alpha/Beta Scans of Building Structures

Surface scan surveys for alpha and beta radiation will be conducted with Ludlum Model 43-89 large area scintillation probes or equivalent, and/or Ludlum Model 43-37 large area gas proportional probes, coupled to Ludlum Model 2360 Data Loggers. The probes have 0.8 mg/cm² or 1.2 mg/cm² thick



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Mylar windows. The detector will be moved over the surface being surveyed at a rate of 0.5 to 1.0 cm per second. The detector will be held within ¼" of the surface being surveyed. Audible indicators will be used during the surveys.

8.9.3 Gross Alpha/Beta Direct Measurements of Building Structures

Direct surface contamination surveys for alpha and beta radiation will be conducted with Ludlum Model 43-89 large area scintillation probes and/or Ludlum Model 43-37 large area gas proportional probes coupled to Ludlum Model 2360 Data Loggers or equivalent. The probes have 0.8 mg/cm² or 1.2 mg/cm² thick Mylar windows. Direct measurements will be conducted with the detector on contact with the surface for a period of 1 to 2 minutes.

8.10 DETECTION SENSITIVITY—STATIC AND SCAN MINIMUM DETECTABLE CONCENTRATION (MDC), GROSS ALPHA-GROSS BETA SURVEYS

8.10.1 Determination of Instrument Efficiency (ϵ_i) for Alpha and Beta Surface Activity Measurements

The instrument efficiency (ϵ_i) will be determined during calibration and is defined as the ratio between the net count rate (in counts per minute (cpm)) of the instrument and the surface emission rate of the calibration source for a specified geometry. The surface emission rate is the 2π particle fluence that is affected by both the attenuation and backscatter of the radiation emitted from the calibration source. Equation 1 will be used to calculate the instrument efficiency in counts per particle, although efficiency is typically reported as having no units or unitless.

Equation 1



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$$\varepsilon_i = \frac{R_{S+B} - R_B}{q_{2\pi} \left(\frac{W_A}{S_A} \right)}$$

Where,

R_{S+B} = the gross count rate of the calibration measurement (cpm)

R_B = the background count rate in cpm

q_{2π} = surface emission rate of the calibration source (NIST traceable)

W_A = Active Area of the detector window (cm²)

S_A = Area of the source (cm²)

Note: This equation assumes that the dimensions of the calibration source are sufficient to cover the window of the instrument detector. If the dimensions of the calibration source are smaller than the detector's window, set W_A equal to the dimensions of the calibration source, i.e., set the quotient of W_A and S_A equal to 1.

The instrument efficiency is determined during calibration by obtaining static counts with the detector over a calibration source that has a National Institute of Standards and Technology (NIST) traceable surface emission rate. The 2π particle fluence rate is corrected for decay, attenuation and scatter, then; the surface emission rate of the source must be corrected for the area subtended by the probe. Factors that can also affect the instruments efficiency are discussed below:

Calibration Sources: The calibration sources selected emit alpha or beta radiation with energies similar to those expected from the contaminant in the field, i.e., similar to the expected radionuclide(s) of concern.

Source Geometry Factors: The instrument efficiency is determined with a calibration source equal to or greater than the area of the probe.



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Source-to-Detector Distance: The detector is calibrated at a source-to-detector distance that is the same as the detector-to-surface distance used in the field.

Window Density Thickness: The detector is calibrated with a probe window density thickness that is the same as the probe window density thickness used in the field.

Detector-Related Factors - Ambient Conditions: The variation between ambient conditions such as the temperature, pressure, and humidity between calibration and field use, corrections to the detector's response were considered. None were noted.

8.10.2 Static MDC for Gross Alpha-Beta Surveys

The static MDC is the level of radioactivity, on a surface, that is practically achievable by the overall measurement process. The conventional equation, Equation 2 below, will be used to calculate instrument MDCs in dpm per 100 cm² when the background and sample are counted for the same time intervals.

Equation 2

$$MDC = \frac{3 + 4.65\sqrt{C_B * T_B}}{\epsilon_i \epsilon_s \frac{W_A}{100 \text{ cm}^2} T_B}$$

where;

C_B= background count rate (cpm)

T_B= background counting time (min)

ε_i = instrument efficiency (count per particle)

ε_s= contaminated surface efficiency (particle per disintegration)

W_A= area of the detector window (cm²)



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If the background and sample are counted for different time intervals, Equation 3 below will be used to calculate the MDC in dpm per 100 cm².

Equation 3

$$MDC = \frac{3 + 3.29 \sqrt{R_B T_{S+B} \left(1 + \frac{T_{S+B}}{T_B} \right)}}{\epsilon_i \epsilon_s \frac{W_A}{100 \text{ cm}^2} T_{S+B}}$$

Where;

R_B = background count rate (cpm)

T_B = background counting time (min)

T_{S+B} = sample counting time (min)

ε_i = the instrument efficiency (count per particle)

ε_s = the contaminated surface efficiency (particle per disintegration)

W_A = the area of the detector window (cm²)

8.10.3 Surface Efficiency (ε_s) for Surface Activity Measurements

The surface efficiency term in Equation 2 is used to determine the 4π total efficiency for a particular surface and condition. Suitable values are based on the radiation and radiation energy, and are primarily impacted by the backscatter and self-absorption characteristics of the surface on which the contamination exists in the field. Backscatter is most affected by the energy of the radiation and the density of the surface material. Self-absorption characteristics or attenuation are also a function of the radiation's energy and surface condition. Surfaces typically encountered in the field include concrete, wood, dry wall, plaster, carpet, and metal. Surface conditions include both physical effects, such as scabbled concrete, and



the effect of surface coatings, i.e., dust, paint, rust, water, and oil.

In the absence of experimentally determined surface efficiencies, ISO-7503-1 and NUREG 1507, provide conservative recommendations for surface efficiencies. ISO-7503-1, recommends a surface efficiency of 0.5 for maximum beta energies exceeding 0.5 MeV, and to use a surface efficiency of 0.25 for beta energies between 0.15 and 0.4 MeV and for alpha emitters (ISO, 1998), (NRC, 1997). NUREG-1507 provides surface efficiencies based on studies performed primarily at ORISE. In general, NUREG-1507 indicates that the ISO rule-of-thumb for surface efficiencies is conservative, particularly for beta-emitting radionuclides with end-point energies between 0.25 MeV and 0.4 MeV.

The surface condition on the structures are metal surfaces that are slightly covered with dust and rust. The surface efficiency for alpha emitters used in accordance with ISO-7503-1 under these conditions is 0.25 and for beta emitters is 0.25.

8.10.4 Probe Area Correction factor for Surface Activity Measurements

In Equation 2, W_A is the size of the “active” area of the detector window. If the area of the detector window (cm^2) does not equal 100 cm^2 , it is necessary to convert the detector response to units of dpm per 100 cm^2 .

8.10.5 Scanning Minimum Detectable Count Rate, (MDCR)

The minimum detectable number of net source counts in the scan interval, for an ideal observer, is arrived at by multiplying the square root of the number of background counts (in the scan interval) by the detectability value associated with the desired performance (as reflected in d') as shown in Equation 4 below.

Equation 4



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$$MDCR = d' \sqrt{b_i} \times 60/i$$

where,

d' = index of sensitivity (α and β error) – MARSSIM Table 6.5

b_i = number of background counts in scan time interval (count)

i = scan or observation interval (s) (time that a typical source remains under the probe during the scan)

8.10.6 Scan MDC for Gross Beta Surveys

The scan MDC will be determined from the minimum detectable count rate (MDCR) by applying conversion factors that account for detector and surface characteristics and surveyor efficiency. As discussed above, the MDCR accounts for the background level, performance criteria (d'), and observation interval. The observation interval during scanning is the actual time that the detector can respond to the contamination source. This interval depends on the scan speed, detector size in the direction of the scan, and area of elevated activity.

The scan MDC for structure surveys will be calculated using Equation 5 below.

Equation 5

$$\text{Scan MDC} = \frac{MDCR}{\sqrt{p} \epsilon_i \epsilon_s \frac{W_A}{100 \text{ cm}^2}}$$

Where;



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MDCR = discussed in Section 8.10.5

p = surveyor efficiency factor

ϵ_i = instrument efficiency (count per particle)

ϵ_s = contaminated surface efficiency (particles per disintegration)

W_A = area of the detector window (cm²)

8.10.7 Scan MDC for Gross Alpha Surveys

Using the following equation (Abelquist, 2001), one can calculate the activity of a 100 cm² “hot spot” with a 90 % probability of detection using Equation 6 below.

Equation 6

$$\alpha \text{ scanMDC} = \frac{[-\ln(1 - P(n \geq 1))]60}{t\epsilon_s\epsilon_i}$$

Where

t = dwell time over source (seconds)

ϵ_i = Instrument efficiency (counts per particle)

ϵ_s = contaminated surface efficiency (particles per disintegration)

Based upon an Instrument Efficiency (ϵ_i) of 30% and a Surface Efficiency Factor (ϵ_s) of 0.25. The estimated scan MDC for the gross alpha surveys is ~ 310 dpm/100cm².

Following NJDEP and NRC approval of the responses, the appropriate sections of the Area 1222 (Gorge) MARSSIM Final Status Survey and Sampling Plan will be updated with the responses above.



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It you have any questions please do not hesitate to contact me at (412) 824-2333.

Sincerely,

Daniel Spicuzza

AWS Project Manager

Cc: Mr. William Haney, AWS Field Operations Manager

Mr. Joe Hart, JMC Health Physicist



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Attachment 1

DandD Version 2.1 Input/Output Files



DandD Building Occupancy Scenario

DandD Version: 2.1.0

Run Date/Time: 6/26/2014 7:04:39 PM

Site Name: Picatinny Gorge Area

Description: Structure DCGL

FileName: C:\Users\Dan\Desktop\Ra226_38m.mcd

Options:

Implicit progeny doses included with explicit parent doses

Nuclide concentrations are NOT distributed among all progeny

Number of simulations: 100

Seed for Random Generation: 8718721

Averages used for behavioral type parameters

External Pathway is ON

Inhalation Pathway is ON

Secondary Ingestion Pathway is ON

Initial Activities:

Nuclide	Area of Contamination (m ²)	Distribution
226Ra+C	38	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 3.00E+02

Chain Data:

Number of chains: 1

Chain No. 1: 226Ra+C

Nuclides in chain: 5

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d)/(Bq/m ²))	15 cm Dose Rate Factor ((Sv/d)/(Bq/m ³))
226Ra+C	1	5.84E+05								
222Rn	2	3.82E+00	1	1	0	0	0.00E+00	0.00E+00	3.41E-14	9.81E-16
210Pb	3	8.15E+03	2	1	0	0	1.45E-06	3.67E-06	2.14E-13	1.13E-15

210Bi	4	5.01E+00	3	1	0	0	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	5	1.38E+02	4	1	0	0	5.14E-07	2.54E-06	7.16E-16	2.11E-17

Initial Concentrations:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Nuclide	Surface Concentration (dpm/100 cm**2)
226Ra	3.00E+02
222Rn	3.00E+02
210Pb	3.04E+02
210Bi	3.04E+02
210Po	3.04E+02

Model Parameters:

General Parameters:

Parameter Name	Description	Distribution
To:Time In Building	The time in the building during the occupancy period	CONSTANT(hr/week)
Default value used		Value 4.50E+01
Tto:Occupancy Period	The duration of the occupancy exposure period	CONSTANT(days)
Default value used		Value 3.65E+02
Vo:Breathing Rate	The average volumetric breathing rate during building occupancy for an 8-hour work day	CONSTANT(m**3/hr)
Default value used		Value 1.40E+00
RFo*:Resuspension Factor	Effective resuspension factor during the occupancy period = RFo * FI	CONSTANT(1/m)
Justification for modification: NUREG 1720		Value 1.00E-06
		Default DERIVED(1/m)
GO*:Ingestion Rate	Effective secondary ingestion transfer rate of removable surface activity from building surfaces to the mouth during building occupancy = GO * FI	DERIVED(m**2/hr)
Default value used		
Tstart:Start Time	The start time of the scenario in days	CONSTANT(days)
Default value used		Value 0.00E+00
Tend:End Time	The ending time of the scenario in days	CONSTANT(days)
Default value used		Value 3.65E+02
dt:Time Step Size	The time step size	CONSTANT(days)
Default value used		Value 3.65E+02
Pstep:Print Step Size	The time steps for the history file. Doses will be written to the history file every n time steps	CONSTANT(none)

Default value used		Value	1.00E+00
AOExt:External Exposure Area	Minimum surface area to which occupant is exposed via external radiation during occupancy period	CONSTANT(m**2)	
Default value used		Value	1.00E+01
AOInh:Inhalation Exposure Area	Minimum surface area to which occupant is exposed via inhalation during occupancy period	CONSTANT(m**2)	
Default value used		Value	1.00E+01
AOIng:Secondary Ingestion Exposure Area	Minimum surface area to which occupant is exposed via secondary ingestion during occupancy period	CONSTANT(m**2)	
Default value used		Value	1.00E+01
AO:Exposure Area	Minimum surface area to which occupant is exposed during the occupancy period	DERIVED(m**2)	
Default value used			
Fl:Loose Fraction	Fraction of surface contamination available for resuspension and ingestion	CONSTANT(none)	
Default value used		Value	1.00E-01
Rfo:Loose Resuspension Factor	Resuspension factor for loose contamination	CONTINUOUS LOGARITHMIC(1/m)	
Default value used		Value	Probability
		9.12E-06	0.00E+00
		1.10E-04	7.67E-01
		1.46E-04	9.09E-01
		1.62E-04	9.50E-01
		1.85E-04	9.90E-01
		1.90E-04	1.00E+00
GO:Loose Ingestion Rate	The secondary ingestion transfer rate of loose removable surface activity from building surfaces to the mouth during building occupancy	CONSTANT(m**2/hr)	
Default value used		Value	1.10E-04

Correlation Coefficients:

None

Summary Results:

90.00% of the 100 calculated TEDE values are < 5.15E+00 mrem/year .

The 95 % Confidence Interval for the 0.9 quantile value of TEDE is 5.15E+00 to 5.15E+00 mrem/year

Detailed Results:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Concentration at Time of Peak Dose:

Nuclide	Surface Concentration (dpm/100 cm**2)
---------	--

226Ra	3.00E+02
222Rn	3.00E+02
210Pb	3.04E+02
210Bi	3.04E+02
210Po	3.04E+02

Pathway Dose from All Nuclides (mrem)

All Pathways Dose	External	Inhalation	Secondary Ingestion
5.15E+00	7.01E-01	1.42E+00	3.03E+00

Radionuclide Dose through All Active Pathways (mrem)

Nuclide	All Pathways Dose
226Ra	8.43E-01
222Rn	6.98E-01
210Pb	2.50E+00
210Bi	1.15E-02
210Po	1.09E+00
All Nuclides	5.15E+00

Dose from Each Nuclide through Each Active Pathway (mrem)

Nuclide	External	Inhalation	Secondary Ingestion
226Ra	2.71E-03	3.80E-01	4.61E-01
222Rn	6.97E-01	6.37E-04	3.16E-04
210Pb	1.06E-03	6.10E-01	1.89E+00
210Bi	4.48E-04	8.79E-03	2.26E-03
210Po	3.54E-06	4.22E-01	6.71E-01



DandD Building Occupancy Scenario

DandD Version: 2.1.0

Run Date/Time: 6/26/2014 7:09:06 PM

Site Name: Picatinny Gorge Area

Description: Structure DCGL

FileName: C:\Users\Dan\Desktop\Ra226_10m.mcd

Options:

Implicit progeny doses included with explicit parent doses

Nuclide concentrations are NOT distributed among all progeny

Number of simulations: 100

Seed for Random Generation: 8718721

Averages used for behavioral type parameters

External Pathway is ON

Inhalation Pathway is ON

Secondary Ingestion Pathway is ON

Initial Activities:

Nuclide	Area of Contamination (m ²)	Distribution
226Ra+C	10	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 3.00E+02

Chain Data:

Number of chains: 1

Chain No. 1: 226Ra+C

Nuclides in chain: 5

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d)/(Bq/m ²))	15 cm Dose Rate Factor ((Sv/d)/(Bq/m ³))
226Ra+C	1	5.84E+05								
222Rn	2	3.82E+00	1	1	0	0	0.00E+00	0.00E+00	3.41E-14	9.81E-16
210Pb	3	8.15E+03	2	1	0	0	1.45E-06	3.67E-06	2.14E-13	1.13E-15

210Bi	4	5.01E+00	3	1	0	0	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	5	1.38E+02	4	1	0	0	5.14E-07	2.54E-06	7.16E-16	2.11E-17

Initial Concentrations:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Nuclide	Surface Concentration (dpm/100 cm**2)
226Ra	3.00E+02
222Rn	3.00E+02
210Pb	3.04E+02
210Bi	3.04E+02
210Po	3.04E+02

Model Parameters:

General Parameters:

Parameter Name	Description	Distribution
To:Time In Building	The time in the building during the occupancy period	CONSTANT(hr/week)
Default value used		Value 4.50E+01
Tto:Occupancy Period	The duration of the occupancy exposure period	CONSTANT(days)
Default value used		Value 3.65E+02
Vo:Breathing Rate	The average volumetric breathing rate during building occupancy for an 8-hour work day	CONSTANT(m**3/hr)
Default value used		Value 1.40E+00
RFo*:Resuspension Factor	Effective resuspension factor during the occupancy period = RFo * FI	CONSTANT(1/m)
Justification for modification: NUREG 1720		Value 1.00E-06
		Default DERIVED(1/m)
GO*:Ingestion Rate	Effective secondary ingestion transfer rate of removable surface activity from building surfaces to the mouth during building occupancy = GO * FI	DERIVED(m**2/hr)
Default value used		
Tstart:Start Time	The start time of the scenario in days	CONSTANT(days)
Default value used		Value 0.00E+00
Tend:End Time	The ending time of the scenario in days	CONSTANT(days)
Default value used		Value 3.65E+02
dt:Time Step Size	The time step size	CONSTANT(days)
Default value used		Value 3.65E+02
Pstep:Print Step Size	The time steps for the history file. Doses will be written to the history file every n time steps	CONSTANT(none)

Default value used		Value	1.00E+00
AOExt:External Exposure Area	Minimum surface area to which occupant is exposed via external radiation during occupancy period	CONSTANT(m**2)	
Default value used		Value	1.00E+01
AOInh:Inhalation Exposure Area	Minimum surface area to which occupant is exposed via inhalation during occupancy period	CONSTANT(m**2)	
Default value used		Value	1.00E+01
AOIng:Secondary Ingestion Exposure Area	Minimum surface area to which occupant is exposed via secondary ingestion during occupancy period	CONSTANT(m**2)	
Default value used		Value	1.00E+01
AO:Exposure Area	Minimum surface area to which occupant is exposed during the occupancy period	DERIVED(m**2)	
Default value used			
Fl:Loose Fraction	Fraction of surface contamination available for resuspension and ingestion	CONSTANT(none)	
Default value used		Value	1.00E-01
Rfo:Loose Resuspension Factor	Resuspension factor for loose contamination	CONTINUOUS LOGARITHMIC(1/m)	
Default value used		Value	Probability
		9.12E-06	0.00E+00
		1.10E-04	7.67E-01
		1.46E-04	9.09E-01
		1.62E-04	9.50E-01
		1.85E-04	9.90E-01
		1.90E-04	1.00E+00
GO:Loose Ingestion Rate	The secondary ingestion transfer rate of loose removable surface activity from building surfaces to the mouth during building occupancy	CONSTANT(m**2/hr)	
Default value used		Value	1.10E-04

Correlation Coefficients:None**Summary Results:**

90.00% of the 100 calculated TEDE values are < 5.15E+00 mrem/year .

The 95 % Confidence Interval for the 0.9 quantile value of TEDE is 5.15E+00 to 5.15E+00 mrem/year

Detailed Results:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Concentration at Time of Peak Dose:

Nuclide	Surface Concentration (dpm/100 cm**2)
---------	--

226Ra	3.00E+02
222Rn	3.00E+02
210Pb	3.04E+02
210Bi	3.04E+02
210Po	3.04E+02

Pathway Dose from All Nuclides (mrem)

All Pathways Dose	External	Inhalation	Secondary Ingestion
5.15E+00	7.01E-01	1.42E+00	3.03E+00

Radionuclide Dose through All Active Pathways (mrem)

Nuclide	All Pathways Dose
226Ra	8.43E-01
222Rn	6.98E-01
210Pb	2.50E+00
210Bi	1.15E-02
210Po	1.09E+00
All Nuclides	5.15E+00

Dose from Each Nuclide through Each Active Pathway (mrem)

Nuclide	External	Inhalation	Secondary Ingestion
226Ra	2.71E-03	3.80E-01	4.61E-01
222Rn	6.97E-01	6.37E-04	3.16E-04
210Pb	1.06E-03	6.10E-01	1.89E+00
210Bi	4.48E-04	8.79E-03	2.26E-03
210Po	3.54E-06	4.22E-01	6.71E-01



DandD Building Occupancy Scenario

DandD Version: 2.1.0

Run Date/Time: 6/27/2014 9:31:01 AM

Site Name: Picatinny Gorge Area

Description: Structure DCGL

FileName: C:\Users\Dan\Desktop\Ra226_2m.mcd

Options:

Implicit progeny doses included with explicit parent doses

Nuclide concentrations are NOT distributed among all progeny

Number of simulations: 100

Seed for Random Generation: 8718721

Averages used for behavioral type parameters

External Pathway is ON

Inhalation Pathway is ON

Secondary Ingestion Pathway is ON

Initial Activities:

Nuclide	Area of Contamination (m ²)	Distribution
226Ra+C	2	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 3.00E+02

Chain Data:

Number of chains: 1

Chain No. 1: **226Ra+C**

Nuclides in chain: **5**

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d)/(Bq/m ²))	15 cm Dose Rate Factor ((Sv/d)/(Bq/m ³))
226Ra+C	1	5.84E+05								
222Rn	2	3.82E+00	1	1	0	0	0.00E+00	0.00E+00	3.41E-14	9.81E-16
210Pb	3	8.15E+03	2	1	0	0	1.45E-06	3.67E-06	2.14E-13	1.13E-15

210Bi	4	5.01E+00	3	1	0	0	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	5	1.38E+02	4	1	0	0	5.14E-07	2.54E-06	7.16E-16	2.11E-17

Initial Concentrations:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Nuclide	Surface Concentration (dpm/100 cm**2)
226Ra	6.00E+01
222Rn	6.00E+01
210Pb	6.08E+01
210Bi	6.09E+01
210Po	6.09E+01

Model Parameters:

General Parameters:

Parameter Name	Description	Distribution
To:Time In Building	The time in the building during the occupancy period	CONSTANT(hr/week)
Default value used		Value 4.50E+01
Tto:Occupancy Period	The duration of the occupancy exposure period	CONSTANT(days)
Default value used		Value 3.65E+02
Vo:Breathing Rate	The average volumetric breathing rate during building occupancy for an 8-hour work day	CONSTANT(m**3/hr)
Default value used		Value 1.40E+00
RFo*:Resuspension Factor	Effective resuspension factor during the occupancy period = RFo * FI	CONSTANT(1/m)
Justification for modification: NUREG 1720		Value 1.00E-06
		Default DERIVED(1/m)
GO*:Ingestion Rate	Effective secondary ingestion transfer rate of removable surface activity from building surfaces to the mouth during building occupancy = GO * FI	DERIVED(m**2/hr)
Default value used		
Tstart:Start Time	The start time of the scenario in days	CONSTANT(days)
Default value used		Value 0.00E+00
Tend:End Time	The ending time of the scenario in days	CONSTANT(days)
Default value used		Value 3.65E+02
dt:Time Step Size	The time step size	CONSTANT(days)
Default value used		Value 3.65E+02
Pstep:Print Step Size	The time steps for the history file. Doses will be written to the history file every n time steps	CONSTANT(none)

Default value used		Value	1.00E+00
AOExt:External Exposure Area	Minimum surface area to which occupant is exposed via external radiation during occupancy period	CONSTANT(m**2)	
Default value used		Value	1.00E+01
AOInh:Inhalation Exposure Area	Minimum surface area to which occupant is exposed via inhalation during occupancy period	CONSTANT(m**2)	
Default value used		Value	1.00E+01
AOIng:Secondary Ingestion Exposure Area	Minimum surface area to which occupant is exposed via secondary ingestion during occupancy period	CONSTANT(m**2)	
Default value used		Value	1.00E+01
AO:Exposure Area	Minimum surface area to which occupant is exposed during the occupancy period	DERIVED(m**2)	
Default value used			
Fl:Loose Fraction	Fraction of surface contamination available for resuspension and ingestion	CONSTANT(none)	
Default value used		Value	1.00E-01
Rfo:Loose Resuspension Factor	Resuspension factor for loose contamination	CONTINUOUS LOGARITHMIC(1/m)	
Default value used		Value	Probability
		9.12E-06	0.00E+00
		1.10E-04	7.67E-01
		1.46E-04	9.09E-01
		1.62E-04	9.50E-01
		1.85E-04	9.90E-01
		1.90E-04	1.00E+00
GO:Loose Ingestion Rate	The secondary ingestion transfer rate of loose removable surface activity from building surfaces to the mouth during building occupancy	CONSTANT(m**2/hr)	
Default value used		Value	1.10E-04

Correlation Coefficients:

None

Summary Results:

90.00% of the 100 calculated TEDE values are < 1.03E+00 mrem/year .

The 95 % Confidence Interval for the 0.9 quantile value of TEDE is 1.03E+00 to 1.03E+00 mrem/year

Detailed Results:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Concentration at Time of Peak Dose:

Nuclide	Surface Concentration (dpm/100 cm**2)
---------	--

226Ra	6.00E+01
222Rn	6.00E+01
210Pb	6.08E+01
210Bi	6.08E+01
210Po	6.09E+01

Pathway Dose from All Nuclides (mrem)

All Pathways Dose	External	Inhalation	Secondary Ingestion
1.03E+00	1.40E-01	2.84E-01	6.05E-01

Radionuclide Dose through All Active Pathways (mrem)

Nuclide	All Pathways Dose
226Ra	1.69E-01
222Rn	1.40E-01
210Pb	5.01E-01
210Bi	2.30E-03
210Po	2.19E-01
All Nuclides	1.03E+00

Dose from Each Nuclide through Each Active Pathway (mrem)

Nuclide	External	Inhalation	Secondary Ingestion
226Ra	5.42E-04	7.60E-02	9.21E-02
222Rn	1.39E-01	1.27E-04	6.32E-05
210Pb	2.12E-04	1.22E-01	3.78E-01
210Bi	8.96E-05	1.76E-03	4.52E-04
210Po	7.08E-07	8.44E-02	1.34E-01



DandD Building Occupancy Scenario

DandD Version: 2.1.0

Run Date/Time: 7/9/2014 1:19:04 PM

Site Name: Picatinny Gorge Area

Description: Structure DCGL

FileName: C:\Users\Dan\Desktop\DU_IAEADU_38m.mcd

Options:

Implicit progeny doses included with explicit parent doses

Nuclide concentrations are NOT distributed among all progeny

Number of simulations: 100

Seed for Random Generation: 8718721

Averages used for behavioral type parameters

External Pathway is ON

Inhalation Pathway is ON

Secondary Ingestion Pathway is ON

Initial Activities:

Nuclide	Area of Contamination (m ²)	Distribution
238U	38	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 5.02E+02
235U	38	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 6.00E+00
234U	38	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 9.10E+01

Chain Data:

Number of chains: 3

Chain No. 1: 234U

Nuclides in chain: 7

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d)	15 cm Dose Rate Factor ((Sv/d)
---------	----------------	-----------	--------------	------------------	---------------	------------------	-------------------------------	--------------------------------	----------------------------------	--------------------------------

									/(Bq/m ²))	/(Bq/m ³))
234U	1	8.92E+07					7.66E-08	3.58E-05	6.46E-14	1.85E-16
230Th	2	2.81E+07	1	1	0	0	1.48E-07	8.80E-05	6.48E-14	5.52E-16
226Ra	3	5.84E+05	2	1	0	0	3.58E-07	2.32E-06	5.56E-13	1.42E-14
222Rn	4	3.82E+00	3	1	0	0	0.00E+00	0.00E+00	3.41E-14	9.81E-16
210Pb	5	8.15E+03	4	1	0	0	1.45E-06	3.67E-06	2.14E-13	1.13E-15
210Bi	6	5.01E+00	5	1	0	0	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	7	1.38E+02	6	1	0	0	5.14E-07	2.54E-06	7.16E-16	2.11E-17

Chain No. 2: **235U**

Nuclides in chain: 6

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d) / (Bq/m ²))	15 cm Dose Rate Factor ((Sv/d) / (Bq/m ³))
235U	1	2.57E+11					7.19E-08	3.32E-05	1.28E-11	3.24E-13
231Th	2	1.06E+00	1	1	0	0	3.65E-10	2.37E-10	1.60E-12	1.68E-14
231Pa	3	1.20E+07	2	1	0	0	2.86E-06	3.47E-04	3.52E-12	8.30E-14
227Ac	4	7.95E+03	3	1	0	0	3.80E-06	1.81E-03	1.36E-14	2.26E-16
227Th	5	1.87E+01	4	0.9862	0	0	1.03E-08	4.37E-06	8.94E-12	2.29E-13
223Ra	6	1.14E+01	5	1	4	0.0138	1.78E-07	2.12E-06	1.11E-11	2.67E-13

Chain No. 3: **238U**

Nuclides in chain: 9

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d) / (Bq/m ²))	15 cm Dose Rate Factor ((Sv/d) / (Bq/m ³))
238U	1	1.63E+12					6.88E-08	3.20E-05	4.76E-14	4.76E-17
234Th	2	2.41E+01	1	1	0	0	3.69E-09	9.47E-09	7.18E-13	1.12E-14
234U	3	8.93E+07	2	1	0	0	7.66E-08	3.58E-05	6.46E-14	1.85E-16
230Th	4	2.81E+07	3	1	0	0	1.48E-07	8.80E-05	6.48E-14	5.52E-16
226Ra	5	5.84E+05	4	1	0	0	3.58E-07	2.32E-06	5.56E-13	1.42E-14
222Rn	6	3.82E+00	5	1	0	0	0.00E+00	0.00E+00	3.41E-14	9.81E-16
210Pb	7	8.15E+03	6	1	0	0	1.45E-06	3.67E-06	2.14E-13	1.13E-15
210Bi	8	5.01E+00	7	1	0	0	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	9	1.38E+02	8	1	0	0	5.14E-07	2.54E-06	7.16E-16	2.11E-17

Initial Concentrations:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Nuclide	Surface Concentration (dpm/100 cm**2)
238U	5.02E+02
234Th	0.00E+00
234U	9.10E+01
230Th	0.00E+00
226Ra	0.00E+00
222Rn	0.00E+00
210Pb	0.00E+00
210Bi	0.00E+00
210Po	0.00E+00
235U	6.00E+00
231Th	0.00E+00
231Pa	0.00E+00
227Ac	0.00E+00
227Th	0.00E+00
223Ra	0.00E+00

Model Parameters:

General Parameters:

Parameter Name	Description	Distribution
To:Time In Building	The time in the building during the occupancy period	CONSTANT(hr/week)
Default value used		Value 4.50E+01
Tto:Occupancy Period	The duration of the occupancy exposure period	CONSTANT(days)
Default value used		Value 3.65E+02
Vo:Breathing Rate	The average volumetric breathing rate during building occupancy for an 8-hour work day	CONSTANT(m**3/hr)
Default value used		Value 1.40E+00
RFo*:Resuspension Factor	Effective resuspension factor during the occupancy period = $RF_o * FI$	CONSTANT(1/m)
Justification for modification: NUREG 1720		Value 1.00E-06
		Default DERIVED(1/m)
GO*:Ingestion Rate	Effective secondary ingestion transfer rate of removable surface activity from building surfaces to the mouth during building occupancy = $GO * FI$	DERIVED(m**2/hr)

<u>Default value used</u>																
Tstart:Start Time	The start time of the scenario in days	CONSTANT(days)														
<u>Default value used</u>		<u>Value</u> 0.00E+00														
Tend:End Time	The ending time of the scenario in days	CONSTANT(days)														
<u>Default value used</u>		<u>Value</u> 3.65E+02														
dt:Time Step Size	The time step size	CONSTANT(days)														
<u>Default value used</u>		<u>Value</u> 3.65E+02														
Pstep:Print Step Size	The time steps for the history file. Doses will be written to the history file every n time steps	CONSTANT(none)														
<u>Default value used</u>		<u>Value</u> 1.00E+00														
AOExt:External Exposure Area	Minimum surface area to which occupant is exposed via external radiation during occupancy period	CONSTANT(m**2)														
<u>Default value used</u>		<u>Value</u> 1.00E+01														
AOInh:Inhalation Exposure Area	Minimum surface area to which occupant is exposed via inhalation during occupancy period	CONSTANT(m**2)														
<u>Default value used</u>		<u>Value</u> 1.00E+01														
AOIng:Secondary Ingestion Exposure Area	Minimum surface area to which occupant is exposed via secondary ingestion during occupancy period	CONSTANT(m**2)														
<u>Default value used</u>		<u>Value</u> 1.00E+01														
AO:Exposure Area	Minimum surface area to which occupant is exposed during the occupancy period	DERIVED(m**2)														
<u>Default value used</u>																
Fl:Loose Fraction	Fraction of surface contamination available for resuspension and ingestion	CONSTANT(none)														
<u>Default value used</u>		<u>Value</u> 1.00E-01														
Rfo:Loose Resuspension Factor	Resuspension factor for loose contamination	CONTINUOUS LOGARITHMIC(1/m)														
<u>Default value used</u>		<table><tr><td><u>Value</u></td><td><u>Probability</u></td></tr><tr><td>9.12E-06</td><td>0.00E+00</td></tr><tr><td>1.10E-04</td><td>7.67E-01</td></tr><tr><td>1.46E-04</td><td>9.09E-01</td></tr><tr><td>1.62E-04</td><td>9.50E-01</td></tr><tr><td>1.85E-04</td><td>9.90E-01</td></tr><tr><td>1.90E-04</td><td>1.00E+00</td></tr></table>	<u>Value</u>	<u>Probability</u>	9.12E-06	0.00E+00	1.10E-04	7.67E-01	1.46E-04	9.09E-01	1.62E-04	9.50E-01	1.85E-04	9.90E-01	1.90E-04	1.00E+00
<u>Value</u>	<u>Probability</u>															
9.12E-06	0.00E+00															
1.10E-04	7.67E-01															
1.46E-04	9.09E-01															
1.62E-04	9.50E-01															
1.85E-04	9.90E-01															
1.90E-04	1.00E+00															
GO:Loose Ingestion Rate	The secondary ingestion transfer rate of loose removable surface activity from building surfaces to the mouth during building occupancy	CONSTANT(m**2/hr)														
<u>Default value used</u>		<u>Value</u> 1.10E-04														

Correlation Coefficients:

None

Summary Results:

90.00% of the 100 calculated TEDE values are < 1.09E+01 mrem/year .

The 95 % Confidence Interval for the 0.9 quantile value of TEDE is 1.09E+01 to 1.09E+01 mrem/year

Detailed Results:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Concentration at Time of Peak Dose:

Nuclide	Surface Concentration (dpm/100 cm**2)
238U	5.02E+02
234Th	4.54E+02
234U	9.10E+01
230Th	4.10E-04
226Ra	5.92E-08
222Rn	5.66E-08
210Pb	4.31E-10
210Bi	3.98E-10
210Po	1.08E-10
235U	6.00E+00
231Th	5.97E+00
231Pa	6.28E-05
227Ac	6.58E-07
227Th	5.25E-07
223Ra	4.64E-07

Pathway Dose from All Nuclides (mrem)

All Pathways Dose	External	Inhalation	Secondary Ingestion
1.09E+01	1.93E-02	1.07E+01	1.87E-01

Radionuclide Dose through All Active Pathways (mrem)

Nuclide	All Pathways Dose
238U	8.92E+00
234Th	2.69E-02
234U	1.81E+00
230Th	2.00E-05
226Ra	1.67E-10
222Rn	1.32E-10

210Pb	3.55E-12
210Bi	1.50E-14
210Po	3.89E-13
235U	1.12E-01
231Th	1.65E-04
231Pa	1.27E-05
227Ac	6.61E-07
227Th	1.35E-09
223Ra	1.08E-09
All Nuclides	1.09E+01

Dose from Each Nuclide through Each Active Pathway (mrem)

Nuclide	External	Inhalation	Secondary Ingestion
238U	3.88E-04	8.77E+00	1.48E-01
234Th	1.74E-02	2.35E-03	7.19E-03
234U	9.55E-05	1.78E+00	2.99E-02
230Th	4.32E-10	1.97E-05	2.60E-07
226Ra	5.35E-13	7.50E-11	9.10E-11
222Rn	1.32E-10	1.20E-13	5.96E-14
210Pb	1.50E-15	8.63E-13	2.68E-12
210Bi	5.86E-16	1.15E-14	2.96E-15
210Po	1.26E-18	1.50E-13	2.39E-13
235U	1.25E-03	1.09E-01	1.85E-03
231Th	1.55E-04	7.73E-07	9.36E-06
231Pa	3.59E-09	1.19E-05	7.70E-07
227Ac	8.66E-13	6.51E-07	1.07E-08
227Th	7.62E-11	1.25E-09	2.32E-11
223Ra	1.85E-10	5.38E-10	3.55E-10



DandD Building Occupancy Scenario

DandD Version: 2.1.0

Run Date/Time: 7/9/2014 1:13:45 PM

Site Name: Picatinny Gorge Area

Description: Structure DCGL

FileName: C:\Users\Dan\Desktop\DU_IAEADU_10m.mcd

Options:

Implicit progeny doses included with explicit parent doses

Nuclide concentrations are NOT distributed among all progeny

Number of simulations: 100

Seed for Random Generation: 8718721

Averages used for behavioral type parameters

External Pathway is ON

Inhalation Pathway is ON

Secondary Ingestion Pathway is ON

Initial Activities:

Nuclide	Area of Contamination (m ²)	Distribution
238U	10	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 5.02E+02
235U	10	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 6.00E+00
234U	10	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 9.10E+01

Chain Data:

Number of chains: 3

Chain No. 1: 234U

Nuclides in chain: 7

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d)	15 cm Dose Rate Factor ((Sv/d)
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									/(Bq/m ²))	/(Bq/m ³))
234U	1	8.92E+07					7.66E-08	3.58E-05	6.46E-14	1.85E-16
230Th	2	2.81E+07	1	1	0	0	1.48E-07	8.80E-05	6.48E-14	5.52E-16
226Ra	3	5.84E+05	2	1	0	0	3.58E-07	2.32E-06	5.56E-13	1.42E-14
222Rn	4	3.82E+00	3	1	0	0	0.00E+00	0.00E+00	3.41E-14	9.81E-16
210Pb	5	8.15E+03	4	1	0	0	1.45E-06	3.67E-06	2.14E-13	1.13E-15
210Bi	6	5.01E+00	5	1	0	0	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	7	1.38E+02	6	1	0	0	5.14E-07	2.54E-06	7.16E-16	2.11E-17

Chain No. 2: **235U**

Nuclides in chain: 6

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d) / (Bq/m ²))	15 cm Dose Rate Factor ((Sv/d) / (Bq/m ³))
235U	1	2.57E+11					7.19E-08	3.32E-05	1.28E-11	3.24E-13
231Th	2	1.06E+00	1	1	0	0	3.65E-10	2.37E-10	1.60E-12	1.68E-14
231Pa	3	1.20E+07	2	1	0	0	2.86E-06	3.47E-04	3.52E-12	8.30E-14
227Ac	4	7.95E+03	3	1	0	0	3.80E-06	1.81E-03	1.36E-14	2.26E-16
227Th	5	1.87E+01	4	0.9862	0	0	1.03E-08	4.37E-06	8.94E-12	2.29E-13
223Ra	6	1.14E+01	5	1	4	0.0138	1.78E-07	2.12E-06	1.11E-11	2.67E-13

Chain No. 3: **238U**

Nuclides in chain: 9

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d) / (Bq/m ²))	15 cm Dose Rate Factor ((Sv/d) / (Bq/m ³))
238U	1	1.63E+12					6.88E-08	3.20E-05	4.76E-14	4.76E-17
234Th	2	2.41E+01	1	1	0	0	3.69E-09	9.47E-09	7.18E-13	1.12E-14
234U	3	8.93E+07	2	1	0	0	7.66E-08	3.58E-05	6.46E-14	1.85E-16
230Th	4	2.81E+07	3	1	0	0	1.48E-07	8.80E-05	6.48E-14	5.52E-16
226Ra	5	5.84E+05	4	1	0	0	3.58E-07	2.32E-06	5.56E-13	1.42E-14
222Rn	6	3.82E+00	5	1	0	0	0.00E+00	0.00E+00	3.41E-14	9.81E-16
210Pb	7	8.15E+03	6	1	0	0	1.45E-06	3.67E-06	2.14E-13	1.13E-15
210Bi	8	5.01E+00	7	1	0	0	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	9	1.38E+02	8	1	0	0	5.14E-07	2.54E-06	7.16E-16	2.11E-17

Initial Concentrations:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Nuclide	Surface Concentration (dpm/100 cm**2)
238U	5.02E+02
234Th	0.00E+00
234U	9.10E+01
230Th	0.00E+00
226Ra	0.00E+00
222Rn	0.00E+00
210Pb	0.00E+00
210Bi	0.00E+00
210Po	0.00E+00
235U	6.00E+00
231Th	0.00E+00
231Pa	0.00E+00
227Ac	0.00E+00
227Th	0.00E+00
223Ra	0.00E+00

Model Parameters:

General Parameters:

Parameter Name	Description	Distribution
To:Time In Building	The time in the building during the occupancy period	CONSTANT(hr/week)
Default value used		Value 4.50E+01
Tto:Occupancy Period	The duration of the occupancy exposure period	CONSTANT(days)
Default value used		Value 3.65E+02
Vo:Breathing Rate	The average volumetric breathing rate during building occupancy for an 8-hour work day	CONSTANT(m**3/hr)
Default value used		Value 1.40E+00
RFo*:Resuspension Factor	Effective resuspension factor during the occupancy period = RFo * FI	CONSTANT(1/m)
Justification for modification: NUREG 1720		Value 1.00E-06
		Default DERIVED(1/m)
GO*:Ingestion Rate	Effective secondary ingestion transfer rate of removable surface activity from building surfaces to the mouth during building occupancy = GO * FI	DERIVED(m**2/hr)

Default value used		
Tstart:Start Time	The start time of the scenario in days	CONSTANT(days)
Default value used		Value 0.00E+00
Tend:End Time	The ending time of the scenario in days	CONSTANT(days)
Default value used		Value 3.65E+02
dt:Time Step Size	The time step size	CONSTANT(days)
Default value used		Value 3.65E+02
Pstep:Print Step Size	The time steps for the history file. Doses will be written to the history file every n time steps	CONSTANT(none)
Default value used		Value 1.00E+00
AOExt:External Exposure Area	Minimum surface area to which occupant is exposed via external radiation during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AOInh:Inhalation Exposure Area	Minimum surface area to which occupant is exposed via inhalation during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AOIng:Secondary Ingestion Exposure Area	Minimum surface area to which occupant is exposed via secondary ingestion during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AO:Exposure Area	Minimum surface area to which occupant is exposed during the occupancy period	DERIVED(m**2)
Default value used		
Fl:Loose Fraction	Fraction of surface contamination available for resuspension and ingestion	CONSTANT(none)
Default value used		Value 1.00E-01
Rfo:Loose Resuspension Factor	Resuspension factor for loose contamination	CONTINUOUS LOGARITHMIC(1/m)
Default value used		Value Probability
		9.12E-06 0.00E+00
		1.10E-04 7.67E-01
		1.46E-04 9.09E-01
		1.62E-04 9.50E-01
		1.85E-04 9.90E-01
		1.90E-04 1.00E+00
GO:Loose Ingestion Rate	The secondary ingestion transfer rate of loose removable surface activity from building surfaces to the mouth during building occupancy	CONSTANT(m**2/hr)
Default value used		Value 1.10E-04

Correlation Coefficients:

None

Summary Results:

90.00% of the 100 calculated TEDE values are $< 1.09\text{E}+01$ mrem/year .

The 95 % Confidence Interval for the 0.9 quantile value of TEDE is $1.09\text{E}+01$ to $1.09\text{E}+01$ mrem/year

Detailed Results:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Concentration at Time of Peak Dose:

Nuclide	Surface Concentration (dpm/100 cm**2)
238U	5.02E+02
234Th	4.54E+02
234U	9.10E+01
230Th	4.10E-04
226Ra	5.92E-08
222Rn	5.66E-08
210Pb	4.31E-10
210Bi	3.98E-10
210Po	1.08E-10
235U	6.00E+00
231Th	5.97E+00
231Pa	6.28E-05
227Ac	6.58E-07
227Th	5.25E-07
223Ra	4.64E-07

Pathway Dose from All Nuclides (mrem)

All Pathways Dose	External	Inhalation	Secondary Ingestion
1.09E+01	1.93E-02	1.07E+01	1.87E-01

Radionuclide Dose through All Active Pathways (mrem)

Nuclide	All Pathways Dose
238U	8.92E+00
234Th	2.69E-02
234U	1.81E+00
230Th	2.00E-05
226Ra	1.67E-10
222Rn	1.32E-10

210Pb	3.55E-12
210Bi	1.50E-14
210Po	3.89E-13
235U	1.12E-01
231Th	1.65E-04
231Pa	1.27E-05
227Ac	6.61E-07
227Th	1.35E-09
223Ra	1.08E-09
All Nuclides	1.09E+01

Dose from Each Nuclide through Each Active Pathway (mrem)

Nuclide	External	Inhalation	Secondary Ingestion
238U	3.88E-04	8.77E+00	1.48E-01
234Th	1.74E-02	2.35E-03	7.19E-03
234U	9.55E-05	1.78E+00	2.99E-02
230Th	4.32E-10	1.97E-05	2.60E-07
226Ra	5.35E-13	7.50E-11	9.10E-11
222Rn	1.32E-10	1.20E-13	5.96E-14
210Pb	1.50E-15	8.63E-13	2.68E-12
210Bi	5.86E-16	1.15E-14	2.96E-15
210Po	1.26E-18	1.50E-13	2.39E-13
235U	1.25E-03	1.09E-01	1.85E-03
231Th	1.55E-04	7.73E-07	9.36E-06
231Pa	3.59E-09	1.19E-05	7.70E-07
227Ac	8.66E-13	6.51E-07	1.07E-08
227Th	7.62E-11	1.25E-09	2.32E-11
223Ra	1.85E-10	5.38E-10	3.55E-10



DandD Building Occupancy Scenario

DandD Version: 2.1.0

Run Date/Time: 7/9/2014 1:16:02 PM

Site Name: Picatinny Gorge Area

Description: Structure DCGL

FileName: C:\Users\Dan\Desktop\DU_IAEADU_2m.mcd

Options:

Implicit progeny doses included with explicit parent doses

Nuclide concentrations are NOT distributed among all progeny

Number of simulations: 100

Seed for Random Generation: 8718721

Averages used for behavioral type parameters

External Pathway is ON

Inhalation Pathway is ON

Secondary Ingestion Pathway is ON

Initial Activities:

Nuclide	Area of Contamination (m ²)	Distribution
238U	2	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 5.02E+02
235U	2	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 6.00E+00
234U	2	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 9.10E+01

Chain Data:

Number of chains: 3

Chain No. 1: 234U

Nuclides in chain: 7

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d)	15 cm Dose Rate Factor ((Sv/d)
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									/(Bq/m ²))	/(Bq/m ³))
234U	1	8.92E+07					7.66E-08	3.58E-05	6.46E-14	1.85E-16
230Th	2	2.81E+07	1	1	0	0	1.48E-07	8.80E-05	6.48E-14	5.52E-16
226Ra	3	5.84E+05	2	1	0	0	3.58E-07	2.32E-06	5.56E-13	1.42E-14
222Rn	4	3.82E+00	3	1	0	0	0.00E+00	0.00E+00	3.41E-14	9.81E-16
210Pb	5	8.15E+03	4	1	0	0	1.45E-06	3.67E-06	2.14E-13	1.13E-15
210Bi	6	5.01E+00	5	1	0	0	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	7	1.38E+02	6	1	0	0	5.14E-07	2.54E-06	7.16E-16	2.11E-17

Chain No. 2: **235U**

Nuclides in chain: 6

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d) / (Bq/m²))	15 cm Dose Rate Factor ((Sv/d) / (Bq/m³))
235U	1	2.57E+11					7.19E-08	3.32E-05	1.28E-11	3.24E-13
231Th	2	1.06E+00	1	1	0	0	3.65E-10	2.37E-10	1.60E-12	1.68E-14
231Pa	3	1.20E+07	2	1	0	0	2.86E-06	3.47E-04	3.52E-12	8.30E-14
227Ac	4	7.95E+03	3	1	0	0	3.80E-06	1.81E-03	1.36E-14	2.26E-16
227Th	5	1.87E+01	4	0.9862	0	0	1.03E-08	4.37E-06	8.94E-12	2.29E-13
223Ra	6	1.14E+01	5	1	4	0.0138	1.78E-07	2.12E-06	1.11E-11	2.67E-13

Chain No. 3: **238U**

Nuclides in chain: 9

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d) / (Bq/m²))	15 cm Dose Rate Factor ((Sv/d) / (Bq/m³))
238U	1	1.63E+12					6.88E-08	3.20E-05	4.76E-14	4.76E-17
234Th	2	2.41E+01	1	1	0	0	3.69E-09	9.47E-09	7.18E-13	1.12E-14
234U	3	8.93E+07	2	1	0	0	7.66E-08	3.58E-05	6.46E-14	1.85E-16
230Th	4	2.81E+07	3	1	0	0	1.48E-07	8.80E-05	6.48E-14	5.52E-16
226Ra	5	5.84E+05	4	1	0	0	3.58E-07	2.32E-06	5.56E-13	1.42E-14
222Rn	6	3.82E+00	5	1	0	0	0.00E+00	0.00E+00	3.41E-14	9.81E-16
210Pb	7	8.15E+03	6	1	0	0	1.45E-06	3.67E-06	2.14E-13	1.13E-15
210Bi	8	5.01E+00	7	1	0	0	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	9	1.38E+02	8	1	0	0	5.14E-07	2.54E-06	7.16E-16	2.11E-17

Initial Concentrations:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Nuclide	Surface Concentration (dpm/100 cm**2)
238U	1.00E+02
234Th	0.00E+00
234U	1.82E+01
230Th	0.00E+00
226Ra	0.00E+00
222Rn	0.00E+00
210Pb	0.00E+00
210Bi	0.00E+00
210Po	0.00E+00
235U	1.20E+00
231Th	0.00E+00
231Pa	0.00E+00
227Ac	0.00E+00
227Th	0.00E+00
223Ra	0.00E+00

Model Parameters:

General Parameters:

Parameter Name	Description	Distribution
To:Time In Building	The time in the building during the occupancy period	CONSTANT(hr/week)
Default value used		Value 4.50E+01
Tto:Occupancy Period	The duration of the occupancy exposure period	CONSTANT(days)
Default value used		Value 3.65E+02
Vo:Breathing Rate	The average volumetric breathing rate during building occupancy for an 8-hour work day	CONSTANT(m**3/hr)
Default value used		Value 1.40E+00
RFo*:Resuspension Factor	Effective resuspension factor during the occupancy period = RFo * FI	CONSTANT(1/m)
Justification for modification: NUREG 1720		Value 1.00E-06
		Default DERIVED(1/m)
GO*:Ingestion Rate	Effective secondary ingestion transfer rate of removable surface activity from building surfaces to the mouth during building occupancy = GO * FI	DERIVED(m**2/hr)

Default value used		
Tstart:Start Time	The start time of the scenario in days	CONSTANT(days)
Default value used		Value 0.00E+00
Tend:End Time	The ending time of the scenario in days	CONSTANT(days)
Default value used		Value 3.65E+02
dt:Time Step Size	The time step size	CONSTANT(days)
Default value used		Value 3.65E+02
Pstep:Print Step Size	The time steps for the history file. Doses will be written to the history file every n time steps	CONSTANT(none)
Default value used		Value 1.00E+00
AOExt:External Exposure Area	Minimum surface area to which occupant is exposed via external radiation during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AOInh:Inhalation Exposure Area	Minimum surface area to which occupant is exposed via inhalation during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AOIng:Secondary Ingestion Exposure Area	Minimum surface area to which occupant is exposed via secondary ingestion during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AO:Exposure Area	Minimum surface area to which occupant is exposed during the occupancy period	DERIVED(m**2)
Default value used		
Fl:Loose Fraction	Fraction of surface contamination available for resuspension and ingestion	CONSTANT(none)
Default value used		Value 1.00E-01
Rfo:Loose Resuspension Factor	Resuspension factor for loose contamination	CONTINUOUS LOGARITHMIC(1/m)
Default value used		Value Probability
		9.12E-06 0.00E+00
		1.10E-04 7.67E-01
		1.46E-04 9.09E-01
		1.62E-04 9.50E-01
		1.85E-04 9.90E-01
		1.90E-04 1.00E+00
GO:Loose Ingestion Rate	The secondary ingestion transfer rate of loose removable surface activity from building surfaces to the mouth during building occupancy	CONSTANT(m**2/hr)
Default value used		Value 1.10E-04

Correlation Coefficients:None**Summary Results:**

90.00% of the 100 calculated TEDE values are $< 2.17\text{E}+00$ mrem/year .

The 95 % Confidence Interval for the 0.9 quantile value of TEDE is $2.17\text{E}+00$ to $2.17\text{E}+00$ mrem/year

Detailed Results:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Concentration at Time of Peak Dose:

Nuclide	Surface Concentration (dpm/100 cm**2)
238U	1.00E+02
234Th	9.08E+01
234U	1.82E+01
230Th	8.20E-05
226Ra	1.18E-08
222Rn	1.13E-08
210Pb	8.62E-11
210Bi	7.97E-11
210Po	2.17E-11
235U	1.20E+00
231Th	1.19E+00
231Pa	1.26E-05
227Ac	1.32E-07
227Th	1.05E-07
223Ra	9.28E-08

Pathway Dose from All Nuclides (mrem)

All Pathways Dose	External	Inhalation	Secondary Ingestion
2.17E+00	3.85E-03	2.13E+00	3.74E-02

Radionuclide Dose through All Active Pathways (mrem)

Nuclide	All Pathways Dose
238U	1.78E+00
234Th	5.38E-03
234U	3.62E-01
230Th	3.99E-06
226Ra	3.33E-11
222Rn	2.64E-11

210Pb	7.09E-13
210Bi	3.01E-15
210Po	7.78E-14
235U	2.24E-02
231Th	3.31E-05
231Pa	2.53E-06
227Ac	1.32E-07
227Th	2.70E-10
223Ra	2.15E-10
All Nuclides	2.17E+00

Dose from Each Nuclide through Each Active Pathway (mrem)

Nuclide	External	Inhalation	Secondary Ingestion
238U	7.77E-05	1.75E+00	2.96E-02
234Th	3.47E-03	4.70E-04	1.44E-03
234U	1.91E-05	3.56E-01	5.98E-03
230Th	8.63E-11	3.94E-06	5.21E-08
226Ra	1.07E-13	1.50E-11	1.82E-11
222Rn	2.63E-11	2.41E-14	1.19E-14
210Pb	3.00E-16	1.73E-13	5.36E-13
210Bi	1.17E-16	2.30E-15	5.91E-16
210Po	2.52E-19	3.00E-14	4.78E-14
235U	2.50E-04	2.18E-02	3.70E-04
231Th	3.11E-05	1.55E-07	1.87E-06
231Pa	7.18E-10	2.38E-06	1.54E-07
227Ac	1.73E-13	1.30E-07	2.15E-09
227Th	1.52E-11	2.50E-10	4.64E-12
223Ra	3.70E-11	1.08E-10	7.09E-11



DandD Building Occupancy Scenario

DandD Version: 2.1.0

Run Date/Time: 7/9/2014 1:21:09 PM

Site Name: Picatinny Gorge Area

Description: Structure DCGL

FileName: C:\Users\Dan\Desktop\DU_IAEANU_38m.mcd

Options:

Implicit progeny doses included with explicit parent doses

Nuclide concentrations are NOT distributed among all progeny

Number of simulations: 100

Seed for Random Generation: 8718721

Averages used for behavioral type parameters

External Pathway is ON

Inhalation Pathway is ON

Secondary Ingestion Pathway is ON

Initial Activities:

Nuclide	Area of Contamination (m ²)	Distribution
238U	38	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 2.93E+02
235U	38	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 1.40E+01
234U	38	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 2.93E+02

Chain Data:

Number of chains: 3

Chain No. 1: 234U

Nuclides in chain: 7

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d)	15 cm Dose Rate Factor ((Sv/d)
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									/(Bq/m ²))	/(Bq/m ³))
234U	1	8.92E+07					7.66E-08	3.58E-05	6.46E-14	1.85E-16
230Th	2	2.81E+07	1	1	0	0	1.48E-07	8.80E-05	6.48E-14	5.52E-16
226Ra	3	5.84E+05	2	1	0	0	3.58E-07	2.32E-06	5.56E-13	1.42E-14
222Rn	4	3.82E+00	3	1	0	0	0.00E+00	0.00E+00	3.41E-14	9.81E-16
210Pb	5	8.15E+03	4	1	0	0	1.45E-06	3.67E-06	2.14E-13	1.13E-15
210Bi	6	5.01E+00	5	1	0	0	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	7	1.38E+02	6	1	0	0	5.14E-07	2.54E-06	7.16E-16	2.11E-17

Chain No. 2: **235U**Nuclides in chain: **6**

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d) / (Bq/m²))	15 cm Dose Rate Factor ((Sv/d) / (Bq/m³))
235U	1	2.57E+11					7.19E-08	3.32E-05	1.28E-11	3.24E-13
231Th	2	1.06E+00	1	1	0	0	3.65E-10	2.37E-10	1.60E-12	1.68E-14
231Pa	3	1.20E+07	2	1	0	0	2.86E-06	3.47E-04	3.52E-12	8.30E-14
227Ac	4	7.95E+03	3	1	0	0	3.80E-06	1.81E-03	1.36E-14	2.26E-16
227Th	5	1.87E+01	4	0.9862	0	0	1.03E-08	4.37E-06	8.94E-12	2.29E-13
223Ra	6	1.14E+01	5	1	4	0.0138	1.78E-07	2.12E-06	1.11E-11	2.67E-13

Chain No. 3: **238U**Nuclides in chain: **9**

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d) / (Bq/m²))	15 cm Dose Rate Factor ((Sv/d) / (Bq/m³))
238U	1	1.63E+12					6.88E-08	3.20E-05	4.76E-14	4.76E-17
234Th	2	2.41E+01	1	1	0	0	3.69E-09	9.47E-09	7.18E-13	1.12E-14
234U	3	8.93E+07	2	1	0	0	7.66E-08	3.58E-05	6.46E-14	1.85E-16
230Th	4	2.81E+07	3	1	0	0	1.48E-07	8.80E-05	6.48E-14	5.52E-16
226Ra	5	5.84E+05	4	1	0	0	3.58E-07	2.32E-06	5.56E-13	1.42E-14
222Rn	6	3.82E+00	5	1	0	0	0.00E+00	0.00E+00	3.41E-14	9.81E-16
210Pb	7	8.15E+03	6	1	0	0	1.45E-06	3.67E-06	2.14E-13	1.13E-15
210Bi	8	5.01E+00	7	1	0	0	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	9	1.38E+02	8	1	0	0	5.14E-07	2.54E-06	7.16E-16	2.11E-17

Initial Concentrations:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Nuclide	Surface Concentration (dpm/100 cm**2)
238U	2.93E+02
234Th	0.00E+00
234U	2.93E+02
230Th	0.00E+00
226Ra	0.00E+00
222Rn	0.00E+00
210Pb	0.00E+00
210Bi	0.00E+00
210Po	0.00E+00
235U	1.40E+01
231Th	0.00E+00
231Pa	0.00E+00
227Ac	0.00E+00
227Th	0.00E+00
223Ra	0.00E+00

Model Parameters:

General Parameters:

Parameter Name	Description	Distribution
To:Time In Building	The time in the building during the occupancy period	CONSTANT(hr/week)
Default value used		Value 4.50E+01
Tto:Occupancy Period	The duration of the occupancy exposure period	CONSTANT(days)
Default value used		Value 3.65E+02
Vo:Breathing Rate	The average volumetric breathing rate during building occupancy for an 8-hour work day	CONSTANT(m**3/hr)
Default value used		Value 1.40E+00
RFo*:Resuspension Factor	Effective resuspension factor during the occupancy period = RFo * FI	CONSTANT(1/m)
Justification for modification: NUREG 1720		Value 1.00E-06
		Default DERIVED(1/m)
GO*:Ingestion Rate	Effective secondary ingestion transfer rate of removable surface activity from building surfaces to the mouth during building occupancy = GO * FI	DERIVED(m**2/hr)

Default value used		
Tstart:Start Time	The start time of the scenario in days	CONSTANT(days)
Default value used		Value 0.00E+00
Tend:End Time	The ending time of the scenario in days	CONSTANT(days)
Default value used		Value 3.65E+02
dt:Time Step Size	The time step size	CONSTANT(days)
Default value used		Value 3.65E+02
Pstep:Print Step Size	The time steps for the history file. Doses will be written to the history file every n time steps	CONSTANT(none)
Default value used		Value 1.00E+00
AOExt:External Exposure Area	Minimum surface area to which occupant is exposed via external radiation during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AOInh:Inhalation Exposure Area	Minimum surface area to which occupant is exposed via inhalation during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AOIng:Secondary Ingestion Exposure Area	Minimum surface area to which occupant is exposed via secondary ingestion during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AO:Exposure Area	Minimum surface area to which occupant is exposed during the occupancy period	DERIVED(m**2)
Default value used		
Fl:Loose Fraction	Fraction of surface contamination available for resuspension and ingestion	CONSTANT(none)
Default value used		Value 1.00E-01
Rfo:Loose Resuspension Factor	Resuspension factor for loose contamination	CONTINUOUS LOGARITHMIC(1/m)
Default value used		Value Probability
		9.12E-06 0.00E+00
		1.10E-04 7.67E-01
		1.46E-04 9.09E-01
		1.62E-04 9.50E-01
		1.85E-04 9.90E-01
		1.90E-04 1.00E+00
GO:Loose Ingestion Rate	The secondary ingestion transfer rate of loose removable surface activity from building surfaces to the mouth during building occupancy	CONSTANT(m**2/hr)
Default value used		Value 1.10E-04

Correlation Coefficients:None**Summary Results:**

90.00% of the 100 calculated TEDE values are $< 1.13\text{E}+01$ mrem/year .

The 95 % Confidence Interval for the 0.9 quantile value of TEDE is $1.13\text{E}+01$ to $1.13\text{E}+01$ mrem/year

Detailed Results:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Concentration at Time of Peak Dose:

Nuclide	Surface Concentration (dpm/100 cm**2)
238U	2.93E+02
234Th	2.65E+02
234U	2.93E+02
230Th	1.32E-03
226Ra	1.91E-07
222Rn	1.82E-07
210Pb	1.39E-09
210Bi	1.28E-09
210Po	3.49E-10
235U	1.40E+01
231Th	1.39E+01
231Pa	1.46E-04
227Ac	1.54E-06
227Th	1.22E-06
223Ra	1.08E-06

Pathway Dose from All Nuclides (mrem)

All Pathways Dose	External	Inhalation	Secondary Ingestion
1.13E+01	1.39E-02	1.11E+01	1.91E-01

Radionuclide Dose through All Active Pathways (mrem)

Nuclide	All Pathways Dose
238U	5.21E+00
234Th	1.57E-02
234U	5.82E+00
230Th	6.43E-05
226Ra	5.36E-10
222Rn	4.24E-10

210Pb	1.14E-11
210Bi	4.84E-14
210Po	1.25E-12
235U	2.61E-01
231Th	3.86E-04
231Pa	2.96E-05
227Ac	1.54E-06
227Th	3.15E-09
223Ra	2.51E-09
All Nuclides	1.13E+01

Dose from Each Nuclide through Each Active Pathway (mrem)

Nuclide	External	Inhalation	Secondary Ingestion
238U	2.27E-04	5.12E+00	8.65E-02
234Th	1.01E-02	1.37E-03	4.20E-03
234U	3.08E-04	5.73E+00	9.63E-02
230Th	1.39E-09	6.34E-05	8.38E-07
226Ra	1.72E-12	2.42E-10	2.93E-10
222Rn	4.24E-10	3.87E-13	1.92E-13
210Pb	4.82E-15	2.78E-12	8.63E-12
210Bi	1.89E-15	3.70E-14	9.52E-15
210Po	4.06E-18	4.84E-13	7.69E-13
235U	2.91E-03	2.54E-01	4.32E-03
231Th	3.62E-04	1.80E-06	2.18E-05
231Pa	8.38E-09	2.77E-05	1.80E-06
227Ac	2.02E-12	1.52E-06	2.50E-08
227Th	1.78E-10	2.92E-09	5.41E-11
223Ra	4.31E-10	1.25E-09	8.27E-10



DandD Building Occupancy Scenario

DandD Version: 2.1.0

Run Date/Time: 7/9/2014 1:23:08 PM

Site Name: Picatinny Gorge Area

Description: Structure DCGL

FileName: C:\Users\Dan\Desktop\DU_IAEANU_10m.mcd

Options:

Implicit progeny doses included with explicit parent doses

Nuclide concentrations are NOT distributed among all progeny

Number of simulations: 100

Seed for Random Generation: 8718721

Averages used for behavioral type parameters

External Pathway is ON

Inhalation Pathway is ON

Secondary Ingestion Pathway is ON

Initial Activities:

Nuclide	Area of Contamination (m ²)	Distribution
238U	10	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 2.93E+02
235U	10	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 1.40E+01
234U	10	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 2.93E+02

Chain Data:

Number of chains: 3

Chain No. 1: 234U

Nuclides in chain: 7

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d)	15 cm Dose Rate Factor ((Sv/d)
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									/(Bq/m ²))	/(Bq/m ³))
234U	1	8.92E+07					7.66E-08	3.58E-05	6.46E-14	1.85E-16
230Th	2	2.81E+07	1	1	0	0	1.48E-07	8.80E-05	6.48E-14	5.52E-16
226Ra	3	5.84E+05	2	1	0	0	3.58E-07	2.32E-06	5.56E-13	1.42E-14
222Rn	4	3.82E+00	3	1	0	0	0.00E+00	0.00E+00	3.41E-14	9.81E-16
210Pb	5	8.15E+03	4	1	0	0	1.45E-06	3.67E-06	2.14E-13	1.13E-15
210Bi	6	5.01E+00	5	1	0	0	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	7	1.38E+02	6	1	0	0	5.14E-07	2.54E-06	7.16E-16	2.11E-17

Chain No. 2: **235U**

Nuclides in chain: 6

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d) / (Bq/m ²))	15 cm Dose Rate Factor ((Sv/d) / (Bq/m ³))
235U	1	2.57E+11					7.19E-08	3.32E-05	1.28E-11	3.24E-13
231Th	2	1.06E+00	1	1	0	0	3.65E-10	2.37E-10	1.60E-12	1.68E-14
231Pa	3	1.20E+07	2	1	0	0	2.86E-06	3.47E-04	3.52E-12	8.30E-14
227Ac	4	7.95E+03	3	1	0	0	3.80E-06	1.81E-03	1.36E-14	2.26E-16
227Th	5	1.87E+01	4	0.9862	0	0	1.03E-08	4.37E-06	8.94E-12	2.29E-13
223Ra	6	1.14E+01	5	1	4	0.0138	1.78E-07	2.12E-06	1.11E-11	2.67E-13

Chain No. 3: **238U**

Nuclides in chain: 9

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d) / (Bq/m ²))	15 cm Dose Rate Factor ((Sv/d) / (Bq/m ³))
238U	1	1.63E+12					6.88E-08	3.20E-05	4.76E-14	4.76E-17
234Th	2	2.41E+01	1	1	0	0	3.69E-09	9.47E-09	7.18E-13	1.12E-14
234U	3	8.93E+07	2	1	0	0	7.66E-08	3.58E-05	6.46E-14	1.85E-16
230Th	4	2.81E+07	3	1	0	0	1.48E-07	8.80E-05	6.48E-14	5.52E-16
226Ra	5	5.84E+05	4	1	0	0	3.58E-07	2.32E-06	5.56E-13	1.42E-14
222Rn	6	3.82E+00	5	1	0	0	0.00E+00	0.00E+00	3.41E-14	9.81E-16
210Pb	7	8.15E+03	6	1	0	0	1.45E-06	3.67E-06	2.14E-13	1.13E-15
210Bi	8	5.01E+00	7	1	0	0	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	9	1.38E+02	8	1	0	0	5.14E-07	2.54E-06	7.16E-16	2.11E-17

Initial Concentrations:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Nuclide	Surface Concentration (dpm/100 cm**2)
238U	2.93E+02
234Th	0.00E+00
234U	2.93E+02
230Th	0.00E+00
226Ra	0.00E+00
222Rn	0.00E+00
210Pb	0.00E+00
210Bi	0.00E+00
210Po	0.00E+00
235U	1.40E+01
231Th	0.00E+00
231Pa	0.00E+00
227Ac	0.00E+00
227Th	0.00E+00
223Ra	0.00E+00

Model Parameters:

General Parameters:

Parameter Name	Description	Distribution
To:Time In Building	The time in the building during the occupancy period	CONSTANT(hr/week)
Default value used		Value 4.50E+01
Tto:Occupancy Period	The duration of the occupancy exposure period	CONSTANT(days)
Default value used		Value 3.65E+02
Vo:Breathing Rate	The average volumetric breathing rate during building occupancy for an 8-hour work day	CONSTANT(m**3/hr)
Default value used		Value 1.40E+00
RFo*:Resuspension Factor	Effective resuspension factor during the occupancy period = RFo * FI	CONSTANT(1/m)
Justification for modification: NUREG 1720		Value 1.00E-06
		Default DERIVED(1/m)
GO*:Ingestion Rate	Effective secondary ingestion transfer rate of removable surface activity from building surfaces to the mouth during building occupancy = GO * FI	DERIVED(m**2/hr)

Default value used		
Tstart:Start Time	The start time of the scenario in days	CONSTANT(days)
Default value used		Value 0.00E+00
Tend:End Time	The ending time of the scenario in days	CONSTANT(days)
Default value used		Value 3.65E+02
dt:Time Step Size	The time step size	CONSTANT(days)
Default value used		Value 3.65E+02
Pstep:Print Step Size	The time steps for the history file. Doses will be written to the history file every n time steps	CONSTANT(none)
Default value used		Value 1.00E+00
AOExt:External Exposure Area	Minimum surface area to which occupant is exposed via external radiation during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AOInh:Inhalation Exposure Area	Minimum surface area to which occupant is exposed via inhalation during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AOIng:Secondary Ingestion Exposure Area	Minimum surface area to which occupant is exposed via secondary ingestion during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AO:Exposure Area	Minimum surface area to which occupant is exposed during the occupancy period	DERIVED(m**2)
Default value used		
Fl:Loose Fraction	Fraction of surface contamination available for resuspension and ingestion	CONSTANT(none)
Default value used		Value 1.00E-01
Rfo:Loose Resuspension Factor	Resuspension factor for loose contamination	CONTINUOUS LOGARITHMIC(1/m)
Default value used		Value Probability
		9.12E-06 0.00E+00
		1.10E-04 7.67E-01
		1.46E-04 9.09E-01
		1.62E-04 9.50E-01
		1.85E-04 9.90E-01
		1.90E-04 1.00E+00
GO:Loose Ingestion Rate	The secondary ingestion transfer rate of loose removable surface activity from building surfaces to the mouth during building occupancy	CONSTANT(m**2/hr)
Default value used		Value 1.10E-04

Correlation Coefficients:None**Summary Results:**

90.00% of the 100 calculated TEDE values are $< 1.13\text{E}+01$ mrem/year .

The 95 % Confidence Interval for the 0.9 quantile value of TEDE is $1.13\text{E}+01$ to $1.13\text{E}+01$ mrem/year

Detailed Results:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Concentration at Time of Peak Dose:

Nuclide	Surface Concentration (dpm/100 cm**2)
238U	2.93E+02
234Th	2.65E+02
234U	2.93E+02
230Th	1.32E-03
226Ra	1.91E-07
222Rn	1.82E-07
210Pb	1.39E-09
210Bi	1.28E-09
210Po	3.49E-10
235U	1.40E+01
231Th	1.39E+01
231Pa	1.46E-04
227Ac	1.54E-06
227Th	1.22E-06
223Ra	1.08E-06

Pathway Dose from All Nuclides (mrem)

All Pathways Dose	External	Inhalation	Secondary Ingestion
1.13E+01	1.39E-02	1.11E+01	1.91E-01

Radionuclide Dose through All Active Pathways (mrem)

Nuclide	All Pathways Dose
238U	5.21E+00
234Th	1.57E-02
234U	5.82E+00
230Th	6.43E-05
226Ra	5.36E-10
222Rn	4.24E-10

210Pb	1.14E-11
210Bi	4.84E-14
210Po	1.25E-12
235U	2.61E-01
231Th	3.86E-04
231Pa	2.96E-05
227Ac	1.54E-06
227Th	3.15E-09
223Ra	2.51E-09
All Nuclides	1.13E+01

Dose from Each Nuclide through Each Active Pathway (mrem)

Nuclide	External	Inhalation	Secondary Ingestion
238U	2.27E-04	5.12E+00	8.65E-02
234Th	1.01E-02	1.37E-03	4.20E-03
234U	3.08E-04	5.73E+00	9.63E-02
230Th	1.39E-09	6.34E-05	8.38E-07
226Ra	1.72E-12	2.42E-10	2.93E-10
222Rn	4.24E-10	3.87E-13	1.92E-13
210Pb	4.82E-15	2.78E-12	8.63E-12
210Bi	1.89E-15	3.70E-14	9.52E-15
210Po	4.06E-18	4.84E-13	7.69E-13
235U	2.91E-03	2.54E-01	4.32E-03
231Th	3.62E-04	1.80E-06	2.18E-05
231Pa	8.38E-09	2.77E-05	1.80E-06
227Ac	2.02E-12	1.52E-06	2.50E-08
227Th	1.78E-10	2.92E-09	5.41E-11
223Ra	4.31E-10	1.25E-09	8.27E-10



DandD Building Occupancy Scenario

DandD Version: 2.1.0

Run Date/Time: 7/9/2014 1:24:44 PM

Site Name: Picatinny Gorge Area

Description: Structure DCGL

FileName: C:\Users\Dan\Desktop\DU_IAEANU_2m.mcd

Options:

Implicit progeny doses included with explicit parent doses

Nuclide concentrations are NOT distributed among all progeny

Number of simulations: 100

Seed for Random Generation: 8718721

Averages used for behavioral type parameters

External Pathway is ON

Inhalation Pathway is ON

Secondary Ingestion Pathway is ON

Initial Activities:

Nuclide	Area of Contamination (m ²)	Distribution
238U	2	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 2.93E+02
235U	2	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 1.40E+01
234U	2	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 2.93E+02

Chain Data:

Number of chains: 3

Chain No. 1: 234U

Nuclides in chain: 7

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d)	15 cm Dose Rate Factor ((Sv/d)
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									/(Bq/m ²))	/(Bq/m ³))
234U	1	8.92E+07					7.66E-08	3.58E-05	6.46E-14	1.85E-16
230Th	2	2.81E+07	1	1	0	0	1.48E-07	8.80E-05	6.48E-14	5.52E-16
226Ra	3	5.84E+05	2	1	0	0	3.58E-07	2.32E-06	5.56E-13	1.42E-14
222Rn	4	3.82E+00	3	1	0	0	0.00E+00	0.00E+00	3.41E-14	9.81E-16
210Pb	5	8.15E+03	4	1	0	0	1.45E-06	3.67E-06	2.14E-13	1.13E-15
210Bi	6	5.01E+00	5	1	0	0	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	7	1.38E+02	6	1	0	0	5.14E-07	2.54E-06	7.16E-16	2.11E-17

Chain No. 2: **235U**

Nuclides in chain: 6

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d) / (Bq/m²))	15 cm Dose Rate Factor ((Sv/d) / (Bq/m³))
235U	1	2.57E+11					7.19E-08	3.32E-05	1.28E-11	3.24E-13
231Th	2	1.06E+00	1	1	0	0	3.65E-10	2.37E-10	1.60E-12	1.68E-14
231Pa	3	1.20E+07	2	1	0	0	2.86E-06	3.47E-04	3.52E-12	8.30E-14
227Ac	4	7.95E+03	3	1	0	0	3.80E-06	1.81E-03	1.36E-14	2.26E-16
227Th	5	1.87E+01	4	0.9862	0	0	1.03E-08	4.37E-06	8.94E-12	2.29E-13
223Ra	6	1.14E+01	5	1	4	0.0138	1.78E-07	2.12E-06	1.11E-11	2.67E-13

Chain No. 3: **238U**

Nuclides in chain: 9

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d) / (Bq/m²))	15 cm Dose Rate Factor ((Sv/d) / (Bq/m³))
238U	1	1.63E+12					6.88E-08	3.20E-05	4.76E-14	4.76E-17
234Th	2	2.41E+01	1	1	0	0	3.69E-09	9.47E-09	7.18E-13	1.12E-14
234U	3	8.93E+07	2	1	0	0	7.66E-08	3.58E-05	6.46E-14	1.85E-16
230Th	4	2.81E+07	3	1	0	0	1.48E-07	8.80E-05	6.48E-14	5.52E-16
226Ra	5	5.84E+05	4	1	0	0	3.58E-07	2.32E-06	5.56E-13	1.42E-14
222Rn	6	3.82E+00	5	1	0	0	0.00E+00	0.00E+00	3.41E-14	9.81E-16
210Pb	7	8.15E+03	6	1	0	0	1.45E-06	3.67E-06	2.14E-13	1.13E-15
210Bi	8	5.01E+00	7	1	0	0	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	9	1.38E+02	8	1	0	0	5.14E-07	2.54E-06	7.16E-16	2.11E-17

Initial Concentrations:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Nuclide	Surface Concentration (dpm/100 cm**2)
238U	5.86E+01
234Th	0.00E+00
234U	5.86E+01
230Th	0.00E+00
226Ra	0.00E+00
222Rn	0.00E+00
210Pb	0.00E+00
210Bi	0.00E+00
210Po	0.00E+00
235U	2.80E+00
231Th	0.00E+00
231Pa	0.00E+00
227Ac	0.00E+00
227Th	0.00E+00
223Ra	0.00E+00

Model Parameters:

General Parameters:

Parameter Name	Description	Distribution
To:Time In Building	The time in the building during the occupancy period	CONSTANT(hr/week)
Default value used		Value 4.50E+01
Tto:Occupancy Period	The duration of the occupancy exposure period	CONSTANT(days)
Default value used		Value 3.65E+02
Vo:Breathing Rate	The average volumetric breathing rate during building occupancy for an 8-hour work day	CONSTANT(m**3/hr)
Default value used		Value 1.40E+00
RFo*:Resuspension Factor	Effective resuspension factor during the occupancy period = $RFo * FI$	CONSTANT(1/m)
Justification for modification: NUREG 1720		Value 1.00E-06
		Default DERIVED(1/m)
GO*:Ingestion Rate	Effective secondary ingestion transfer rate of removable surface activity from building surfaces to the mouth during building occupancy = $GO * FI$	DERIVED(m**2/hr)

Default value used		
Tstart:Start Time	The start time of the scenario in days	CONSTANT(days)
Default value used		Value 0.00E+00
Tend:End Time	The ending time of the scenario in days	CONSTANT(days)
Default value used		Value 3.65E+02
dt:Time Step Size	The time step size	CONSTANT(days)
Default value used		Value 3.65E+02
Pstep:Print Step Size	The time steps for the history file. Doses will be written to the history file every n time steps	CONSTANT(none)
Default value used		Value 1.00E+00
AOExt:External Exposure Area	Minimum surface area to which occupant is exposed via external radiation during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AOInh:Inhalation Exposure Area	Minimum surface area to which occupant is exposed via inhalation during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AOIng:Secondary Ingestion Exposure Area	Minimum surface area to which occupant is exposed via secondary ingestion during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AO:Exposure Area	Minimum surface area to which occupant is exposed during the occupancy period	DERIVED(m**2)
Default value used		
Fl:Loose Fraction	Fraction of surface contamination available for resuspension and ingestion	CONSTANT(none)
Default value used		Value 1.00E-01
Rfo:Loose Resuspension Factor	Resuspension factor for loose contamination	CONTINUOUS LOGARITHMIC(1/m)
Default value used		Value Probability
		9.12E-06 0.00E+00
		1.10E-04 7.67E-01
		1.46E-04 9.09E-01
		1.62E-04 9.50E-01
		1.85E-04 9.90E-01
		1.90E-04 1.00E+00
GO:Loose Ingestion Rate	The secondary ingestion transfer rate of loose removable surface activity from building surfaces to the mouth during building occupancy	CONSTANT(m**2/hr)
Default value used		Value 1.10E-04

Correlation Coefficients:

None

Summary Results:

90.00% of the 100 calculated TEDE values are < 2.26E+00 mrem/year .

The 95 % Confidence Interval for the 0.9 quantile value of TEDE is 2.26E+00 to 2.26E+00 mrem/year

Detailed Results:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Concentration at Time of Peak Dose:

Nuclide	Surface Concentration (dpm/100 cm**2)
238U	5.86E+01
234Th	5.30E+01
234U	5.86E+01
230Th	2.64E-04
226Ra	3.81E-08
222Rn	3.65E-08
210Pb	2.77E-10
210Bi	2.56E-10
210Po	6.97E-11
235U	2.80E+00
231Th	2.79E+00
231Pa	2.93E-05
227Ac	3.07E-07
227Th	2.45E-07
223Ra	2.17E-07

Pathway Dose from All Nuclides (mrem)

All Pathways Dose	External	Inhalation	Secondary Ingestion
2.26E+00	2.79E-03	2.22E+00	3.83E-02

Radionuclide Dose through All Active Pathways (mrem)

Nuclide	All Pathways Dose
238U	1.04E+00
234Th	3.14E-03
234U	1.16E+00
230Th	1.29E-05
226Ra	1.07E-10
222Rn	8.49E-11

210Pb	2.28E-12
210Bi	9.69E-15
210Po	2.50E-13
235U	5.22E-02
231Th	7.72E-05
231Pa	5.91E-06
227Ac	3.09E-07
227Th	6.31E-10
223Ra	5.03E-10
All Nuclides	2.26E+00

Dose from Each Nuclide through Each Active Pathway (mrem)

Nuclide	External	Inhalation	Secondary Ingestion
238U	4.53E-05	1.02E+00	1.73E-02
234Th	2.03E-03	2.74E-04	8.40E-04
234U	6.15E-05	1.15E+00	1.93E-02
230Th	2.78E-10	1.27E-05	1.68E-07
226Ra	3.45E-13	4.83E-11	5.86E-11
222Rn	8.48E-11	7.75E-14	3.84E-14
210Pb	9.65E-16	5.56E-13	1.73E-12
210Bi	3.78E-16	7.41E-15	1.90E-15
210Po	8.11E-19	9.67E-14	1.54E-13
235U	5.82E-04	5.08E-02	8.64E-04
231Th	7.25E-05	3.61E-07	4.37E-06
231Pa	1.68E-09	5.55E-06	3.59E-07
227Ac	4.04E-13	3.04E-07	5.01E-09
227Th	3.56E-11	5.84E-10	1.08E-11
223Ra	8.63E-11	2.51E-10	1.65E-10



DandD Building Occupancy Scenario

DandD Version: 2.1.0

Run Date/Time: 7/9/2014 1:28:17 PM

Site Name: Picatinny Gorge Area

Description: Structure DCGL

FileName: C:\Users\Dan\Desktop\DU_611B_38m.mcd

Options:

Implicit progeny doses included with explicit parent doses

Nuclide concentrations are NOT distributed among all progeny

Number of simulations: 100

Seed for Random Generation: 8718721

Averages used for behavioral type parameters

External Pathway is ON

Inhalation Pathway is ON

Secondary Ingestion Pathway is ON

Initial Activities:

Nuclide	Area of Contamination (m ²)	Distribution
238U	38	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 4.09E+02
235U	38	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 8.00E+00
234U	38	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 1.83E+02

Chain Data:

Number of chains: 3

Chain No. 1: 234U

Nuclides in chain: 7

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d)	15 cm Dose Rate Factor ((Sv/d)
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									/(Bq/m ²))	/(Bq/m ³))
234U	1	8.92E+07					7.66E-08	3.58E-05	6.46E-14	1.85E-16
230Th	2	2.81E+07	1	1	0	0	1.48E-07	8.80E-05	6.48E-14	5.52E-16
226Ra	3	5.84E+05	2	1	0	0	3.58E-07	2.32E-06	5.56E-13	1.42E-14
222Rn	4	3.82E+00	3	1	0	0	0.00E+00	0.00E+00	3.41E-14	9.81E-16
210Pb	5	8.15E+03	4	1	0	0	1.45E-06	3.67E-06	2.14E-13	1.13E-15
210Bi	6	5.01E+00	5	1	0	0	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	7	1.38E+02	6	1	0	0	5.14E-07	2.54E-06	7.16E-16	2.11E-17

Chain No. 2: **235U**

Nuclides in chain: 6

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d) / (Bq/m ²))	15 cm Dose Rate Factor ((Sv/d) / (Bq/m ³))
235U	1	2.57E+11					7.19E-08	3.32E-05	1.28E-11	3.24E-13
231Th	2	1.06E+00	1	1	0	0	3.65E-10	2.37E-10	1.60E-12	1.68E-14
231Pa	3	1.20E+07	2	1	0	0	2.86E-06	3.47E-04	3.52E-12	8.30E-14
227Ac	4	7.95E+03	3	1	0	0	3.80E-06	1.81E-03	1.36E-14	2.26E-16
227Th	5	1.87E+01	4	0.9862	0	0	1.03E-08	4.37E-06	8.94E-12	2.29E-13
223Ra	6	1.14E+01	5	1	4	0.0138	1.78E-07	2.12E-06	1.11E-11	2.67E-13

Chain No. 3: **238U**

Nuclides in chain: 9

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d) / (Bq/m ²))	15 cm Dose Rate Factor ((Sv/d) / (Bq/m ³))
238U	1	1.63E+12					6.88E-08	3.20E-05	4.76E-14	4.76E-17
234Th	2	2.41E+01	1	1	0	0	3.69E-09	9.47E-09	7.18E-13	1.12E-14
234U	3	8.93E+07	2	1	0	0	7.66E-08	3.58E-05	6.46E-14	1.85E-16
230Th	4	2.81E+07	3	1	0	0	1.48E-07	8.80E-05	6.48E-14	5.52E-16
226Ra	5	5.84E+05	4	1	0	0	3.58E-07	2.32E-06	5.56E-13	1.42E-14
222Rn	6	3.82E+00	5	1	0	0	0.00E+00	0.00E+00	3.41E-14	9.81E-16
210Pb	7	8.15E+03	6	1	0	0	1.45E-06	3.67E-06	2.14E-13	1.13E-15
210Bi	8	5.01E+00	7	1	0	0	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	9	1.38E+02	8	1	0	0	5.14E-07	2.54E-06	7.16E-16	2.11E-17

Initial Concentrations:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Nuclide	Surface Concentration (dpm/100 cm**2)
238U	4.09E+02
234Th	0.00E+00
234U	1.83E+02
230Th	0.00E+00
226Ra	0.00E+00
222Rn	0.00E+00
210Pb	0.00E+00
210Bi	0.00E+00
210Po	0.00E+00
235U	8.00E+00
231Th	0.00E+00
231Pa	0.00E+00
227Ac	0.00E+00
227Th	0.00E+00
223Ra	0.00E+00

Model Parameters:

General Parameters:

Parameter Name	Description	Distribution
To:Time In Building	The time in the building during the occupancy period	CONSTANT(hr/week)
Default value used		Value 4.50E+01
Tto:Occupancy Period	The duration of the occupancy exposure period	CONSTANT(days)
Default value used		Value 3.65E+02
Vo:Breathing Rate	The average volumetric breathing rate during building occupancy for an 8-hour work day	CONSTANT(m**3/hr)
Default value used		Value 1.40E+00
RFo*:Resuspension Factor	Effective resuspension factor during the occupancy period = RFo * FI	CONSTANT(1/m)
Justification for modification: NUREG 1720		Value 1.00E-06
		Default DERIVED(1/m)
GO*:Ingestion Rate	Effective secondary ingestion transfer rate of removable surface activity from building surfaces to the mouth during building occupancy = GO * FI	DERIVED(m**2/hr)

Default value used		
Tstart:Start Time	The start time of the scenario in days	CONSTANT(days)
Default value used		Value 0.00E+00
Tend:End Time	The ending time of the scenario in days	CONSTANT(days)
Default value used		Value 3.65E+02
dt:Time Step Size	The time step size	CONSTANT(days)
Default value used		Value 3.65E+02
Pstep:Print Step Size	The time steps for the history file. Doses will be written to the history file every n time steps	CONSTANT(none)
Default value used		Value 1.00E+00
AOExt:External Exposure Area	Minimum surface area to which occupant is exposed via external radiation during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AOInh:Inhalation Exposure Area	Minimum surface area to which occupant is exposed via inhalation during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AOIng:Secondary Ingestion Exposure Area	Minimum surface area to which occupant is exposed via secondary ingestion during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AO:Exposure Area	Minimum surface area to which occupant is exposed during the occupancy period	DERIVED(m**2)
Default value used		
Fl:Loose Fraction	Fraction of surface contamination available for resuspension and ingestion	CONSTANT(none)
Default value used		Value 1.00E-01
Rfo:Loose Resuspension Factor	Resuspension factor for loose contamination	CONTINUOUS LOGARITHMIC(1/m)
Default value used		Value Probability
		9.12E-06 0.00E+00
		1.10E-04 7.67E-01
		1.46E-04 9.09E-01
		1.62E-04 9.50E-01
		1.85E-04 9.90E-01
		1.90E-04 1.00E+00
GO:Loose Ingestion Rate	The secondary ingestion transfer rate of loose removable surface activity from building surfaces to the mouth during building occupancy	CONSTANT(m**2/hr)
Default value used		Value 1.10E-04

Correlation Coefficients:

None

Summary Results:

90.00% of the 100 calculated TEDE values are $< 1.11\text{E}+01$ mrem/year .

The 95 % Confidence Interval for the 0.9 quantile value of TEDE is $1.11\text{E}+01$ to $1.11\text{E}+01$ mrem/year

Detailed Results:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Concentration at Time of Peak Dose:

Nuclide	Surface Concentration (dpm/100 cm**2)
238U	4.09E+02
234Th	3.70E+02
234U	1.83E+02
230Th	8.24E-04
226Ra	1.19E-07
222Rn	1.14E-07
210Pb	8.66E-10
210Bi	8.01E-10
210Po	2.18E-10
235U	8.00E+00
231Th	7.97E+00
231Pa	8.37E-05
227Ac	8.78E-07
227Th	7.00E-07
223Ra	6.19E-07

Pathway Dose from All Nuclides (mrem)

All Pathways Dose	External	Inhalation	Secondary Ingestion
1.11E+01	1.65E-02	1.09E+01	1.89E-01

Radionuclide Dose through All Active Pathways (mrem)

Nuclide	All Pathways Dose
238U	7.27E+00
234Th	2.19E-02
234U	3.64E+00
230Th	4.01E-05
226Ra	3.35E-10
222Rn	2.65E-10

210Pb	7.13E-12
210Bi	3.03E-14
210Po	7.82E-13
235U	1.49E-01
231Th	2.21E-04
231Pa	1.69E-05
227Ac	8.82E-07
227Th	1.80E-09
223Ra	1.44E-09
All Nuclides	1.11E+01

Dose from Each Nuclide through Each Active Pathway (mrem)

Nuclide	External	Inhalation	Secondary Ingestion
238U	3.16E-04	7.15E+00	1.21E-01
234Th	1.42E-02	1.91E-03	5.86E-03
234U	1.92E-04	3.58E+00	6.01E-02
230Th	8.68E-10	3.96E-05	5.23E-07
226Ra	1.08E-12	1.51E-10	1.83E-10
222Rn	2.65E-10	2.42E-13	1.20E-13
210Pb	3.01E-15	1.74E-12	5.39E-12
210Bi	1.18E-15	2.31E-14	5.95E-15
210Po	2.53E-18	3.02E-13	4.80E-13
235U	1.66E-03	1.45E-01	2.47E-03
231Th	2.07E-04	1.03E-06	1.25E-05
231Pa	4.79E-09	1.59E-05	1.03E-06
227Ac	1.15E-12	8.67E-07	1.43E-08
227Th	1.02E-10	1.67E-09	3.09E-11
223Ra	2.46E-10	7.17E-10	4.73E-10



DandD Building Occupancy Scenario

DandD Version: 2.1.0

Run Date/Time: 7/9/2014 1:30:11 PM

Site Name: Picatinny Gorge Area

Description: Structure DCGL

FileName: C:\Users\Dan\Desktop\DU_611B_10m.mcd

Options:

Implicit progeny doses included with explicit parent doses

Nuclide concentrations are NOT distributed among all progeny

Number of simulations: 100

Seed for Random Generation: 8718721

Averages used for behavioral type parameters

External Pathway is ON

Inhalation Pathway is ON

Secondary Ingestion Pathway is ON

Initial Activities:

Nuclide	Area of Contamination (m ²)	Distribution
238U	10	CONSTANT(dpm/100 cm**2)
<u>Justification for concentration:</u> Site Specific		<u>Value</u> 4.09E+02
235U	10	CONSTANT(dpm/100 cm**2)
<u>Justification for concentration:</u> Site Specific		<u>Value</u> 8.00E+00
234U	10	CONSTANT(dpm/100 cm**2)
<u>Justification for concentration:</u> Site Specific		<u>Value</u> 1.83E+02

Chain Data:

Number of chains: 3

Chain No. 1: 234U

Nuclides in chain: 7

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d)	15 cm Dose Rate Factor ((Sv/d)
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									/(Bq/m ²))	/(Bq/m ³))
234U	1	8.92E+07					7.66E-08	3.58E-05	6.46E-14	1.85E-16
230Th	2	2.81E+07	1	1	0	0	1.48E-07	8.80E-05	6.48E-14	5.52E-16
226Ra	3	5.84E+05	2	1	0	0	3.58E-07	2.32E-06	5.56E-13	1.42E-14
222Rn	4	3.82E+00	3	1	0	0	0.00E+00	0.00E+00	3.41E-14	9.81E-16
210Pb	5	8.15E+03	4	1	0	0	1.45E-06	3.67E-06	2.14E-13	1.13E-15
210Bi	6	5.01E+00	5	1	0	0	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	7	1.38E+02	6	1	0	0	5.14E-07	2.54E-06	7.16E-16	2.11E-17

Chain No. 2: **235U**Nuclides in chain: **6**

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d) / (Bq/m ²))	15 cm Dose Rate Factor ((Sv/d) / (Bq/m ³))
235U	1	2.57E+11					7.19E-08	3.32E-05	1.28E-11	3.24E-13
231Th	2	1.06E+00	1	1	0	0	3.65E-10	2.37E-10	1.60E-12	1.68E-14
231Pa	3	1.20E+07	2	1	0	0	2.86E-06	3.47E-04	3.52E-12	8.30E-14
227Ac	4	7.95E+03	3	1	0	0	3.80E-06	1.81E-03	1.36E-14	2.26E-16
227Th	5	1.87E+01	4	0.9862	0	0	1.03E-08	4.37E-06	8.94E-12	2.29E-13
223Ra	6	1.14E+01	5	1	4	0.0138	1.78E-07	2.12E-06	1.11E-11	2.67E-13

Chain No. 3: **238U**Nuclides in chain: **9**

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d) / (Bq/m ²))	15 cm Dose Rate Factor ((Sv/d) / (Bq/m ³))
238U	1	1.63E+12					6.88E-08	3.20E-05	4.76E-14	4.76E-17
234Th	2	2.41E+01	1	1	0	0	3.69E-09	9.47E-09	7.18E-13	1.12E-14
234U	3	8.93E+07	2	1	0	0	7.66E-08	3.58E-05	6.46E-14	1.85E-16
230Th	4	2.81E+07	3	1	0	0	1.48E-07	8.80E-05	6.48E-14	5.52E-16
226Ra	5	5.84E+05	4	1	0	0	3.58E-07	2.32E-06	5.56E-13	1.42E-14
222Rn	6	3.82E+00	5	1	0	0	0.00E+00	0.00E+00	3.41E-14	9.81E-16
210Pb	7	8.15E+03	6	1	0	0	1.45E-06	3.67E-06	2.14E-13	1.13E-15
210Bi	8	5.01E+00	7	1	0	0	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	9	1.38E+02	8	1	0	0	5.14E-07	2.54E-06	7.16E-16	2.11E-17

Initial Concentrations:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Nuclide	Surface Concentration (dpm/100 cm**2)
238U	4.09E+02
234Th	0.00E+00
234U	1.83E+02
230Th	0.00E+00
226Ra	0.00E+00
222Rn	0.00E+00
210Pb	0.00E+00
210Bi	0.00E+00
210Po	0.00E+00
235U	8.00E+00
231Th	0.00E+00
231Pa	0.00E+00
227Ac	0.00E+00
227Th	0.00E+00
223Ra	0.00E+00

Model Parameters:

General Parameters:

Parameter Name	Description	Distribution
To:Time In Building	The time in the building during the occupancy period	CONSTANT(hr/week)
Default value used		Value 4.50E+01
Tto:Occupancy Period	The duration of the occupancy exposure period	CONSTANT(days)
Default value used		Value 3.65E+02
Vo:Breathing Rate	The average volumetric breathing rate during building occupancy for an 8-hour work day	CONSTANT(m**3/hr)
Default value used		Value 1.40E+00
RFo*:Resuspension Factor	Effective resuspension factor during the occupancy period = RFo * FI	CONSTANT(1/m)
Justification for modification: NUREG 1720		Value 1.00E-06
		Default DERIVED(1/m)
GO*:Ingestion Rate	Effective secondary ingestion transfer rate of removable surface activity from building surfaces to the mouth during building occupancy = GO * FI	DERIVED(m**2/hr)

<u>Default value used</u>																
Tstart:Start Time	The start time of the scenario in days	CONSTANT(days)														
<u>Default value used</u>		<u>Value</u> 0.00E+00														
Tend:End Time	The ending time of the scenario in days	CONSTANT(days)														
<u>Default value used</u>		<u>Value</u> 3.65E+02														
dt:Time Step Size	The time step size	CONSTANT(days)														
<u>Default value used</u>		<u>Value</u> 3.65E+02														
Pstep:Print Step Size	The time steps for the history file. Doses will be written to the history file every n time steps	CONSTANT(none)														
<u>Default value used</u>		<u>Value</u> 1.00E+00														
AOExt:External Exposure Area	Minimum surface area to which occupant is exposed via external radiation during occupancy period	CONSTANT(m**2)														
<u>Default value used</u>		<u>Value</u> 1.00E+01														
AOInh:Inhalation Exposure Area	Minimum surface area to which occupant is exposed via inhalation during occupancy period	CONSTANT(m**2)														
<u>Default value used</u>		<u>Value</u> 1.00E+01														
AOIng:Secondary Ingestion Exposure Area	Minimum surface area to which occupant is exposed via secondary ingestion during occupancy period	CONSTANT(m**2)														
<u>Default value used</u>		<u>Value</u> 1.00E+01														
AO:Exposure Area	Minimum surface area to which occupant is exposed during the occupancy period	DERIVED(m**2)														
<u>Default value used</u>																
Fl:Loose Fraction	Fraction of surface contamination available for resuspension and ingestion	CONSTANT(none)														
<u>Default value used</u>		<u>Value</u> 1.00E-01														
Rfo:Loose Resuspension Factor	Resuspension factor for loose contamination	CONTINUOUS LOGARITHMIC(1/m)														
<u>Default value used</u>		<table><tr><td><u>Value</u></td><td><u>Probability</u></td></tr><tr><td>9.12E-06</td><td>0.00E+00</td></tr><tr><td>1.10E-04</td><td>7.67E-01</td></tr><tr><td>1.46E-04</td><td>9.09E-01</td></tr><tr><td>1.62E-04</td><td>9.50E-01</td></tr><tr><td>1.85E-04</td><td>9.90E-01</td></tr><tr><td>1.90E-04</td><td>1.00E+00</td></tr></table>	<u>Value</u>	<u>Probability</u>	9.12E-06	0.00E+00	1.10E-04	7.67E-01	1.46E-04	9.09E-01	1.62E-04	9.50E-01	1.85E-04	9.90E-01	1.90E-04	1.00E+00
<u>Value</u>	<u>Probability</u>															
9.12E-06	0.00E+00															
1.10E-04	7.67E-01															
1.46E-04	9.09E-01															
1.62E-04	9.50E-01															
1.85E-04	9.90E-01															
1.90E-04	1.00E+00															
GO:Loose Ingestion Rate	The secondary ingestion transfer rate of loose removable surface activity from building surfaces to the mouth during building occupancy	CONSTANT(m**2/hr)														
<u>Default value used</u>		<u>Value</u> 1.10E-04														

Correlation Coefficients:None**Summary Results:**

90.00% of the 100 calculated TEDE values are $< 1.11\text{E}+01$ mrem/year .

The 95 % Confidence Interval for the 0.9 quantile value of TEDE is $1.11\text{E}+01$ to $1.11\text{E}+01$ mrem/year

Detailed Results:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Concentration at Time of Peak Dose:

Nuclide	Surface Concentration (dpm/100 cm**2)
238U	4.09E+02
234Th	3.70E+02
234U	1.83E+02
230Th	8.24E-04
226Ra	1.19E-07
222Rn	1.14E-07
210Pb	8.66E-10
210Bi	8.01E-10
210Po	2.18E-10
235U	8.00E+00
231Th	7.97E+00
231Pa	8.37E-05
227Ac	8.78E-07
227Th	7.00E-07
223Ra	6.19E-07

Pathway Dose from All Nuclides (mrem)

All Pathways Dose	External	Inhalation	Secondary Ingestion
1.11E+01	1.65E-02	1.09E+01	1.89E-01

Radionuclide Dose through All Active Pathways (mrem)

Nuclide	All Pathways Dose
238U	7.27E+00
234Th	2.19E-02
234U	3.64E+00
230Th	4.01E-05
226Ra	3.35E-10
222Rn	2.65E-10

210Pb	7.13E-12
210Bi	3.03E-14
210Po	7.82E-13
235U	1.49E-01
231Th	2.21E-04
231Pa	1.69E-05
227Ac	8.82E-07
227Th	1.80E-09
223Ra	1.44E-09
All Nuclides	1.11E+01

Dose from Each Nuclide through Each Active Pathway (mrem)

Nuclide	External	Inhalation	Secondary Ingestion
238U	3.16E-04	7.15E+00	1.21E-01
234Th	1.42E-02	1.91E-03	5.86E-03
234U	1.92E-04	3.58E+00	6.01E-02
230Th	8.68E-10	3.96E-05	5.23E-07
226Ra	1.08E-12	1.51E-10	1.83E-10
222Rn	2.65E-10	2.42E-13	1.20E-13
210Pb	3.01E-15	1.74E-12	5.39E-12
210Bi	1.18E-15	2.31E-14	5.95E-15
210Po	2.53E-18	3.02E-13	4.80E-13
235U	1.66E-03	1.45E-01	2.47E-03
231Th	2.07E-04	1.03E-06	1.25E-05
231Pa	4.79E-09	1.59E-05	1.03E-06
227Ac	1.15E-12	8.67E-07	1.43E-08
227Th	1.02E-10	1.67E-09	3.09E-11
223Ra	2.46E-10	7.17E-10	4.73E-10



DandD Building Occupancy Scenario

DandD Version: 2.1.0

Run Date/Time: 7/9/2014 1:31:45 PM

Site Name: Picatinny Gorge Area

Description: Structure DCGL

FileName: C:\Users\Dan\Desktop\DU_611B_2m.mcd

Options:

Implicit progeny doses included with explicit parent doses

Nuclide concentrations are NOT distributed among all progeny

Number of simulations: 100

Seed for Random Generation: 8718721

Averages used for behavioral type parameters

External Pathway is ON

Inhalation Pathway is ON

Secondary Ingestion Pathway is ON

Initial Activities:

Nuclide	Area of Contamination (m ²)	Distribution
238U	2	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 4.09E+02
235U	2	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 8.00E+00
234U	2	CONSTANT(dpm/100 cm**2)
Justification for concentration: Site Specific		Value 1.83E+02

Chain Data:

Number of chains: 3

Chain No. 1: 234U

Nuclides in chain: 7

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d)	15 cm Dose Rate Factor ((Sv/d)
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									/(Bq/m ²))	/(Bq/m ³))
234U	1	8.92E+07					7.66E-08	3.58E-05	6.46E-14	1.85E-16
230Th	2	2.81E+07	1	1	0	0	1.48E-07	8.80E-05	6.48E-14	5.52E-16
226Ra	3	5.84E+05	2	1	0	0	3.58E-07	2.32E-06	5.56E-13	1.42E-14
222Rn	4	3.82E+00	3	1	0	0	0.00E+00	0.00E+00	3.41E-14	9.81E-16
210Pb	5	8.15E+03	4	1	0	0	1.45E-06	3.67E-06	2.14E-13	1.13E-15
210Bi	6	5.01E+00	5	1	0	0	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	7	1.38E+02	6	1	0	0	5.14E-07	2.54E-06	7.16E-16	2.11E-17

Chain No. 2: **235U**Nuclides in chain: **6**

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d) / (Bq/m ²))	15 cm Dose Rate Factor ((Sv/d) / (Bq/m ³))
235U	1	2.57E+11					7.19E-08	3.32E-05	1.28E-11	3.24E-13
231Th	2	1.06E+00	1	1	0	0	3.65E-10	2.37E-10	1.60E-12	1.68E-14
231Pa	3	1.20E+07	2	1	0	0	2.86E-06	3.47E-04	3.52E-12	8.30E-14
227Ac	4	7.95E+03	3	1	0	0	3.80E-06	1.81E-03	1.36E-14	2.26E-16
227Th	5	1.87E+01	4	0.9862	0	0	1.03E-08	4.37E-06	8.94E-12	2.29E-13
223Ra	6	1.14E+01	5	1	4	0.0138	1.78E-07	2.12E-06	1.11E-11	2.67E-13

Chain No. 3: **238U**Nuclides in chain: **9**

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d) / (Bq/m ²))	15 cm Dose Rate Factor ((Sv/d) / (Bq/m ³))
238U	1	1.63E+12					6.88E-08	3.20E-05	4.76E-14	4.76E-17
234Th	2	2.41E+01	1	1	0	0	3.69E-09	9.47E-09	7.18E-13	1.12E-14
234U	3	8.93E+07	2	1	0	0	7.66E-08	3.58E-05	6.46E-14	1.85E-16
230Th	4	2.81E+07	3	1	0	0	1.48E-07	8.80E-05	6.48E-14	5.52E-16
226Ra	5	5.84E+05	4	1	0	0	3.58E-07	2.32E-06	5.56E-13	1.42E-14
222Rn	6	3.82E+00	5	1	0	0	0.00E+00	0.00E+00	3.41E-14	9.81E-16
210Pb	7	8.15E+03	6	1	0	0	1.45E-06	3.67E-06	2.14E-13	1.13E-15
210Bi	8	5.01E+00	7	1	0	0	1.73E-09	5.29E-08	9.06E-14	1.61E-15
210Po	9	1.38E+02	8	1	0	0	5.14E-07	2.54E-06	7.16E-16	2.11E-17

Initial Concentrations:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Nuclide	Surface Concentration (dpm/100 cm**2)
238U	8.18E+01
234Th	0.00E+00
234U	3.66E+01
230Th	0.00E+00
226Ra	0.00E+00
222Rn	0.00E+00
210Pb	0.00E+00
210Bi	0.00E+00
210Po	0.00E+00
235U	1.60E+00
231Th	0.00E+00
231Pa	0.00E+00
227Ac	0.00E+00
227Th	0.00E+00
223Ra	0.00E+00

Model Parameters:

General Parameters:

Parameter Name	Description	Distribution
To:Time In Building	The time in the building during the occupancy period	CONSTANT(hr/week)
Default value used		Value 4.50E+01
Tto:Occupancy Period	The duration of the occupancy exposure period	CONSTANT(days)
Default value used		Value 3.65E+02
Vo:Breathing Rate	The average volumetric breathing rate during building occupancy for an 8-hour work day	CONSTANT(m**3/hr)
Default value used		Value 1.40E+00
RFo*:Resuspension Factor	Effective resuspension factor during the occupancy period = $RF_o * FI$	CONSTANT(1/m)
Justification for modification: NUREG 1720		Value 1.00E-06
		Default DERIVED(1/m)
GO*:Ingestion Rate	Effective secondary ingestion transfer rate of removable surface activity from building surfaces to the mouth during building occupancy = $GO * FI$	DERIVED(m**2/hr)

Default value used		
Tstart:Start Time	The start time of the scenario in days	CONSTANT(days)
Default value used		Value 0.00E+00
Tend:End Time	The ending time of the scenario in days	CONSTANT(days)
Default value used		Value 3.65E+02
dt:Time Step Size	The time step size	CONSTANT(days)
Default value used		Value 3.65E+02
Pstep:Print Step Size	The time steps for the history file. Doses will be written to the history file every n time steps	CONSTANT(none)
Default value used		Value 1.00E+00
AOExt:External Exposure Area	Minimum surface area to which occupant is exposed via external radiation during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AOInh:Inhalation Exposure Area	Minimum surface area to which occupant is exposed via inhalation during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AOIng:Secondary Ingestion Exposure Area	Minimum surface area to which occupant is exposed via secondary ingestion during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AO:Exposure Area	Minimum surface area to which occupant is exposed during the occupancy period	DERIVED(m**2)
Default value used		
Fl:Loose Fraction	Fraction of surface contamination available for resuspension and ingestion	CONSTANT(none)
Default value used		Value 1.00E-01
Rfo:Loose Resuspension Factor	Resuspension factor for loose contamination	CONTINUOUS LOGARITHMIC(1/m)
Default value used		Value Probability
		9.12E-06 0.00E+00
		1.10E-04 7.67E-01
		1.46E-04 9.09E-01
		1.62E-04 9.50E-01
		1.85E-04 9.90E-01
		1.90E-04 1.00E+00
GO:Loose Ingestion Rate	The secondary ingestion transfer rate of loose removable surface activity from building surfaces to the mouth during building occupancy	CONSTANT(m**2/hr)
Default value used		Value 1.10E-04

Correlation Coefficients:None**Summary Results:**

90.00% of the 100 calculated TEDE values are $< 2.22\text{E}+00$ mrem/year .

The 95 % Confidence Interval for the 0.9 quantile value of TEDE is $2.22\text{E}+00$ to $2.22\text{E}+00$ mrem/year

Detailed Results:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Concentration at Time of Peak Dose:

Nuclide	Surface Concentration (dpm/100 cm**2)
238U	8.18E+01
234Th	7.40E+01
234U	3.66E+01
230Th	1.65E-04
226Ra	2.38E-08
222Rn	2.28E-08
210Pb	1.73E-10
210Bi	1.60E-10
210Po	4.36E-11
235U	1.60E+00
231Th	1.59E+00
231Pa	1.67E-05
227Ac	1.76E-07
227Th	1.40E-07
223Ra	1.24E-07

Pathway Dose from All Nuclides (mrem)

All Pathways Dose	External	Inhalation	Secondary Ingestion
2.22E+00	3.31E-03	2.17E+00	3.78E-02

Radionuclide Dose through All Active Pathways (mrem)

Nuclide	All Pathways Dose
238U	1.45E+00
234Th	4.39E-03
234U	7.28E-01
230Th	8.03E-06
226Ra	6.70E-11
222Rn	5.30E-11

210Pb	1.43E-12
210Bi	6.05E-15
210Po	1.56E-13
235U	2.98E-02
231Th	4.41E-05
231Pa	3.38E-06
227Ac	1.76E-07
227Th	3.60E-10
223Ra	2.87E-10
All Nuclides	2.22E+00

Dose from Each Nuclide through Each Active Pathway (mrem)

Nuclide	External	Inhalation	Secondary Ingestion
238U	6.33E-05	1.43E+00	2.41E-02
234Th	2.83E-03	3.83E-04	1.17E-03
234U	3.84E-05	7.15E-01	1.20E-02
230Th	1.74E-10	7.92E-06	1.05E-07
226Ra	2.15E-13	3.02E-11	3.66E-11
222Rn	5.29E-11	4.84E-14	2.40E-14
210Pb	6.03E-16	3.47E-13	1.08E-12
210Bi	2.36E-16	4.63E-15	1.19E-15
210Po	5.07E-19	6.04E-14	9.60E-14
235U	3.33E-04	2.90E-02	4.94E-04
231Th	4.14E-05	2.06E-07	2.50E-06
231Pa	9.57E-10	3.17E-06	2.05E-07
227Ac	2.31E-13	1.73E-07	2.86E-09
227Th	2.03E-11	3.34E-10	6.18E-12
223Ra	4.93E-11	1.43E-10	9.46E-11



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Attachment 2

RESRAD Version 6.5 Input/Output Files

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
Summary of Pathway Selections	7
Contaminated Zone and Total Dose Summary	8
Total Dose Components	
Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
Time = 1.000E+03	16
Dose/Source Ratios Summed Over All Pathways	17
Single Radionuclide Soil Guidelines	17
Dose Per Nuclide Summed Over All Pathways	18
Soil Concentration Per Nuclide	18

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(11)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(1)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(2)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(1)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(2)
D-34	Food transfer factors:			
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(2,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(2,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(2,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(2,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(2,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETPG table in Ground Pathway of Detailed Report.

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

Summary : RESRAD Default Parameters Resident Farmer Scenario

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.200E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	7.100E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(2)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(2)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+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)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.000E-01	4.000E-01	---	TFSZ
R014	Saturated zone effective porosity	2.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	1.000E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	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)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-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	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.165E-03	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.217E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	7.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	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	-1 shows non-circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	3.750E+00	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m), ring 2:	7.500E+00	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m), ring 3:	1.125E+01	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m), ring 4:	1.500E+01	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m), ring 5:	1.875E+01	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m), ring 6:	2.250E+01	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m), ring 7:	2.625E+01	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m), ring 8:	3.000E+01	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m), ring 9:	3.375E+01	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m), ring 10:	3.750E+01	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	4.125E+01	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	4.500E+01	0.000E+00	---	RAD_SHAPE(12)

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

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	1.000E+00	1.000E+00	---	FRACA(1)
R017	Ring 2	1.000E+00	2.732E-01	---	FRACA(2)
R017	Ring 3	1.000E+00	0.000E+00	---	FRACA(3)
R017	Ring 4	8.800E-01	0.000E+00	---	FRACA(4)
R017	Ring 5	7.400E-01	0.000E+00	---	FRACA(5)
R017	Ring 6	5.900E-01	0.000E+00	---	FRACA(6)
R017	Ring 7	4.500E-01	0.000E+00	---	FRACA(7)
R017	Ring 8	3.800E-01	0.000E+00	---	FRACA(8)
R017	Ring 9	2.700E-01	0.000E+00	---	FRACA(9)
R017	Ring 10	1.600E-01	0.000E+00	---	FRACA(10)
R017	Ring 11	9.900E-02	0.000E+00	---	FRACA(11)
R017	Ring 12	9.800E-03	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
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	0.110E+00	FMEAT
R018	Contamination fraction of milk	-1	-1	0.110E+00	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)

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

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	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	---	Cl2WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	Cl2CZ
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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

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	257	---	---	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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	2200.00 square meters	Ra-226	1.000E+00
Thickness:	1.50 meters		
Cover Depth:	0.00 meters		

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	1.086E+01	1.102E+01	1.132E+01	1.216E+01	1.335E+01	1.208E+01	6.001E+00	7.097E+00
M(t):	7.240E-01	7.348E-01	7.546E-01	8.109E-01	8.901E-01	8.054E-01	4.001E-01	4.731E-01

Maximum TDOSE(t): 1.351E+01 mrem/yr at t = 42.78 ± 0.09 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 = 4.278E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	5.188E+00	0.3841	1.225E-03	0.0001	0.000E+00	0.0000	8.055E+00	0.5964	5.653E-02	0.0042	4.607E-02	0.0034	1.600E-01	0.0118
Total	5.188E+00	0.3841	1.225E-03	0.0001	0.000E+00	0.0000	8.055E+00	0.5964	5.653E-02	0.0042	4.607E-02	0.0034	1.600E-01	0.0118

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 4.278E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.351E+01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.351E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
Ra-226	6.048E+00	0.5570	4.890E-04	0.0000	0.000E+00	0.0000	4.704E+00	0.4332	3.060E-02	0.0028	3.653E-02	0.0034	3.915E-02	0.0036
Total	6.048E+00	0.5570	4.890E-04	0.0000	0.000E+00	0.0000	4.704E+00	0.4332	3.060E-02	0.0028	3.653E-02	0.0034	3.915E-02	0.0036

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- 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.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.086E+01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.086E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.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- 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.
Ra-226	6.027E+00	0.5468	5.254E-04	0.0000	0.000E+00	0.0000	4.880E+00	0.4428	3.200E-02	0.0029	3.712E-02	0.0034	4.499E-02	0.0041
Total	6.027E+00	0.5468	5.254E-04	0.0000	0.000E+00	0.0000	4.880E+00	0.4428	3.200E-02	0.0029	3.712E-02	0.0034	4.499E-02	0.0041

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- 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.
Ra-226	0.000E+00	0.0000	0.000E+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+01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.102E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
Ra-226	5.984E+00	0.5286	5.940E-04	0.0001	0.000E+00	0.0000	5.206E+00	0.4599	3.448E-02	0.0030	3.817E-02	0.0034	5.602E-02	0.0049
Total	5.984E+00	0.5286	5.940E-04	0.0001	0.000E+00	0.0000	5.206E+00	0.4599	3.448E-02	0.0030	3.817E-02	0.0034	5.602E-02	0.0049

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

Water Dependent Pathways

Radio- 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.
Ra-226	0.000E+00	0.0000	0.000E+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+01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.132E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
Ra-226	5.836E+00	0.4797	7.956E-04	0.0001	0.000E+00	0.0000	6.156E+00	0.5061	4.175E-02	0.0034	4.118E-02	0.0034	8.859E-02	0.0073
Total	5.836E+00	0.4797	7.956E-04	0.0001	0.000E+00	0.0000	6.156E+00	0.5061	4.175E-02	0.0034	4.118E-02	0.0034	8.859E-02	0.0073

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

Water Dependent Pathways

Radio- 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.
Ra-226	0.000E+00	0.0000	0.000E+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+01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.216E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
Ra-226	5.431E+00	0.4068	1.131E-03	0.0001	0.000E+00	0.0000	7.676E+00	0.5749	5.349E-02	0.0040	4.546E-02	0.0034	1.437E-01	0.0108
Total	5.431E+00	0.4068	1.131E-03	0.0001	0.000E+00	0.0000	7.676E+00	0.5749	5.349E-02	0.0040	4.546E-02	0.0034	1.437E-01	0.0108

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

Water Dependent Pathways

Radio- 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.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.335E+01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.335E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
Ra-226	4.223E+00	0.3495	1.206E-03	0.0001	0.000E+00	0.0000	7.599E+00	0.6290	5.386E-02	0.0045	4.132E-02	0.0034	1.630E-01	0.0135
Total	4.223E+00	0.3495	1.206E-03	0.0001	0.000E+00	0.0000	7.599E+00	0.6290	5.386E-02	0.0045	4.132E-02	0.0034	1.630E-01	0.0135

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

Water Dependent Pathways

Radio- 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.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.208E+01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.208E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
Ra-226	2.056E+00	0.3427	6.101E-04	0.0001	0.000E+00	0.0000	3.813E+00	0.6355	2.708E-02	0.0045	2.053E-02	0.0034	8.296E-02	0.0138
Total	2.056E+00	0.3427	6.101E-04	0.0001	0.000E+00	0.0000	3.813E+00	0.6355	2.708E-02	0.0045	2.053E-02	0.0034	8.296E-02	0.0138

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

Water Dependent Pathways

Radio- 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.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.001E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.001E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
Ra-226	1.652E-01	0.0233	4.916E-05	0.0000	0.000E+00	0.0000	1.705E-01	0.0240	1.524E-03	0.0002	1.140E-03	0.0002	6.684E-03	0.0009
Total	1.652E-01	0.0233	4.916E-05	0.0000	0.000E+00	0.0000	1.705E-01	0.0240	1.524E-03	0.0002	1.140E-03	0.0002	6.684E-03	0.0009

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

Water Dependent Pathways

Radio- 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.
Ra-226	6.225E+00	0.8771	1.961E-02	0.0028	0.000E+00	0.0000	4.807E-01	0.0677	1.236E-02	0.0017	1.424E-02	0.0020	7.097E+00	1.0000
Total	6.225E+00	0.8771	1.961E-02	0.0028	0.000E+00	0.0000	4.807E-01	0.0677	1.236E-02	0.0017	1.424E-02	0.0020	7.097E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

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

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.074E+01	1.070E+01	1.062E+01	1.036E+01	9.641E+00	7.494E+00	3.649E+00	1.622E+00
Ra-226+D	Pb-210+D	1.000E+00	1.198E-01	3.208E-01	6.951E-01	1.804E+00	3.710E+00	4.587E+00	2.352E+00	5.475E+00
Ra-226+D	ΣDSR(j)		1.086E+01	1.102E+01	1.132E+01	1.216E+01	1.335E+01	1.208E+01	6.001E+00	7.097E+00

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

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	1.381E+00	1.361E+00	1.325E+00	1.233E+00	1.124E+00	1.242E+00	2.500E+00	2.113E+00

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 42.78 ± 0.09 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Ra-226	1.000E+00	42.78 ± 0.09	1.351E+01	1.111E+00	1.351E+01	1.111E+00

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

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

Nuclide Parent		THF(i)	DOSE(j,t), mrem/yr								
(j)	(i)		t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226	Ra-226	1.000E+00	1.074E+01	1.070E+01	1.062E+01	1.036E+01	9.641E+00	7.494E+00	3.649E+00	1.622E+00	
Pb-210	Ra-226	1.000E+00	1.198E-01	3.208E-01	6.951E-01	1.804E+00	3.710E+00	4.587E+00	2.352E+00	5.475E+00	

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide Parent		THF(i)	S(j,t), pCi/g								
(j)	(i)		t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226	Ra-226	1.000E+00	1.000E+00	9.964E-01	9.893E-01	9.647E-01	8.977E-01	6.978E-01	3.398E-01	2.737E-02	
Pb-210	Ra-226	1.000E+00	0.000E+00	3.052E-02	8.826E-02	2.594E-01	5.540E-01	6.928E-01	3.555E-01	2.865E-02	

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

RESRAD.EXE execution time = 3.50 seconds

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

Table of ContentsPart II: Source Terms, Factors, and Parameters for Individual Pathways

Iteration Logs

Maximum Ra-226 Dose/Source Ratio	3
Maximum Total Dose	9

Source Factors for Ingrowth and Decay

Radioactivity Only	15
Combined Radioactivity and Leaching	15

Ground Pathway

Source Term Parameters	16
Time Dependence of Source Geometry	16
Occupancy, Cover/Depth, and Area Factors	17
Dose Conversion and Environmental Transport Factors .	17
Dose/Source Ratios	18

Inhalation Pathway (radon excluded)

Dose/Source Ratios	19
Pathway Factors	19
Dose Conversion and Environmental Transport Factors .	19

Radon Pathway

Flux and Parameters	20
Concentration and Parameters	21
Working Levels	22
Dose/Source Ratios	23

Groundwater and Surface Water Pathway Segments

Transport Time Parameters for Unsaturated Zone Strata	24
Dilution Factor and Rise Time Parameters for	
Nondispersion (ND) Model	25
Primary Parameters Used to Calculate Ratios	25
Water/Soil Concentration Ratios	26

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

Table of Contents (cont.)Part II: Source Terms, Factors, and Parameters for Individual Pathways

Food Pathways

Storage Times for Contaminated Foodstuffs	27
Storage Time Ingrowth and Decay Factors	27
Storage Correction Factors	
Drinking Water	28
Irrigation Water	28
Livestock Water	29
Plants	29
Livestock Fodder	30
Meat and Milk	30
Fish and Crustacea	31
Area and Depth Factors	32
Dose Conversion and Environmental Transport Factors	
Plant	34
Meat	35
Milk	37
Fish	39
Drinking Water	39
Dose/Source Ratios	
Plant	40
Plant Total	41
Meat	42
Meat Total	43
Milk	44
Milk Total	45
Fish	46
Drinking Water	47
Concentration Ratios	
Plant/Air and Plant/Water	48
Plant/Soil	48
Meat/Fodder, Fodder/Air, Fodder/Water	50
Fodder/Soil	51
Meat/Soil	52
Milk/Soil	53

Soil Ingestion Pathway

Dose/Source Ratios.....	54
Dose Conversion and Environmental Transport Factors .	54

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

Iteration Log for Computation of the Time of Maximum Ra-226 Dose/Source Ratio

Pathway: Inhale (excluding Radon)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	7.01704E+01	1.26873E-03		
1	6.55287E+01	1.27111E-03	-4.64172E+00	parabolic
2	6.46275E+01	1.27123E-03	-9.01162E-01	parabolic
3	6.41437E+01	1.27124E-03	-4.83851E-01	parabolic
4	6.42098E+01	1.27124E-03	6.61893E-02	parabolic
5	6.42741E+01	1.27124E-03	6.42098E-02	parabolic
6	6.42098E+01	1.27124E-03	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

Iteration Log for Computation of the Time of Maximum Ra-226 Dose/Source Ratio

Pathway: Plant (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	5.37984E+01	8.16230E+00		
1	5.77983E+01	8.16562E+00	3.99990E+00	parabolic
2	5.67768E+01	8.16629E+00	-1.02149E+00	parabolic
3	5.66330E+01	8.16630E+00	-1.43835E-01	parabolic
4	5.65763E+01	8.16630E+00	-2.47053E-02	parabolic
5	5.66896E+01	8.16630E+00	5.66330E-02	parabolic
6	5.66330E+01	8.16630E+00	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

Iteration Log for Computation of the Time of Maximum Ra-226 Dose/Source Ratio

Pathway: Meat (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	5.37984E+01	5.75007E-02		
1	5.95244E+01	5.75802E-02	5.72605E+00	parabolic
2	5.88613E+01	5.75831E-02	-6.63115E-01	parabolic
3	5.85877E+01	5.75834E-02	-2.73615E-01	parabolic
4	5.85291E+01	5.75834E-02	-4.07032E-02	parabolic
5	5.84706E+01	5.75834E-02	-5.85291E-02	parabolic
6	5.85291E+01	5.75834E-02	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

Iteration Log for Computation of the Time of Maximum Ra-226 Dose/Source Ratio

Pathway: Milk (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	4.12463E+01	4.60527E-02		
1	4.43496E+01	4.60679E-02	3.10339E+00	parabolic
2	4.37801E+01	4.60692E-02	-5.69561E-01	parabolic
3	4.36698E+01	4.60692E-02	-1.10307E-01	parabolic
4	4.36261E+01	4.60692E-02	-1.30233E-02	parabolic
5	4.37135E+01	4.60692E-02	4.36698E-02	parabolic
6	4.36698E+01	4.60692E-02	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

Iteration Log for Computation of the Time of Maximum Ra-226 Dose/Source Ratio
 Pathway: Soil

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	7.01704E+01	1.69875E-01		
1	7.11418E+01	1.69843E-01	9.71424E-01	parabolic
2	6.93080E+01	1.69887E-01	-8.62389E-01	parabolic
3	6.90127E+01	1.69888E-01	-2.95302E-01	parabolic
4	6.90817E+01	1.69888E-01	1.62857E-02	parabolic
5	6.89437E+01	1.69888E-01	-6.90127E-02	parabolic
6	6.90127E+01	1.69888E-01	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

Iteration Log for Computation of the Time of Maximum Ra-226 Dose/Source Ratio
 All Pathways Summed

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	4.12463E+01	1.35043E+01		
1	4.35134E+01	1.35058E+01	2.26714E+00	parabolic
2	4.28414E+01	1.35062E+01	-6.72009E-01	parabolic
3	4.27847E+01	1.35063E+01	-5.67124E-02	parabolic
4	4.27419E+01	1.35063E+01	-4.27847E-02	parabolic
5	4.27847E+01	1.35063E+01	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Inhale (excluding Radon)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	7.01704E+01	1.26873E-03		
1	6.55287E+01	1.27111E-03	-4.64172E+00	parabolic
2	6.46275E+01	1.27123E-03	-9.01162E-01	parabolic
3	6.41437E+01	1.27124E-03	-4.83851E-01	parabolic
4	6.42098E+01	1.27124E-03	6.61893E-02	parabolic
5	6.42741E+01	1.27124E-03	6.42098E-02	parabolic
6	6.42098E+01	1.27124E-03	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Plant (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDose(t) (mrem/yr)	Step Size (years)	Step Type
0	5.37984E+01	8.16230E+00		
1	5.77983E+01	8.16562E+00	3.99990E+00	parabolic
2	5.67768E+01	8.16629E+00	-1.02149E+00	parabolic
3	5.66330E+01	8.16630E+00	-1.43835E-01	parabolic
4	5.65763E+01	8.16630E+00	-2.47053E-02	parabolic
5	5.66896E+01	8.16630E+00	5.66330E-02	parabolic
6	5.66330E+01	8.16630E+00	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDose(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDose(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

Iteration Log for Computation of the Time of Maximum Total Dose
 Pathway: Meat (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDose(t) (mrem/yr)	Step Size (years)	Step Type
0	5.37984E+01	5.75007E-02		
1	5.95244E+01	5.75802E-02	5.72605E+00	parabolic
2	5.88613E+01	5.75831E-02	-6.63115E-01	parabolic
3	5.85877E+01	5.75834E-02	-2.73615E-01	parabolic
4	5.85291E+01	5.75834E-02	-4.07032E-02	parabolic
5	5.84706E+01	5.75834E-02	-5.85291E-02	parabolic
6	5.85291E+01	5.75834E-02	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDose(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDose(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

Iteration Log for Computation of the Time of Maximum Total Dose
 Pathway: Milk (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	4.12463E+01	4.60527E-02		
1	4.43496E+01	4.60679E-02	3.10339E+00	parabolic
2	4.37801E+01	4.60692E-02	-5.69561E-01	parabolic
3	4.36698E+01	4.60692E-02	-1.10307E-01	parabolic
4	4.36261E+01	4.60692E-02	-1.30233E-02	parabolic
5	4.37135E+01	4.60692E-02	4.36698E-02	parabolic
6	4.36698E+01	4.60692E-02	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Soil

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	7.01704E+01	1.69875E-01		
1	7.11418E+01	1.69843E-01	9.71424E-01	parabolic
2	6.93080E+01	1.69887E-01	-8.62389E-01	parabolic
3	6.90127E+01	1.69888E-01	-2.95302E-01	parabolic
4	6.90817E+01	1.69888E-01	1.62857E-02	parabolic
5	6.89437E+01	1.69888E-01	-6.90127E-02	parabolic
6	6.90127E+01	1.69888E-01	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

All Pathways Summed

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDose(t) (mrem/yr)	Step Size (years)	Step Type
0	4.12463E+01	1.35043E+01		
1	4.35134E+01	1.35058E+01	2.26714E+00	parabolic
2	4.28414E+01	1.35062E+01	-6.72009E-01	parabolic
3	4.27847E+01	1.35063E+01	-5.67124E-02	parabolic
4	4.27419E+01	1.35063E+01	-4.27847E-02	parabolic
5	4.27847E+01	1.35063E+01	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDose(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDose(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

Source Factors for Ingrowth and Decay
Radioactivity Factors Only
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	ID(j,t) = THF(j)*S1(j,t)/S1(i,0) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	9.996E-01	9.987E-01	9.957E-01	9.871E-01	9.576E-01	8.781E-01	6.484E-01
Ra-226+D	Pb-210+D	1.000E+00	0.000E+00	3.060E-02	8.897E-02	2.666E-01	6.019E-01	9.258E-01	8.904E-01	6.576E-01

Source Factors for Ingrowth and Decay
Combined Radioactivity and Leaching Factors
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	SF(j,t) = THF(j)*S1(j,t)/S1(i,0) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	9.964E-01	9.893E-01	9.647E-01	8.977E-01	6.978E-01	3.398E-01	2.737E-02
Ra-226+D	Pb-210+D	1.000E+00	0.000E+00	3.052E-02	8.826E-02	2.594E-01	5.540E-01	6.928E-01	3.555E-01	2.865E-02

The effect of volatilization was also considered when computing the source factors for H-3 and C-14.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226.RAD

Parameters Used for Calculating Cover Depth and Contaminated Zone Thicknesses

Cover Erosion rate (vcv): 0.001000 m/yr
 Contaminated Zone Erosion rate (vcz): 0.001000 m/yr
 Water Table Drop rate (vwt): 0.001000 m/yr
 Precipitation rate (Pr): 1.000000 m/yr
 Cover Removal Time (Tc): 0.000E+00 yr
 Overhead irrigation rate (Irr): 0.200 m/yr Runoff coefficient (Cr): 0.200
 Evapotranspiration coeff. (Ce): 0.500 Infiltration rate (In): 0.500 m/yr
 Bulk soil density (rhob): 1.500 g/cm**3 Effective porosity (pe): 0.000

Radio- nuclide (i)	Distribution Coefficient Kd(i), cm**3/g	Leaching Ratio q(i)
Pb-210	1.000000E+02	2.135E-03
Ra-226	7.000000E+01	3.047E-03

Time Dependence of Source Geometry

Time Dependence of Cover Depth [Cd(i,t)]

Nuclide (i) t=		Cd(i,t) (meters)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
Ra-226		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Time Dependence of Contaminated Zone Thicknesses [T(i,t)]

Nuclide (i) t=		T(i,t) (meters)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210		1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01
Ra-226		1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01

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Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Ground Pathway (p=1)

Nuclide (i)	DCF(i,1)* t=	ETFG(i,t) At Time in Years (dimensionless)							
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Po-218	5.642E-05	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.393E-01
Ra-226	3.176E-02	5.527E-01	5.527E-01	5.527E-01	5.527E-01	5.527E-01	5.527E-01	5.527E-01	5.527E-01
Rn-222	2.354E-03	5.376E-01	5.376E-01	5.376E-01	5.376E-01	5.376E-01	5.376E-01	5.376E-01	5.373E-01
Tl-210	0.000E+00	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01

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

Dose/Source Ratios for External Radiation from the Ground (p=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,1,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	6.048E+00	6.027E+00	5.983E+00	5.835E+00	5.430E+00	4.221E+00	2.055E+00	1.651E-01
Ra-226+D	Pb-210+D	1.000E+00	5.171E-05	1.526E-04	3.435E-04	9.093E-04	1.882E-03	2.331E-03	1.195E-03	9.632E-05
Ra-226+D	ΣDSR(j)		6.048E+00	6.027E+00	5.984E+00	5.836E+00	5.431E+00	4.223E+00	2.056E+00	1.652E-01

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Inhalation Pathway, Excluding Radon (p=2)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,2,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226+D	Ra-226+D	1.000E+00	4.695E-04	4.678E-04	4.645E-04	4.529E-04	4.215E-04	3.276E-04	1.595E-04	1.285E-05	
Ra-226+D	Pb-210+D	1.000E+00	1.949E-05	5.752E-05	1.295E-04	3.427E-04	7.093E-04	8.786E-04	4.505E-04	3.630E-05	
Ra-226+D	ΣDSR(j)		4.890E-04	5.254E-04	5.940E-04	7.956E-04	1.131E-03	1.206E-03	6.101E-04	4.916E-05	

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

Pathway Factors for the Inhalation Pathway (radon excluded)

Area (A):	2.2000E+03 m**2	Occupancy Factor (FO2):	4.5000E-01
Area Factor (FA2):	1.4479E-01	Annual Air Intake (F12):	8.4000E+03 m**3/yr
Cover Depth [Cd(0)]:	0.0000E+00 m	Mass Loading (ASR2):	1.0000E-04 g/m**3
Contaminated Zone Thickness [T(0)]:	1.5000E+00 m	FA2 * FO2 * F12 * ASR2:	5.4730E-02 g/yr

Nuclide	Depth Factor [FD(i,2,t)] (dimensionless)								
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00

Dose Conversion and Environmental Transport Factors for the Inhalation Pathway, Excluding Radon (p=2)

Parent (i)	Product (j)	DCF(j,2)*	ETF(j,2,t) At Time in Years (g/yr)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226+D	Ra-226+D	8.594E-03	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	
Ra-226+D	Pb-210+D	2.320E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	

* - The dose conversion factor units are mrem/pCi.

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Time Dependence of Indoor Radon Concentration [HCONC(i,r)]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Outdoor Working Levels of Radon [WLOTD(i,t)]

Nuclide		WLOTD(i,t) (WL)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Indoor Working Levels of Radon [WLIND(i,t)]

Nuclide		WLIND(i,t) (WL)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Fraction of Time Spent Outdoors (FOTD): 2.500E-01

Fraction of Time Spent Indoors (FIND): 5.000E-01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Radon Pathway (p=9)

Subpathway: Outdoor and Indoor Radon Flux

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,9,t) - DSRRNW(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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
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
Ra-226+D	ΣDSR(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

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

Dose/Source Ratios for Radon Pathway (p=9)

Subpathway: Indoor Radon from Water Usage

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSRRNW(j,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-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	
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	
Ra-226+D	ΣDSR(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	

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Transport Time Parameters for Unsaturated Zone Stratum No. 1

Stratum thickness [h(1)]: 4.000000 m
 Bulk soil material density [rhob(1)]: 1.500000 g/cm**3
 Effective porosity [peuz(1)]: 0.200000
 Hydraulic conductivity [Khuz(1)]: 10.000000 m/yr
 Total porosity [ptuz(1)]: 0.400000
 Soil specific b parameter [buz(1)]: 5.300000
 Saturation ratio [sruz(1)]: 0.802299

Radio-nuclide	Distribution Coefficient	Retardation Factor	Transport Time
(i)	Kduz(i,1), cm**3/g	Rduz(i,1)	Dtuz(i,1), yr
Pb-210	1.0000E+02	4.6841E+02	6.0128E+02
Ra-226	7.0000E+01	3.2818E+02	4.2128E+02

Transport Time Parameters for Unsaturated Zone created by the Falling Water Table

Water table drop rate [vwt]: 0.001000 m/yr
 Bulk soil material density [rhobaq]: 1.500000 g/cm**3
 Effective porosity [peaq]: 0.200000
 Hydraulic conductivity [Khaq]: 100.000000 m/yr
 Total porosity [ptaq]: 0.400000
 Soil specific b parameter [baq]: 5.300000
 Saturation ratio [sruaq]: 0.677340

Radio-nuclide	Distribution Coefficient	Retardation Factor	Minimum Transport Time
(i)	Kdaq(i), cm**3/g	Rduaq(i)	Dtuaq(i), yr
Pb-210	1.0000E+02	5.5464E+02	1.0633E+02
Ra-226	7.0000E+01	3.8855E+02	4.9567E+01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dilution Factor and Rise Time Parameters for Nondispersion (ND) Model

Aquifer contamination depth at well (z): 1.77500E+01 m
 Depth of water intake below water table (dw): 1.00000E+01 m
 Infiltration rate (In): 5.00000E-01 m/yr
 Aquifer water flow rate (Vwfr): 2.00000E+00 m/yr
 Hydraulic gradient (J): 2.00000E-02
 Hydraulic conductivity of aquifer (Kszh): 1.00000E+02 m/yr
 Contaminated zone extent parallel to gradient (l): 7.10000E+01 m
 Distance below contaminated zone to water table (h): 0.40000E+01 m
 Initial thickness of uncontaminated cover (Cd): 0.00000E+00 m
 Initial thickness of contaminated zone (T): 0.15000E+01 m
 Effective porosity of saturated zone (pesz): 0.20000E+00

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdsz(i)	Horizontal Transport Time		Rise Time dt(i), yr	Decay Time Parameter 1/lambda(i),yr
				Onsite Tauh(i), yr		
Pb-210	1.000E+00	3.760E+02		2.670E+03	1.504E+03	3.217E+01
Ra-226	1.000E+00	2.635E+02		1.871E+03	1.054E+03	2.308E+03

Primary Parameters Used for Calculating Water/Soil
Concentration Ratios for Groundwater Pathway Segment

Model used: Nondispersion (ND)

Bulk soil density in contaminated zone (rhob): 1.500 g/cm**3

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdcz(i)	Breakthrough Time		Rise Time dt(i), yr
			Chain year	Single Nuclide Dt(i), yr	
Pb-210	1.000E+00	4.684E+02	4.709E+02	7.076E+02	1.504E+03
Ra-226	1.000E+00	3.282E+02	4.709E+02	4.709E+02	1.054E+03

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Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Times For Contaminated Foodstuffs

k	Food Item	STOR_T(k), days
1	non-leafy plants	14.
2	leafy plants	1.
3	milk	1.
4	meat	20.
5	fish	7.
6	crustacea	7.
7	well water	1.
8	surface water	1.
9	livestock fodder	45.

Storage Time Ingrowth and Decay Factors

Storage Time for k'th Foodstuff: $t = \text{STOR_T}(k)$, days

Parent (i)	Product (j)	Thread Fraction	STOR_ID(i,j,t) = CONCE(i,j,t)/CONCE(i,i,0)									
			t= 1.400E+01	1.000E+00	1.000E+00	2.000E+01	7.000E+00	7.000E+00	1.000E+00	1.000E+00	4.500E+01	
Pb-210	Pb-210	1.000E+00	9.988E-01	9.999E-01	9.999E-01	9.983E-01	9.994E-01	9.994E-01	9.999E-01	9.999E-01	9.962E-01	
Ra-226	Ra-226	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	
Ra-226	Pb-210	1.000E+00	1.191E-03	8.510E-05	8.510E-05	1.701E-03	5.955E-04	5.955E-04	8.510E-05	8.510E-05	3.822E-03	

CONCE(i,j,t)/CONCE(i,i,0) is the concentration ratio of Product(j) at time t to Parent(i) at start of storage time.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors
 Drinking Water from Well and/or Surface
 Harvest Time = $t - 2.74\text{E-}03$ yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,1) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Nonleafy Plants from Well and/or Surface
 Harvest Time = $t - 4.11\text{E-}02$ yr; Consumption Time = $t - 3.83\text{E-}02$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,2) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Leafy Plants from Well and/or Surface
 Harvest Time = $t - 5.48\text{E-}03$ yr; Consumption Time = $t - 2.74\text{E-}03$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,3) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Livestock (Milk) Fodder from Well and/or Surface
 Harvest Time = $t - 1.29\text{E-}01$ yr; Consumption Time = $t - 1.26\text{E-}01$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,5) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors

Irrigation Water for Livestock (Meat) Fodder from Well and/or Surface

Harvest Time = t - 1.81E-01 yr; Consumption Time = t - 1.78E-01 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,7)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Livestock (Milk) Water from Well and/or Surface

Harvest Time = t - 5.48E-03 yr; Consumption Time = t - 2.74E-03 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,4)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Livestock (Meat) Water from Well and/or Surface

Harvest Time = t - 5.75E-02 yr; Consumption Time = t - 5.48E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,6)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Nonleafy Plants

Harvest Time = t - 3.83E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors for Leafy Plants

Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Livestock (Meat) Fodder

Harvest Time = t - 1.78E-01 yr; Consumption Time = t - 5.48E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.602E+00	1.178E+00	1.054E+00	1.021E+00	1.012E+00	1.011E+00	1.002E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Livestock (Milk) Fodder

Harvest Time = t - 1.26E-01 yr; Consumption Time = t - 2.74E-03 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.566E+00	1.175E+00	1.054E+00	1.021E+00	1.012E+00	1.011E+00	1.002E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Meat

Harvest Time = t - 5.48E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF45(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.161E+00	1.060E+00	1.019E+00	1.008E+00	1.004E+00	1.004E+00	1.001E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors for Milk

Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF45(j,2,t)# At Time in Years								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.020E+00	1.008E+00	1.003E+00	1.001E+00	1.001E+00	1.001E+00	1.000E+00	

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Fish & Crustacea

Harvest Time = t - 1.92E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CFF(j,1,t)# At Time in Years								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.995E-01	

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Area Factor for Plant Foods [FA(3)] = 0.50

Area Factor for Plant Foods [FA(3)] = 0.50

Area Factor for Plant Foods [FA(3)] = 0.50

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Area and Depth Factors for Plant (p=3), Meat (p=4), and Milk (p=5) Pathways
Overhead Irrigation (q=4)

Area Factor for Plant Foods [FA(3)] = 0.50

The Depth Factor Value

$FD(i,p,q,t) = 1.0000E+00$

is applicable for all radionuclides(i) and times(t).

Area and Depth Factors for Meat (p=4) and Milk (p=5) Pathways
Transfer from Livestock Water (q=5) and Soil (q=6) Intake

Area Factor for Meat and Milk [FA(p),p=4,5] = 0.11

The livestock water subpathway (q=5) and livestock soil intake subpathway (q=6)
occur only for the meat (p=4) and milk (p=5) pathways.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,1,t) At Time in Years (g/yr)						
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02
Ra-226+D	Ra-226+D	1.321E-03	3.480E+03	3.468E+03	3.443E+03	3.357E+03	3.124E+03	2.429E+03	1.183E+03
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	2.942E+01	7.963E+01	2.285E+02	4.846E+02	6.048E+02	3.103E+02

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,2,t) At Time in Years (g/yr)						
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02
Ra-226+D	Ra-226+D	1.321E-03	8.969E-02	8.938E-02	8.874E-02	8.653E-02	8.052E-02	6.259E-02	3.048E-02
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	2.737E-03	7.916E-03	2.327E-02	4.970E-02	6.214E-02	3.189E-02

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,3,t) * SF(j,t) At Time in Years (g/yr)						
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02
Ra-226+D	Ra-226+D	1.321E-03	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	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,4,t) * SF(j,t) At Time in Years (g/yr)						
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02
Ra-226+D	Ra-226+D	1.321E-03	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	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	1.885E+01	1.879E+01	1.866E+01	1.819E+01	1.693E+01	1.316E+01	6.408E+00	2.869E-01
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	1.837E-01	4.010E-01	1.045E+00	2.151E+00	2.661E+00	1.364E+00	6.109E-02

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	1.955E-03	1.950E-03	1.936E-03	1.887E-03	1.756E-03	1.365E-03	6.648E-04	5.356E-05
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	4.842E-05	1.388E-04	4.066E-04	8.677E-04	1.085E-03	5.566E-04	4.485E-05

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.902E-03
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.757E-04

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.617E+00
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.147E-01

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,5,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.556E-01
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.702E-01

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	2.226E+01	2.219E+01	2.203E+01	2.149E+01	1.999E+01	1.554E+01	7.568E+00	3.388E-01
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	7.180E-02	1.681E-01	4.535E-01	9.442E-01	1.172E+00	6.009E-01	2.691E-02

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	2.310E-03	2.302E-03	2.286E-03	2.229E-03	2.074E-03	1.612E-03	7.851E-04	6.325E-05
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	2.129E-05	6.131E-05	1.799E-04	3.841E-04	4.803E-04	2.465E-04	1.986E-05

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.246E-03
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.211E-04

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.910E+00
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.047E-01

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,5,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.064E+00
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.481E-01

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Fish Pathway (p=6)

Parent (i)	Product (j)	DCF(j,6)*	ETF(j,6,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.030E+00
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.508E+00

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Drinking Water Pathway (p=7)

Parent (i)	Product (j)	DCF(j,7)*	ETF(j,7,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.650E+02
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.803E+02

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	4.589E+00	4.573E+00	4.540E+00	4.427E+00	4.119E+00	3.202E+00	1.559E+00	6.972E-02
Ra-226+D	Pb-210+D	1.000E+00	1.150E-01	3.077E-01	6.664E-01	1.729E+00	3.556E+00	4.396E+00	2.254E+00	1.008E-01
Ra-226+D	ΣDSR(j)		4.704E+00	4.880E+00	5.206E+00	6.156E+00	7.675E+00	7.598E+00	3.813E+00	1.705E-01

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.183E-04	1.178E-04	1.170E-04	1.141E-04	1.062E-04	8.253E-05	4.019E-05	3.238E-06
Ra-226+D	Pb-210+D	1.000E+00	1.002E-05	2.957E-05	6.657E-05	1.762E-04	3.646E-04	4.517E-04	2.316E-04	1.866E-05
Ra-226+D	ΣDSR(j)		1.283E-04	1.474E-04	1.836E-04	2.903E-04	4.708E-04	5.342E-04	2.718E-04	2.190E-05

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	1.023E-03
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	9.980E-04
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.021E-03

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,4t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	9.800E-02
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	3.807E-01
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.787E-01

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	4.589E+00	4.573E+00	4.540E+00	4.427E+00	4.120E+00	3.202E+00	1.559E+00	1.688E-01
Ra-226+D	Pb-210+D	1.000E+00	1.150E-01	3.077E-01	6.664E-01	1.729E+00	3.556E+00	4.397E+00	2.254E+00	4.825E-01
Ra-226+D	ΣDSR(j)		4.704E+00	4.880E+00	5.206E+00	6.156E+00	7.676E+00	7.599E+00	3.813E+00	6.513E-01

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (c=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	2.487E-02	2.478E-02	2.460E-02	2.399E-02	2.232E-02	1.735E-02	8.450E-03	3.779E-04
Ra-226+D	Pb-210+D	1.000E+00	8.483E-04	1.742E-03	3.293E-03	7.890E-03	1.578E-02	1.934E-02	9.909E-03	4.433E-04
Ra-226+D	ΣDSR(j)		2.571E-02	2.652E-02	2.789E-02	3.188E-02	3.810E-02	3.669E-02	1.836E-02	8.212E-04

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	2.580E-06	2.570E-06	2.552E-06	2.489E-06	2.316E-06	1.800E-06	8.766E-07	7.062E-08
Ra-226+D	Pb-210+D	1.000E+00	1.789E-07	5.208E-07	1.166E-06	3.079E-06	6.366E-06	7.884E-06	4.043E-06	3.258E-07
Ra-226+D	ΣDSR(j)		2.758E-06	3.091E-06	3.718E-06	5.567E-06	8.682E-06	9.685E-06	4.919E-06	3.964E-07

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	2.512E-06
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	2.006E-06
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.518E-06

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,4t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	2.136E-03
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	6.656E-03
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.793E-03

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,5t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	8.661E-04
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	2.694E-03
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.560E-03

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	2.944E-02	2.933E-02	2.912E-02	2.840E-02	2.643E-02	2.054E-02	1.000E-02	3.508E-03
Ra-226+D	Pb-210+D	1.000E+00	1.165E-03	2.665E-03	5.361E-03	1.335E-02	2.707E-02	3.332E-02	1.708E-02	1.037E-02
Ra-226+D	ΣDSR(j)		3.060E-02	3.200E-02	3.448E-02	4.175E-02	5.349E-02	5.386E-02	2.708E-02	1.388E-02

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	2.937E-02	2.926E-02	2.905E-02	2.833E-02	2.636E-02	2.049E-02	9.979E-03	4.463E-04
Ra-226+D	Pb-210+D	1.000E+00	3.163E-04	7.020E-04	1.390E-03	3.427E-03	6.927E-03	8.517E-03	4.365E-03	1.952E-04
Ra-226+D	ΣDSR(j)		2.968E-02	2.996E-02	3.044E-02	3.176E-02	3.329E-02	2.901E-02	1.434E-02	6.415E-04

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	3.046E-06	3.036E-06	3.014E-06	2.939E-06	2.735E-06	2.126E-06	1.035E-06	8.340E-08
Ra-226+D	Pb-210+D	1.000E+00	7.828E-08	2.295E-07	5.153E-07	1.362E-06	2.819E-06	3.491E-06	1.790E-06	1.442E-07
Ra-226+D	ΣDSR(j)		3.125E-06	3.265E-06	3.529E-06	4.301E-06	5.553E-06	5.617E-06	2.825E-06	2.276E-07

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	2.967E-06
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	8.811E-07
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.848E-06

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,4t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	2.523E-03
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	2.945E-03
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.469E-03

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,5t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	4.047E-03
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	4.717E-03
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.764E-03

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	3.604E-02	3.591E-02	3.566E-02	3.477E-02	3.235E-02	2.515E-02	1.225E-02	7.203E-03
Ra-226+D	Pb-210+D	1.000E+00	4.878E-04	1.205E-03	2.519E-03	6.413E-03	1.310E-02	1.617E-02	8.287E-03	8.174E-03
Ra-226+D	ΣDSR(j)		3.653E-02	3.712E-02	3.817E-02	4.118E-02	4.546E-02	4.132E-02	2.053E-02	1.538E-02

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from the Ingestion of Fish (p=6)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,6,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	1.361E-03
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	1.825E-02
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.961E-02

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from the Ingestion of Drinking Water (p=7)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,7,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	1.275E+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	4.950E+00
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.225E+00

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

Area Factor for Mass Loading [FA(2)]: 1.448E-01

FAR(i,p,q,k) is the plant/air concentration ratio for airborne contaminated dust, and FWR(i,p,q,k) is the plant/water concentration ratio. See groundwater displays for water/soil concentration ratios.

Nonleafy (k=1) and/or Leafy (k=2) Vegetables

Ditch Irrigation ($q=3$)

Overhead Irrigation (q=4) and Nonleafy Vegetables (k=1)

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Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Meat/Fodder, Milk/Fodder, Fodder/Air and Fodder/Water Concentration Ratios

FI(4,q): 68.0 kg/day FI(5,q): 55.0 kg/day q=1,2,3,4

FI(4,q): 50.0 L/day FI(5,q): 160.0 L/day q=5

FI(4,q): 0.5 kg/day FI(5,q):

Nuclide (i)	FQR(i,4) d/kg	FQR(i,5) d/kg	FAR(i,3,2,3) m**3/g	FWR(i,3,3,3) L/g	FWR(i,3,4,3) L/g
Pb-210	8.0000E-04	3.0000E-04	2.8659E-01	5.3329E-07	1.8139E-03
Ra-226	1.0000E-03	1.0000E-03	2.8659E-01	2.1329E-06	1.8139E-03

FI(p,q) are the fodder (q=1,2,3,4), livestock water (q=5) and soil (q=6) intake rates;

FQR(i,p) are the transfer coefficients from contaminated fodder of livestock

water to meat (p=4) or milk (p=5). FAR(i,3,2,3) are the fodder/air

concentration ratios, and FWR(i,3,3,3) and FWR(i,3,4,3) are the fodder/

water concentration ratios for ditch and overhead irrigation, respectively.

Root Uptake (q=1) and Foliar Dust Deposition (q=2)

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Meat/Soil Concentration Ratios, FSR(i,4,q,t)
Root Uptake (q=1) and Foliar Dust Deposition (q=2)

Nuclide(i)			
Parent	Product	FSR(i,4,1)	FSR(i,4,2)
Ra-226+D	Ra-226+D	2.7200E-03	2.8217E-07
Ra-226+D	Pb-210+D	0.0000E+00	0.0000E+00

Meat/Soil Concentration Ratio, FSR(j,4,q,t)
Ditch Irrigation (q=3)

[illegible]

Meat/Soil Concentration Ratio, FSR(j,4,q,t)
Overhead Irrigation (q=4)

[illegible]

Meat/Soil Concentration Ratio, FSR(j,4,q,t)
Livestock Water (q=5)

[illegible]

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Soil Ingestion Pathway (p=8)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,8,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	3.609E-02	3.597E-02	3.571E-02	3.482E-02	3.240E-02	2.519E-02	1.226E-02	9.881E-04
Ra-226+D	Pb-210+D	1.000E+00	3.058E-03	9.025E-03	2.032E-02	5.377E-02	1.113E-01	1.379E-01	7.069E-02	5.696E-03
Ra-226+D	ΣDSR(j)		3.915E-02	4.499E-02	5.602E-02	8.859E-02	1.437E-01	1.630E-01	8.296E-02	6.684E-03

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

Dose Conversion and Environmental Transport Factors for the Soil Ingestion Pathway (p=8)

Parent (i)	Product (j)	DCF(j,8)*	ETF(j,8,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01
Ra-226+D	Pb-210+D	7.276E-03	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01

* - The dose conversion factor units are mrem/pCi.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
Summary of Pathway Selections	7
Contaminated Zone and Total Dose Summary	8
Total Dose Components	
Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
Time = 1.000E+03	16
Dose/Source Ratios Summed Over All Pathways	17
Single Radionuclide Soil Guidelines	17
Dose Per Nuclide Summed Over All Pathways	18
Soil Concentration Per Nuclide	18

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(11)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(1)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(2)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(1)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(2)
D-34	Food transfer factors:			
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(2,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(2,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(2,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(2,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(2,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

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)	1.250E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	5.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(2)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(2)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+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)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.000E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	1.000E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	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)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-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	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUC(2,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.165E-03	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUC(1,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.217E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	7.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	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	-1 shows non-circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	2.417E+00	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m), ring 2:	4.833E+00	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m), ring 3:	7.250E+00	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m), ring 4:	9.667E+00	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m), ring 5:	1.208E+01	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m), ring 6:	1.450E+01	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m), ring 7:	1.692E+01	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m), ring 8:	1.933E+01	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m), ring 9:	2.175E+01	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m), ring 10:	2.417E+01	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	2.658E+01	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	2.900E+01	0.000E+00	---	RAD_SHAPE(12)

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

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	1.000E+00	1.000E+00	---	FRACA(1)
R017	Ring 2	1.000E+00	2.732E-01	---	FRACA(2)
R017	Ring 3	1.000E+00	0.000E+00	---	FRACA(3)
R017	Ring 4	1.000E+00	0.000E+00	---	FRACA(4)
R017	Ring 5	1.000E+00	0.000E+00	---	FRACA(5)
R017	Ring 6	8.200E-01	0.000E+00	---	FRACA(6)
R017	Ring 7	6.000E-01	0.000E+00	---	FRACA(7)
R017	Ring 8	4.900E-01	0.000E+00	---	FRACA(8)
R017	Ring 9	4.200E-01	0.000E+00	---	FRACA(9)
R017	Ring 10	3.700E-01	0.000E+00	---	FRACA(10)
R017	Ring 11	2.200E-01	0.000E+00	---	FRACA(11)
R017	Ring 12	2.000E-02	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
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	0.625E-01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.625E-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)

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

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	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
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

Summary : RESRAD Default Parameters Resident Farmer Scenario

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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	257	---	---	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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Contaminated Zone Dimensions

Initial Soil Concentrations, pCi/g

Area: 1250.00 square meters
 Thickness: 1.50 meters
 Cover Depth: 0.00 meters

Ra-226 1.000E+00

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	1.077E+01	1.094E+01	1.123E+01	1.207E+01	1.326E+01	1.200E+01	5.961E+00	7.075E+00
M(t):	7.182E-01	7.290E-01	7.488E-01	8.049E-01	8.838E-01	8.000E-01	3.974E-01	4.716E-01

Maximum TDOSE(t): 1.341E+01 mrem/yr at t = 42.85 ± 0.09 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 = 4.285E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	5.137E+00	0.3830	1.155E-03	0.0001	0.000E+00	0.0000	8.056E+00	0.6006	3.213E-02	0.0024	2.617E-02	0.0020	1.601E-01	0.0119
Total	5.137E+00	0.3830	1.155E-03	0.0001	0.000E+00	0.0000	8.056E+00	0.6006	3.213E-02	0.0024	2.617E-02	0.0020	1.601E-01	0.0119

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

As mrem/yr and Fraction of Total Dose At t = 4.285E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.341E+01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.341E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
Ra-226	5.991E+00	0.5561	4.610E-04	0.0000	0.000E+00	0.0000	4.704E+00	0.4366	1.739E-02	0.0016	2.075E-02	0.0019	3.915E-02	0.0036
Total	5.991E+00	0.5561	4.610E-04	0.0000	0.000E+00	0.0000	4.704E+00	0.4366	1.739E-02	0.0016	2.075E-02	0.0019	3.915E-02	0.0036

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- 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.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.077E+01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.077E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.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- 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.
Ra-226	5.970E+00	0.5459	4.953E-04	0.0000	0.000E+00	0.0000	4.880E+00	0.4463	1.818E-02	0.0017	2.109E-02	0.0019	4.499E-02	0.0041
Total	5.970E+00	0.5459	4.953E-04	0.0000	0.000E+00	0.0000	4.880E+00	0.4463	1.818E-02	0.0017	2.109E-02	0.0019	4.499E-02	0.0041

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- 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.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.094E+01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.094E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
Ra-226	5.927E+00	0.5277	5.599E-04	0.0000	0.000E+00	0.0000	5.206E+00	0.4635	1.959E-02	0.0017	2.169E-02	0.0019	5.602E-02	0.0050
Total	5.927E+00	0.5277	5.599E-04	0.0000	0.000E+00	0.0000	5.206E+00	0.4635	1.959E-02	0.0017	2.169E-02	0.0019	5.602E-02	0.0050

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

Radio- 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.
Ra-226	0.000E+00	0.0000	0.000E+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+01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.123E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
Ra-226	5.780E+00	0.4788	7.501E-04	0.0001	0.000E+00	0.0000	6.156E+00	0.5099	2.372E-02	0.0020	2.340E-02	0.0019	8.859E-02	0.0073
Total	5.780E+00	0.4788	7.501E-04	0.0001	0.000E+00	0.0000	6.156E+00	0.5099	2.372E-02	0.0020	2.340E-02	0.0019	8.859E-02	0.0073

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

Water Dependent Pathways

Radio- 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.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.207E+01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.207E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
Ra-226	5.380E+00	0.4058	1.066E-03	0.0001	0.000E+00	0.0000	7.676E+00	0.5790	3.039E-02	0.0023	2.583E-02	0.0019	1.437E-01	0.0108
Total	5.380E+00	0.4058	1.066E-03	0.0001	0.000E+00	0.0000	7.676E+00	0.5790	3.039E-02	0.0023	2.583E-02	0.0019	1.437E-01	0.0108

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

Water Dependent Pathways

Radio- 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.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.326E+01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.326E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
Ra-226	4.183E+00	0.3486	1.137E-03	0.0001	0.000E+00	0.0000	7.599E+00	0.6332	3.060E-02	0.0026	2.348E-02	0.0020	1.630E-01	0.0136
Total	4.183E+00	0.3486	1.137E-03	0.0001	0.000E+00	0.0000	7.599E+00	0.6332	3.060E-02	0.0026	2.348E-02	0.0020	1.630E-01	0.0136

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

Water Dependent Pathways

Radio- 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.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.200E+01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.200E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

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

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
Ra-226	2.037E+00	0.3417	5.751E-04	0.0001	0.000E+00	0.0000	3.813E+00	0.6397	1.539E-02	0.0026	1.167E-02	0.0020	8.296E-02	0.0139
Total	2.037E+00	0.3417	5.751E-04	0.0001	0.000E+00	0.0000	3.813E+00	0.6397	1.539E-02	0.0026	1.167E-02	0.0020	8.296E-02	0.0139

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

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

Water Dependent Pathways

Radio- 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.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.961E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.961E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
Ra-226	1.636E-01	0.0231	4.634E-05	0.0000	0.000E+00	0.0000	1.705E-01	0.0241	8.658E-04	0.0001	6.479E-04	0.0001	6.684E-03	0.0009
Total	1.636E-01	0.0231	4.634E-05	0.0000	0.000E+00	0.0000	1.705E-01	0.0241	8.658E-04	0.0001	6.479E-04	0.0001	6.684E-03	0.0009

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

Water Dependent Pathways

Radio- 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.
Ra-226	6.225E+00	0.8799	1.114E-02	0.0016	0.000E+00	0.0000	4.807E-01	0.0679	7.021E-03	0.0010	8.089E-03	0.0011	7.075E+00	1.0000
Total	6.225E+00	0.8799	1.114E-02	0.0016	0.000E+00	0.0000	4.807E-01	0.0679	7.021E-03	0.0010	8.089E-03	0.0011	7.075E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

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

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.065E+01	1.062E+01	1.054E+01	1.028E+01	9.564E+00	7.435E+00	3.620E+00	1.615E+00
Ra-226+D	Pb-210+D	1.000E+00	1.191E-01	3.191E-01	6.917E-01	1.796E+00	3.693E+00	4.566E+00	2.341E+00	5.460E+00
Ra-226+D	ΣDSR(j)		1.077E+01	1.094E+01	1.123E+01	1.207E+01	1.326E+01	1.200E+01	5.961E+00	7.075E+00

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

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Nuclide									
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	1.392E+00	1.372E+00	1.336E+00	1.242E+00	1.131E+00	1.250E+00	2.516E+00	2.120E+00	

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 42.85 ± 0.09 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
				(pCi/g)		(pCi/g)
Ra-226	1.000E+00	42.85 ± 0.09	1.341E+01	1.118E+00	1.341E+01	1.118E+00

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr								
			t = 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226	Ra-226	1.000E+00	1.065E+01	1.062E+01	1.054E+01	1.028E+01	9.564E+00	7.435E+00	3.620E+00	1.615E+00	
Pb-210	Ra-226	1.000E+00	1.191E-01	3.191E-01	6.917E-01	1.796E+00	3.693E+00	4.566E+00	2.341E+00	5.460E+00	

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

Individual Nuclide Soil Concentration

Parent Nuclide and Branch Fraction Indicated

Nuclide Parent THF(i)			S(j,t), pCi/g								
(j)	(i)		t =	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	Ra-226	1.000E+00		1.000E+00	9.964E-01	9.893E-01	9.647E-01	8.977E-01	6.978E-01	3.398E-01	2.737E-02
Pb-210	Ra-226	1.000E+00		0.000E+00	3.052E-02	8.826E-02	2.594E-01	5.540E-01	6.928E-01	3.555E-01	2.865E-02

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

RESRAD.EXE execution time = 3.32 seconds

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Table of ContentsPart II: Source Terms, Factors, and Parameters for Individual Pathways

Iteration Logs

Maximum Ra-226 Dose/Source Ratio	3
Maximum Total Dose	9

Source Factors for Ingrowth and Decay

Radioactivity Only	15
Combined Radioactivity and Leaching	15

Ground Pathway

Source Term Parameters	16
Time Dependence of Source Geometry	16
Occupancy, Cover/Depth, and Area Factors	17
Dose Conversion and Environmental Transport Factors .	17
Dose/Source Ratios	18

Inhalation Pathway (radon excluded)

Dose/Source Ratios	19
Pathway Factors	19
Dose Conversion and Environmental Transport Factors .	19

Radon Pathway

Flux and Parameters	20
Concentration and Parameters	21
Working Levels	22
Dose/Source Ratios	23

Groundwater and Surface Water Pathway Segments

Transport Time Parameters for Unsaturated Zone Strata	24
Dilution Factor and Rise Time Parameters for	
Nondispersion (ND) Model	25
Primary Parameters Used to Calculate Ratios	25
Water/Soil Concentration Ratios	26

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Table of Contents (cont.)Part II: Source Terms, Factors, and Parameters for Individual Pathways

Food Pathways

Storage Times for Contaminated Foodstuffs	27
Storage Time Ingrowth and Decay Factors	27
Storage Correction Factors	
Drinking Water	28
Irrigation Water	28
Livestock Water	29
Plants	29
Livestock Fodder	30
Meat and Milk	30
Fish and Crustacea	31
Area and Depth Factors	32
Dose Conversion and Environmental Transport Factors	
Plant	34
Meat	35
Milk	37
Fish	39
Drinking Water	39
Dose/Source Ratios	
Plant	40
Plant Total	41
Meat	42
Meat Total	43
Milk	44
Milk Total	45
Fish	46
Drinking Water	47
Concentration Ratios	
Plant/Air and Plant/Water	48
Plant/Soil	48
Meat/Fodder, Fodder/Air, Fodder/Water	50
Fodder/Soil	51
Meat/Soil	52
Milk/Soil	53

Soil Ingestion Pathway

Dose/Source Ratios.....	54
Dose Conversion and Environmental Transport Factors .	54

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Iteration Log for Computation of the Time of Maximum Ra-226 Dose/Source Ratio
Pathway: Inhale (excluding Radon)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	7.01704E+01	1.19603E-03		
1	6.55287E+01	1.19828E-03	-4.64173E+00	parabolic
2	6.46275E+01	1.19839E-03	-9.01166E-01	parabolic
3	6.41430E+01	1.19840E-03	-4.84461E-01	parabolic
4	6.42093E+01	1.19840E-03	6.62755E-02	parabolic
5	6.42735E+01	1.19840E-03	6.42093E-02	parabolic
6	6.42093E+01	1.19840E-03	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Iteration Log for Computation of the Time of Maximum Ra-226 Dose/Source Ratio

Pathway: Plant (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	5.37984E+01	8.16226E+00		
1	5.77982E+01	8.16559E+00	3.99982E+00	parabolic
2	5.67770E+01	8.16626E+00	-1.02120E+00	parabolic
3	5.66335E+01	8.16627E+00	-1.43492E-01	parabolic
4	5.65769E+01	8.16627E+00	-2.52191E-02	parabolic
5	5.65203E+01	8.16627E+00	-5.65769E-02	parabolic
6	5.65769E+01	8.16627E+00	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Iteration Log for Computation of the Time of Maximum Ra-226 Dose/Source Ratio

Pathway: Meat (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	5.37984E+01	3.26706E-02		
1	5.95244E+01	3.27157E-02	5.72598E+00	parabolic
2	5.88611E+01	3.27173E-02	-6.63251E-01	parabolic
3	5.85854E+01	3.27175E-02	-2.75672E-01	parabolic
4	5.85269E+01	3.27175E-02	-3.23988E-02	parabolic
5	5.84683E+01	3.27175E-02	-5.85269E-02	parabolic
6	5.85269E+01	3.27175E-02	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Iteration Log for Computation of the Time of Maximum Ra-226 Dose/Source Ratio
 Pathway: Milk (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	4.12463E+01	2.61661E-02		
1	4.43495E+01	2.61748E-02	3.10327E+00	parabolic
2	4.37800E+01	2.61755E-02	-5.69559E-01	parabolic
3	4.36699E+01	2.61755E-02	-1.10050E-01	parabolic
4	4.36263E+01	2.61755E-02	-1.67073E-02	parabolic
5	4.37136E+01	2.61755E-02	4.36699E-02	parabolic
6	4.36699E+01	2.61755E-02	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Iteration Log for Computation of the Time of Maximum Ra-226 Dose/Source Ratio
Pathway: Soil

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	7.01704E+01	1.69875E-01		
1	7.11418E+01	1.69843E-01	9.71424E-01	parabolic
2	6.93080E+01	1.69887E-01	-8.62389E-01	parabolic
3	6.90127E+01	1.69888E-01	-2.95302E-01	parabolic
4	6.90817E+01	1.69888E-01	1.62857E-02	parabolic
5	6.89437E+01	1.69888E-01	-6.90127E-02	parabolic
6	6.90127E+01	1.69888E-01	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Iteration Log for Computation of the Time of Maximum Ra-226 Dose/Source Ratio
All Pathways Summed

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	4.12463E+01	1.34108E+01		
1	4.35793E+01	1.34125E+01	2.33299E+00	parabolic
2	4.29149E+01	1.34129E+01	-6.64307E-01	parabolic
3	4.28541E+01	1.34129E+01	-6.08575E-02	parabolic
4	4.28112E+01	1.34129E+01	-4.28541E-02	parabolic
5	4.28541E+01	1.34129E+01	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Iteration Log for Computation of the Time of Maximum Total Dose
Pathway: Inhale (excluding Radon)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDose(t) (mrem/yr)	Step Size (years)	Step Type
0	7.01704E+01	1.19603E-03		
1	6.55287E+01	1.19828E-03	-4.64173E+00	parabolic
2	6.46275E+01	1.19839E-03	-9.01166E-01	parabolic
3	6.41430E+01	1.19840E-03	-4.84461E-01	parabolic
4	6.42093E+01	1.19840E-03	6.62755E-02	parabolic
5	6.42735E+01	1.19840E-03	6.42093E-02	parabolic
6	6.42093E+01	1.19840E-03	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDose(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \times (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDose(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Plant (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	5.37984E+01	8.16226E+00		
1	5.77982E+01	8.16559E+00	3.99982E+00	parabolic
2	5.67770E+01	8.16626E+00	-1.02120E+00	parabolic
3	5.66335E+01	8.16627E+00	-1.43492E-01	parabolic
4	5.65769E+01	8.16627E+00	-2.52191E-02	parabolic
5	5.65203E+01	8.16627E+00	-5.65769E-02	parabolic
6	5.65769E+01	8.16627E+00	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Meat (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	5.37984E+01	3.26706E-02		
1	5.95244E+01	3.27157E-02	5.72598E+00	parabolic
2	5.88611E+01	3.27173E-02	-6.63251E-01	parabolic
3	5.85854E+01	3.27175E-02	-2.75672E-01	parabolic
4	5.85269E+01	3.27175E-02	-3.23988E-02	parabolic
5	5.84683E+01	3.27175E-02	-5.85269E-02	parabolic
6	5.85269E+01	3.27175E-02	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Milk (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	4.12463E+01	2.61661E-02		
1	4.43495E+01	2.61748E-02	3.10327E+00	parabolic
2	4.37800E+01	2.61755E-02	-5.69559E-01	parabolic
3	4.36699E+01	2.61755E-02	-1.10050E-01	parabolic
4	4.36263E+01	2.61755E-02	-1.67073E-02	parabolic
5	4.37136E+01	2.61755E-02	4.36699E-02	parabolic
6	4.36699E+01	2.61755E-02	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Soil

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	7.01704E+01	1.69875E-01		
1	7.11418E+01	1.69843E-01	9.71424E-01	parabolic
2	6.93080E+01	1.69887E-01	-8.62389E-01	parabolic
3	6.90127E+01	1.69888E-01	-2.95302E-01	parabolic
4	6.90817E+01	1.69888E-01	1.62857E-02	parabolic
5	6.89437E+01	1.69888E-01	-6.90127E-02	parabolic
6	6.90127E+01	1.69888E-01	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

All Pathways Summed

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	4.12463E+01	1.34108E+01		
1	4.35793E+01	1.34125E+01	2.33299E+00	parabolic
2	4.29149E+01	1.34129E+01	-6.64307E-01	parabolic
3	4.28541E+01	1.34129E+01	-6.08575E-02	parabolic
4	4.28112E+01	1.34129E+01	-4.28541E-02	parabolic
5	4.28541E+01	1.34129E+01	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Source Factors for Ingrowth and Decay
Radioactivity Factors Only
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	ID(j,t) = THF(j)*S1(j,t)/S1(i,0) At Time in Years								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	9.996E-01	9.987E-01	9.957E-01	9.871E-01	9.576E-01	8.781E-01	6.484E-01	
Ra-226+D	Pb-210+D	1.000E+00	0.000E+00	3.060E-02	8.897E-02	2.666E-01	6.019E-01	9.258E-01	8.904E-01	6.576E-01	

Source Factors for Ingrowth and Decay
Combined Radioactivity and Leaching Factors
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent	Product	Thread	SF(j,t) = THF(j)*S1(j,t)/S1(i,0) At Time in Years								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	9.964E-01	9.893E-01	9.647E-01	8.977E-01	6.978E-01	3.398E-01	2.737E-02	
Ra-226+D	Pb-210+D	1.000E+00	0.000E+00	3.052E-02	8.826E-02	2.594E-01	5.540E-01	6.928E-01	3.555E-01	2.865E-02	

The effect of volatilization was also considered when computing the source factors for H-3 and C-14.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Parameters Used for Calculating Cover Depth and Contaminated Zone Thicknesses

Cover Erosion rate (vcv): 0.001000 m/yr
 Contaminated Zone Erosion rate (vcz): 0.001000 m/yr
 Water Table Drop rate (vwt): 0.001000 m/yr
 Precipitation rate (Pr): 1.000000 m/yr
 Cover Removal Time (Tc): 0.000E+00 yr
 Overhead irrigation rate (Irr): 0.200 m/yr Runoff coefficient (Cr): 0.200
 Evapotranspiration coeff. (Ce): 0.500 Infiltration rate (In): 0.500 m/yr
 Bulk soil density (rhob): 1.500 g/cm**3 Effective porosity (pe): 0.000

Radio-nuclide (i)	Distribution Coefficient Kd(i), cm**3/g	Leaching Ratio q(i)
Pb-210	1.000000E+02	2.135E-03
Ra-226	7.000000E+01	3.047E-03

Time Dependence of Source Geometry

Time Dependence of Cover Depth [Cd(i,t)]

Nuclide (i) t=		Cd(i,t) (meters)						
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02
Pb-210		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
Ra-226		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Time Dependence of Contaminated Zone Thicknesses [T(i,t)]

Nuclide (i) t=		T(i,t) (meters)						
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02
Pb-210		1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00
Ra-226		1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Dose Conversion and Environmental Transport Factors for the Ground Pathway (p=1)

Nuclide (i)	DCF(i,1)*	ETFG(i,t) At Time in Years (dimensionless)							
		t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Po-218	5.642E-05	5.345E-01	5.345E-01	5.345E-01	5.345E-01	5.345E-01	5.345E-01	5.345E-01	5.339E-01
Ra-226	3.176E-02	5.489E-01	5.489E-01	5.489E-01	5.489E-01	5.489E-01	5.489E-01	5.489E-01	5.489E-01
Rn-222	2.354E-03	5.323E-01	5.323E-01	5.323E-01	5.323E-01	5.323E-01	5.323E-01	5.323E-01	5.320E-01
Tl-210	0.000E+00	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01

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

Dose/Source Ratios for External Radiation from the Ground (p=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,1,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	5.991E+00	5.970E+00	5.927E+00	5.780E+00	5.378E-00	4.181E+00	2.036E+00	1.635E-01
Ra-226+D	Pb-210+D	1.000E+00	5.121E-05	1.511E-04	3.402E-04	9.004E-04	1.864E-03	2.308E-03	1.184E-03	9.538E-05
Ra-226+D	ΣDSR(j)		5.991E+00	5.970E+00	5.927E+00	5.780E+00	5.380E-00	4.183E+00	2.037E+00	1.636E-01

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Inhalation Pathway, Excluding Radon (p=2)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,2,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226+D	Ra-226+D	1.000E+00	4.426E-04	4.410E-04	4.379E-04	4.270E-04	3.973E-04	3.089E-04	1.504E-04	1.212E-05	
Ra-226+D	Pb-210+D	1.000E+00	1.837E-05	5.423E-05	1.221E-04	3.231E-04	6.686E-04	8.283E-04	4.247E-04	3.422E-05	
Ra-226+D	ΣDSR(j)		4.610E-04	4.953E-04	5.599E-04	7.501E-04	1.066E-03	1.137E-03	5.751E-04	4.634E-05	

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

Pathway Factors for the Inhalation Pathway (radon excluded)

Area (A):	1.2500E+03 m**2	Occupancy Factor (FO2):	4.5000E-01
Area Factor (FA2):	1.3649E-01	Annual Air Intake (FI2):	8.4000E+03 m**3/yr
Cover Depth [Cd(0)]:	0.0000E+00 m	Mass Loading (ASR2):	1.0000E-04 g/m**3
Contaminated Zone Thickness [T(0)]:	1.5000E+00 m	FA2 * FO2 * FI2 * ASR2:	5.1594E-02 g/yr

Nuclide (i)	t=	Depth Factor [FD(i,2,t)] (dimensionless)							
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00

Dose Conversion and Environmental Transport Factors for the Inhalation Pathway, Excluding Radon (p=2)

Parent (i)	Product (j)	DCF(j,2) *	ETF(j,2,t) At Time in Years (g/yr)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226+D	Ra-226+D	8.594E-03	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	
Ra-226+D	Pb-210+D	2.320E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	

* - The dose conversion factor units are mrem/pCi.

	*Floor	Cover	Contaminated
	Material	Material	Zone
Radon Diffusion Coefficient (m**2/s)	3.000E-07	2.000E-06	2.000E-06
Total Porosity	1.000E-01	4.000E-01	4.000E-01
Volumetric Water Content	3.000E-02	5.000E-02	3.209E-01
Bulk Density (g/cm**3)	2.400E+00	1.500E+00	1.500E+00
Rn-222 Emanation Coefficient	2.500E-01	2.500E-01	2.500E-01
Initial Thickness (m)	1.500E-01	0.000E+00	1.500E+00

Negative DMFL shows building depth adjusted (if necessary) for no penetration of contaminated zone. Actual values used *(DMFLACT), m:

FAI <= 0.0 shows calculated time-dependent value based on amount of wall area extending into the contaminated zone. Actual values used *(FAIACT):

```

FAIACT = 0.0000E+00  0.0000E+00  0.0000E+00  0.0000E+00  0.0000E+00  0.0000E+00  0.0000E+00  0.0000E+00

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* - Parameters are used only for indoor radon flux

[illegible][illegible]

Time Dependence of Indoor Radon Concentration [HCONC(i,r)]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Outdoor Working Levels of Radon [WLOTD(i,t)]

Nuclide	WLOTD(i,t) (WL)								
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Indoor Working Levels of Radon [WLIND(i,t)]

Nuclide		WLIND(i,t) (WL)							
{i}	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Fraction of Time Spent Outdoors (FOTD): 2.500E-01

Fraction of Time Spent Indoors (FIND): 5.000E-01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Radon Pathway (p=9)

Subpathway: Outdoor and Indoor Radon Flux

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,9,t) - DSRRNW(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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
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
Ra-226+D	ΣDSR(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

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

Dose/Source Ratios for Radon Pathway (p=9)

Subpathway: Indoor Radon from Water Usage

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSRRNW(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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
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
Ra-226+D	ΣDSR(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

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Transport Time Parameters for Unsaturated Zone Stratum No. 1

Stratum thickness [h(1)]: 4.000000 m
 Bulk soil material density [rhob(1)]: 1.500000 g/cm**3
 Effective porosity [peuz(1)]: 0.200000
 Hydraulic conductivity [Khuz(1)]: 10.000000 m/yr
 Total porosity [ptuz(1)]: 0.400000
 Soil specific b parameter [buz(1)]: 5.300000
 Saturation ratio [sruz(1)]: 0.802299

Radio-nuclide (i)	Distribution Coefficient Kduz(i,1), cm**3/g	Retardation Factor Rduz(i,1)	Transport Time Dtuz(i,1), yr
Pb-210	1.0000E+02	4.6841E+02	6.0128E+02
Ra-226	7.0000E+01	3.2818E+02	4.2128E+02

Transport Time Parameters for Unsaturated Zone created by the Falling Water Table

Water table drop rate [vwt]: 0.001000 m/yr
 Bulk soil material density [rhobaq]: 1.500000 g/cm**3
 Effective porosity [peaq]: 0.200000
 Hydraulic conductivity [Khaq]: 100.000000 m/yr
 Total porosity [ptaq]: 0.400000
 Soil specific b parameter [baq]: 5.300000
 Saturation ratio [sruaq]: 0.677340

Radio-nuclide (i)	Distribution Coefficient Kdaq(i), cm**3/g	Retardation Factor Rduaq(i)	Minimum Transport Time Dtuaq(i), yr
Pb-210	1.0000E+02	5.5464E+02	1.0633E+02
Ra-226	7.0000E+01	3.8855E+02	4.9567E+01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dilution Factor and Rise Time Parameters for Nondispersion (ND) Model

Aquifer contamination depth at well (z): 1.25000E+01 m
 Depth of water intake below water table (dw): 1.00000E+01 m
 Infiltration rate (In): 5.00000E-01 m/yr
 Aquifer water flow rate (Vwfr): 2.00000E+00 m/yr
 Hydraulic gradient (J): 2.00000E-02
 Hydraulic conductivity of aquifer (Kszh): 1.00000E+02 m/yr
 Contaminated zone extent parallel to gradient (l): 5.00000E+01 m
 Distance below contaminated zone to water table (h): 0.40000E+01 m
 Initial thickness of uncontaminated cover (Cd): 0.00000E+00 m
 Initial thickness of contaminated zone (T): 0.15000E+01 m
 Effective porosity of saturated zone (pesz): 0.20000E+00

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdsz(i)	Horizontal Transport Time		Rise Time dt(i), yr	Decay Time Parameter 1/lamda(i),yr
				Onsite Tauh(i), yr		
Pb-210	1.000E+00	3.760E+02		1.880E+03	1.504E+03	3.217E+01
Ra-226	1.000E+00	2.635E+02		1.318E+03	1.054E+03	2.308E+03

Primary Parameters Used for Calculating Water/Soil
Concentration Ratios for Groundwater Pathway Segment

Model used: Nondispersion (ND)

Bulk soil density in contaminated zone (rhob): 1.500 g/cm**3

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdcz(i)	Breakthrough Time		Rise Time dt(i), yr
			Chain year	Single Nuclide Dt(i), yr	
Pb-210	1.000E+00	4.684E+02	4.709E+02	7.076E+02	1.504E+03
Ra-226	1.000E+00	3.282E+02	4.709E+02	4.709E+02	1.054E+03

[illegible]

Watershed Area (A_w) = 1.0000E+06 m**2
Contaminated Zone Area (A) = 1.2500E+03 m**2
Dilution Factor (f') = 1.2500E-03
Soil Density (ρ_{hob}) = 1.5000E+00 kg/m**3

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 1250.RAD

Storage Times For Contaminated Foodstuffs

k	Food Item	STOR_T(k), days
1	non-leafy plants	14.
2	leafy plants	1.
3	milk	1.
4	meat	20.
5	fish	7.
6	crustacea	7.
7	well water	1.
8	surface water	1.
9	livestock fodder	45.

Storage Time Ingrowth and Decay Factors

Storage Time for k'th Foodstuff: $t = \text{STOR_T}(k)$, days

Parent (i)	Product (j)	Thread Fraction	STOR_ID(i,j,t) = CONCE(i,j,t)/CONCE(i,i,0)									
			t= 1.400E+01	1.000E+00	1.000E+00	2.000E+01	7.000E+00	7.000E+00	1.000E+00	1.000E+00	4.500E+01	
Pb-210	Pb-210	1.000E+00	9.988E-01	9.999E-01	9.999E-01	9.983E-01	9.994E-01	9.994E-01	9.999E-01	9.999E-01	9.962E-01	
Ra-226	Ra-226	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	
Ra-226	Pb-210	1.000E+00	1.191E-03	8.510E-05	8.510E-05	1.701E-03	5.955E-04	5.955E-04	8.510E-05	8.510E-05	3.822E-03	

CONCE(i,j,t)/CONCE(i,i,0) is the concentration ratio of Product(j) at time t to Parent(i) at start of storage time.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors
 Drinking Water from Well and/or Surface
 Harvest Time = $t - 2.74E-03$ yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,1)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Nonleafy Plants from Well and/or Surface
 Harvest Time = $t - 4.11E-02$ yr; Consumption Time = $t - 3.83E-02$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,2)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Leafy Plants from Well and/or Surface
 Harvest Time = $t - 5.48E-03$ yr; Consumption Time = $t - 2.74E-03$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,3)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Livestock (Milk) Fodder from Well and/or Surface
 Harvest Time = $t - 1.29E-01$ yr; Consumption Time = $t - 1.26E-01$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,5)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors

Irrigation Water for Livestock (Meat) Fodder from Well and/or Surface

Harvest Time = t - 1.81E-01 yr; Consumption Time = t - 1.78E-01 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,7)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Livestock (Milk) Water from Well and/or Surface

Harvest Time = t - 5.48E-03 yr; Consumption Time = t - 2.74E-03 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,4)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Livestock (Meat) Water from Well and/or Surface

Harvest Time = t - 5.75E-02 yr; Consumption Time = t - 5.48E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,6)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Nonleafy Plants

Harvest Time = t - 3.83E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors for Leafy Plants

Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Livestock (Meat) Fodder

Harvest Time = t - 1.78E-01 yr; Consumption Time = t - 5.48E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.602E+00	1.178E+00	1.054E+00	1.021E+00	1.012E+00	1.011E+00	1.002E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Livestock (Milk) Fodder

Harvest Time = t - 1.26E-01 yr; Consumption Time = t - 2.74E-03 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.566E+00	1.175E+00	1.054E+00	1.021E+00	1.012E+00	1.011E+00	1.002E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Meat

Harvest Time = t - 5.48E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF45(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.161E+00	1.060E+00	1.019E+00	1.008E+00	1.004E+00	1.004E+00	1.001E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

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Storage Time Correction Factors for Milk

Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF45(j,2,t)# At Time in Years								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.020E+00	1.008E+00	1.003E+00	1.001E+00	1.001E+00	1.001E+00	1.000E+00	

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Fish & Crustacea

Harvest Time = t - 1.92E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CFF(j,1,t)# At Time in Years								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.995E-01	

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Area and Depth Factors for Plant (p=3), Meat (p=4), and Milk (p=5) Pathways
Ditch Irrigation (q=3)

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Area and Depth Factors for Plant (p=3), Meat (p=4), and Milk (p=5) Pathways
Overhead Irrigation (q=4)

Area Factor for Plant Foods [FA(3)] = 0.50

The Depth Factor Value

$FD(i,p,q,t) = 1.0000E+00$

is applicable for all radionuclides(i) and times(t).

Area and Depth Factors for Meat (p=4) and Milk (p=5) Pathways
Transfer from Livestock Water (q=5) and Soil (q=6) Intake

Area Factor for Meat and Milk [FA(p),p=4,5] = 0.06

The livestock water subpathway (q=5) and livestock soil intake subpathway (q=6)
occur only for the meat (p=4) and milk (p=5) pathways.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,1,t) At Time in Years (g/yr)						
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02
Ra-226+D	Ra-226+D	1.321E-03	3.480E+03	3.468E+03	3.443E+03	3.357E+03	3.124E+03	2.429E+03	1.183E+03
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	2.942E+01	7.963E+01	2.285E+02	4.846E+02	6.048E+02	3.103E+02

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (c=2)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,2,t) At Time in Years (g/yr)						
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02
Ra-226+D	Ra-226+D	1.321E-03	8.455E-02	8.426E-02	8.365E-02	8.157E-02	7.591E-02	5.901E-02	2.873E-02
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	2.580E-03	7.463E-03	2.194E-02	4.685E-02	5.858E-02	3.006E-02

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,3,t) * SF(j,t) At Time in Years (g/yr)						
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02
Ra-226+D	Ra-226+D	1.321E-03	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	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,4,t) * SF(j,t) At Time in Years (g/yr)						
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02
Ra-226+D	Ra-226+D	1.321E-03	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	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	1.071E+01	1.068E+01	1.060E+01	1.034E+01	9.620E+00	7.478E+00	3.641E+00	1.630E-01
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	1.044E-01	2.278E-01	5.936E-01	1.222E+00	1.512E+00	7.751E-01	3.471E-02

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	1.047E-03	1.044E-03	1.037E-03	1.011E-03	9.407E-04	7.313E-04	3.561E-04	2.869E-05
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	2.593E-05	7.433E-05	2.178E-04	4.647E-04	5.810E-04	2.981E-04	2.402E-05

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.080E-03
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.567E-04

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.189E-01
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.197E-01

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,5,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.725E-01
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.104E-01

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	1.265E+01	1.261E+01	1.252E+01	1.221E+01	1.136E+01	8.831E+00	4.300E+00	1.925E-01
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	4.080E-02	9.551E-02	2.576E-01	5.365E-01	6.658E-01	3.414E-01	1.529E-02

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	1.237E-03	1.233E-03	1.224E-03	1.194E-03	1.111E-03	8.636E-04	4.205E-04	3.388E-05
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	1.140E-05	3.284E-05	9.637E-05	2.057E-04	2.572E-04	1.320E-04	1.064E-05

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.276E-03
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.879E-05

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.085E+00
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.300E-01

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,5,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.741E+00
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.683E-01

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Fish Pathway (p=6)

Parent (i)	Product (j)	DCF(j,6)*	ETF(j,6,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.854E-01
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.425E+00

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Drinking Water Pathway (p=7)

Parent (i)	Product (j)	DCF(j,7)*	ETF(j,7,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.650E+02
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.803E+02

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	4.589E+00	4.573E+00	4.540E+00	4.427E+00	4.119E+00	3.202E+00	1.559E+00	6.972E-02
Ra-226+D	Pb-210+D	1.000E+00	1.150E-01	3.077E-01	6.664E-01	1.729E+00	3.556E+00	4.396E+00	2.254E+00	1.008E-01
Ra-226+D	ΣDSR(j)		4.704E+00	4.880E+00	5.206E+00	6.156E+00	7.675E+00	7.598E+00	3.813E+00	1.705E-01

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.115E-04	1.111E-04	1.103E-04	1.076E-04	1.001E-04	7.780E-05	3.788E-05	3.052E-06
Ra-226+D	Pb-210+D	1.000E+00	9.445E-06	2.788E-05	6.275E-05	1.661E-04	3.438E-04	4.258E-04	2.184E-04	1.759E-05
Ra-226+D	ΣDSR(j)		1.209E-04	1.390E-04	1.730E-04	2.736E-04	4.438E-04	5.036E-04	2.562E-04	2.065E-05

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	1.023E-03
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	9.980E-04
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.021E-03

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,4t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	9.800E-02
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	3.807E-01
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.787E-01

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)
Total for All Subpathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	4.589E+00	4.573E+00	4.540E+00	4.427E+00	4.120E+00	3.202E+00	1.559E+00	1.688E-01
Ra-226+D	Pb-210+D	1.000E+00	1.150E-01	3.077E-01	6.664E-01	1.729E+00	3.556E+00	4.397E+00	2.254E+00	4.825E-01
Ra-226+D	ΣDSR(j)		4.704E+00	4.880E+00	5.206E+00	6.156E+00	7.676E+00	7.599E+00	3.813E+00	6.513E-01

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.413E-02	1.408E-02	1.398E-02	1.363E-02	1.268E-02	9.860E-03	4.801E-03	2.147E-04
Ra-226+D	Pb-210+D	1.000E+00	4.820E-04	9.896E-04	1.871E-03	4.483E-03	8.966E-03	1.099E-02	5.630E-03	2.519E-04
Ra-226+D	ΣDSR(j)		1.461E-02	1.507E-02	1.585E-02	1.811E-02	2.165E-02	2.085E-02	1.043E-02	4.666E-04

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.382E-06	1.377E-06	1.367E-06	1.333E-06	1.240E-06	9.642E-07	4.695E-07	3.783E-08
Ra-226+D	Pb-210+D	1.000E+00	9.585E-08	2.789E-07	6.246E-07	1.649E-06	3.410E-06	4.223E-06	2.165E-06	1.745E-07
Ra-226+D	ΣDSR(j)		1.478E-06	1.656E-06	1.992E-06	2.982E-06	4.650E-06	5.187E-06	2.635E-06	2.123E-07

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	1.427E-06
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	1.140E-06
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.567E-06

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,4t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	1.214E-03
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	3.782E-03
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.996E-03

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,5t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-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	4.921E-04
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	1.531E-03
Ra-226+D	ΣDSR(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	2.023E-03

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226+D	Ra-226+D	1.000E+00	1.673E-02	1.667E-02	1.655E-02	1.614E-02	1.502E-02	1.167E-02	5.684E-03	1.993E-03	
Ra-226+D	Pb-210+D	1.000E+00	6.622E-04	1.514E-03	3.046E-03	7.584E-03	1.538E-02	1.893E-02	9.702E-03	5.894E-03	
Ra-226+D	ΣDSR(j)		1.739E-02	1.818E-02	1.959E-02	2.372E-02	3.039E-02	3.060E-02	1.539E-02	7.887E-03	

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.669E-02	1.663E-02	1.651E-02	1.610E-02	1.498E-02	1.164E-02	5.670E-03	2.536E-04
Ra-226+D	Pb-210+D	1.000E+00	1.797E-04	3.989E-04	7.896E-04	1.947E-03	3.936E-03	4.839E-03	2.480E-03	1.109E-04
Ra-226+D	ΣDSR(j)		1.686E-02	1.703E-02	1.730E-02	1.804E-02	1.891E-02	1.648E-02	8.150E-03	3.645E-04

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.632E-06	1.626E-06	1.614E-06	1.574E-06	1.465E-06	1.139E-06	5.545E-07	4.467E-08
Ra-226+D	Pb-210+D	1.000E+00	4.193E-08	1.229E-07	2.760E-07	7.297E-07	1.510E-06	1.870E-06	9.588E-07	7.726E-08
Ra-226+D	ΣDSR(j)		1.674E-06	1.749E-06	1.890E-06	2.304E-06	2.975E-06	3.009E-06	1.513E-06	1.219E-07

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	1.686E-06
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	5.006E-07
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.187E-06

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,4t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	1.434E-03
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	1.674E-03
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.107E-03

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,5t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	2.300E-03
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	2.680E-03
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.980E-03

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	2.048E-02	2.041E-02	2.026E-02	1.975E-02	1.838E-02	1.429E-02	6.958E-03	4.093E-03
Ra-226+D	Pb-210+D	1.000E+00	2.771E-04	6.846E-04	1.431E-03	3.643E-03	7.445E-03	9.186E-03	4.709E-03	4.644E-03
Ra-226+D	ΣDSR(j)		2.075E-02	2.109E-02	2.169E-02	2.340E-02	2.583E-02	2.348E-02	1.167E-02	8.737E-03

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from the Ingestion of Fish (p=6)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,6,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	7.733E-04
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	1.037E-02
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.114E-02

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from the Ingestion of Drinking Water (p=7)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,7,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-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	1.275E+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	4.950E+00
Ra-226+D	ΣDSR(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	6.225E+00

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

Area Factor for Mass Loading [FA(2)]: 1.365E-01

FAR(i,p,q,k) is the plant/air concentration ratio for airborne contaminated dust, and FWR(i,p,q,k) is the plant/water concentration ratio. See groundwater displays for water/soil concentration ratios.

Nonleafy (k=1) and/or Leafy (k=2) Vegetables

Ditch Irrigation ($q=3$)Overhead Irrigation ($q=4$) and Nonleafy Vegetables ($k=1$)[illegible]

Plant/Soil Concentration Ratio, FSR(j,3,q,k,t)
Overhead Irrigation (q=4) and Leafy Vegetables (k=2)

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Meat/Fodder, Milk/Fodder, Fodder/Air and Fodder/Water Concentration Ratios

FI(4,q): 68.0 kg/day FI(5,q): 55.0 kg/day q=1,2,3,4
 FI(4,q): 50.0 L/day FI(5,q): 160.0 L/day q=5
 FI(4,q): 0.5 kg/day FI(5,q):

Nuclide (i)	FQR(i,4) d/kg	FQR(i,5) d/kg	FAR(i,3,2,3) m**3/g	FWR(i,3,3,3) L/g	FWR(i,3,4,3) L/g
Pb-210	8.0000E-04	3.0000E-04	2.8659E-01	5.3329E-07	1.8139E-03
Ra-226	1.0000E-03	1.0000E-03	2.8659E-01	2.1329E-06	1.8139E-03

FI(p,q) are the fodder (q=1,2,3,4), livestock water (q=5) and soil (q=6) intake rates;

FQR(i,p) are the transfer coefficients from contaminated fodder of livestock water to meat (p=4) or milk (p=5). FAR(i,3,2,3) are the fodder/air concentration ratios, and FWR(i,3,3,3) and FWR(i,3,4,3) are the fodder/water concentration ratios for ditch and overhead irrigation, respectively.

[illegible]

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Soil Ingestion Pathway (p=8)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,8,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	3.609E-02	3.597E-02	3.571E-02	3.482E-02	3.240E-02	2.519E-02	1.226E-02	9.881E-04
Ra-226+D	Pb-210+D	1.000E+00	3.058E-03	9.025E-03	2.032E-02	5.377E-02	1.113E-01	1.379E-01	7.069E-02	5.696E-03
Ra-226+D	ΣDSR(j)		3.915E-02	4.499E-02	5.602E-02	8.859E-02	1.437E-01	1.630E-01	8.296E-02	6.684E-03

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

Dose Conversion and Environmental Transport Factors for the Soil Ingestion Pathway (p=8)

Parent (i)	Product (j)	DCF(j,8)*	ETF(j,8,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01
Ra-226+D	Pb-210+D	7.276E-03	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01

* - The dose conversion factor units are mrem/pCi.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
Summary of Pathway Selections	7
Contaminated Zone and Total Dose Summary	8
Total Dose Components	
Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
Time = 1.000E+03	16
Dose/Source Ratios Summed Over All Pathways	17
Single Radionuclide Soil Guidelines	17
Dose Per Nuclide Summed Over All Pathways	18
Soil Concentration Per Nuclide	18

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(11)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(1)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(2)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(1)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(2)
D-34	Food transfer factors:			
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(2,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(2,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(2,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(2,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(2,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETEG table in Ground Pathway of Detailed Report.

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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

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)	1.000E+01	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	5.000E+00	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(2)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(2)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+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)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.000E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	1.000E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	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)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-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	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUC(2,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.165E-03	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUC(1,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.217E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	7.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	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	-1 shows non-circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	3.333E-01	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m), ring 2:	6.667E-01	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m), ring 3:	1.000E+00	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m), ring 4:	1.333E+00	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m), ring 5:	1.667E+00	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m), ring 6:	2.000E+00	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m), ring 7:	2.333E+00	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m), ring 8:	2.667E+00	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m), ring 9:	3.000E+00	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m), ring 10:	3.333E+00	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	3.667E+00	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	4.000E+00	0.000E+00	---	RAD_SHAPE(12)

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

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	9.000E-01	1.000E+00	---	FRACA(1)
R017	Ring 2	9.000E-01	2.732E-01	---	FRACA(2)
R017	Ring 3	9.000E-01	0.000E+00	---	FRACA(3)
R017	Ring 4	6.500E-01	0.000E+00	---	FRACA(4)
R017	Ring 5	4.300E-01	0.000E+00	---	FRACA(5)
R017	Ring 6	3.400E-01	0.000E+00	---	FRACA(6)
R017	Ring 7	2.500E-01	0.000E+00	---	FRACA(7)
R017	Ring 8	1.200E-01	0.000E+00	---	FRACA(8)
R017	Ring 9	1.100E-01	0.000E+00	---	FRACA(9)
R017	Ring 10	8.500E-02	0.000E+00	---	FRACA(10)
R017	Ring 11	4.300E-03	0.000E+00	---	FRACA(11)
R017	Ring 12	0.000E+00	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
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-02	FPLANT
R018	Contamination fraction of meat	-1	-1	0.500E-03	FMEAT
R018	Contamination fraction of milk	-1	-1	0.500E-03	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)

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

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	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
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	---	TFFL
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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

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	257	---	---	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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	10.00 square meters	Ra-226	1.000E+00
Thickness:	1.50 meters		
Cover Depth:	0.00 meters		

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	2.471E+00	2.465E+00	2.451E+00	2.401E+00	2.255E+00	1.771E+00	8.634E-01	1.946E-01
M(t):	1.648E-01	1.643E-01	1.634E-01	1.601E-01	1.504E-01	1.180E-01	5.756E-02	1.297E-02

Maximum TDOSE(t): 2.471E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
Ra-226	2.423E+00	0.9806	2.754E-04	0.0001	0.000E+00	0.0000	4.704E-02	0.0190	1.391E-04	0.0001	1.660E-04	0.0001	3.915E-04	0.0002
Total	2.423E+00	0.9806	2.754E-04	0.0001	0.000E+00	0.0000	4.704E-02	0.0190	1.391E-04	0.0001	1.660E-04	0.0001	3.915E-04	0.0002

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- 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.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.471E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.471E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.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- 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.
Ra-226	2.415E+00	0.9798	2.959E-04	0.0001	0.000E+00	0.0000	4.880E-02	0.0198	1.454E-04	0.0001	1.687E-04	0.0001	4.499E-04	0.0002
Total	2.415E+00	0.9798	2.959E-04	0.0001	0.000E+00	0.0000	4.880E-02	0.0198	1.454E-04	0.0001	1.687E-04	0.0001	4.499E-04	0.0002

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- 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.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.465E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.465E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
Ra-226	2.397E+00	0.9783	3.346E-04	0.0001	0.000E+00	0.0000	5.206E-02	0.0212	1.567E-04	0.0001	1.735E-04	0.0001	5.602E-04	0.0002
Total	2.397E+00	0.9783	3.346E-04	0.0001	0.000E+00	0.0000	5.206E-02	0.0212	1.567E-04	0.0001	1.735E-04	0.0001	5.602E-04	0.0002

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

Water Dependent Pathways

Radio- 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.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.451E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.451E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

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

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
Ra-226	2.338E+00	0.9737	4.482E-04	0.0002	0.000E+00	0.0000	6.156E-02	0.0256	1.837E-04	0.0001	1.872E-04	0.0001	8.859E-04	0.0004
Total	2.338E+00	0.9737	4.482E-04	0.0002	0.000E+00	0.0000	6.156E-02	0.0256	1.837E-04	0.0001	1.872E-04	0.0001	8.859E-04	0.0004

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

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

Water Dependent Pathways

Radio- 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.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.401E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.401E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
Ra-226	2.176E+00	0.9648	6.369E-04	0.0003	0.000E+00	0.0000	7.676E-02	0.0340	2.431E-04	0.0001	2.066E-04	0.0001	1.437E-03	0.0006
Total	2.176E+00	0.9648	6.369E-04	0.0003	0.000E+00	0.0000	7.676E-02	0.0340	2.431E-04	0.0001	2.066E-04	0.0001	1.437E-03	0.0006

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

Radio- 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.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.255E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.255E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
Ra-226	1.692E+00	0.9555	6.794E-04	0.0004	0.000E+00	0.0000	7.599E-02	0.0429	2.448E-04	0.0001	1.878E-04	0.0001	1.630E-03	0.0009
Total	1.692E+00	0.9555	6.794E-04	0.0004	0.000E+00	0.0000	7.599E-02	0.0429	2.448E-04	0.0001	1.878E-04	0.0001	1.630E-03	0.0009

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

Water Dependent Pathways

Radio- 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.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.771E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.771E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
Ra-226	8.239E-01	0.9542	3.436E-04	0.0004	0.000E+00	0.0000	3.813E-02	0.0442	1.231E-04	0.0001	9.333E-05	0.0001	8.296E-04	0.0010
Total	8.239E-01	0.9542	3.436E-04	0.0004	0.000E+00	0.0000	3.813E-02	0.0442	1.231E-04	0.0001	9.333E-05	0.0001	8.296E-04	0.0010

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

Water Dependent Pathways

Radio- 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.
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.634E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.634E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
Ra-226	6.618E-02	0.3401	2.769E-05	0.0001	0.000E+00	0.0000	1.705E-03	0.0088	6.926E-06	0.0000	5.183E-06	0.0000	6.684E-05	0.0003
Total	6.618E-02	0.3401	2.769E-05	0.0001	0.000E+00	0.0000	1.705E-03	0.0088	6.926E-06	0.0000	5.183E-06	0.0000	6.684E-05	0.0003

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

Water Dependent Pathways

Radio- 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.
Ra-226	1.264E-01	0.6496	9.092E-05	0.0005	0.000E+00	0.0000	9.760E-05	0.0005	1.140E-06	0.0000	1.303E-06	0.0000	1.946E-01	1.0000
Total	1.264E-01	0.6496	9.092E-05	0.0005	0.000E+00	0.0000	9.760E-05	0.0005	1.140E-06	0.0000	1.303E-06	0.0000	1.946E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

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

Parent	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226+D	Ra-226+D	1.000E+00	2.470E+00	2.461E+00	2.444E+00	2.383E+00	2.217E+00	1.724E+00	8.393E-01	9.206E-02	
Ra-226+D	Pb-210+D	1.000E+00	1.221E-03	3.282E-03	7.122E-03	1.850E-02	3.805E-02	4.705E-02	2.412E-02	1.025E-01	
Ra-226+D	ΣDSR(j)		2.471E+00	2.465E+00	2.451E+00	2.401E+00	2.255E+00	1.771E+00	8.634E-01	1.946E-01	

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

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Nuclide (i)	t = 0.000E+00 1.000E+00 3.000E+00 1.000E+01 3.000E+01 1.000E+02 3.000E+02 1.000E+03								
Ra-226	6.070E+00	6.086E+00	6.121E+00	6.247E+00	6.651E+00	8.471E+00	1.737E+01	7.709E+01	

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin) G(i,tmin) DSR(i,tmax) G(i,tmax)			
				(pCi/g)		(pCi/g)
Ra-226	1.000E+00	0.000E+00	2.471E+00	6.070E+00	2.471E+00	6.070E+00

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

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

Nuclide Parent			DOSE(j,t), mrem/yr							
(j)	(i)	THF(i)	t= 0.000E+00 1.000E+00 3.000E+00 1.000E+01 3.000E+01 1.000E+02 3.000E+02 1.000E+03							
Ra-226	Ra-226	1.000E+00	2.470E+00	2.461E+00	2.444E+00	2.383E+00	2.217E+00	1.724E+00	8.393E-01	9.206E-02
Pb-210	Ra-226	1.000E+00	1.221E-03	3.282E-03	7.122E-03	1.850E-02	3.805E-02	4.705E-02	2.412E-02	1.025E-01

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide Parent			S(j,t), pCi/g							
(j)	(i)	THF(i)	t= 0.000E+00 1.000E+00 3.000E+00 1.000E+01 3.000E+01 1.000E+02 3.000E+02 1.000E+03							
Ra-226	Ra-226	1.000E+00	1.000E+00	9.964E-01	9.893E-01	9.647E-01	8.977E-01	6.978E-01	3.398E-01	2.737E-02
Pb-210	Ra-226	1.000E+00	0.000E+00	3.052E-02	8.826E-02	2.594E-01	5.540E-01	6.928E-01	3.555E-01	2.865E-02

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

RESCALC.EXE execution time = 3.42 seconds

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Table of Contents

Part II: Source Terms, Factors, and Parameters for Individual Pathways

Iteration Logs

Maximum Ra-226 Dose/Source Ratio	3
Maximum Total Dose	13

Source Factors for Ingrowth and Decay

Radioactivity Only	23
Combined Radioactivity and Leaching	23

Ground Pathway

Source Term Parameters	24
Time Dependence of Source Geometry	24
Occupancy, Cover/Depth, and Area Factors	25
Dose Conversion and Environmental Transport Factors .	25
Dose/Source Ratios	26

Inhalation Pathway (radon excluded)

Dose/Source Ratios	27
Pathway Factors	27
Dose Conversion and Environmental Transport Factors .	27

Radon Pathway

Flux and Parameters	28
Concentration and Parameters	29
Working Levels	30
Dose/Source Ratios	31

Groundwater and Surface Water Pathway Segments

Transport Time Parameters for Unsaturated Zone Strata	32
Dilution Factor and Rise Time Parameters for	
Nondispersion (ND) Model	33
Primary Parameters Used to Calculate Ratios	33
Water/Soil Concentration Ratios	34

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Table of Contents (cont.)

Part II: Source Terms, Factors, and Parameters for Individual Pathways

Food Pathways

Storage Times for Contaminated Foodstuffs	35
Storage Time Ingrowth and Decay Factors	35
Storage Correction Factors	
Drinking Water	36
Irrigation Water	36
Livestock Water	37
Plants	37
Livestock Fodder	38
Meat and Milk	38
Fish and Crustacea	39
Area and Depth Factors	40
Dose Conversion and Environmental Transport Factors	
Plant	42
Meat	43
Milk	45
Fish	47
Drinking Water	47
Dose/Source Ratios	
Plant	48
Plant Total	49
Meat	50
Meat Total	51
Milk	52
Milk Total	53
Fish	54
Drinking Water	55
Concentration Ratios	
Plant/Air and Plant/Water	56
Plant/Soil	56
Meat/Fodder, Fodder/Air, Fodder/Water	58
Fodder/Soil	59
Meat/Soil	60
Milk/Soil	61

Soil Ingestion Pathway

Dose/Source Ratios.....	62
Dose Conversion and Environmental Transport Factors .	62

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Ra-226 Dose/Source Ratio
 Pathway: Inhale (excluding Radon)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	7.01704E+01	7.14620E-04		
1	6.55287E+01	7.15963E-04	-4.64173E+00	parabolic
2	6.46276E+01	7.16029E-04	-9.01085E-01	parabolic
3	6.41423E+01	7.16036E-04	-4.85272E-01	parabolic
4	6.42095E+01	7.16036E-04	6.72374E-02	parabolic
5	6.42737E+01	7.16036E-04	6.42095E-02	parabolic
6	6.42095E+01	7.16036E-04	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Ra-226 Dose/Source Ratio

Pathway: Plant (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	5.37984E+01	8.16206E-02		
1	5.77979E+01	8.16538E-02	3.99946E+00	parabolic
2	5.67763E+01	8.16605E-02	-1.02160E+00	parabolic
3	5.66324E+01	8.16606E-02	-1.43873E-01	parabolic
4	5.65757E+01	8.16606E-02	-1.89142E-02	parabolic
5	5.65192E+01	8.16606E-02	-5.65758E-02	parabolic
6	5.65757E+01	8.16606E-02	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Ra-226 Dose/Source Ratio
 Pathway: Meat (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	5.37984E+01	2.61347E-04		
1	5.95237E+01	2.61708E-04	5.72530E+00	parabolic
2	5.88603E+01	2.61721E-04	-6.63363E-01	parabolic
3	5.85864E+01	2.61723E-04	-2.73903E-01	parabolic
4	5.85278E+01	2.61723E-04	-3.92648E-02	parabolic
5	5.84693E+01	2.61723E-04	-5.85278E-02	parabolic
6	5.85278E+01	2.61723E-04	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Ra-226 Dose/Source Ratio
 Pathway: Milk (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	4.12463E+01	2.09319E-04		
1	4.43485E+01	2.09388E-04	3.10228E+00	parabolic
2	4.37789E+01	2.09394E-04	-5.69622E-01	parabolic
3	4.36691E+01	2.09394E-04	-1.09813E-01	parabolic
4	4.36254E+01	2.09394E-04	-1.50278E-02	parabolic
5	4.35818E+01	2.09394E-04	-4.36254E-02	parabolic
6	4.36254E+01	2.09394E-04	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Ra-226 Dose/Source Ratio
 Pathway: Soil

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	7.01704E+01	1.69875E-03		
1	7.11418E+01	1.69843E-03	9.71427E-01	parabolic
2	6.93083E+01	1.69887E-03	-8.62069E-01	parabolic
3	6.90107E+01	1.69888E-03	-2.97581E-01	parabolic
4	6.90797E+01	1.69888E-03	2.00064E-02	parabolic
5	6.89417E+01	1.69888E-03	-6.90107E-02	parabolic
6	6.90107E+01	1.69888E-03	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Ra-226 Dose/Source Ratio

Pathway: Water

Tolerance for tmax = .1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	5.87802E+02	4.49593E-01		
1	4.94738E+02	8.29527E-02	-9.30640E+01	parabolic
2	6.56778E+02	4.99180E-01	6.89761E+01	parabolic
3	6.50172E+02	5.17498E-01	-6.60607E+00	parabolic
4	6.28710E+02	5.45637E-01	-2.14614E+01	parabolic
5	6.26853E+02	5.48937E-01	-1.85729E+00	parabolic
6	6.11937E+02	5.23117E-01	-1.49163E+01	golden section
7	6.23533E+02	5.45021E-01	-3.31973E+00	parabolic
8	6.26226E+02	5.48171E-01	-6.27118E-01	parabolic
9	6.27480E+02	5.48995E-01	6.26853E-01	parabolic

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Ra-226 Dose/Source Ratio

Pathway: Fish

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	5.87802E+02	3.18599E-04		
1	4.98904E+02	6.78419E-05	-8.88972E+01	parabolic
2	6.57998E+02	3.57078E-04	7.01967E+01	parabolic
3	6.52057E+02	3.71844E-04	-5.94096E+00	parabolic
4	6.28706E+02	3.91602E-04	-2.33519E+01	parabolic
5	6.13082E+02	3.74001E-04	-1.56239E+01	golden section
6	6.32023E+02	3.85770E-04	3.31726E+00	parabolic
7	6.24592E+02	3.90967E-04	-4.11326E+00	parabolic
8	6.27134E+02	3.94120E-04	-1.57113E+00	golden section
9	6.26507E+02	3.93374E-04	-3.73852E-01	parabolic
10	6.27762E+02	3.93731E-04	6.27135E-01	parabolic
11	6.27134E+02	3.94120E-04	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Ra-226 Dose/Source Ratio
 Pathway: Plant (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	5.87802E+02	3.47160E-04		
1	4.94770E+02	6.41391E-05	-9.30320E+01	parabolic
2	6.56787E+02	3.85484E-04	6.89850E+01	parabolic
3	6.50189E+02	3.99572E-04	-6.59761E+00	parabolic
4	6.28734E+02	4.21347E-04	-2.14551E+01	parabolic
5	6.26758E+02	4.23761E-04	-1.97628E+00	parabolic
6	6.11878E+02	4.03806E-04	-1.48799E+01	golden section
7	6.23728E+02	4.21021E-04	-3.02982E+00	parabolic
8	6.26131E+02	4.23176E-04	-4.50128E-01	parabolic
9	6.27385E+02	4.24017E-04	6.26758E-01	parabolic
10	6.28012E+02	4.23032E-04	5.15458E-01	golden section
11	6.27385E+02	4.24017E-04	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Ra-226 Dose/Source Ratio

Pathway: Meat (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	5.87802E+02	4.06557E-06		
1	4.93951E+02	7.29239E-07	-9.38510E+01	parabolic
2	6.56537E+02	4.50613E-06	6.87353E+01	parabolic
3	6.49804E+02	4.66043E-06	-6.73279E+00	parabolic
4	6.28945E+02	4.91810E-06	-2.08596E+01	parabolic
5	6.13229E+02	4.76137E-06	-1.57152E+01	golden section
6	6.29573E+02	4.90258E-06	3.11504E-01	parabolic
7	6.23440E+02	4.91805E-06	-5.50503E+00	parabolic
8	6.26842E+02	4.94849E-06	-2.10272E+00	golden section
9	6.26193E+02	4.94244E-06	-6.48741E-01	parabolic
10	6.27469E+02	4.95141E-06	6.26842E-01	parabolic
11	6.28096E+02	4.94075E-06	6.27469E-01	parabolic
12	6.27469E+02	4.95141E-06	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Ra-226 Dose/Source Ratio
 Pathway: Milk (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	5.87802E+02	4.76254E-06		
1	4.87696E+02	6.60290E-07	-1.00106E+02	parabolic
2	6.54556E+02	5.19676E-06	6.67546E+01	parabolic
3	6.46392E+02	5.34227E-06	-8.16380E+00	parabolic
4	6.29011E+02	5.64132E-06	-1.73811E+01	parabolic
5	6.13271E+02	5.55571E-06	-1.57407E+01	golden section
6	6.25119E+02	5.68197E-06	-3.89270E+00	parabolic
7	6.23169E+02	5.68039E-06	-1.94920E+00	parabolic
8	6.25744E+02	5.68270E-06	6.25119E-01	parabolic
9	6.26992E+02	5.68434E-06	1.24810E+00	golden section
10	6.27763E+02	5.67590E-06	7.71369E-01	golden section
11	6.26992E+02	5.68434E-06	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Inhale (excluding Radon)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	7.01704E+01	7.14620E-04		
1	6.55287E+01	7.15963E-04	-4.64173E+00	parabolic
2	6.46276E+01	7.16029E-04	-9.01085E-01	parabolic
3	6.41423E+01	7.16036E-04	-4.85272E-01	parabolic
4	6.42095E+01	7.16036E-04	6.72374E-02	parabolic
5	6.42737E+01	7.16036E-04	6.42095E-02	parabolic
6	6.42095E+01	7.16036E-04	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Plant (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	5.37984E+01	8.16206E-02		
1	5.77979E+01	8.16538E-02	3.99946E+00	parabolic
2	5.67763E+01	8.16605E-02	-1.02160E+00	parabolic
3	5.66324E+01	8.16606E-02	-1.43873E-01	parabolic
4	5.65757E+01	8.16606E-02	-1.89142E-02	parabolic
5	5.65192E+01	8.16606E-02	-5.65758E-02	parabolic
6	5.65757E+01	8.16606E-02	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Meat (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	5.37984E+01	2.61347E-04		
1	5.95237E+01	2.61708E-04	5.72530E+00	parabolic
2	5.88603E+01	2.61721E-04	-6.63363E-01	parabolic
3	5.85864E+01	2.61723E-04	-2.73903E-01	parabolic
4	5.85278E+01	2.61723E-04	-3.92648E-02	parabolic
5	5.84693E+01	2.61723E-04	-5.85278E-02	parabolic
6	5.85278E+01	2.61723E-04	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Milk (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDose(t) (mrem/yr)	Step Size (years)	Step Type
0	4.12463E+01	2.09319E-04		
1	4.43485E+01	2.09388E-04	3.10228E+00	parabolic
2	4.37789E+01	2.09394E-04	-5.69622E-01	parabolic
3	4.36691E+01	2.09394E-04	-1.09813E-01	parabolic
4	4.36254E+01	2.09394E-04	-1.50278E-02	parabolic
5	4.35818E+01	2.09394E-04	-4.36254E-02	parabolic
6	4.36254E+01	2.09394E-04	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDose(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDose(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Soil

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDose(t) (mrem/yr)	Step Size (years)	Step Type
0	7.01704E+01	1.69875E-03		
1	7.11418E+01	1.69843E-03	9.71427E-01	parabolic
2	6.93083E+01	1.69887E-03	-8.62069E-01	parabolic
3	6.90107E+01	1.69888E-03	-2.97581E-01	parabolic
4	6.90797E+01	1.69888E-03	2.00064E-02	parabolic
5	6.89417E+01	1.69888E-03	-6.90107E-02	parabolic
6	6.90107E+01	1.69888E-03	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDose(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDose(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Water

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	5.87802E+02	4.49593E-01		
1	4.94738E+02	8.29527E-02	-9.30640E+01	parabolic
2	6.56778E+02	4.99180E-01	6.89761E+01	parabolic
3	6.50172E+02	5.17498E-01	-6.60607E+00	parabolic
4	6.28710E+02	5.45637E-01	-2.14614E+01	parabolic
5	6.26853E+02	5.48937E-01	-1.85729E+00	parabolic
6	6.11937E+02	5.23117E-01	-1.49163E+01	golden section
7	6.23533E+02	5.45021E-01	-3.31973E+00	parabolic
8	6.26226E+02	5.48171E-01	-6.27118E-01	parabolic
9	6.27480E+02	5.48995E-01	6.26853E-01	parabolic

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Fish

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	5.87802E+02	3.18599E-04		
1	4.98904E+02	6.78419E-05	-8.88972E+01	parabolic
2	6.57998E+02	3.57078E-04	7.01967E+01	parabolic
3	6.52057E+02	3.71844E-04	-5.94096E+00	parabolic
4	6.28706E+02	3.91602E-04	-2.33519E+01	parabolic
5	6.13082E+02	3.74001E-04	-1.56239E+01	golden section
6	6.32023E+02	3.85770E-04	3.31726E+00	parabolic
7	6.24592E+02	3.90967E-04	-4.11326E+00	parabolic
8	6.27134E+02	3.94120E-04	-1.57113E+00	golden section
9	6.26507E+02	3.93374E-04	-3.73852E-01	parabolic
10	6.27762E+02	3.93731E-04	6.27135E-01	parabolic
11	6.27134E+02	3.94120E-04	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Plant (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	5.87802E+02	3.47160E-04		
1	4.94770E+02	6.41391E-05	-9.30320E+01	parabolic
2	6.56787E+02	3.85484E-04	6.89850E+01	parabolic
3	6.50189E+02	3.99572E-04	-6.59761E+00	parabolic
4	6.28734E+02	4.21347E-04	-2.14551E+01	parabolic
5	6.26758E+02	4.23761E-04	-1.97628E+00	parabolic
6	6.11878E+02	4.03806E-04	-1.48799E+01	golden section
7	6.23728E+02	4.21021E-04	-3.02982E+00	parabolic
8	6.26131E+02	4.23176E-04	-4.50128E-01	parabolic
9	6.27385E+02	4.24017E-04	6.26758E-01	parabolic
10	6.28012E+02	4.23032E-04	5.15458E-01	golden section
11	6.27385E+02	4.24017E-04	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Meat (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	5.87802E+02	4.06557E-06		
1	4.93951E+02	7.29239E-07	-9.38510E+01	parabolic
2	6.56537E+02	4.50613E-06	6.87353E+01	parabolic
3	6.49804E+02	4.66043E-06	-6.73279E+00	parabolic
4	6.28945E+02	4.91810E-06	-2.08596E+01	parabolic
5	6.13229E+02	4.76137E-06	-1.57152E+01	golden section
6	6.29573E+02	4.90258E-06	3.11504E-01	parabolic
7	6.23440E+02	4.91805E-06	-5.50503E+00	parabolic
8	6.26842E+02	4.94849E-06	-2.10272E+00	golden section
9	6.26193E+02	4.94244E-06	-6.48741E-01	parabolic
10	6.27469E+02	4.95141E-06	6.26842E-01	parabolic
11	6.28096E+02	4.94075E-06	6.27469E-01	parabolic
12	6.27469E+02	4.95141E-06	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Milk (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	5.87802E+02	4.76254E-06		
1	4.87696E+02	6.60290E-07	-1.00106E+02	parabolic
2	6.54556E+02	5.19676E-06	6.67546E+01	parabolic
3	6.46392E+02	5.34227E-06	-8.16380E+00	parabolic
4	6.29011E+02	5.64132E-06	-1.73811E+01	parabolic
5	6.13271E+02	5.55571E-06	-1.57407E+01	golden section
6	6.25119E+02	5.68197E-06	-3.89270E+00	parabolic
7	6.23169E+02	5.68039E-06	-1.94920E+00	parabolic
8	6.25744E+02	5.68270E-06	6.25119E-01	parabolic
9	6.26992E+02	5.68434E-06	1.24810E+00	golden section
10	6.27763E+02	5.67590E-06	7.71369E-01	golden section
11	6.26992E+02	5.68434E-06	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Source Factors for Ingrowth and Decay
Radioactivity Factors Only
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	ID(j,t) = THF(j)*S1(j,t)/S1(i,0) At Time in Years								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	9.996E-01	9.987E-01	9.957E-01	9.871E-01	9.576E-01	8.781E-01	6.484E-01	
Ra-226+D	Pb-210+D	1.000E+00	0.000E+00	3.060E-02	8.897E-02	2.666E-01	6.019E-01	9.258E-01	8.904E-01	6.576E-01	

Source Factors for Ingrowth and Decay
Combined Radioactivity and Leaching Factors
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	SF(j, t) = THF(j)*S1(j, t)/S1(i, 0) At Time in Years								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	9.964E-01	9.893E-01	9.647E-01	8.977E-01	6.978E-01	3.398E-01	2.737E-02	
Ra-226+D	Pb-210+D	1.000E+00	0.000E+00	3.052E-02	8.826E-02	2.594E-01	5.540E-01	6.928E-01	3.555E-01	2.865E-02	

The effect of volatilization was also considered when computing the source factors for H-3 and C-14.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Parameters Used for Calculating Cover Depth and Contaminated Zone Thicknesses

Cover Erosion rate (vcv): 0.001000 m/yr
 Contaminated Zone Erosion rate (vcz): 0.001000 m/yr
 Water Table Drop rate (vwt): 0.001000 m/yr
 Precipitation rate (Pr): 1.000000 m/yr
 Cover Removal Time (Tc): 0.000E+00 yr
 Overhead irrigation rate (Irr): 0.200 m/yr Runoff coefficient (Cr): 0.200
 Evapotranspiration coeff. (Ce): 0.500 Infiltration rate (In): 0.500 m/yr
 Bulk soil density (rhob): 1.500 g/cm**3 Effective porosity (pe): 0.000

Radio- nuclide (i)	Distribution Coefficient Kd(i), cm**3/g	Leaching Ratio q(i)
Pb-210	1.000000E+02	2.135E-03
Ra-226	7.000000E+01	3.047E-03

Time Dependence of Source Geometry

Time Dependence of Cover Depth [Cd(i,t)]

Nuclide (i) t=		Cd(i,t) (meters)							
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
Ra-226		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Time Dependence of Contaminated Zone Thicknesses [T(i,t)]

Nuclide (i) t=		T(i,t) (meters)							
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210		1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01
Ra-226		1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Dose Conversion and Environmental Transport Factors for the Ground Pathway (p=1)

Nuclide (i)	DCF(i,1)*	ETFG(i,t) At Time in Years (dimensionless)							
		t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Po-218	5.642E-05	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.178E-01
Ra-226	3.176E-02	2.327E-01	2.327E-01	2.327E-01	2.327E-01	2.327E-01	2.327E-01	2.327E-01	2.327E-01
Rn-222	2.354E-03	2.202E-01	2.202E-01	2.202E-01	2.202E-01	2.202E-01	2.202E-01	2.202E-01	2.201E-01
Tl-210	0.000E+00	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01

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

Dose/Source Ratios for External Radiation from the Ground (p=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,1,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	2.423E+00	2.415E+00	2.397E+00	2.338E+00	2.175E+00	1.691E+00	8.234E-01	6.614E-02
Ra-226+D	Pb-210+D	1.000E+00	2.193E-05	6.472E-05	1.457E-04	3.856E-04	7.980E-04	9.885E-04	5.069E-04	4.084E-05
Ra-226+D	ΣDSR(j)		2.423E+00	2.415E+00	2.397E+00	2.338E+00	2.176E+00	1.692E+00	8.239E-01	6.618E-02

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Dose/Source Ratios for Inhalation Pathway, Excluding Radon (p=2)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,2,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226+D	Ra-226+D	1.000E+00	2.645E-04	2.635E-04	2.616E-04	2.551E-04	2.374E-04	1.845E-04	8.986E-05	7.240E-06	
Ra-226+D	Pb-210+D	1.000E+00	1.098E-05	3.240E-05	7.293E-05	1.930E-04	3.995E-04	4.949E-04	2.538E-04	2.045E-05	
Ra-226+D	ΣDSR(j)		2.754E-04	2.959E-04	3.346E-04	4.482E-04	6.369E-04	6.794E-04	3.436E-04	2.769E-05	

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

Pathway Factors for the Inhalation Pathway (radon excluded)

Area (A): 1.0000E+01 m**2 Occupancy Factor (FO2): 4.5000E-01

Area Factor (FA2): 8.1554E-02 Annual Air Intake (FI2): 8.4000E+03 m**3/yr

Cover Depth [Cd(0)]: 0.0000E+00 m Mass Loading (ASR2): 1.0000E-04 g/m**3

Contaminated Zone Thickness [T(0)]: 1.5000E+00 m FA2 * FO2 * FI2 * ASR2: 3.0827E-02 g/yr

Nuclide (i)	t=	Depth Factor [FD(i,2,t)] (dimensionless)							
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00

Dose Conversion and Environmental Transport Factors for the Inhalation Pathway, Excluding Radon (p=2)

Parent (i)	Product (j)	DCF(j,2) *	ETF(j,2,t) At Time in Years (g/yr)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226+D	Ra-226+D	8.594E-03	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	
Ra-226+D	Pb-210+D	2.320E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	

* - The dose conversion factor units are mrem/pCi.

* - Parameters are used only for indoor radon flux

[illegible]

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Outdoor Working Levels of Radon [WLOTD(i,t)]

Nuclide		WLOTD(i,t) (WL)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Indoor Working Levels of Radon [WLIND(i,t)]

Nuclide		WLIND(i,t) (WL)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Fraction of Time Spent Outdoors (FOTD): 2.500E-01

Fraction of Time Spent Indoors (FIND): 5.000E-01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Dose/Source Ratios for Radon Pathway (p=9)

Subpathway: Outdoor and Indoor Radon Flux

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,9,t) - DSRRNW(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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
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
Ra-226+D	ΣDSR(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

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

Dose/Source Ratios for Radon Pathway (p=9)

Subpathway: Indoor Radon from Water Usage

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSRRNW(j,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-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	
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	
Ra-226+D	ΣDSR(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	

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Transport Time Parameters for Unsaturated Zone Stratum No. 1

Stratum thickness [h(1)]: 4.000000 m
 Bulk soil material density [rhob(1)]: 1.500000 g/cm**3
 Effective porosity [peuz(1)]: 0.200000
 Hydraulic conductivity [Khuz(1)]: 10.000000 m/yr
 Total porosity [ptuz(1)]: 0.400000
 Soil specific b parameter [buz(1)]: 5.300000
 Saturation ratio [sruz(1)]: 0.802299

Radio-nuclide (i)	Distribution Coefficient Kduz(i,1), cm**3/g	Retardation Factor Rduz(i,1)	Transport Time Dtuz(i,1), yr
Pb-210	1.0000E+02	4.6841E+02	6.0128E+02
Ra-226	7.0000E+01	3.2818E+02	4.2128E+02

Transport Time Parameters for Unsaturated Zone created by the Falling Water Table

Water table drop rate [vwt]: 0.001000 m/yr
 Bulk soil material density [rhobaq]: 1.500000 g/cm**3
 Effective porosity [peaq]: 0.200000
 Hydraulic conductivity [Khaq]: 100.000000 m/yr
 Total porosity [ptaq]: 0.400000
 Soil specific b parameter [baq]: 5.300000
 Saturation ratio [sruaq]: 0.677340

Radio-nuclide (i)	Distribution Coefficient Kdaq(i), cm**3/g	Retardation Factor Rduaq(i)	Minimum Transport Time Dtuaq(i), yr
Pb-210	1.0000E+02	5.5464E+02	1.0633E+02
Ra-226	7.0000E+01	3.8855E+02	4.9567E+01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dilution Factor and Rise Time Parameters for Nondispersion (ND) Model

Aquifer contamination depth at well (z): 1.25000E+00 m
 Depth of water intake below water table (dw): 1.00000E+01 m
 Infiltration rate (In): 5.00000E-01 m/yr
 Aquifer water flow rate (Vwfr): 2.00000E+00 m/yr
 Hydraulic gradient (J): 2.00000E-02
 Hydraulic conductivity of aquifer (Kszh): 1.00000E+02 m/yr
 Contaminated zone extent parallel to gradient (l): 5.00000E+00 m
 Distance below contaminated zone to water table (h): 0.40000E+01 m
 Initial thickness of uncontaminated cover (Cd): 0.00000E+00 m
 Initial thickness of contaminated zone (T): 0.15000E+01 m
 Effective porosity of saturated zone (pesz): 0.20000E+00

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdsz(i)	Horizontal Transport Time		Rise Time dt(i), yr	Decay Time Parameter 1/lambda(i),yr
			Chain	Onsite Tauh(i), yr		
Pb-210	2.000E-02	3.760E+02		1.880E+02	1.880E+02	3.217E+01
Ra-226	2.000E-02	2.635E+02		1.318E+02	1.318E+02	2.308E+03

Primary Parameters Used for Calculating Water/Soil
Concentration Ratios for Groundwater Pathway Segment

Model used: Nondispersion (ND)

Bulk soil density in contaminated zone (rhob): 1.500 g/cm³

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdcz(i)	Breakthrough Time		Rise Time dt(i), yr
			Chain year	Single Nuclide Dt(i), yr	
Pb-210	2.000E-02	4.684E+02	4.709E+02	7.076E+02	1.880E+02
Ra-226	2.000E-02	3.282E+02	4.709E+02	4.709E+02	1.318E+02

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Times For Contaminated Foodstuffs

k	Food Item	STOR_T(k), days
1	non-leafy plants	14.
2	leafy plants	1.
3	milk	1.
4	meat	20.
5	fish	7.
6	crustacea	7.
7	well water	1.
8	surface water	1.
9	livestock fodder	45.

Storage Time Ingrowth and Decay Factors

Storage Time for k'th Foodstuff: $t = \text{STOR_T}(k)$, days

Parent (i)	Product (j)	Thread Fraction	STOR_ID(i,j,t) = CONCE(i,j,t)/CONCE(i,i,0)									
			t= 1.400E+01	1.000E+00	1.000E+00	2.000E+01	7.000E+00	7.000E+00	1.000E+00	1.000E+00	4.500E+01	
Pb-210	Pb-210	1.000E+00	9.988E-01	9.999E-01	9.999E-01	9.983E-01	9.994E-01	9.994E-01	9.999E-01	9.999E-01	9.962E-01	
Ra-226	Ra-226	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	
Ra-226	Pb-210	1.000E+00	1.191E-03	8.510E-05	8.510E-05	1.701E-03	5.955E-04	5.955E-04	8.510E-05	8.510E-05	3.822E-03	

CONCE(i,j,t)/CONCE(i,i,0) is the concentration ratio of Product(j) at time t to Parent(i) at start of storage time.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors
 Drinking Water from Well and/or Surface
 Harvest Time = $t - 2.74\text{E-}03$ yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,1) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Nonleafy Plants from Well and/or Surface
 Harvest Time = $t - 4.11\text{E-}02$ yr; Consumption Time = $t - 3.83\text{E-}02$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,2) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Leafy Plants from Well and/or Surface
 Harvest Time = $t - 5.48\text{E-}03$ yr; Consumption Time = $t - 2.74\text{E-}03$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,3) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Livestock (Milk) Fodder from Well and/or Surface
 Harvest Time = $t - 1.29\text{E-}01$ yr; Consumption Time = $t - 1.26\text{E-}01$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,5) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors

Irrigation Water for Livestock (Meat) Fodder from Well and/or Surface

Harvest Time = t - 1.81E-01 yr; Consumption Time = t - 1.78E-01 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,7)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Livestock (Milk) Water from Well and/or Surface

Harvest Time = t - 5.48E-03 yr; Consumption Time = t - 2.74E-03 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,4)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Livestock (Meat) Water from Well and/or Surface

Harvest Time = t - 5.75E-02 yr; Consumption Time = t - 5.48E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,6)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Nonleafy Plants

Harvest Time = t - 3.83E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors for Leafy Plants

Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Livestock (Meat) Fodder

Harvest Time = t - 1.78E-01 yr; Consumption Time = t - 5.48E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.602E+00	1.178E+00	1.054E+00	1.021E+00	1.012E+00	1.011E+00	1.009E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Livestock (Milk) Fodder

Harvest Time = t - 1.26E-01 yr; Consumption Time = t - 2.74E-03 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.566E+00	1.175E+00	1.054E+00	1.021E+00	1.012E+00	1.011E+00	1.009E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Meat

Harvest Time = t - 5.48E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF45(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.161E+00	1.060E+00	1.019E+00	1.008E+00	1.004E+00	1.004E+00	1.003E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors for Milk
 Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent	Product	Thread	CF45(j,2,t)# At Time in Years								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.020E+00	1.008E+00	1.003E+00	1.001E+00	1.001E+00	1.001E+00	1.000E+00	

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Fish & Crustacea
 Harvest Time = t - 1.92E-02 yr; Consumption Time = t yr

Parent	Product	Thread	CFF(j,1,t)# At Time in Years								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226+D	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
Ra-226+D	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.995E-01	

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Area and Depth Factors for Plant (p=3), Meat (p=4), and Milk (p=5) Pathways
Overhead Irrigation (q=4)

Area Factor for Plant Foods [FA(3)] = 0.01

The Depth Factor Value

$FD(i,p,q,t) = 1.0000E+00$

is applicable for all radionuclides(i) and times(t).

Area and Depth Factors for Meat (p=4) and Milk (p=5) Pathways
Transfer from Livestock Water (q=5) and Soil (q=6) Intake

Area Factor for Meat and Milk [FA(p),p=4,5] = 0.00

The livestock water subpathway (q=5) and livestock soil intake subpathway (q=6)
occur only for the meat (p=4) and milk (p=5) pathways.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,1,t) At Time in Years (g/yr)						
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02 1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	3.480E+01	3.468E+01	3.443E+01	3.357E+01	3.124E+01	2.429E+01	1.183E+01 5.293E-01
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	2.942E-01	7.963E-01	2.285E+00	4.846E+00	6.048E+00	3.103E+00 1.389E-01

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,2,t) At Time in Years (g/yr)						
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02 1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	5.052E-04	5.034E-04	4.998E-04	4.874E-04	4.535E-04	3.526E-04	1.717E-04 1.383E-05
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	1.542E-05	4.459E-05	1.311E-04	2.799E-04	3.500E-04	1.796E-04 1.447E-05

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,3,t) * SF(j,t) At Time in Years (g/yr)						
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02 1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00 1.533E-04
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00 2.810E-05

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,4,t) * SF(j,t) At Time in Years (g/yr)						
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02 1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00 1.469E-02
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00 1.072E-02

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	8.568E-02	8.542E-02	8.481E-02	8.270E-02	7.696E-02	5.982E-02	2.913E-02	1.304E-03
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	8.349E-04	1.823E-03	4.749E-03	9.779E-03	1.209E-02	6.201E-03	2.777E-04

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	5.006E-06	4.991E-06	4.955E-06	4.832E-06	4.497E-06	3.495E-06	1.702E-06	1.371E-07
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	1.240E-07	3.553E-07	1.041E-06	2.221E-06	2.777E-06	1.425E-06	1.148E-07

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.712E-07
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.567E-08

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.456E-04
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.523E-05

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,5,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E-01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.901E-05
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.448E-05

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	1.012E-01	1.009E-01	1.002E-01	9.766E-02	9.088E-02	7.065E-02	3.440E-02	1.540E-03
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	3.264E-04	7.641E-04	2.061E-03	4.292E-03	5.326E-03	2.732E-03	1.223E-04

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	5.913E-06	5.894E-06	5.852E-06	5.707E-06	5.310E-06	4.128E-06	2.010E-06	1.619E-07
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	5.450E-08	1.570E-07	4.607E-07	9.835E-07	1.230E-06	6.310E-07	5.084E-08

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.022E-07
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.127E-08

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.720E-04
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.771E-05

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,5,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.757E-04
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.036E-05

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Fish Pathway (p=6)

Parent (i)	Product (j)	DCF(j,6)*	ETF(j,6,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.635E-03
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.168E-02

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Drinking Water Pathway (p=7)

Parent (i)	Product (j)	DCF(j,7)*	ETF(j,7,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.910E+01
Ra-226+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.394E+01

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	4.589E-02	4.573E-02	4.540E-02	4.427E-02	4.119E-02	3.202E-02	1.559E-02	6.972E-04
Ra-226+D	Pb-210+D	1.000E+00	1.150E-03	3.077E-03	6.664E-03	1.729E-02	3.556E-02	4.396E-02	2.254E-02	1.008E-03
Ra-226+D	ΣDSR(j)		4.704E-02	4.880E-02	5.206E-02	6.156E-02	7.675E-02	7.598E-02	3.813E-02	1.705E-03

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,2t) At Time in Years (nrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	6.662E-07	6.638E-07	6.590E-07	6.426E-07	5.980E-07	4.649E-07	2.264E-07	1.824E-08
Ra-226+D	Pb-210+D	1.000E+00	5.644E-08	1.666E-07	3.749E-07	9.924E-07	2.054E-06	2.544E-06	1.305E-06	1.051E-07
Ra-226+D	ΣDSR(j)		7.226E-07	8.303E-07	1.034E-06	1.635E-06	2.652E-06	3.009E-06	1.531E-06	1.234E-07

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	2.021E-07
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	2.040E-07
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.061E-07

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,4t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	1.936E-05
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	7.784E-05
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.720E-05

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226+D	Ra-226+D	1.000E+00	4.589E-02	4.573E-02	4.540E-02	4.427E-02	4.120E-02	3.202E-02	1.559E-02	7.168E-04	
Ra-226+D	Pb-210+D	1.000E+00	1.150E-03	3.077E-03	6.664E-03	1.729E-02	3.556E-02	4.396E-02	2.254E-02	1.086E-03	
Ra-226+D	ΣDSR(j)		4.704E-02	4.880E-02	5.206E-02	6.156E-02	7.676E-02	7.599E-02	3.813E-02	1.803E-03	

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.130E-04	1.126E-04	1.118E-04	1.090E-04	1.015E-04	7.888E-05	3.841E-05	1.718E-06
Ra-226+D	Pb-210+D	1.000E+00	3.856E-06	7.916E-06	1.497E-05	3.587E-05	7.173E-05	8.792E-05	4.504E-05	2.015E-06
Ra-226+D	ΣDSR(j)		1.169E-04	1.205E-04	1.268E-04	1.449E-04	1.732E-04	1.668E-04	8.345E-05	3.733E-06

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	6.604E-09	6.581E-09	6.534E-09	6.371E-09	5.929E-09	4.609E-09	2.244E-09	1.808E-10
Ra-226+D	Pb-210+D	1.000E+00	4.581E-10	1.333E-09	2.986E-09	7.882E-09	1.630E-08	2.019E-08	1.035E-08	8.340E-10
Ra-226+D	ΣDSR(j)		7.062E-09	7.914E-09	9.520E-09	1.425E-08	2.223E-08	2.480E-08	1.260E-08	1.015E-09

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	2.257E-10
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	1.864E-10
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.121E-10

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,4t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	1.920E-07
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	6.189E-07
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.109E-07

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)
Subpathway: Livestock Water (q=5)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent	Product	Thread	DSR(j,4,5t) At Time in Years (mrem/yr)/(pCi/g)								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-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	7.778E-08	
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	2.504E-07	
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.282E-07	

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)
Total for All Subpathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent	Product	Thread	DSR(j,4,t) At Time in Years (mrem/yr)/(pCi/g)								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-226+D	Ra-226+D	1.000E+00	1.338E-04	1.333E-04	1.324E-04	1.291E-04	1.201E-04	9.338E-05	4.547E-05	2.557E-06	
Ra-226+D	Pb-210+D	1.000E+00	5.297E-06	1.211E-05	2.436E-05	6.066E-05	1.230E-04	1.514E-04	7.761E-05	5.508E-06	
Ra-226+D	ΣDSR(j)		1.391E-04	1.454E-04	1.567E-04	1.897E-04	2.431E-04	2.448E-04	1.231E-04	8.065E-06	

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.335E-04	1.330E-04	1.321E-04	1.288E-04	1.198E-04	9.315E-05	4.536E-05	2.029E-06
Ra-226+D	Pb-210+D	1.000E+00	1.438E-06	3.191E-06	6.317E-06	1.558E-05	3.148E-05	3.872E-05	1.984E-05	8.874E-07
Ra-226+D	ΣDSR(j)		1.349E-04	1.362E-04	1.384E-04	1.443E-04	1.513E-04	1.319E-04	6.520E-05	2.916E-06

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	7.800E-09	7.772E-09	7.716E-09	7.524E-09	7.002E-09	5.443E-09	2.650E-09	2.135E-10
Ra-226+D	Pb-210+D	1.000E+00	2.004E-10	5.876E-10	1.319E-09	3.488E-09	7.216E-09	8.938E-09	4.583E-09	3.693E-10
Ra-226+D	ΣDSR(j)		8.000E-09	8.360E-09	9.036E-09	1.101E-08	1.422E-08	1.438E-08	7.233E-09	5.828E-10

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	2.666E-10
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	8.186E-11
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.484E-10

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,4t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	2.267E-07
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	2.738E-07
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.005E-07

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA RA-226 EMC 10.RAD

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	3.634E-07
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	4.383E-07
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.017E-07

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	1.638E-04	1.632E-04	1.621E-04	1.580E-04	1.471E-04	1.143E-04	5.566E-05	3.449E-06
Ra-226+D	Pb-210+D	1.000E+00	2.217E-06	5.476E-06	1.145E-05	2.915E-05	5.955E-05	7.348E-05	3.767E-05	3.036E-06
Ra-226+D	ΣDSR(j)		1.660E-04	1.687E-04	1.735E-04	1.872E-04	2.066E-04	1.878E-04	9.333E-05	6.485E-06

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from the Ingestion of Fish (p=6)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,6,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-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	6.110E-06
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	8.481E-05
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.092E-05

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from the Ingestion of Drinking Water (p=7)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,7,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Ra-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	2.518E-02	
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	1.012E-01	
Ra-226+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.264E-01	

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

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[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Meat/Fodder, Milk/Fodder, Fodder/Air and Fodder/Water Concentration Ratios

FI(4,q): 68.0 kg/day FI(5,q): 55.0 kg/day q=1,2,3,4
 FI(4,q): 50.0 L/day FI(5,q): 160.0 L/day q=5
 FI(4,q): 0.5 kg/day FI(5,q):

Nuclide (i)	FQR(i,4) d/kg	FQR(i,5) d/kg	FAR(i,3,2,3) m**3/g	FWR(i,3,3,3) L/g	FWR(i,3,4,3) L/g
Pb-210	8.0000E-04	3.0000E-04	2.8659E-01	5.3329E-07	1.8139E-03
Ra-226	1.0000E-03	1.0000E-03	2.8659E-01	2.1329E-06	1.8139E-03

FI(p,q) are the fodder (q=1,2,3,4), livestock water (q=5) and soil (q=6) intake rates;

FQR(i,p) are the transfer coefficients from contaminated fodder of livestock water to meat (p=4) or milk (p=5). FAR(i,3,2,3) are the fodder/air concentration ratios, and FWR(i,3,3,3) and FWR(i,3,4,3) are the fodder/water concentration ratios for ditch and overhead irrigation, respectively.

Fodder/Soil Concentration Ratio, QSR(j,p,q,t), for Meat and Milk Pathways
Livestock Water (q=5)

[illegible]

Milk/Soil Concentration Ratio, FSR(j,5,q,t)
Livestock Water (q=5)

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Soil Ingestion Pathway (p=8)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,8,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.000E+00	3.609E-04	3.597E-04	3.571E-04	3.482E-04	3.240E-04	2.519E-04	1.226E-04	9.881E-06
Ra-226+D	Pb-210+D	1.000E+00	3.058E-05	9.025E-05	2.032E-04	5.377E-04	1.113E-03	1.379E-03	7.069E-04	5.696E-05
Ra-226+D	ΣDSR(j)		3.915E-04	4.499E-04	5.602E-04	8.859E-04	1.437E-03	1.630E-03	8.296E-04	6.684E-05

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

Dose Conversion and Environmental Transport Factors for the Soil Ingestion Pathway (p=8)

Parent (i)	Product (j)	DCF(j,8)*	ETF(j,8,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226+D	Ra-226+D	1.321E-03	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01
Ra-226+D	Pb-210+D	7.276E-03	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01

* - The dose conversion factor units are mrem/pCi.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238.RAD

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	4
Summary of Pathway Selections	8
Contaminated Zone and Total Dose Summary	9
Total Dose Components	
Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
Time = 3.000E+02	16
Time = 1.000E+03	17
Dose/Source Ratios Summed Over All Pathways	18
Single Radionuclide Soil Guidelines	18
Dose Per Nuclide Summed Over All Pathways	19
Soil Concentration Per Nuclide	19

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(4)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(5)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(6)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(7)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(8)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(9)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(10)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(11)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(12)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(13)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1(14)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(15)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1(16)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1(17)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(1)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(2)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(3)
B-1	U-234	1.320E-01	1.320E-01	DCF2(4)
B-1	U-238	1.180E-01	1.180E-01	DCF2(5)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2(6)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(1)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(2)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(3)
D-1	U-234	2.830E-04	2.830E-04	DCF3(4)
D-1	U-238	2.550E-04	2.550E-04	DCF3(5)
D-1	U-238+D	2.687E-04	2.550E-04	DCF3(6)
D-34	Food transfer factors:			
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(2,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(2,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(2,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
D-34				

Summary : RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(4,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(4,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(4,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(5,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(5,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(5,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(6,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(6,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(6,3)
D-34				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(2,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(2,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(4,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(4,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(5,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(6,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(6,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETEG table in Ground Pathway of Detailed Report.

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

Summary : RESRAD Default Parameters Resident Farmer Scenario

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.200E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	7.100E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): U-238	1.700E+01	0.000E+00	---	S1(5)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(5)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+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)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.000E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	1.000E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	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)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-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	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.426E-03	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.217E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.165E-03	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.704E-06	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for daughter U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.426E-03	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	7.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	5.000E-01	5.000E-01	---	FIND

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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	-1 shows non-circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	3.750E+00	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m), ring 2:	7.500E+00	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m), ring 3:	1.125E+01	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m), ring 4:	1.500E+01	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m), ring 5:	1.875E+01	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m), ring 6:	2.250E+01	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m), ring 7:	2.625E+01	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m), ring 8:	3.000E+01	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m), ring 9:	3.375E+01	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m), ring 10:	3.750E+01	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	4.125E+01	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	4.500E+01	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	1.000E+00	1.000E+00	---	FRACA(1)
R017	Ring 2	1.000E+00	2.732E-01	---	FRACA(2)
R017	Ring 3	1.000E+00	0.000E+00	---	FRACA(3)
R017	Ring 4	8.800E-01	0.000E+00	---	FRACA(4)
R017	Ring 5	7.400E-01	0.000E+00	---	FRACA(5)
R017	Ring 6	5.900E-01	0.000E+00	---	FRACA(6)
R017	Ring 7	4.500E-01	0.000E+00	---	FRACA(7)
R017	Ring 8	3.800E-01	0.000E+00	---	FRACA(8)
R017	Ring 9	2.700E-01	0.000E+00	---	FRACA(9)
R017	Ring 10	1.600E-01	0.000E+00	---	FRACA(10)
R017	Ring 11	9.900E-02	0.000E+00	---	FRACA(11)
R017	Ring 12	9.800E-03	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
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	0.110E+00	FMEAT
R018	Contamination fraction of milk	-1	-1	0.110E+00	FMILK
R019	Livestock fodder intake for meat (kg/day)	6.800E+01	6.800E+01	---	LF15
R019	Livestock fodder intake for milk (kg/day)	5.500E+01	5.500E+01	---	LF16
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238.RAD

Site-Specific Parameter Summary (continued)

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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	2200.00 square meters	U-238	1.700E+01
Thickness:	1.50 meters		
Cover Depth:	0.00 meters		

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	2.649E+00	2.637E+00	2.614E+00	2.534E+00	2.320E+00	1.702E+00	7.025E-01	1.242E+01
M(t):	1.766E-01	1.758E-01	1.743E-01	1.689E-01	1.546E-01	1.135E-01	4.683E-02	8.279E-01

Maximum TDOSE(t): 1.242E+01 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-238	1.398E+00	0.5277	1.096E-01	0.0414	0.000E+00	0.0000	9.919E-01	0.3745	7.201E-03	0.0027	1.765E-02	0.0067	1.248E-01	0.0471
Total	1.398E+00	0.5277	1.096E-01	0.0414	0.000E+00	0.0000	9.919E-01	0.3745	7.201E-03	0.0027	1.765E-02	0.0067	1.248E-01	0.0471

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- 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.
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.649E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.649E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238.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- 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.
U-238	1.392E+00	0.5277	1.091E-01	0.0414	0.000E+00	0.0000	9.875E-01	0.3745	7.169E-03	0.0027	1.757E-02	0.0067	1.242E-01	0.0471
Total	1.392E+00	0.5277	1.091E-01	0.0414	0.000E+00	0.0000	9.875E-01	0.3745	7.169E-03	0.0027	1.757E-02	0.0067	1.242E-01	0.0471

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- 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.
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.637E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.637E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-238	1.379E+00	0.5277	1.081E-01	0.0414	0.000E+00	0.0000	9.788E-01	0.3745	7.106E-03	0.0027	1.742E-02	0.0067	1.231E-01	0.0471
Total	1.379E+00	0.5277	1.081E-01	0.0414	0.000E+00	0.0000	9.788E-01	0.3745	7.106E-03	0.0027	1.742E-02	0.0067	1.231E-01	0.0471

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

Water Dependent Pathways

Radio- 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.
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.614E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.614E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

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

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-238	1.337E+00	0.5277	1.048E-01	0.0414	0.000E+00	0.0000	9.490E-01	0.3745	6.890E-03	0.0027	1.689E-02	0.0067	1.194E-01	0.0471
Total	1.337E+00	0.5277	1.048E-01	0.0414	0.000E+00	0.0000	9.490E-01	0.3745	6.890E-03	0.0027	1.689E-02	0.0067	1.194E-01	0.0471

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

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

Water Dependent Pathways

Radio- 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.
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.534E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.534E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-238	1.224E+00	0.5277	9.596E-02	0.0414	0.000E+00	0.0000	8.687E-01	0.3745	6.306E-03	0.0027	1.546E-02	0.0067	1.093E-01	0.0471
Total	1.224E+00	0.5277	9.596E-02	0.0414	0.000E+00	0.0000	8.687E-01	0.3745	6.306E-03	0.0027	1.546E-02	0.0067	1.093E-01	0.0471

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

Water Dependent Pathways

Radio- 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.
U-238	0.000E+00	0.0000	0.000E+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+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.320E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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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

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-238	8.979E-01	0.5276	7.042E-02	0.0414	0.000E+00	0.0000	6.374E-01	0.3745	4.627E-03	0.0027	1.134E-02	0.0067	8.018E-02	0.0471
Total	8.979E-01	0.5276	7.042E-02	0.0414	0.000E+00	0.0000	6.374E-01	0.3745	4.627E-03	0.0027	1.134E-02	0.0067	8.018E-02	0.0471

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

Water Dependent Pathways

Radio- 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.
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.702E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.702E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-238	3.705E-01	0.5275	2.908E-02	0.0414	0.000E+00	0.0000	2.632E-01	0.3746	1.911E-03	0.0027	4.684E-03	0.0067	3.311E-02	0.0471
Total	3.705E-01	0.5275	2.908E-02	0.0414	0.000E+00	0.0000	2.632E-01	0.3746	1.911E-03	0.0027	4.684E-03	0.0067	3.311E-02	0.0471

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

Water Dependent Pathways

Radio- 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.
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.025E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.025E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238.RAD

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

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-238	1.673E-02	0.0013	1.316E-03	0.0001	0.000E+00	0.0000	6.623E-03	0.0005	7.679E-05	0.0000	1.916E-04	0.0000	1.499E-03	0.0001
Total	1.673E-02	0.0013	1.316E-03	0.0001	0.000E+00	0.0000	6.623E-03	0.0005	7.679E-05	0.0000	1.916E-04	0.0000	1.499E-03	0.0001

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

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

Water Dependent Pathways

Radio- 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.
U-238	1.146E+01	0.9231	2.671E-03	0.0002	0.000E+00	0.0000	8.818E-01	0.0710	9.180E-03	0.0007	3.545E-02	0.0029	1.242E+01	1.0000
Total	1.146E+01	0.9231	2.671E-03	0.0002	0.000E+00	0.0000	8.818E-01	0.0710	9.180E-03	0.0007	3.545E-02	0.0029	1.242E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	3.792E-06	3.776E-06	3.742E-06	3.628E-06	3.321E-06	2.436E-06	1.005E-06	3.727E-05
U-238+D	U-238+D	9.999E-01	1.558E-01	1.551E-01	1.538E-01	1.491E-01	1.364E-01	1.001E-01	4.131E-02	7.283E-01
U-238+D	U-234	9.999E-01	1.107E-07	3.308E-07	7.651E-07	2.225E-06	5.917E-06	1.430E-05	1.764E-05	2.170E-03
U-238+D	Th-230	9.999E-01	3.770E-13	2.511E-12	1.291E-11	1.118E-10	8.859E-10	7.849E-09	4.066E-08	8.380E-08
U-238+D	Ra-226+D	9.999E-01	4.660E-15	7.188E-14	8.466E-13	2.216E-11	5.109E-10	1.476E-08	2.177E-07	4.154E-06
U-238+D	Pb-210+D	9.999E-01	2.699E-17	7.134E-16	1.595E-14	1.094E-12	6.365E-11	4.306E-09	1.010E-07	1.128E-05
U-238+D	ΣDSR(j)		1.558E-01	1.551E-01	1.538E-01	1.491E-01	1.364E-01	1.001E-01	4.132E-02	7.304E-01

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

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Nuclide									
(i)	t =	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	9.627E+01	9.669E+01	9.755E+01	1.006E+02	1.099E+02	1.498E+02	3.630E+02	2.053E+01	

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at t_{min} = time of minimum single radionuclide soil guideline
and at t_{max} = time of maximum total dose = 1.000E+03 years

Nuclide (i)	Initial (pCi/g)	t _{min} (years)	DSR(i,t _{min})	G(i,t _{min})	DSR(i,t _{max})	G(i,t _{max})
			(pCi/g)		(pCi/g)	
U-238	1.700E+01	1.000E+03	7.305E-01	2.053E+01	7.305E-01	2.053E+01

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr								
			t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	6.447E-05	6.418E-05	6.362E-05	6.168E-05	5.645E-05	4.141E-05	1.709E-05	6.336E-04	
U-238	U-238	9.999E-01	2.649E+00	2.637E+00	2.614E+00	2.534E+00	2.319E+00	1.702E+00	7.022E-01	1.238E+01	
U-238	ΣDOSE(j)		2.649E+00	2.637E+00	2.614E+00	2.534E+00	2.320E+00	1.702E+00	7.022E-01	1.238E+01	
U-234	U-238	9.999E-01	1.882E-06	5.623E-06	1.301E-05	3.783E-05	1.006E-04	2.431E-04	2.999E-04	3.688E-02	
Th-230	U-238	9.999E-01	6.408E-12	4.269E-11	2.195E-10	1.901E-09	1.506E-08	1.334E-07	6.913E-07	1.425E-06	
Ra-226	U-238	9.999E-01	7.921E-14	1.222E-12	1.439E-11	3.767E-10	8.686E-09	2.508E-07	3.701E-06	7.062E-05	
Pb-210	U-238	9.999E-01	4.589E-16	1.213E-14	2.712E-13	1.860E-11	1.082E-09	7.320E-08	1.717E-06	1.917E-04	

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g								
			t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	9.180E-04	9.139E-04	9.059E-04	8.783E-04	8.039E-04	5.897E-04	2.434E-04	1.099E-05	
U-238	U-238	9.999E-01	1.700E+01	1.692E+01	1.677E+01	1.626E+01	1.489E+01	1.092E+01	4.506E+00	2.034E-01	
U-238	ΣS(j):		1.700E+01	1.692E+01	1.678E+01	1.626E+01	1.489E+01	1.092E+01	4.507E+00	2.035E-01	
U-234	U-238	9.999E-01	0.000E+00	4.798E-05	1.427E-04	4.610E-04	1.266E-03	3.095E-03	3.831E-03	5.759E-04	
Th-230	U-238	9.999E-01	0.000E+00	2.163E-10	1.935E-09	2.106E-08	1.787E-07	1.623E-06	8.467E-06	2.054E-05	
Ra-226	U-238	9.999E-01	0.000E+00	3.123E-14	8.378E-13	3.036E-11	7.705E-10	2.301E-08	3.428E-07	2.061E-06	
Pb-210	U-238	9.999E-01	0.000E+00	2.412E-16	1.918E-14	2.224E-12	1.514E-10	1.083E-08	2.578E-07	1.879E-06	

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

RESCALC.EXE execution time = 5.02 seconds

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238.RAD

Table of ContentsPart II: Source Terms, Factors, and Parameters for Individual Pathways

Source Factors for Ingrowth and Decay

Radioactivity Only	3
Combined Radioactivity and Leaching	3

Ground Pathway

Source Term Parameters	4
Time Dependence of Source Geometry	4
Occupancy, Cover/Depth, and Area Factors	5
Dose Conversion and Environmental Transport Factors .	6
Dose/Source Ratios	6

Inhalation Pathway (radon excluded)

Dose/Source Ratios	7
Pathway Factors	7
Dose Conversion and Environmental Transport Factors .	7

Radon Pathway

Flux and Parameters	8
Concentration and Parameters	9
Working Levels	10
Dose/Source Ratios	11

Groundwater and Surface Water Pathway Segments

Transport Time Parameters for Unsaturated Zone Strata	12
Dilution Factor and Rise Time Parameters for	
Nondispersion (ND) Model	13
Primary Parameters Used to Calculate Ratios	13
Water/Soil Concentration Ratios	14

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238.RAD

Table of Contents (cont.)Part II: Source Terms, Factors, and Parameters for Individual Pathways

Food Pathways

Storage Times for Contaminated Foodstuffs	15
Storage Time Ingrowth and Decay Factors	15
Storage Correction Factors	
Drinking Water	16
Irrigation Water	16
Livestock Water	17
Plants	18
Livestock Fodder	19
Meat and Milk	19
Fish and Crustacea	20
Area and Depth Factors	21
Dose Conversion and Environmental Transport Factors	
Plant	23
Meat	25
Milk	27
Fish	29
Drinking Water	29
Dose/Source Ratios	
Plant	30
Plant Total	31
Meat	32
Meat Total	33
Milk	34
Milk Total	35
Fish	36
Drinking Water	37
Concentration Ratios	
Plant/Air and Plant/Water	38
Plant/Soil	38
Meat/Fodder, Fodder/Air, Fodder/Water	40
Fodder/Soil	41
Meat/Soil	43
Milk/Soil	45

Soil Ingestion Pathway

Dose/Source Ratios.....	47
Dose Conversion and Environmental Transport Factors .	47

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238.RAD

Source Factors for Ingrowth and Decay
Radioactivity Factors Only
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	ID(j,t) = THF(j)*SI(j,t)/SI(i,0) At Time in Years								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-238	U-238	5.400E-05	5.400E-05	5.400E-05	5.400E-05	5.400E-05	5.400E-05	5.400E-05	5.400E-05	5.400E-05	
U-238+D	U-238+D	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	
U-238+D	U-234	9.999E-01	0.000E+00	2.835E-06	8.504E-06	2.835E-05	8.504E-05	2.834E-04	8.501E-04	2.831E-03	
U-238+D	Th-230	9.999E-01	0.000E+00	1.276E-11	1.148E-10	1.276E-09	1.148E-08	1.275E-07	1.147E-06	1.271E-05	
U-238+D	Ra-226+D	9.999E-01	0.000E+00	1.842E-15	4.973E-14	1.840E-12	4.958E-11	1.822E-09	4.813E-08	1.654E-06	
U-238+D	Pb-210+D	9.999E-01	0.000E+00	1.423E-17	1.138E-15	1.346E-13	9.704E-12	8.486E-10	3.570E-08	1.509E-06	

Source Factors for Ingrowth and Decay
Combined Radioactivity and Leaching Factors
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	SF(j,t) = THF(j)*SI(j,t)/SI(i,0) At Time in Years								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-238	U-238	5.400E-05	5.400E-05	5.376E-05	5.329E-05	5.166E-05	4.729E-05	3.469E-05	1.432E-05	6.463E-07	
U-238+D	U-238+D	9.999E-01	9.999E-01	9.955E-01	9.868E-01	9.567E-01	8.756E-01	6.424E-01	2.651E-01	1.197E-02	
U-238+D	U-234	9.999E-01	0.000E+00	2.822E-06	8.392E-06	2.712E-05	7.447E-05	1.821E-04	2.254E-04	3.388E-05	
U-238+D	Th-230	9.999E-01	0.000E+00	1.272E-11	1.138E-10	1.239E-09	1.051E-08	9.547E-08	4.981E-07	1.208E-06	
U-238+D	Ra-226+D	9.999E-01	0.000E+00	1.837E-15	4.929E-14	1.786E-12	4.532E-11	1.354E-09	2.016E-08	1.212E-07	
U-238+D	Pb-210+D	9.999E-01	0.000E+00	1.419E-17	1.128E-15	1.308E-13	8.906E-12	6.368E-10	1.517E-08	1.105E-07	

The effect of volatilization was also considered when computing the source factors for H-3 and C-14.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Parameters Used for Calculating Cover Depth and Contaminated Zone Thicknesses

Cover Erosion rate (vcv): 0.001000 m/yr

Contaminated Zone Erosion rate (vcz): 0.001000 m/yr

Water Table Drop rate (vwt): 0.001000 m/yr

Precipitation rate (Pr): 1.000000 m/yr

Cover Removal Time (Tc): 0.000E+00 yr

Overhead irrigation rate (Irr): 0.200 m/yr

Runoff coefficient (Cr): 0.200

Evapotranspiration coeff. (Ce): 0.500

Infiltration rate (In): 0.500 m/yr

Bulk soil density (rhob): 1.500 g/cm³

Effective porosity (pe): 0.000

Radio-nuclide (i)	Distribution Coefficient Kd(i), cm ³ /g	Leaching Ratio q(i)
Pb-210	1.000000E+02	2.135E-03
Ra-226	7.000000E+01	3.047E-03
Th-230	6.000000E+04	3.566E-06
U-234	5.000000E+01	4.261E-03
U-238	5.000000E+01	4.261E-03

Time Dependence of Source Geometry

Time Dependence of Cover Depth [Cd(i,t)]

Nuclide (i)		Cd(i,t) (meters)						
t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
Ra-226	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
Th-230	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
U-234	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
U-238	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Time Dependence of Contaminated Zone Thicknesses [T(i,t)]

Nuclide (i)		T(i,t) (meters)						
t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01
Ra-226	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01
Th-230	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01
U-234	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01
U-238	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01

Initial contaminated zone thickness (T): 1.500 meters

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Ground Pathway (p=1)

Nuclide (i)	DCF(i,1)*		ETFG(i,t) At Time in Years (dimensionless)						
	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
At-218	5.847E-03	5.572E-01	5.572E-01	5.572E-01	5.572E-01	5.572E-01	5.572E-01	5.572E-01	5.572E-01
Bi-210	3.606E-03	5.451E-01	5.451E-01	5.451E-01	5.451E-01	5.451E-01	5.451E-01	5.451E-01	5.451E-01
Bi-214	9.808E+00	5.413E-01	5.413E-01	5.413E-01	5.413E-01	5.413E-01	5.413E-01	5.413E-01	5.395E-01
Pa-234	1.155E+01	5.409E-01	5.409E-01	5.409E-01	5.409E-01	5.409E-01	5.409E-01	5.409E-01	5.402E-01
Pa-234m	8.967E-02	5.402E-01	5.402E-01	5.402E-01	5.402E-01	5.402E-01	5.402E-01	5.402E-01	5.397E-01
Pb-210	2.447E-03	5.617E-01	5.617E-01	5.617E-01	5.617E-01	5.617E-01	5.617E-01	5.617E-01	5.617E-01
Pb-214	1.341E+00	5.452E-01	5.452E-01	5.452E-01	5.452E-01	5.452E-01	5.452E-01	5.452E-01	5.450E-01
Po-210	5.231E-05	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.394E-01
Po-214	5.138E-04	5.369E-01	5.369E-01	5.369E-01	5.369E-01	5.369E-01	5.369E-01	5.369E-01	5.362E-01
Po-218	5.642E-05	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.393E-01
Ra-226	3.176E-02	5.527E-01	5.527E-01	5.527E-01	5.527E-01	5.527E-01	5.527E-01	5.527E-01	5.527E-01
Rn-222	2.354E-03	5.376E-01	5.376E-01	5.376E-01	5.376E-01	5.376E-01	5.376E-01	5.376E-01	5.373E-01
Th-230	1.209E-03	5.548E-01	5.548E-01	5.548E-01	5.548E-01	5.548E-01	5.548E-01	5.548E-01	5.548E-01
Th-234	2.410E-02	5.562E-01	5.562E-01	5.562E-01	5.562E-01	5.562E-01	5.562E-01	5.562E-01	5.562E-01
Tl-210	0.000E+00	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01
U-234	4.017E-04	5.604E-01	5.604E-01	5.604E-01	5.604E-01	5.604E-01	5.604E-01	5.604E-01	5.604E-01
U-238	1.031E-04	5.812E-01	5.812E-01	5.812E-01	5.812E-01	5.812E-01	5.812E-01	5.812E-01	5.812E-01

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

Dose/Source Ratios for External Radiation from the Ground (p=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,1,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	3.228E-09	3.214E-09	3.186E-09	3.089E-09	2.827E-09	2.074E-09	8.558E-10	3.864E-11
U-238+D	U-238+D	9.999E-01	8.222E-02	8.186E-02	8.114E-02	7.866E-02	7.200E-02	5.282E-02	2.180E-02	9.832E-04
U-238+D	U-234	9.999E-01	3.181E-10	9.507E-10	2.199E-09	6.396E-09	1.701E-08	4.110E-08	5.070E-08	7.614E-09
U-238+D	Th-230	9.999E-01	2.847E-15	1.988E-14	1.045E-13	9.154E-13	7.279E-12	6.459E-11	3.348E-10	8.106E-10
U-238+D	Ra-226+D	9.999E-01	2.784E-15	4.165E-14	4.830E-13	1.254E-11	2.882E-10	8.314E-09	1.226E-07	7.327E-07
U-238+D	Pb-210+D	9.999E-01	9.572E-21	2.944E-19	7.291E-18	5.355E-16	3.193E-14	2.180E-12	5.129E-11	3.725E-10
U-238+D	ΣDSR(j)		8.222E-02	8.186E-02	8.114E-02	7.866E-02	7.200E-02	5.282E-02	2.180E-02	9.839E-04

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Inhalation Pathway, Excluding Radon (p=2)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,2,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	3.480E-07	3.464E-07	3.434E-07	3.329E-07	3.047E-07	2.235E-07	9.225E-08	4.165E-09
U-238+D	U-238+D	9.999E-01	6.445E-03	6.417E-03	6.360E-03	6.166E-03	5.644E-03	4.141E-03	1.709E-03	7.714E-05
U-238+D	U-234	9.999E-01	1.021E-08	3.051E-08	7.057E-08	2.053E-07	5.457E-07	1.319E-06	1.627E-06	2.443E-07
U-238+D	Th-230	9.999E-01	7.572E-14	5.287E-13	2.778E-12	2.435E-11	1.936E-10	1.718E-09	8.904E-09	2.156E-08
U-238+D	Ra-226+D	9.999E-01	2.161E-19	3.233E-18	3.750E-17	9.732E-16	2.237E-14	6.454E-13	9.519E-12	5.704E-11
U-238+D	Pb-210+D	9.999E-01	3.608E-21	1.110E-19	2.748E-18	2.018E-16	1.203E-14	8.218E-13	1.933E-11	1.404E-10
U-238+D	ΣDSR(j)		6.445E-03	6.417E-03	6.361E-03	6.167E-03	5.645E-03	4.142E-03	1.710E-03	7.741E-05

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

Pathway Factors for the Inhalation Pathway (radon excluded)

Area (A):	2.2000E+03 m**2	Occupancy Factor (FO2):	4.5000E-01
Area Factor (FA2):	1.4479E-01	Annual Air Intake (F12):	8.4000E+03 m**3/yr
Cover Depth [Cd(0)]:	0.0000E+00 m	Mass Loading (ASR2):	1.0000E-04 g/m**3
Contaminated Zone Thickness [T(0)]:	1.5000E+00 m	FA2 * FO2 * F12 * ASR2:	5.4730E-02 g/yr

Nuclide (i)	t=	Depth Factor [FD(i,2,t)] (dimensionless)							
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00

Dose Conversion and Environmental Transport Factors for the Inhalation Pathway, Excluding Radon (p=2)

Parent (i)	Product (j)	DCF(j,2)*	ETF(j,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	1.180E-01	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02
U-238+D	U-238+D	1.180E-01	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02
U-238+D	U-234	1.320E-01	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02
U-238+D	Th-230	3.260E-01	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02
U-238+D	Ra-226+D	8.594E-03	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02
U-238+D	Pb-210+D	2.320E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02

* - The dose conversion factor units are mrem/pCi.

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Parameters Used for Calculating Indoor and Outdoor Radon Concentration

Radon Vertical Dimension of Mixing (HMIX):	2.000E+00	(m)
Average Annual Wind Speed (WIND):	2.000E+00	(m/sec)
Building Room Height (HRM):	2.500E+00	(m)
Building Air Exchange Rate (REXG):	5.000E-01	(1/hr)

Time Dependence of Outdoor Radon Concentration [CRNO(i,t)]

[illegible]

Time Dependence of Indoor Radon Concentration [HCONC(i,r)]

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Outdoor Working Levels of Radon [WLOTD(i,t)]

Nuclide		WLOTD(i,t) (WL)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Indoor Working Levels of Radon [WLIND(i,t)]

Nuclide		WLIND(i,t) (WL)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Fraction of Time Spent Outdoors (FOTD): 2.500E-01

Fraction of Time Spent Indoors (FIND): 5.000E-01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Radon Pathway (p=9)

Subpathway: Outdoor and Indoor Radon Flux

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,9,t) - DSRRNW(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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
U-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
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
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
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
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
U-238+D	ΣDSR(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

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

Dose/Source Ratios for Radon Pathway (p=9)

Subpathway: Indoor Radon from Water Usage

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSRRNW(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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
U-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
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
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
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
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
U-238+D	ΣDSR(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

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Transport Time Parameters for Unsaturated Zone Stratum No. 1

Stratum thickness [h(1)]: 4.000000 m
 Bulk soil material density [rhob(1)]: 1.500000 g/cm**3
 Effective porosity [peuz(1)]: 0.200000
 Hydraulic conductivity [Khuz(1)]: 10.000000 m/yr
 Total porosity [ptuz(1)]: 0.400000
 Soil specific b parameter [buz(1)]: 5.300000
 Saturation ratio [sruz(1)]: 0.802299

Radio-nuclide (i)	Distribution Coefficient Kduz(i,1), cm**3/g	Retardation Factor Rduz(i,1)	Transport Time Dtuz(i,1), yr
Pb-210	1.0000E+02	4.6841E+02	6.0128E+02
Ra-226	7.0000E+01	3.2818E+02	4.2128E+02
Th-230	6.0000E+04	2.8045E+05	3.6000E+05
U-234	5.0000E+01	2.3470E+02	3.0128E+02
U-238	5.0000E+01	2.3470E+02	3.0128E+02

Transport Time Parameters for Unsaturated Zone created by the Falling Water Table

Water table drop rate [vwt]: 0.001000 m/yr
 Bulk soil material density [rhobaq]: 1.500000 g/cm**3
 Effective porosity [peaq]: 0.200000
 Hydraulic conductivity [Khaq]: 100.000000 m/yr
 Total porosity [ptaq]: 0.400000
 Soil specific b parameter [baq]: 5.300000
 Saturation ratio [sruaq]: 0.677340

Radio-nuclide (i)	Distribution Coefficient Kdaq(i), cm**3/g	Retardation Factor Rduaq(i)	Minimum Transport Time Dtuaq(i), yr
Pb-210	1.0000E+02	5.5464E+02	1.0633E+02
Ra-226	7.0000E+01	3.8855E+02	4.9567E+01
Th-230	6.0000E+04	3.3218E+05	Infinite
U-234	5.0000E+01	2.7782E+02	2.4524E+01
U-238	5.0000E+01	2.7782E+02	2.4524E+01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dilution Factor and Rise Time Parameters for Nondispersion (ND) Model

Aquifer contamination depth at well (z): 1.77500E+01 m
 Depth of water intake below water table (dw): 1.00000E+01 m
 Infiltration rate (In): 5.00000E-01 m/yr
 Aquifer water flow rate (Vwfr): 2.00000E+00 m/yr
 Hydraulic gradient (J): 2.00000E-02
 Hydraulic conductivity of aquifer (Kszh): 1.00000E+02 m/yr
 Contaminated zone extent parallel to gradient (l): 7.10000E+01 m
 Distance below contaminated zone to water table (h): 0.40000E+01 m
 Initial thickness of uncontaminated cover (Cd): 0.00000E+00 m
 Initial thickness of contaminated zone (T): 0.15000E+01 m
 Effective porosity of saturated zone (pesz): 0.20000E+00

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdsz(i)	Horizontal Transport Time Onsite Tauh(i), yr	Rise Time dt(i), yr	Decay Time Parameter 1/lamda(i),yr
Pb-210	1.000E+00	3.760E+02	2.670E+03	1.504E+03	3.217E+01
Ra-226	1.000E+00	2.635E+02	1.871E+03	1.054E+03	2.308E+03
Th-230	1.000E+00	2.250E+05	1.598E+06	9.000E+05	1.111E+05
U-234	1.000E+00	1.885E+02	1.338E+03	7.540E+02	3.527E+05
U-238	1.000E+00	1.885E+02	1.338E+03	7.540E+02	6.446E+09

Primary Parameters Used for Calculating Water/Soil
Concentration Ratios for Groundwater Pathway Segment

Model used: Nondispersion (ND)

Bulk soil density in contaminated zone (rhob): 1.500 g/cm**3

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdcz(i)	Breakthrough Time Chain year	Single Nuclide Dt(i), yr	Rise Time dt(i), yr
Pb-210	1.000E+00	4.684E+02	3.258E+02	7.076E+02	1.504E+03
Ra-226	1.000E+00	3.282E+02	3.258E+02	4.709E+02	1.054E+03
Th-230	1.000E+00	2.804E+05	3.258E+02	Infinite	9.000E+05
U-234	1.000E+00	2.347E+02	3.258E+02	3.258E+02	7.540E+02
U-238	1.000E+00	2.347E+02	3.258E+02	3.258E+02	7.540E+02

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Water/Soil Concentration Ratios [WSR(j,1,t)] for Groundwater Pathway Segment

[illegible]

Water/Soil Concentration Ratios [WSR(j,2,t)] for Surface Water Pathway Segment

Watershed Area (A_w) = 1.0000E+06 m**2
Contaminated Zone Area (A) = 2.2000E+03 m**2
Dilution Factor (f') = 2.2000E-03
Soil Density (ρ_{hob}) = 1.5000E+00 kg/m**3

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Times For Contaminated Foodstuffs

k	Food Item	STOR_T(k), days
1	non-leafy plants	14.
2	leafy plants	1.
3	milk	1.
4	meat	20.
5	fish	7.
6	crustacea	7.
7	well water	1.
8	surface water	1.
9	livestock fodder	45.

Storage Time Ingrowth and Decay Factors

Storage Time for k'th Foodstuff: $t = \text{STOR_T}(k)$, days

Parent	Product	Thread	STOR_ID(i,j,t) = CONCE(i,j,t)/CONCE(i,i,0)								
(i)	(j)	Fraction	t = 1.400E+01	1.000E+00	1.000E+00	2.000E+01	7.000E+00	7.000E+00	1.000E+00	1.000E+00	4.500E+01
Pb-210	Pb-210	1.000E+00	9.988E-01	9.999E-01	9.999E-01	9.983E-01	9.994E-01	9.994E-01	9.999E-01	9.999E-01	9.962E-01
Ra-226	Ra-226	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01
Ra-226	Pb-210	1.000E+00	1.191E-03	8.510E-05	8.510E-05	1.701E-03	5.955E-04	5.955E-04	8.510E-05	8.510E-05	3.822E-03
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Th-230	Ra-226	1.000E+00	1.661E-05	1.186E-06	1.186E-06	2.372E-05	8.303E-06	8.303E-06	1.186E-06	1.186E-06	5.337E-05
Th-230	Pb-210	1.000E+00	9.888E-09	5.047E-11	5.047E-11	2.018E-08	2.472E-09	2.472E-09	5.047E-11	5.047E-11	1.021E-07
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	3.450E-07	2.465E-08	2.465E-08	4.929E-07	1.725E-07	1.725E-07	2.465E-08	2.465E-08	1.109E-06
U-234	Ra-226	1.000E+00	2.865E-12	1.462E-14	1.462E-14	5.846E-12	7.162E-13	7.162E-13	1.462E-14	1.462E-14	2.960E-11
U-234	Pb-210	1.000E+00	1.137E-15	4.146E-19	4.146E-19	3.315E-15	1.422E-16	1.422E-16	4.146E-19	4.146E-19	3.774E-14
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238	U-238	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238	U-234	1.000E+00	1.087E-07	7.762E-09	7.762E-09	1.552E-07	5.433E-08	5.433E-08	7.762E-09	7.762E-09	3.493E-07
U-238	Th-230	1.000E+00	1.875E-14	9.565E-17	9.565E-17	3.826E-14	4.687E-15	4.687E-15	9.565E-17	9.565E-17	1.937E-13
U-238	Ra-226	1.000E+00	1.038E-19	3.782E-23	3.782E-23	3.025E-19	1.297E-20	1.297E-20	3.782E-23	3.782E-23	3.446E-18
U-238	Pb-210	1.000E+00	3.090E-23	8.045E-28	8.045E-28	1.287E-22	1.931E-24	1.931E-24	8.045E-28	8.045E-28	3.296E-21

CONCE(i,j,t)/CONCE(i,i,0) is the concentration ratio of Product(j) at time t to Parent(i) at start of storage time.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors
Drinking Water from Well and/or Surface
Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,1)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.010E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
Irrigation Water for Nonleafy Plants from Well and/or Surface
Harvest Time = t - 4.11E-02 yr; Consumption Time = t - 3.83E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,2)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.010E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
Irrigation Water for Leafy Plants from Well and/or Surface
Harvest Time = t - 5.48E-03 yr; Consumption Time = t - 2.74E-03 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,3)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.010E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors

Irrigation Water for Livestock (Milk) Fodder from Well and/or Surface

Harvest Time = $t - 1.29E-01$ yr; Consumption Time = $t - 1.26E-01$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,5)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.010E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Irrigation Water for Livestock (Meat) Fodder from Well and/or Surface

Harvest Time = $t - 1.81E-01$ yr; Consumption Time = $t - 1.78E-01$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,7)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.010E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Livestock (Milk) Water from Well and/or Surface

Harvest Time = $t - 5.48E-03$ yr; Consumption Time = $t - 2.74E-03$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,4)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.010E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors

Livestock (Meat) Water from Well and/or Surface

Harvest Time = t - 5.75E-02 yr; Consumption Time = t - 5.48E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,6)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.010E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Nonleafy Plants

Harvest Time = t - 3.83E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.133E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Leafy Plants

Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.009E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

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Storage Time Correction Factors for Livestock (Meat) Fodder

Harvest Time = t - 1.78E-01 yr; Consumption Time = t - 5.48E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.150E+00	1.044E+00	1.013E+00	1.004E+00	1.001E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.802E+00	1.222E+00	1.062E+00	1.020E+00	1.005E+00	1.001E+00	1.038E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.016E+00	1.004E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	3.417E+00	1.706E+00	1.209E+00	1.074E+00	1.029E+00	1.017E+00	1.003E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Livestock (Milk) Fodder

Harvest Time = t - 1.26E-01 yr; Consumption Time = t - 2.74E-03 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.141E+00	1.043E+00	1.012E+00	1.004E+00	1.001E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.752E+00	1.217E+00	1.062E+00	1.020E+00	1.005E+00	1.001E+00	1.038E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.014E+00	1.004E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	3.273E+00	1.694E+00	1.207E+00	1.074E+00	1.029E+00	1.017E+00	1.003E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Meat

Harvest Time = t - 5.48E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF45(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.058E+00	1.019E+00	1.006E+00	1.002E+00	1.001E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.457E+00	1.148E+00	1.043E+00	1.014E+00	1.004E+00	1.001E+00	1.006E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.005E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.368E+00	1.184E+00	1.069E+00	1.027E+00	1.010E+00	1.006E+00	1.002E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

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Storage Time Correction Factors for Milk
Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF45(j,2,t) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.003E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.732E+00	1.248E+00	1.074E+00	1.024E+00	1.006E+00	1.002E+00	1.016E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.047E+00	1.023E+00	1.009E+00	1.003E+00	1.001E+00	1.001E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Fish & Crustacea
Harvest Time = t - 1.92E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CFF(j,1,t) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.007E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.996E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Area Factor for Plant Foods [FA(3)] = 0.50

Area Factor for Plant Foods [FA(3)] = 0.50

Area Factor for Plant Foods [FA(3)] = 0.50

[illegible]

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Area and Depth Factors for Plant (p=3), Meat (p=4), and Milk (p=5) Pathways
Overhead Irrigation (q=4)

Area Factor for Plant Foods [FA(3)] = 0.50

The Depth Factor Value

$FD(i,p,q,t) = 1.0000E+00$

is applicable for all radionuclides(i) and times(t).

Area and Depth Factors for Meat (p=4) and Milk (p=5) Pathways
Transfer from Livestock Water (q=5) and Soil (q=6) Intake

Area Factor for Meat and Milk [FA(p),p=4,5] = 0.11

The livestock water subpathway (q=5) and livestock soil intake subpathway (q=6)
occur only for the meat (p=4) and milk (p=5) pathways.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	1.174E-02	1.169E-02	1.159E-02	1.124E-02	1.029E-02	7.546E-03	3.114E-03	7.811E-05
U-238+D	U-238+D	2.687E-04	2.175E+02	2.166E+02	2.147E+02	2.081E+02	1.905E+02	1.397E+02	5.766E+01	1.446E+00
U-238+D	U-234	2.830E-04	0.000E+00	6.139E-04	1.826E-03	5.900E-03	1.620E-02	3.961E-02	4.902E-02	4.095E-03
U-238+D	Th-230	5.480E-04	0.000E+00	1.222E-09	1.025E-08	1.089E-07	9.178E-07	8.313E-06	4.334E-05	5.841E-05
U-238+D	Ra-226+D	1.321E-03	0.000E+00	5.760E-12	1.657E-10	6.152E-09	1.572E-07	4.707E-06	7.015E-05	2.344E-04
U-238+D	Pb-210+D	7.276E-03	0.000E+00	1.698E-14	1.118E-12	1.189E-10	7.879E-09	5.579E-07	1.325E-05	5.363E-05

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	4.843E-06	4.822E-06	4.780E-06	4.634E-06	4.242E-06	3.112E-06	1.284E-06	5.797E-08
U-238+D	U-238+D	2.687E-04	8.969E-02	8.930E-02	8.851E-02	8.581E-02	7.854E-02	5.762E-02	2.378E-02	1.074E-03
U-238+D	U-234	2.830E-04	0.000E+00	2.532E-07	7.528E-07	2.433E-06	6.680E-06	1.633E-05	2.021E-05	3.039E-06
U-238+D	Th-230	5.480E-04	0.000E+00	1.141E-12	1.021E-11	1.111E-10	9.430E-10	8.563E-09	4.467E-08	1.084E-07
U-238+D	Ra-226+D	1.321E-03	0.000E+00	1.649E-16	4.421E-15	1.602E-13	4.065E-12	1.214E-10	1.809E-09	1.087E-08
U-238+D	Pb-210+D	7.276E-03	0.000E+00	1.274E-18	1.012E-16	1.173E-14	7.989E-13	5.712E-11	1.360E-09	9.916E-09

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.774E-06
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.254E-01
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.551E-04
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.943E-10
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.731E-06
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.770E-07

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,3) *	ETF(j,3,4,t) * SF(j,t) At Time in Years (g/yr)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.038E-02	
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.923E+02	
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.444E-01	
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.554E-06	
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.662E-04	
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.058E-04	

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	2.163E-05	2.155E-05	2.136E-05	2.071E-05	1.896E-05	1.391E-05	5.739E-06	1.440E-07
U-238+D	U-238+D	2.687E-04	4.005E-01	3.991E-01	3.956E-01	3.835E-01	3.510E-01	2.575E-01	1.063E-01	2.666E-03
U-238+D	U-234	2.830E-04	0.000E+00	1.131E-06	3.364E-06	1.087E-05	2.985E-05	7.299E-05	9.034E-05	7.548E-06
U-238+D	Th-230	5.480E-04	0.000E+00	1.274E-12	7.447E-12	6.520E-11	5.143E-10	4.545E-09	2.353E-08	3.165E-08
U-238+D	Ra-226+D	1.321E-03	0.000E+00	1.957E-14	7.767E-13	3.195E-11	8.399E-10	2.540E-08	3.796E-07	1.270E-06
U-238+D	Pb-210+D	7.276E-03	0.000E+00	1.168E-16	7.005E-15	6.090E-13	3.665E-11	2.494E-09	5.858E-08	2.363E-07

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	3.590E-08	3.577E-08	3.546E-08	3.437E-08	3.146E-08	2.308E-08	9.525E-09	4.300E-10
U-238+D	U-238+D	2.687E-04	6.648E-04	6.624E-04	6.566E-04	6.365E-04	5.826E-04	4.274E-04	1.764E-04	7.963E-06
U-238+D	U-234	2.830E-04	0.000E+00	1.878E-09	5.584E-09	1.805E-08	4.955E-08	1.212E-07	1.499E-07	2.254E-08
U-238+D	Th-230	5.480E-04	0.000E+00	3.124E-15	2.418E-14	2.485E-13	2.073E-12	1.871E-11	9.744E-11	2.363E-10
U-238+D	Ra-226+D	1.321E-03	0.000E+00	3.099E-18	9.178E-17	3.443E-15	8.824E-14	2.645E-12	3.943E-11	2.371E-10
U-238+D	Pb-210+D	7.276E-03	0.000E+00	2.292E-20	1.794E-18	2.059E-16	1.397E-14	9.974E-13	2.375E-11	1.731E-10

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.658E-09
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.048E-04
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.966E-07
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.343E-13
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.269E-09
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.610E-10

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.698E-05
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.425E+00
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.035E-03
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.395E-09
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.630E-06
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.856E-06

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,5,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.120E-05
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.778E-01
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.636E-03
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.058E-09
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.464E-06
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.464E-07

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	4.508E-05	4.491E-05	4.451E-05	4.316E-05	3.950E-05	2.898E-05	1.196E-05	3.000E-07
U-238+D	U-238+D	2.687E-04	8.349E-01	8.316E-01	8.243E-01	7.992E-01	7.315E-01	5.366E-01	2.214E-01	5.555E-03
U-238+D	U-234	2.830E-04	0.000E+00	2.358E-06	7.011E-06	2.266E-05	6.221E-05	1.521E-04	1.883E-04	1.573E-05
U-238+D	Th-230	5.480E-04	0.000E+00	1.055E-13	5.269E-13	4.129E-12	3.113E-11	2.703E-10	1.392E-09	1.869E-09
U-238+D	Ra-226+D	1.321E-03	0.000E+00	2.771E-14	9.686E-13	3.833E-11	9.970E-10	3.004E-08	4.485E-07	1.500E-06
U-238+D	Pb-210+D	7.276E-03	0.000E+00	4.767E-17	2.774E-15	2.542E-13	1.581E-11	1.092E-09	2.575E-08	1.040E-07

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	7.483E-08	7.454E-08	7.389E-08	7.163E-08	6.557E-08	4.810E-08	1.985E-08	8.961E-10
U-238+D	U-238+D	2.687E-04	1.386E-03	1.380E-03	1.368E-03	1.326E-03	1.214E-03	8.907E-04	3.676E-04	1.659E-05
U-238+D	U-234	2.830E-04	0.000E+00	3.913E-09	1.164E-08	3.760E-08	1.033E-07	2.525E-07	3.125E-07	4.698E-08
U-238+D	Th-230	5.480E-04	0.000E+00	2.424E-16	1.599E-15	1.523E-14	1.239E-13	1.109E-12	5.759E-12	1.396E-11
U-238+D	Ra-226+D	1.321E-03	0.000E+00	4.209E-18	1.136E-16	4.123E-15	1.047E-13	3.128E-12	4.659E-11	2.801E-10
U-238+D	Pb-210+D	7.276E-03	0.000E+00	1.008E-20	7.889E-19	9.091E-17	6.179E-15	4.415E-13	1.051E-11	7.664E-11

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.179E-08
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.184E-04
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.182E-07
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.636E-14
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.115E-09
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.500E-10

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.604E-04
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.971E+00
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.411E-03
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.679E-10
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.350E-06
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.341E-07

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,5,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.573E-04
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.765E+00
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.349E-02
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.255E-10
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.909E-06
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.321E-06

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Fish Pathway (p=6)

Parent (i)	Product (j)	DCF(j,6)*	ETF(j,6,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.147E-05
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.827E-01
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.650E-03
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.930E-08
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.313E-06
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.084E-06

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Drinking Water Pathway (p=7)

Parent (i)	Product (j)	DCF(j,7)*	ETF(j,7,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.351E-01
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.501E+03
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.081E+00
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.846E-05
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.178E-03
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.388E-03

* - The dose conversion factor units are mrem/pCi.

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Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	2.989E-06	2.976E-06	2.949E-06	2.859E-06	2.617E-06	1.920E-06	7.923E-07	1.985E-08
U-238+D	U-238+D	9.999E-01	5.832E-02	5.806E-02	5.755E-02	5.580E-02	5.107E-02	3.746E-02	1.546E-02	3.874E-04
U-238+D	U-234	9.999E-01	8.700E-08	2.600E-07	6.014E-07	1.749E-06	4.650E-06	1.124E-05	1.387E-05	1.156E-06
U-238+D	Th-230	9.999E-01	2.330E-13	1.508E-12	7.646E-12	6.572E-11	5.191E-10	4.595E-09	2.380E-08	3.198E-08
U-238+D	Ra-226+D	9.999E-01	1.840E-15	2.962E-14	3.559E-13	9.418E-12	2.179E-10	6.301E-09	9.300E-08	3.094E-07
U-238+D	Pb-210+D	9.999E-01	2.608E-17	6.861E-16	1.531E-14	1.049E-12	6.100E-11	4.127E-09	9.682E-08	3.900E-07
U-238+D	ΣDSR(j)		5.832E-02	5.806E-02	5.755E-02	5.580E-02	5.107E-02	3.748E-02	1.547E-02	3.893E-04

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.232E-09	1.227E-09	1.216E-09	1.179E-09	1.079E-09	7.917E-10	3.267E-10	1.475E-11
U-238+D	U-238+D	9.999E-01	2.405E-05	2.394E-05	2.373E-05	2.301E-05	2.106E-05	1.545E-05	6.375E-06	2.878E-07
U-238+D	U-234	9.999E-01	3.588E-11	1.072E-10	2.480E-10	7.213E-10	1.918E-09	4.635E-09	5.718E-09	8.586E-10
U-238+D	Th-230	9.999E-01	2.087E-16	1.456E-15	7.654E-15	6.708E-14	5.334E-13	4.733E-12	2.453E-11	5.940E-11
U-238+D	Ra-226+D	9.999E-01	5.451E-20	8.146E-19	9.446E-18	2.451E-16	5.636E-15	1.626E-13	2.398E-12	1.437E-11
U-238+D	Pb-210+D	9.999E-01	1.859E-21	5.708E-20	1.413E-18	1.038E-16	6.187E-15	4.225E-13	9.938E-12	7.218E-11
U-238+D	ΣDSR(j)		2.405E-05	2.394E-05	2.373E-05	2.301E-05	2.106E-05	1.545E-05	6.381E-06	2.888E-07

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.727E-09
U-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	3.371E-05
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	1.005E-07
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	2.713E-13
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	2.302E-09
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	2.030E-09
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.381E-05

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,4t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	2.648E-06
U-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	5.168E-02
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	1.542E-04
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	8.528E-10
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	2.204E-07
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	7.733E-07
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.183E-02

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	2.990E-06	2.977E-06	2.951E-06	2.861E-06	2.618E-06	1.921E-06	7.927E-07	2.670E-06
U-238+D	U-238+D	9.999E-01	5.834E-02	5.809E-02	5.758E-02	5.582E-02	5.109E-02	3.748E-02	1.547E-02	5.210E-02
U-238+D	U-234	9.999E-01	8.704E-08	2.601E-07	6.016E-07	1.750E-06	4.652E-06	1.125E-05	1.387E-05	1.554E-04
U-238+D	Th-230	9.999E-01	2.332E-13	1.509E-12	7.654E-12	6.578E-11	5.197E-10	4.600E-09	2.382E-08	3.289E-08
U-238+D	Ra-226+D	9.999E-01	1.840E-15	2.962E-14	3.559E-13	9.418E-12	2.179E-10	6.302E-09	9.300E-08	5.321E-07
U-238+D	Pb-210+D	9.999E-01	2.608E-17	6.862E-16	1.531E-14	1.049E-12	6.101E-11	4.127E-09	9.683E-08	1.165E-06
U-238+D	ΣDSR(j)		5.834E-02	5.809E-02	5.758E-02	5.582E-02	5.110E-02	3.749E-02	1.548E-02	5.226E-02

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,1t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-238	U-238	5.400E-05	5.507E-09	5.483E-09	5.435E-09	5.269E-09	4.823E-09	3.538E-09	1.460E-09	3.660E-11	
U-238+D	U-238+D	9.999E-01	1.075E-04	1.070E-04	1.061E-04	1.028E-04	9.411E-05	6.904E-05	2.849E-05	7.141E-07	
U-238+D	U-234	9.999E-01	1.603E-10	4.791E-10	1.108E-09	3.223E-09	8.570E-09	2.071E-08	2.555E-08	2.130E-09	
U-238+D	Th-230	9.999E-01	2.829E-16	1.329E-15	5.354E-15	3.916E-14	2.907E-13	2.512E-12	1.292E-11	1.733E-11	
U-238+D	Ra-226+D	9.999E-01	5.374E-18	1.216E-16	1.707E-15	4.901E-14	1.165E-12	3.400E-11	5.032E-10	1.676E-09	
U-238+D	Pb-210+D	9.999E-01	1.683E-19	4.693E-18	9.286E-17	5.340E-15	2.835E-13	1.845E-11	4.280E-10	1.719E-09	
U-238+D	ΣDSR(j)		1.075E-04	1.070E-04	1.061E-04	1.028E-04	9.412E-05	6.906E-05	2.852E-05	7.197E-07	

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,2t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-238	U-238	5.400E-05	9.141E-12	9.102E-12	9.021E-12	8.746E-12	8.005E-12	5.873E-12	2.424E-12	1.094E-13	
U-238+D	U-238+D	9.999E-01	1.784E-07	1.776E-07	1.760E-07	1.707E-07	1.562E-07	1.146E-07	4.729E-08	2.135E-09	
U-238+D	U-234	9.999E-01	2.661E-13	7.952E-13	1.839E-12	5.350E-12	1.422E-11	3.438E-11	4.241E-11	6.369E-12	
U-238+D	Th-230	9.999E-01	6.221E-19	3.702E-18	1.792E-17	1.498E-16	1.173E-15	1.034E-14	5.351E-14	1.295E-13	
U-238+D	Ra-226+D	9.999E-01	9.774E-22	1.620E-20	1.976E-19	5.272E-18	1.223E-16	3.541E-15	5.227E-14	3.134E-13	
U-238+D	Pb-210+D	9.999E-01	3.342E-23	1.020E-21	2.499E-20	1.820E-18	1.082E-16	7.378E-15	1.735E-13	1.260E-12	
U-238+D	ΣDSR(j)		1.784E-07	1.776E-07	1.760E-07	1.707E-07	1.562E-07	1.146E-07	4.733E-08	2.143E-09	

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,3t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	1.443E-12	
U-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	2.815E-08	
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	8.398E-11	
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	1.833E-16	
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	5.626E-12	
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	4.072E-12	
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.825E-08	

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.963E-08
U-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	3.831E-04
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	1.143E-06
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	3.507E-12
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	4.785E-09
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	1.347E-08
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.842E-04

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,5t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	7.958E-09
U-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	1.553E-04
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	4.632E-07
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	1.130E-12
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	1.952E-09
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	5.487E-09
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.558E-04

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	2.171E-08	2.161E-08	2.142E-08	2.077E-08	1.901E-08	1.394E-08	5.755E-09	2.782E-08
U-238+D	U-238+D	9.999E-01	4.236E-04	4.217E-04	4.180E-04	4.052E-04	3.709E-04	2.721E-04	1.123E-04	5.429E-04
U-238+D	U-234	9.999E-01	6.319E-10	1.888E-09	4.368E-09	1.270E-08	3.378E-08	3.164E-08	1.007E-07	1.619E-06
U-238+D	Th-230	9.999E-01	1.385E-15	7.891E-15	3.712E-14	3.048E-13	2.370E-12	2.085E-11	1.078E-10	2.516E-10
U-238+D	Ra-226+D	9.999E-01	7.106E-18	1.503E-16	2.057E-15	5.836E-14	1.381E-12	4.028E-11	5.958E-10	8.974E-09
U-238+D	Pb-210+D	9.999E-01	2.275E-19	6.501E-18	1.371E-16	8.566E-15	4.752E-13	3.152E-11	7.355E-10	2.292E-08
U-238+D	ΣDSR(j)		4.236E-04	4.217E-04	4.180E-04	4.053E-04	3.709E-04	2.722E-04	1.124E-04	5.445E-04

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.148E-08	1.143E-08	1.133E-08	1.098E-08	1.005E-08	7.373E-09	3.043E-09	7.626E-11
U-238+D	U-238+D	9.999E-01	2.239E-04	2.230E-04	2.210E-04	2.143E-04	1.961E-04	1.439E-04	5.937E-05	1.488E-06
U-238+D	U-234	9.999E-01	3.341E-10	9.984E-10	2.309E-09	6.717E-09	1.786E-08	4.316E-08	5.325E-08	4.439E-09
U-238+D	Th-230	9.999E-01	2.511E-17	1.029E-16	3.716E-16	2.473E-15	1.759E-14	1.494E-13	7.642E-13	1.023E-12
U-238+D	Ra-226+D	9.999E-01	8.070E-18	1.596E-16	2.110E-15	5.876E-14	1.382E-12	4.022E-11	5.946E-10	1.980E-09
U-238+D	Pb-210+D	9.999E-01	7.166E-20	1.851E-18	3.702E-17	2.234E-15	1.223E-13	8.075E-12	1.881E-10	7.564E-10
U-238+D	ΣDSR(j)		2.239E-04	2.230E-04	2.210E-04	2.143E-04	1.961E-04	1.439E-04	5.943E-05	1.495E-06

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.905E-11	1.897E-11	1.880E-11	1.823E-11	1.668E-11	1.224E-11	5.050E-12	2.280E-13
U-238+D	U-238+D	9.999E-01	3.717E-07	3.701E-07	3.668E-07	3.556E-07	3.255E-07	2.388E-07	9.855E-08	4.449E-09
U-238+D	U-234	9.999E-01	5.545E-13	1.657E-12	3.833E-12	1.115E-11	2.964E-11	7.165E-11	8.838E-11	1.327E-11
U-238+D	Th-230	9.999E-01	5.249E-20	2.659E-19	1.167E-18	9.165E-18	7.008E-17	6.128E-16	3.162E-15	7.649E-15
U-238+D	Ra-226+D	9.999E-01	1.387E-21	2.087E-20	2.427E-19	6.309E-18	1.451E-16	4.187E-15	6.176E-14	3.701E-13
U-238+D	Pb-210+D	9.999E-01	1.479E-23	4.477E-22	1.100E-20	8.038E-19	4.785E-17	3.266E-15	7.681E-14	5.578E-13
U-238+D	ΣDSR(j)		3.717E-07	3.701E-07	3.668E-07	3.557E-07	3.255E-07	2.389E-07	9.863E-08	4.463E-09

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	3.007E-12
U-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	5.868E-08
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	1.751E-10
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	1.445E-17
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	6.639E-12
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	1.785E-12
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.887E-08

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,4t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	4.092E-08
U-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	7.984E-04
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	2.382E-06
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	2.564E-13
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	5.646E-09
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	5.957E-09
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.008E-04

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,5t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	6.563E-08
U-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	1.281E-03
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	3.820E-06
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	3.429E-13
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	9.070E-09
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	9.543E-09
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.284E-03

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	5.321E-08	5.298E-08	5.251E-08	5.091E-08	4.659E-08	3.418E-08	1.411E-08	1.071E-07
U-238+D	U-238+D	9.999E-01	1.038E-03	1.034E-03	1.025E-03	9.933E-04	9.092E-04	6.670E-04	2.752E-04	2.090E-03
U-238+D	U-234	9.999E-01	1.549E-09	4.628E-09	1.071E-08	3.114E-08	8.279E-08	2.001E-07	2.469E-07	6.235E-06
U-238+D	Th-230	9.999E-01	1.401E-16	6.856E-16	2.929E-15	2.256E-14	1.712E-13	1.492E-12	7.696E-12	1.839E-11
U-238+D	Ra-226+D	9.999E-01	1.111E-17	2.054E-16	2.642E-15	7.258E-14	1.700E-12	4.939E-11	7.299E-10	1.751E-08
U-238+D	Pb-210+D	9.999E-01	1.041E-19	2.832E-18	6.111E-17	3.995E-15	2.272E-13	1.523E-11	3.564E-10	1.748E-08
U-238+D	ΣDSR(j)		1.038E-03	1.034E-03	1.025E-03	9.934E-04	9.093E-04	6.672E-04	2.755E-04	2.097E-03

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

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Dose/Source Ratios for Internal Radiation from the Ingestion of Fish (p=6)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,6,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	8.025E-09	
U-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	1.566E-04	
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	4.671E-07	
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	2.156E-11	
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	3.057E-09	
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	3.702E-08	
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.571E-04	

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from the Ingestion of Drinking Water (p=7)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,7,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	3.445E-05
U-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	6.722E-01
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	2.005E-03
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	1.012E-08
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	2.855E-06
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	1.001E-05
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.742E-01

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

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Meat/Fodder, Milk/Fodder, Fodder/Air and Fodder/Water Concentration Ratios

FI(4,q): 68.0 kg/day FI(5,q): 55.0 kg/day q=1,2,3,4
 FI(4,q): 50.0 L/day FI(5,q): 160.0 L/day q=5
 FI(4,q): 0.5 kg/day FI(5,q):

Nuclide (i)	FQR(i,4) d/kg	FQR(i,5) d/kg	FAR(i,3,2,3) m**3/g	FWR(i,3,3,3) L/g	FWR(i,3,4,3) L/g
Pb-210	8.0000E-04	3.0000E-04	2.8659E-01	5.3329E-07	1.8139E-03
Ra-226	1.0000E-03	1.0000E-03	2.8659E-01	2.1329E-06	1.8139E-03
Th-230	1.0000E-04	5.0000E-06	2.8659E-01	5.3644E-08	1.8139E-03
U-234	3.4000E-04	6.0000E-04	2.8659E-01	1.3332E-07	1.8139E-03
U-238	3.4000E-04	6.0000E-04	2.8659E-01	1.3332E-07	1.8139E-03

FI(p,q) are the fodder (q=1,2,3,4), livestock water (q=5) and soil (q=6) intake rates;

FQR(i,p) are the transfer coefficients from contaminated fodder of livestock

water to meat (p=4) or milk (p=5). FAR(i,3,2,3) are the fodder/air

concentration ratios, and FWR(i,3,3,3) and FWR(i,3,4,3) are the fodder/

water concentration ratios for ditch and overhead irrigation, respectively.

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Meat/Soil Concentration Ratio, FSR(j,4,q,t)
Livestock Water (q=5)

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Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Soil Ingestion Pathway (p=8)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,8,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	3.761E-07	3.745E-07	3.712E-07	3.598E-07	3.294E-07	2.416E-07	9.971E-08	4.501E-09
U-238+D	U-238+D	9.999E-01	7.339E-03	7.307E-03	7.242E-03	7.021E-03	6.427E-03	4.715E-03	1.946E-03	8.784E-05
U-238+D	U-234	9.999E-01	1.095E-08	3.272E-08	7.568E-08	2.201E-07	5.852E-07	1.415E-06	1.745E-06	2.620E-07
U-238+D	Th-230	9.999E-01	6.366E-14	4.445E-13	2.336E-12	2.047E-11	1.628E-10	1.445E-09	7.487E-09	1.813E-08
U-238+D	Ra-226+D	9.999E-01	1.661E-17	2.486E-16	2.883E-15	7.481E-14	1.720E-12	4.962E-11	7.317E-10	4.385E-09
U-238+D	Pb-210+D	9.999E-01	5.661E-19	1.741E-17	4.311E-16	3.167E-14	1.888E-12	1.289E-10	3.033E-09	2.203E-08
U-238+D	ΣDSR(j)		7.339E-03	7.307E-03	7.242E-03	7.022E-03	6.427E-03	4.716E-03	1.947E-03	8.814E-05

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

Dose Conversion and Environmental Transport Factors for the Soil Ingestion Pathway (p=8)

Parent (i)	Product (j)	DCF(j,8)*	ETF(j,8,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01
U-238+D	U-238+D	2.687E-04	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01
U-238+D	U-234	2.830E-04	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01
U-238+D	Th-230	5.480E-04	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01
U-238+D	Ra-226+D	1.321E-03	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01
U-238+D	Pb-210+D	7.276E-03	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01

* - The dose conversion factor units are mrem/pCi.

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	4
Summary of Pathway Selections	8
Contaminated Zone and Total Dose Summary	9
Total Dose Components	
Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
Time = 3.000E+02	16
Time = 1.000E+03	17
Dose/Source Ratios Summed Over All Pathways	18
Single Radionuclide Soil Guidelines	18
Dose Per Nuclide Summed Over All Pathways	19
Soil Concentration Per Nuclide	19

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 1250.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(4)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(5)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(6)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(7)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(8)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(9)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(10)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(11)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(12)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(13)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1(14)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(15)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1(16)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1(17)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(1)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(2)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(3)
B-1	U-234	1.320E-01	1.320E-01	DCF2(4)
B-1	U-238	1.180E-01	1.180E-01	DCF2(5)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2(6)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(1)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(2)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(3)
D-1	U-234	2.830E-04	2.830E-04	DCF3(4)
D-1	U-238	2.550E-04	2.550E-04	DCF3(5)
D-1	U-238+D	2.687E-04	2.550E-04	DCF3(6)
D-34	Food transfer factors:			
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(2,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(2,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(2,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
D-34				

Summary : RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(4,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(4,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(4,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(5,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(5,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(5,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(6,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(6,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(6,3)
D-34				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(2,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(2,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(4,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(4,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(5,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(6,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(6,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETEG table in Ground Pathway of Detailed Report.

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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 1250.RAD

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)	1.250E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	5.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): U-238	1.700E+01	0.000E+00	---	S1(5)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(5)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+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)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.000E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	1.000E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	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)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 1250.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-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	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(5)
R016	Unsat. zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.426E-03	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.217E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.165E-03	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.704E-06	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for daughter U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(4)
R016	Unsat. zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.426E-03	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	7.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	5.000E-01	5.000E-01	---	FIND

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 1250.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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	-1 shows non-circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	2.417E+00	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m), ring 2:	4.833E+00	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m), ring 3:	7.250E+00	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m), ring 4:	9.667E+00	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m), ring 5:	1.208E+01	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m), ring 6:	1.450E+01	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m), ring 7:	1.692E+01	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m), ring 8:	1.933E+01	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m), ring 9:	2.175E+01	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m), ring 10:	2.417E+01	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	2.658E+01	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	2.900E+01	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	1.000E+00	1.000E+00	---	FRACA(1)
R017	Ring 2	1.000E+00	2.732E-01	---	FRACA(2)
R017	Ring 3	1.000E+00	0.000E+00	---	FRACA(3)
R017	Ring 4	1.000E+00	0.000E+00	---	FRACA(4)
R017	Ring 5	1.000E+00	0.000E+00	---	FRACA(5)
R017	Ring 6	8.200E-01	0.000E+00	---	FRACA(6)
R017	Ring 7	6.000E-01	0.000E+00	---	FRACA(7)
R017	Ring 8	4.900E-01	0.000E+00	---	FRACA(8)
R017	Ring 9	4.200E-01	0.000E+00	---	FRACA(9)
R017	Ring 10	3.700E-01	0.000E+00	---	FRACA(10)
R017	Ring 11	2.200E-01	0.000E+00	---	FRACA(11)
R017	Ring 12	2.000E-02	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
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	0.625E-01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.625E-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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 1250.RAD

Site-Specific Parameter Summary (continued)

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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 1250.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 1250.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	1250.00 square meters	U-238	1.700E+01
Thickness:	1.50 meters		
Cover Depth:	0.00 meters		

Total Dose TDOSE(t), mrem/yr
 Basic Radiation Dose Limit = 1.500E+01 mrem/yr
 Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	2.618E+00	2.607E+00	2.584E+00	2.505E+00	2.293E+00	1.682E+00	6.944E-01	1.240E+01
M(t):	1.746E-01	1.738E-01	1.723E-01	1.670E-01	1.529E-01	1.122E-01	4.630E-02	8.265E-01

Maximum TDOSE(t): 1.240E+01 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 1250.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-238	1.384E+00	0.5287	1.033E-01	0.0395	0.000E+00	0.0000	9.919E-01	0.3788	4.091E-03	0.0016	1.003E-02	0.0038	1.248E-01	0.0477
Total	1.384E+00	0.5287	1.033E-01	0.0395	0.000E+00	0.0000	9.919E-01	0.3788	4.091E-03	0.0016	1.003E-02	0.0038	1.248E-01	0.0477

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- 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.
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.618E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.618E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-238	1.378E+00	0.5287	1.028E-01	0.0395	0.000E+00	0.0000	9.875E-01	0.3788	4.073E-03	0.0016	9.985E-03	0.0038	1.242E-01	0.0477
Total	1.378E+00	0.5287	1.028E-01	0.0395	0.000E+00	0.0000	9.875E-01	0.3788	4.073E-03	0.0016	9.985E-03	0.0038	1.242E-01	0.0477

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- 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.
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.607E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.607E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-238	1.366E+00	0.5287	1.019E-01	0.0395	0.000E+00	0.0000	9.788E-01	0.3788	4.038E-03	0.0016	9.897E-03	0.0038	1.231E-01	0.0477
Total	1.366E+00	0.5287	1.019E-01	0.0395	0.000E+00	0.0000	9.788E-01	0.3788	4.038E-03	0.0016	9.897E-03	0.0038	1.231E-01	0.0477

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

Water Dependent Pathways

Radio- 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.
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.584E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.584E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-238	1.324E+00	0.5287	9.883E-02	0.0395	0.000E+00	0.0000	9.490E-01	0.3788	3.914E-03	0.0016	9.595E-03	0.0038	1.194E-01	0.0477
Total	1.324E+00	0.5287	9.883E-02	0.0395	0.000E+00	0.0000	9.490E-01	0.3788	3.914E-03	0.0016	9.595E-03	0.0038	1.194E-01	0.0477

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

Water Dependent Pathways

Radio- 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.
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.505E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.505E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-238	1.212E+00	0.5287	9.047E-02	0.0395	0.000E+00	0.0000	8.686E-01	0.3788	3.593E-03	0.0016	8.783E-03	0.0038	1.093E-01	0.0477
Total	1.212E+00	0.5287	9.047E-02	0.0395	0.000E+00	0.0000	8.686E-01	0.3788	3.593E-03	0.0016	8.783E-03	0.0038	1.093E-01	0.0477

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

Water Dependent Pathways

Radio- 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.
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.293E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.293E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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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

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-238	8.893E-01	0.5286	6.638E-02	0.0395	0.000E+00	0.0000	6.374E-01	0.3789	2.629E-03	0.0016	6.445E-03	0.0038	8.018E-02	0.0477
Total	8.893E-01	0.5286	6.638E-02	0.0395	0.000E+00	0.0000	6.374E-01	0.3789	2.629E-03	0.0016	6.445E-03	0.0038	8.018E-02	0.0477

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

Water Dependent Pathways

Radio- 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.
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.682E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.682E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 1250.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-238	3.670E-01	0.5285	2.741E-02	0.0395	0.000E+00	0.0000	2.632E-01	0.3790	1.036E-03	0.0016	2.661E-03	0.0038	3.311E-02	0.0477
Total	3.670E-01	0.5285	2.741E-02	0.0395	0.000E+00	0.0000	2.632E-01	0.3790	1.036E-03	0.0016	2.661E-03	0.0038	3.311E-02	0.0477

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

Water Dependent Pathways

Radio- 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.
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.944E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.944E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 1250.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-238	1.657E-02	0.0013	1.241E-03	0.0001	0.000E+00	0.0000	6.623E-03	0.0005	4.363E-05	0.0000	1.089E-04	0.0000	1.499E-03	0.0001
Total	1.657E-02	0.0013	1.241E-03	0.0001	0.000E+00	0.0000	6.623E-03	0.0005	4.363E-05	0.0000	1.089E-04	0.0000	1.499E-03	0.0001

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

Water Dependent Pathways

Radio- 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.
U-238	1.146E+01	0.9246	1.517E-03	0.0001	0.000E+00	0.0000	8.818E-01	0.0711	5.216E-03	0.0004	2.014E-02	0.0016	1.240E+01	1.0000
Total	1.146E+01	0.9246	1.517E-03	0.0001	0.000E+00	0.0000	8.818E-01	0.0711	5.216E-03	0.0004	2.014E-02	0.0016	1.240E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	3.740E-06	3.723E-06	3.691E-06	3.578E-06	3.275E-06	2.403E-06	9.914E-07	3.721E-05
U-238+D	U-238+D	9.999E-01	1.540E-01	1.533E-01	1.520E-01	1.474E-01	1.349E-01	9.894E-02	4.083E-02	7.270E-01
U-238+D	U-234	9.999E-01	1.092E-07	3.262E-07	7.545E-07	2.195E-06	5.835E-06	1.410E-05	1.740E-05	2.166E-03
U-238+D	Th-230	9.999E-01	3.719E-13	2.477E-12	1.274E-11	1.103E-10	8.736E-10	7.740E-09	4.010E-08	8.243E-08
U-238+D	Ra-226+D	9.999E-01	4.626E-15	7.133E-14	8.400E-13	2.199E-11	5.069E-10	1.464E-08	2.160E-07	4.134E-06
U-238+D	Pb-210+D	9.999E-01	2.685E-17	7.093E-16	1.587E-14	1.089E-12	6.334E-11	4.285E-09	1.006E-07	1.124E-05
U-238+D	ΣDSR(j)		1.540E-01	1.533E-01	1.520E-01	1.474E-01	1.349E-01	9.896E-02	4.085E-02	7.292E-01

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

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Nuclide									
(i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-238	9.739E+01	9.782E+01	9.869E+01	1.018E+02	1.112E+02	1.516E+02	3.672E+02	2.057E+01	

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at t_{min} = time of minimum single radionuclide soil guideline
and at t_{max} = time of maximum total dose = 1.000E+03 years

Nuclide (i)	Initial (pCi/g)	t _{min} (years)	DSR(i,t _{min})	G(i,t _{min})	DSR(i,t _{max})	G(i,t _{max})
U-238	1.700E+01	1.000E+03	7.293E-01	2.057E+01	7.293E-01	2.057E+01

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr								
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-238	U-238	5.400E-05	6.358E-05	6.330E-05	6.274E-05	6.083E-05	5.567E-05	4.084E-05	1.685E-05	6.326E-04	
U-238	U-238	9.999E-01	2.618E+00	2.607E+00	2.584E+00	2.505E+00	2.293E+00	1.682E+00	6.941E-01	1.236E+01	
U-238	ΣDOSE(j)		2.618E+00	2.607E+00	2.584E+00	2.505E+00	2.293E+00	1.682E+00	6.941E-01	1.236E+01	
U-234	U-238	9.999E-01	1.856E-06	5.545E-06	1.283E-05	3.731E-05	9.920E-05	2.398E-04	2.958E-04	3.682E-02	
Th-230	U-238	9.999E-01	6.323E-12	4.211E-11	2.165E-10	1.875E-09	1.485E-08	1.316E-07	6.817E-07	1.401E-06	
Ra-226	U-238	9.999E-01	7.863E-14	1.213E-12	1.428E-11	3.738E-10	8.617E-09	2.489E-07	3.671E-06	7.029E-05	
Pb-210	U-238	9.999E-01	4.564E-16	1.206E-14	2.697E-13	1.851E-11	1.077E-09	7.285E-08	1.709E-06	1.911E-04	

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	9.180E-04	9.139E-04	9.059E-04	8.783E-04	8.039E-04	5.897E-04	2.434E-04	1.099E-05
U-238	U-238	9.999E-01	1.700E+01	1.692E+01	1.677E+01	1.626E+01	1.489E+01	1.092E+01	4.506E+00	2.034E-01
U-238	ΣS(j):		1.700E+01	1.692E+01	1.678E+01	1.626E+01	1.489E+01	1.092E+01	4.507E+00	2.035E-01
U-234	U-238	9.999E-01	0.000E+00	4.798E-05	1.427E-04	4.610E-04	1.266E-03	3.095E-03	3.831E-03	5.759E-04
Th-230	U-238	9.999E-01	0.000E+00	2.163E-10	1.935E-09	2.106E-08	1.787E-07	1.623E-06	8.467E-06	2.054E-05
Ra-226	U-238	9.999E-01	0.000E+00	3.123E-14	8.378E-13	3.036E-11	7.705E-10	2.301E-08	3.428E-07	2.061E-06
Pb-210	U-238	9.999E-01	0.000E+00	2.412E-16	1.918E-14	2.224E-12	1.514E-10	1.083E-08	2.578E-07	1.879E-06

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

RESCALC.EXE execution time = 5.52 seconds

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 1250.RAD

Table of ContentsPart II: Source Terms, Factors, and Parameters for Individual Pathways

Source Factors for Ingrowth and Decay

Radioactivity Only	3
Combined Radioactivity and Leaching	3

Ground Pathway

Source Term Parameters	4
Time Dependence of Source Geometry	4
Occupancy, Cover/Depth, and Area Factors	5
Dose Conversion and Environmental Transport Factors .	6
Dose/Source Ratios	6

Inhalation Pathway (radon excluded)

Dose/Source Ratios	7
Pathway Factors	7
Dose Conversion and Environmental Transport Factors .	7

Radon Pathway

Flux and Parameters	8
Concentration and Parameters	9
Working Levels	10
Dose/Source Ratios	11

Groundwater and Surface Water Pathway Segments

Transport Time Parameters for Unsaturated Zone Strata	12
Dilution Factor and Rise Time Parameters for	
Nondispersion (ND) Model	13
Primary Parameters Used to Calculate Ratios	13
Water/Soil Concentration Ratios	14

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 1250.RAD

Table of Contents (cont.)

Part II: Source Terms, Factors, and Parameters for Individual Pathways

Food Pathways

Storage Times for Contaminated Foodstuffs	15
Storage Time Ingrowth and Decay Factors	15
Storage Correction Factors	
Drinking Water	16
Irrigation Water	16
Livestock Water	17
Plants	18
Livestock Fodder	19
Meat and Milk	19
Fish and Crustacea	20
Area and Depth Factors	21
Dose Conversion and Environmental Transport Factors	
Plant	23
Meat	25
Milk	27
Fish	29
Drinking Water	29
Dose/Source Ratios	
Plant	30
Plant Total	31
Meat	32
Meat Total	33
Milk	34
Milk Total	35
Fish	36
Drinking Water	37
Concentration Ratios	
Plant/Air and Plant/Water	38
Plant/Soil	38
Meat/Fodder, Fodder/Air, Fodder/Water	40
Fodder/Soil	41
Meat/Soil	43
Milk/Soil	45

Soil Ingestion Pathway

Dose/Source Ratios.....	47
Dose Conversion and Environmental Transport Factors .	47

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 1250.RAD

Source Factors for Ingrowth and Decay
Radioactivity Factors Only
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	ID(j,t) = THF(j)*S1(j,t)/S1(i,0) At Time in Years								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-238	U-238	5.400E-05	5.400E-05	5.400E-05	5.400E-05	5.400E-05	5.400E-05	5.400E-05	5.400E-05	5.400E-05	
U-238+D	U-238+D	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	
U-238+D	U-234	9.999E-01	0.000E+00	2.835E-06	8.504E-06	2.835E-05	8.504E-05	2.834E-04	8.501E-04	2.831E-03	
U-238+D	Th-230	9.999E-01	0.000E+00	1.276E-11	1.148E-10	1.276E-09	1.148E-08	1.275E-07	1.147E-06	1.271E-05	
U-238+D	Ra-226+D	9.999E-01	0.000E+00	1.842E-15	4.973E-14	1.840E-12	4.958E-11	1.822E-09	4.813E-08	1.654E-06	
U-238+D	Pb-210+D	9.999E-01	0.000E+00	1.423E-17	1.138E-15	1.346E-13	9.704E-12	8.486E-10	3.570E-08	1.509E-06	

Source Factors for Ingrowth and Decay
Combined Radioactivity and Leaching Factors
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent	Product	Thread	SF(j,t) = THF(j)*S1(j,t)/S1(i,0) At Time in Years								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-238	U-238	5.400E-05	5.400E-05	5.376E-05	5.329E-05	5.166E-05	4.729E-05	3.469E-05	1.432E-05	6.463E-07	
U-238+D	U-238+D	9.999E-01	9.999E-01	9.955E-01	9.868E-01	9.567E-01	8.756E-01	6.424E-01	2.651E-01	1.197E-02	
U-238+D	U-234	9.999E-01	0.000E+00	2.822E-06	8.392E-06	2.712E-05	7.447E-05	1.821E-04	2.254E-04	3.388E-05	
U-238+D	Th-230	9.999E-01	0.000E+00	1.272E-11	1.138E-10	1.239E-09	1.051E-08	9.547E-08	4.981E-07	1.208E-06	
U-238+D	Ra-226+D	9.999E-01	0.000E+00	1.837E-15	4.929E-14	1.786E-12	4.532E-11	1.354E-09	2.016E-08	1.212E-07	
U-238+D	Pb-210+D	9.999E-01	0.000E+00	1.419E-17	1.128E-15	1.308E-13	8.906E-12	6.368E-10	1.517E-08	1.105E-07	

The effect of volatilization was also considered when computing the source factors for H-3 and C-14.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Parameters Used for Calculating Cover Depth and Contaminated Zone Thicknesses

Cover Erosion rate (vcv): 0.001000 m/yr
 Contaminated Zone Erosion rate (vcz): 0.001000 m/yr
 Water Table Drop rate (vwt): 0.001000 m/yr
 Precipitation rate (Pr): 1.000000 m/yr
 Cover Removal Time (Tc): 0.000E+00 yr
 Overhead irrigation rate (Irr): 0.200 m/yr Runoff coefficient (Cr): 0.200
 Evapotranspiration coeff. (Ce): 0.500 Infiltration rate (In): 0.500 m/yr
 Bulk soil density (rhob): 1.500 g/cm**3 Effective porosity (pe): 0.000

Radio-nuclide (i)	Distribution Coefficient Kd(i), cm**3/g	Leaching Ratio q(i)
Pb-210	1.000000E+02	2.135E-03
Ra-226	7.000000E+01	3.047E-03
Th-230	6.000000E+04	3.566E-06
U-234	5.000000E+01	4.261E-03
U-238	5.000000E+01	4.261E-03

Time Dependence of Source Geometry

Time Dependence of Cover Depth [Cd(i,t)]

Nuclide (i)	t=	Cd(i,t) (meters)							
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
Ra-226	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
Th-230	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
U-234	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
U-238	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Time Dependence of Contaminated Zone Thicknesses [T(i,t)]

Nuclide (i)	t=	T(i,t) (meters)							
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01	
Ra-226	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01	
Th-230	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01	
U-234	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01	
U-238	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01	

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Ground Pathway (p=1)

Nuclide (i)	DCF(i,1)*		ETFG(i,t) At Time in Years (dimensionless)						
	t= 0.000E+00		1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
At-218	5.847E-03	5.517E-01	5.517E-01	5.517E-01	5.517E-01	5.517E-01	5.517E-01	5.517E-01	5.517E-01
Bi-210	3.606E-03	5.404E-01	5.404E-01	5.404E-01	5.404E-01	5.404E-01	5.404E-01	5.404E-01	5.404E-01
Bi-214	9.808E+00	5.362E-01	5.362E-01	5.362E-01	5.362E-01	5.362E-01	5.362E-01	5.362E-01	5.344E-01
Pa-234	1.155E+01	5.355E-01	5.355E-01	5.355E-01	5.355E-01	5.355E-01	5.355E-01	5.355E-01	5.349E-01
Pa-234m	8.967E-02	5.348E-01	5.348E-01	5.348E-01	5.348E-01	5.348E-01	5.348E-01	5.348E-01	5.342E-01
Pb-210	2.447E-03	5.553E-01	5.553E-01	5.553E-01	5.553E-01	5.553E-01	5.553E-01	5.553E-01	5.553E-01
Pb-214	1.341E+00	5.404E-01	5.404E-01	5.404E-01	5.404E-01	5.404E-01	5.404E-01	5.404E-01	5.403E-01
Po-210	5.231E-05	5.345E-01	5.345E-01	5.345E-01	5.345E-01	5.345E-01	5.345E-01	5.345E-01	5.340E-01
Po-214	5.138E-04	5.315E-01	5.315E-01	5.315E-01	5.315E-01	5.315E-01	5.315E-01	5.315E-01	5.308E-01
Po-218	5.642E-05	5.345E-01	5.345E-01	5.345E-01	5.345E-01	5.345E-01	5.345E-01	5.345E-01	5.339E-01
Ra-226	3.176E-02	5.489E-01	5.489E-01	5.489E-01	5.489E-01	5.489E-01	5.489E-01	5.489E-01	5.489E-01
Rn-222	2.354E-03	5.323E-01	5.323E-01	5.323E-01	5.323E-01	5.323E-01	5.323E-01	5.323E-01	5.320E-01
Th-230	1.209E-03	5.505E-01	5.505E-01	5.505E-01	5.505E-01	5.505E-01	5.505E-01	5.505E-01	5.505E-01
Th-234	2.410E-02	5.521E-01	5.521E-01	5.521E-01	5.521E-01	5.521E-01	5.521E-01	5.521E-01	5.521E-01
Tl-210	0.000E+00	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01
U-234	4.017E-04	5.567E-01	5.567E-01	5.567E-01	5.567E-01	5.567E-01	5.567E-01	5.567E-01	5.567E-01
U-238	1.031E-04	5.779E-01	5.779E-01	5.779E-01	5.779E-01	5.779E-01	5.779E-01	5.779E-01	5.779E-01

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

Dose/Source Ratios for External Radiation from the Ground (p=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,1,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	3.210E-09	3.196E-09	3.168E-09	3.071E-09	2.811E-09	2.062E-09	8.511E-10	3.842E-11
U-238+D	U-238+D	9.999E-01	8.143E-02	8.107E-02	8.036E-02	7.791E-02	7.131E-02	5.231E-02	2.159E-02	9.738E-04
U-238+D	U-234	9.999E-01	3.160E-10	9.443E-10	2.184E-09	6.353E-09	1.689E-08	4.083E-08	5.036E-08	7.563E-09
U-238+D	Th-230	9.999E-01	2.824E-15	1.972E-14	1.036E-13	9.084E-13	7.223E-12	6.409E-11	3.322E-10	8.044E-10
U-238+D	Ra-226+D	9.999E-01	2.758E-15	4.126E-14	4.785E-13	1.242E-11	2.855E-10	8.236E-09	1.215E-07	7.258E-07
U-238+D	Pb-210+D	9.999E-01	9.479E-21	2.916E-19	7.219E-18	5.302E-16	3.162E-14	2.159E-12	5.079E-11	3.689E-10
U-238+D	ΣDSR(j)		8.143E-02	8.107E-02	8.036E-02	7.791E-02	7.131E-02	5.231E-02	2.159E-02	9.745E-04

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Inhalation Pathway, Excluding Radon (p=2)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,2,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	3.280E-07	3.266E-07	3.237E-07	3.138E-07	2.872E-07	2.107E-07	8.696E-08	3.926E-09
U-238+D	U-238+D	9.999E-01	6.076E-03	6.049E-03	5.996E-03	5.813E-03	5.321E-03	3.903E-03	1.611E-03	7.272E-05
U-238+D	U-234	9.999E-01	9.625E-09	2.876E-08	6.653E-08	1.935E-07	5.145E-07	1.243E-06	1.534E-06	2.303E-07
U-238+D	Th-230	9.999E-01	7.138E-14	4.984E-13	2.619E-12	2.296E-11	1.825E-10	1.620E-09	8.394E-09	2.033E-08
U-238+D	Ra-226+D	9.999E-01	2.037E-19	3.048E-18	3.535E-17	9.174E-16	2.109E-14	6.084E-13	8.973E-12	5.378E-11
U-238+D	Pb-210+D	9.999E-01	3.401E-21	1.046E-19	2.590E-18	1.903E-16	1.134E-14	7.747E-13	1.822E-11	1.324E-10
U-238+D	ΣDSR(j)		6.076E-03	6.049E-03	5.996E-03	5.813E-03	5.321E-03	3.905E-03	1.612E-03	7.297E-05

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

Pathway Factors for the Inhalation Pathway (radon excluded)

Area (A):	1.2500E+03 m**2	Occupancy Factor (FO2):	4.5000E-01
Area Factor (FA2):	1.3649E-01	Annual Air Intake (FI2):	8.4000E+03 m**3/yr
Cover Depth [Cd(0)]:	0.0000E+00 m	Mass Loading (ASR2):	1.0000E-04 g/m**3
Contaminated Zone Thickness [T(0)]:	1.5000E+00 m	FA2 * FO2 * FI2 * ASR2:	5.1594E-02 g/yr

Nuclide (i)	t=	Depth Factor [FD(i,2,t)] (dimensionless)							
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00

Dose Conversion and Environmental Transport Factors for the Inhalation Pathway, Excluding Radon (p=2)

Parent (i)	Product (j)	DCF(j,2)*	ETF(j,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	1.180E-01	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02
U-238+D	U-238+D	1.180E-01	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02
U-238+D	U-234	1.320E-01	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02
U-238+D	Th-230	3.260E-01	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02
U-238+D	Ra-226+D	8.594E-03	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02
U-238+D	Pb-210+D	2.320E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02

* - The dose conversion factor units are mrem/pCi.

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Outdoor Working Levels of Radon [WLOTD(i,t)]

Nuclide		WLOTD(i,t) (WL)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Indoor Working Levels of Radon [WLIND(i,t)]

Nuclide		WLIND(i,t) (WL)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Fraction of Time Spent Outdoors (FOTD): 2.500E-01

Fraction of Time Spent Indoors (FIND): 5.000E-01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Radon Pathway (p=9)

Subpathway: Outdoor and Indoor Radon Flux

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,9,t) - DSRRNW(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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
U-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
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
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
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
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
U-238+D	ΣDSR(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

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

Dose/Source Ratios for Radon Pathway (p=9)

Subpathway: Indoor Radon from Water Usage

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSRRNW(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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
U-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
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
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
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
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
U-238+D	ΣDSR(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

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Transport Time Parameters for Unsaturated Zone Stratum No. 1

Stratum thickness [h(1)]: 4.000000 m
 Bulk soil material density [rhob(1)]: 1.500000 g/cm**3
 Effective porosity [peuz(1)]: 0.200000
 Hydraulic conductivity [Khuz(1)]: 10.000000 m/yr
 Total porosity [ptuz(1)]: 0.400000
 Soil specific b parameter [buz(1)]: 5.300000
 Saturation ratio [sruz(1)]: 0.802299

Radio-nuclide (i)	Distribution Coefficient Kduz(i,1), cm**3/g	Retardation Factor Rduz(i,1)	Transport Time Dtuz(i,1), yr
Pb-210	1.0000E+02	4.6841E+02	6.0128E+02
Ra-226	7.0000E+01	3.2818E+02	4.2128E+02
Th-230	6.0000E+04	2.8045E+05	3.6000E+05
U-234	5.0000E+01	2.3470E+02	3.0128E+02
U-238	5.0000E+01	2.3470E+02	3.0128E+02

Transport Time Parameters for Unsaturated Zone created by the Falling Water Table

Water table drop rate [vwt]: 0.001000 m/yr
 Bulk soil material density [rhobaq]: 1.500000 g/cm**3
 Effective porosity [peaq]: 0.200000
 Hydraulic conductivity [Khaq]: 100.000000 m/yr
 Total porosity [ptaq]: 0.400000
 Soil specific b parameter [baq]: 5.300000
 Saturation ratio [sruaq]: 0.677340

Radio-nuclide (i)	Distribution Coefficient Kdaq(i), cm**3/g	Retardation Factor Rduaq(i)	Minimum Transport Time Dtuaq(i), yr
Pb-210	1.0000E+02	5.5464E+02	1.0633E+02
Ra-226	7.0000E+01	3.8855E+02	4.9567E+01
Th-230	6.0000E+04	3.3218E+05	Infinite
U-234	5.0000E+01	2.7782E+02	2.4524E+01
U-238	5.0000E+01	2.7782E+02	2.4524E+01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dilution Factor and Rise Time Parameters for Nondispersion (ND) Model

Aquifer contamination depth at well (z): 1.25000E+01 m
 Depth of water intake below water table (dw): 1.00000E+01 m
 Infiltration rate (In): 5.00000E-01 m/yr
 Aquifer water flow rate (Vwfr): 2.00000E+00 m/yr
 Hydraulic gradient (J): 2.00000E-02
 Hydraulic conductivity of aquifer (Kszh): 1.00000E+02 m/yr
 Contaminated zone extent parallel to gradient (l): 5.00000E+01 m
 Distance below contaminated zone to water table (h): 0.40000E+01 m
 Initial thickness of uncontaminated cover (Cd): 0.00000E+00 m
 Initial thickness of contaminated zone (T): 0.15000E+01 m
 Effective porosity of saturated zone (pesz): 0.20000E+00

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdsz(i)	Horizontal Transport Time Onsite Tauh(i), yr	Rise Time dt(i), yr	Decay Time Parameter 1/lamda(i),yr
Pb-210	1.000E+00	3.760E+02	1.880E+03	1.504E+03	3.217E+01
Ra-226	1.000E+00	2.635E+02	1.318E+03	1.054E+03	2.308E+03
Th-230	1.000E+00	2.250E+05	1.125E+06	9.000E+05	1.111E+05
U-234	1.000E+00	1.885E+02	9.425E+02	7.540E+02	3.527E+05
U-238	1.000E+00	1.885E+02	9.425E+02	7.540E+02	6.446E+09

Primary Parameters Used for Calculating Water/Soil
Concentration Ratios for Groundwater Pathway Segment

Model used: Nondispersion (ND)

Bulk soil density in contaminated zone (rhob): 1.500 g/cm**3

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdcz(i)	Breakthrough Time Chain year	Single Nuclide Dt(i), yr	Rise Time dt(i), yr
Pb-210	1.000E+00	4.684E+02	3.258E+02	7.076E+02	1.504E+03
Ra-226	1.000E+00	3.282E+02	3.258E+02	4.709E+02	1.054E+03
Th-230	1.000E+00	2.804E+05	3.258E+02	Infinite	9.000E+05
U-234	1.000E+00	2.347E+02	3.258E+02	3.258E+02	7.540E+02
U-238	1.000E+00	2.347E+02	3.258E+02	3.258E+02	7.540E+02

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Times For Contaminated Foodstuffs

k	Food Item	STOR_T(k), days
1	non-leafy plants	14.
2	leafy plants	1.
3	milk	1.
4	meat	20.
5	fish	7.
6	crustacea	7.
7	well water	1.
8	surface water	1.
9	livestock fodder	45.

Storage Time Ingrowth and Decay Factors

Storage Time for k'th Foodstuff: $t = \text{STOR_T}(k)$, days

Parent (i)	Product (j)	Thread Fraction	STOR_ID(i,j,t) = CONCE(i,j,t)/CONCE(i,i,0)									
			t =	1.400E+01	1.000E+00	1.000E+00	2.000E+01	7.000E+00	7.000E+00	1.000E+00	1.000E+00	4.500E+01
Pb-210	Pb-210	1.000E+00	9.988E-01	9.999E-01	9.999E-01	9.983E-01	9.994E-01	9.994E-01	9.999E-01	9.999E-01	9.962E-01	
Ra-226	Ra-226	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	
Ra-226	Pb-210	1.000E+00	1.191E-03	8.510E-05	8.510E-05	1.701E-03	5.955E-04	5.955E-04	8.510E-05	8.510E-05	3.822E-03	
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
Th-230	Ra-226	1.000E+00	1.661E-05	1.186E-06	1.186E-06	2.372E-05	8.303E-06	8.303E-06	1.186E-06	1.186E-06	5.337E-05	
Th-230	Pb-210	1.000E+00	9.888E-09	5.047E-11	5.047E-11	2.018E-08	2.472E-09	2.472E-09	5.047E-11	5.047E-11	1.021E-07	
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
U-234	Th-230	1.000E+00	3.450E-07	2.465E-08	2.465E-08	4.929E-07	1.725E-07	1.725E-07	2.465E-08	2.465E-08	1.109E-06	
U-234	Ra-226	1.000E+00	2.865E-12	1.462E-14	1.462E-14	5.846E-12	7.162E-13	7.162E-13	1.462E-14	1.462E-14	2.960E-11	
U-234	Pb-210	1.000E+00	1.137E-15	4.146E-19	4.146E-19	3.315E-15	1.422E-16	1.422E-16	4.146E-19	4.146E-19	3.774E-14	
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
U-238	U-238	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
U-238	U-234	1.000E+00	1.087E-07	7.762E-09	7.762E-09	1.552E-07	5.433E-08	5.433E-08	7.762E-09	7.762E-09	3.493E-07	
U-238	Th-230	1.000E+00	1.875E-14	9.565E-17	9.565E-17	3.826E-14	4.687E-15	4.687E-15	9.565E-17	9.565E-17	1.937E-13	
U-238	Ra-226	1.000E+00	1.038E-19	3.782E-23	3.782E-23	3.025E-19	1.297E-20	1.297E-20	3.782E-23	3.782E-23	3.446E-18	
U-238	Pb-210	1.000E+00	3.090E-23	8.045E-28	8.045E-28	1.287E-22	1.931E-24	1.931E-24	8.045E-28	8.045E-28	3.296E-21	

CONCE(i,j,t)/CONCE(i,i,0) is the concentration ratio of Product(j) at time t to Parent(i) at start of storage time.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors
 Drinking Water from Well and/or Surface
 Harvest Time = $t - 2.74\text{E-}03$ yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,1)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.010E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Nonleafy Plants from Well and/or Surface
 Harvest Time = $t - 4.11\text{E-}02$ yr; Consumption Time = $t - 3.83\text{E-}02$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,2)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.010E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Leafy Plants from Well and/or Surface
 Harvest Time = $t - 5.48\text{E-}03$ yr; Consumption Time = $t - 2.74\text{E-}03$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,3)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.010E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors

Irrigation Water for Livestock (Milk) Fodder from Well and/or Surface

Harvest Time = $t - 1.29E-01$ yr; Consumption Time = $t - 1.26E-01$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,5)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.010E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Irrigation Water for Livestock (Meat) Fodder from Well and/or Surface

Harvest Time = $t - 1.81E-01$ yr; Consumption Time = $t - 1.78E-01$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,7)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.010E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Livestock (Milk) Water from Well and/or Surface

Harvest Time = $t - 5.48E-03$ yr; Consumption Time = $t - 2.74E-03$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,4)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.010E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors

Livestock (Meat) Water from Well and/or Surface

Harvest Time = t - 5.75E-02 yr; Consumption Time = t - 5.48E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,6)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.010E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Nonleafy Plants

Harvest Time = t - 3.83E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.133E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Leafy Plants

Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.009E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors for Livestock (Meat) Fodder

Harvest Time = t - 1.78E-01 yr; Consumption Time = t - 5.48E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,1,t) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.150E+00	1.044E+00	1.013E+00	1.004E+00	1.001E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.803E+00	1.222E+00	1.062E+00	1.020E+00	1.005E+00	1.001E+00	1.038E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.016E+00	1.004E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	3.417E+00	1.706E+00	1.209E+00	1.074E+00	1.029E+00	1.017E+00	1.003E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Livestock (Milk) Fodder

Harvest Time = t - 1.26E-01 yr; Consumption Time = t - 2.74E-03 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,2,t) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.141E+00	1.043E+00	1.012E+00	1.004E+00	1.001E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.752E+00	1.217E+00	1.062E+00	1.020E+00	1.005E+00	1.001E+00	1.038E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.014E+00	1.004E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	3.273E+00	1.694E+00	1.207E+00	1.074E+00	1.029E+00	1.017E+00	1.003E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Meat

Harvest Time = t - 5.48E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF45(j,1,t) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.058E+00	1.019E+00	1.006E+00	1.002E+00	1.001E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.457E+00	1.148E+00	1.043E+00	1.014E+00	1.004E+00	1.001E+00	1.006E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.005E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.368E+00	1.184E+00	1.069E+00	1.027E+00	1.010E+00	1.006E+00	1.002E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors for Milk

Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF45(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.003E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.732E+00	1.248E+00	1.074E+00	1.024E+00	1.006E+00	1.002E+00	1.016E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.047E+00	1.023E+00	1.009E+00	1.003E+00	1.001E+00	1.001E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Fish & Crustacea

Harvest Time = t - 1.92E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CFF(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.007E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.996E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Area Factor for Plant Foods [FA(3)] = 0.50

Area Factor for Plant Foods [FA(3)] = 0.50

Area Factor for Plant Foods [FA(3)] = 0.50

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Area and Depth Factors for Plant (p=3), Meat (p=4), and Milk (p=5) Pathways
Overhead Irrigation (q=4)

Area Factor for Plant Foods [FA(3)] = 0.50

The Depth Factor Value

$FD(i,p,q,t) = 1.0000E+00$

is applicable for all radionuclides(i) and times(t).

Area and Depth Factors for Meat (p=4) and Milk (p=5) Pathways
Transfer from Livestock Water (q=5) and Soil (q=6) Intake

Area Factor for Meat and Milk [FA(p),p=4,5] = 0.06

The livestock water subpathway (q=5) and livestock soil intake subpathway (q=6)
occur only for the meat (p=4) and milk (p=5) pathways.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	1.174E-02	1.169E-02	1.159E-02	1.124E-02	1.029E-02	7.546E-03	3.114E-03	7.811E-05
U-238+D	U-238+D	2.687E-04	2.175E+02	2.166E+02	2.147E+02	2.081E+02	1.905E+02	1.397E+02	5.766E+01	1.446E+00
U-238+D	U-234	2.830E-04	0.000E+00	6.139E-04	1.826E-03	5.900E-03	1.620E-02	3.961E-02	4.902E-02	4.095E-03
U-238+D	Th-230	5.480E-04	0.000E+00	1.222E-09	1.025E-08	1.089E-07	9.178E-07	8.313E-06	4.334E-05	5.841E-05
U-238+D	Ra-226+D	1.321E-03	0.000E+00	5.760E-12	1.657E-10	6.152E-09	1.572E-07	4.707E-06	7.015E-05	2.344E-04
U-238+D	Pb-210+D	7.276E-03	0.000E+00	1.698E-14	1.118E-12	1.189E-10	7.879E-09	5.579E-07	1.325E-05	5.363E-05

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	4.566E-06	4.546E-06	4.506E-06	4.369E-06	3.999E-06	2.933E-06	1.211E-06	5.465E-08
U-238+D	U-238+D	2.687E-04	8.455E-02	8.418E-02	8.344E-02	8.090E-02	7.404E-02	5.432E-02	2.242E-02	1.012E-03
U-238+D	U-234	2.830E-04	0.000E+00	2.387E-07	7.097E-07	2.293E-06	6.297E-06	1.540E-05	1.906E-05	2.865E-06
U-238+D	Th-230	5.480E-04	0.000E+00	1.076E-12	9.624E-12	1.047E-10	8.890E-10	8.072E-09	4.211E-08	1.022E-07
U-238+D	Ra-226+D	1.321E-03	0.000E+00	1.554E-16	4.168E-15	1.510E-13	3.832E-12	1.145E-10	1.705E-09	1.025E-08
U-238+D	Pb-210+D	7.276E-03	0.000E+00	1.201E-18	9.543E-17	1.106E-14	7.531E-13	5.384E-11	1.282E-09	9.348E-09

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.774E-06
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.254E-01
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.551E-04
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.943E-10
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.731E-06
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.770E-07

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.038E-02
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.923E+02
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.444E-01
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.554E-06
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.662E-04
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.058E-04

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	1.229E-05	1.225E-05	1.214E-05	1.177E-05	1.077E-05	7.901E-06	3.261E-06	8.181E-08
U-238+D	U-238+D	2.687E-04	2.276E-01	2.267E-01	2.248E-01	2.179E-01	1.994E-01	1.463E-01	6.038E-02	1.515E-03
U-238+D	U-234	2.830E-04	0.000E+00	6.428E-07	1.911E-06	6.177E-06	1.696E-05	4.147E-05	5.133E-05	4.289E-06
U-238+D	Th-230	5.480E-04	0.000E+00	7.238E-13	4.231E-12	3.704E-11	2.922E-10	2.582E-09	1.337E-08	1.798E-08
U-238+D	Ra-226+D	1.321E-03	0.000E+00	1.112E-14	4.413E-13	1.815E-11	4.772E-10	1.443E-08	2.157E-07	7.214E-07
U-238+D	Pb-210+D	7.276E-03	0.000E+00	6.636E-17	3.980E-15	3.460E-13	2.082E-11	1.417E-09	3.328E-08	1.343E-07

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	1.923E-08	1.916E-08	1.899E-08	1.841E-08	1.685E-08	1.236E-08	5.102E-09	2.303E-10
U-238+D	U-238+D	2.687E-04	3.561E-04	3.548E-04	3.517E-04	3.409E-04	3.121E-04	2.289E-04	9.447E-05	4.265E-06
U-238+D	U-234	2.830E-04	0.000E+00	1.006E-09	2.991E-09	9.665E-09	2.654E-08	6.489E-08	8.031E-08	1.207E-08
U-238+D	Th-230	5.480E-04	0.000E+00	1.673E-15	1.295E-14	1.331E-13	1.110E-12	1.002E-11	5.219E-11	1.266E-10
U-238+D	Ra-226+D	1.321E-03	0.000E+00	1.660E-18	4.916E-17	1.844E-15	4.726E-14	1.417E-12	2.112E-11	1.270E-10
U-238+D	Pb-210+D	7.276E-03	0.000E+00	1.228E-20	9.610E-19	1.103E-16	7.482E-15	5.343E-13	1.272E-11	9.271E-11

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.215E-09
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.952E-05
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.685E-07
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.899E-13
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.426E-09
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.187E-10

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.374E-05
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.099E-01
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.293E-03
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.634E-09
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.063E-06
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.055E-06

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,5,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.773E-05
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.283E-01
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.294E-04
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.170E-09
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.318E-07
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.241E-07

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	2.562E-05	2.552E-05	2.529E-05	2.452E-05	2.244E-05	1.646E-05	6.795E-06	1.705E-07
U-238+D	U-238+D	2.687E-04	4.743E-01	4.725E-01	4.684E-01	4.541E-01	4.156E-01	3.049E-01	1.258E-01	3.156E-03
U-238+D	U-234	2.830E-04	0.000E+00	1.340E-06	3.983E-06	1.287E-05	3.535E-05	8.642E-05	1.070E-04	8.936E-06
U-238+D	Th-230	5.480E-04	0.000E+00	5.993E-14	2.994E-13	2.346E-12	1.769E-11	1.536E-10	7.908E-10	1.062E-09
U-238+D	Ra-226+D	1.321E-03	0.000E+00	1.575E-14	5.503E-13	2.178E-11	5.665E-10	1.707E-08	2.548E-07	8.521E-07
U-238+D	Pb-210+D	7.276E-03	0.000E+00	2.709E-17	1.576E-15	1.445E-13	8.983E-12	6.203E-10	1.463E-08	5.910E-08

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	4.008E-08	3.993E-08	3.958E-08	3.837E-08	3.512E-08	2.576E-08	1.063E-08	4.800E-10
U-238+D	U-238+D	2.687E-04	7.422E-04	7.394E-04	7.328E-04	7.105E-04	6.503E-04	4.771E-04	1.969E-04	8.888E-06
U-238+D	U-234	2.830E-04	0.000E+00	2.096E-09	6.233E-09	2.014E-08	5.531E-08	1.352E-07	1.674E-07	2.516E-08
U-238+D	Th-230	5.480E-04	0.000E+00	1.299E-16	8.563E-16	8.155E-15	6.639E-14	5.938E-13	3.085E-12	7.475E-12
U-238+D	Ra-226+D	1.321E-03	0.000E+00	2.255E-18	6.083E-17	2.209E-15	5.607E-14	1.675E-12	2.495E-11	1.500E-10
U-238+D	Pb-210+D	7.276E-03	0.000E+00	5.401E-21	4.225E-19	4.869E-17	3.310E-15	2.365E-13	5.631E-12	4.105E-11

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.700E-09
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.241E-04
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.512E-07
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.498E-14
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.906E-09
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.420E-10

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.116E-05
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.688E+00
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.779E-03
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.659E-10
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.472E-06
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.739E-07

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,5,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.462E-04
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.707E+00
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.665E-03
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.554E-10
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.926E-06
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.504E-07

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Fish Pathway (p=6)

Parent (i)	Product (j)	DCF(j,6)*	ETF(j,6,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.788E-05
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.311E-01
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.373E-04
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.233E-08
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.314E-06
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.889E-06

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Drinking Water Pathway (p=7)

Parent (i)	Product (j)	DCF(j,7)*	ETF(j,7,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E-01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.351E-01
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.501E+03
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.081E+00
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.846E-05
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.178E-03
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.388E-03

* - The dose conversion factor units are mrem/pCi.

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Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	2.989E-06	2.976E-06	2.949E-06	2.859E-06	2.617E-06	1.920E-06	7.923E-07	1.985E-08
U-238+D	U-238+D	9.999E-01	5.832E-02	5.806E-02	5.755E-02	5.580E-02	5.107E-02	3.746E-02	1.546E-02	3.874E-04
U-238+D	U-234	9.999E-01	8.700E-08	2.600E-07	6.014E-07	1.749E-06	4.650E-06	1.124E-05	1.387E-05	1.156E-06
U-238+D	Th-230	9.999E-01	2.330E-13	1.508E-12	7.646E-12	6.572E-11	5.191E-10	4.595E-09	2.380E-08	3.198E-08
U-238+D	Ra-226+D	9.999E-01	1.840E-15	2.962E-14	3.559E-13	9.418E-12	2.179E-10	6.301E-09	9.300E-08	3.094E-07
U-238+D	Pb-210+D	9.999E-01	2.608E-17	6.861E-16	1.531E-14	1.049E-12	6.100E-11	4.127E-09	9.682E-08	3.900E-07
U-238+D	ΣDSR(j)		5.832E-02	5.806E-02	5.755E-02	5.580E-02	5.107E-02	3.748E-02	1.547E-02	3.893E-04

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.162E-09	1.157E-09	1.147E-09	1.112E-09	1.017E-09	7.464E-10	3.080E-10	1.391E-11
U-238+D	U-238+D	9.999E-01	2.267E-05	2.257E-05	2.237E-05	2.169E-05	1.985E-05	1.456E-05	6.010E-06	2.713E-07
U-238+D	U-234	9.999E-01	3.382E-11	1.011E-10	2.338E-10	6.799E-10	1.808E-09	4.369E-09	5.390E-09	8.094E-10
U-238+D	Th-230	9.999E-01	1.967E-16	1.373E-15	7.216E-15	6.324E-14	5.028E-13	4.462E-12	2.312E-11	5.599E-11
U-238+D	Ra-226+D	9.999E-01	5.138E-20	7.680E-19	8.905E-18	2.311E-16	5.313E-15	1.533E-13	2.260E-12	1.355E-11
U-238+D	Pb-210+D	9.999E-01	1.752E-21	5.381E-20	1.332E-18	9.781E-17	5.832E-15	3.983E-13	9.368E-12	6.804E-11
U-238+D	ΣDSR(j)		2.267E-05	2.257E-05	2.237E-05	2.169E-05	1.985E-05	1.457E-05	6.015E-06	2.723E-07

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.727E-09
U-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	3.371E-05
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	1.005E-07
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	2.713E-13
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	2.302E-09
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	2.030E-09
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.381E-05

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 1250.RAD

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,4t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	2.648E-06
U-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	5.168E-02
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	1.542E-04
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	8.528E-10
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	2.204E-07
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	7.733E-07
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.183E-02

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	2.990E-06	2.977E-06	2.951E-06	2.861E-06	2.618E-06	1.921E-06	7.926E-07	2.670E-06
U-238+D	U-238+D	9.999E-01	5.834E-02	5.809E-02	5.757E-02	5.582E-02	5.109E-02	3.748E-02	1.547E-02	5.210E-02
U-238+D	U-234	9.999E-01	8.703E-08	2.601E-07	6.016E-07	1.750E-06	4.652E-06	1.124E-05	1.387E-05	1.554E-04
U-238+D	Th-230	9.999E-01	2.332E-13	1.509E-12	7.654E-12	6.578E-11	5.196E-10	4.599E-09	2.382E-08	3.289E-08
U-238+D	Ra-226+D	9.999E-01	1.840E-15	2.962E-14	3.559E-13	9.418E-12	2.179E-10	6.302E-09	9.300E-08	5.321E-07
U-238+D	Pb-210+D	9.999E-01	2.608E-17	6.862E-16	1.531E-14	1.049E-12	6.101E-11	4.127E-09	9.683E-08	1.165E-06
U-238+D	ΣDSR(j)		5.834E-02	5.809E-02	5.757E-02	5.582E-02	5.109E-02	3.749E-02	1.548E-02	5.226E-02

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 1250.RAD

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	3.129E-09	3.116E-09	3.088E-09	2.994E-09	2.740E-09	2.010E-09	8.296E-10	2.079E-11
U-238+D	U-238+D	9.999E-01	6.106E-05	6.079E-05	6.026E-05	5.842E-05	5.347E-05	3.923E-05	1.619E-05	4.058E-07
U-238+D	U-234	9.999E-01	9.109E-11	2.722E-10	6.296E-10	1.831E-09	4.869E-09	1.177E-08	1.452E-08	1.210E-09
U-238+D	Th-230	9.999E-01	1.608E-16	7.550E-16	3.042E-15	2.225E-14	1.652E-13	1.427E-12	7.340E-12	9.846E-12
U-238+D	Ra-226+D	9.999E-01	3.053E-18	6.910E-17	9.700E-16	2.785E-14	6.617E-13	1.932E-11	2.859E-10	9.523E-10
U-238+D	Pb-210+D	9.999E-01	9.562E-20	2.667E-18	5.276E-17	3.034E-15	1.611E-13	1.048E-11	2.432E-10	9.765E-10
U-238+D	ΣDSR(j)		6.106E-05	6.079E-05	6.026E-05	5.842E-05	5.348E-05	3.924E-05	1.620E-05	4.089E-07

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	4.896E-12	4.875E-12	4.832E-12	4.685E-12	4.288E-12	3.146E-12	1.298E-12	5.860E-14
U-238+D	U-238+D	9.999E-01	9.554E-08	9.513E-08	9.429E-08	9.141E-08	8.367E-08	6.138E-08	2.533E-08	1.144E-09
U-238+D	U-234	9.999E-01	1.425E-13	4.259E-13	9.852E-13	2.866E-12	7.619E-12	1.842E-11	2.272E-11	3.411E-12
U-238+D	Th-230	9.999E-01	3.332E-19	1.983E-18	9.597E-18	8.026E-17	6.280E-16	5.539E-15	2.866E-14	6.937E-14
U-238+D	Ra-226+D	9.999E-01	5.235E-22	8.679E-21	1.058E-19	2.824E-18	6.552E-17	1.897E-15	2.800E-14	1.678E-13
U-238+D	Pb-210+D	9.999E-01	1.790E-23	5.463E-22	1.338E-20	9.748E-19	5.794E-17	3.952E-15	9.292E-14	6.748E-13
U-238+D	ΣDSR(j)		9.554E-08	9.513E-08	9.429E-08	9.141E-08	8.368E-08	6.140E-08	2.535E-08	1.148E-09

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	8.198E-13
U-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	1.600E-08
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	4.772E-11
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	1.042E-16
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	3.197E-12
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	2.313E-12
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.605E-08

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.115E-08
U-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	2.176E-04
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	6.492E-07
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	1.993E-12
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	2.719E-09
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	7.655E-09
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.183E-04

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,5t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	4.522E-09
U-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	8.823E-05
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	2.632E-07
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	6.420E-13
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	1.109E-09
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	3.118E-09
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.850E-05

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.233E-08	1.228E-08	1.217E-08	1.180E-08	1.080E-08	7.923E-09	3.270E-09	1.581E-08
U-238+D	U-238+D	9.999E-01	2.406E-04	2.396E-04	2.375E-04	2.302E-04	2.107E-04	1.546E-04	6.380E-05	3.084E-04
U-238+D	U-234	9.999E-01	3.590E-10	1.073E-09	2.482E-09	7.218E-09	1.919E-08	4.638E-08	5.722E-08	9.201E-07
U-238+D	Th-230	9.999E-01	7.872E-16	4.483E-15	2.109E-14	1.732E-13	1.346E-12	1.184E-11	6.124E-11	1.429E-10
U-238+D	Ra-226+D	9.999E-01	4.037E-18	8.542E-17	1.169E-15	3.316E-14	7.849E-13	2.288E-11	3.385E-10	5.099E-09
U-238+D	Pb-210+D	9.999E-01	1.293E-19	3.694E-18	7.792E-17	4.867E-15	2.700E-13	1.791E-11	4.179E-10	1.302E-08
U-238+D	ΣDSR(j)		2.406E-04	2.396E-04	2.375E-04	2.303E-04	2.108E-04	1.546E-04	6.386E-05	3.094E-04

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 1250.RAD

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	6.521E-09	6.493E-09	6.435E-09	6.239E-09	5.711E-09	4.189E-09	1.729E-09	4.333E-11
U-238+D	U-238+D	9.999E-01	1.272E-04	1.267E-04	1.256E-04	1.217E-04	1.114E-04	8.175E-05	3.373E-05	8.454E-07
U-238+D	U-234	9.999E-01	1.898E-10	5.672E-10	1.312E-09	3.816E-09	1.015E-08	2.453E-08	3.025E-08	2.522E-09
U-238+D	Th-230	9.999E-01	1.427E-17	5.846E-17	2.112E-16	1.405E-15	9.995E-15	8.487E-14	4.342E-13	5.815E-13
U-238+D	Ra-226+D	9.999E-01	4.585E-18	9.069E-17	1.199E-15	3.338E-14	7.855E-13	2.285E-11	3.378E-10	1.125E-09
U-238+D	Pb-210+D	9.999E-01	4.071E-20	1.052E-18	2.103E-17	1.269E-15	6.951E-14	4.588E-12	1.069E-10	4.298E-10
U-238+D	ΣDSR(j)		1.272E-04	1.267E-04	1.256E-04	1.217E-04	1.114E-04	8.177E-05	3.376E-05	8.495E-07

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.020E-11	1.016E-11	1.007E-11	9.762E-12	8.935E-12	6.555E-12	2.705E-12	1.221E-13
U-238+D	U-238+D	9.999E-01	1.991E-07	1.982E-07	1.965E-07	1.905E-07	1.744E-07	1.279E-07	5.278E-08	2.383E-09
U-238+D	U-234	9.999E-01	2.970E-13	8.876E-13	2.053E-12	5.972E-12	1.588E-11	3.838E-11	4.734E-11	7.108E-12
U-238+D	Th-230	9.999E-01	2.812E-20	1.424E-19	6.250E-19	4.909E-18	3.754E-17	3.282E-16	1.694E-15	4.097E-15
U-238+D	Ra-226+D	9.999E-01	7.430E-22	1.118E-20	1.300E-19	3.379E-18	7.773E-17	2.243E-15	3.308E-14	1.983E-13
U-238+D	Pb-210+D	9.999E-01	7.920E-24	2.398E-22	5.889E-21	4.305E-19	2.563E-17	1.749E-15	4.114E-14	2.988E-13
U-238+D	ΣDSR(j)		1.991E-07	1.982E-07	1.965E-07	1.905E-07	1.744E-07	1.279E-07	5.283E-08	2.391E-09

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.709E-12
U-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	3.334E-08
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	9.946E-11
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	8.209E-18
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	3.772E-12
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	1.014E-12
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.345E-08

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,4t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	2.325E-08
U-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	4.537E-04
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	1.353E-06
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	1.457E-13
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	3.208E-09
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	3.385E-09
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.550E-04

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,5t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	3.729E-08
U-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	7.276E-04
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	2.170E-06
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	1.948E-13
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	5.153E-09
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	5.422E-09
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.298E-04

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	3.023E-08	3.010E-08	2.983E-08	2.892E-08	2.647E-08	1.942E-08	8.015E-09	6.087E-08
U-238+D	U-238+D	9.999E-01	5.899E-04	5.873E-04	5.821E-04	5.644E-04	5.166E-04	3.790E-04	1.564E-04	1.188E-03
U-238+D	U-234	9.999E-01	8.800E-10	2.630E-09	6.083E-09	1.769E-08	4.704E-08	1.137E-07	1.403E-07	3.543E-06
U-238+D	Th-230	9.999E-01	7.963E-17	3.895E-16	1.664E-15	1.282E-14	9.727E-14	8.479E-13	4.372E-12	1.045E-11
U-238+D	Ra-226+D	9.999E-01	6.313E-18	1.167E-16	1.501E-15	4.124E-14	9.661E-13	2.806E-11	4.147E-10	9.951E-09
U-238+D	Pb-210+D	9.999E-01	5.914E-20	1.609E-18	3.472E-17	2.270E-15	1.291E-13	8.654E-12	2.025E-10	9.932E-09
U-238+D	ΣDSR(j)		5.899E-04	5.873E-04	5.822E-04	5.644E-04	5.166E-04	3.791E-04	1.565E-04	1.191E-03

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from the Ingestion of Fish (p=6)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,6,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	4.560E-09	
U-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	8.897E-05	
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	2.654E-07	
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	1.225E-11	
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	1.737E-09	
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	2.103E-08	
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.926E-05	

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from the Ingestion of Drinking Water (p=7)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,7,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	3.445E-05
U-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	6.722E-01
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	2.005E-03
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	1.012E-08
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	2.855E-06
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	1.001E-05
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.742E-01

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

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Plant/Soil Concentration Ratio, FSR(j,3,q,k,t)
Overhead Irrigation (q=4) and Nonleafy Vegetables (k=1)

[illegible]

Plant/Soil Concentration Ratio, $FSR(j, 3, q, k, t)$
Overhead Irrigation ($q=4$) and Leafy Vegetables ($k=2$)

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Meat/Fodder, Milk/Fodder, Fodder/Air and Fodder/Water Concentration Ratios

FI(4,q): 68.0 kg/day FI(5,q): 55.0 kg/day q=1,2,3,4
 FI(4,q): 50.0 L/day FI(5,q): 160.0 L/day q=5
 FI(4,q): 0.5 kg/day FI(5,q):

Nuclide (i)	FQR(i,4) d/kg	FQR(i,5) d/kg	FAR(i,3,2,3) m**3/g	FWR(i,3,3,3) L/g	FWR(i,3,4,3) L/g
Pb-210	8.0000E-04	3.0000E-04	2.8659E-01	5.3329E-07	1.8139E-03
Ra-226	1.0000E-03	1.0000E-03	2.8659E-01	2.1329E-06	1.8139E-03
Th-230	1.0000E-04	5.0000E-06	2.8659E-01	5.3644E-08	1.8139E-03
U-234	3.4000E-04	6.0000E-04	2.8659E-01	1.3332E-07	1.8139E-03
U-238	3.4000E-04	6.0000E-04	2.8659E-01	1.3332E-07	1.8139E-03

FI(p,q) are the fodder (q=1,2,3,4), livestock water (q=5) and soil (q=6) intake rates;
 FQR(i,p) are the transfer coefficients from contaminated fodder of livestock
 water to meat (p=4) or milk (p=5). FAR(i,3,2,3) are the fodder/air
 concentration ratios, and FWR(i,3,3,3) and FWR(i,3,4,3) are the fodder/
 water concentration ratios for ditch and overhead irrigation, respectively.

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[illegible]

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U-238	U-238	4.4550E-09	6.9708E-12
U-238+D	U-238+D	8.2496E-05	1.2908E-07
U-238+D	U-234	0.0000E+00	0.0000E+00
U-238+D	Th-230	0.0000E+00	0.0000E+00
U-238+D	Ra-226+D	0.0000E+00	0.0000E+00
U-238+D	Pb-210+D	0.0000E+00	0.0000E+00

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[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Soil Ingestion Pathway (p=8)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,8,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	3.761E-07	3.745E-07	3.712E-07	3.598E-07	3.294E-07	2.416E-07	9.971E-08	4.501E-09
U-238+D	U-238+D	9.999E-01	7.339E-03	7.307E-03	7.242E-03	7.021E-03	6.427E-03	4.715E-03	1.946E-03	8.784E-05
U-238+D	U-234	9.999E-01	1.095E-08	3.272E-08	7.568E-08	2.201E-07	5.852E-07	1.415E-06	1.745E-06	2.620E-07
U-238+D	Th-230	9.999E-01	6.366E-14	4.445E-13	2.336E-12	2.047E-11	1.628E-10	1.445E-09	7.487E-09	1.813E-08
U-238+D	Ra-226+D	9.999E-01	1.661E-17	2.486E-16	2.883E-15	7.481E-14	1.720E-12	4.962E-11	7.317E-10	4.385E-09
U-238+D	Pb-210+D	9.999E-01	5.661E-19	1.741E-17	4.311E-16	3.167E-14	1.888E-12	1.289E-10	3.033E-09	2.203E-08
U-238+D	ΣDSR(j)		7.339E-03	7.307E-03	7.242E-03	7.022E-03	6.427E-03	4.716E-03	1.947E-03	8.814E-05

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

Dose Conversion and Environmental Transport Factors for the Soil Ingestion Pathway (p=8)

Parent (i)	Product (j)	DCF(j,8)*	ETF(j,8,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01
U-238+D	U-238+D	2.687E-04	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01
U-238+D	U-234	2.830E-04	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01
U-238+D	Th-230	5.480E-04	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01
U-238+D	Ra-226+D	1.321E-03	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01
U-238+D	Pb-210+D	7.276E-03	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01

* - The dose conversion factor units are mrem/pCi.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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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	4
Summary of Pathway Selections	8
Contaminated Zone and Total Dose Summary	9
Total Dose Components	
Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
Time = 3.000E+02	16
Time = 1.000E+03	17
Dose/Source Ratios Summed Over All Pathways	18
Single Radionuclide Soil Guidelines	18
Dose Per Nuclide Summed Over All Pathways	19
Soil Concentration Per Nuclide	19

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(4)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(5)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(6)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(7)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(8)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(9)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(10)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(11)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(12)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(13)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1(14)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(15)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1(16)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1(17)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(1)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(2)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(3)
B-1	U-234	1.320E-01	1.320E-01	DCF2(4)
B-1	U-238	1.180E-01	1.180E-01	DCF2(5)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2(6)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(1)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(2)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(3)
D-1	U-234	2.830E-04	2.830E-04	DCF3(4)
D-1	U-238	2.550E-04	2.550E-04	DCF3(5)
D-1	U-238+D	2.687E-04	2.550E-04	DCF3(6)
D-34	Food transfer factors:			
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(2,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(2,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(2,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
D-34				

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(4,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(4,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(4,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(5,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(5,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(5,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(6,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(6,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(6,3)
D-34				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(2,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(2,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(4,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(4,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(5,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(5,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(6,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(6,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETEG table in Ground Pathway of Detailed Report.

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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

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)	1.000E+01	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	5.000E+00	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): U-238	1.700E+01	0.000E+00	---	S1(5)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(5)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	Romberg failures occurred	EPS
R014	Density of saturated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.000E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	1.000E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	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)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-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	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(5)
R016	Unsat. zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.426E-03	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.217E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.165E-03	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.704E-06	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for daughter U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(4)
R016	Unsat. zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.426E-03	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	7.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	5.000E-01	5.000E-01	---	FIND

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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	-1 shows non-circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	3.333E-01	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m), ring 2:	6.667E-01	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m), ring 3:	1.000E+00	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m), ring 4:	1.333E+00	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m), ring 5:	1.667E+00	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m), ring 6:	2.000E+00	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m), ring 7:	2.333E+00	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m), ring 8:	2.667E+00	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m), ring 9:	3.000E+00	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m), ring 10:	3.333E+00	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	3.667E+00	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	4.000E+00	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	9.000E-01	1.000E+00	---	FRACA(1)
R017	Ring 2	9.000E-01	2.732E-01	---	FRACA(2)
R017	Ring 3	9.000E-01	0.000E+00	---	FRACA(3)
R017	Ring 4	6.500E-01	0.000E+00	---	FRACA(4)
R017	Ring 5	4.300E-01	0.000E+00	---	FRACA(5)
R017	Ring 6	3.400E-01	0.000E+00	---	FRACA(6)
R017	Ring 7	2.500E-01	0.000E+00	---	FRACA(7)
R017	Ring 8	1.200E-01	0.000E+00	---	FRACA(8)
R017	Ring 9	1.100E-01	0.000E+00	---	FRACA(9)
R017	Ring 10	8.500E-02	0.000E+00	---	FRACA(10)
R017	Ring 11	4.300E-03	0.000E+00	---	FRACA(11)
R017	Ring 12	0.000E+00	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
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-02	FPLANT
R018	Contamination fraction of meat	-1	-1	0.500E-03	FMEAT
R018	Contamination fraction of milk	-1	-1	0.500E-03	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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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 (l/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (l/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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	10.00 square meters	U-238	1.700E+01
Thickness:	1.50 meters		
Cover Depth:	0.00 meters		

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	6.439E-01	6.411E-01	6.355E-01	6.161E-01	5.639E-01	4.137E-01	1.707E-01	5.279E-02
M(t):	4.293E-02	4.274E-02	4.236E-02	4.107E-02	3.759E-02	2.758E-02	1.138E-02	3.520E-03

Maximum TDOSE(t): 8.340E-01 mrem/yr at t = 427.1 ± 0.9 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 = 4.271E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-238	8.624E-02	0.1034	9.335E-03	0.0112	0.000E+00	0.0000	1.500E-03	0.0018	4.950E-06	0.0000	1.213E-05	0.0000	1.887E-04	0.0002
Total	8.624E-02	0.1034	9.335E-03	0.0112	0.000E+00	0.0000	1.500E-03	0.0018	4.950E-06	0.0000	1.213E-05	0.0000	1.887E-04	0.0002

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 4.271E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-238	7.361E-01	0.8826	3.897E-05	0.0000	0.000E+00	0.0000	5.662E-04	0.0007	2.678E-06	0.0000	1.035E-05	0.0000	8.340E-01	1.0000
Total	7.361E-01	0.8826	3.897E-05	0.0000	0.000E+00	0.0000	5.662E-04	0.0007	2.678E-06	0.0000	1.035E-05	0.0000	8.340E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-238	5.710E-01	0.8866	6.172E-02	0.0958	0.000E+00	0.0000	9.917E-03	0.0154	3.272E-05	0.0001	8.022E-05	0.0001	1.248E-03	0.0019
Total	5.710E-01	0.8866	6.172E-02	0.0958	0.000E+00	0.0000	9.917E-03	0.0154	3.272E-05	0.0001	8.022E-05	0.0001	1.248E-03	0.0019

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- 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.
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.439E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.439E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.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- 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.
U-238	5.684E-01	0.8866	6.145E-02	0.0958	0.000E+00	0.0000	9.874E-03	0.0154	3.258E-05	0.0001	7.987E-05	0.0001	1.242E-03	0.0019
Total	5.684E-01	0.8866	6.145E-02	0.0958	0.000E+00	0.0000	9.874E-03	0.0154	3.258E-05	0.0001	7.987E-05	0.0001	1.242E-03	0.0019

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- 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.
U-238	0.000E+00	0.0000	0.000E+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-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.411E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-238	5.634E-01	0.8866	6.091E-02	0.0958	0.000E+00	0.0000	9.787E-03	0.0154	3.230E-05	0.0001	7.917E-05	0.0001	1.231E-03	0.0019
Total	5.634E-01	0.8866	6.091E-02	0.0958	0.000E+00	0.0000	9.787E-03	0.0154	3.230E-05	0.0001	7.917E-05	0.0001	1.231E-03	0.0019

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

Water Dependent Pathways

Radio- 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.
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.355E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.355E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-238	5.462E-01	0.8866	5.905E-02	0.0959	0.000E+00	0.0000	9.488E-03	0.0154	3.131E-05	0.0001	7.675E-05	0.0001	1.194E-03	0.0019
Total	5.462E-01	0.8866	5.905E-02	0.0959	0.000E+00	0.0000	9.488E-03	0.0154	3.131E-05	0.0001	7.675E-05	0.0001	1.194E-03	0.0019

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

Water Dependent Pathways

Radio- 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.
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.161E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.161E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-238	5.000E-01	0.8866	5.405E-02	0.0959	0.000E+00	0.0000	8.685E-03	0.0154	2.366E-05	0.0001	7.026E-05	0.0001	1.093E-03	0.0019
Total	5.000E-01	0.8866	5.405E-02	0.0959	0.000E+00	0.0000	8.685E-03	0.0154	2.366E-05	0.0001	7.026E-05	0.0001	1.093E-03	0.0019

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

Water Dependent Pathways

Radio- 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.
U-238	0.000E+00	0.0000	0.000E+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-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.639E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-238	3.668E-01	0.8866	3.966E-02	0.0959	0.000E+00	0.0000	6.373E-03	0.0154	2.103E-05	0.0001	5.155E-05	0.0001	8.018E-04	0.0019
Total	3.668E-01	0.8866	3.966E-02	0.0959	0.000E+00	0.0000	6.373E-03	0.0154	2.103E-05	0.0001	5.155E-05	0.0001	8.018E-04	0.0019

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

Water Dependent Pathways

Radio- 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.
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.137E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.137E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-238	1.514E-01	0.8865	1.638E-02	0.0959	0.000E+00	0.0000	2.631E-03	0.0154	8.684E-06	0.0001	2.129E-05	0.0001	3.311E-04	0.0019
Total	1.514E-01	0.8865	1.638E-02	0.0959	0.000E+00	0.0000	2.631E-03	0.0154	8.684E-06	0.0001	2.129E-05	0.0001	3.311E-04	0.0019

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

Water Dependent Pathways

Radio- 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.
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.707E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.707E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-238	6.832E-03	0.1294	7.412E-04	0.0140	0.000E+00	0.0000	6.621E-05	0.0013	3.490E-07	0.0000	8.709E-07	0.0000	1.499E-05	0.0003
Total	6.832E-03	0.1294	7.412E-04	0.0140	0.000E+00	0.0000	6.621E-05	0.0013	3.490E-07	0.0000	8.709E-07	0.0000	1.499E-05	0.0003

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

Water Dependent Pathways

Radio- 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.
U-238	4.510E-02	0.8543	2.392E-06	0.0000	0.000E+00	0.0000	3.470E-05	0.0007	1.643E-07	0.0000	6.342E-07	0.0000	5.279E-02	1.0000
Total	4.510E-02	0.8543	2.392E-06	0.0000	0.000E+00	0.0000	3.470E-05	0.0007	1.643E-07	0.0000	6.342E-07	0.0000	5.279E-02	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

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

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	2.315E-07	2.305E-07	2.285E-07	2.215E-07	2.028E-07	1.487E-07	6.138E-08	1.383E-07
U-238+D	U-238+D	9.999E-01	3.788E-02	3.771E-02	3.738E-02	3.624E-02	3.317E-02	2.433E-02	1.004E-02	3.097E-03
U-238+D	U-234	9.999E-01	6.879E-09	2.056E-08	4.755E-08	1.383E-07	3.677E-07	8.888E-07	1.096E-06	8.051E-06
U-238+D	Th-230	9.999E-01	4.684E-14	3.259E-13	1.710E-12	1.497E-11	1.190E-10	1.056E-09	5.472E-09	1.325E-08
U-238+D	Ra-226+D	9.999E-01	1.134E-15	1.699E-14	1.972E-13	5.119E-12	1.177E-10	3.395E-09	5.008E-08	3.711E-07
U-238+D	Pb-210+D	9.999E-01	2.741E-19	7.266E-18	1.630E-16	1.121E-14	6.525E-13	4.416E-11	1.036E-09	2.733E-07
U-238+D	ΣDSR(j)		3.788E-02	3.771E-02	3.738E-02	3.624E-02	3.317E-02	2.433E-02	1.004E-02	3.105E-03

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

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	3.960E+02	3.977E+02	4.013E+02	4.139E+02	4.522E+02	6.164E+02	1.494E+03	4.830E+03

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 = 427.1 ± 0.9 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
U-238	1.700E+01	427.1 ± 0.9	4.906E-02	3.057E+02	4.906E-02	3.057E+02

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr								
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-238	U-238	5.400E-05	3.936E-06	3.919E-06	3.884E-06	3.766E-06	3.447E-06	2.529E-06	1.044E-06	2.350E-06	
U-238	U-238	9.999E-01	6.439E-01	6.411E-01	6.355E-01	6.161E-01	5.639E-01	4.137E-01	1.707E-01	5.264E-02	
U-238	ΣDOSE(j)		6.439E-01	6.411E-01	6.355E-01	6.161E-01	5.639E-01	4.137E-01	1.707E-01	5.265E-02	
U-234	U-238	9.999E-01	1.169E-07	3.495E-07	8.083E-07	2.351E-06	6.251E-06	1.511E-05	1.864E-05	1.369E-04	
Th-230	U-238	9.999E-01	7.963E-13	5.540E-12	2.907E-11	2.545E-10	2.023E-09	1.795E-08	9.303E-08	2.252E-07	
Ra-226	U-238	9.999E-01	1.928E-14	2.888E-13	3.352E-12	8.702E-11	2.001E-09	5.772E-08	8.513E-07	6.308E-06	
Pb-210	U-238	9.999E-01	4.659E-18	1.235E-16	2.771E-15	1.905E-13	1.109E-11	7.507E-10	1.761E-08	4.645E-06	

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g								
			t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05		9.180E-04	9.139E-04	9.059E-04	8.783E-04	8.039E-04	5.897E-04	2.434E-04	1.099E-05
U-238	U-238	9.999E-01		1.700E+01	1.692E+01	1.677E+01	1.626E+01	1.489E+01	1.092E+01	4.506E+00	2.034E-01
U-238	ΣS(j):			1.700E+01	1.692E+01	1.678E+01	1.626E+01	1.489E+01	1.092E+01	4.507E+00	2.035E-01
U-234	U-238	9.999E-01		0.000E+00	4.798E-05	1.427E-04	4.610E-04	1.266E-03	3.095E-03	3.831E-03	5.759E-04
Th-230	U-238	9.999E-01		0.000E+00	2.163E-10	1.935E-09	2.106E-08	1.787E-07	1.623E-06	8.467E-06	2.054E-05
Ra-226	U-238	9.999E-01		0.000E+00	3.123E-14	8.378E-13	3.036E-11	7.705E-10	2.301E-08	3.428E-07	2.061E-06
Pb-210	U-238	9.999E-01		0.000E+00	2.412E-16	1.918E-14	2.224E-12	1.514E-10	1.083E-08	2.578E-07	1.879E-06

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

RESCALC.EXE execution time = 11.77 seconds

Total water/soil iteration failures = 1.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Table of ContentsPart II: Source Terms, Factors, and Parameters for Individual Pathways

Iteration Logs

Maximum U-238 Dose/Source Ratio	3
Maximum Total Dose	9

Source Factors for Ingrowth and Decay

Radioactivity Only	15
Combined Radioactivity and Leaching	15

Ground Pathway

Source Term Parameters	16
Time Dependence of Source Geometry	16
Occupancy, Cover/Depth, and Area Factors	17
Dose Conversion and Environmental Transport Factors .	18
Dose/Source Ratios	18

Inhalation Pathway (radon excluded)

Dose/Source Ratios	19
Pathway Factors	19
Dose Conversion and Environmental Transport Factors .	19

Radon Pathway

Flux and Parameters	20
Concentration and Parameters	21
Working Levels	22
Dose/Source Ratios	23

Groundwater and Surface Water Pathway Segments

Transport Time Parameters for Unsaturated Zone Strata	24
Dilution Factor and Rise Time Parameters for	
Nondispersion (ND) Model	25
Primary Parameters Used to Calculate Ratios	25
Water/Soil Concentration Ratios	26

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Table of Contents (cont.)Part II: Source Terms, Factors, and Parameters for Individual Pathways

Food Pathways

Storage Times for Contaminated Foodstuffs	27
Storage Time Ingrowth and Decay Factors	27
Storage Correction Factors	
Drinking Water	28
Irrigation Water	28
Livestock Water	29
Plants	30
Livestock Fodder	31
Meat and Milk	31
Fish and Crustacea	32
Area and Depth Factors	33
Dose Conversion and Environmental Transport Factors	
Plant	35
Meat	37
Milk	39
Fish	41
Drinking Water	41
Dose/Source Ratios	
Plant	42
Plant Total	43
Meat	44
Meat Total	45
Milk	46
Milk Total	47
Fish	48
Drinking Water	49
Concentration Ratios	
Plant/Air and Plant/Water	50
Plant/Soil	50
Meat/Fodder, Fodder/Air, Fodder/Water	52
Fodder/Soil	53
Meat/Soil	55
Milk/Soil	57

Soil Ingestion Pathway

Dose/Source Ratios.....	59
Dose Conversion and Environmental Transport Factors .	59

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum U-238 Dose/Source Ratio
 Pathway: Water

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	4.50657E+02	3.88311E-02		
1	4.78789E+02	3.39837E-02	2.81314E+01	parabolic
2	4.10495E+02	3.76096E-02	-4.01624E+01	golden section
3	4.35699E+02	4.16786E-02	-1.49582E+01	parabolic
4	4.32312E+02	4.23513E-02	-3.38687E+00	parabolic
5	4.23979E+02	4.22939E-02	-8.33345E+00	golden section
6	4.28342E+02	4.31534E-02	-3.97029E+00	parabolic
7	4.27913E+02	4.32408E-02	-1.24523E-01	parabolic
8	4.26410E+02	4.31073E-02	-1.50298E+00	golden section
9	4.27455E+02	4.33138E-02	-4.58657E-01	parabolic
10	4.27027E+02	4.32889E-02	-3.98903E-01	golden section
11	4.27455E+02	4.33138E-02	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum U-238 Dose/Source Ratio

Pathway: Fish

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	4.50657E+02	2.05595E-06		
1	4.78799E+02	1.79922E-06	2.81421E+01	parabolic
2	4.10495E+02	1.99077E-06	-4.01624E+01	golden section
3	4.35734E+02	2.20634E-06	-1.49228E+01	parabolic
4	4.32326E+02	2.24217E-06	-3.40790E+00	parabolic
5	4.23987E+02	2.23894E-06	-8.33898E+00	golden section
6	4.28366E+02	2.28453E-06	-3.96065E+00	parabolic
7	4.27937E+02	2.28916E-06	-1.32290E-01	parabolic
8	4.26429E+02	2.28217E-06	-1.50876E+00	golden section
9	4.27474E+02	2.29310E-06	-4.63712E-01	parabolic
10	4.27046E+02	2.29178E-06	-3.99171E-01	golden section
11	4.27474E+02	2.29310E-06	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum U-238 Dose/Source Ratio
 Pathway: Plant (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	4.50657E+02	2.98749E-05		
1	4.78804E+02	2.61436E-05	2.81467E+01	parabolic
2	4.10495E+02	2.89227E-05	-4.01624E+01	golden section
3	4.35758E+02	3.20568E-05	-1.48995E+01	parabolic
4	4.32336E+02	3.25795E-05	-3.42157E+00	parabolic
5	4.23993E+02	3.25305E-05	-8.34264E+00	golden section
6	4.28383E+02	3.31939E-05	-3.95346E+00	parabolic
7	4.27954E+02	3.32611E-05	-1.37910E-01	parabolic
8	4.26441E+02	3.31604E-05	-1.51290E+00	golden section
9	4.27487E+02	3.33190E-05	-4.67260E-01	parabolic
10	4.27059E+02	3.32999E-05	-3.99404E-01	golden section
11	4.27487E+02	3.33190E-05	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum U-238 Dose/Source Ratio
 Pathway: Meat (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	4.50657E+02	1.41464E-07		
1	4.78867E+02	1.23759E-07	2.82098E+01	parabolic
2	4.10495E+02	1.36713E-07	-4.01624E+01	golden section
3	4.35998E+02	1.51623E-07	-1.46595E+01	parabolic
4	4.32435E+02	1.54198E-07	-3.56237E+00	parabolic
5	4.24055E+02	1.53871E-07	-8.38052E+00	golden section
6	4.28551E+02	1.57055E-07	-3.88463E+00	parabolic
7	4.28122E+02	1.57373E-07	-1.92438E-01	parabolic
8	4.26568E+02	1.56933E-07	-1.55358E+00	golden section
9	4.27619E+02	1.57675E-07	-5.02989E-01	parabolic
10	4.27191E+02	1.57591E-07	-4.01293E-01	golden section
11	4.27619E+02	1.57675E-07	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum U-238 Dose/Source Ratio
 Pathway: Milk (water dependent)

Tolerance for t_{max} = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	4.50657E+02	5.46034E-07		
1	4.78816E+02	4.77808E-07	2.81589E+01	parabolic
2	4.10495E+02	5.28448E-07	-4.01624E+01	golden section
3	4.35804E+02	5.85782E-07	-1.48527E+01	parabolic
4	4.32355E+02	5.95412E-07	-3.44917E+00	parabolic
5	4.24005E+02	5.94445E-07	-8.34999E+00	golden section
6	4.28415E+02	6.06602E-07	-3.94004E+00	parabolic
7	4.27987E+02	6.07831E-07	-1.48585E-01	parabolic
8	4.26466E+02	6.06017E-07	-1.52082E+00	golden section
9	4.27513E+02	6.08894E-07	-4.74187E-01	parabolic
10	4.27085E+02	6.08553E-07	-3.99777E-01	golden section
11	4.27513E+02	6.08894E-07	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Iteration Log for Computation of the Time of Maximum U-238 Dose/Source Ratio
All Pathways Summed

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	4.50657E+02	4.40200E-02		
1	2.50463E+02	1.25043E-02	-2.00194E+02	parabolic
2	3.74190E+02	3.06572E-02	-7.64673E+01	golden section
3	5.03042E+02	3.43997E-02	5.23846E+01	golden section
4	4.21449E+02	4.73403E-02	-2.92079E+01	golden section
5	4.03398E+02	4.14062E-02	-1.80515E+01	golden section
6	4.29981E+02	4.85066E-02	8.53223E+00	parabolic
7	4.31359E+02	4.81940E-02	1.37789E+00	parabolic
8	4.27579E+02	4.90498E-02	-2.40276E+00	parabolic
9	4.25237E+02	4.85221E-02	-2.34124E+00	golden section
10	4.28006E+02	4.89580E-02	1.35294E-02	parabolic
11	4.27117E+02	4.90608E-02	-4.61599E-01	parabolic
12	4.26399E+02	4.88803E-02	-7.17958E-01	golden section
13	4.27117E+02	4.90608E-02	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Water

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	4.50657E+02	6.60129E-01		
1	4.78789E+02	5.77722E-01	2.81314E+01	parabolic
2	4.10495E+02	6.39363E-01	-4.01624E+01	golden section
3	4.35699E+02	7.08537E-01	-1.49582E+01	parabolic
4	4.32312E+02	7.19972E-01	-3.38687E+00	parabolic
5	4.23979E+02	7.18996E-01	-8.33345E+00	golden section
6	4.28342E+02	7.33608E-01	-3.97029E+00	parabolic
7	4.27913E+02	7.35094E-01	-1.24523E-01	parabolic
8	4.26410E+02	7.32825E-01	-1.50298E+00	golden section
9	4.27455E+02	7.36335E-01	-4.58659E-01	parabolic
10	4.27027E+02	7.35911E-01	-3.98903E-01	golden section
11	4.27455E+02	7.36335E-01	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \times (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Fish

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	4.50657E+02	3.49512E-05		
1	4.78799E+02	3.05867E-05	2.81421E+01	parabolic
2	4.10495E+02	3.38430E-05	-4.01624E+01	golden section
3	4.35734E+02	3.75078E-05	-1.49228E+01	parabolic
4	4.32326E+02	3.81170E-05	-3.40790E+00	parabolic
5	4.23987E+02	3.80620E-05	-8.33898E+00	golden section
6	4.28366E+02	3.88371E-05	-3.96065E+00	parabolic
7	4.27937E+02	3.89158E-05	-1.32263E-01	parabolic
8	4.26429E+02	3.87969E-05	-1.50875E+00	golden section
9	4.27474E+02	3.89827E-05	-4.63684E-01	parabolic
10	4.27046E+02	3.89603E-05	-3.99183E-01	golden section
11	4.27474E+02	3.89827E-05	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Plant (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	4.50657E+02	5.07874E-04		
1	4.78804E+02	4.44442E-04	2.81467E+01	parabolic
2	4.10495E+02	4.91686E-04	-4.01624E+01	golden section
3	4.35758E+02	5.44965E-04	-1.48995E+01	parabolic
4	4.32336E+02	5.53851E-04	-3.42157E+00	parabolic
5	4.23993E+02	5.53018E-04	-8.34264E+00	golden section
6	4.28383E+02	5.64296E-04	-3.95345E+00	parabolic
7	4.27954E+02	5.65440E-04	-1.37906E-01	parabolic
8	4.26441E+02	5.63726E-04	-1.51290E+00	golden section
9	4.27487E+02	5.66423E-04	-4.67254E-01	parabolic
10	4.27059E+02	5.66098E-04	-3.99404E-01	golden section
11	4.27487E+02	5.66423E-04	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Meat (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	4.50657E+02	2.40489E-06		
1	4.78867E+02	2.10390E-06	2.82098E+01	parabolic
2	4.10495E+02	2.32412E-06	-4.01624E+01	golden section
3	4.35998E+02	2.57760E-06	-1.46595E+01	parabolic
4	4.32435E+02	2.62137E-06	-3.56236E+00	parabolic
5	4.24055E+02	2.61581E-06	-8.38052E+00	golden section
6	4.28551E+02	2.66994E-06	-3.88463E+00	parabolic
7	4.28122E+02	2.67535E-06	-1.92438E-01	parabolic
8	4.26568E+02	2.66786E-06	-1.55358E+00	golden section
9	4.27619E+02	2.68048E-06	-5.02992E-01	parabolic
10	4.27191E+02	2.67905E-06	-4.01293E-01	golden section
11	4.27619E+02	2.68048E-06	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Milk (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	4.50657E+02	9.28257E-06		
1	4.78816E+02	8.12274E-06	2.81589E+01	parabolic
2	4.10495E+02	8.98362E-06	-4.01624E+01	golden section
3	4.35804E+02	9.95830E-06	-1.48527E+01	parabolic
4	4.32355E+02	1.01220E-05	-3.44917E+00	parabolic
5	4.24005E+02	1.01056E-05	-8.34999E+00	golden section
6	4.28415E+02	1.03122E-05	-3.94004E+00	parabolic
7	4.27987E+02	1.03331E-05	-1.48586E-01	parabolic
8	4.26466E+02	1.03023E-05	-1.52082E+00	golden section
9	4.27513E+02	1.03512E-05	-4.74181E-01	parabolic
10	4.27085E+02	1.03454E-05	-3.99777E-01	golden section
11	4.27513E+02	1.03512E-05	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

All Pathways Summed

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	4.50657E+02	7.48339E-01		
1	2.50463E+02	2.12574E-01	-2.00194E+02	parabolic
2	3.74190E+02	5.21173E-01	-7.64673E+01	golden section
3	5.03042E+02	5.84796E-01	5.23846E+01	golden section
4	4.21449E+02	8.04785E-01	-2.92079E+01	golden section
5	4.03398E+02	7.03905E-01	-1.80515E+01	golden section
6	4.29981E+02	8.24611E-01	8.53224E+00	parabolic
7	4.31359E+02	8.19299E-01	1.37789E+00	parabolic
8	4.27579E+02	8.33847E-01	-2.40276E+00	parabolic
9	4.25237E+02	8.24976E-01	-2.34124E+00	golden section
10	4.28006E+02	8.32286E-01	1.35296E-02	parabolic
11	4.27117E+02	8.34034E-01	-4.61597E-01	parabolic
12	4.26399E+02	8.30965E-01	-7.17958E-01	golden section
13	4.27117E+02	8.34034E-01	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Source Factors for Ingrowth and Decay

Radioactivity Factors Only

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	ID(j,t) = THF(j)*S1(j,t)/S1(i,0) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	5.400E-05	5.400E-05	5.400E-05	5.400E-05	5.400E-05	5.400E-05	5.400E-05	5.400E-05
U-238+D	U-238+D	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01	9.999E-01
U-238+D	U-234	9.999E-01	0.000E+00	2.835E-06	8.504E-06	2.835E-05	8.504E-05	2.834E-04	8.501E-04	2.831E-03
U-238+D	Th-230	9.999E-01	0.000E+00	1.276E-11	1.148E-10	1.276E-09	1.148E-08	1.275E-07	1.147E-06	1.271E-05
U-238+D	Ra-226+D	9.999E-01	0.000E+00	1.842E-15	4.973E-14	1.840E-12	4.958E-11	1.822E-09	4.813E-08	1.654E-06
U-238+D	Pb-210+D	9.999E-01	0.000E+00	1.423E-17	1.138E-15	1.346E-13	9.704E-12	8.486E-10	3.570E-08	1.509E-06

Source Factors for Ingrowth and Decay

Combined Radioactivity and Leaching Factors

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	SF(j,t) = THF(j)*S1(j,t)/S1(i,0) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	5.400E-05	5.376E-05	5.329E-05	5.166E-05	4.729E-05	3.469E-05	1.432E-05	6.463E-07
U-238+D	U-238+D	9.999E-01	9.999E-01	9.955E-01	9.868E-01	9.567E-01	8.756E-01	6.424E-01	2.651E-01	1.197E-02
U-238+D	U-234	9.999E-01	0.000E+00	2.822E-06	8.392E-06	2.712E-05	7.447E-05	1.821E-04	2.254E-04	3.388E-05
U-238+D	Th-230	9.999E-01	0.000E+00	1.272E-11	1.138E-10	1.239E-09	1.051E-08	9.547E-08	4.981E-07	1.208E-06
U-238+D	Ra-226+D	9.999E-01	0.000E+00	1.837E-15	4.929E-14	1.786E-12	4.532E-11	1.354E-09	2.016E-08	1.212E-07
U-238+D	Pb-210+D	9.999E-01	0.000E+00	1.419E-17	1.128E-15	1.308E-13	8.906E-12	6.368E-10	1.517E-08	1.105E-07

The effect of volatilization was also considered when computing the source factors for H-3 and C-14.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Parameters Used for Calculating Cover Depth and Contaminated Zone Thicknesses

Cover Erosion rate (vcv): 0.001000 m/yr
 Contaminated Zone Erosion rate (vcz): 0.001000 m/yr
 Water Table Drop rate (vwt): 0.001000 m/yr
 Precipitation rate (Pr): 1.000000 m/yr
 Cover Removal Time (Tc): 0.000E+00 yr
 Overhead irrigation rate (Irr): 0.200 m/yr Runoff coefficient (Cr): 0.200
 Evapotranspiration coeff. (Ce): 0.500 Infiltration rate (In): 0.500 m/yr
 Bulk soil density (rhob): 1.500 g/cm**3 Effective porosity (pe): 0.000

Radio-nuclide (i)	Distribution Coefficient Kd(i), cm**3/g	Leaching Ratio q(i)
Pb-210	1.000000E+02	2.135E-03
Ra-226	7.000000E+01	3.047E-03
Th-230	6.000000E+04	3.566E-06
U-234	5.000000E+01	4.261E-03
U-238	5.000000E+01	4.261E-03

Time Dependence of Source Geometry

Time Dependence of Cover Depth [Cd(i,t)]

Nuclide (i)	t=	Cd(i,t) (meters)						
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02
Pb-210	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
Ra-226	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
Th-230	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
U-234	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
U-238	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Time Dependence of Contaminated Zone Thicknesses [T(i,t)]

Nuclide (i)	t=	T(i,t) (meters)						
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02
Pb-210	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01
Ra-226	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01
Th-230	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01
U-234	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01
U-238	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Dose Conversion and Environmental Transport Factors for the Ground Pathway (p=1)

Nuclide (i)	DCF(i,1)* t=	ETFG(i,t) At Time in Years (dimensionless)							
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
At-218	5.847E-03	2.422E-01	2.422E-01	2.422E-01	2.422E-01	2.422E-01	2.422E-01	2.422E-01	2.422E-01
Bi-210	3.606E-03	2.261E-01	2.261E-01	2.261E-01	2.261E-01	2.261E-01	2.261E-01	2.261E-01	2.261E-01
Bi-214	9.808E+00	2.158E-01	2.158E-01	2.158E-01	2.158E-01	2.158E-01	2.158E-01	2.158E-01	2.151E-01
Pa-234	1.155E+01	2.191E-01	2.191E-01	2.191E-01	2.191E-01	2.191E-01	2.191E-01	2.191E-01	2.188E-01
Pa-234m	8.967E-02	2.183E-01	2.183E-01	2.183E-01	2.183E-01	2.183E-01	2.183E-01	2.183E-01	2.181E-01
Pb-210	2.447E-03	2.458E-01	2.458E-01	2.458E-01	2.458E-01	2.458E-01	2.458E-01	2.458E-01	2.458E-01
Pb-214	1.341E+00	2.260E-01	2.260E-01	2.260E-01	2.260E-01	2.260E-01	2.260E-01	2.260E-01	2.260E-01
Po-210	5.231E-05	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.178E-01
Po-214	5.138E-04	2.188E-01	2.188E-01	2.188E-01	2.188E-01	2.188E-01	2.188E-01	2.188E-01	2.186E-01
Po-218	5.642E-05	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.178E-01
Ra-226	3.176E-02	2.327E-01	2.327E-01	2.327E-01	2.327E-01	2.327E-01	2.327E-01	2.327E-01	2.327E-01
Rn-222	2.354E-03	2.202E-01	2.202E-01	2.202E-01	2.202E-01	2.202E-01	2.202E-01	2.202E-01	2.201E-01
Th-230	1.209E-03	2.378E-01	2.378E-01	2.378E-01	2.378E-01	2.378E-01	2.378E-01	2.378E-01	2.378E-01
Th-234	2.410E-02	2.386E-01	2.386E-01	2.386E-01	2.386E-01	2.386E-01	2.386E-01	2.386E-01	2.386E-01
Tl-210	0.000E+00	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01
U-234	4.017E-04	2.445E-01	2.445E-01	2.445E-01	2.445E-01	2.445E-01	2.445E-01	2.445E-01	2.445E-01
U-238	1.031E-04	2.791E-01	2.791E-01	2.791E-01	2.791E-01	2.791E-01	2.791E-01	2.791E-01	2.791E-01

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

Dose/Source Ratios for External Radiation from the Ground (p=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,1,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.551E-09	1.544E-09	1.530E-09	1.483E-09	1.358E-09	9.960E-10	4.110E-10	1.856E-11
U-238+D	U-238+D	9.999E-01	3.359E-02	3.344E-02	3.314E-02	3.213E-02	2.941E-02	2.158E-02	8.903E-03	4.016E-04
U-238+D	U-234	9.999E-01	1.388E-10	4.148E-10	9.594E-10	2.791E-09	7.419E-09	1.793E-08	2.212E-08	3.322E-09
U-238+D	Th-230	9.999E-01	1.220E-15	8.518E-15	4.477E-14	3.923E-13	3.120E-12	2.768E-11	1.435E-10	3.474E-10
U-238+D	Ra-226+D	9.999E-01	1.115E-15	1.669E-14	1.935E-13	5.023E-12	1.155E-10	3.331E-09	4.913E-08	2.935E-07
U-238+D	Pb-210+D	9.999E-01	4.059E-21	1.249E-19	3.091E-18	2.271E-16	1.354E-14	9.245E-13	2.175E-11	1.579E-10
U-238+D	ΣDSR(j)		3.359E-02	3.344E-02	3.314E-02	3.213E-02	2.941E-02	2.158E-02	8.904E-03	4.019E-04

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Inhalation Pathway, Excluding Radon (p=2)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,2,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-238	U-238	5.400E-05	1.960E-07	1.951E-07	1.934E-07	1.875E-07	1.716E-07	1.259E-07	5.196E-08	2.346E-09	
U-238+D	U-238+D	9.999E-01	3.630E-03	3.614E-03	3.583E-03	3.473E-03	3.179E-03	2.332E-03	9.624E-04	4.345E-05	
U-238+D	U-234	9.999E-01	5.751E-09	1.718E-08	3.975E-08	1.156E-07	3.074E-07	7.430E-07	9.165E-07	1.376E-07	
U-238+D	Th-230	9.999E-01	4.265E-14	2.978E-13	1.565E-12	1.372E-11	1.091E-10	9.677E-10	5.015E-09	1.215E-08	
U-238+D	Ra-226+D	9.999E-01	1.217E-19	1.821E-18	2.112E-17	5.481E-16	1.260E-14	3.635E-13	5.361E-12	3.213E-11	
U-238+D	Pb-210+D	9.999E-01	2.032E-21	6.251E-20	1.548E-18	1.137E-16	6.778E-15	4.629E-13	1.089E-11	7.908E-11	
U-238+D	ΣDSR(j)		3.630E-03	3.614E-03	3.583E-03	3.473E-03	3.179E-03	2.333E-03	9.634E-04	4.360E-05	

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

Pathway Factors for the Inhalation Pathway (radon excluded)

Area (A):	1.0000E+01 m**2	Occupancy Factor (FO2):	4.5000E-01
Area Factor (FA2):	8.1554E-02	Annual Air Intake (F12):	8.4000E+03 m**3/yr
Cover Depth [Cd(0)]:	0.0000E+00 m	Mass Loading (ASR2):	1.0000E-04 g/m**3
Contaminated Zone Thickness [T(0)]:	1.5000E+00 m	FA2 * FO2 * F12 * ASR2:	3.0827E-02 g/yr

Nuclide (i)	t=	Depth Factor [FD(i,2,t)] (dimensionless)							
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00

Dose Conversion and Environmental Transport Factors for the Inhalation Pathway, Excluding Radon (p=2)

Parent (i)	Product (j)	DCF(j,2)*	ETF(j,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	1.180E-01	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02
U-238+D	U-238+D	1.180E-01	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02
U-238+D	U-234	1.320E-01	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02
U-238+D	Th-230	3.260E-01	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02
U-238+D	Ra-226+D	8.594E-03	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02
U-238+D	Pb-210+D	2.320E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Outdoor Working Levels of Radon [WLOTD(i,t)]

Nuclide		WLOTD(i,t) (WL)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Indoor Working Levels of Radon [WLIND(i,t)]

Nuclide		WLIND(i,t) (WL)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Fraction of Time Spent Outdoors (FOTD): 2.500E-01

Fraction of Time Spent Indoors (FIND): 5.000E-01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Radon Pathway (p=9)

Subpathway: Outdoor and Indoor Radon Flux

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,9,t) - DSRRNW(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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
U-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
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
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
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
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
U-238+D	ΣDSR(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

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

Dose/Source Ratios for Radon Pathway (p=9)

Subpathway: Indoor Radon from Water Usage

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSRRNW(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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
U-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
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
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
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
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
U-238+D	ΣDSR(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

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Transport Time Parameters for Unsaturated Zone Stratum No. 1

Stratum thickness [h(1)]: 4.000000 m
 Bulk soil material density [rhob(1)]: 1.500000 g/cm**3
 Effective porosity [peuz(1)]: 0.200000
 Hydraulic conductivity [Khuz(1)]: 10.000000 m/yr
 Total porosity [ptuz(1)]: 0.400000
 Soil specific b parameter [buz(1)]: 5.300000
 Saturation ratio [sruz(1)]: 0.802299

Radio-nuclide (i)	Distribution Coefficient Kduz(i,1), cm**3/g	Retardation Factor Rduz(i,1)	Transport Time Dtuz(i,1), yr
Pb-210	1.0000E+02	4.6841E+02	6.0128E+02
Ra-226	7.0000E+01	3.2818E+02	4.2128E+02
Th-230	6.0000E+04	2.8045E+05	3.6000E+05
U-234	5.0000E+01	2.3470E+02	3.0128E+02
U-238	5.0000E+01	2.3470E+02	3.0128E+02

Transport Time Parameters for Unsaturated Zone created by the Falling Water Table

Water table drop rate [vwt]: 0.001000 m/yr
 Bulk soil material density [rhobaq]: 1.500000 g/cm**3
 Effective porosity [peaq]: 0.200000
 Hydraulic conductivity [Khaq]: 100.000000 m/yr
 Total porosity [ptaq]: 0.400000
 Soil specific b parameter [baq]: 5.300000
 Saturation ratio [sruaq]: 0.677340

Radio-nuclide (i)	Distribution Coefficient Kdaq(i), cm**3/g	Retardation Factor Rduaq(i)	Minimum Transport Time Dtuaq(i), yr
Pb-210	1.0000E+02	5.5464E+02	1.0633E+02
Ra-226	7.0000E+01	3.8855E+02	4.9567E+01
Th-230	6.0000E+04	3.3218E+05	Infinite
U-234	5.0000E+01	2.7782E+02	2.4524E+01
U-238	5.0000E+01	2.7782E+02	2.4524E+01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dilution Factor and Rise Time Parameters for Nondispersion (ND) Model

Aquifer contamination depth at well (z): 1.25000E+00 m
 Depth of water intake below water table (dw): 1.00000E+01 m
 Infiltration rate (In): 5.00000E-01 m/yr
 Aquifer water flow rate (Vwfr): 2.00000E+00 m/yr
 Hydraulic gradient (J): 2.00000E-02
 Hydraulic conductivity of aquifer (Kszh): 1.00000E+02 m/yr
 Contaminated zone extent parallel to gradient (l): 5.00000E+00 m
 Distance below contaminated zone to water table (h): 0.40000E+01 m
 Initial thickness of uncontaminated cover (Cd): 0.00000E+00 m
 Initial thickness of contaminated zone (T): 0.15000E+01 m
 Effective porosity of saturated zone (pesz): 0.20000E+00

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdsz(i)	Horizontal Transport Time Onsite Tauh(i), yr	Rise Time dt(i), yr	Decay Time Parameter 1/lamda(i),yr
Pb-210	2.000E-02	3.760E+02	1.880E+02	1.880E+02	3.217E+01
Ra-226	2.000E-02	2.635E+02	1.318E+02	1.318E+02	2.308E+03
Th-230	2.000E-02	2.250E+05	1.125E+05	1.125E+05	1.111E+05
U-234	2.000E-02	1.885E+02	9.425E+01	9.425E+01	3.527E+05
U-238	2.000E-02	1.885E+02	9.425E+01	9.425E+01	6.446E+09

Primary Parameters Used for Calculating Water/Soil
Concentration Ratios for Groundwater Pathway Segment

Model used: Nondispersion (ND)

Bulk soil density in contaminated zone (rhob): 1.500 g/cm**3

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdcz(i)	Breakthrough Time Chain year	Single Nuclide Dt(i), yr	Rise Time dt(i), yr
Pb-210	2.000E-02	4.684E+02	3.258E+02	7.076E+02	1.880E+02
Ra-226	2.000E-02	3.282E+02	3.258E+02	4.709E+02	1.318E+02
Th-230	2.000E-02	2.804E+05	3.258E+02	Infinite	1.125E+05
U-234	2.000E-02	2.347E+02	3.258E+02	3.258E+02	9.425E+01
U-238	2.000E-02	2.347E+02	3.258E+02	3.258E+02	9.425E+01

Water/Soil Concentration Ratios [WSR(j,2,t)] for Surface Water Pathway Segment

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Times For Contaminated Foodstuffs

k	Food Item	STOR_T(k), days
1	non-leafy plants	14.
2	leafy plants	1.
3	milk	1.
4	meat	20.
5	fish	7.
6	crustacea	7.
7	well water	1.
8	surface water	1.
9	livestock fodder	45.

Storage Time Ingrowth and Decay Factors

Storage Time for k'th Foodstuff: $t = \text{STOR_T}(k)$, days

Parent	Product	Thread	STOR_ID(i,j,t) = CONCE(i,j,t)/CONCE(i,i,0)									
(i)	(j)	Fraction	t =	1.400E+01	1.000E+00	1.000E+00	2.000E+01	7.000E+00	7.000E+00	1.000E+00	1.000E+00	4.500E+01
Pb-210	Pb-210	1.000E+00		9.988E-01	9.999E-01	9.999E-01	9.983E-01	9.994E-01	9.994E-01	9.999E-01	9.999E-01	9.962E-01
Ra-226	Ra-226	1.000E+00		1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01
Ra-226	Pb-210	1.000E+00		1.191E-03	8.510E-05	8.510E-05	1.701E-03	5.955E-04	5.955E-04	8.510E-05	8.510E-05	3.822E-03
Th-230	Th-230	1.000E+00		1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Th-230	Ra-226	1.000E+00		1.661E-05	1.186E-06	1.186E-06	2.372E-05	8.303E-06	3.303E-06	1.186E-06	1.186E-06	5.337E-05
Th-230	Pb-210	1.000E+00		9.888E-09	5.047E-11	5.047E-11	2.018E-08	2.472E-09	2.472E-09	5.047E-11	5.047E-11	1.021E-07
U-234	U-234	1.000E+00		1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00		3.450E-07	2.465E-08	2.465E-08	4.929E-07	1.725E-07	1.725E-07	2.465E-08	2.465E-08	1.109E-06
U-234	Ra-226	1.000E+00		2.865E-12	1.462E-14	1.462E-14	5.846E-12	7.162E-13	7.162E-13	1.462E-14	1.462E-14	2.960E-11
U-234	Pb-210	1.000E+00		1.137E-15	4.146E-19	4.146E-19	3.315E-15	1.422E-16	1.422E-16	4.146E-19	4.146E-19	3.774E-14
U-238	U-238	5.400E-05		1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238	U-238	9.999E-01		1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238	U-234	1.000E+00		1.087E-07	7.762E-09	7.762E-09	1.552E-07	5.433E-08	5.433E-08	7.762E-09	7.762E-09	3.493E-07
U-238	Th-230	1.000E+00		1.875E-14	9.565E-17	9.565E-17	3.826E-14	4.687E-15	4.687E-15	9.565E-17	9.565E-17	1.937E-13
U-238	Ra-226	1.000E+00		1.038E-19	3.782E-23	3.782E-23	3.025E-19	1.297E-20	1.297E-20	3.782E-23	3.782E-23	3.446E-18
U-238	Pb-210	1.000E+00		3.090E-23	8.045E-28	8.045E-28	1.287E-22	1.931E-24	1.931E-24	8.045E-28	8.045E-28	3.296E-21

CONCE(i,j,t)/CONCE(i,i,0) is the concentration ratio of Product(j) at time t to Parent(i) at start of storage time.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors
Drinking Water from Well and/or Surface
Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,1)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
Irrigation Water for Nonleafy Plants from Well and/or Surface
Harvest Time = t - 4.11E-02 yr; Consumption Time = t - 3.83E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,2)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
Irrigation Water for Leafy Plants from Well and/or Surface
Harvest Time = t - 5.48E-03 yr; Consumption Time = t - 2.74E-03 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,3)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors

Irrigation Water for Livestock (Milk) Fodder from Well and/or Surface

Harvest Time = $t - 1.29\text{E-}01$ yr; Consumption Time = $t - 1.26\text{E-}01$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,5) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Irrigation Water for Livestock (Meat) Fodder from Well and/or Surface

Harvest Time = $t - 1.81\text{E-}01$ yr; Consumption Time = $t - 1.78\text{E-}01$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,7) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Livestock (Milk) Water from Well and/or Surface

Harvest Time = $t - 5.48\text{E-}03$ yr; Consumption Time = $t - 2.74\text{E-}03$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,4) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors

Livestock (Meat) Water from Well and/or Surface

Harvest Time = t - 5.75E-02 yr; Consumption Time = t - 5.48E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,6)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Nonleafy Plants

Harvest Time = t - 3.83E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.021E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Leafy Plants

Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors for Livestock (Meat) Fodder

Harvest Time = t - 1.78E-01 yr; Consumption Time = t - 5.48E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.150E+00	1.044E+00	1.013E+00	1.004E+00	1.001E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.803E+00	1.222E+00	1.062E+00	1.020E+00	1.005E+00	1.001E+00	1.000E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.016E+00	1.004E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	3.417E+00	1.706E+00	1.209E+00	1.074E+00	1.029E+00	1.017E+00	1.011E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Livestock (Milk) Fodder

Harvest Time = t - 1.26E-01 yr; Consumption Time = t - 2.74E-03 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.141E+00	1.043E+00	1.012E+00	1.004E+00	1.001E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.752E+00	1.218E+00	1.062E+00	1.020E+00	1.005E+00	1.001E+00	1.000E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.014E+00	1.004E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	3.273E+00	1.694E+00	1.207E+00	1.074E+00	1.029E+00	1.017E+00	1.011E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Meat

Harvest Time = t - 5.48E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF45(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.058E+00	1.019E+00	1.006E+00	1.002E+00	1.001E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.457E+00	1.148E+00	1.043E+00	1.014E+00	1.004E+00	1.001E+00	1.000E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.005E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.368E+00	1.184E+00	1.069E+00	1.027E+00	1.010E+00	1.006E+00	1.003E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors for Milk

Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF45(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.003E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.732E+00	1.248E+00	1.074E+00	1.024E+00	1.006E+00	1.002E+00	1.000E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.047E+00	1.023E+00	1.009E+00	1.003E+00	1.001E+00	1.001E+00	1.001E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Fish & Crustacea

Harvest Time = t - 1.92E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CFF(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-238+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	U-234	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Th-230	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00
U-238+D	Ra-226+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-238+D	Pb-210+D	9.999E-01	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.996E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Area and Depth Factors for Plant (p=3), Meat (p=4), and Milk (p=5) Pathways
Overhead Irrigation (q=4)

Area Factor for Plant Foods [FA(3)] = 0.01

The Depth Factor Value

$FD(i,p,q,t) = 1.0000E+00$

is applicable for all radionuclides(i) and times(t).

Area and Depth Factors for Meat (p=4) and Milk (p=5) Pathways
Transfer from Livestock Water (q=5) and Soil (q=6) Intake

Area Factor for Meat and Milk [FA(p),p=4,5] = 0.00

The livestock water subpathway (q=5) and livestock soil intake subpathway (q=6)
occur only for the meat (p=4) and milk (p=5) pathways.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	1.174E-04	1.169E-04	1.159E-04	1.124E-04	1.029E-04	7.546E-05	3.114E-05	7.811E-07
U-238+D	U-238+D	2.687E-04	2.175E+00	2.166E+00	2.147E+00	2.081E+00	1.905E+00	1.397E+00	5.766E-01	1.446E-02
U-238+D	U-234	2.830E-04	0.000E+00	6.139E-06	1.826E-05	5.900E-05	1.620E-04	3.961E-04	4.902E-04	4.095E-05
U-238+D	Th-230	5.480E-04	0.000E+00	1.222E-11	1.025E-10	1.089E-09	9.178E-09	3.313E-08	4.334E-07	5.841E-07
U-238+D	Ra-226+D	1.321E-03	0.000E+00	5.760E-14	1.657E-12	6.152E-11	1.572E-09	4.707E-08	7.015E-07	2.344E-06
U-238+D	Pb-210+D	7.276E-03	0.000E+00	1.698E-16	1.118E-14	1.189E-12	7.879E-11	5.579E-09	1.325E-07	5.363E-07

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	2.728E-08	2.716E-08	2.692E-08	2.610E-08	2.389E-08	1.753E-08	7.233E-09	3.265E-10
U-238+D	U-238+D	2.687E-04	5.052E-04	5.030E-04	4.986E-04	4.834E-04	4.424E-04	3.246E-04	1.339E-04	6.047E-06
U-238+D	U-234	2.830E-04	0.000E+00	1.426E-09	4.240E-09	1.370E-08	3.762E-08	9.200E-08	1.139E-07	1.712E-08
U-238+D	Th-230	5.480E-04	0.000E+00	6.428E-15	5.750E-14	6.259E-13	5.312E-12	4.823E-11	2.516E-10	6.104E-10
U-238+D	Ra-226+D	1.321E-03	0.000E+00	9.286E-19	2.490E-17	9.024E-16	2.290E-14	6.840E-13	1.019E-11	6.125E-11
U-238+D	Pb-210+D	7.276E-03	0.000E+00	7.177E-21	5.702E-19	6.609E-17	4.500E-15	3.217E-13	7.662E-12	5.585E-11

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.672E-10
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.949E-06
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.401E-08
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.006E-13
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.511E-10
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.434E-11

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.097E-07
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.587E-03
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.148E-05
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.602E-10
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.324E-08
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.836E-08

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	9.832E-08	9.796E-08	9.710E-08	9.414E-08	8.616E-08	6.321E-08	2.608E-08	6.545E-10
U-238+D	U-238+D	2.687E-04	1.821E-03	1.814E-03	1.798E-03	1.743E-03	1.596E-03	1.170E-03	4.830E-04	1.212E-05
U-238+D	U-234	2.830E-04	0.000E+00	5.143E-09	1.529E-08	4.942E-08	1.357E-07	3.318E-07	4.106E-07	3.431E-08
U-238+D	Th-230	5.480E-04	0.000E+00	5.790E-15	3.385E-14	2.964E-13	2.338E-12	2.066E-11	1.069E-10	1.439E-10
U-238+D	Ra-226+D	1.321E-03	0.000E+00	8.897E-17	3.530E-15	1.452E-13	3.818E-12	1.154E-10	1.725E-09	5.772E-09
U-238+D	Pb-210+D	7.276E-03	0.000E+00	5.309E-19	3.184E-17	2.768E-15	1.666E-13	1.134E-11	2.663E-10	1.074E-09

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	9.192E-11	9.158E-11	9.078E-11	8.801E-11	8.055E-11	5.909E-11	2.439E-11	1.101E-12
U-238+D	U-238+D	2.687E-04	1.702E-06	1.696E-06	1.681E-06	1.630E-06	1.492E-06	1.094E-06	4.516E-07	2.039E-08
U-238+D	U-234	2.830E-04	0.000E+00	4.808E-12	1.430E-11	4.620E-11	1.269E-10	3.102E-10	3.839E-10	5.771E-11
U-238+D	Th-230	5.480E-04	0.000E+00	7.997E-18	6.192E-17	6.363E-16	5.308E-15	4.790E-14	2.495E-13	6.050E-13
U-238+D	Ra-226+D	1.321E-03	0.000E+00	7.934E-21	2.350E-19	8.815E-18	2.259E-16	6.771E-15	1.010E-13	6.071E-13
U-238+D	Pb-210+D	7.276E-03	0.000E+00	5.869E-23	4.593E-21	5.270E-19	3.576E-17	2.554E-15	6.080E-14	4.431E-13

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.015E-13
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.880E-09
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.323E-12
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.476E-17
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.035E-13
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.808E-14

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.382E-09
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.558E-05
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.243E-08
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.109E-13
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.282E-10
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.254E-10

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,5,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.597E-10
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.036E-05
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.934E-08
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.570E-13
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.734E-10
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.110E-11

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	2.049E-07	2.041E-07	2.023E-07	1.962E-07	1.796E-07	1.317E-07	5.436E-08	1.364E-09
U-238+D	U-238+D	2.687E-04	3.795E-03	3.780E-03	3.747E-03	3.633E-03	3.325E-03	2.439E-03	1.007E-03	2.525E-05
U-238+D	U-234	2.830E-04	0.000E+00	1.072E-08	3.187E-08	1.030E-07	2.828E-07	6.914E-07	8.557E-07	7.149E-08
U-238+D	Th-230	5.480E-04	0.000E+00	4.794E-16	2.395E-15	1.877E-14	1.415E-13	1.229E-12	6.326E-12	8.496E-12
U-238+D	Ra-226+D	1.321E-03	0.000E+00	1.260E-16	4.403E-15	1.742E-13	4.532E-12	1.365E-10	2.039E-09	6.817E-09
U-238+D	Pb-210+D	7.276E-03	0.000E+00	2.167E-19	1.261E-17	1.156E-15	7.186E-14	4.963E-12	1.170E-10	4.728E-10

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	1.916E-10	1.909E-10	1.892E-10	1.834E-10	1.679E-10	1.231E-10	5.082E-11	2.294E-12
U-238+D	U-238+D	2.687E-04	3.548E-06	3.534E-06	3.503E-06	3.396E-06	3.108E-06	2.280E-06	9.410E-07	4.248E-08
U-238+D	U-234	2.830E-04	0.000E+00	1.002E-11	2.979E-11	9.628E-11	2.644E-10	6.464E-10	8.000E-10	1.203E-10
U-238+D	Th-230	5.480E-04	0.000E+00	6.207E-19	4.093E-18	3.898E-17	3.173E-16	2.839E-15	1.475E-14	3.573E-14
U-238+D	Ra-226+D	1.321E-03	0.000E+00	1.078E-20	2.908E-19	1.056E-17	2.680E-16	8.008E-15	1.193E-13	7.171E-13
U-238+D	Pb-210+D	7.276E-03	0.000E+00	2.582E-23	2.020E-21	2.328E-19	1.582E-17	1.130E-15	2.692E-14	1.962E-13

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.116E-13
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.918E-09
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.109E-11
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.896E-19
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.943E-13
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.986E-14

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,4,t) * SF(j,t) At Time in Years (g/yr)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.879E-09
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.331E-05
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.509E-07
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.587E-14
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.054E-10
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.969E-11

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,5,t) * SF(j,t) At Time in Years (g/yr)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.614E-09
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.544E-05
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.419E-07
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.928E-14
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.131E-10
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.600E-10

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Fish Pathway (p=6)

Parent (i)	Product (j)	DCF(j,6)*	ETF(j,6,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.821E-08
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.224E-04
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.479E-06
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.240E-10
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.366E-08
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.092E-08

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Drinking Water Pathway (p=7)

Parent (i)	Product (j)	DCF(j,7)*	ETF(j,7,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.329E-04
U-238+D	U-238+D	2.687E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.867E+00
U-238+D	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.793E-02
U-238+D	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.617E-07
U-238+D	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.635E-05
U-238+D	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.695E-05

* - The dose conversion factor units are mrem/pCi.

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Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	2.989E-08	2.976E-08	2.949E-08	2.859E-08	2.617E-08	1.920E-08	7.923E-09	1.985E-10
U-238+D	U-238+D	9.999E-01	5.832E-04	5.806E-04	5.755E-04	5.580E-04	5.107E-04	3.746E-04	1.546E-04	3.874E-06
U-238+D	U-234	9.999E-01	8.700E-10	2.600E-09	6.014E-09	1.749E-08	4.650E-08	1.124E-07	1.387E-07	1.156E-08
U-238+D	Th-230	9.999E-01	2.330E-15	1.508E-14	7.646E-14	6.572E-13	5.191E-12	4.595E-11	2.380E-10	3.198E-10
U-238+D	Ra-226+D	9.999E-01	1.840E-17	2.962E-16	3.559E-15	9.418E-14	2.179E-12	6.301E-11	9.300E-10	3.094E-09
U-238+D	Pb-210+D	9.999E-01	2.608E-19	6.861E-18	1.531E-16	1.049E-14	6.100E-13	4.127E-11	9.682E-10	3.900E-09
U-238+D	ΣDSR(j)		5.832E-04	5.806E-04	5.755E-04	5.580E-04	5.107E-04	3.748E-04	1.547E-04	3.893E-06

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	6.942E-12	6.911E-12	6.850E-12	6.641E-12	6.079E-12	4.459E-12	1.840E-12	8.308E-14
U-238+D	U-238+D	9.999E-01	1.355E-07	1.349E-07	1.337E-07	1.296E-07	1.186E-07	8.702E-08	3.591E-08	1.621E-09
U-238+D	U-234	9.999E-01	2.021E-13	6.038E-13	1.397E-12	4.063E-12	1.080E-11	2.611E-11	3.220E-11	4.836E-12
U-238+D	Th-230	9.999E-01	1.175E-18	8.204E-18	4.311E-17	3.778E-16	3.004E-15	2.666E-14	1.382E-13	3.346E-13
U-238+D	Ra-226+D	9.999E-01	3.070E-22	4.589E-21	5.320E-20	1.381E-18	3.174E-17	9.157E-16	1.350E-14	8.093E-14
U-238+D	Pb-210+D	9.999E-01	1.047E-23	3.215E-22	7.958E-21	5.844E-19	3.485E-17	2.380E-15	5.597E-14	4.066E-13
U-238+D	ΣDSR(j)		1.355E-07	1.349E-07	1.337E-07	1.296E-07	1.186E-07	8.704E-08	3.594E-08	1.627E-09

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	6.797E-14
U-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	1.326E-09
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	3.957E-12
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	5.514E-17
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	5.956E-13
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	5.407E-13
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.331E-09

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,4t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.042E-10
U-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	2.033E-06
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	6.066E-09
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	1.974E-13
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	5.707E-11
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	2.062E-10
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.040E-06

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	2.989E-08	2.976E-08	2.950E-08	2.860E-08	2.618E-08	1.920E-08	7.925E-09	3.029E-10
U-238+D	U-238+D	9.999E-01	5.833E-04	5.808E-04	5.756E-04	5.581E-04	5.108E-04	3.747E-04	1.546E-04	5.910E-06
U-238+D	U-234	9.999E-01	8.702E-10	2.600E-09	6.015E-09	1.750E-08	4.652E-08	1.124E-07	1.387E-07	1.763E-08
U-238+D	Th-230	9.999E-01	2.331E-15	1.509E-14	7.651E-14	6.575E-13	5.194E-12	4.598E-11	2.381E-10	3.203E-10
U-238+D	Ra-226+D	9.999E-01	1.840E-17	2.962E-16	3.559E-15	9.418E-14	2.179E-12	6.302E-11	9.300E-10	3.152E-09
U-238+D	Pb-210+D	9.999E-01	2.608E-19	6.862E-18	1.531E-16	1.049E-14	6.101E-13	4.127E-11	9.682E-10	4.107E-09
U-238+D	ΣDSR(j)		5.833E-04	5.808E-04	5.757E-04	5.581E-04	5.109E-04	3.748E-04	1.548E-04	5.936E-06

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	2.503E-11	2.492E-11	2.471E-11	2.395E-11	2.192E-11	1.608E-11	6.637E-12	1.664E-13
U-238+D	U-238+D	9.999E-01	4.885E-07	4.864E-07	4.821E-07	4.674E-07	4.278E-07	3.138E-07	1.295E-07	3.246E-09
U-238+D	U-234	9.999E-01	7.287E-13	2.178E-12	5.037E-12	1.465E-11	3.895E-11	9.415E-11	1.161E-10	9.683E-12
U-238+D	Th-230	9.999E-01	1.286E-18	6.040E-18	2.433E-17	1.780E-16	1.321E-15	1.142E-14	5.872E-14	7.877E-14
U-238+D	Ra-226+D	9.999E-01	2.443E-20	5.528E-19	7.760E-18	2.228E-16	5.294E-15	1.546E-13	2.287E-12	7.619E-12
U-238+D	Pb-210+D	9.999E-01	7.650E-22	2.133E-20	4.221E-19	2.427E-17	1.289E-15	8.385E-14	1.945E-12	7.812E-12
U-238+D	ΣDSR(j)		4.885E-07	4.864E-07	4.821E-07	4.674E-07	4.278E-07	3.139E-07	1.296E-07	3.271E-09

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	2.340E-14	2.330E-14	2.310E-14	2.239E-14	2.050E-14	1.504E-14	6.205E-15	2.801E-16
U-238+D	U-238+D	9.999E-01	4.567E-10	4.547E-10	4.507E-10	4.369E-10	3.999E-10	2.934E-10	1.211E-10	5.466E-12
U-238+D	U-234	9.999E-01	6.813E-16	2.036E-15	4.709E-15	1.370E-14	3.642E-14	8.802E-14	1.086E-13	1.631E-14
U-238+D	Th-230	9.999E-01	1.593E-21	9.477E-21	4.587E-20	3.836E-19	3.002E-18	2.648E-17	1.370E-16	3.316E-16
U-238+D	Ra-226+D	9.999E-01	2.502E-24	4.148E-23	5.059E-22	1.350E-20	3.132E-19	9.065E-18	1.338E-16	8.023E-16
U-238+D	Pb-210+D	9.999E-01	8.556E-26	2.611E-24	6.397E-23	4.659E-21	2.769E-19	1.889E-17	4.442E-16	3.226E-15
U-238+D	ΣDSR(j)		4.567E-10	4.547E-10	4.507E-10	4.370E-10	4.000E-10	2.935E-10	1.212E-10	5.487E-12

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	2.583E-17
U-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	5.040E-13
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	1.503E-15
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	8.086E-21
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	6.648E-16
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	4.952E-16
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.066E-13

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	3.514E-13
U-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	6.857E-09
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	2.045E-11
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	2.252E-16
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	5.653E-13
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	1.640E-12
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.880E-09

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,5t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.424E-13
U-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	2.778E-09
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	8.286E-12
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	8.601E-17
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	2.292E-13
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	6.632E-13
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.787E-09

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	9.865E-11	9.822E-11	9.735E-11	9.438E-11	8.639E-11	6.337E-11	2.615E-11	1.541E-12
U-238+D	U-238+D	9.999E-01	1.925E-06	1.916E-06	1.900E-06	1.842E-06	1.686E-06	1.237E-06	5.103E-07	3.007E-08
U-238+D	U-234	9.999E-01	2.872E-12	8.581E-12	1.985E-11	5.773E-11	1.535E-10	3.710E-10	4.577E-10	8.971E-11
U-238+D	Th-230	9.999E-01	6.296E-18	3.586E-17	1.687E-16	1.385E-15	1.077E-14	9.474E-14	4.898E-13	1.123E-12
U-238+D	Ra-226+D	9.999E-01	3.230E-20	6.833E-19	9.351E-18	2.652E-16	6.279E-15	1.831E-13	2.708E-12	1.094E-11
U-238+D	Pb-210+D	9.999E-01	1.034E-21	2.955E-20	6.233E-19	3.893E-17	2.160E-15	1.433E-13	3.343E-12	2.026E-11
U-238+D	ΣDSR(j)		1.925E-06	1.916E-06	1.900E-06	1.842E-06	1.686E-06	1.237E-06	5.108E-07	3.020E-08

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-238 EMC 10.RAD

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	5.217E-11	5.194E-11	5.148E-11	4.991E-11	4.568E-11	3.351E-11	1.383E-11	3.466E-13
U-238+D	U-238+D	9.999E-01	1.018E-06	1.014E-06	1.005E-06	9.739E-07	8.914E-07	6.540E-07	2.699E-07	6.764E-09
U-238+D	U-234	9.999E-01	1.519E-12	4.538E-12	1.050E-11	3.053E-11	8.117E-11	1.962E-10	2.420E-10	2.018E-11
U-238+D	Th-230	9.999E-01	1.142E-19	4.677E-19	1.689E-18	1.124E-17	7.996E-17	6.789E-16	3.474E-15	4.652E-15
U-238+D	Ra-226+D	9.999E-01	3.668E-20	7.255E-19	9.593E-18	2.671E-16	6.284E-15	1.828E-13	2.703E-12	8.998E-12
U-238+D	Pb-210+D	9.999E-01	3.257E-22	8.415E-21	1.683E-19	1.015E-17	5.561E-16	3.670E-14	8.551E-13	3.438E-12
U-238+D	ΣDSR(j)		1.018E-06	1.014E-06	1.005E-06	9.740E-07	8.915E-07	6.542E-07	2.701E-07	6.796E-09

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	4.877E-14	4.856E-14	4.813E-14	4.666E-14	4.271E-14	3.133E-14	1.293E-14	5.837E-16
U-238+D	U-238+D	9.999E-01	9.517E-10	9.475E-10	9.392E-10	9.105E-10	8.334E-10	6.114E-10	2.523E-10	1.139E-11
U-238+D	U-234	9.999E-01	1.420E-15	4.243E-15	9.814E-15	2.854E-14	7.589E-14	1.834E-13	2.263E-13	3.398E-14
U-238+D	Th-230	9.999E-01	1.344E-22	6.807E-22	2.987E-21	2.346E-20	1.794E-19	1.569E-18	8.097E-18	1.958E-17
U-238+D	Ra-226+D	9.999E-01	3.551E-24	5.344E-23	6.215E-22	1.615E-20	3.716E-19	1.072E-17	1.581E-16	9.476E-16
U-238+D	Pb-210+D	9.999E-01	3.786E-26	1.146E-24	2.815E-23	2.058E-21	1.225E-19	8.361E-18	1.966E-16	1.428E-15
U-238+D	ΣDSR(j)		9.517E-10	9.475E-10	9.392E-10	9.106E-10	8.335E-10	6.116E-10	2.525E-10	1.143E-11

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	5.382E-17
U-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	1.050E-12
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	3.133E-15
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	5.423E-22
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	7.863E-16
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	2.176E-16
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.054E-12

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,4t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	7.322E-13
U-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	1.429E-08
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	4.262E-11
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	1.418E-17
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	6.687E-13
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	7.263E-13
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.433E-08

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,5t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.174E-12
U-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	2.290E-08
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	6.831E-11
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	2.151E-17
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	1.072E-12
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	1.162E-12
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.297E-08

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	2.418E-10	2.408E-10	2.386E-10	2.314E-10	2.118E-10	1.553E-10	6.411E-11	4.522E-12
U-238+D	U-238+D	9.999E-01	4.719E-06	4.698E-06	4.657E-06	4.514E-06	4.132E-06	3.031E-06	1.251E-06	8.824E-08
U-238+D	U-234	9.999E-01	7.039E-12	2.104E-11	4.866E-11	1.415E-10	3.763E-10	9.095E-10	1.122E-09	2.632E-10
U-238+D	Th-230	9.999E-01	6.369E-19	3.116E-18	1.331E-17	1.025E-16	7.780E-16	6.782E-15	3.497E-14	8.087E-14
U-238+D	Ra-226+D	9.999E-01	5.050E-20	9.334E-19	1.201E-17	3.299E-16	7.729E-15	2.245E-13	3.318E-12	1.443E-11
U-238+D	Pb-210+D	9.999E-01	4.731E-22	1.287E-20	2.777E-19	1.816E-17	1.033E-15	6.922E-14	1.620E-12	1.088E-11
U-238+D	ΣDSR(j)		4.719E-06	4.698E-06	4.657E-06	4.515E-06	4.132E-06	3.032E-06	1.252E-06	8.853E-08

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from the Ingestion of Fish (p=6)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,6,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	7.176E-12
U-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	1.400E-07
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	4.177E-10
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	1.227E-13
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	1.802E-11
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	2.248E-10
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.407E-07

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from the Ingestion of Drinking Water (p=7)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,7,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.355E-07
U-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	2.645E-03
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	7.889E-06
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	2.530E-10
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	7.427E-08
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	2.684E-07
U-238+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.653E-03

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

Plant/Soil Concentration Ratio, FSR(j,3,q,k,t)
Overhead Irrigation (q=4) and Leafy Vegetables (k=2)

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Meat/Fodder, Milk/Fodder, Fodder/Air and Fodder/Water Concentration Ratios

FI(4,q): 68.0 kg/day FI(5,q): 55.0 kg/day q=1,2,3,4
 FI(4,q): 50.0 L/day FI(5,q): 160.0 L/day q=5
 FI(4,q): 0.5 kg/day FI(5,q):

Nuclide (i)	FQR(i,4) d/kg	FQR(i,5) d/kg	FAR(i,3,2,3) m**3/g	FWR(i,3,3,3) L/g	FWR(i,3,4,3) L/g
Pb-210	8.0000E-04	3.0000E-04	2.8659E-01	5.3329E-07	1.8139E-03
Ra-226	1.0000E-03	1.0000E-03	2.8659E-01	2.1329E-06	1.8139E-03
Th-230	1.0000E-04	5.0000E-06	2.8659E-01	5.3644E-08	1.8139E-03
U-234	3.4000E-04	6.0000E-04	2.8659E-01	1.3332E-07	1.8139E-03
U-238	3.4000E-04	6.0000E-04	2.8659E-01	1.3332E-07	1.8139E-03

FI(p,q) are the fodder (q=1,2,3,4), livestock water (q=5) and soil (q=6) intake rates;
 FQR(i,p) are the transfer coefficients from contaminated fodder of livestock
 water to meat (p=4) or milk (p=5). FAR(i,3,2,3) are the fodder/air
 concentration ratios, and FWR(i,3,3,3) and FWR(i,3,4,3) are the fodder/
 water concentration ratios for ditch and overhead irrigation, respectively.

Root Uptake ($q=1$) and Foliar Dust Deposition ($q=2$)

Nuclide(i)		QSR(i,p,1)	QSR(i,p,2)
Parent	Product		
U-238	U-238	2.5000E-03	2.3373E-06
U-238+D	U-238+D	2.5000E-03	2.3373E-06
U-238+D	U-234	2.5000E-03	2.3373E-06
U-238+D	Th-230	1.0000E-03	2.3373E-06
U-238+D	Ra-226+D	4.0000E-02	2.3373E-06
U-238+D	Pb-210+D	1.0000E-02	2.3373E-06

Fodder/Soil Concentration Ratio, QSR(j,p,q,t), for Meat and Milk Pathways
Ditch Irrigation (q=3)

[illegible]

Fodder/Soil Concentration Ratio, $QSR(j,p,q,t)$, for Meat and Milk Pathways
Overhead Irrigation ($q=4$)

[illegible]

[illegible]

Nuclide(i)		Nuclide(j)	
Parent	Product	FSR(i,4,1)	FSR(i,4,2)
U-238	U-238	3.1212E-09	2.9180E-12
U-238+D	U-238+D	5.7797E-05	5.4035E-08
U-238+D	U-234	0.0000E+00	0.0000E+00
U-238+D	Th-230	0.0000E+00	0.0000E+00
U-238+D	Ra-226+D	0.0000E+00	0.0000E+00
U-238+D	Pb-210+D	0.0000E+00	0.0000E+00

[illegible]

Parent (i)	Product (j)	Thread Fraction	FSR(j,4,4,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	4.386E-11
U-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	8.122E-07
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	2.299E-09
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	1.191E-14
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	1.359E-11
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	7.146E-12

Livestock Water (q=5)

[illegible]

Nuclide (i)		j	
Parent	Product	FSR(i,5,1)	FSR(i,5,2)
U-238	U-238	4.4550E-09	4.1650E-12
U-238+D	U-238+D	8.2496E-05	7.7126E-08
U-238+D	U-234	0.0000E+00	0.0000E+00
U-238+D	Th-230	0.0000E+00	0.0000E+00
U-238+D	Ra-226+D	0.0000E+00	0.0000E+00
U-238+D	Pb-210+D	0.0000E+00	0.0000E+00

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Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Soil Ingestion Pathway (p=8)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,8,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	5.400E-05	3.761E-09	3.745E-09	3.712E-09	3.598E-09	3.294E-09	2.416E-09	9.971E-10	4.501E-11
U-238+D	U-238+D	9.999E-01	7.339E-05	7.307E-05	7.242E-05	7.021E-05	6.427E-05	4.715E-05	1.946E-05	8.784E-07
U-238+D	U-234	9.999E-01	1.095E-10	3.272E-10	7.568E-10	2.201E-09	5.852E-09	1.415E-08	1.745E-08	2.620E-09
U-238+D	Th-230	9.999E-01	6.366E-16	4.445E-15	2.336E-14	2.047E-13	1.628E-12	1.445E-11	7.487E-11	1.813E-10
U-238+D	Ra-226+D	9.999E-01	1.661E-19	2.486E-18	2.883E-17	7.481E-16	1.720E-14	4.962E-13	7.317E-12	4.385E-11
U-238+D	Pb-210+D	9.999E-01	5.661E-21	1.741E-19	4.311E-18	3.167E-16	1.888E-14	1.289E-12	3.033E-11	2.203E-10
U-238+D	ΣDSR(j)		7.339E-05	7.307E-05	7.242E-05	7.022E-05	6.427E-05	4.716E-05	1.947E-05	8.814E-07

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

Dose Conversion and Environmental Transport Factors for the Soil Ingestion Pathway (p=8)

Parent (i)	Product (j)	DCF(j,8)*	ETF(j,8,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-238	U-238	2.550E-04	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01
U-238+D	U-238+D	2.687E-04	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01
U-238+D	U-234	2.830E-04	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01
U-238+D	Th-230	5.480E-04	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01
U-238+D	Ra-226+D	1.321E-03	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01
U-238+D	Pb-210+D	7.276E-03	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01

* - The dose conversion factor units are mrem/pCi.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.RAD

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
Summary of Pathway Selections	7
Contaminated Zone and Total Dose Summary	8
Total Dose Components	
Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
Time = 1.000E+03	16
Dose/Source Ratios Summed Over All Pathways	17
Single Radionuclide Soil Guidelines	17
Dose Per Nuclide Summed Over All Pathways	18
Soil Concentration Per Nuclide	18

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 12 & 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	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(2)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(3)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(4)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(5)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1(6)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1(7)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1(8)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1(9)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1(10)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1(11)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1(12)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1(13)
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	U-235+D	1.230E-01	1.230E-01	DCF2(3)
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	U-235+D	2.673E-04	2.660E-04	DCF3(3)
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	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	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(3,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(3,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(3,3)
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	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	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(3,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(3,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETEG table in Ground Pathway of Detailed Report.

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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.RAD

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)	2.200E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.000E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): U-235	4.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(3)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+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)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.000E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	1.000E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	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)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-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	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	3.000E+00	4.426E-03	ALEACH(3)
R016	Solubility constant	0.000E+00	3.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	3.000E+00	1.099E-02	ALEACH(1)
R016	Solubility constant	0.000E+00	3.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	3.000E+00	4.426E-03	ALEACH(2)
R016	Solubility constant	0.000E+00	3.000E+00	not used	SOLUBK(2)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	7.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	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	-1 shows non-circular AREA.	FS

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	3.750E+00	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m), ring 2:	7.500E+00	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m), ring 3:	1.125E+01	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m), ring 4:	1.500E+01	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m), ring 5:	1.875E+01	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m), ring 6:	2.250E+01	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m), ring 7:	2.625E+01	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m), ring 8:	3.000E+01	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m), ring 9:	3.375E+01	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m), ring 10:	3.750E+01	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	4.125E+01	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	4.500E+01	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	1.000E+00	1.000E+00	---	FRACA(1)
R017	Ring 2	1.000E+00	2.732E-01	---	FRACA(2)
R017	Ring 3	1.000E+00	0.000E+00	---	FRACA(3)
R017	Ring 4	8.800E-01	0.000E+00	---	FRACA(4)
R017	Ring 5	7.400E-01	0.000E+00	---	FRACA(5)
R017	Ring 6	5.900E-01	0.000E+00	---	FRACA(6)
R017	Ring 7	4.500E-01	0.000E+00	---	FRACA(7)
R017	Ring 8	3.800E-01	0.000E+00	---	FRACA(8)
R017	Ring 9	2.700E-01	0.000E+00	---	FRACA(9)
R017	Ring 10	1.600E-01	0.000E+00	---	FRACA(10)
R017	Ring 11	9.900E-02	0.000E+00	---	FRACA(11)
R017	Ring 12	9.800E-03	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
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	0.110E+00	FMEAT
R018	Contamination fraction of milk	-1	-1	0.110E+00	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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	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
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.RAD

Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 2200.00 square meters	U-235 4.000E+00
Thickness: 1.50 meters	
Cover Depth: 0.00 meters	

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	1.965E+00	1.958E+00	1.942E+00	1.889E+00	1.748E+00	1.335E+00	8.503E-01	1.334E+01
M(t):	1.310E-01	1.305E-01	1.295E-01	1.259E-01	1.165E-01	8.898E-02	5.669E-02	8.896E-01

Maximum TDOSE(t): 1.334E+01 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.RAD

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

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-235	1.671E+00	0.8502	2.687E-02	0.0137	0.000E+00	0.0000	2.326E-01	0.1183	1.701E-03	0.0009	4.132E-03	0.0021	2.922E-02	0.0149
Total	1.671E+00	0.8502	2.687E-02	0.0137	0.000E+00	0.0000	2.326E-01	0.1183	1.701E-03	0.0009	4.132E-03	0.0021	2.922E-02	0.0149

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- 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.
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.965E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.965E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.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- 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.
U-235	1.664E+00	0.8498	2.676E-02	0.0137	0.000E+00	0.0000	2.323E-01	0.1187	1.729E-03	0.0009	4.114E-03	0.0021	2.912E-02	0.0149
Total	1.664E+00	0.8498	2.676E-02	0.0137	0.000E+00	0.0000	2.323E-01	0.1187	1.729E-03	0.0009	4.114E-03	0.0021	2.912E-02	0.0149

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- 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.
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.958E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.958E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.RAD

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-235	1.649E+00	0.8490	2.654E-02	0.0137	0.000E+00	0.0000	2.319E-01	0.1194	1.787E-03	0.0009	4.078E-03	0.0021	2.892E-02	0.0149
Total	1.649E+00	0.8490	2.654E-02	0.0137	0.000E+00	0.0000	2.319E-01	0.1194	1.787E-03	0.0009	4.078E-03	0.0021	2.892E-02	0.0149

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

Radio- 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.
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.942E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.942E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-235	1.599E+00	0.8463	2.581E-02	0.0137	0.000E+00	0.0000	2.304E-01	0.1219	1.978E-03	0.0010	3.954E-03	0.0021	2.824E-02	0.0149
Total	1.599E+00	0.8463	2.581E-02	0.0137	0.000E+00	0.0000	2.304E-01	0.1219	1.978E-03	0.0010	3.954E-03	0.0021	2.824E-02	0.0149

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

Water Dependent Pathways

Radio- 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.
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.889E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.889E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-235	1.464E+00	0.8379	2.397E-02	0.0137	0.000E+00	0.0000	2.266E-01	0.1297	2.454E-03	0.0014	3.621E-03	0.0021	2.654E-02	0.0152
Total	1.464E+00	0.8379	2.397E-02	0.0137	0.000E+00	0.0000	2.266E-01	0.1297	2.454E-03	0.0014	3.621E-03	0.0021	2.654E-02	0.0152

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

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-235	0.000E+00	0.0000	0.000E+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+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.748E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-235	1.078E+00	0.8074	1.888E-02	0.0141	0.000E+00	0.0000	2.103E-01	0.1576	3.453E-03	0.0026	2.664E-03	0.0020	2.171E-02	0.0163
Total	1.078E+00	0.8074	1.888E-02	0.0141	0.000E+00	0.0000	2.103E-01	0.1576	3.453E-03	0.0026	2.664E-03	0.0020	2.171E-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 = 1.000E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.335E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.335E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.RAD

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

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-235	4.493E-01	0.5283	9.461E-03	0.0111	0.000E+00	0.0000	1.398E-01	0.1645	3.369E-03	0.0040	1.109E-03	0.0013	1.175E-02	0.0138
Total	4.493E-01	0.5283	9.461E-03	0.0111	0.000E+00	0.0000	1.398E-01	0.1645	3.369E-03	0.0040	1.109E-03	0.0013	1.175E-02	0.0138

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

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

Water Dependent Pathways

Radio- 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.
U-235	2.183E-01	0.2567	4.614E-04	0.0005	0.000E+00	0.0000	1.676E-02	0.0197	1.020E-05	0.0000	2.244E-05	0.0000	8.503E-01	1.0000
Total	2.183E-01	0.2567	4.614E-04	0.0005	0.000E+00	0.0000	1.676E-02	0.0197	1.020E-05	0.0000	2.244E-05	0.0000	8.503E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-235	2.099E-02	0.0016	6.890E-04	0.0001	0.000E+00	0.0000	8.117E-03	0.0006	3.424E-04	0.0000	4.654E-05	0.0000	9.672E-04	0.0001
Total	2.099E-02	0.0016	6.890E-04	0.0001	0.000E+00	0.0000	8.117E-03	0.0006	3.424E-04	0.0000	4.654E-05	0.0000	9.672E-04	0.0001

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

Water Dependent Pathways

Radio- 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.
U-235	1.231E+01	0.9226	1.703E-02	0.0013	0.000E+00	0.0000	9.470E-01	0.0710	2.873E-02	0.0022	9.095E-03	0.0007	1.334E+01	1.0000
Total	1.231E+01	0.9226	1.703E-02	0.0013	0.000E+00	0.0000	9.470E-01	0.0710	2.873E-02	0.0022	9.095E-03	0.0007	1.334E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.RAD

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

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	4.913E-01	4.891E-01	4.848E-01	4.700E-01	4.302E-01	3.156E-01	1.302E-01	7.286E-01
U-235+D	Pa-231	1.000E+00	1.015E-04	3.129E-04	7.320E-04	2.141E-03	5.700E-03	1.378E-02	1.697E-02	6.065E-01
U-235+D	Ac-227+D	1.000E+00	6.791E-07	4.263E-06	2.079E-05	1.613E-04	9.856E-04	4.311E-03	6.538E-02	2.001E+00
U-235+D	ΣDSR(j)		4.914E-01	4.894E-01	4.855E-01	4.723E-01	4.369E-01	3.337E-01	2.126E-01	3.336E+00

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

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Nuclide (i)	t = 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235	3.053E+01	3.065E+01	3.089E+01	3.176E+01	3.433E+01	4.495E+01	7.056E+01	4.497E+00

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 1.000E+03 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
U-235	4.000E+00	1.000E+03	3.336E+00	4.497E+00	3.336E+00	4.497E+00

Summary : RESRAD Default Parameters Resident Farmer Scenario

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr								
			t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235	U-235	1.000E+00		1.965E+00	1.956E+00	1.939E+00	1.880E+00	1.721E+00	1.262E+00	5.209E-01	2.915E+00
Pa-231	U-235	1.000E+00		4.061E-04	1.252E-03	2.928E-03	8.563E-03	2.280E-02	5.511E-02	6.788E-02	2.426E+00
Ac-227	U-235	1.000E+00		2.717E-06	1.705E-05	8.316E-05	6.450E-04	3.942E-03	1.725E-02	2.615E-01	8.003E+00

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

Individual Nuclide Soil Concentration

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g								
			t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235	U-235	1.000E+00		4.000E+00	3.982E+00	3.947E+00	3.827E+00	3.503E+00	2.570E+00	1.060E+00	4.787E-02
Pa-231	U-235	1.000E+00		0.000E+00	8.426E-05	2.505E-04	8.096E-04	2.223E-03	5.431E-03	6.710E-03	1.002E-03
Ac-227	U-235	1.000E+00		0.000E+00	1.324E-06	1.152E-05	1.138E-04	7.486E-04	3.356E-03	5.081E-03	8.094E-04

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

RESRAD.EXE execution time = 5.04 seconds

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.RAD

Table of ContentsPart II: Source Terms, Factors, and Parameters for Individual Pathways

Iteration Logs

Maximum U-235 Dose/Source Ratio	3
Maximum Total Dose	4

Source Factors for Ingrowth and Decay

Radioactivity Only	5
Combined Radioactivity and Leaching	5

Ground Pathway

Source Term Parameters	6
Time Dependence of Source Geometry	6
Occupancy, Cover/Depth, and Area Factors	7
Dose Conversion and Environmental Transport Factors .	8
Dose/Source Ratios	8

Inhalation Pathway (radon excluded)

Dose/Source Ratios	9
Pathway Factors	9
Dose Conversion and Environmental Transport Factors .	9

Groundwater and Surface Water Pathway Segments

Transport Time Parameters for Unsaturated Zone Strata	10
Dilution Factor and Rise Time Parameters for	
Nondispersion (ND) Model	11
Primary Parameters Used to Calculate Ratios	11
Water/Soil Concentration Ratios	12

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.RAD

Table of Contents (cont.)Part II: Source Terms, Factors, and Parameters for Individual Pathways

Food Pathways

Storage Times for Contaminated Foodstuffs	13
Storage Time Ingrowth and Decay Factors	13
Storage Correction Factors	
Drinking Water	14
Irrigation Water	14
Livestock Water	15
Plants	15
Livestock Fodder	16
Meat and Milk	16
Fish and Crustacea	17
Area and Depth Factors	18
Dose Conversion and Environmental Transport Factors	
Plant	20
Meat	21
Milk	23
Fish	25
Drinking Water	25
Dose/Source Ratios	
Plant	26
Plant Total	27
Meat	28
Meat Total	29
Milk	30
Milk Total	31
Fish	32
Drinking Water	33
Concentration Ratios	
Plant/Air and Plant/Water	34
Plant/Soil	34
Meat/Fodder, Fodder/Air, Fodder/Water	36
Fodder/Soil	37
Meat/Soil	38
Milk/Soil	39

Soil Ingestion Pathway

Dose/Source Ratios.....	40
Dose Conversion and Environmental Transport Factors .	40

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.RAD

Iteration Log for Computation of the Time of Maximum U-235 Dose/Source Ratio
Pathway: Meat (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	2.03092E+02	9.32006E-04		
1	1.80369E+02	9.36850E-04	-2.27232E+01	parabolic
2	1.80158E+02	9.36854E-04	-2.10992E-01	parabolic
3	1.79245E+02	9.36860E-04	-9.12301E-01	parabolic
4	1.79424E+02	9.36860E-04	8.14826E-02	parabolic
5	1.79066E+02	9.36860E-04	-1.79245E-01	parabolic
6	1.79245E+02	9.36860E-04	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Meat (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	2.03092E+02	3.72802E-03		
1	1.80369E+02	3.74740E-03	-2.27232E+01	parabolic
2	1.80158E+02	3.74742E-03	-2.10992E-01	parabolic
3	1.79245E+02	3.74744E-03	-9.12301E-01	parabolic
4	1.79424E+02	3.74744E-03	8.14826E-02	parabolic
5	1.79066E+02	3.74744E-03	-1.79245E-01	parabolic
6	1.79245E+02	3.74744E-03	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.RAD

Source Factors for Ingrowth and Decay
Radioactivity Factors Only
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	ID(j,t) = THF(j)*S1(j,t)/S1(i,0) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	0.000E+00	2.116E-05	6.347E-05	2.116E-04	6.345E-04	2.114E-03	6.327E-03	2.094E-02
U-235+D	Ac-227+D	1.000E+00	0.000E+00	3.332E-07	2.937E-06	3.037E-05	2.258E-04	1.477E-03	5.667E-03	2.028E-02

Source Factors for Ingrowth and Decay
Combined Radioactivity and Leaching Factors
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	SF(j,t) = THF(j)*S1(j,t)/S1(i,0) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	9.956E-01	9.868E-01	9.567E-01	8.757E-01	6.424E-01	2.651E-01	1.197E-02
U-235+D	Pa-231	1.000E+00	0.000E+00	2.106E-05	6.264E-05	2.024E-04	5.557E-04	1.358E-03	1.677E-03	2.506E-04
U-235+D	Ac-227+D	1.000E+00	0.000E+00	3.310E-07	2.879E-06	2.846E-05	1.872E-04	8.389E-04	1.270E-03	2.024E-04

The effect of volatilization was also considered when computing the source factors for H-3 and C-14.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235.RAD

Parameters Used for Calculating Cover Depth and Contaminated Zone Thicknesses

Cover Erosion rate (vcv): 0.001000 m/yr
 Contaminated Zone Erosion rate (vcz): 0.001000 m/yr
 Water Table Drop rate (vwt): 0.001000 m/yr
 Precipitation rate (Pr): 1.000000 m/yr
 Cover Removal Time (Tc): 0.000E+00 yr
 Overhead irrigation rate (Irr): 0.200 m/yr Runoff coefficient (Cr): 0.200
 Evapotranspiration coeff. (Ce): 0.500 Infiltration rate (In): 0.500 m/yr
 Bulk soil density (rhob): 1.500 g/cm**3 Effective porosity (pe): 0.000

Radio- nuclide (i)	Distribution Coefficient Kd(i), cm**3/g	Leaching Ratio q(i)
Ac-227	2.000000E+01	1.058E-02
Pa-231	5.000000E+01	4.261E-03
U-235	5.000000E+01	4.261E-03

Time Dependence of Source Geometry

Time Dependence of Cover Depth [Cd(i,t)]

Nuclide (i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
Pa-231		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
U-235		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Time Dependence of Contaminated Zone Thicknesses [T(i,t)]

Nuclide (i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227		1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01
Pa-231		1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01
U-235		1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01

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Occupancy, Cover/Depth, and Area Factors for Ground Pathway

Occupancy Factor (FOI):	0.600
Area (A):	2200. sq. meters
Initial cover depth (Cd):	0.000 meters
Initial contaminated zone thickness (T):	1.500 meters

Time Dependence of Cover/Depth Factor [FCTR_COV_DEPTH(i,t)]

[illegible]

Time Dependence of Area Factor [FCTR AREA(i,t)]

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Ground Pathway (p=1)

Nuclide (i)	DCF(i,1)*	ETFG(i,t) At Time in Years (dimensionless)							
		t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	4.951E-04	5.554E-01	5.554E-01	5.554E-01	5.554E-01	5.554E-01	5.554E-01	5.554E-01	5.554E-01
Bi-211	2.559E-01	5.453E-01	5.453E-01	5.453E-01	5.453E-01	5.453E-01	5.453E-01	5.453E-01	5.452E-01
Fr-223	1.980E-01	5.484E-01	5.484E-01	5.484E-01	5.484E-01	5.484E-01	5.484E-01	5.484E-01	5.484E-01
Pa-231	1.906E-01	5.456E-01	5.456E-01	5.456E-01	5.456E-01	5.456E-01	5.456E-01	5.456E-01	5.455E-01
Pb-211	3.064E-01	5.403E-01	5.403E-01	5.403E-01	5.403E-01	5.403E-01	5.403E-01	5.403E-01	5.399E-01
Po-211	4.764E-02	5.369E-01	5.369E-01	5.369E-01	5.369E-01	5.369E-01	5.369E-01	5.369E-01	5.363E-01
Po-215	1.016E-03	5.406E-01	5.406E-01	5.406E-01	5.406E-01	5.406E-01	5.406E-01	5.406E-01	5.403E-01
Ra-223	6.034E-01	5.485E-01	5.485E-01	5.485E-01	5.485E-01	5.485E-01	5.485E-01	5.485E-01	5.485E-01
Rn-219	3.083E-01	5.458E-01	5.458E-01	5.458E-01	5.458E-01	5.458E-01	5.458E-01	5.458E-01	5.457E-01
Th-227	5.212E-01	5.507E-01	5.507E-01	5.507E-01	5.507E-01	5.507E-01	5.507E-01	5.507E-01	5.507E-01
Th-231	3.643E-02	5.565E-01	5.565E-01	5.565E-01	5.565E-01	5.565E-01	5.565E-01	5.565E-01	5.565E-01
Tl-207	1.980E-02	5.403E-01	5.403E-01	5.403E-01	5.403E-01	5.403E-01	5.403E-01	5.403E-01	5.400E-01
U-235	7.211E-01	5.525E-01	5.525E-01	5.525E-01	5.525E-01	5.525E-01	5.525E-01	5.525E-01	5.525E-01

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

Dose/Source Ratios for External Radiation from the Ground (p=1)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,1,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	4.177E-01	4.159E-01	4.122E-01	3.997E-01	3.658E-01	2.684E-01	1.107E-01	5.000E-03
U-235+D	Pa-231	1.000E+00	1.097E-06	3.278E-06	7.581E-06	2.205E-05	5.861E-05	1.416E-04	1.743E-04	2.601E-05
U-235+D	Ac-227+D	1.000E+00	1.220E-07	8.413E-07	4.302E-06	3.427E-05	2.113E-04	9.272E-04	1.397E-03	2.223E-04
U-235+D	ΣDSR(j)		4.177E-01	4.159E-01	4.122E-01	3.997E-01	3.661E-01	2.694E-01	1.123E-01	5.248E-03

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Inhalation Pathway, Excluding Radon (p=2)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,2,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	6.717E-03	6.687E-03	6.628E-03	6.426E-03	5.882E-03	4.315E-03	1.781E-03	8.039E-05
U-235+D	Pa-231	1.000E+00	7.389E-07	2.208E-06	5.107E-06	1.485E-05	3.949E-05	9.538E-05	1.174E-04	1.752E-05
U-235+D	Ac-227+D	1.000E+00	4.078E-08	2.813E-07	1.439E-06	1.146E-05	7.066E-05	3.101E-04	4.672E-04	7.434E-05
U-235+D	ΣDSR(j)		6.718E-03	6.690E-03	6.635E-03	6.453E-03	5.992E-03	4.720E-03	2.365E-03	1.723E-04

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

Pathway Factors for the Inhalation Pathway (radon excluded)

Area (A):	2.2000E+03 m**2	Occupancy Factor (FO2):	4.5000E-01
Area Factor (FA2):	1.4479E-01	Annual Air Intake (FI2):	8.4000E+03 m**3/yr
Cover Depth [Cd(0)]:	0.0000E+00 m	Mass Loading (ASR2):	1.0000E-04 g/m**3
Contaminated Zone Thickness [T(0)]:	1.5000E+00 m	FA2 * FO2 * FI2 * ASR2:	5.4730E-02 g/yr

Nuclide (i)	t=	Depth Factor [FD(i,2,t)] (dimensionless)							
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00

Dose Conversion and Environmental Transport Factors for the Inhalation Pathway, Excluding Radon (p=2)

Parent (i)	Product (j)	DCF(j,2)*	ETF(j,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.230E-01	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02
U-235+D	Pa-231	1.280E+00	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02
U-235+D	Ac-227+D	6.724E+00	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Transport Time Parameters for Unsaturated Zone Stratum No. 1

Stratum thickness [h(1)]: 4.000000 m
 Bulk soil material density [rhob(1)]: 1.500000 g/cm**3
 Effective porosity [peuz(1)]: 0.200000
 Hydraulic conductivity [Khuz(1)]: 10.000000 m/yr
 Total porosity [ptuz(1)]: 0.400000
 Soil specific b parameter [buz(1)]: 5.300000
 Saturation ratio [sruz(1)]: 0.802299

Radio-nuclide (i)	Distribution Coefficient Kduz(i,1), cm**3/g	Retardation Factor Rduz(i,1)	Transport Time Dtuz(i,1), yr
Ac-227	2.0000E+01	9.4481E+01	1.2128E+02
Pa-231	5.0000E+01	2.3470E+02	3.0128E+02
U-235	5.0000E+01	2.3470E+02	3.0128E+02

Transport Time Parameters for Unsaturated Zone created by the Falling Water Table

Water table drop rate [vwt]: 0.001000 m/yr
 Bulk soil material density [rhobaq]: 1.500000 g/cm**3
 Effective porosity [peaq]: 0.200000
 Hydraulic conductivity [Khaq]: 100.000000 m/yr
 Total porosity [ptaq]: 0.400000
 Soil specific b parameter [baq]: 5.300000
 Saturation ratio [sruaq]: 0.677340

Radio-nuclide (i)	Distribution Coefficient Kdaq(i), cm**3/g	Retardation Factor Rduaq(i)	Minimum Transport Time Dtuaq(i), yr
Ac-227	2.0000E+01	1.1173E+02	3.7860E+00
Pa-231	5.0000E+01	2.7782E+02	2.4524E+01
U-235	5.0000E+01	2.7782E+02	2.4524E+01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dilution Factor and Rise Time Parameters for Nondispersion (ND) Model

Aquifer contamination depth at well (z): 2.50000E+01 m
 Depth of water intake below water table (dw): 1.00000E+01 m
 Infiltration rate (In): 5.00000E-01 m/yr
 Aquifer water flow rate (Vwfr): 2.00000E+00 m/yr
 Hydraulic gradient (J): 2.00000E-02
 Hydraulic conductivity of aquifer (Kszh): 1.00000E+02 m/yr
 Contaminated zone extent parallel to gradient (l): 1.00000E+02 m
 Distance below contaminated zone to water table (h): 0.40000E+01 m
 Initial thickness of uncontaminated cover (Cd): 0.00000E+00 m
 Initial thickness of contaminated zone (T): 0.15000E+01 m
 Effective porosity of saturated zone (pesz): 0.20000E+00

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdsz(i)	Horizontal Transport Time Onsite Tauh(i), yr	Rise Time dt(i), yr	Decay Time Parameter 1/lamda(i),yr
Ac-227	1.000E+00	7.600E+01	7.600E+02	3.040E+02	3.141E+01
Pa-231	1.000E+00	1.885E+02	1.885E+03	7.540E+02	4.726E+04
U-235	1.000E+00	1.885E+02	1.885E+03	7.540E+02	1.015E+09

Primary Parameters Used for Calculating Water/Soil
Concentration Ratios for Groundwater Pathway Segment

Model used: Nondispersion (ND)

Bulk soil density in contaminated zone (rhob): 1.500 g/cm**3

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdcz(i)	Breakthrough Time Chain year	Single Nuclide Dt(i), yr	Rise Time dt(i), yr
Ac-227	1.000E+00	9.448E+01	1.251E+02	1.251E+02	3.040E+02
Pa-231	1.000E+00	2.347E+02	3.258E+02	3.258E+02	7.540E+02
U-235	1.000E+00	2.347E+02	3.258E+02	3.258E+02	7.540E+02

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Water/Soil Concentration Ratios [WSR(j,1,t)] for Groundwater Pathway Segment

Parent (i)	Product (j)	Thread Fraction	WSR(j,1,t) At Time in Years (pCi/L)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	4.905E+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	1.027E-01
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	7.136E-03	2.455E-01

Water/Soil Concentration Ratios [WSR(j,2,t)] for Surface Water Pathway Segment

Watershed Area (Aw) = 1.0000E+06 m**2

Contaminated Zone Area (A) = 2.2000E+03 m**2

Dilution Factor (f') = 2.2000E-03

Soil Density (rhob) = 1.5000E+00 kg/m**3

Parent (i)	Product (j)	Thread Fraction	WSR(j,2,t) At Time in Years (pCi/L)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.079E-02
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	2.259E-04
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	1.570E-05	5.400E-04

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Times For Contaminated Foodstuffs

k	Food Item	STOR_T(k), days
1	non-leafy plants	14.
2	leafy plants	1.
3	milk	1.
4	meat	20.
5	fish	7.
6	crustacea	7.
7	well water	1.
8	surface water	1.
9	livestock fodder	45.

Storage Time Ingrowth and Decay Factors

Storage Time for k'th Foodstuff: $t = \text{STOR_T}(k)$, days

Parent (i)	Product (j)	Thread Fraction	STOR_ID(i,j,t) = CONCE(i,j,t)/CONCE(i,i,0)									
			t = 1.400E+01	1.000E+00	1.000E+00	2.000E+01	7.000E+00	7.000E+00	1.000E+00	1.000E+00	4.500E+01	
Ac-227	Ac-227	1.000E+00	9.988E-01	9.999E-01	9.999E-01	9.983E-01	9.994E-01	9.994E-01	9.999E-01	9.999E-01	9.961E-01	
Pa-231	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
Pa-231	Ac-227	1.000E+00	1.219E-03	8.716E-05	8.716E-05	1.742E-03	6.099E-04	6.099E-04	8.716E-05	8.716E-05	3.915E-03	
U-235	U-235	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
U-235	Pa-231	1.000E+00	8.110E-07	5.793E-08	5.793E-08	1.159E-06	4.055E-07	4.055E-07	5.793E-08	5.793E-08	2.607E-06	
U-235	Ac-227	1.000E+00	4.946E-10	2.524E-12	2.524E-12	1.009E-09	1.237E-10	1.237E-10	2.524E-12	2.524E-12	5.105E-09	

CONCE(i,j,t)/CONCE(i,i,0) is the concentration ratio of Product(j) at time t to Parent(i) at start of storage time.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors
 Drinking Water from Well and/or Surface
 Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,1)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.999E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Nonleafy Plants from Well and/or Surface
 Harvest Time = t - 4.11E-02 yr; Consumption Time = t - 3.83E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,2)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.999E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Leafy Plants from Well and/or Surface
 Harvest Time = t - 5.48E-03 yr; Consumption Time = t - 2.74E-03 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,3)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.999E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Livestock (Milk) Fodder from Well and/or Surface
 Harvest Time = t - 1.29E-01 yr; Consumption Time = t - 1.26E-01 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,5)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E-01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E-00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E-00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E-00	1.000E+00	1.000E+00	9.999E-01	9.999E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors

Irrigation Water for Livestock (Meat) Fodder from Well and/or Surface

Harvest Time = $t - 1.81\text{E-}01$ yr; Consumption Time = $t - 1.78\text{E-}01$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,7)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.999E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Livestock (Milk) Water from Well and/or Surface

Harvest Time = $t - 5.48\text{E-}03$ yr; Consumption Time = $t - 2.74\text{E-}03$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,4)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.999E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Livestock (Meat) Water from Well and/or Surface

Harvest Time = $t - 5.75\text{E-}02$ yr; Consumption Time = $t - 5.48\text{E-}02$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,6)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.999E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Nonleafy Plants

Harvest Time = $t - 3.83\text{E-}02$ yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.988E-01	9.993E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors for Leafy Plants
Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.999E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Livestock (Meat) Fodder
Harvest Time = t - 1.78E-01 yr; Consumption Time = t - 5.48E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.038E+00	1.011E+00	1.003E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	2.226E+00	1.359E+00	1.109E+00	1.043E+00	1.021E+00	1.000E+00	9.977E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Livestock (Milk) Fodder
Harvest Time = t - 1.26E-01 yr; Consumption Time = t - 2.74E-03 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.035E+00	1.011E+00	1.003E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	2.153E+00	1.353E+00	1.109E+00	1.043E+00	1.021E+00	1.000E+00	9.977E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Meat
Harvest Time = t - 5.48E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF45(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.002E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	4.249E+01	1.668E+01	6.336E+00	3.254E+00	2.233E+00	1.412E+00	1.182E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors for Milk

Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent	Product	Thread	CF45(j,2,t)# At Time in Years							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.210E+00	1.068E+00	1.020E+00	1.007E+00	1.002E+00	1.001E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.002E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.999E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Fish & Crustacea

Harvest Time = t - 1.92E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CFF(j,1,t)# At Time in Years								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.994E-01	9.996E-01	

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Area Factor for Plant Foods [FA(3)] = 0.50

Area Factor for Plant Foods [FA(3)] = 0.50

Area Factor for Plant Foods [FA(3)] = 0.50

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Area and Depth Factors for Plant (p=3), Meat (p=4), and Milk (p=5) Pathways
Overhead Irrigation (q=4)

Area Factor for Plant Foods [FA(3)] = 0.50

The Depth Factor Value

$FD(i,p,q,t) = 1.0000E+00$

is applicable for all radionuclides(i) and times(t).

Area and Depth Factors for Meat (p=4) and Milk (p=5) Pathways
Transfer from Livestock Water (q=5) and Soil (q=6) Intake

Area Factor for Meat and Milk [FA(p),p=4,5] = 0.11

The livestock water subpathway (q=5) and livestock soil intake subpathway (q=6)
occur only for the meat (p=4) and milk (p=5) pathways.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	2.175E+02	2.166E+02	2.147E+02	2.081E+02	1.905E+02	1.397E+02	5.767E+01	1.446E+00
U-235+D	Pa-231	1.060E-02	0.000E+00	1.784E-02	5.402E-02	1.756E-01	4.831E-01	1.181E+00	1.459E+00	1.211E-01
U-235+D	Ac-227+D	1.480E-02	0.000E+00	8.697E-05	6.721E-04	6.341E-03	4.113E-02	1.835E-01	2.776E-01	2.457E-02

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	8.969E-02	8.931E-02	8.852E-02	8.582E-02	7.855E-02	5.762E-02	2.378E-02	1.074E-03
U-235+D	Pa-231	1.060E-02	0.000E+00	1.890E-06	5.619E-06	1.816E-05	4.984E-05	1.218E-04	1.505E-04	2.248E-05
U-235+D	Ac-227+D	1.480E-02	0.000E+00	2.971E-08	2.583E-07	2.554E-06	1.679E-05	7.527E-05	1.140E-04	1.816E-05

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.254E-01
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.050E-02
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.820E-04	6.278E-03

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.923E+02
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.026E+00
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.792E-01	9.618E+00

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	4.006E-01	3.991E-01	3.956E-01	3.835E-01	3.510E-01	2.575E-01	1.063E-01	2.666E-03
U-235+D	Pa-231	1.060E-02	0.000E+00	4.241E-04	1.405E-03	4.703E-03	1.304E-02	3.197E-02	3.953E-02	3.283E-03
U-235+D	Ac-227+D	1.480E-02	0.000E+00	7.500E-07	2.528E-06	8.909E-06	2.726E-05	7.581E-05	9.924E-05	8.406E-06

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	6.648E-04	6.624E-04	6.566E-04	6.366E-04	5.826E-04	4.274E-04	1.764E-04	7.963E-06
U-235+D	Pa-231	1.060E-02	0.000E+00	1.956E-07	6.025E-07	1.970E-06	5.428E-06	1.328E-05	1.641E-05	2.452E-06
U-235+D	Ac-227+D	1.480E-02	0.000E+00	3.516E-10	1.157E-09	4.533E-09	1.675E-08	5.591E-08	7.824E-08	1.218E-08

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.048E-04
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.290E-04
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.865E-09	5.332E-07

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.425E+00
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.389E-01
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.207E-04	4.943E-03

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,5,t) * SF(j,t) At Time in Years (g/yr)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.779E-01	
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.779E-01	
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.928E-05	2.008E-03	

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	8.349E-01	8.317E-01	8.243E-01	7.992E-01	7.315E-01	5.366E-01	2.215E-01	5.556E-03
U-235+D	Pa-231	1.060E-02	0.000E+00	5.789E-07	1.737E-06	5.629E-06	1.547E-05	3.780E-05	4.671E-05	3.877E-06
U-235+D	Ac-227+D	1.480E-02	0.000E+00	1.524E-08	9.986E-08	8.585E-07	5.397E-06	2.382E-05	3.594E-05	3.179E-06

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	1.386E-03	1.380E-03	1.368E-03	1.327E-03	1.214E-03	8.907E-04	3.676E-04	1.659E-05
U-235+D	Pa-231	1.060E-02	0.000E+00	3.227E-10	8.023E-10	2.415E-09	6.490E-09	1.574E-08	1.940E-08	2.896E-09
U-235+D	Ac-227+D	1.480E-02	0.000E+00	1.525E-11	1.330E-10	1.316E-09	8.656E-09	3.880E-08	5.875E-08	9.360E-09

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.184E-04
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.524E-07
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.050E-08	3.651E-07

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.971E+00
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.186E-04
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.430E-04	4.944E-03

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,5,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.765E+00
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.317E-04
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.310E-04	7.948E-03

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Fish Pathway (p=6)

Parent (i)	Product (j)	DCF(j,6)*	ETF(j,6,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.827E-01
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.728E-02
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.691E-03	2.647E-01

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Drinking Water Pathway (p=7)

Parent (i)	Product (j)	DCF(j,7)*	ETF(j,7,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.502E+03
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.237E+01
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.639E+00	1.252E+02

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	5.803E-02	5.777E-02	5.726E-02	5.552E-02	5.081E-02	3.728E-02	1.538E-02	3.855E-04
U-235+D	Pa-231	1.000E+00	9.287E-05	2.856E-04	6.673E-04	1.951E-03	5.194E-03	1.255E-02	1.546E-02	1.281E-03
U-235+D	Ac-227+D	1.000E+00	4.621E-07	2.796E-06	1.337E-05	1.026E-04	6.243E-04	2.728E-03	4.106E-03	3.625E-04
U-235+D	ΣDSR(j)		5.812E-02	5.806E-02	5.794E-02	5.757E-02	5.663E-02	5.256E-02	3.495E-02	2.028E-03

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	2.393E-05	2.382E-05	2.361E-05	2.289E-05	2.095E-05	1.537E-05	6.343E-06	2.864E-07
U-235+D	Pa-231	1.000E+00	1.003E-08	2.997E-08	6.932E-08	2.016E-07	5.359E-07	1.295E-06	1.594E-06	2.378E-07
U-235+D	Ac-227+D	1.000E+00	1.472E-10	1.015E-09	5.190E-09	4.134E-08	2.549E-07	1.119E-06	1.686E-06	2.682E-07
U-235+D	ΣDSR(j)		2.394E-05	2.385E-05	2.369E-05	2.314E-05	2.174E-05	1.778E-05	9.623E-06	7.924E-07

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	3.354E-05
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	1.114E-04
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	2.729E-06	9.294E-05
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.729E-06	2.379E-04

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

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Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,4t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	5.142E-02	
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	4.270E-02	
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	4.188E-03	1.424E-01	
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.188E-03	2.365E-01	

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-235+D	U-235+D	1.000E+00	5.805E-02	5.780E-02	5.729E-02	5.554E-02	5.084E-02	3.729E-02	1.539E-02	5.184E-02	
U-235+D	Pa-231	1.000E+00	9.288E-05	2.856E-04	6.674E-04	1.951E-03	5.195E-03	1.256E-02	1.546E-02	4.409E-02	
U-235+D	Ac-227+D	1.000E+00	4.622E-07	2.797E-06	1.338E-05	1.026E-04	6.246E-04	2.729E-03	8.299E-03	1.428E-01	
U-235+D	ΣDSR(j)		5.815E-02	5.809E-02	5.797E-02	5.759E-02	5.665E-02	5.258E-02	3.915E-02	2.388E-01	

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.069E-04	1.065E-04	1.055E-04	1.023E-04	9.364E-05	6.870E-05	2.835E-05	7.106E-07
U-235+D	Pa-231	1.000E+00	1.978E-06	7.110E-06	1.746E-05	5.226E-05	1.402E-04	3.398E-04	4.188E-04	3.471E-05
U-235+D	Ac-227+D	1.000E+00	4.731E-09	1.764E-08	4.405E-08	1.387E-07	4.099E-07	1.125E-06	1.468E-06	1.240E-07
U-235+D	ΣDSR(j)		1.089E-04	1.136E-04	1.230E-04	1.547E-04	2.343E-04	4.096E-04	4.486E-04	3.554E-05

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.775E-07	1.767E-07	1.752E-07	1.698E-07	1.554E-07	1.140E-07	4.705E-08	2.124E-09
U-235+D	Pa-231	1.000E+00	9.986E-10	3.158E-09	7.451E-09	2.189E-08	5.836E-08	1.411E-07	1.739E-07	2.594E-08
U-235+D	Ac-227+D	1.000E+00	2.418E-12	8.080E-12	2.030E-11	7.104E-11	2.527E-10	8.303E-10	1.157E-09	1.800E-10
U-235+D	ΣDSR(j)		1.785E-07	1.799E-07	1.826E-07	1.918E-07	2.140E-07	2.560E-07	2.221E-07	2.825E-08

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	2.801E-08
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	1.368E-06
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	1.330E-10	7.895E-09
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.330E-10	1.404E-06

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,4t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	3.811E-04	
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	4.655E-03	
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	1.810E-06	7.318E-05	
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.810E-06	5.109E-03	

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,5t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	1.545E-04	
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	1.887E-03	
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	7.391E-07	2.972E-05	
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.391E-07	2.071E-03	

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-235+D	U-235+D	1.000E+00	4.214E-04	4.196E-04	4.159E-04	4.032E-04	3.691E-04	2.707E-04	1.117E-04	5.401E-04	
U-235+D	Pa-231	1.000E+00	3.747E-06	1.271E-05	3.067E-05	9.105E-05	2.436E-04	5.899E-04	7.269E-04	6.624E-03	
U-235+D	Ac-227+D	1.000E+00	9.016E-09	3.196E-08	8.002E-08	2.645E-07	8.575E-07	2.596E-06	6.066E-06	1.034E-04	
U-235+D	ΣDSR(j)		4.252E-04	4.323E-04	4.466E-04	4.945E-04	6.136E-04	8.633E-04	8.447E-04	7.267E-03	

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	2.228E-04	2.219E-04	2.199E-04	2.132E-04	1.951E-04	1.432E-04	5.908E-05	1.461E-06
U-235+D	Pa-231	1.000E+00	3.044E-09	9.223E-09	2.144E-08	6.251E-08	1.663E-07	4.018E-07	4.948E-07	4.099E-08
U-235+D	Ac-227+D	1.000E+00	8.464E-11	4.549E-10	1.952E-09	1.385E-08	8.190E-08	3.540E-07	5.317E-07	4.692E-08
U-235+D	ΣDSR(j)		2.228E-04	2.219E-04	2.199E-04	2.133E-04	1.954E-04	1.439E-04	6.010E-05	1.568E-06

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	3.698E-07	3.682E-07	3.650E-07	3.539E-07	3.239E-07	2.376E-07	9.805E-08	4.427E-09
U-235+D	Pa-231	1.000E+00	2.011E-12	4.699E-12	9.761E-12	2.678E-11	6.977E-11	1.673E-10	2.056E-10	3.065E-11
U-235+D	Ac-227+D	1.000E+00	7.543E-14	5.219E-13	2.673E-12	2.130E-11	1.314E-10	5.766E-10	8.689E-10	1.383E-10
U-235+D	ΣDSR(j)		3.698E-07	3.682E-07	3.650E-07	3.539E-07	3.241E-07	2.384E-07	9.913E-08	4.596E-09

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	5.839E-08
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	1.616E-09
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	1.576E-10	5.405E-09
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.576E-10	6.541E-08

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,4t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	7.944E-04	
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	5.500E-06	
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	2.144E-06	7.319E-05	
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.144E-06	8.731E-04	

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,5t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	1.274E-03	
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	8.821E-06	
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	3.465E-06	1.177E-04	
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.465E-06	1.401E-03	

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-235+D	U-235+D	1.000E+00	1.033E-03	1.029E-03	1.019E-03	9.884E-04	9.047E-04	6.637E-04	2.739E-04	2.080E-03	
U-235+D	Pa-231	1.000E+00	7.450E-09	1.952E-08	4.282E-08	1.212E-07	3.191E-07	7.683E-07	9.451E-07	1.443E-05	
U-235+D	Ac-227+D	1.000E+00	2.498E-10	1.597E-09	7.802E-09	6.049E-08	3.695E-07	1.616E-06	8.043E-06	1.912E-04	
U-235+D	ΣDSR(j)		1.033E-03	1.029E-03	1.020E-03	9.886E-04	9.053E-04	6.660E-04	2.829E-04	2.285E-03	

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from the Ingestion of Fish (p=6)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,6,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.558E-04
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	1.833E-04
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	1.154E-04	3.919E-03
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.154E-04	4.258E-03

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from the Ingestion of Drinking Water (p=7)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,7,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	6.689E-01	
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	5.555E-01	
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	5.457E-02	1.853E+00	
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.457E-02	3.078E+00	

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Plant/Air and Plant/Water Concentration Ratios

Mass loading [ASR(3)]: 1.000E-04 g/m**3

Area Factor for Mass Loading [FA(2)]: 1.448E-01

Nuclide (i)	FAR(i,3,2,1) m**3/g	FAR(i,3,2,2) m**3/g	FWR(i,3,3,1) L/g	FWR(i,3,3,2) L/g	FWR(i,3,4,1) L/g	FWR(i,3,4,2) L/g
Ac-227	5.4545E-02	2.6156E-01	2.8307E-07	4.1610E-07	3.4522E-04	1.6554E-03
Pa-231	5.4545E-02	2.6156E-01	1.1329E-06	1.6658E-06	3.4522E-04	1.6554E-03
U-235	5.4545E-02	2.6156E-01	2.8322E-07	4.1644E-07	3.4522E-04	1.6554E-03

FAR(i,p,q,k) is the plant/air concentration ratio for airborne contaminated dust,
and FWR(i,p,q,k) is the plant/water concentration ratio. See groundwater displays
for water/soil concentration ratios.

Plant/Soil Concentration Ratios, FSR(i,3,q,k,t)

Root Uptake (q=1) and Foliar Dust Deposition (q=2)

Nonleafy (k=1) and/or Leafy (k=2) Vegetables

Nuclide(i)		FSR(i,3,1,k)	FSR(i,3,2,1)	FSR(i,3,2,2)
Parent	Product			
U-235+D	U-235+D	2.5000E-03	7.8976E-07	3.7871E-06
U-235+D	Pa-231	1.0000E-02	7.8976E-07	3.7871E-06
U-235+D	Ac-227+D	2.5000E-03	7.8976E-07	3.7871E-06

Plant/Soil Concentration Ratio, FSR(j,3,q,k,t)

Ditch Irrigation (q=3)

Parent (i)	Product (j)	Thread Fraction	FSR(j,3,3,k,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.389E-06
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	1.163E-07
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	2.017E-09	6.948E-08

Plant/Soil Concentration Ratio, FSR(j,3,q,k,t)

Overhead Irrigation (q=4) and Nonleafy Vegetables (k=1)

Parent (i)	Product (j)	Thread Fraction	FSR(j,3,4,1,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.693E-03
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	3.545E-05
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	2.460E-06	8.474E-05

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Plant/Soil Concentration Ratio, FSR(j,3,q,k,t)
Overhead Irrigation (q=4) and Leafy Vegetables (k=2)

Parent (i)	Product (j)	Thread Fraction	FSR(j,3,4,2,t) * SF(j,t) At Time in Years								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	8.120E-03	
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	1.700E-04	
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	1.181E-05	4.063E-04	

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Meat/Fodder, Milk/Fodder, Fodder/Air and Fodder/Water Concentration Ratios

FI(4,q): 68.0 kg/day FI(5,q): 55.0 kg/day q=1,2,3,4
 FI(4,q): 50.0 L/day FI(5,q): 160.0 L/day q=5
 FI(4,q): 0.5 kg/day FI(5,q):

Nuclide (i)	FQR(i,4) d/kg	FQR(i,5) d/kg	FAR(i,3,2,3) m**3/g	FWR(i,3,3,3) L/g	FWR(i,3,4,3) L/g
Ac-227	2.0000E-05	2.0000E-05	2.8659E-01	1.3328E-07	1.8139E-03
Pa-231	5.0000E-03	5.0000E-06	2.8659E-01	5.3326E-07	1.8139E-03
U-235	3.4000E-04	6.0000E-04	2.8659E-01	1.3332E-07	1.8139E-03

FI(p,q) are the fodder (q=1,2,3,4), livestock water (q=5) and soil (q=6) intake rates;
 FQR(i,p) are the transfer coefficients from contaminated fodder of livestock
 water to meat (p=4) or milk (p=5). FAR(i,3,2,3) are the fodder/air
 concentration ratios, and FWR(i,3,3,3) and FWR(i,3,4,3) are the fodder/
 water concentration ratios for ditch and overhead irrigation, respectively.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Fodder/Soil Concentration Ratios, QSR(i,p,q,t), for Meat and Milk Pathways

Root Uptake (q=1) and Foliar Dust Deposition (q=2)

Nuclide(i)			
Parent	Product	QSR(i,p,1)	QSR(i,p,2)
U-235+D	U-235+D	2.5000E-03	4.1496E-06
U-235+D	Pa-231	1.0000E-02	4.1496E-06
U-235+D	Ac-227+D	2.5000E-03	4.1496E-06

Fodder/Soil Concentration Ratio, QSR(j,p,q,t), for Meat and Milk Pathways

Ditch Irrigation (q=3)

Parent (i)	Product (j)	Thread Fraction	QSR(j,p,3,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	6.539E-07
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	5.475E-08
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	9.460E-10	3.271E-08

Fodder/Soil Concentration Ratio, QSR(j,p,q,t), for Meat and Milk Pathways

Overhead Irrigation (q=4)

Parent (i)	Product (j)	Thread Fraction	QSR(j,p,4,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	8.897E-03
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	1.862E-04
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	1.287E-05	4.452E-04

Fodder/Soil Concentration Ratio, QSR(j,p,q,t), for Meat and Milk Pathways

Livestock Water (q=5)

Parent (i)	Product (j)	Thread Fraction	QSR(j,p,5,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	4.905E-03
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	1.027E-04
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	7.123E-06	2.454E-04

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Meat/Soil Concentration Ratios, FSR(i,4,q,t)
 Root Uptake (q=1) and Foliar Dust Deposition (q=2)

Nuclide(i)			
Parent	Product	FSR(i,4,1)	FSR(i,4,2)
U-235+D	U-235+D	5.7800E-05	9.5938E-08
U-235+D	Pa-231	0.0000E+00	0.0000E+00
U-235+D	Ac-227+D	0.0000E+00	0.0000E+00

Meat/Soil Concentration Ratio, FSR(j,4,q,t)
 Ditch Irrigation (q=3)

Parent (i)	Product (j)	Thread Fraction	FSR(j,4,3,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.512E-08
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	1.862E-08
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	1.281E-12	4.460E-11

Meat/Soil Concentration Ratio, FSR(j,4,q,t)
 Overhead Irrigation (q=4)

Parent (i)	Product (j)	Thread Fraction	FSR(j,4,4,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	2.057E-04
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	6.333E-05
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	1.744E-08	6.040E-07

Meat/Soil Concentration Ratio, FSR(j,4,q,t)
 Livestock Water (q=5)

Parent (i)	Product (j)	Thread Fraction	FSR(j,4,5,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	8.339E-05
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	2.567E-05
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	7.123E-09	2.454E-07

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Milk/Soil Concentration Ratios, FSR(i,5,q,t)
 Root Uptake (q=1) and Foliar Dust Deposition (q=2)

Nuclide(i)			
Parent	Product	FSR(i,5,1)	FSR(i,5,2)
U-235+D	U-235+D	8.2500E-05	1.3694E-07
U-235+D	Pa-231	0.0000E+00	0.0000E+00
U-235+D	Ac-227+D	0.0000E+00	0.0000E+00

Milk/Soil Concentration Ratio, FSR(j,5,q,t)
 Ditch Irrigation (q=3)

Parent	Product	Thread	FSR(j,5,3,t) * SF(j,t) At Time in Years								
{i}	{j}	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	2.158E-08	
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	1.506E-11	
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	1.038E-12	3.608E-11	

Milk/Soil Concentration Ratio, FSR(j,5,q,t)
 Overhead Irrigation (q=4)

Parent	Product	Thread	FSR(j,5,4,t) * SF(j,t) At Time in Years								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	2.936E-04	
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	5.122E-08	
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	1.413E-08	4.886E-07	

Milk/Soil Concentration Ratio, FSR(j,5,q,t)
 Livestock Water (q=5)

Parent	Product	Thread	FSR(j,5,5,t) * SF(j,t) At Time in Years								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	4.709E-04	
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	8.215E-08	
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	2.283E-08	7.855E-07	

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Dose/Source Ratios for Soil Ingestion Pathway (p=8)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,8,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-235+D	U-235+D	1.000E+00	7.303E-03	7.270E-03	7.206E-03	6.986E-03	6.395E-03	4.691E-03	1.936E-03	8.740E-05	
U-235+D	Pa-231	1.000E+00	3.061E-06	9.146E-06	2.116E-05	6.153E-05	1.636E-04	3.951E-04	4.865E-04	7.258E-05	
U-235+D	Ac-227+D	1.000E+00	4.489E-08	3.097E-07	1.584E-06	1.261E-05	7.778E-05	3.413E-04	5.143E-04	8.183E-05	
U-235+D	ΣDSR(j)		7.306E-03	7.280E-03	7.229E-03	7.061E-03	6.636E-03	5.427E-03	2.937E-03	2.418E-04	

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

Dose Conversion and Environmental Transport Factors for the Soil Ingestion Pathway (p=8)

Parent (i)	Product (j)	DCF(j,8) *	ETF(j,8,t) At Time in Years (g/yr)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-235+D	U-235+D	2.673E-04	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	
U-235+D	Pa-231	1.060E-02	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	
U-235+D	Ac-227+D	1.480E-02	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	

* - The dose conversion factor units are mrem/pCi.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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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	3
Summary of Pathway Selections	7
Contaminated Zone and Total Dose Summary	8
Total Dose Components	
Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
Time = 1.000E+03	16
Dose/Source Ratios Summed Over All Pathways	17
Single Radionuclide Soil Guidelines	17
Dose Per Nuclide Summed Over All Pathways	18
Soil Concentration Per Nuclide	18

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 1250.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 12 & 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	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(2)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(3)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(4)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(5)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1(6)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1(7)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1(8)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1(9)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1(10)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1(11)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1(12)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1(13)
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	U-235+D	1.230E-01	1.230E-01	DCF2(3)
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	U-235+D	2.673E-04	2.660E-04	DCF3(3)
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	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	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(3,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(3,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(3,3)
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	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	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(3,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(3,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETEG table in Ground Pathway of Detailed Report.

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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 1250.RAD

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)	1.250E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	5.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): U-235	4.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(3)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+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)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.000E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	1.000E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	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)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 1250.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-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	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.426E-03	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.099E-02	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.426E-03	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	7.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	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	-1 shows non-circular AREA.	FS

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 1250.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	2.417E+00	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m), ring 2:	4.833E+00	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m), ring 3:	7.250E+00	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m), ring 4:	9.667E+00	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m), ring 5:	1.208E+01	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m), ring 6:	1.450E+01	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m), ring 7:	1.692E+01	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m), ring 8:	1.933E+01	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m), ring 9:	2.175E+01	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m), ring 10:	2.417E+01	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	2.658E+01	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	2.900E+01	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	1.000E+00	1.000E+00	---	FRACA(1)
R017	Ring 2	1.000E+00	2.732E-01	---	FRACA(2)
R017	Ring 3	1.000E+00	0.000E+00	---	FRACA(3)
R017	Ring 4	1.000E+00	0.000E+00	---	FRACA(4)
R017	Ring 5	1.000E+00	0.000E+00	---	FRACA(5)
R017	Ring 6	8.200E-01	0.000E+00	---	FRACA(6)
R017	Ring 7	6.000E-01	0.000E+00	---	FRACA(7)
R017	Ring 8	4.900E-01	0.000E+00	---	FRACA(8)
R017	Ring 9	4.200E-01	0.000E+00	---	FRACA(9)
R017	Ring 10	3.700E-01	0.000E+00	---	FRACA(10)
R017	Ring 11	2.200E-01	0.000E+00	---	FRACA(11)
R017	Ring 12	2.000E-02	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
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	0.625E-01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.625E-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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 1250.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	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	3.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 1250.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 1250.RAD

Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 1250.00 square meters	U-235 4.000E+00
Thickness: 1.50 meters	
Cover Depth: 0.00 meters	

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	1.950E+00	1.942E+00	1.927E+00	1.874E+00	1.733E+00	1.324E+00	8.446E-01	1.332E+01
M(t):	1.300E-01	1.295E-01	1.285E-01	1.249E-01	1.156E-01	8.824E-02	5.630E-02	8.880E-01

Maximum TDOSE(t): 1.332E+01 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 1250.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-235	1.660E+00	0.8511	2.533E-02	0.0130	0.000E+00	0.0000	2.326E-01	0.1193	9.663E-04	0.0005	2.348E-03	0.0012	2.922E-02	0.0150
Total	1.660E+00	0.8511	2.533E-02	0.0130	0.000E+00	0.0000	2.326E-01	0.1193	9.663E-04	0.0005	2.348E-03	0.0012	2.922E-02	0.0150

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- 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.
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.950E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.950E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 1250.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- 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.
U-235	1.652E+00	0.8507	2.523E-02	0.0130	0.000E+00	0.0000	2.323E-01	0.1196	9.826E-04	0.0005	2.338E-03	0.0012	2.912E-02	0.0150
Total	1.652E+00	0.8507	2.523E-02	0.0130	0.000E+00	0.0000	2.323E-01	0.1196	9.826E-04	0.0005	2.338E-03	0.0012	2.912E-02	0.0150

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- 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.
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.942E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.942E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-235	1.638E+00	0.8499	2.502E-02	0.0130	0.000E+00	0.0000	2.319E-01	0.1203	1.015E-03	0.0005	2.317E-03	0.0012	2.892E-02	0.0150
Total	1.638E+00	0.8499	2.502E-02	0.0130	0.000E+00	0.0000	2.319E-01	0.1203	1.015E-03	0.0005	2.317E-03	0.0012	2.892E-02	0.0150

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

Water Dependent Pathways

Radio- 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.
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.927E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.927E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-235	1.588E+00	0.8472	2.433E-02	0.0130	0.000E+00	0.0000	2.304E-01	0.1229	1.124E-03	0.0006	2.247E-03	0.0012	2.824E-02	0.0151
Total	1.588E+00	0.8472	2.433E-02	0.0130	0.000E+00	0.0000	2.304E-01	0.1229	1.124E-03	0.0006	2.247E-03	0.0012	2.824E-02	0.0151

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

Water Dependent Pathways

Radio- 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.
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.874E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.874E+00	1.0000

*Sum of all water independent and dependent pathways. .

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-235	1.454E+00	0.8389	2.259E-02	0.0130	0.000E+00	0.0000	2.266E-01	0.1307	1.394E-03	0.0008	2.058E-03	0.0012	2.654E-02	0.0153
Total	1.454E+00	0.8389	2.259E-02	0.0130	0.000E+00	0.0000	2.266E-01	0.1307	1.394E-03	0.0008	2.058E-03	0.0012	2.654E-02	0.0153

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

Radio- 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.
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.733E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.733E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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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

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-235	1.070E+00	0.8086	1.780E-02	0.0134	0.000E+00	0.0000	2.103E-01	0.1589	1.962E-03	0.0015	1.514E-03	0.0011	2.171E-02	0.0164
Total	1.070E+00	0.8086	1.780E-02	0.0134	0.000E+00	0.0000	2.103E-01	0.1589	1.962E-03	0.0015	1.514E-03	0.0011	2.171E-02	0.0164

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

Water Dependent Pathways

Radio- 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.
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.324E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.324E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-235	4.462E-01	0.5283	8.919E-03	0.0106	0.000E+00	0.0000	1.398E-01	0.1656	1.914E-03	0.0023	6.301E-04	0.0007	1.175E-02	0.0139
Total	4.462E-01	0.5283	8.919E-03	0.0106	0.000E+00	0.0000	1.398E-01	0.1656	1.914E-03	0.0023	6.301E-04	0.0007	1.175E-02	0.0139

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

Water Dependent Pathways

Radio- 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.
U-235	2.183E-01	0.2585	2.622E-04	0.0003	0.000E+00	0.0000	1.676E-02	0.0198	5.793E-06	0.0000	1.275E-05	0.0000	8.446E-01	1.0000
Total	2.183E-01	0.2585	2.622E-04	0.0003	0.000E+00	0.0000	1.676E-02	0.0198	5.793E-06	0.0000	1.275E-05	0.0000	8.446E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-235	2.085E-02	0.0016	6.495E-04	0.0000	0.000E+00	0.0000	8.117E-03	0.0006	1.945E-04	0.0000	2.644E-05	0.0000	9.672E-04	0.0001
Total	2.085E-02	0.0016	6.495E-04	0.0000	0.000E+00	0.0000	8.117E-03	0.0006	1.945E-04	0.0000	2.644E-05	0.0000	9.672E-04	0.0001

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

Water Dependent Pathways

Radio- 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.
U-235	1.231E+01	0.9242	9.678E-03	0.0007	0.000E+00	0.0000	9.470E-01	0.0711	1.632E-02	0.0012	5.168E-03	0.0004	1.332E+01	1.0000
Total	1.231E+01	0.9242	9.678E-03	0.0007	0.000E+00	0.0000	9.470E-01	0.0711	1.632E-02	0.0012	5.168E-03	0.0004	1.332E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-235+D	U-235+D	1.000E+00	4.874E-01	4.852E-01	4.810E-01	4.663E-01	4.268E-01	3.131E-01	1.292E-01	7.274E-01	
U-235+D	Pa-231	1.000E+00	9.985E-05	3.073E-04	7.183E-04	2.100E-03	5.592E-03	1.352E-02	1.665E-02	6.036E-01	
U-235+D	Ac-227+D	1.000E+00	6.718E-07	4.225E-06	2.063E-05	1.602E-04	9.792E-04	4.284E-03	6.529E-02	1.999E+00	
U-235+D	ΣDSR(j)		4.875E-01	4.855E-01	4.817E-01	4.685E-01	4.334E-01	3.309E-01	2.111E-01	3.330E+00	

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

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Nuclide (i)	t =	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235		3.077E+01	3.089E+01	3.114E+01	3.201E+01	3.461E+01	4.533E+01	7.104E+01	4.505E+00

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 1.000E+03 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
U-235	4.000E+00	1.000E+03	3.330E+00	4.505E+00	3.330E+00	4.505E+00

Summary : RESRAD Default Parameters Resident Farmer Scenario

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr								
			t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235	U-235	1.000E+00		1.950E+00	1.941E+00	1.924E+00	1.865E+00	1.707E+00	1.252E+00	5.168E-01	2.910E+00
Pa-231	U-235	1.000E+00		3.994E-04	1.229E-03	2.873E-03	8.401E-03	2.237E-02	5.407E-02	6.659E-02	2.414E+00
Ac-227	U-235	1.000E+00		2.687E-06	1.690E-05	8.254E-05	6.407E-04	3.917E-03	1.714E-02	2.611E-01	7.995E+00

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

Individual Nuclide Soil Concentration

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g								
			t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235	U-235	1.000E+00		4.000E+00	3.982E+00	3.947E+00	3.827E+00	3.503E+00	2.570E+00	1.060E+00	4.787E-02
Pa-231	U-235	1.000E+00		0.000E+00	8.426E-05	2.505E-04	8.096E-04	2.223E-03	5.431E-03	6.710E-03	1.002E-03
Ac-227	U-235	1.000E+00		0.000E+00	1.324E-06	1.152E-05	1.138E-04	7.486E-04	3.356E-03	5.081E-03	8.094E-04

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

RESCALC.EXE execution time = 3.89 seconds

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Table of ContentsPart II: Source Terms, Factors, and Parameters for Individual Pathways

Iteration Logs

Maximum U-235 Dose/Source Ratio	3
Maximum Total Dose	4

Source Factors for Ingrowth and Decay

Radioactivity Only	5
Combined Radioactivity and Leaching	5

Ground Pathway

Source Term Parameters	6
Time Dependence of Source Geometry	6
Occupancy, Cover/Depth, and Area Factors	7
Dose Conversion and Environmental Transport Factors .	8
Dose/Source Ratios	8

Inhalation Pathway (radon excluded)

Dose/Source Ratios	9
Pathway Factors	9
Dose Conversion and Environmental Transport Factors .	9

Groundwater and Surface Water Pathway Segments

Transport Time Parameters for Unsaturated Zone Strata	10
Dilution Factor and Rise Time Parameters for	
Nondispersion (ND) Model	11
Primary Parameters Used to Calculate Ratios	11
Water/Soil Concentration Ratios	12

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 1250.RAD

Table of Contents (cont.)Part II: Source Terms, Factors, and Parameters for Individual Pathways

Food Pathways

Storage Times for Contaminated Foodstuffs	13
Storage Time Ingrowth and Decay Factors	13
Storage Correction Factors	
Drinking Water	14
Irrigation Water	14
Livestock Water	15
Plants	15
Livestock Fodder	16
Meat and Milk	16
Fish and Crustacea	17
Area and Depth Factors	18
Dose Conversion and Environmental Transport Factors	
Plant	20
Meat	21
Milk	23
Fish	25
Drinking Water	25
Dose/Source Ratios	
Plant	26
Plant Total	27
Meat	28
Meat Total	29
Milk	30
Milk Total	31
Fish	32
Drinking Water	33
Concentration Ratios	
Plant/Air and Plant/Water	34
Plant/Soil	34
Meat/Fodder, Fodder/Air, Fodder/Water	36
Fodder/Soil	37
Meat/Soil	38
Milk/Soil	39

Soil Ingestion Pathway

Dose/Source Ratios.....	40
Dose Conversion and Environmental Transport Factors .	40

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 1250.RAD

Iteration Log for Computation of the Time of Maximum U-235 Dose/Source Ratio

Pathway: Meat (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	2.03092E+02	5.29541E-04		
1	1.80369E+02	5.32293E-04	-2.27227E+01	parabolic
2	1.80158E+02	5.32295E-04	-2.11099E-01	parabolic
3	1.79271E+02	5.32299E-04	-8.87129E-01	parabolic
4	1.79450E+02	5.32299E-04	5.44410E-02	parabolic
5	1.79630E+02	5.32298E-04	1.79450E-01	parabolic
6	1.79450E+02	5.32299E-04	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Iteration Log for Computation of the Time of Maximum Total Dose
Pathway: Meat (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDose(t) (mrem/yr)	Step Size (years)	Step Type
0	2.03092E+02	2.11816E-03		
1	1.80369E+02	2.12917E-03	-2.27227E+01	parabolic
2	1.80158E+02	2.12918E-03	-2.11099E-01	parabolic
3	1.79271E+02	2.12919E-03	-8.87129E-01	parabolic
4	1.79450E+02	2.12919E-03	5.44410E-02	parabolic
5	1.79630E+02	2.12919E-03	1.79450E-01	parabolic
6	1.79450E+02	2.12919E-03	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDose(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDose(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Source Factors for Ingrowth and Decay

Radioactivity Factors Only

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	ID(j,t) = THF(j)*S1(j,t)/S1(i,0) At Time in Years								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
U-235+D	Pa-231	1.000E+00	0.000E+00	2.116E-05	6.347E-05	2.116E-04	6.345E-04	2.114E-03	6.327E-03	2.094E-02	
U-235+D	Ac-227+D	1.000E+00	0.000E+00	3.332E-07	2.937E-06	3.037E-05	2.258E-04	1.477E-03	5.667E-03	2.028E-02	

Source Factors for Ingrowth and Decay

Combined Radioactivity and Leaching Factors

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	SF(j,t) = THF(j)*S1(j,t)/S1(i,0) At Time in Years								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-235+D	U-235+D	1.000E+00	1.000E+00	9.956E-01	9.868E-01	9.567E-01	8.757E-01	6.424E-01	2.651E-01	1.197E-02	
U-235+D	Pa-231	1.000E+00	0.000E+00	2.106E-05	6.264E-05	2.024E-04	5.557E-04	1.358E-03	1.677E-03	2.506E-04	
U-235+D	Ac-227+D	1.000E+00	0.000E+00	3.310E-07	2.879E-06	2.846E-05	1.872E-04	8.389E-04	1.270E-03	2.024E-04	

The effect of volatilization was also considered when computing the source factors for H-3 and C-14.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Parameters Used for Calculating Cover Depth and Contaminated Zone Thicknesses

Cover Erosion rate (vcv): 0.001000 m/yr
 Contaminated Zone Erosion rate (vcz): 0.001000 m/yr
 Water Table Drop rate (vwt): 0.001000 m/yr
 Precipitation rate (Pr): 1.000000 m/yr
 Cover Removal Time (Tc): 0.000E+00 yr
 Overhead irrigation rate (Irr): 0.200 m/yr Runoff coefficient (Cr): 0.200
 Evapotranspiration coeff. (Ce): 0.500 Infiltration rate (In): 0.500 m/yr
 Bulk soil density (rhob): 1.500 g/cm**3 Effective porosity (pe): 0.000

Radio-nuclide (i)	Distribution Coefficient Kd(i), cm**3/g	Leaching Ratio q(i)
Ac-227	2.000000E+01	1.058E-02
Pa-231	5.000000E+01	4.261E-03
U-235	5.000000E+01	4.261E-03

Time Dependence of Source Geometry

Time Dependence of Cover Depth [Cd(i,t)]

Nuclide (i)	t=	Cd(i,t) (meters)							
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
Pa-231		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
U-235		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Time Dependence of Contaminated Zone Thicknesses [T(i,t)]

Nuclide (i)	t=	T(i,t) (meters)							
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227		1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01
Pa-231		1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01
U-235		1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Ground Pathway (p=1)

Nuclide (i)	DCF(i,1)*		ETFG(i,t) At Time in Years (dimensionless)						
	t= 0.000E+00		1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	4.951E-04	5.517E-01	5.517E-01	5.517E-01	5.517E-01	5.517E-01	5.517E-01	5.517E-01	5.517E-01
Bi-211	2.559E-01	5.406E-01	5.406E-01	5.406E-01	5.406E-01	5.406E-01	5.406E-01	5.406E-01	5.405E-01
Fr-223	1.980E-01	5.438E-01	5.438E-01	5.438E-01	5.438E-01	5.438E-01	5.438E-01	5.438E-01	5.438E-01
Pa-231	1.906E-01	5.409E-01	5.409E-01	5.409E-01	5.409E-01	5.409E-01	5.409E-01	5.409E-01	5.408E-01
Pb-211	3.064E-01	5.349E-01	5.349E-01	5.349E-01	5.349E-01	5.349E-01	5.349E-01	5.349E-01	5.346E-01
Po-211	4.764E-02	5.315E-01	5.315E-01	5.315E-01	5.315E-01	5.315E-01	5.315E-01	5.315E-01	5.309E-01
Po-215	1.016E-03	5.354E-01	5.354E-01	5.354E-01	5.354E-01	5.354E-01	5.354E-01	5.354E-01	5.352E-01
Ra-223	6.034E-01	5.440E-01	5.440E-01	5.440E-01	5.440E-01	5.440E-01	5.440E-01	5.440E-01	5.440E-01
Rn-219	3.083E-01	5.411E-01	5.411E-01	5.411E-01	5.411E-01	5.411E-01	5.411E-01	5.411E-01	5.410E-01
Th-227	5.212E-01	5.466E-01	5.466E-01	5.466E-01	5.466E-01	5.466E-01	5.466E-01	5.466E-01	5.465E-01
Th-231	3.643E-02	5.526E-01	5.526E-01	5.526E-01	5.526E-01	5.526E-01	5.526E-01	5.526E-01	5.526E-01
Tl-207	1.980E-02	5.351E-01	5.351E-01	5.351E-01	5.351E-01	5.351E-01	5.351E-01	5.351E-01	5.347E-01
U-235	7.211E-01	5.487E-01	5.487E-01	5.487E-01	5.487E-01	5.487E-01	5.487E-01	5.487E-01	5.487E-01

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

Dose/Source Ratios for External Radiation from the Ground (p=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,1,t) At Time in Years (mrem/yr)/(pCi/g)						
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02 1.000E+03
U-235+D	U-235+D	1.000E+00	4.149E-01	4.130E-01	4.094E-01	3.969E-01	3.633E-01	2.665E-01	1.100E-01 4.965E-03
U-235+D	Pa-231	1.000E+00	1.087E-06	3.249E-06	7.516E-06	2.186E-05	5.811E-05	1.404E-04	1.728E-04 2.579E-05
U-235+D	Ac-227+D	1.000E+00	1.209E-07	8.342E-07	4.266E-06	3.398E-05	2.095E-04	9.194E-04	1.385E-03 2.204E-04
U-235+D	ΣDSR(j)		4.149E-01	4.130E-01	4.094E-01	3.970E-01	3.636E-01	2.676E-01	1.115E-01 5.212E-03

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Inhalation Pathway, Excluding Radon (p=2)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent {i}	Product {j}	Thread Fraction	DSR(j,2,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-235+D	U-235+D	1.000E+00	6.332E-03	6.304E-03	6.249E-03	6.058E-03	5.545E-03	4.068E-03	1.679E-03	7.578E-05	
U-235+D	Pa-231	1.000E+00	6.966E-07	2.082E-06	4.815E-06	1.400E-05	3.722E-05	8.992E-05	1.107E-04	1.652E-05	
U-235+D	Ac-227+D	1.000E+00	3.845E-08	2.652E-07	1.356E-06	1.080E-05	6.661E-05	2.923E-04	4.404E-04	7.008E-05	
U-235+D	ΣDSR(j)		6.333E-03	6.307E-03	6.255E-03	6.083E-03	5.649E-03	4.450E-03	2.230E-03	1.624E-04	

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

Pathway Factors for the Inhalation Pathway (radon excluded)

Area (A):	1.2500E+03 m**2	Occupancy Factor (FO2):	4.5000E-01
Area Factor (FA2):	1.3649E-01	Annual Air Intake (FI2):	8.4000E+03 m**3/yr
Cover Depth [Cd(0)]:	0.0000E+00 m	Mass Loading (ASR2):	1.0000E-04 g/m**3
Contaminated Zone Thickness [T(0)]:	1.5000E+00 m	FA2 * FO2 * FI2 * ASR2:	5.1594E-02 g/yr

Nuclide (i)	t=	Depth Factor [FD(i,2,t)] (dimensionless)							
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00

Dose Conversion and Environmental Transport Factors for the Inhalation Pathway, Excluding Radon (p=2)

Parent (i)	Product (j)	DCF(j,2) *	ETF(j,2,t) At Time in Years (g/yr)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-235+D	U-235+D	1.230E-01	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	
U-235+D	Pa-231	1.280E+00	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	
U-235+D	Ac-227+D	6.724E+00	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Transport Time Parameters for Unsaturated Zone Stratum No. 1

Stratum thickness [h(1)]: 4.000000 m
 Bulk soil material density [rhob(1)]: 1.500000 g/cm**3
 Effective porosity [peuz(1)]: 0.200000
 Hydraulic conductivity [Khuz(1)]: 10.000000 m/yr
 Total porosity [ptuz(1)]: 0.400000
 Soil specific b parameter [buz(1)]: 5.300000
 Saturation ratio [sruz(1)]: 0.802299

Radio-nuclide (i)	Distribution Coefficient Kduz(i,1), cm**3/g	Retardation Factor Rduz(i,1)	Transport Time Dtuz(i,1), yr
Ac-227	2.0000E+01	9.4481E+01	1.2128E+02
Pa-231	5.0000E+01	2.3470E+02	3.0128E+02
U-235	5.0000E+01	2.3470E+02	3.0128E+02

Transport Time Parameters for Unsaturated Zone created by the Falling Water Table

Water table drop rate [vwt]: 0.001000 m/yr
 Bulk soil material density [rhobaq]: 1.500000 g/cm**3
 Effective porosity [peaq]: 0.200000
 Hydraulic conductivity [Khaq]: 100.000000 m/yr
 Total porosity [ptaq]: 0.400000
 Soil specific b parameter [baq]: 5.300000
 Saturation ratio [sruaq]: 0.677340

Radio-nuclide (i)	Distribution Coefficient Kdaq(i), cm**3/g	Retardation Factor Rduaq(i)	Minimum Transport Time Dtuaq(i), yr
Ac-227	2.0000E+01	1.1173E+02	3.7860E+00
Pa-231	5.0000E+01	2.7782E+02	2.4524E+01
U-235	5.0000E+01	2.7782E+02	2.4524E+01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dilution Factor and Rise Time Parameters for Nondispersion (ND) Model

Aquifer contamination depth at well (z): 1.25000E+01 m
 Depth of water intake below water table (dw): 1.00000E+01 m
 Infiltration rate (In): 5.00000E-01 m/yr
 Aquifer water flow rate (Vwfr): 2.00000E+00 m/yr
 Hydraulic gradient (J): 2.00000E-02
 Hydraulic conductivity of aquifer (Kszh): 1.00000E+02 m/yr
 Contaminated zone extent parallel to gradient (l): 5.00000E+01 m
 Distance below contaminated zone to water table (h): 0.40000E+01 m
 Initial thickness of uncontaminated cover (Cd): 0.00000E+00 m
 Initial thickness of contaminated zone (T): 0.15000E+01 m
 Effective porosity of saturated zone (pesz): 0.20000E+00

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdsz(i)	Horizontal Transport Time Onsite Tauh(i), yr	Rise Time dt(i), yr	Decay Time Parameter 1/lamda(i),yr
Ac-227	1.000E+00	7.600E+01	3.800E+02	3.040E+02	3.141E+01
Pa-231	1.000E+00	1.885E+02	9.425E+02	7.540E+02	4.726E+04
U-235	1.000E+00	1.885E+02	9.425E+02	7.540E+02	1.015E+09

Primary Parameters Used for Calculating Water/Soil
Concentration Ratios for Groundwater Pathway Segment

Model used: Nondispersion (ND)

Bulk soil density in contaminated zone (rhob): 1.500 g/cm**3

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdcz(i)	Breakthrough Time Chain year	Single Nuclide Dt(i), yr	Rise Time dt(i), yr
Ac-227	1.000E+00	9.448E+01	1.251E+02	1.251E+02	3.040E+02
Pa-231	1.000E+00	2.347E+02	3.258E+02	3.258E+02	7.540E+02
U-235	1.000E+00	2.347E+02	3.258E+02	3.258E+02	7.540E+02

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Water/Soil Concentration Ratios [WSR(j,1,t)] for Groundwater Pathway Segment

Parent (i)	Product (j)	Thread Fraction	WSR(j,1,t) At Time in Years (pCi/L)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	4.905E+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	1.027E-01	
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	7.136E-03	2.455E-01	

Water/Soil Concentration Ratios [WSR(j,2,t)] for Surface Water Pathway Segment

Watershed Area (Aw) = 1.0000E+06 m**2

Contaminated Zone Area (A) = 1.2500E+03 m**2

Dilution Factor (f') = 1.2500E-03

Soil Density (rhob) = 1.5000E+00 kg/m**3

Parent (i)	Product (j)	Thread Fraction	WSR(j,2,t) At Time in Years (pCi/L)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	6.131E-03	
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	1.284E-04	
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	8.919E-06	3.068E-04	

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Times For Contaminated Foodstuffs

k	Food Item	STOR_T(k), days
1	non-leafy plants	14.
2	leafy plants	1.
3	milk	1.
4	meat	20.
5	fish	7.
6	crustacea	7.
7	well water	1.
8	surface water	1.
9	livestock fodder	45.

Storage Time Ingrowth and Decay Factors

Storage Time for k'th Foodstuff: $t = \text{STOR_T}(k)$, days

Parent Product Thread			STOR_ID(i,j,t) = CONCE(i,j,t)/CONCE(i,i,0)									
(i)	(j)	Fraction	t = 1.400E+01	1.000E+00	1.000E+00	2.000E+01	7.000E+00	7.000E+00	1.000E+00	1.000E+00	4.500E+01	
Ac-227	Ac-227	1.000E+00	9.988E-01	9.999E-01	9.999E-01	9.983E-01	9.994E-01	9.994E-01	9.999E-01	9.999E-01	9.961E-01	
Pa-231	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
Pa-231	Ac-227	1.000E+00	1.219E-03	8.716E-05	8.716E-05	1.742E-03	6.099E-04	6.099E-04	8.716E-05	8.716E-05	3.915E-03	
U-235	U-235	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
U-235	Pa-231	1.000E+00	8.110E-07	5.793E-08	5.793E-08	1.159E-06	4.055E-07	4.055E-07	5.793E-08	5.793E-08	2.607E-06	
U-235	Ac-227	1.000E+00	4.946E-10	2.524E-12	2.524E-12	1.009E-09	1.237E-10	1.237E-10	2.524E-12	2.524E-12	5.105E-09	

CONCE(i,j,t)/CONCE(i,i,0) is the concentration ratio of Product(j) at time t to Parent(i) at start of storage time.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 1250.RAD

Storage Time Correction Factors
 Drinking Water from Well and/or Surface
 Harvest Time = $t - 2.74E-03$ yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,1) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.999E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Nonleafy Plants from Well and/or Surface
 Harvest Time = $t - 4.11E-02$ yr; Consumption Time = $t - 3.83E-02$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,2) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.999E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Leafy Plants from Well and/or Surface
 Harvest Time = $t - 5.48E-03$ yr; Consumption Time = $t - 2.74E-03$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,3) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.999E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Livestock (Milk) Fodder from Well and/or Surface
 Harvest Time = $t - 1.29E-01$ yr; Consumption Time = $t - 1.26E-01$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,5) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.999E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

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Storage Time Correction Factors

Irrigation Water for Livestock (Meat) Fodder from Well and/or Surface

Harvest Time = $t - 1.81\text{E-}01$ yr; Consumption Time = $t - 1.78\text{E-}01$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,7)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.999E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Livestock (Milk) Water from Well and/or Surface

Harvest Time = $t - 5.48\text{E-}03$ yr; Consumption Time = $t - 2.74\text{E-}03$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,4)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.999E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Livestock (Meat) Water from Well and/or Surface

Harvest Time = $t - 5.75\text{E-}02$ yr; Consumption Time = $t - 5.48\text{E-}02$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,6)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.999E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Nonleafy Plants

Harvest Time = $t - 3.83\text{E-}02$ yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.988E-01	9.993E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors for Leafy Plants
Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.999E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Livestock (Meat) Fodder
Harvest Time = t - 1.78E-01 yr; Consumption Time = t - 5.48E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.038E+00	1.011E+00	1.003E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	2.226E+00	1.359E+00	1.109E+00	1.043E+00	1.021E+00	1.000E+00	9.977E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Livestock (Milk) Fodder
Harvest Time = t - 1.26E-01 yr; Consumption Time = t - 2.74E-03 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.035E+00	1.011E+00	1.003E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	2.153E+00	1.353E+00	1.109E+00	1.043E+00	1.021E+00	1.000E+00	9.977E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Meat
Harvest Time = t - 5.48E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF45(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E-01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E-00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.002E+00	1.001E+00	1.000E-00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	4.249E+01	1.668E+01	6.336E-00	3.254E+00	2.233E+00	1.412E+00	1.182E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors for Milk

Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF45(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.210E+00	1.068E+00	1.020E+00	1.007E+00	1.002E+00	1.001E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.002E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.999E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Fish & Crustacea

Harvest Time = t - 1.92E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF4(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.994E-01	9.996E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Area and Depth Factors for Plant (p=3), Meat (p=4), and Milk (p=5) Pathways
Overhead Irrigation (q=4)

Area Factor for Plant Foods [FA(3)] = 0.50

The Depth Factor Value

$FD(i,p,q,t) = 1.0000E+00$

is applicable for all radionuclides(i) and times(t).

Area and Depth Factors for Meat (p=4) and Milk (p=5) Pathways
Transfer from Livestock Water (q=5) and Soil (q=6) Intake

Area Factor for Meat and Milk [FA(p),p=4,5] = 0.06

The livestock water subpathway (q=5) and livestock soil intake subpathway (q=6)
occur only for the meat (p=4) and milk (p=5) pathways.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	2.175E+02	2.166E+02	2.147E+02	2.081E+02	1.905E+02	1.397E+02	5.767E+01	1.446E+00
U-235+D	Pa-231	1.060E-02	0.000E+00	1.784E-02	5.402E-02	1.756E-01	4.831E-01	1.181E+00	1.459E+00	1.211E-01
U-235+D	Ac-227+D	1.480E-02	0.000E+00	8.697E-05	6.721E-04	6.341E-03	4.113E-02	1.835E-01	2.776E-01	2.457E-02

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	8.455E-02	8.419E-02	8.345E-02	8.090E-02	7.405E-02	5.432E-02	2.242E-02	1.012E-03
U-235+D	Pa-231	1.060E-02	0.000E+00	1.781E-06	5.297E-06	1.712E-05	4.699E-05	1.148E-04	1.418E-04	2.119E-05
U-235+D	Ac-227+D	1.480E-02	0.000E+00	2.800E-08	2.435E-07	2.407E-06	1.583E-05	7.095E-05	1.074E-04	1.711E-05

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.254E-01
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.050E-02
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.820E-04	6.278E-03

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.923E+02
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.026E+00
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.792E-01	9.618E+00

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	2.276E-01	2.268E-01	2.248E-01	2.179E-01	1.994E-01	1.463E-01	6.038E-02	1.515E-03
U-235+D	Pa-231	1.060E-02	0.000E+00	2.410E-04	7.983E-04	2.672E-03	7.408E-03	1.816E-02	2.246E-02	1.865E-03
U-235+D	Ac-227+D	1.480E-02	0.000E+00	4.261E-07	1.437E-06	5.062E-06	1.549E-05	4.307E-05	5.638E-05	4.776E-06

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	3.561E-04	3.548E-04	3.517E-04	3.410E-04	3.121E-04	2.289E-04	9.448E-05	4.265E-06
U-235+D	Pa-231	1.060E-02	0.000E+00	1.048E-07	3.227E-07	1.055E-06	2.907E-06	7.112E-06	8.790E-06	1.313E-06
U-235+D	Ac-227+D	1.480E-02	0.000E+00	1.883E-10	6.198E-10	2.428E-09	8.971E-09	2.995E-08	4.191E-08	6.525E-09

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.953E-05
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.330E-05
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.037E-09	3.030E-07

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.099E-01
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.494E-01
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.855E-05	2.809E-03

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,5,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.283E-01
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.011E-01
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.800E-05	1.141E-03

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	4.744E-01	4.725E-01	4.684E-01	4.541E-01	4.156E-01	3.049E-01	1.258E-01	3.157E-03
U-235+D	Pa-231	1.060E-02	0.000E+00	3.289E-07	9.867E-07	3.198E-06	8.787E-06	2.148E-05	2.654E-05	2.203E-06
U-235+D	Ac-227+D	1.480E-02	0.000E+00	8.660E-09	5.674E-08	4.878E-07	3.066E-06	1.354E-05	2.042E-05	1.806E-06

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	7.423E-04	7.394E-04	7.329E-04	7.105E-04	6.503E-04	4.771E-04	1.969E-04	8.888E-06
U-235+D	Pa-231	1.060E-02	0.000E+00	1.728E-10	4.298E-10	1.293E-09	3.476E-09	8.431E-09	1.039E-08	1.551E-09
U-235+D	Ac-227+D	1.480E-02	0.000E+00	8.169E-12	7.124E-11	7.048E-10	4.636E-09	2.078E-08	3.147E-08	5.013E-09

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.241E-04
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.659E-08
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.968E-09	2.074E-07

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.688E+00
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.946E-04
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.123E-05	2.809E-03

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,5,t) * SF(j,t) At Time in Years (g/yr)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.708E+00	
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.725E-04	
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.313E-04	4.516E-03	

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Fish Pathway (p=6)

Parent (i)	Product (j)	DCF(j,6)*	ETF(j,6,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.311E-01
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.820E-03
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.370E-03	1.504E-01

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Drinking Water Pathway (p=7)

Parent (i)	Product (j)	DCF(j,7)*	ETF(j,7,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.502E+03
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.237E+01
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.639E+00	1.252E+02

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	5.803E-02	5.777E-02	5.726E-02	5.552E-02	5.081E-02	3.728E-02	1.538E-02	3.855E-04
U-235+D	Pa-231	1.000E+00	9.287E-05	2.856E-04	6.673E-04	1.951E-03	5.194E-03	1.255E-02	1.546E-02	1.281E-03
U-235+D	Ac-227+D	1.000E+00	4.621E-07	2.796E-06	1.337E-05	1.026E-04	6.243E-04	2.728E-03	4.106E-03	3.625E-04
U-235+D	ΣDSR(j)		5.812E-02	5.806E-02	5.794E-02	5.757E-02	5.663E-02	5.256E-02	3.495E-02	2.028E-03

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	2.256E-05	2.246E-05	2.226E-05	2.158E-05	1.975E-05	1.449E-05	5.980E-06	2.700E-07
U-235+D	Pa-231	1.000E+00	9.455E-09	2.825E-08	6.535E-08	1.901E-07	5.052E-07	1.220E-06	1.503E-06	2.242E-07
U-235+D	Ac-227+D	1.000E+00	1.388E-10	9.568E-10	4.893E-09	3.897E-08	2.403E-07	1.054E-06	1.589E-06	2.528E-07
U-235+D	ΣDSR(j)		2.257E-05	2.249E-05	2.233E-05	2.181E-05	2.050E-05	1.677E-05	9.072E-06	7.470E-07

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	3.354E-05
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	1.114E-04
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	2.729E-06	9.294E-05
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.729E-06	2.379E-04

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,4t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	5.142E-02
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	4.270E-02
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	4.188E-03	1.424E-01
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.188E-03	2.365E-01

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	5.805E-02	5.780E-02	5.729E-02	5.554E-02	5.083E-02	3.729E-02	1.539E-02	5.184E-02
U-235+D	Pa-231	1.000E+00	9.287E-05	2.856E-04	6.674E-04	1.951E-03	5.195E-03	1.256E-02	1.546E-02	4.409E-02
U-235+D	Ac-227+D	1.000E+00	4.622E-07	2.797E-06	1.338E-05	1.026E-04	6.246E-04	2.729E-03	8.299E-03	1.428E-01
U-235+D	ΣDSR(j)		5.814E-02	5.808E-02	5.797E-02	5.759E-02	5.665E-02	5.258E-02	3.915E-02	2.388E-01

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	6.075E-05	6.049E-05	5.996E-05	5.813E-05	5.320E-05	3.903E-05	1.611E-05	4.037E-07
U-235+D	Pa-231	1.000E+00	1.124E-06	4.040E-06	9.921E-06	2.969E-05	7.967E-05	1.931E-04	2.380E-04	1.972E-05
U-235+D	Ac-227+D	1.000E+00	2.688E-09	1.002E-08	2.503E-08	7.879E-08	2.329E-07	6.394E-07	8.339E-07	7.048E-08
U-235+D	ΣDSR(j)		6.188E-05	6.454E-05	6.990E-05	8.790E-05	1.331E-04	2.328E-04	2.549E-04	2.019E-05

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	9.506E-08	9.465E-08	9.382E-08	9.095E-08	8.325E-08	6.107E-08	2.520E-08	1.138E-09
U-235+D	Pa-231	1.000E+00	5.349E-10	1.691E-09	3.991E-09	1.172E-08	3.126E-08	7.560E-08	9.312E-08	1.390E-08
U-235+D	Ac-227+D	1.000E+00	1.295E-12	4.328E-12	1.087E-11	3.805E-11	1.353E-10	4.447E-10	6.198E-10	9.639E-11
U-235+D	ΣDSR(j)		9.560E-08	9.635E-08	9.782E-08	1.027E-07	1.146E-07	1.371E-07	1.189E-07	1.513E-08

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.592E-08
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	7.774E-07
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	7.555E-11	4.486E-09
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.555E-11	7.978E-07

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	2.166E-04
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	2.645E-03
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	1.028E-06	4.158E-05
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.028E-06	2.903E-03

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,5t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	8.779E-05
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	1.072E-03
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	4.199E-07	1.689E-05
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.199E-07	1.177E-03

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	2.394E-04	2.384E-04	2.363E-04	2.291E-04	2.097E-04	1.538E-04	6.348E-05	3.069E-04
U-235+D	Pa-231	1.000E+00	2.129E-06	7.219E-06	1.742E-05	5.173E-05	1.384E-04	3.352E-04	4.130E-04	3.763E-03
U-235+D	Ac-227+D	1.000E+00	5.123E-09	1.816E-08	4.547E-08	1.503E-07	4.872E-07	1.475E-06	3.447E-06	5.872E-05
U-235+D	ΣDSR(j)		2.416E-04	2.456E-04	2.538E-04	2.810E-04	3.486E-04	4.905E-04	4.799E-04	4.129E-03

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.266E-04	1.261E-04	1.249E-04	1.211E-04	1.109E-04	8.134E-05	3.357E-05	8.412E-07
U-235+D	Pa-231	1.000E+00	1.730E-09	5.240E-09	1.218E-08	3.552E-08	9.449E-08	2.283E-07	2.811E-07	2.329E-08
U-235+D	Ac-227+D	1.000E+00	4.809E-11	2.585E-10	1.109E-09	7.872E-09	4.653E-08	2.012E-07	3.021E-07	2.666E-08
U-235+D	ΣDSR(j)		1.266E-04	1.261E-04	1.250E-04	1.212E-04	1.110E-04	8.177E-05	3.415E-05	8.912E-07

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.981E-07	1.972E-07	1.955E-07	1.895E-07	1.735E-07	1.273E-07	5.252E-08	2.371E-09
U-235+D	Pa-231	1.000E+00	1.077E-12	2.517E-12	5.228E-12	1.434E-11	3.737E-11	8.961E-11	1.101E-10	1.642E-11
U-235+D	Ac-227+D	1.000E+00	4.040E-14	2.795E-13	1.432E-12	1.141E-11	7.038E-11	3.089E-10	4.654E-10	7.406E-11
U-235+D	ΣDSR(j)		1.981E-07	1.972E-07	1.955E-07	1.896E-07	1.736E-07	1.277E-07	5.310E-08	2.462E-09

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	3.318E-08
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	9.184E-10
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	8.952E-11	3.071E-09
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.952E-11	3.716E-08

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,4t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	4.514E-04
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	3.125E-06
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	1.218E-06	4.159E-05
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.218E-06	4.961E-04

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,5t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	7.239E-04
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	5.012E-06
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	1.969E-06	6.686E-05
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.969E-06	7.958E-04

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-235+D	U-235+D	1.000E+00	5.870E-04	5.844E-04	5.792E-04	5.616E-04	5.140E-04	3.771E-04	1.556E-04	1.182E-03	
U-235+D	Pa-231	1.000E+00	4.233E-09	1.109E-08	2.433E-08	6.884E-08	1.813E-07	4.365E-07	5.370E-07	8.199E-06	
U-235+D	Ac-227+D	1.000E+00	1.419E-10	9.075E-10	4.433E-09	3.437E-08	2.099E-07	9.183E-07	4.570E-06	1.086E-04	
U-235+D	ΣDSR(j)		5.870E-04	5.844E-04	5.793E-04	5.617E-04	5.144E-04	3.784E-04	1.607E-04	1.299E-03	

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from the Ingestion of Fish (p=6)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,6,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	8.853E-05
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	1.042E-04
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	6.554E-05	2.227E-03
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.554E-05	2.419E-03

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from the Ingestion of Drinking Water (p=7)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,7,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	6.689E-01
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	5.555E-01
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	5.457E-02	1.853E+00
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.457E-02	3.078E+00

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Plant/Air and Plant/Water Concentration Ratios

Mass loading [ASR(3)]: 1.000E-04 g/m**3

Area Factor for Mass Loading [FA(2)]: 1.365E-01

Nuclide (i)	FAR(i,3,2,1) m**3/g	FAR(i,3,2,2) m**3/g	FWR(i,3,3,1) L/g	FWR(i,3,3,2) L/g	FWR(i,3,4,1) L/g	FWR(i,3,4,2) L/g
Ac-227	5.4545E-02	2.6156E-01	2.8307E-07	4.1610E-07	3.4522E-04	1.6554E-03
Pa-231	5.4545E-02	2.6156E-01	1.1329E-06	1.6658E-06	3.4522E-04	1.6554E-03
U-235	5.4545E-02	2.6156E-01	2.8322E-07	4.1644E-07	3.4522E-04	1.6554E-03

FAR(i,p,q,k) is the plant/air concentration ratio for airborne contaminated dust,
and FWR(i,p,q,k) is the plant/water concentration ratio. See groundwater displays
for water/soil concentration ratios.

Plant/Soil Concentration Ratios, FSR(i,3,q,k,t)

Root Uptake (q=1) and Foliar Dust Deposition (q=2)

Nonleafy (k=1) and/or Leafy (k=2) Vegetables

Nuclide(i)		FSR(i,3,1,k)	FSR(i,3,2,1)	FSR(i,3,2,2)
Parent	Product			
U-235+D	U-235+D	2.5000E-03	7.4451E-07	3.5701E-06
U-235+D	Pa-231	1.0000E-02	7.4451E-07	3.5701E-06
U-235+D	Ac-227+D	2.5000E-03	7.4451E-07	3.5701E-06

Plant/Soil Concentration Ratio, FSR(j,3,q,k,t)

Ditch Irrigation (q=3)

Parent (i)	Product (j)	Thread Fraction	FSR(j,3,3,k,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.389E-06
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	1.163E-07
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	2.017E-09	6.948E-08

Plant/Soil Concentration Ratio, FSR(j,3,q,k,t)

Overhead Irrigation (q=4) and Nonleafy Vegetables (k=1)

Parent (i)	Product (j)	Thread Fraction	FSR(j,3,4,1,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.693E-03
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	3.545E-05
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	2.460E-06	8.474E-05

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Plant/Soil Concentration Ratio, FSR(j,3,q,k,t)
Overhead Irrigation (q=4) and Leafy Vegetables (k=2)

Parent	Product	Thread	FSR(j,3,4,2,t) * SF(j,t) At Time in Years								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	8.120E-03	
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	1.700E-04	
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	1.181E-05	4.063E-04	

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Meat/Fodder, Milk/Fodder, Fodder/Air and Fodder/Water Concentration Ratios

FI(4,q): 68.0 kg/day FI(5,q): 55.0 kg/day q=1,2,3,4
 FI(4,q): 50.0 L/day FI(5,q): 160.0 L/day q=5
 FI(4,q): 0.5 kg/day FI(5,q):

Nuclide (i)	FQR(i,4) d/kg	FQR(i,5) d/kg	FAR(i,3,2,3) m**3/g	FWR(i,3,3,3) L/g	FWR(i,3,4,3) L/g
Ac-227	2.0000E-05	2.0000E-05	2.8659E-01	1.3328E-07	1.8139E-03
Pa-231	5.0000E-03	5.0000E-06	2.8659E-01	5.3326E-07	1.8139E-03
U-235	3.4000E-04	6.0000E-04	2.8659E-01	1.3332E-07	1.8139E-03

FI(p,q) are the fodder (q=1,2,3,4), livestock water (q=5) and soil (q=6) intake rates;
 FQR(i,p) are the transfer coefficients from contaminated fodder of livestock
 water to meat (p=4) or milk (p=5). FAR(i,3,2,3) are the fodder/air
 concentration ratios, and FWR(i,3,3,3) and FWR(i,3,4,3) are the fodder/
 water concentration ratios for ditch and overhead irrigation, respectively.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Fodder/Soil Concentration Ratios, $QSR(i,p,q,t)$, for Meat and Milk PathwaysRoot Uptake ($q=1$) and Foliar Dust Deposition ($q=2$)

Nuclide(i)			
Parent	Product	$QSR(i,p,1)$	$QSR(i,p,2)$
U-235+D	U-235+D	2.5000E-03	3.9118E-06
U-235+D	Pa-231	1.0000E-02	3.9118E-06
U-235+D	Ac-227+D	2.5000E-03	3.9118E-06

Fodder/Soil Concentration Ratio, $QSR(j,p,q,t)$, for Meat and Milk PathwaysDitch Irrigation ($q=3$)

Parent (i)	Product (j)	Thread Fraction	$QSR(j,p,3,t) * SF(j,t)$ At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	6.539E-07
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	5.475E-08
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	9.460E-10	3.271E-08

Fodder/Soil Concentration Ratio, $QSR(j,p,q,t)$, for Meat and Milk PathwaysOverhead Irrigation ($q=4$)

Parent (i)	Product (j)	Thread Fraction	$QSR(j,p,4,t) * SF(j,t)$ At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	8.897E-03
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	1.862E-04
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	1.287E-05	4.452E-04

Fodder/Soil Concentration Ratio, $QSR(j,p,q,t)$, for Meat and Milk PathwaysLivestock Water ($q=5$)

Parent (i)	Product (j)	Thread Fraction	$QSR(j,p,5,t) * SF(j,t)$ At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	4.905E-03
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	1.027E-04
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	7.123E-06	2.454E-04

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Meat/Soil Concentration Ratios, FSR(i,4,q,t)
 Root Uptake (q=1) and Foliar Dust Deposition (q=2)

Nuclide(i)			
Parent	Product	FSR(i,4,1)	FSR(i,4,2)
U-235+D	U-235+D	5.7800E-05	9.0440E-08
U-235+D	Pa-231	0.0000E+00	0.0000E+00
U-235+D	Ac-227+D	0.0000E+00	0.0000E+00

Meat/Soil Concentration Ratio, FSR(j,4,q,t)
 Ditch Irrigation (q=3)

Parent (i)	Product (j)	Thread Fraction	FSR(j,4,3,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.512E-08
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	1.862E-08
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	1.281E-12	4.460E-11

Meat/Soil Concentration Ratio, FSR(j,4,q,t)
 Overhead Irrigation (q=4)

Parent (i)	Product (j)	Thread Fraction	FSR(j,4,4,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	2.057E-04
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	6.333E-05
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	1.744E-08	6.040E-07

Meat/Soil Concentration Ratio, FSR(j,4,q,t)
 Livestock Water (q=5)

Parent (i)	Product (j)	Thread Fraction	FSR(j,4,5,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	8.339E-05
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	2.567E-05
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	7.123E-09	2.454E-07

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Milk/Soil Concentration Ratios, FSR(i,5,q,t)
 Root Uptake (q=1) and Foliar Dust Deposition (q=2)

Nuclide(i)			
Parent	Product	FSR(i,5,1)	FSR(i,5,2)
U-235+D	U-235+D	8.2500E-05	1.2909E-07
U-235+D	Pa-231	0.0000E+00	0.0000E+00
U-235+D	Ac-227+D	0.0000E+00	0.0000E+00

Milk/Soil Concentration Ratio, FSR(j,5,q,t)
 Ditch Irrigation (q=3)

Parent (i)	Product (j)	Thread Fraction	FSR(j,5,3,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	2.158E-08
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	1.506E-11
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	1.038E-12	3.608E-11

Milk/Soil Concentration Ratio, FSR(j,5,q,t)
 Overhead Irrigation (q=4)

Parent (i)	Product (j)	Thread Fraction	FSR(j,5,4,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	2.936E-04
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	5.122E-08
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	1.413E-08	4.886E-07

Milk/Soil Concentration Ratio, FSR(j,5,q,t)
 Livestock Water (q=5)

Parent (i)	Product (j)	Thread Fraction	FSR(j,5,5,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	4.709E-04
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	8.215E-08
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	2.283E-08	7.855E-07

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Soil Ingestion Pathway (p=8)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,8,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	7.303E-03	7.270E-03	7.206E-03	6.986E-03	6.395E-03	4.691E-03	1.936E-03	8.740E-05
U-235+D	Pa-231	1.000E+00	3.061E-06	9.146E-06	2.116E-05	6.153E-05	1.636E-04	3.951E-04	4.865E-04	7.258E-05
U-235+D	Ac-227+D	1.000E+00	4.489E-08	3.097E-07	1.584E-06	1.261E-05	7.778E-05	3.413E-04	5.143E-04	8.183E-05
U-235+D	ΣDSR(j)		7.306E-03	7.280E-03	7.229E-03	7.061E-03	6.636E-03	5.427E-03	2.937E-03	2.418E-04

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

Dose Conversion and Environmental Transport Factors for the Soil Ingestion Pathway (p=8)

Parent (i)	Product (j)	DCF(j,8)*	ETF(j,8,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01
U-235+D	Pa-231	1.060E-02	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01
U-235+D	Ac-227+D	1.480E-02	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01

* - The dose conversion factor units are mrem/pCi.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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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	3
Summary of Pathway Selections	7
Contaminated Zone and Total Dose Summary	8
Total Dose Components	
Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
Time = 1.000E+03	16
Dose/Source Ratios Summed Over All Pathways	17
Single Radionuclide Soil Guidelines	17
Dose Per Nuclide Summed Over All Pathways	18
Soil Concentration Per Nuclide	18

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 12 & 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	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1(2)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1(3)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1(4)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1(5)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1(6)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1(7)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1(8)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1(9)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1(10)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1(11)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1(12)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1(13)
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	U-235+D	1.230E-01	1.230E-01	DCF2(3)
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	U-235+D	2.673E-04	2.660E-04	DCF3(3)
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	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	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(3,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(3,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(3,3)
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	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	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(3,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(3,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETEG table in Ground Pathway of Detailed Report.

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

Summary : RESRAD Default Parameters Resident Farmer Scenario

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	1.000E+01	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	5.000E+00	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): U-235	4.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(3)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+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)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.000E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	1.000E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	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)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW

Summary : RESRAD Default Parameters Resident Farmer Scenario

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-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	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.426E-03	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.099E-02	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.426E-03	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	7.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	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	-1 shows non-circular AREA.	FS

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	3.333E-01	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m), ring 2:	6.667E-01	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m), ring 3:	1.000E+00	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m), ring 4:	1.333E+00	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m), ring 5:	1.667E+00	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m), ring 6:	2.000E+00	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m), ring 7:	2.333E+00	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m), ring 8:	2.667E+00	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m), ring 9:	3.000E+00	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m), ring 10:	3.333E+00	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	3.667E+00	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	4.000E+00	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	9.000E-01	1.000E+00	---	FRACA(1)
R017	Ring 2	9.000E-01	2.732E-01	---	FRACA(2)
R017	Ring 3	9.000E-01	0.000E+00	---	FRACA(3)
R017	Ring 4	6.500E-01	0.000E+00	---	FRACA(4)
R017	Ring 5	4.300E-01	0.000E+00	---	FRACA(5)
R017	Ring 6	3.400E-01	0.000E+00	---	FRACA(6)
R017	Ring 7	2.500E-01	0.000E+00	---	FRACA(7)
R017	Ring 8	1.200E-01	0.000E+00	---	FRACA(8)
R017	Ring 9	1.100E-01	0.000E+00	---	FRACA(9)
R017	Ring 10	8.500E-02	0.000E+00	---	FRACA(10)
R017	Ring 11	4.300E-03	0.000E+00	---	FRACA(11)
R017	Ring 12	0.000E+00	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
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-02	FPLANT
R018	Contamination fraction of meat	-1	-1	0.500E-03	FMEAT
R018	Contamination fraction of milk	-1	-1	0.500E-03	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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	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
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	10.00 square meters	U-235	4.000E+00
Thickness:	1.50 meters		
Cover Depth:	0.00 meters		

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	7.215E-01	7.183E-01	7.120E-01	6.905E-01	6.327E-01	4.668E-01	2.275E-01	5.217E-02
M(t):	4.810E-02	4.789E-02	4.747E-02	4.603E-02	4.218E-02	3.112E-02	1.517E-02	3.478E-03

Maximum TDOSE(t): 7.215E-01 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-235	7.037E-01	0.9754	1.514E-02	0.0210	0.000E+00	0.0000	2.325E-03	0.0032	7.729E-06	0.0000	1.878E-05	0.0000	2.922E-04	0.0004
Total	7.037E-01	0.9754	1.514E-02	0.0210	0.000E+00	0.0000	2.325E-03	0.0032	7.729E-06	0.0000	1.878E-05	0.0000	2.922E-04	0.0004

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- 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.
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.215E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.215E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.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- 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.
U-235	7.006E-01	0.9753	1.507E-02	0.0210	0.000E+00	0.0000	2.323E-03	0.0032	7.859E-06	0.0000	1.870E-05	0.0000	2.912E-04	0.0004
Total	7.006E-01	0.9753	1.507E-02	0.0210	0.000E+00	0.0000	2.323E-03	0.0032	7.859E-06	0.0000	1.870E-05	0.0000	2.912E-04	0.0004

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- 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.
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.183E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.183E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-235	6.944E-01	0.9753	1.495E-02	0.0210	0.000E+00	0.0000	2.318E-03	0.0033	8.119E-06	0.0000	1.853E-05	0.0000	2.892E-04	0.0004
Total	6.944E-01	0.9753	1.495E-02	0.0210	0.000E+00	0.0000	2.318E-03	0.0033	8.119E-06	0.0000	1.853E-05	0.0000	2.892E-04	0.0004

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

Water Dependent Pathways

Radio- 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.
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.120E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.120E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-235	6.733E-01	0.9752	1.454E-02	0.0211	0.000E+00	0.0000	2.303E-03	0.0033	8.990E-06	0.0000	1.797E-05	0.0000	2.824E-04	0.0004
Total	6.733E-01	0.9752	1.454E-02	0.0211	0.000E+00	0.0000	2.303E-03	0.0033	8.990E-06	0.0000	1.797E-05	0.0000	2.824E-04	0.0004

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

Water Dependent Pathways

Radio- 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.
U-235	0.000E+00	0.0000	0.000E+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-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.905E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-235	6.166E-01	0.9746	1.350E-02	0.0213	0.000E+00	0.0000	2.266E-03	0.0036	1.115E-05	0.0000	1.646E-05	0.0000	2.654E-04	0.0004
Total	6.166E-01	0.9746	1.350E-02	0.0213	0.000E+00	0.0000	2.266E-03	0.0036	1.115E-05	0.0000	1.646E-05	0.0000	2.654E-04	0.0004

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

Water Dependent Pathways

Radio- 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.
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.327E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.327E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-235	4.538E-01	0.9722	1.064E-02	0.0228	0.000E+00	0.0000	2.103E-03	0.0045	1.569E-05	0.0000	1.211E-05	0.0000	2.171E-04	0.0005
Total	4.538E-01	0.9722	1.064E-02	0.0228	0.000E+00	0.0000	2.103E-03	0.0045	1.569E-05	0.0000	1.211E-05	0.0000	2.171E-04	0.0005

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

Water Dependent Pathways

Radio- 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.
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.668E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.668E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-235	1.892E-01	0.8314	5.329E-03	0.0234	0.000E+00	0.0000	1.398E-03	0.0061	1.531E-05	0.0001	5.040E-06	0.0000	1.175E-04	0.0005
Total	1.892E-01	0.8314	5.329E-03	0.0234	0.000E+00	0.0000	1.398E-03	0.0061	1.531E-05	0.0001	5.040E-06	0.0000	1.175E-04	0.0005

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

Water Dependent Pathways

Radio- 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.
U-235	3.146E-02	0.1383	1.511E-05	0.0001	0.000E+00	0.0000	2.416E-05	0.0001	6.680E-09	0.0000	1.470E-08	0.0000	2.275E-01	1.0000
Total	3.146E-02	0.1383	1.511E-05	0.0001	0.000E+00	0.0000	2.416E-05	0.0001	6.680E-09	0.0000	1.470E-08	0.0000	2.275E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-235	8.834E-03	0.1693	3.881E-04	0.0074	0.000E+00	0.0000	8.116E-05	0.0016	1.556E-06	0.0000	2.115E-07	0.0000	9.672E-06	0.0002
Total	8.834E-03	0.1693	3.881E-04	0.0074	0.000E+00	0.0000	8.116E-05	0.0016	1.556E-06	0.0000	2.115E-07	0.0000	9.672E-06	0.0002

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

Water Dependent Pathways

Radio- 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.
U-235	4.281E-02	0.8206	1.253E-05	0.0002	0.000E+00	0.0000	3.294E-05	0.0006	5.129E-07	0.0000	1.601E-07	0.0000	5.217E-02	1.0000
Total	4.281E-02	0.8206	1.253E-05	0.0002	0.000E+00	0.0000	3.294E-05	0.0006	5.129E-07	0.0000	1.601E-07	0.0000	5.217E-02	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

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

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-235+D	U-235+D	1.000E+00	1.804E-01	1.796E-01	1.780E-01	1.726E-01	1.579E-01	1.159E-01	4.781E-02	4.789E-03	
U-235+D	Pa-231	1.000E+00	1.848E-06	5.610E-06	1.305E-05	3.807E-05	1.013E-04	2.447E-04	3.014E-04	2.222E-03	
U-235+D	Ac-227+D	1.000E+00	7.880E-08	5.395E-07	2.749E-06	2.186E-05	1.347E-04	5.909E-04	8.766E-03	6.032E-03	
U-235+D	ΣDSR(j)		1.804E-01	1.796E-01	1.780E-01	1.726E-01	1.582E-01	1.167E-01	5.688E-02	1.304E-02	

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

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235	8.316E+01	8.353E+01	8.427E+01	8.690E+01	9.483E+01	1.285E+02	2.637E+02	1.150E+03

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
U-235	4.000E+00	0.000E+00	1.804E-01	8.316E+01	1.804E-01	8.316E+01

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr								
			t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235	U-235	1.000E+00		7.215E-01	7.183E-01	7.119E-01	6.902E-01	6.318E-01	4.635E-01	1.913E-01	1.916E-02
Pa-231	U-235	1.000E+00		7.393E-06	2.244E-05	5.220E-05	1.523E-04	4.051E-04	9.789E-04	1.205E-03	8.888E-03
Ac-227	U-235	1.000E+00		3.152E-07	2.158E-06	1.100E-05	8.743E-05	5.388E-04	2.364E-03	3.506E-02	2.413E-02

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g								
			t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235	U-235	1.000E+00		4.000E+00	3.982E+00	3.947E+00	3.827E+00	3.503E+00	2.570E+00	1.060E+00	4.787E-02
Pa-231	U-235	1.000E+00		0.000E+00	8.426E-05	2.505E-04	8.096E-04	2.223E-03	5.431E-03	6.710E-03	1.002E-03
Ac-227	U-235	1.000E+00		0.000E+00	1.324E-06	1.152E-05	1.138E-04	7.486E-04	3.356E-03	5.081E-03	8.094E-04

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

RESCALC.EXE execution time = 3.72 seconds

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Table of ContentsPart II: Source Terms, Factors, and Parameters for Individual Pathways

Iteration Logs

Maximum U-235 Dose/Source Ratio	3
Maximum Total Dose	9

Source Factors for Ingrowth and Decay

Radioactivity Only	15
Combined Radioactivity and Leaching	15

Ground Pathway

Source Term Parameters	16
Time Dependence of Source Geometry	16
Occupancy, Cover/Depth, and Area Factors	17
Dose Conversion and Environmental Transport Factors .	18
Dose/Source Ratios	18

Inhalation Pathway (radon excluded)

Dose/Source Ratios	19
Pathway Factors	19
Dose Conversion and Environmental Transport Factors .	19

Groundwater and Surface Water Pathway Segments

Transport Time Parameters for Unsaturated Zone Strata	20
Dilution Factor and Rise Time Parameters for	
Nondispersion (ND) Model	21
Primary Parameters Used to Calculate Ratios	21
Water/Soil Concentration Ratios	22

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Table of Contents (cont.)Part II: Source Terms, Factors, and Parameters for Individual Pathways

Food Pathways

Storage Times for Contaminated Foodstuffs	23
Storage Time Ingrowth and Decay Factors	23
Storage Correction Factors	
Drinking Water	24
Irrigation Water	24
Livestock Water	25
Plants	25
Livestock Fodder	26
Meat and Milk	26
Fish and Crustacea	27
Area and Depth Factors	28
Dose Conversion and Environmental Transport Factors	
Plant	30
Meat	31
Milk	33
Fish	35
Drinking Water	35
Dose/Source Ratios	
Plant	36
Plant Total	37
Meat	38
Meat Total	39
Milk	40
Milk Total	41
Fish	42
Drinking Water	43
Concentration Ratios	
Plant/Air and Plant/Water	44
Plant/Soil	44
Meat/Fodder, Fodder/Air, Fodder/Water	46
Fodder/Soil	47
Meat/Soil	48
Milk/Soil	49

Soil Ingestion Pathway

Dose/Source Ratios.....	50
Dose Conversion and Environmental Transport Factors .	50

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum U-235 Dose/Source Ratio

Pathway: Meat (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	2.03092E+02	4.23589E-06		
1	1.80373E+02	4.25790E-06	-2.27187E+01	parabolic
2	1.80161E+02	4.25791E-06	-2.11977E-01	parabolic
3	1.79274E+02	4.25794E-06	-8.87113E-01	parabolic
4	1.79453E+02	4.25794E-06	3.77082E-02	parabolic
5	1.79095E+02	4.25794E-06	-1.79274E-01	parabolic
6	1.79274E+02	4.25794E-06	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum U-235 Dose/Source Ratio

Pathway: Water

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	4.50657E+02	9.18619E-02		
1	4.79625E+02	8.31843E-02	2.89681E+01	parabolic
2	4.10495E+02	9.05727E-02	-4.01624E+01	golden section
3	4.33921E+02	9.72004E-02	-1.67359E+01	parabolic
4	4.31647E+02	9.79446E-02	-2.27441E+00	parabolic
5	4.23567E+02	9.80944E-02	-8.07938E+00	golden section
6	4.27296E+02	9.93153E-02	3.72873E+00	parabolic
7	4.27724E+02	9.92387E-02	1.94393E-01	parabolic
8	4.26775E+02	9.92450E-02	-5.21234E-01	parabolic
9	4.27296E+02	9.93153E-02	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum U-235 Dose/Source Ratio

Pathway: Fish

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	4.50657E+02	2.17561E-05		
1	4.76314E+02	2.03156E-05	2.56566E+01	parabolic
2	4.10495E+02	2.23420E-05	-4.01624E+01	golden section
3	4.19023E+02	2.29903E-05	8.52780E+00	parabolic
4	4.28029E+02	2.30493E-05	9.00654E+00	parabolic
5	4.24353E+02	2.31943E-05	-3.67578E+00	parabolic
6	4.23906E+02	2.32061E-05	-4.47566E-01	parabolic
7	4.22041E+02	2.31750E-05	-1.86521E+00	golden section
8	4.23422E+02	2.32173E-05	-4.84131E-01	parabolic
9	4.22894E+02	2.32159E-05	-5.27523E-01	golden section
10	4.23422E+02	2.32173E-05	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \times (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum U-235 Dose/Source Ratio
 Pathway: Plant (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	4.50657E+02	7.06818E-05		
1	4.79649E+02	6.39999E-05	2.89917E+01	parabolic
2	4.10495E+02	6.96632E-05	-4.01624E+01	golden section
3	4.34004E+02	7.47687E-05	-1.66534E+01	parabolic
4	4.31677E+02	7.53544E-05	-2.32679E+00	parabolic
5	4.23586E+02	7.54646E-05	-8.09089E+00	golden section
6	4.27333E+02	7.64087E-05	3.74741E+00	parabolic
7	4.27761E+02	7.63480E-05	1.86626E-01	parabolic
8	4.26795E+02	7.63526E-05	-5.38546E-01	parabolic
9	4.27333E+02	7.64087E-05	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum U-235 Dose/Source Ratio

Pathway: Meat (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	4.50657E+02	9.29367E-07		
1	4.88589E+02	8.31443E-07	3.79315E+01	parabolic
2	4.10495E+02	8.32006E-07	-4.01624E+01	golden section
3	4.49485E+02	9.32489E-07	-1.17175E+00	parabolic
4	4.39863E+02	9.58314E-07	-9.62247E+00	parabolic
5	4.28645E+02	9.88850E-07	-1.12176E+01	golden section
6	4.21712E+02	9.38785E-07	-6.93288E+00	golden section
7	4.31770E+02	9.80300E-07	3.12436E+00	parabolic
8	4.25997E+02	9.79238E-07	-2.64813E+00	golden section
9	4.29074E+02	9.87674E-07	3.21558E-01	parabolic
10	4.27634E+02	9.91251E-07	-1.01150E+00	golden section
11	4.27009E+02	9.88629E-07	-6.25136E-01	golden section
12	4.28061E+02	9.90451E-07	4.27634E-01	parabolic
13	4.27634E+02	9.91251E-07	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum U-235 Dose/Source Ratio
 Pathway: Milk (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	4.50657E+02	5.62396E-07		
1	4.78753E+02	4.93374E-07	2.80963E+01	parabolic
2	4.10495E+02	5.45537E-07	-4.01624E+01	golden section
3	4.35557E+02	6.03315E-07	-1.51006E+01	parabolic
4	4.32257E+02	6.12639E-07	-3.29992E+00	parabolic
5	4.23944E+02	6.11508E-07	-8.31231E+00	golden section
6	4.28367E+02	6.23810E-07	-3.88932E+00	parabolic
7	4.27939E+02	6.25052E-07	-1.66786E-01	parabolic
8	4.26413E+02	6.22943E-07	-1.52581E+00	golden section
9	4.27491E+02	6.26040E-07	-4.47519E-01	parabolic
10	4.27064E+02	6.25637E-07	-4.11877E-01	golden section
11	4.27491E+02	6.26040E-07	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Meat (water independent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	2.03092E+02	1.69435E-05		
1	1.80373E+02	1.70316E-05	-2.27187E+01	parabolic
2	1.80161E+02	1.70317E-05	-2.11977E-01	parabolic
3	1.79274E+02	1.70318E-05	-8.87113E-01	parabolic
4	1.79453E+02	1.70318E-05	3.77082E-02	parabolic
5	1.79095E+02	1.70318E-05	-1.79274E-01	parabolic
6	1.79274E+02	1.70318E-05	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \times (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Water

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	4.50657E+02	3.67448E-01		
1	4.79625E+02	3.32737E-01	2.89681E+01	parabolic
2	4.10495E+02	3.62291E-01	-4.01624E+01	golden section
3	4.33921E+02	3.88802E-01	-1.67359E+01	parabolic
4	4.31647E+02	3.91778E-01	-2.27441E+00	parabolic
5	4.23567E+02	3.92377E-01	-8.07938E+00	golden section
6	4.27296E+02	3.97261E-01	3.72873E+00	parabolic
7	4.27724E+02	3.96955E-01	1.94393E-01	parabolic
8	4.26775E+02	3.96980E-01	-5.21234E-01	parabolic
9	4.27296E+02	3.97261E-01	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Fish

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	4.50657E+02	8.70245E-05		
1	4.76314E+02	8.12625E-05	2.56566E+01	parabolic
2	4.10495E+02	8.93682E-05	-4.01624E+01	golden section
3	4.19023E+02	9.19612E-05	8.52780E+00	parabolic
4	4.28029E+02	9.21974E-05	9.00654E+00	parabolic
5	4.24353E+02	9.27772E-05	-3.67578E+00	parabolic
6	4.23906E+02	9.28243E-05	-4.47566E-01	parabolic
7	4.22041E+02	9.27000E-05	-1.86521E+00	golden section
8	4.23422E+02	9.28690E-05	-4.84131E-01	parabolic
9	4.22894E+02	9.28635E-05	-5.27523E-01	golden section
10	4.23422E+02	9.28690E-05	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose
 Pathway: Plant (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	4.50657E+02	2.82727E-04		
1	4.79649E+02	2.56000E-04	2.89917E+01	parabolic
2	4.10495E+02	2.78653E-04	-4.01624E+01	golden section
3	4.34004E+02	2.99075E-04	-1.66534E+01	parabolic
4	4.31677E+02	3.01418E-04	-2.32679E+00	parabolic
5	4.23586E+02	3.01858E-04	-8.09089E+00	golden section
6	4.27333E+02	3.05635E-04	3.74741E+00	parabolic
7	4.27761E+02	3.05392E-04	1.86626E-01	parabolic
8	4.26795E+02	3.05410E-04	-5.38546E-01	parabolic
9	4.27333E+02	3.05635E-04	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Meat (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	4.50657E+02	3.71747E-06		
1	4.88589E+02	3.32577E-06	3.79315E+01	parabolic
2	4.10495E+02	3.32802E-06	-4.01624E+01	golden section
3	4.49485E+02	3.72996E-06	-1.17175E+00	parabolic
4	4.39863E+02	3.83326E-06	-9.62247E+00	parabolic
5	4.28645E+02	3.95540E-06	-1.12176E+01	golden section
6	4.21712E+02	3.75514E-06	-6.93288E+00	golden section
7	4.31770E+02	3.92120E-06	3.12436E+00	parabolic
8	4.25997E+02	3.91695E-06	-2.64813E+00	golden section
9	4.29074E+02	3.95070E-06	3.21558E-01	parabolic
10	4.27634E+02	3.96500E-06	-1.01150E+00	golden section
11	4.27009E+02	3.95452E-06	-6.25136E-01	golden section
12	4.28061E+02	3.96180E-06	4.27634E-01	parabolic
13	4.27634E+02	3.96500E-06	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Milk (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	4.50657E+02	2.24958E-06		
1	4.78753E+02	1.97350E-06	2.80963E+01	parabolic
2	4.10495E+02	2.18215E-06	-4.01624E+01	golden section
3	4.35557E+02	2.41326E-06	-1.51006E+01	parabolic
4	4.32257E+02	2.45056E-06	-3.29992E+00	parabolic
5	4.23944E+02	2.44603E-06	-8.31231E+00	golden section
6	4.28367E+02	2.49524E-06	-3.88932E+00	parabolic
7	4.27939E+02	2.50021E-06	-1.66786E-01	parabolic
8	4.26413E+02	2.49177E-06	-1.52581E+00	golden section
9	4.27491E+02	2.50416E-06	-4.47519E-01	parabolic
10	4.27064E+02	2.50255E-06	-4.11877E-01	golden section
11	4.27491E+02	2.50416E-06	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \times (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Source Factors for Ingrowth and Decay

Radioactivity Factors Only

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	ID(j,t) = THF(j)*SI(j,t)/SI(i,0) At Time in Years								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
U-235+D	Pa-231	1.000E+00	0.000E+00	2.116E-05	6.347E-05	2.116E-04	6.345E-04	2.114E-03	6.327E-03	2.094E-02	
U-235+D	Ac-227+D	1.000E+00	0.000E+00	3.332E-07	2.937E-06	3.037E-05	2.258E-04	1.477E-03	5.667E-03	2.028E-02	

Source Factors for Ingrowth and Decay

Combined Radioactivity and Leaching Factors

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	SF(j,t) = THF(j)*SI(j,t)/SI(i,0) At Time in Years								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-235+D	U-235+D	1.000E+00	1.000E+00	9.956E-01	9.868E-01	9.567E-01	8.757E-01	6.424E-01	2.651E-01	1.197E-02	
U-235+D	Pa-231	1.000E+00	0.000E+00	2.106E-05	6.264E-05	2.024E-04	5.557E-04	1.358E-03	1.677E-03	2.506E-04	
U-235+D	Ac-227+D	1.000E+00	0.000E+00	3.310E-07	2.879E-06	2.846E-05	1.872E-04	8.389E-04	1.270E-03	2.024E-04	

The effect of volatilization was also considered when computing the source factors for H-3 and C-14.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Parameters Used for Calculating Cover Depth and Contaminated Zone Thicknesses

Cover Erosion rate (vcv): 0.001000 m/yr
 Contaminated Zone Erosion rate (vcz): 0.001000 m/yr
 Water Table Drop rate (vwt): 0.001000 m/yr
 Precipitation rate (Pr): 1.000000 m/yr
 Cover Removal Time (Tc): 0.000E+00 yr
 Overhead irrigation rate (Irr): 0.200 m/yr Runoff coefficient (Cr): 0.200
 Evapotranspiration coeff. (Ce): 0.500 Infiltration rate (In): 0.500 m/yr
 Bulk soil density (rhob): 1.500 g/cm**3 Effective porosity (pe): 0.000

Radio-nuclide (i)	Distribution Coefficient Kd(i), cm**3/g	Leaching Ratio q(i)
Ac-227	2.000000E+01	1.058E-02
Pa-231	5.000000E+01	4.261E-03
U-235	5.000000E+01	4.261E-03

Time Dependence of Source Geometry

Time Dependence of Cover Depth [Cd(i,t)]

Nuclide (i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
Pa-231		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
U-235		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Time Dependence of Contaminated Zone Thicknesses [T(i,t)]

Nuclide (i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227		1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01
Pa-231		1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01
U-235		1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Dose Conversion and Environmental Transport Factors for the Ground Pathway (p=1)

Nuclide (i)	DCF(i,1)*	ETFG(i,t) At Time in Years (dimensionless)							
		t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	4.951E-04	2.361E-01	2.361E-01	2.361E-01	2.361E-01	2.361E-01	2.361E-01	2.361E-01	2.361E-01
Bi-211	2.559E-01	2.263E-01	2.263E-01	2.263E-01	2.263E-01	2.263E-01	2.263E-01	2.263E-01	2.263E-01
Fr-223	1.980E-01	2.296E-01	2.296E-01	2.296E-01	2.296E-01	2.296E-01	2.296E-01	2.296E-01	2.296E-01
Pa-231	1.906E-01	2.266E-01	2.266E-01	2.266E-01	2.266E-01	2.266E-01	2.266E-01	2.266E-01	2.266E-01
Pb-211	3.064E-01	2.201E-01	2.201E-01	2.201E-01	2.201E-01	2.201E-01	2.201E-01	2.201E-01	2.199E-01
Po-211	4.764E-02	2.188E-01	2.188E-01	2.188E-01	2.188E-01	2.188E-01	2.188E-01	2.188E-01	2.186E-01
Po-215	1.016E-03	2.229E-01	2.229E-01	2.229E-01	2.229E-01	2.229E-01	2.229E-01	2.229E-01	2.228E-01
Ra-223	6.034E-01	2.298E-01	2.298E-01	2.298E-01	2.298E-01	2.298E-01	2.298E-01	2.298E-01	2.298E-01
Rn-219	3.083E-01	2.265E-01	2.265E-01	2.265E-01	2.265E-01	2.265E-01	2.265E-01	2.265E-01	2.264E-01
Th-227	5.212E-01	2.304E-01	2.304E-01	2.304E-01	2.304E-01	2.304E-01	2.304E-01	2.304E-01	2.304E-01
Th-231	3.643E-02	2.387E-01	2.387E-01	2.387E-01	2.387E-01	2.387E-01	2.387E-01	2.387E-01	2.387E-01
Tl-207	1.990E-02	2.212E-01	2.212E-01	2.212E-01	2.212E-01	2.212E-01	2.212E-01	2.212E-01	2.211E-01
U-235	7.211E-01	2.324E-01	2.324E-01	2.324E-01	2.324E-01	2.324E-01	2.324E-01	2.324E-01	2.324E-01

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

Dose/Source Ratios for External Radiation from the Ground (p=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,1,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.759E-01	1.751E-01	1.736E-01	1.683E-01	1.540E-01	1.130E-01	4.664E-02	2.105E-03
U-235+D	Pa-231	1.000E+00	4.557E-07	1.362E-06	3.149E-06	9.160E-06	2.435E-05	5.882E-05	7.242E-05	1.080E-05
U-235+D	Ac-227+D	1.000E+00	5.072E-08	3.498E-07	1.789E-06	1.425E-05	8.787E-05	3.856E-04	5.810E-04	9.242E-05
U-235+D	ΣDSR(j)		1.759E-01	1.751E-01	1.736E-01	1.683E-01	1.542E-01	1.135E-01	4.729E-02	2.208E-03

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Dose/Source Ratios for Inhalation Pathway, Excluding Radon (p=2)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,2,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-235+D	U-235+D	1.000E+00	3.783E-03	3.767E-03	3.734E-03	3.620E-03	3.313E-03	2.430E-03	1.003E-03	4.528E-05	
U-235+D	Pa-231	1.000E+00	4.162E-07	1.244E-06	2.877E-06	8.367E-06	2.224E-05	5.372E-05	6.615E-05	9.870E-06	
U-235+D	Ac-227+D	1.000E+00	2.297E-08	1.585E-07	8.103E-07	6.454E-06	3.980E-05	1.746E-04	2.632E-04	4.187E-05	
U-235+D	ΣDSR(j)		3.784E-03	3.768E-03	3.737E-03	3.634E-03	3.375E-03	2.659E-03	1.332E-03	9.702E-05	

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

Pathway Factors for the Inhalation Pathway (radon excluded)

Area (A):	1.0000E+01 m**2	Occupancy Factor (FO2):	4.5000E-01
Area Factor (FA2):	8.1554E-02	Annual Air Intake (FI2):	8.4000E+03 m**3/yr
Cover Depth [Cd(0)]:	0.0000E+00 m	Mass Loading (ASR2):	1.0000E-04 g/m**3
Contaminated Zone Thickness [T(0)]:	1.5000E+00 m	FA2 * FO2 * FI2 * ASR2:	3.0827E-02 g/yr

Nuclide (i)	t=	Depth Factor [FD(i,2,t)] (dimensionless)							
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00

Dose Conversion and Environmental Transport Factors for the Inhalation Pathway, Excluding Radon (p=2)

Parent (i)	Product (j)	DCF(j,2)*	ETF(j,2,t) At Time in Years (g/yr)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-235+D	U-235+D	1.230E-01	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	
U-235+D	Pa-231	1.280E+00	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	
U-235+D	Ac-227+D	6.724E+00	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Transport Time Parameters for Unsaturated Zone Stratum No. 1

Stratum thickness [h(1)]: 4.000000 m
 Bulk soil material density [rhob(1)]: 1.500000 g/cm**3
 Effective porosity [peuz(1)]: 0.200000
 Hydraulic conductivity [Khuz(1)]: 10.000000 m/yr
 Total porosity [ptuz(1)]: 0.400000
 Soil specific b parameter [buz(1)]: 5.300000
 Saturation ratio [sruz(1)]: 0.802299

Radio-nuclide (i)	Distribution Coefficient Kduz(i,1), cm**3/g	Retardation Factor Rduz(i,1)	Transport Time Dtuz(i,1), yr
Ac-227	2.0000E+01	9.4481E+01	1.2128E+02
Pa-231	5.0000E+01	2.3470E+02	3.0128E+02
U-235	5.0000E+01	2.3470E+02	3.0128E+02

Transport Time Parameters for Unsaturated Zone created by the Falling Water Table

Water table drop rate [vwt]: 0.001000 m/yr
 Bulk soil material density [rhobaq]: 1.500000 g/cm**3
 Effective porosity [peaq]: 0.200000
 Hydraulic conductivity [Khaq]: 100.000000 m/yr
 Total porosity [ptaq]: 0.400000
 Soil specific b parameter [baq]: 5.300000
 Saturation ratio [sruaq]: 0.677340

Radio-nuclide (i)	Distribution Coefficient Kdaq(i), cm**3/g	Retardation Factor Rduaq(i)	Minimum Transport Time Dtuaq(i), yr
Ac-227	2.0000E+01	1.1173E+02	3.7860E+00
Pa-231	5.0000E+01	2.7782E+02	2.4524E+01
U-235	5.0000E+01	2.7782E+02	2.4524E+01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dilution Factor and Rise Time Parameters for Nondispersion (ND) Model

Aquifer contamination depth at well (z): 1.25000E+00 m
 Depth of water intake below water table (dw): 1.00000E+01 m
 Infiltration rate (In): 5.00000E-01 m/yr
 Aquifer water flow rate (Vwfr): 2.00000E+00 m/yr
 Hydraulic gradient (J): 2.00000E-02
 Hydraulic conductivity of aquifer (Kszh): 1.00000E+02 m/yr
 Contaminated zone extent parallel to gradient (l): 5.00000E+00 m
 Distance below contaminated zone to water table (h): 0.40000E+01 m
 Initial thickness of uncontaminated cover (Cd): 0.00000E+00 m
 Initial thickness of contaminated zone (T): 0.15000E+01 m
 Effective porosity of saturated zone (pesz): 0.20000E+00

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdsz(i)	Horizontal Transport Time		Rise Time dt(i), yr	Decay Time Parameter 1/lamda(i),yr
				Onsite Tauh(i), yr		
Ac-227	2.000E-02	7.600E+01		3.800E+01	3.800E+01	3.141E+01
Pa-231	2.000E-02	1.885E+02		9.425E+01	9.425E+01	4.726E+04
U-235	2.000E-02	1.885E+02		9.425E+01	9.425E+01	1.015E+09

Primary Parameters Used for Calculating Water/Soil
Concentration Ratios for Groundwater Pathway Segment

Model used: Nondispersion (ND)

Bulk soil density in contaminated zone (rhob): 1.500 g/cm**3

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdcz(i)	Breakthrough Time		Rise Time dt(i), yr
			Chain year	Single Nuclide Dt(i), yr	
Ac-227	2.000E-02	9.448E+01	1.251E+02	1.251E+02	3.800E+01
Pa-231	2.000E-02	2.347E+02	3.258E+02	3.258E+02	9.425E+01
U-235	2.000E-02	2.347E+02	3.258E+02	3.258E+02	9.425E+01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Water/Soil Concentration Ratios [WSR(j,1,t)] for Groundwater Pathway Segment

Parent (i)	Product (j)	Thread Fraction	WSR(j,1,t) At Time in Years (pCi/L)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.935E-02
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	4.051E-04
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	1.029E-03	7.816E-04

Water/Soil Concentration Ratios [WSR(j,2,t)] for Surface Water Pathway Segment

Watershed Area (Aw) = 1.0000E+C6 m**2
 Contaminated Zone Area (A) = 1.0000E+C1 m**2
 Dilution Factor (f') = 1.0000E-C5
 Soil Density (rhob) = 1.5000E+C0 kg/m**3

Parent (i)	Product (j)	Thread Fraction	WSR(j,2,t) At Time in Years (pCi/L)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	9.674E-06
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	2.025E-07
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	5.143E-07	3.908E-07

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Times For Contaminated Foodstuffs

k	Food Item	STOR_T(k), days
1	non-leafy plants	14.
2	leafy plants	1.
3	milk	1.
4	meat	20.
5	fish	7.
6	crustacea	7.
7	well water	1.
8	surface water	1.
9	livestock fodder	45.

Storage Time Ingrowth and Decay Factors

Storage Time for k'th Foodstuff: $t = \text{STOR_T}(k)$, days

Parent Product Thread			STOR_ID(i,j,t) = CONCE(i,j,t)/CONCE(i,i,0)									
(i)	(j)	Fraction	t= 1.400E+01	1.000E+00	1.000E+00	2.000E+01	7.000E+00	7.000E+00	1.000E+00	1.000E+00	4.500E+01	
Ac-227	Ac-227	1.000E+00	9.988E-01	9.999E-01	9.999E-01	9.983E-01	9.994E-01	9.994E-01	9.999E-01	9.999E-01	9.961E-01	
Pa-231	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
Pa-231	Ac-227	1.000E+00	1.219E-03	8.716E-05	8.716E-05	1.742E-03	6.099E-04	6.099E-04	8.716E-05	8.716E-05	3.915E-03	
U-235	U-235	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
U-235	Pa-231	1.000E+00	8.110E-07	5.793E-08	5.793E-08	1.159E-06	4.055E-07	4.055E-07	5.793E-08	5.793E-08	2.607E-06	
U-235	Ac-227	1.000E+00	4.946E-10	2.524E-12	2.524E-12	1.009E-09	1.237E-10	1.237E-10	2.524E-12	2.524E-12	5.105E-09	

CONCE(i,j,t)/CONCE(i,i,0) is the concentration ratio of Product(j) at time t to Parent(i) at start of storage time.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors
 Drinking Water from Well and/or Surface
 Harvest Time = $t - 2.74E-03$ yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,1)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Nonleafy Plants from Well and/or Surface
 Harvest Time = $t - 4.11E-02$ yr; Consumption Time = $t - 3.83E-02$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,2)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Leafy Plants from Well and/or Surface
 Harvest Time = $t - 5.48E-03$ yr; Consumption Time = $t - 2.74E-03$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,3)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Livestock (Milk) Fodder from Well and/or Surface
 Harvest Time = $t - 1.29E-01$ yr; Consumption Time = $t - 1.26E-01$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,5)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors

Irrigation Water for Livestock (Meat) Fodder from Well and/or Surface

Harvest Time = $t - 1.81\text{E-}01$ yr; Consumption Time = $t - 1.78\text{E-}01$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,7)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Livestock (Milk) Water from Well and/or Surface

Harvest Time = $t - 5.48\text{E-}03$ yr; Consumption Time = $t - 2.74\text{E-}03$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,4)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Livestock (Meat) Water from Well and/or Surface

Harvest Time = $t - 5.75\text{E-}02$ yr; Consumption Time = $t - 5.48\text{E-}02$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,6)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Nonleafy Plants

Harvest Time = $t - 3.83\text{E-}02$ yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.988E-01	9.994E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors for Leafy Plants
Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Livestock (Meat) Fodder
Harvest Time = t - 1.78E-01 yr; Consumption Time = t - 5.48E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.037E+00	1.011E+00	1.003E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	2.227E+00	1.359E+00	1.109E+00	1.043E+00	1.021E+00	1.009E+00	1.001E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Livestock (Milk) Fodder
Harvest Time = t - 1.26E-01 yr; Consumption Time = t - 2.74E-03 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.035E+00	1.011E+00	1.003E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	2.153E+00	1.353E+00	1.109E+00	1.043E+00	1.021E+00	1.009E+00	1.001E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Meat
Harvest Time = t - 5.48E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF45(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.002E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	4.249E+01	1.668E+01	6.336E+00	3.254E+00	2.233E+00	1.834E+00	1.492E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors for Milk

Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF45(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.210E+00	1.068E+00	1.020E+00	1.007E+00	1.002E+00	1.001E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.002E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.999E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Fish & Crustacea

Harvest Time = t - 1.92E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CFF(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Pa-231	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-235+D	Ac-227+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.994E-01	9.996E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Area Factor for Plant Foods [FA(3)] = 0.01

Area Factor for Plant Foods [FA(3)] = 0.01

Area Factor for Plant Foods [FA(3)] = 0.01

Nuclide (i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+0C	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00
Pa-231	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+0C	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00
U-235	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+0C	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Area and Depth Factors for Plant (p=3), Meat (p=4), and Milk (p=5) Pathways
Overhead Irrigation (q=4)

Area Factor for Plant Foods {FA(3)} = 0.01

The Depth Factor Value

$FD(i,p,q,t) = 1.0000E+00$

is applicable for all radionuclides(i) and times(t).

Area and Depth Factors for Meat (p=4) and Milk (p=5) Pathways
Transfer from Livestock Water (q=5) and Soil (q=6) Intake

Area Factor for Meat and Milk [FA(p),p=4,5] = 0.00

The livestock water subpathway (q=5) and livestock soil intake subpathway (q=6)
occur only for the meat (p=4) and milk (p=5) pathways.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	2.175E+00	2.166E+00	2.147E+00	2.081E+00	1.905E+00	1.397E+00	5.767E-01	1.446E-02
U-235+D	Pa-231	1.060E-02	0.000E+00	1.784E-04	5.402E-04	1.756E-03	4.831E-03	1.181E-02	1.459E-02	1.211E-03
U-235+D	Ac-227+D	1.480E-02	0.000E+00	8.697E-07	6.721E-06	6.341E-05	4.113E-04	1.835E-03	2.776E-03	2.457E-04

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	5.052E-04	5.030E-04	4.986E-04	4.834E-04	4.424E-04	3.246E-04	1.339E-04	6.047E-06
U-235+D	Pa-231	1.060E-02	0.000E+00	1.064E-08	3.165E-08	1.023E-07	2.807E-07	6.860E-07	8.475E-07	1.266E-07
U-235+D	Ac-227+D	1.480E-02	0.000E+00	1.673E-10	1.455E-09	1.438E-08	9.458E-08	4.239E-07	6.419E-07	1.023E-07

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.949E-06
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.144E-07
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.623E-07	2.000E-07

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.587E-03
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.588E-04
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.025E-04	3.063E-04

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	1.821E-03	1.814E-03	1.798E-03	1.743E-03	1.596E-03	1.171E-03	4.830E-04	1.212E-05
U-235+D	Pa-231	1.060E-02	0.000E+00	1.928E-06	6.386E-06	2.138E-05	5.927E-05	1.453E-04	1.797E-04	1.492E-05
U-235+D	Ac-227+D	1.480E-02	0.000E+00	3.409E-09	1.149E-08	4.050E-08	1.239E-07	3.446E-07	4.511E-07	3.821E-08

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	1.702E-06	1.696E-06	1.681E-06	1.630E-06	1.492E-06	1.094E-06	4.516E-07	2.039E-08
U-235+D	Pa-231	1.060E-02	0.000E+00	5.008E-10	1.542E-09	5.045E-09	1.390E-08	3.400E-08	4.201E-08	6.277E-09
U-235+D	Ac-227+D	1.480E-02	0.000E+00	9.001E-13	2.963E-12	1.160E-11	4.288E-11	1.431E-10	2.003E-10	3.119E-11

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.880E-09
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.315E-09
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.809E-12	8.510E-12

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.558E-05
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.877E-06
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.906E-08	7.428E-08

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,5,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.036E-05
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.191E-06
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.229E-08	3.014E-08

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	3.795E-03	3.780E-03	3.747E-03	3.633E-03	3.325E-03	2.439E-03	1.007E-03	2.525E-05
U-235+D	Pa-231	1.060E-02	0.000E+00	2.631E-09	7.893E-09	2.558E-08	7.030E-08	1.718E-07	2.123E-07	1.762E-08
U-235+D	Ac-227+D	1.480E-02	0.000E+00	6.928E-11	4.539E-10	3.902E-09	2.453E-08	1.083E-07	1.634E-07	1.445E-08

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	3.548E-06	3.534E-06	3.503E-06	3.396E-06	3.109E-06	2.280E-06	9.411E-07	4.249E-08
U-235+D	Pa-231	1.060E-02	0.000E+00	8.262E-13	2.054E-12	6.183E-12	1.662E-11	4.030E-11	4.968E-11	7.415E-12
U-235+D	Ac-227+D	1.480E-02	0.000E+00	3.905E-14	3.405E-13	3.369E-12	2.216E-11	9.934E-11	1.504E-10	2.396E-11

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.918E-09
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.734E-12
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.883E-12	5.296E-12

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.331E-05
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.304E-09
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.368E-08	7.163E-08

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,5,t) * SF(j,t) At Time in Years (g/yr)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.544E-05	
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.491E-08	
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.514E-07	1.150E-07	

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Fish Pathway (p=6)

Parent (i)	Product (j)	DCF(j,6)*	ETF(j,6,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.225E-04
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.550E-05
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.520E-04	1.916E-04

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Drinking Water Pathway (p=7)

Parent (i)	Product (j)	DCF(j,7)*	ETF(j,7,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.868E+00
U-235+D	Pa-231	1.060E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.066E-01
U-235+D	Ac-227+D	1.480E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.245E-01	3.986E-01

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	5.803E-04	5.777E-04	5.726E-04	5.552E-04	5.081E-04	3.728E-04	1.538E-04	3.855E-06
U-235+D	Pa-231	1.000E+00	9.287E-07	2.856E-06	6.673E-06	1.951E-05	5.194E-05	1.255E-04	1.546E-04	1.281E-05
U-235+D	Ac-227+D	1.000E+00	4.621E-09	2.796E-08	1.337E-07	1.026E-06	6.243E-06	2.728E-05	4.106E-05	3.625E-06
U-235+D	ΣDSR(j)		5.812E-04	5.806E-04	5.794E-04	5.757E-04	5.663E-04	5.256E-04	3.495E-04	2.028E-05

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.348E-07	1.342E-07	1.330E-07	1.289E-07	1.180E-07	8.658E-08	3.573E-08	1.613E-09
U-235+D	Pa-231	1.000E+00	5.649E-11	1.688E-10	3.905E-10	1.136E-09	3.019E-09	7.292E-09	8.979E-09	1.340E-09
U-235+D	Ac-227+D	1.000E+00	8.291E-13	5.717E-12	2.923E-11	2.328E-10	1.436E-09	6.300E-09	9.494E-09	1.511E-09
U-235+D	ΣDSR(j)		1.348E-07	1.344E-07	1.334E-07	1.303E-07	1.225E-07	1.002E-07	5.420E-08	4.463E-09

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.320E-09
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	4.384E-09
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	3.934E-09	2.954E-09
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.934E-09	8.657E-09

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,4t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	2.023E-06
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	1.680E-06
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	6.036E-06	4.523E-06
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.036E-06	8.227E-06	

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-235+D	U-235+D	1.000E+00	5.804E-04	5.779E-04	5.728E-04	5.553E-04	5.083E-04	3.729E-04	1.539E-04	5.881E-06	
U-235+D	Pa-231	1.000E+00	9.287E-07	2.856E-06	6.674E-06	1.951E-05	5.195E-05	1.256E-04	1.546E-04	1.449E-05	
U-235+D	Ac-227+D	1.000E+00	4.622E-09	2.797E-08	1.338E-07	1.026E-06	6.245E-06	2.728E-05	4.711E-05	8.153E-06	
U-235+D	ΣDSR(j)		5.813E-04	5.807E-04	5.796E-04	5.758E-04	5.665E-04	5.257E-04	3.556E-04	2.852E-05	

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	4.860E-07	4.839E-07	4.797E-07	4.650E-07	4.256E-07	3.123E-07	1.289E-07	3.230E-09
U-235+D	Pa-231	1.000E+00	8.989E-09	3.232E-08	7.937E-08	2.376E-07	6.373E-07	1.545E-06	1.904E-06	1.578E-07
U-235+D	Ac-227+D	1.000E+00	2.150E-11	8.020E-11	2.002E-10	6.303E-10	1.863E-09	5.115E-09	6.671E-09	5.639E-10
U-235+D	ΣDSR(j)		4.950E-07	5.163E-07	5.592E-07	7.032E-07	1.065E-06	1.862E-06	2.039E-06	1.616E-07

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	4.544E-10	4.524E-10	4.484E-10	4.348E-10	3.979E-10	2.919E-10	1.205E-10	5.439E-12
U-235+D	Pa-231	1.000E+00	2.557E-12	8.085E-12	1.908E-11	5.603E-11	1.494E-10	3.614E-10	4.451E-10	6.642E-11
U-235+D	Ac-227+D	1.000E+00	6.191E-15	2.069E-14	5.198E-14	1.819E-13	6.469E-13	2.126E-12	2.963E-12	4.607E-13
U-235+D	ΣDSR(j)		4.569E-10	4.605E-10	4.676E-10	4.910E-10	5.480E-10	6.554E-10	5.685E-10	7.232E-11

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	5.014E-13
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	2.449E-11
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	8.712E-14	1.257E-13
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.712E-14	2.512E-11

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,4t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	6.823E-09
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	8.332E-08
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	1.186E-09	1.097E-09
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.186E-09	9.124E-08

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,5t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	2.764E-09
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	3.375E-08
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	4.842E-10	4.451E-10
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.842E-10	3.696E-08

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.915E-06	1.907E-06	1.890E-06	1.832E-06	1.677E-06	1.230E-06	5.078E-07	2.992E-08
U-235+D	Pa-231	1.000E+00	1.703E-08	5.775E-08	1.394E-07	4.138E-07	1.107E-06	2.681E-06	3.304E-06	4.838E-07
U-235+D	Ac-227+D	1.000E+00	4.098E-11	1.453E-10	3.637E-10	1.202E-09	3.897E-09	1.180E-08	1.765E-08	3.554E-09
U-235+D	ΣDSR(j)		1.932E-06	1.965E-06	2.030E-06	2.247E-06	2.788E-06	3.923E-06	3.829E-06	5.172E-07

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	1.013E-06	1.008E-06	9.996E-07	9.691E-07	8.870E-07	6.507E-07	2.685E-07	6.730E-09
U-235+D	Pa-231	1.000E+00	1.384E-11	4.192E-11	9.745E-11	2.841E-10	7.559E-10	1.826E-09	2.249E-09	1.863E-10
U-235+D	Ac-227+D	1.000E+00	3.347E-13	2.068E-12	8.873E-12	6.297E-11	3.723E-10	1.609E-09	2.417E-09	2.133E-10
U-235+D	ΣDSR(j)		1.013E-06	1.008E-06	9.997E-07	9.694E-07	8.881E-07	6.541E-07	2.732E-07	7.129E-09

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	9.469E-10	9.428E-10	9.345E-10	9.060E-10	8.292E-10	6.083E-10	2.510E-10	1.133E-11
U-235+D	Pa-231	1.000E+00	5.149E-15	1.203E-14	2.499E-14	6.856E-14	1.786E-13	4.283E-13	5.263E-13	7.846E-14
U-235+D	Ac-227+D	1.000E+00	1.931E-16	1.336E-15	6.843E-15	5.454E-14	3.364E-13	1.476E-12	2.225E-12	3.540E-13
U-235+D	ΣDSR(j)		9.469E-10	9.428E-10	9.345E-10	9.061E-10	8.298E-10	6.102E-10	2.538E-10	1.177E-11

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.045E-12
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	2.893E-14
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	1.032E-13	7.820E-14
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.032E-13	1.152E-12

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,4t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.422E-08
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	9.842E-11
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	1.405E-09	1.058E-09
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.405E-09	1.537E-08

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,5t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	2.279E-08
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	1.577E-10
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	2.270E-09	1.699E-09
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.270E-09	2.464E-08

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	4.695E-06	4.674E-06	4.633E-06	4.492E-06	4.111E-06	3.016E-06	1.245E-06	8.780E-08
U-235+D	Pa-231	1.000E+00	3.386E-11	8.870E-11	1.946E-10	5.507E-10	1.451E-09	3.492E-09	4.295E-09	7.476E-10
U-235+D	Ac-227+D	1.000E+00	1.135E-12	7.259E-12	3.546E-11	2.749E-10	1.679E-09	7.345E-09	1.474E-08	4.345E-09
U-235+D	ΣDSR(j)		4.695E-06	4.675E-06	4.633E-06	4.493E-06	4.115E-06	3.027E-06	1.264E-06	9.290E-08

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Dose/Source Ratios for Internal Radiation from the Ingestion of Fish (p=6)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,6,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.393E-07
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	1.639E-07
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	3.779E-06	2.829E-06
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.779E-06	3.132E-06

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from the Ingestion of Drinking Water (p=7)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,7,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	2.631E-03	
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	2.185E-03	
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	7.866E-03	5.886E-03	
U-235+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.866E-03	1.070E-02	

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Plant/Air and Plant/Water Concentration Ratios

Mass loading [ASR(3)]: 1.000E-04 g/m**3

Area Factor for Mass Loading [FA(2)]: 8.155E-02

Nuclide (i)	FAR(i,3,2,1) m**3/g	FAR(i,3,2,2) m**3/g	FWR(i,3,3,1) L/g	FWR(i,3,3,2) L/g	FWR(i,3,4,1) L/g	FWR(i,3,4,2) L/g
Ac-227	5.4545E-02	2.6156E-01	2.8307E-07	4.1610E-07	3.4522E-04	1.6554E-03
Pa-231	5.4545E-02	2.6156E-01	1.1329E-06	1.6658E-06	3.4522E-04	1.6554E-03
U-235	5.4545E-02	2.6156E-01	2.8322E-07	4.1644E-07	3.4522E-04	1.6554E-03

FAR(i,p,q,k) is the plant/air concentration ratio for airborne contaminated dust,
and FWR(i,p,q,k) is the plant/water concentration ratio. See groundwater displays
for water/soil concentration ratios.

Plant/Soil Concentration Ratios, FSR(i,3,q,k,t)

Root Uptake (q=1) and Foliar Dust Deposition (q=2)

Nonleafy (k=1) and/or Leafy (k=2) Vegetables

Nuclide(i)		FSR(i,3,1,k)	FSR(i,3,2,1)	FSR(i,3,2,2)
Parent	Product			
U-235+D	U-235+D	2.5000E-03	4.4484E-07	2.1331E-06
U-235+D	Pa-231	1.0000E-02	4.4484E-07	2.1331E-06
U-235+D	Ac-227+D	2.5000E-03	4.4484E-07	2.1331E-06

Plant/Soil Concentration Ratio, FSR(j,3,q,k,t)

Ditch Irrigation (q=3)

Parent (i)	Product (j)	Thread Fraction	FSR(j,3,3,k,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	5.481E-09
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	4.590E-10
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	2.908E-10	2.213E-10

Plant/Soil Concentration Ratio, FSR(j,3,q,k,t)

Overhead Irrigation (q=4) and Nonleafy Vegetables (k=1)

Parent (i)	Product (j)	Thread Fraction	FSR(j,3,4,1,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	6.681E-06
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	1.399E-07
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	3.547E-07	2.699E-07

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Plant/Soil Concentration Ratio, FSR(j,3,q,k,t)
Overhead Irrigation (q=4) and Leafy Vegetables (k=2)

Parent (i)	Product (j)	Thread Fraction	FSR(j,3,4,2,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	3.203E-05
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	6.706E-07
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	1.702E-06	1.294E-06

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Meat/Fodder, Milk/Fodder, Fodder/Air and Fodder/Water Concentration Ratios

FI(4,q): 68.0 kg/day FI(5,q): 55.0 kg/day q=1,2,3,4
 FI(4,q): 50.0 L/day FI(5,q): 160.0 L/day q=5
 FI(4,q): 0.5 kg/day FI(5,q):

Nuclide (i)	FQR(i,4) d/kg	FQR(i,5) d/kg	FAR(i,3,2,3) m**3/g	FWR(i,3,3,3) L/g	FWR(i,3,4,3) L/g
Ac-227	2.0000E-05	2.0000E-05	2.8659E-01	1.3328E-07	1.8139E-03
Pa-231	5.0000E-03	5.0000E-06	2.8659E-01	5.3326E-07	1.8139E-03
U-235	3.4000E-04	6.0000E-04	2.8659E-01	1.3332E-07	1.8139E-03

FI(p,q) are the fodder (q=1,2,3,4), livestock water (q=5) and soil (q=6) intake rates;
 FQR(i,p) are the transfer coefficients from contaminated fodder of livestock
 water to meat (p=4) or milk (p=5). FAR(i,3,2,3) are the fodder/air
 concentration ratios, and FWR(i,3,3,3) and FWR(i,3,4,3) are the fodder/
 water concentration ratios for ditch and overhead irrigation, respectively.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-235 EMC 10.RAD

Fodder/Soil Concentration Ratios, QSR(i,p,q,t), for Meat and Milk Pathways

Root Uptake (q=1) and Foliar Dust Deposition (q=2)

Nuclide(i)			
Parent	Product	QSR(i,p,1)	QSR(i,p,2)
U-235+D	U-235+D	2.5000E-03	2.3373E-06
U-235+D	Pa-231	1.0000E-02	2.3373E-06
U-235+D	Ac-227+D	2.5000E-03	2.3373E-06

Fodder/Soil Concentration Ratio, QSR(j,p,q,t), for Meat and Milk Pathways

Ditch Irrigation (q=3)

Parent (i)	Product (j)	Thread Fraction	QSR(j,p,3,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	2.582E-09
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	2.162E-10
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	1.364E-10	1.042E-10

Fodder/Soil Concentration Ratio, QSR(j,p,q,t), for Meat and Milk Pathways

Overhead Irrigation (q=4)

Parent (i)	Product (j)	Thread Fraction	QSR(j,p,4,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	3.513E-05
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	7.354E-07
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	1.856E-06	1.419E-06

Fodder/Soil Concentration Ratio, QSR(j,p,q,t), for Meat and Milk Pathways

Livestock Water (q=5)

Parent (i)	Product (j)	Thread Fraction	QSR(j,p,5,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.935E-05
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	4.052E-07
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	1.027E-06	7.817E-07

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Meat/Soil Concentration Ratios, FSR(i,4,q,t)
 Root Uptake (q=1) and Foliar Dust Deposition (q=2)

Nuclide(i)			
Parent	Product	FSR(i,4,1)	FSR(i,4,2)
U-235+D	U-235+D	5.7800E-05	5.4038E-08
U-235+D	Pa-231	0.0000E+00	0.0000E+00
U-235+D	Ac-227+D	0.0000E+00	0.0000E+00

Meat/Soil Concentration Ratio, FSR(j,4,q,t)
 Ditch Irrigation (q=3)

Parent (i)	Product (j)	Thread Fraction	FSR(j,4,3,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	5.970E-11
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	7.351E-11
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	1.847E-13	1.424E-13

Meat/Soil Concentration Ratio, FSR(j,4,q,t)
 Overhead Irrigation (q=4)

Parent (i)	Product (j)	Thread Fraction	FSR(j,4,4,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	8.122E-07
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	2.501E-07
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	2.514E-09	1.926E-09

Meat/Soil Concentration Ratio, FSR(j,4,q,t)
 Livestock Water (q=5)

Parent (i)	Product (j)	Thread Fraction	FSR(j,4,5,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	3.290E-07
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	1.013E-07
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	1.027E-09	7.817E-10

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Milk/Soil Concentration Ratios, FSR(i,5,q,t)
 Root Uptake (q=1) and Foliar Dust Deposition (q=2)

Nuclide(i)			
Parent	Product	FSR(i,5,1)	FSR(i,5,2)
U-235+D	U-235+D	8.2500E-05	7.7130E-08
U-235+D	Pa-231	0.0000E+00	0.0000E+00
U-235+D	Ac-227+D	0.0000E+00	0.0000E+00

Milk/Soil Concentration Ratio, FSR(j,5,q,t)
 Ditch Irrigation (q=3)

Parent (i)	Product (j)	Thread Fraction	FSR(j,5,3,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	8.518E-11
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	5.944E-14
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	1.496E-13	1.151E-13

Milk/Soil Concentration Ratio, FSR(j,5,q,t)
 Overhead Irrigation (q=4)

Parent (i)	Product (j)	Thread Fraction	FSR(j,5,4,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.159E-06
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	2.022E-10
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	2.037E-09	1.557E-09

Milk/Soil Concentration Ratio, FSR(j,5,q,t)
 Livestock Water (q=5)

Parent (i)	Product (j)	Thread Fraction	FSR(j,5,5,t) * SF(j,t) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.857E-06
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	3.241E-10
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	3.291E-09	2.501E-09

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Soil Ingestion Pathway (p=8)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,8,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	1.000E+00	7.303E-05	7.270E-05	7.206E-05	6.986E-05	6.395E-05	4.691E-05	1.936E-05	8.740E-07
U-235+D	Pa-231	1.000E+00	3.061E-08	9.146E-08	2.116E-07	6.153E-07	1.636E-06	3.951E-06	4.865E-06	7.258E-07
U-235+D	Ac-227+D	1.000E+00	4.489E-10	3.097E-09	1.584E-08	1.261E-07	7.778E-07	3.413E-06	5.143E-06	8.183E-07
U-235+D	ΣDSR(j)		7.306E-05	7.280E-05	7.229E-05	7.061E-05	6.636E-05	5.427E-05	2.937E-05	2.418E-06

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

Dose Conversion and Environmental Transport Factors for the Soil Ingestion Pathway (p=8)

Parent (i)	Product (j)	DCF(j,8)*	ETF(j,8,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-235+D	U-235+D	2.673E-04	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01
U-235+D	Pa-231	1.060E-02	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01
U-235+D	Ac-227+D	1.480E-02	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01

* - The dose conversion factor units are mrem/pCi.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	4
Summary of Pathway Selections	8
Contaminated Zone and Total Dose Summary	9
Total Dose Components	
Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
Time = 3.000E+02	16
Time = 1.000E+03	17
Dose/Source Ratios Summed Over All Pathways	18
Single Radionuclide Soil Guidelines	18
Dose Per Nuclide Summed Over All Pathways	19
Soil Concentration Per Nuclide	19

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(11)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(12)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1(13)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(1)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(2)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(3)
B-1	U-234	1.320E-01	1.320E-01	DCF2(4)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(1)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(2)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(3)
D-1	U-234	2.830E-04	2.830E-04	DCF3(4)
D-34	Food transfer factors:			
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(2,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(2,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(2,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(4,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(4,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(4,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(2,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(2,2)

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(4,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(4,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETEG table in Ground Pathway of Detailed Report.

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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

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)	2.200E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.000E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): U-234	1.700E+01	0.000E+00	---	S1(4)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(4)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+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)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.000E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	1.000E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	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)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-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	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(4)
R016	Unsat. zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.426E-03	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.217E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.165E-03	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.704E-06	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	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	-1 shows non-circular AREA.	FS

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	3.750E+00	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m), ring 2:	7.500E+00	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m), ring 3:	1.125E+01	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m), ring 4:	1.500E+01	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m), ring 5:	1.875E+01	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m), ring 6:	2.250E+01	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m), ring 7:	2.625E+01	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m), ring 8:	3.000E+01	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m), ring 9:	3.375E+01	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m), ring 10:	3.750E+01	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	4.125E+01	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	4.500E+01	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	1.000E+00	1.000E+00	---	FRACA(1)
R017	Ring 2	1.000E+00	2.732E-01	---	FRACA(2)
R017	Ring 3	1.000E+00	0.000E+00	---	FRACA(3)
R017	Ring 4	8.800E-01	0.000E+00	---	FRACA(4)
R017	Ring 5	7.400E-01	0.000E+00	---	FRACA(5)
R017	Ring 6	5.900E-01	0.000E+00	---	FRACA(6)
R017	Ring 7	4.500E-01	0.000E+00	---	FRACA(7)
R017	Ring 8	3.800E-01	0.000E+00	---	FRACA(8)
R017	Ring 9	2.700E-01	0.000E+00	---	FRACA(9)
R017	Ring 10	1.600E-01	0.000E+00	---	FRACA(10)
R017	Ring 11	9.900E-02	0.000E+00	---	FRACA(11)
R017	Ring 12	9.800E-03	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
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	0.110E+00	FMEAT
R018	Contamination fraction of milk	-1	-1	0.110E+00	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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	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
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 2200.00 square meters	U-234 1.700E+01
Thickness: 1.50 meters	
Cover Depth: 0.00 meters	

Total Dose TDOSE(t), mrem/yr
 Basic Radiation Dose Limit = 1.500E+01 mrem/yr
 Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	1.329E+00	1.323E+00	1.311E+00	1.271E+00	1.164E+00	8.580E-01	3.765E-01	1.322E+01
M(t):	8.857E-02	8.818E-02	8.741E-02	8.475E-02	7.760E-02	5.720E-02	2.510E-02	8.815E-01

Maximum TDOSE(t): 1.322E+01 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-234	3.819E-03	0.0029	1.225E-01	0.0922	0.000E+00	0.0000	1.045E+00	0.7863	7.584E-03	0.0057	1.859E-02	0.0140	1.314E-01	0.0989
Total	3.819E-03	0.0029	1.225E-01	0.0922	0.000E+00	0.0000	1.045E+00	0.7863	7.584E-03	0.0057	1.859E-02	0.0140	1.314E-01	0.0989

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- 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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.329E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.329E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.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- 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.
U-234	3.802E-03	0.0029	1.220E-01	0.0922	0.000E+00	0.0000	1.040E+00	0.7863	7.551E-03	0.0057	1.851E-02	0.0140	1.308E-01	0.0989
Total	3.802E-03	0.0029	1.220E-01	0.0922	0.000E+00	0.0000	1.040E+00	0.7863	7.551E-03	0.0057	1.851E-02	0.0140	1.308E-01	0.0989

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- 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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.323E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.323E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-234	3.771E-03	0.0029	1.209E-01	0.0922	0.000E+00	0.0000	1.031E+00	0.7863	7.484E-03	0.0057	1.835E-02	0.0140	1.297E-01	0.0989
Total	3.771E-03	0.0029	1.209E-01	0.0922	0.000E+00	0.0000	1.031E+00	0.7863	7.484E-03	0.0057	1.835E-02	0.0140	1.297E-01	0.0989

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

Water Dependent Pathways

Radio- 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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.311E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.311E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-234	3.676E-03	0.0029	1.173E-01	0.0922	0.000E+00	0.0000	9.995E-01	0.7863	7.256E-03	0.0057	1.779E-02	0.0140	1.257E-01	0.0989
Total	3.676E-03	0.0029	1.173E-01	0.0922	0.000E+00	0.0000	9.995E-01	0.7863	7.256E-03	0.0057	1.779E-02	0.0140	1.257E-01	0.0989

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

Water Dependent Pathways

Radio- 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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.271E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.271E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-234	3.519E-03	0.0030	1.074E-01	0.0922	0.000E+00	0.0000	9.151E-01	0.7861	6.643E-03	0.0057	1.628E-02	0.0140	1.151E-01	0.0989
Total	3.519E-03	0.0030	1.074E-01	0.0922	0.000E+00	0.0000	9.151E-01	0.7861	6.643E-03	0.0057	1.628E-02	0.0140	1.151E-01	0.0989

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

Radio- 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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.164E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.164E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-234	4.018E-03	0.0047	7.892E-02	0.0920	0.000E+00	0.0000	6.736E-01	0.7851	4.888E-03	0.0057	1.195E-02	0.0139	8.462E-02	0.0986
Total	4.018E-03	0.0047	7.892E-02	0.0920	0.000E+00	0.0000	6.736E-01	0.7851	4.888E-03	0.0057	1.195E-02	0.0139	8.462E-02	0.0986

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- 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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.580E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.580E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-234	9.497E-03	0.0252	3.291E-02	0.0874	0.000E+00	0.0000	2.916E-01	0.7743	2.110E-03	0.0056	5.002E-03	0.0133	3.546E-02	0.0942
Total	9.497E-03	0.0252	3.291E-02	0.0874	0.000E+00	0.0000	2.916E-01	0.7743	2.110E-03	0.0056	5.002E-03	0.0133	3.546E-02	0.0942

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

Water Dependent Pathways

Radio- 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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.765E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.765E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-234	2.268E-02	0.0017	2.072E-03	0.0002	0.000E+00	0.0000	2.955E-02	0.0022	2.795E-04	0.0000	3.490E-04	0.0000	2.899E-03	0.0002
Total	2.268E-02	0.0017	2.072E-03	0.0002	0.000E+00	0.0000	2.955E-02	0.0022	2.795E-04	0.0000	3.490E-04	0.0000	2.899E-03	0.0002

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

Water Dependent Pathways

Radio- 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.
U-234	1.218E+01	0.9209	3.341E-03	0.0003	0.000E+00	0.0000	9.368E-01	0.0708	9.960E-03	0.0008	3.753E-02	0.0028	1.322E+01	1.0000
Total	1.218E+01	0.9209	3.341E-03	0.0003	0.000E+00	0.0000	9.368E-01	0.0708	9.960E-03	0.0008	3.753E-02	0.0028	1.322E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

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

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	7.815E-02	7.781E-02	7.712E-02	7.477E-02	6.843E-02	5.019E-02	2.070E-02	7.638E-01
U-234	Th-230	1.000E+00	3.860E-07	1.119E-06	2.570E-06	7.546E-06	2.094E-05	5.946E-05	1.216E-04	1.250E-04
U-234	Ra-226+D	1.000E+00	6.675E-09	4.778E-08	2.540E-07	2.244E-06	1.797E-05	1.626E-04	8.840E-04	4.324E-03
U-234	Po-210+D	1.000E+00	4.522E-11	5.840E-10	6.129E-09	1.436E-07	2.843E-06	5.616E-05	4.430E-04	9.504E-03
U-234	ΣDSR(j)		7.815E-02	7.781E-02	7.713E-02	7.478E-02	6.847E-02	5.047E-02	2.215E-02	7.778E-01

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

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Nuclide (i)	t = 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	1.919E+02	1.928E+02	1.945E+02	2.006E+02	2.191E+02	2.972E+02	6.772E+02	1.929E+01

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

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
U-234	1.700E+01	1.000E+03	7.778E-01	1.929E+01	7.778E-01	1.929E+01

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr								
			t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00		1.329E+00	1.323E+00	1.311E+00	1.271E+00	1.163E+00	8.533E-01	3.519E-01	1.299E+01
Th-230	U-234	1.000E+00		6.561E-06	1.903E-05	4.369E-05	1.283E-04	3.560E-04	1.011E-03	2.067E-03	2.124E-03
Ra-226	U-234	1.000E+00		1.135E-07	8.123E-07	4.319E-06	3.814E-05	3.056E-04	2.764E-03	1.503E-02	7.351E-02
Pb-210	U-234	1.000E+00		7.688E-10	9.929E-09	1.042E-07	2.442E-06	4.834E-05	9.547E-04	7.532E-03	1.616E-01

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g								
			t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00		1.700E+01	1.692E+01	1.678E+01	1.626E+01	1.489E+01	1.092E+01	4.503E+00	2.029E-01
Th-230	U-234	1.000E+00		0.000E+00	1.527E-04	4.561E-04	1.497E-03	4.298E-03	1.236E-02	2.535E-02	3.381E-02
Ra-226	U-234	1.000E+00		0.000E+00	3.306E-08	2.959E-07	3.227E-06	2.754E-05	2.547E-04	1.394E-03	3.741E-03
Pb-210	U-234	1.000E+00		0.000E+00	3.399E-10	8.991E-09	3.103E-07	6.906E-06	1.421E-04	1.133E-03	3.455E-03

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

RESCALC.EXE execution time = 5.09 seconds

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

Table of ContentsPart II: Source Terms, Factors, and Parameters for Individual Pathways

Source Factors for Ingrowth and Decay

Radioactivity Only	3
Combined Radioactivity and Leaching	3

Ground Pathway

Source Term Parameters	4
Time Dependence of Source Geometry	4
Occupancy, Cover/Depth, and Area Factors	5
Dose Conversion and Environmental Transport Factors .	6
Dose/Source Ratios	6

Inhalation Pathway (radon excluded)

Dose/Source Ratios	7
Pathway Factors	7
Dose Conversion and Environmental Transport Factors .	7

Radon Pathway

Flux and Parameters	8
Concentration and Parameters	9
Working Levels	10
Dose/Source Ratios	11

Groundwater and Surface Water Pathway Segments

Transport Time Parameters for Unsaturated Zone Strata	12
Dilution Factor and Rise Time Parameters for	
Nondispersion (ND) Model	13
Primary Parameters Used to Calculate Ratios	13
Water/Soil Concentration Ratios	14

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

Table of Contents (cont.)

Part II: Source Terms, Factors, and Parameters for Individual Pathways

Food Pathways

Storage Times for Contaminated Foodstuffs	15
Storage Time Ingrowth and Decay Factors	15
Storage Correction Factors	
Drinking Water	16
Irrigation Water	16
Livestock Water	17
Plants	18
Livestock Fodder	18
Meat and Milk	19
Fish and Crustacea	20
Area and Depth Factors	21
Dose Conversion and Environmental Transport Factors	
Plant	23
Meat	24
Milk	26
Fish	28
Drinking Water	28
Dose/Source Ratios	
Plant	29
Plant Total	30
Meat	31
Meat Total	32
Milk	33
Milk Total	34
Fish	35
Drinking Water	36
Concentration Ratios	
Plant/Air and Plant/Water	37
Plant/Soil	37
Meat/Fodder, Fodder/Air, Fodder/Water	39
Fodder/Soil	40
Meat/Soil	41
Milk/Soil	42

Soil Ingestion Pathway

Dose/Source Ratios.....	43
Dose Conversion and Environmental Transport Factors .	43

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

Source Factors for Ingrowth and Decay

Radioactivity Factors Only

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	ID(j,t) = THF(j)*SI(j,t)/SI(i,0) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.997E-01	9.991E-01	9.972E-01
U-234	Th-230	1.000E+00	0.000E+00	9.002E-06	2.701E-05	9.001E-05	2.700E-04	8.997E-04	2.696E-03	8.949E-03
U-234	Ra-226+D	1.000E+00	0.000E+00	1.950E-09	1.754E-08	1.947E-07	1.747E-06	1.921E-05	1.679E-04	1.689E-03
U-234	Pb-210+D	1.000E+00	0.000E+00	2.004E-11	5.328E-10	1.870E-08	4.373E-07	1.068E-05	1.363E-04	1.591E-03

Source Factors for Ingrowth and Decay

Combined Radioactivity and Leaching Factors

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	SF(j,t) = THF(j)*SI(j,t)/SI(i,0) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	9.956E-01	9.868E-01	9.567E-01	8.756E-01	6.422E-01	2.649E-01	1.193E-02
U-234	Th-230	1.000E+00	0.000E+00	8.982E-06	2.683E-05	8.805E-05	2.528E-04	7.268E-04	1.491E-03	1.989E-03
U-234	Ra-226+D	1.000E+00	0.000E+00	1.945E-09	1.741E-08	1.898E-07	1.620E-06	1.498E-05	8.200E-05	2.200E-04
U-234	Pb-210+D	1.000E+00	0.000E+00	2.000E-11	5.289E-10	1.825E-08	4.062E-07	8.358E-06	6.663E-05	2.032E-04

The effect of volatilization was also considered when computing the source factors for H-3 and C-14.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

Parameters Used for Calculating Cover Depth and Contaminated Zone Thicknesses

Cover Erosion rate (vcv): 0.001000 m/yr
 Contaminated Zone Erosion rate (vcz): 0.001000 m/yr
 Water Table Drop rate (vwt): 0.001000 m/yr
 Precipitation rate (Pr): 1.000000 m/yr
 Cover Removal Time (Tc): 0.000E+00 yr
 Overhead irrigation rate (Irr): 0.200 m/yr
 Runoff coefficient (Cr): 0.200
 Evapotranspiration coeff. (Ce): 0.500
 Infiltration rate (In): 0.500 m/yr
 Bulk soil density (rhob): 1.500 g/cm**3
 Effective porosity (pe): 0.000

Radio-nuclide (i)	Distribution Coefficient Kd(i), cm**3/g	Leaching Ratio q(i)
Pb-210	1.000000E+02	2.135E-03
Ra-226	7.000000E+01	3.047E-03
Th-230	6.000000E+04	3.566E-06
U-234	5.000000E+01	4.261E-03

Time Dependence of Source Geometry

Time Dependence of Cover Depth [Cd(i,t)]

Nuclide		Cd(i,t) (meters)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
Ra-226		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
Th-230		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
U-234		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Time Dependence of Contaminated Zone Thicknesses [T(i,t)]

Nuclide		T(i,t) (meters)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210		1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01
Ra-226		1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01
Th-230		1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01
U-234		1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01

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Dose Conversion and Environmental Transport Factors for the Ground Pathway (p=1)

Nuclide (i)	DCF(i,1)*		ETFG(i,t) At Time in Years (dimensionless)						
	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
At-218	5.847E-03	5.572E-01	5.572E-01	5.572E-01	5.572E-01	5.572E-01	5.572E-01	5.572E-01	5.572E-01
Bi-210	3.606E-03	5.451E-01	5.451E-01	5.451E-01	5.451E-01	5.451E-01	5.451E-01	5.451E-01	5.451E-01
Bi-214	9.808E+00	5.413E-01	5.413E-01	5.413E-01	5.413E-01	5.413E-01	5.413E-01	5.413E-01	5.395E-01
Pb-210	2.447E-03	5.617E-01	5.617E-01	5.617E-01	5.617E-01	5.617E-01	5.617E-01	5.617E-01	5.617E-01
Pb-214	1.341E+00	5.452E-01	5.452E-01	5.452E-01	5.452E-01	5.452E-01	5.452E-01	5.452E-01	5.450E-01
Po-210	5.231E-05	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.394E-01
Po-214	5.138E-04	5.369E-01	5.369E-01	5.369E-01	5.369E-01	5.369E-01	5.369E-01	5.369E-01	5.362E-01
Po-218	5.642E-05	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.393E-01
Ra-226	3.176E-02	5.527E-01	5.527E-01	5.527E-01	5.527E-01	5.527E-01	5.527E-01	5.527E-01	5.527E-01
Rn-222	2.354E-03	5.376E-01	5.376E-01	5.376E-01	5.376E-01	5.376E-01	5.376E-01	5.376E-01	5.373E-01
Th-230	1.209E-03	5.548E-01	5.548E-01	5.548E-01	5.548E-01	5.548E-01	5.548E-01	5.548E-01	5.548E-01
Tl-210	0.000E+00	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01
U-234	4.017E-04	5.604E-01	5.604E-01	5.604E-01	5.604E-01	5.604E-01	5.604E-01	5.604E-01	5.604E-01

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

Dose/Source Ratios for External Radiation from the Ground (p=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,1,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	2.246E-04	2.236E-04	2.217E-04	2.149E-04	1.967E-04	1.443E-04	5.950E-05	2.681E-06
U-234	Th-230	1.000E+00	3.015E-09	9.026E-09	2.097E-08	6.194E-08	1.722E-07	4.895E-07	1.001E-06	1.334E-06
U-234	Ra-226+D	1.000E+00	3.930E-09	2.745E-08	1.443E-07	1.267E-06	1.013E-05	9.159E-05	4.979E-04	1.330E-03
U-234	Pb-210+D	1.000E+00	1.687E-14	2.509E-13	2.870E-12	7.096E-11	1.431E-09	2.847E-08	2.250E-07	6.847E-07
U-234	ΣDSR(j)		2.246E-04	2.237E-04	2.218E-04	2.162E-04	2.070E-04	2.364E-04	5.586E-04	1.334E-03

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

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Dose/Source Ratios for Inhalation Pathway, Excluding Radon (p=2)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,2,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	7.208E-03	7.177E-03	7.113E-03	6.896E-03	6.312E-03	4.629E-03	1.909E-03	8.603E-05
U-234	Th-230	1.000E+00	8.019E-08	2.401E-07	5.578E-07	1.648E-06	4.581E-06	1.302E-05	2.662E-05	3.548E-05
U-234	Ra-226+D	1.000E+00	3.051E-13	2.131E-12	1.120E-11	9.839E-11	7.866E-10	7.110E-09	3.865E-08	1.035E-07
U-234	Pb-210+D	1.000E+00	6.359E-15	9.456E-14	1.082E-12	2.674E-11	5.395E-10	1.073E-08	8.480E-08	2.581E-07
U-234	ΣDSR(j)		7.209E-03	7.177E-03	7.114E-03	6.898E-03	6.316E-03	4.642E-03	1.936E-03	1.219E-04

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

Pathway Factors for the Inhalation Pathway (radon excluded)

Area (A):	2.2000E+03 m**2	Occupancy Factor (FO2):	4.5000E-01
Area Factor (FA2):	1.4479E-01	Annual Air Intake (F12):	8.4000E+03 m**3/yr
Cover Depth [Cd(0)]:	0.0000E+00 m	Mass Loading (ASR2):	1.0000E-04 g/m**3
Contaminated Zone Thickness [T(0)]:	1.5000E+00 m	FA2 * FO2 * F12 * ASR2:	5.4730E-02 g/yr

Nuclide (i)	t=	Depth Factor [FD(i,2,t)] (dimensionless)							
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00

Dose Conversion and Environmental Transport Factors for the Inhalation Pathway, Excluding Radon (p=2)

Parent (i)	Product (j)	DCF(j,2)*	ETF(j,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.320E-01	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02
U-234	Th-230	3.260E-01	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02
U-234	Ra-226+D	8.594E-03	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02
U-234	Pb-210+D	2.320E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02	5.473E-02

* - The dose conversion factor units are mrem/pCi.

[illegible]

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Parameters Used for Calculating Indoor and Outdoor Radon Concentration

```
Radon Vertical Dimension of Mixing (HMIX): 2.000E+00 (m)
Average Annual Wind Speed (WIND): 2.000E+00 (m/sec)
Building Room Height (HRM): 2.500E+00 (m)
Building Air Exchange Rate (REXG): 5.000E-01 (1/hr)
```

Time Dependence of Outdoor Radon Concentration [CRNO(i,t)]

[illegible]

Time Dependence of Indoor Radon Concentration [HCONC(i,r)]

[illegible]

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Outdoor Working Levels of Radon [WLOTD(i,t)]

Nuclide		WLOTD(i,t) (WL)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Indoor Working Levels of Radon [WLIND(i,t)]

Nuclide		WLIND(i,t) (WL)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Fraction of Time Spent Outdoors (FOTD): 2.500E-01

Fraction of Time Spent Indoors (FIND): 5.000E-01

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File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

Dose/Source Ratios for Radon Pathway (p=9)

Subpathway: Outdoor and Indoor Radon Flux

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,9,t) - DSRRNW(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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
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
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
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
U-234	ΣDSR(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

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

Dose/Source Ratios for Radon Pathway (p=9)

Subpathway: Indoor Radon from Water Usage

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSRRNW(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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
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
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
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
U-234	ΣDSR(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

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234.RAD

Transport Time Parameters for Unsaturated Zone Stratum No. 1

Stratum thickness [h(1)]: 4.000000 m
 Bulk soil material density [rhob(1)]: 1.500000 g/cm**3
 Effective porosity [peuz(1)]: 0.200000
 Hydraulic conductivity [Khuz(1)]: 10.000000 m/yr
 Total porosity [ptuz(1)]: 0.400000
 Soil specific b parameter [buz(1)]: 5.300000
 Saturation ratio [sruz(1)]: 0.802299

Radio-nuclide (i)	Distribution Coefficient Kduz(i,1), cm**3/g	Retardation Factor Rduz(i,1)	Transport Time Dtuz(i,1), yr
Pb-210	1.0000E+02	4.6841E+02	6.0128E+02
Ra-226	7.0000E+01	3.2818E+02	4.2128E+02
Th-230	6.0000E+04	2.8045E+05	3.6000E+05
U-234	5.0000E+01	2.3470E+02	3.0128E+02

Transport Time Parameters for Unsaturated Zone created by the Falling Water Table

Water table drop rate [vwt]: 0.001000 m/yr
 Bulk soil material density [rhobaq]: 1.500000 g/cm**3
 Effective porosity [peaq]: 0.200000
 Hydraulic conductivity [Khaq]: 100.000000 m/yr
 Total porosity [ptaq]: 0.400000
 Soil specific b parameter [baq]: 5.300000
 Saturation ratio [sruaq]: 0.677340

Radio-nuclide (i)	Distribution Coefficient Kdaq(i), cm**3/g	Retardation Factor Rduaq(i)	Minimum Transport Time Dtuaq(i), yr
Pb-210	1.0000E+02	5.5464E+02	1.0633E+02
Ra-226	7.0000E+01	3.8855E+02	4.9567E+01
Th-230	6.0000E+04	3.3218E+05	Infinite
U-234	5.0000E+01	2.7782E+02	2.4524E+01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dilution Factor and Rise Time Parameters for Nondispersion (ND) Model

Aquifer contamination depth at well (z): 2.50000E-01 m
 Depth of water intake below water table (dw): 1.00000E-01 m
 Infiltration rate (In): 5.00000E-01 m/yr
 Aquifer water flow rate (Vwfr): 2.00000E-00 m/yr
 Hydraulic gradient (J): 2.00000E-02
 Hydraulic conductivity of aquifer (Kszh): 1.00000E-02 m/yr
 Contaminated zone extent parallel to gradient (l): 1.00000E-02 m
 Distance below contaminated zone to water table (h): 0.40000E-01 m
 Initial thickness of uncontaminated cover (Cd): 0.00000E-00 m
 Initial thickness of contaminated zone (T): 0.15000E-01 m
 Effective porosity of saturated zone (pesz): 0.20000E-00

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdsz(i)	Horizontal Transport Time Onsite Tauh(i), yr	Rise Time dt(i), yr	Decay Time Parameter 1/lamda(i),yr
Pb-210	1.000E+00	3.760E+02	3.760E+03	1.504E+03	3.217E+01
Ra-226	1.000E+00	2.635E+02	2.635E+03	1.054E+03	2.308E+03
Th-230	1.000E+00	2.250E+05	2.250E+06	9.000E+05	1.111E+05
U-234	1.000E+00	1.885E+02	1.885E+03	7.540E+02	3.527E+05

Primary Parameters Used for Calculating Water/Soil
Concentration Ratios for Groundwater Pathway Segment

Model used: Nondispersion (ND)

Bulk soil density in contaminated zone (rhob): 1.500 g/cm**3

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdcz(i)	Breakthrough Time Chain year	Single Nuclide Dt(i), yr	Rise Time dt(i), yr
Pb-210	1.000E+00	4.684E+02	3.258E+02	7.076E+02	1.504E+03
Ra-226	1.000E+00	3.282E+02	3.258E+02	4.709E+02	1.054E+03
Th-230	1.000E+00	2.804E+05	3.258E+02	Infinite	9.000E+05
U-234	1.000E+00	2.347E+02	3.258E+02	3.258E+02	7.540E+02

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Times For Contaminated Foodstuffs

k	Food Item	STOR_T(k), days
1	non-leafy plants	14.
2	leafy plants	1.
3	milk	1.
4	meat	20.
5	fish	7.
6	crustacea	7.
7	well water	1.
8	surface water	1.
9	livestock fodder	45.

Storage Time Ingrowth and Decay Factors

Storage Time for k'th Foodstuff: $t = \text{STOR_T}(k)$, days

Parent Product Thread			STOR_ID(i,j,t) = CONCE(i,j,t)/CONCE(i,i,0)									
(i)	(j)	Fraction	t= 1.400E+01	1.000E+00	1.000E+00	2.000E+01	7.000E+00	7.000E+00	1.000E+00	1.000E+00	4.500E+01	
Pb-210	Pb-210	1.000E+00	9.988E-01	9.999E-01	9.999E-01	9.983E-01	9.994E-01	9.994E-01	9.999E-01	9.999E-01	9.962E-01	
Ra-226	Ra-226	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	
Ra-226	Pb-210	1.000E+00	1.191E-03	8.510E-05	8.510E-05	1.701E-03	5.955E-04	5.955E-04	8.510E-05	8.510E-05	3.822E-03	
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
Th-230	Ra-226	1.000E+00	1.661E-05	1.186E-06	1.186E-06	2.372E-05	8.303E-06	8.303E-06	1.186E-06	1.186E-06	5.337E-05	
Th-230	Pb-210	1.000E+00	9.888E-09	5.047E-11	5.047E-11	2.018E-08	2.472E-09	2.472E-09	5.047E-11	5.047E-11	1.021E-07	
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
U-234	Th-230	1.000E+00	3.450E-07	2.465E-08	2.465E-08	4.929E-07	1.725E-07	1.725E-07	2.465E-08	2.465E-08	1.109E-06	
U-234	Ra-226	1.000E+00	2.865E-12	1.462E-14	1.462E-14	5.846E-12	7.162E-13	7.162E-13	1.462E-14	1.462E-14	2.960E-11	
U-234	Pb-210	1.000E+00	1.137E-15	4.146E-19	4.146E-19	3.315E-15	1.422E-16	1.422E-16	4.146E-19	4.146E-19	3.774E-14	

CONCE(i,j,t)/CONCE(i,i,0) is the concentration ratio of Product(j) at time t to Parent(i) at start of storage time.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors
 Drinking Water from Well and/or Surface
 Harvest Time = $t - 2.74E-03$ yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,1) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.007E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Nonleafy Plants from Well and/or Surface
 Harvest Time = $t - 4.11E-02$ yr; Consumption Time = $t - 3.83E-02$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,2) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.007E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Leafy Plants from Well and/or Surface
 Harvest Time = $t - 5.48E-03$ yr; Consumption Time = $t - 2.74E-03$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,3) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.007E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

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Storage Time Correction Factors

Irrigation Water for Livestock (Milk) Fodder from Well and/or Surface

Harvest Time = $t - 1.29\text{E-}01$ yr; Consumption Time = $t - 1.26\text{E-}01$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,5)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.007E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Irrigation Water for Livestock (Meat) Fodder from Well and/or Surface

Harvest Time = $t - 1.81\text{E-}01$ yr; Consumption Time = $t - 1.78\text{E-}01$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,7)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.007E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Livestock (Milk) Water from Well and/or Surface

Harvest Time = $t - 5.48\text{E-}03$ yr; Consumption Time = $t - 2.74\text{E-}03$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,4)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.007E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

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Storage Time Correction Factors

Livestock (Meat) Water from Well and/or Surface

Harvest Time = t - 5.75E-02 yr; Consumption Time = t - 5.48E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,6)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.007E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Nonleafy Plants

Harvest Time = t - 3.83E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.100E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Leafy Plants

Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.007E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Livestock (Meat) Fodder

Harvest Time = t - 1.78E-01 yr; Consumption Time = t - 5.48E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03

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Storage Time Correction Factors for Livestock (Meat) Fodder

Harvest Time = t - 1.78E-01 yr; Consumption Time = t - 5.48E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.373E+00	1.108E+00	1.031E+00	1.010E+00	1.002E+00	1.000E+00	1.009E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.009E+00	1.002E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	2.809E+00	1.531E+00	1.158E+00	1.057E+00	1.024E+00	1.015E+00	1.004E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Livestock (Milk) Fodder

Harvest Time = t - 1.26E-01 yr; Consumption Time = t - 2.74E-03 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.351E+00	1.106E+00	1.030E+00	1.010E+00	1.002E+00	1.000E+00	1.009E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.008E+00	1.002E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	2.702E+00	1.521E+00	1.157E+00	1.057E+00	1.024E+00	1.015E+00	1.004E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Meat

Harvest Time = t - 5.48E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF45(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.227E+00	1.074E+00	1.022E+00	1.007E+00	1.002E+00	1.000E+00	1.001E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.003E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.319E+00	1.149E+00	1.054E+00	1.021E+00	1.009E+00	1.005E+00	1.002E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Milk

Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF45(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.371E+00	1.124E+00	1.037E+00	1.012E+00	1.003E+00	1.001E+00	1.004E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.041E+00	1.019E+00	1.007E+00	1.003E+00	1.001E+00	1.001E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

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Storage Time Correction Factors for Fish & Crustacea
 Harvest Time = t - 1.92E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CFF(j,1,t)# At Time in Years								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.005E+00	
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.996E-01	

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Area and Depth Factors for Plant (p=3), Meat (p=4), and Milk (p=5) Pathways
Overhead Irrigation (q=4)

Area Factor for Plant Foods [FA(3)] = 0.50

The Depth Factor Value

$FD(i,p,q,t) = 1.0000E+00$

is applicable for all radionuclides(i) and times(t).

Area and Depth Factors for Meat (p=4) and Milk (p=5) Pathways
Transfer from Livestock Water (q=5) and Soil (q=6) Intake

Area Factor for Meat and Milk [FA(p),p=4,5] = 0.11

The livestock water subpathway (q=5) and livestock soil intake subpathway (q=6)
occur only for the meat (p=4) and milk (p=5) pathways.

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Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	2.175E+02	2.166E+02	2.147E+02	2.081E+02	1.905E+02	1.397E+02	5.762E+01	1.442E+00
U-234	Th-230	5.480E-04	0.000E+00	8.229E-04	2.375E-03	7.700E-03	2.203E-02	6.326E-02	1.297E-01	9.612E-02
U-234	Ra-226+D	1.321E-03	0.000E+00	6.311E-06	5.920E-05	6.561E-04	5.625E-03	5.212E-02	2.853E-01	4.254E-01
U-234	Pb-210+D	7.276E-03	0.000E+00	2.252E-08	5.088E-07	1.642E-05	3.581E-04	7.315E-03	5.821E-02	9.860E-02

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	8.969E-02	8.931E-02	8.852E-02	8.582E-02	7.854E-02	5.761E-02	2.376E-02	1.071E-03
U-234	Th-230	5.480E-04	0.000E+00	8.056E-07	2.406E-06	7.897E-06	2.268E-05	6.519E-05	1.337E-04	1.784E-04
U-234	Ra-226+D	1.321E-03	0.000E+00	1.745E-10	1.562E-09	1.703E-08	1.453E-07	1.344E-06	7.355E-06	1.974E-05
U-234	Pb-210+D	7.276E-03	0.000E+00	1.795E-12	4.744E-11	1.637E-09	3.644E-08	7.497E-07	5.976E-06	1.823E-05

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.251E-01
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.191E-07
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.349E-03
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.229E-04

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.918E+02
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.131E-04
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.292E-01
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.502E-02

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	4.006E-01	3.991E-01	3.956E-01	3.835E-01	3.510E-01	2.574E-01	1.062E-01	2.659E-03
U-234	Th-230	5.480E-04	0.000E+00	6.750E-07	1.514E-06	4.391E-06	1.214E-05	3.441E-05	7.032E-05	5.208E-05
U-234	Ra-226+D	1.321E-03	0.000E+00	2.502E-08	2.912E-07	3.456E-06	3.019E-05	2.816E-04	1.544E-03	2.305E-03
U-234	Pb-210+D	7.276E-03	0.000E+00	1.602E-10	3.037E-09	8.138E-08	1.642E-06	3.255E-05	2.569E-04	4.344E-04

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	6.648E-04	6.624E-04	6.566E-04	6.365E-04	5.826E-04	4.273E-04	1.762E-04	7.941E-06
U-234	Th-230	5.480E-04	0.000E+00	1.987E-09	5.474E-09	1.744E-08	4.964E-08	1.423E-07	2.916E-07	3.889E-07
U-234	Ra-226+D	1.321E-03	0.000E+00	3.443E-12	3.295E-11	3.678E-10	3.159E-09	2.929E-08	1.604E-07	4.304E-07
U-234	Pb-210+D	7.276E-03	0.000E+00	3.222E-14	8.382E-13	2.869E-11	6.368E-10	1.309E-08	1.043E-07	3.182E-07

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.045E-04
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.284E-10
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.311E-06
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.489E-07

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.421E+00
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.614E-06
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.816E-03
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.487E-03

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,5,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.762E-01
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.718E-07
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.142E-03
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.017E-04

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	8.349E-01	8.317E-01	8.243E-01	7.992E-01	7.314E-01	5.365E-01	2.213E-01	5.540E-03
U-234	Th-230	5.480E-04	0.000E+00	5.004E-08	9.948E-08	2.691E-07	7.257E-07	2.039E-06	4.156E-06	3.076E-06
U-234	Ra-226+D	1.321E-03	0.000E+00	3.336E-08	3.566E-07	4.125E-06	3.578E-05	3.329E-04	1.825E-03	2.722E-03
U-234	Pb-210+D	7.276E-03	0.000E+00	6.316E-11	1.213E-09	3.434E-08	7.120E-07	1.427E-05	1.130E-04	1.912E-04

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	1.386E-03	1.380E-03	1.368E-03	1.326E-03	1.214E-03	8.905E-04	3.673E-04	1.655E-05
U-234	Th-230	5.480E-04	0.000E+00	1.375E-10	3.432E-10	1.049E-09	2.950E-09	8.415E-09	1.723E-08	2.296E-08
U-234	Ra-226+D	1.321E-03	0.000E+00	4.469E-12	4.015E-11	4.384E-10	3.742E-09	3.462E-08	1.895E-07	5.084E-07
U-234	Pb-210+D	7.276E-03	0.000E+00	1.412E-14	3.690E-13	1.268E-11	2.818E-10	5.795E-09	4.619E-08	1.409E-07

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.178E-04
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.911E-12
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.911E-06
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.970E-07

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.963E+00
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.860E-07
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.326E-03
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.578E-04

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,5,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.752E+00
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.545E-07
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.337E-03
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.053E-03

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Fish Pathway (p=6)

Parent (i)	Product (j)	DCF(j,6)*	ETF(j,6,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.811E-01
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.844E-05
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.795E-03
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.076E-03

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Drinking Water Pathway (p=7)

Parent (i)	Product (j)	DCF(j,7)*	ETF(j,7,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.495E+03
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.652E-03
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.681E+00
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.105E+00

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	6.142E-02	6.115E-02	6.062E-02	5.877E-02	5.378E-02	3.945E-02	1.627E-02	4.069E-04
U-234	Th-230	1.000E+00	2.337E-07	6.642E-07	1.513E-06	4.425E-06	1.226E-05	3.480E-05	7.114E-05	5.262E-05
U-234	Ra-226+D	1.000E+00	2.691E-09	1.991E-08	1.074E-07	9.553E-07	7.671E-06	6.944E-05	3.777E-04	5.615E-04
U-234	Pb-210+D	1.000E+00	4.361E-11	5.612E-10	5.881E-09	1.377E-07	2.725E-06	5.382E-05	4.246E-04	7.169E-04
U-234	ΣDSR(j)		6.142E-02	6.116E-02	6.062E-02	5.877E-02	5.381E-02	3.961E-02	1.714E-02	1.738E-03

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	2.533E-05	2.522E-05	2.500E-05	2.423E-05	2.218E-05	1.627E-05	6.709E-06	3.023E-07
U-234	Th-230	1.000E+00	2.209E-10	6.614E-10	1.537E-09	4.539E-09	1.262E-08	3.586E-08	7.334E-08	9.774E-08
U-234	Ra-226+D	1.000E+00	7.689E-14	5.368E-13	2.822E-12	2.478E-11	1.981E-10	1.791E-09	9.736E-09	2.608E-08
U-234	Pb-210+D	1.000E+00	3.273E-15	4.862E-14	5.561E-13	1.375E-11	2.774E-10	5.516E-09	4.359E-08	1.327E-07
U-234	ΣDSR(j)		2.533E-05	2.522E-05	2.500E-05	2.424E-05	2.219E-05	1.631E-05	6.836E-06	5.588E-07

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Ditch Irrigation (c=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	3.540E-05
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	1.202E-10
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	1.784E-06
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	1.625E-06
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.881E-05

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,4t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	5.427E-02
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	3.911E-07
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	1.709E-04
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	6.195E-04
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.507E-02

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	6.145E-02	6.118E-02	6.064E-02	5.879E-02	5.381E-02	3.946E-02	1.628E-02	5.472E-02
U-234	Th-230	1.000E+00	2.339E-07	6.649E-07	1.514E-06	4.429E-06	1.227E-05	3.484E-05	7.122E-05	5.311E-05
U-234	Ra-226+D	1.000E+00	2.691E-09	1.991E-08	1.074E-07	9.553E-07	7.671E-06	6.944E-05	3.777E-04	7.342E-04
U-234	Pb-210+D	1.000E+00	4.362E-11	5.613E-10	5.881E-09	1.377E-07	2.726E-06	5.383E-05	4.246E-04	1.338E-03
U-234	ΣDSR(j)		6.145E-02	6.118E-02	6.064E-02	5.880E-02	5.383E-02	3.962E-02	1.715E-02	5.684E-02

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.132E-04	1.127E-04	1.117E-04	1.083E-04	9.911E-05	7.270E-05	2.998E-05	7.500E-07
U-234	Th-230	1.000E+00	2.341E-10	4.851E-10	9.437E-10	2.517E-09	6.752E-09	1.893E-08	3.857E-08	2.851E-08
U-234	Ra-226+D	1.000E+00	9.175E-12	8.902E-11	5.360E-10	5.038E-09	4.118E-08	3.752E-07	2.044E-06	3.042E-06
U-234	Pb-210+D	1.000E+00	3.001E-13	3.760E-12	3.398E-11	6.789E-10	1.249E-08	2.395E-07	1.874E-06	3.158E-06
U-234	ΣDSR(j)		1.132E-04	1.127E-04	1.117E-04	1.083E-04	9.917E-05	7.333E-05	3.394E-05	6.979E-06

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.879E-07	1.871E-07	1.854E-07	1.797E-07	1.645E-07	1.207E-07	4.977E-08	2.242E-09
U-234	Th-230	1.000E+00	5.897E-13	1.568E-12	3.475E-12	1.002E-11	2.763E-11	7.827E-11	1.599E-10	2.131E-10
U-234	Ra-226+D	1.000E+00	1.449E-15	1.098E-14	5.986E-14	5.355E-13	4.308E-12	3.902E-11	2.123E-10	5.687E-10
U-234	Pb-210+D	1.000E+00	5.890E-17	8.660E-16	9.808E-15	2.409E-13	4.847E-12	9.632E-11	7.610E-10	2.316E-09
U-234	ΣDSR(j)		1.879E-07	1.871E-07	1.854E-07	1.798E-07	1.645E-07	1.209E-07	5.090E-08	5.340E-09

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	2.957E-08
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	7.041E-14
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	4.380E-09
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	3.271E-09
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.722E-08

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	4.023E-04	
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	1.433E-09	
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	3.725E-06	
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	1.083E-05	
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.169E-04	

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,5t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	1.631E-04	
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	4.781E-10	
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	1.511E-06	
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	4.385E-06	
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.690E-04	

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	4.461E-04	4.442E-04	4.402E-04	4.268E-04	3.906E-04	2.865E-04	1.182E-04	5.701E-04	
U-234	Th-230	1.000E+00	1.280E-09	3.265E-09	7.104E-09	2.028E-08	5.573E-08	1.577E-07	3.221E-07	4.082E-07	
U-234	Ra-226+D	1.000E+00	1.174E-11	1.085E-10	6.421E-10	5.987E-09	4.882E-08	4.444E-07	2.421E-06	9.290E-06	
U-234	Pb-210+D	1.000E+00	4.045E-13	5.295E-12	5.137E-11	1.106E-09	2.108E-08	4.102E-07	3.223E-06	2.248E-05	
U-234	ΣDSR(j)		4.461E-04	4.442E-04	4.402E-04	4.268E-04	3.908E-04	2.875E-04	1.241E-04	6.023E-04	

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	2.359E-04	2.348E-04	2.328E-04	2.257E-04	2.065E-04	1.515E-04	6.248E-05	1.563E-06
U-234	Th-230	1.000E+00	1.860E-11	3.421E-11	6.125E-11	1.540E-10	4.036E-10	1.122E-09	2.279E-09	1.684E-09
U-234	Ra-226+D	1.000E+00	1.298E-11	1.131E-10	6.528E-10	6.010E-09	4.880E-08	4.436E-07	2.415E-06	3.593E-06
U-234	Pb-210+D	1.000E+00	1.225E-13	1.473E-12	1.369E-11	2.870E-10	5.417E-09	1.050E-07	8.243E-07	1.390E-06
U-234	ΣDSR(j)		2.359E-04	2.348E-04	2.328E-04	2.257E-04	2.066E-04	1.520E-04	6.572E-05	6.547E-06

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	3.915E-07	3.898E-07	3.864E-07	3.746E-07	3.428E-07	2.514E-07	1.037E-07	4.673E-09
U-234	Th-230	1.000E+00	4.427E-14	1.036E-13	2.161E-13	6.021E-13	1.641E-12	4.630E-12	9.447E-12	1.259E-11
U-234	Ra-226+D	1.000E+00	1.964E-15	1.378E-14	7.259E-14	6.381E-13	5.103E-12	4.613E-11	2.508E-10	6.717E-10
U-234	Pb-210+D	1.000E+00	2.590E-17	3.801E-16	4.321E-15	1.064E-13	2.145E-12	4.264E-11	3.369E-10	1.025E-09
U-234	ΣDSR(j)		3.915E-07	3.898E-07	3.864E-07	3.746E-07	3.428E-07	2.515E-07	1.043E-07	6.382E-09

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	6.163E-08
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	5.433E-15
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	5.174E-09
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	1.436E-09
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.824E-08

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,4t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	8.386E-04
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	1.020E-10
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	4.400E-06
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	4.794E-06
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.478E-04

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,5t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.345E-03
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	1.395E-10
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	7.060E-06
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	7.676E-06
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.360E-03

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.094E-03	1.089E-03	1.079E-03	1.046E-03	9.575E-04	7.023E-04	2.897E-04	2.195E-03
U-234	Th-230	1.000E+00	1.156E-10	2.613E-10	5.349E-10	1.474E-09	4.001E-09	1.127E-08	2.299E-08	2.951E-08
U-234	Ra-226+D	1.000E+00	1.728E-11	1.433E-10	8.118E-10	7.408E-09	5.998E-08	5.446E-07	2.965E-06	1.653E-05
U-234	Pb-210+D	1.000E+00	1.793E-13	2.306E-12	2.316E-11	5.202E-10	1.012E-08	1.984E-07	1.563E-06	1.611E-05
U-234	ΣDSR(j)		1.094E-03	1.089E-03	1.079E-03	1.046E-03	9.576E-04	7.031E-04	2.942E-04	2.228E-03

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from the Ingestion of Fish (p=6)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,6,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.645E-04
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	1.012E-08
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	2.374E-06
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	2.970E-05
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.965E-04

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from the Ingestion of Drinking Water (p=7)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent	Product	Thread	DSR(j,7,t) At Time in Years (mrem/yr)/(pCi/g)								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	7.060E-01	
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	4.746E-06	
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	2.224E-03	
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	8.056E-03	
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.163E-01	

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

Area Factor for Mass Loading [FA(2)]: 1.448E-01

[illegible]

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Meat/Fodder, Milk/Fodder, Fodder/Air and Fodder/Water Concentration Ratios

FI(4,q): 68.0 kg/day FI(5,q): 55.0 kg/day q=1,2,3,4
 FI(4,q): 50.0 L/day FI(5,q): 160.0 L/day q=5
 FI(4,q): 0.5 kg/day FI(5,q):

Nuclide (i)	FQR(i,4) d/kg	FQR(i,5) d/kg	FAR(i,3,2,3) m**3/g	FWR(i,3,3,3) L/g	FWR(i,3,4,3) L/g
Pb-210	8.0000E-04	3.0000E-04	2.8659E-01	5.3329E-07	1.8139E-03
Ra-226	1.0000E-03	1.0000E-03	2.8659E-01	2.1329E-06	1.8139E-03
Th-230	1.0000E-04	5.0000E-06	2.8659E-01	5.3644E-08	1.8139E-03
U-234	3.4000E-04	6.0000E-04	2.8659E-01	1.3332E-07	1.8139E-03

FI(p,q) are the fodder (q=1,2,3,4), livestock water (q=5) and soil (q=6) intake rates;
 FQR(i,p) are the transfer coefficients from contaminated fodder of livestock
 water to meat (p=4) or milk (p=5). FAR(i,3,2,3) are the fodder/air
 concentration ratios, and FWR(i,3,3,3) and FWR(i,3,4,3) are the fodder/
 water concentration ratios for ditch and overhead irrigation, respectively.

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Milk/Soil Concentration Ratios, FSR(i,5,q,t)
Root Uptake (q=1) and Foliar Dust Deposition (q=2)

Nuclide(i)		FSR(i,5,1)	FSR(i,5,2)
Parent	Product		
U-234	U-234	8.2500E-05	1.3694E-07
U-234	Th-230	0.0000E+00	0.0000E+00
U-234	Ra-226+D	0.0000E+00	0.0000E+00
U-234	Pb-210+D	0.0000E+00	0.0000E+00

Milk/Soil Concentration Ratio, FSR(j,5,q,t)
Ditch Irrigation (q=3)

[illegible]

Milk/Soil Concentration Ratio, FSR(j,5,q,t)
Overhead Irrigation (q=4)

[illegible]

Milk/Soil Concentration Ratio, FSR(j,5,q,t)
Livestock Water (q=5)

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Soil Ingestion Pathway (p=8)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,8,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	7.730E-03	7.696E-03	7.628E-03	7.395E-03	6.768E-03	4.964E-03	2.047E-03	9.225E-05
U-234	Th-230	1.000E+00	6.742E-08	2.019E-07	4.690E-07	1.385E-06	3.852E-06	1.095E-05	2.238E-05	2.983E-05
U-234	Ra-226+D	1.000E+00	2.346E-11	1.638E-10	8.614E-10	7.564E-09	6.047E-08	5.466E-07	2.971E-06	7.958E-06
U-234	Pb-210+D	1.000E+00	9.978E-13	1.484E-11	1.697E-10	4.196E-09	8.465E-08	1.684E-06	1.330E-05	4.049E-05
U-234	ΣDSR(j)		7.730E-03	7.696E-03	7.628E-03	7.397E-03	6.772E-03	4.977E-03	2.086E-03	1.705E-04

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

Dose Conversion and Environmental Transport Factors for the Soil Ingestion Pathway (p=8)

Parent (i)	Product (j)	DCF(j,8)*	ETF(j,8,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01
U-234	Th-230	5.480E-04	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01
U-234	Ra-226+D	1.321E-03	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01
U-234	Pb-210+D	7.276E-03	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01

* - The dose conversion factor units are mrem/pCi.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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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	4
Summary of Pathway Selections	8
Contaminated Zone and Total Dose Summary	9
Total Dose Components	
Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
Time = 3.000E+02	16
Time = 1.000E+03	17
Dose/Source Ratios Summed Over All Pathways	18
Single Radionuclide Soil Guidelines	18
Dose Per Nuclide Summed Over All Pathways	19
Soil Concentration Per Nuclide	19

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 1250.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	At-213 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(11)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(12)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1(13)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(1)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(2)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(3)
B-1	U-234	1.320E-01	1.320E-01	DCF2(4)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(1)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(2)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(3)
D-1	U-234	2.830E-04	2.830E-04	DCF3(4)
D-34	Food transfer factors:			
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(2,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(2,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(2,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(4,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(4,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(4,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(2,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(2,2)

Summary : RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(4,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(4,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.

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

Summary : RESRAD Default Parameters Resident Farmer Scenario

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	1.250E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	5.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): U-234	1.700E+01	0.000E+00	---	S1(4)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(4)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+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)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.000E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	1.000E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	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)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 1250.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-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	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(4)
R016	Unsat. zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.426E-03	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.217E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.165E-03	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.704E-06	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	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	-1 shows non-circular AREA.	FS

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 1250.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	2.417E+00	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m), ring 2:	4.833E+00	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m), ring 3:	7.250E+00	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m), ring 4:	9.667E+00	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m), ring 5:	1.208E+01	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m), ring 6:	1.450E+01	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m), ring 7:	1.692E+01	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m), ring 8:	1.933E+01	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m), ring 9:	2.175E+01	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m), ring 10:	2.417E+01	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	2.658E+01	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	2.900E+01	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	1.000E+00	1.000E+00	---	FRACA(1)
R017	Ring 2	1.000E+00	2.732E-01	---	FRACA(2)
R017	Ring 3	1.000E+00	0.000E+00	---	FRACA(3)
R017	Ring 4	1.000E+00	0.000E+00	---	FRACA(4)
R017	Ring 5	1.000E+00	0.000E+00	---	FRACA(5)
R017	Ring 6	8.200E-01	0.000E+00	---	FRACA(6)
R017	Ring 7	6.000E-01	0.000E+00	---	FRACA(7)
R017	Ring 8	4.900E-01	0.000E+00	---	FRACA(8)
R017	Ring 9	4.200E-01	0.000E+00	---	FRACA(9)
R017	Ring 10	3.700E-01	0.000E+00	---	FRACA(10)
R017	Ring 11	2.200E-01	0.000E+00	---	FRACA(11)
R017	Ring 12	2.000E-02	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
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	0.625E-01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.625E-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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 1250.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	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
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 1250.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 1250.RAD

Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 1250.00 square meters	U-234 1.700E+01
Thickness: 1.50 meters	
Cover Depth: 0.00 meters	

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	1.310E+00	1.304E+00	1.293E+00	1.254E+00	1.148E+00	8.461E-01	3.715E-01	1.320E+01
M(t):	8.735E-02	8.697E-02	8.620E-02	8.358E-02	7.653E-02	5.641E-02	2.477E-02	8.800E-01

Maximum TDOSE(t): 1.320E+01 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 1250.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-234	3.793E-03	0.0029	1.155E-01	0.0882	0.000E+00	0.0000	1.045E+00	0.7973	4.309E-03	0.0033	1.056E-02	0.0081	1.314E-01	0.1003
Total	3.793E-03	0.0029	1.155E-01	0.0882	0.000E+00	0.0000	1.045E+00	0.7973	4.309E-03	0.0033	1.056E-02	0.0081	1.314E-01	0.1003

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- 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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.310E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.310E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 1250.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- 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.
U-234	3.777E-03	0.0029	1.150E-01	0.0882	0.000E+00	0.0000	1.040E+00	0.7973	4.290E-03	0.0033	1.052E-02	0.0081	1.308E-01	0.1003
Total	3.777E-03	0.0029	1.150E-01	0.0882	0.000E+00	0.0000	1.040E+00	0.7973	4.290E-03	0.0033	1.052E-02	0.0081	1.308E-01	0.1003

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- 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.
U-234	0.000E+00	0.0000	0.000E+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	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.304E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 1250.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-234	3.746E-03	0.0029	1.140E-01	0.0882	0.000E+00	0.0000	1.031E+00	0.7973	4.252E-03	0.0033	1.042E-02	0.0081	1.297E-01	0.1003
Total	3.746E-03	0.0029	1.140E-01	0.0882	0.000E+00	0.0000	1.031E+00	0.7973	4.252E-03	0.0033	1.042E-02	0.0081	1.297E-01	0.1003

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

Water Dependent Pathways

Radio- 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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.293E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.293E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 1250.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-234	3.651E-03	0.0029	1.105E-01	0.0882	0.000E+00	0.0000	9.995E-01	0.7973	4.123E-03	0.0033	1.011E-02	0.0081	1.257E-01	0.1003
Total	3.651E-03	0.0029	1.105E-01	0.0882	0.000E+00	0.0000	9.995E-01	0.7973	4.123E-03	0.0033	1.011E-02	0.0081	1.257E-01	0.1003

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

Water Dependent Pathways

Radio- 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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.254E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.254E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	3.495E-03	0.0030	1.012E-01	0.0882	0.000E+00	0.0000	9.151E-01	0.7971	3.774E-03	0.0033	9.249E-03	0.0081	1.151E-01	0.1003
Total	3.495E-03	0.0030	1.012E-01	0.0882	0.000E+00	0.0000	9.151E-01	0.7971	3.774E-03	0.0033	9.249E-03	0.0081	1.151E-01	0.1003

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

Water Dependent Pathways

Radio- 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.
U-234	0.000E+00	0.0000	0.000E+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+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.148E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 1250.RAD

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-234	3.987E-03	0.0047	7.440E-02	0.0879	0.000E+00	0.0000	6.736E-01	0.7961	2.777E-03	0.0033	6.791E-03	0.0080	8.462E-02	0.1000
Total	3.987E-03	0.0047	7.440E-02	0.0879	0.000E+00	0.0000	6.736E-01	0.7961	2.777E-03	0.0033	6.791E-03	0.0080	8.462E-02	0.1000

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- 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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.461E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.461E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-234	9.410E-03	0.0253	3.103E-02	0.0835	0.000E+00	0.0000	2.915E-01	0.7848	1.199E-03	0.0032	2.842E-03	0.0076	3.546E-02	0.0955
Total	9.410E-03	0.0253	3.103E-02	0.0835	0.000E+00	0.0000	2.915E-01	0.7848	1.199E-03	0.0032	2.842E-03	0.0076	3.546E-02	0.0955

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

Water Dependent Pathways

Radio- 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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.715E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.715E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-234	2.247E-02	0.0017	1.953E-03	0.0001	0.000E+00	0.0000	2.955E-02	0.0022	1.588E-04	0.0000	1.983E-04	0.0000	2.899E-03	0.0002
Total	2.247E-02	0.0017	1.953E-03	0.0001	0.000E+00	0.0000	2.955E-02	0.0022	1.588E-04	0.0000	1.983E-04	0.0000	2.899E-03	0.0002

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

Water Dependent Pathways

Radio- 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.
U-234	1.218E+01	0.9225	1.898E-03	0.0001	0.000E+00	0.0000	9.368E-01	0.0710	5.659E-03	0.0004	2.132E-02	0.0016	1.320E+01	1.0000
Total	1.218E+01	0.9225	1.898E-03	0.0001	0.000E+00	0.0000	9.368E-01	0.0710	5.659E-03	0.0004	2.132E-02	0.0016	1.320E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	7.707E-02	7.673E-02	7.606E-02	7.373E-02	6.749E-02	4.950E-02	2.041E-02	7.626E-01
U-234	Th-230	1.000E+00	3.807E-07	1.104E-06	2.534E-06	7.441E-06	2.065E-05	5.864E-05	1.199E-04	1.227E-04
U-234	Ra-226+D	1.000E+00	6.625E-09	4.741E-08	2.521E-07	2.226E-06	1.783E-05	1.613E-04	8.770E-04	4.299E-03
U-234	Pb-210+D	1.000E+00	4.497E-11	5.807E-10	6.097E-09	1.429E-07	2.830E-06	5.590E-05	4.410E-04	9.475E-03
U-234	ΣDSR(j)		7.707E-02	7.673E-02	7.606E-02	7.374E-02	6.753E-02	4.977E-02	2.185E-02	7.765E-01

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

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Nuclide (i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234		1.946E+02	1.955E+02	1.972E+02	2.034E+02	2.221E+02	3.014E+02	6.864E+02	1.932E+01

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

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
U-234	1.700E+01	1.000E+03	7.765E-01	1.932E+01	7.765E-01	1.932E+01

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.310E+00	1.304E+00	1.293E+00	1.253E+00	1.147E+00	8.415E-01	3.470E-01	1.296E-01
Th-230	U-234	1.000E+00	6.472E-06	1.877E-05	4.308E-05	1.265E-04	3.510E-04	9.969E-04	2.038E-03	2.086E-03
Ra-226	U-234	1.000E+00	1.126E-07	8.060E-07	4.285E-06	3.784E-05	3.031E-04	2.742E-03	1.491E-02	7.309E-02
Pb-210	U-234	1.000E+00	7.645E-10	9.873E-09	1.037E-07	2.430E-06	4.811E-05	9.503E-04	7.496E-03	1.611E-01

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.700E+01	1.692E+01	1.678E+01	1.626E+01	1.489E+01	1.092E+01	4.503E+00	2.029E-01
Th-230	U-234	1.000E+00	0.000E+00	1.527E-04	4.561E-04	1.497E-03	4.298E-03	1.236E-02	2.535E-02	3.381E-02
Ra-226	U-234	1.000E+00	0.000E+00	3.306E-08	2.959E-07	3.227E-06	2.754E-05	2.547E-04	1.394E-03	3.741E-03
Pb-210	U-234	1.000E+00	0.000E+00	3.399E-10	8.991E-09	3.103E-07	6.906E-06	1.421E-04	1.133E-03	3.455E-03

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

RESCALC.EXE execution time = 3.52 seconds

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 1250.RAD

Table of ContentsPart II: Source Terms, Factors, and Parameters for Individual Pathways

Source Factors for Ingrowth and Decay

Radioactivity Only	3
Combined Radioactivity and Leaching	3

Ground Pathway

Source Term Parameters	4
Time Dependence of Source Geometry	4
Occupancy, Cover/Depth, and Area Factors	5
Dose Conversion and Environmental Transport Factors .	6
Dose/Source Ratios	6

Inhalation Pathway (radon excluded)

Dose/Source Ratios	7
Pathway Factors	7
Dose Conversion and Environmental Transport Factors .	7

Radon Pathway

Flux and Parameters	8
Concentration and Parameters	9
Working Levels	10
Dose/Source Ratios	11

Groundwater and Surface Water Pathway Segments

Transport Time Parameters for Unsaturated Zone Strata	12
Dilution Factor and Rise Time Parameters for	
Nondispersion (ND) Model	13
Primary Parameters Used to Calculate Ratios	13
Water/Soil Concentration Ratios	14

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 1250.RAD

Table of Contents (cont.)

Part II: Source Terms, Factors, and Parameters for Individual Pathways

Food Pathways

Storage Times for Contaminated Foodstuffs	15
Storage Time Ingrowth and Decay Factors	15
Storage Correction Factors	
Drinking Water	16
Irrigation Water	16
Livestock Water	17
Plants	18
Livestock Fodder	18
Meat and Milk	19
Fish and Crustacea	20
Area and Depth Factors	21
Dose Conversion and Environmental Transport Factors	
Plant	23
Meat	24
Milk	26
Fish	28
Drinking Water	28
Dose/Source Ratios	
Plant	29
Plant Total	30
Meat	31
Meat Total	32
Milk	33
Milk Total	34
Fish	35
Drinking Water	36
Concentration Ratios	
Plant/Air and Plant/Water	37
Plant/Soil	37
Meat/Fodder, Fodder/Air, Fodder/Water	39
Fodder/Soil	40
Meat/Soil	41
Milk/Soil	42

Soil Ingestion Pathway

Dose/Source Ratios.....	43
Dose Conversion and Environmental Transport Factors .	43

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 1250.RAD

Source Factors for Ingrowth and Decay
Radioactivity Factors Only
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	ID(j,t) = THF(j)*SI(j,t)/SI(i,0) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.997E-01	9.991E-01	9.972E-01
U-234	Th-230	1.000E+00	0.000E+00	9.002E-06	2.701E-05	9.001E-05	2.700E-04	8.997E-04	2.696E-03	8.949E-03
U-234	Ra-226+D	1.000E+00	0.000E+00	1.950E-09	1.754E-08	1.947E-07	1.747E-06	1.921E-05	1.679E-04	1.689E-03
U-234	Pb-210+D	1.000E+00	0.000E+00	2.004E-11	5.328E-10	1.870E-08	4.373E-07	1.068E-05	1.363E-04	1.591E-03

Source Factors for Ingrowth and Decay
Combined Radioactivity and Leaching Factors
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	SF(j,t) = THF(j)*SI(j,t)/SI(i,0) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	9.956E-01	9.868E-01	9.567E-01	8.756E-01	6.422E-01	2.649E-01	1.193E-02
U-234	Th-230	1.000E+00	0.000E+00	8.982E-06	2.683E-05	8.805E-05	2.528E-04	7.268E-04	1.491E-03	1.989E-03
U-234	Ra-226+D	1.000E+00	0.000E+00	1.945E-09	1.741E-08	1.898E-07	1.620E-06	1.498E-05	8.200E-05	2.200E-04
U-234	Pb-210+D	1.000E+00	0.000E+00	2.000E-11	5.289E-10	1.825E-08	4.062E-07	8.358E-06	6.663E-05	2.032E-04

The effect of volatilization was also considered when computing the source factors for H-3 and C-14.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 1250.RAD

Parameters Used for Calculating Cover Depth and Contaminated Zone Thicknesses

Cover Erosion rate (vcv): 0.001000 m/yr
 Contaminated Zone Erosion rate (vcz): 0.001000 m/yr
 Water Table Drop rate (vwt): 0.001000 m/yr
 Precipitation rate (Pr): 1.000000 m/yr
 Cover Removal Time (Tc): 0.000E+00 yr
 Overhead irrigation rate (Irr): 0.200 m/yr Runoff coefficient (Cr): 0.200
 Evapotranspiration coeff. (Ce): 0.500 Infiltration rate (In): 0.500 m/yr
 Bulk soil density (rhob): 1.500 g/cm**3 Effective porosity (pe): 0.000

Radio-nuclide (i)	Distribution Coefficient Kd(i), cm**3/g	Leaching Ratio q(i)
Pb-210	1.000000E+02	2.135E-03
Ra-226	7.000000E+01	3.047E-03
Th-230	6.000000E+04	3.566E-06
U-234	5.000000E+01	4.261E-03

Time Dependence of Source Geometry

Time Dependence of Cover Depth [Cd(i,t)]

Nuclide		Cd(i,t) (meters)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
Ra-226	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
Th-230	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
U-234	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Time Dependence of Contaminated Zone Thicknesses [T(i,t)]

Nuclide		T(i,t) (meters)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01	
Ra-226	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01	
Th-230	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01	
U-234	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01	

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Ground Pathway (p=1)

Nuclide (i)	DCF(i,1)*	ETFG(i,t) At Time in Years (dimensionless)							
		t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
At-218	5.847E-03	5.517E-01	5.517E-01	5.517E-01	5.517E-01	5.517E-01	5.517E-01	5.517E-01	5.517E-01
Bi-210	3.606E-03	5.404E-01	5.404E-01	5.404E-01	5.404E-01	5.404E-01	5.404E-01	5.404E-01	5.404E-01
Bi-214	9.808E+00	5.362E-01	5.362E-01	5.362E-01	5.362E-01	5.362E-01	5.362E-01	5.362E-01	5.344E-01
Pb-210	2.447E-03	5.553E-01	5.553E-01	5.553E-01	5.553E-01	5.553E-01	5.553E-01	5.553E-01	5.553E-01
Pb-214	1.341E+00	5.404E-01	5.404E-01	5.404E-01	5.404E-01	5.404E-01	5.404E-01	5.404E-01	5.403E-01
Po-210	5.231E-05	5.345E-01	5.345E-01	5.345E-01	5.345E-01	5.345E-01	5.345E-01	5.345E-01	5.340E-01
Po-214	5.138E-04	5.315E-01	5.315E-01	5.315E-01	5.315E-01	5.315E-01	5.315E-01	5.315E-01	5.308E-01
Po-218	5.642E-05	5.345E-01	5.345E-01	5.345E-01	5.345E-01	5.345E-01	5.345E-01	5.345E-01	5.339E-01
Ra-226	3.176E-02	5.489E-01	5.489E-01	5.489E-01	5.489E-01	5.489E-01	5.489E-01	5.489E-01	5.489E-01
Rn-222	2.354E-03	5.323E-01	5.323E-01	5.323E-01	5.323E-01	5.323E-01	5.323E-01	5.323E-01	5.320E-01
Th-230	1.209E-03	5.505E-01	5.505E-01	5.505E-01	5.505E-01	5.505E-01	5.505E-01	5.505E-01	5.505E-01
Tl-210	0.000E+00	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01	6.000E-01
U-234	4.017E-04	5.567E-01	5.567E-01	5.567E-01	5.567E-01	5.567E-01	5.567E-01	5.567E-01	5.567E-01

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

Dose/Source Ratios for External Radiation from the Ground (p=1)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,1,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	2.231E-04	2.221E-04	2.202E-04	2.135E-04	1.954E-04	1.433E-04	5.910E-05	2.663E-06
U-234	Th-230	1.000E+00	2.991E-09	8.956E-09	2.081E-08	6.146E-08	1.709E-07	4.857E-07	9.931E-07	1.324E-06
U-234	Ra-226+D	1.000E+00	3.893E-09	2.719E-08	1.430E-07	1.255E-06	1.004E-05	9.073E-05	4.932E-04	1.317E-03
U-234	Pb-210+D	1.000E+00	1.671E-14	2.484E-13	2.842E-12	7.026E-11	1.417E-09	2.819E-08	2.228E-07	6.780E-07
U-234	ΣDSR(j)		2.231E-04	2.222E-04	2.203E-04	2.148E-04	2.056E-04	2.345E-04	5.535E-04	1.322E-03

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Inhalation Pathway, Excluding Radon (p=2)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,2,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	6.795E-03	6.765E-03	6.706E-03	6.501E-03	5.950E-03	4.364E-03	1.800E-03	8.110E-05
U-234	Th-230	1.000E+00	7.559E-08	2.263E-07	5.258E-07	1.553E-06	4.319E-06	1.227E-05	2.510E-05	3.345E-05
U-234	Ra-226+D	1.000E+00	2.876E-13	2.009E-12	1.056E-11	9.275E-11	7.416E-10	6.703E-09	3.644E-08	9.759E-08
U-234	Pb-210+D	1.000E+00	5.995E-15	8.914E-14	1.020E-12	2.521E-11	5.086E-10	1.012E-08	7.994E-08	2.433E-07
U-234	ΣDSR(j)		6.795E-03	6.766E-03	6.706E-03	6.503E-03	5.954E-03	4.376E-03	1.825E-03	1.149E-04

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

Pathway Factors for the Inhalation Pathway (radon excluded)

Area (A):	1.2500E+03 m**2	Occupancy Factor (FO2):	4.5000E-01
Area Factor (FA2):	1.3649E-01	Annual Air Intake (FI2):	8.4000E+03 m**3/yr
Cover Depth [Cd(0)]:	0.0000E+00 m	Mass Loading (ASR2):	1.0000E-04 g/m**3
Contaminated Zone Thickness [T(0)]:	1.5000E+00 m	FA2 * FO2 * FI2 * ASR2:	5.1594E-02 g/yr

Nuclide (i)	t=	Depth Factor [FD(i,2,t)] (dimensionless)							
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00

Dose Conversion and Environmental Transport Factors for the Inhalation Pathway, Excluding Radon (p=2)

Parent (i)	Product (j)	DCF(j,2)*	ETF(j,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.320E-01	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02
U-234	Th-230	3.260E-01	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02
U-234	Ra-226+D	8.594E-03	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02
U-234	Pb-210+D	2.320E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02	5.159E-02

* - The dose conversion factor units are mrem/pCi.

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Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Outdoor Working Levels of Radon [WLOTD(i,t)]

Nuclide		WLOTD(i,t) (WL)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Indoor Working Levels of Radon [WLIND(i,t)]

Nuclide		WLIND(i,t) (WL)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Fraction of Time Spent Outdoors (FOTD): 2.500E-01

Fraction of Time Spent Indoors (FIND): 5.000E-01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Radon Pathway (p=9)

Subpathway: Outdoor and Indoor Radon Flux

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,9,t) - DSRRNW(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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
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
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
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
U-234	ΣDSR(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

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

Dose/Source Ratios for Radon Pathway (p=9)

Subpathway: Indoor Radon from Water Usage

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSRRNW(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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
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
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
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
U-234	ΣDSR(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

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Transport Time Parameters for Unsaturated Zone Stratum No. 1

Stratum thickness [h(1)]: 4.000000 m
 Bulk soil material density [rhob(1)]: 1.500000 g/cm**3
 Effective porosity [peuz(1)]: 0.200000
 Hydraulic conductivity [Khuz(1)]: 10.000000 m/yr
 Total porosity [ptuz(1)]: 0.400000
 Soil specific b parameter [buz(1)]: 5.300000
 Saturation ratio [sruz(1)]: 0.802299

Radio-nuclide (i)	Distribution Coefficient Kduz(i,1), cm**3/g	Retardation Factor Rduz(i,1)	Transport Time Dtuz(i,1), yr
Pb-210	1.0000E+02	4.6841E+02	6.0128E+02
Ra-226	7.0000E+01	3.2818E+02	4.2128E+02
Th-230	6.0000E+04	2.8045E+05	3.6000E+05
U-234	5.0000E+01	2.3470E+02	3.0128E+02

Transport Time Parameters for Unsaturated Zone created by the Falling Water Table

Water table drop rate [vwt]: 0.001000 m/yr
 Bulk soil material density [rhobaq]: 1.500000 g/cm**3
 Effective porosity [peaq]: 0.200000
 Hydraulic conductivity [Khaq]: 100.000000 m/yr
 Total porosity [ptaq]: 0.400000
 Soil specific b parameter [baq]: 5.300000
 Saturation ratio [sruaq]: 0.677340

Radio-nuclide (i)	Distribution Coefficient Kdaq(i), cm**3/g	Retardation Factor Rduaq(i)	Minimum Transport Time Dtuaq(i), yr
Pb-210	1.0000E+02	5.5464E+02	1.0633E+02
Ra-226	7.0000E+01	3.8855E+02	4.9567E+01
Th-230	6.0000E+04	3.3218E+05	Infinite
U-234	5.0000E+01	2.7782E+02	2.4524E+01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dilution Factor and Rise Time Parameters for Nondispersion (ND) Model

Aquifer contamination depth at well (z): 1.25000E+01 m
 Depth of water intake below water table (dw): 1.00000E+01 m
 Infiltration rate (In): 5.00000E-01 m/yr
 Aquifer water flow rate (Vwfr): 2.00000E+00 m/yr
 Hydraulic gradient (J): 2.00000E-02
 Hydraulic conductivity of aquifer (Kszh): 1.00000E+02 m/yr
 Contaminated zone extent parallel to gradient (l): 5.00000E-01 m
 Distance below contaminated zone to water table (h): 0.40000E-01 m
 Initial thickness of uncontaminated cover (Cd): 0.00000E-00 m
 Initial thickness of contaminated zone (T): 0.15000E-01 m
 Effective porosity of saturated zone (pesz): 0.20000E-00

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdsz(i)	Horizontal Transport Time Onsite Tauh(i), yr	Rise Time dt(i), yr	Decay Time Parameter 1/lamda(i),yr
Pb-210	1.000E+00	3.760E+02	1.880E+03	1.504E+03	3.217E+01
Ra-226	1.000E+00	2.635E+02	1.318E+03	1.054E+03	2.308E+03
Th-230	1.000E+00	2.250E+05	1.125E+06	9.000E+05	1.111E+05
U-234	1.000E+00	1.885E+02	9.425E+02	7.540E+02	3.527E+05

Primary Parameters Used for Calculating Water/Soil
Concentration Ratios for Groundwater Pathway Segment

Model used: Nondispersion (ND)

Bulk soil density in contaminated zone (rhob): 1.500 g/cm**3

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdcz(i)	Breakthrough Time Chain year	Single Nuclide Dt(i), yr	Rise Time dt(i), yr
Pb-210	1.000E+00	4.684E+02	3.258E+02	7.076E+02	1.504E+03
Ra-226	1.000E+00	3.282E+02	3.258E+02	4.709E+02	1.054E+03
Th-230	1.000E+00	2.804E+05	3.258E+02	Infinite	9.000E+05
U-234	1.000E+00	2.347E+02	3.258E+02	3.258E+02	7.540E+02

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Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Times For Contaminated Foodstuffs

k	Food Item	STOR_T(k), days
1	non-leafy plants	14.
2	leafy plants	1.
3	milk	1.
4	meat	20.
5	fish	7.
6	crustacea	7.
7	well water	1.
8	surface water	1.
9	livestock fodder	45.

Storage Time Ingrowth and Decay Factors

Storage Time for k'th Foodstuff: $t = \text{STOR_T}(k)$, days

Parent (i)	Product (j)	Thread Fraction	STOR_ID(i,j,t) = CONCE(i,j,t)/CONCE(i,i,0)									
			t= 1.400E+01	1.000E+00	1.000E+00	2.000E+01	7.000E+00	7.000E+00	1.000E+00	1.000E+00	4.500E+01	
Pb-210	Pb-210	1.000E+00	9.988E-01	9.999E-01	9.999E-01	9.983E-01	9.994E-01	9.994E-01	9.999E-01	9.999E-01	9.962E-01	
Ra-226	Ra-226	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	
Ra-226	Pb-210	1.000E+00	1.191E-03	8.510E-05	8.510E-05	1.701E-03	5.955E-04	5.955E-04	8.510E-05	8.510E-05	3.822E-03	
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
Th-230	Ra-226	1.000E+00	1.661E-05	1.186E-06	1.186E-06	2.372E-05	8.303E-06	8.303E-06	1.186E-06	1.186E-06	5.337E-05	
Th-230	Pb-210	1.000E+00	9.888E-09	5.047E-11	5.047E-11	2.018E-08	2.472E-09	2.472E-09	5.047E-11	5.047E-11	1.021E-07	
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
U-234	Th-230	1.000E+00	3.450E-07	2.465E-08	2.465E-08	4.929E-07	1.725E-07	1.725E-07	2.465E-08	2.465E-08	1.109E-06	
U-234	Ra-226	1.000E+00	2.865E-12	1.462E-14	1.462E-14	5.846E-12	7.162E-13	7.162E-13	1.462E-14	1.462E-14	2.960E-11	
U-234	Pb-210	1.000E+00	1.137E-15	4.146E-19	4.146E-19	3.315E-15	1.422E-16	1.422E-16	4.146E-19	4.146E-19	3.774E-14	

CONCE(i,j,t)/CONCE(i,i,0) is the concentration ratio of Product(j) at time t to Parent(i) at start of storage time.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors
 Drinking Water from Well and/or Surface
 Harvest Time = $t - 2.74E-03$ yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,1) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.007E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Nonleafy Plants from Well and/or Surface
 Harvest Time = $t - 4.11E-02$ yr; Consumption Time = $t - 3.83E-02$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,2) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.007E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
 Irrigation Water for Leafy Plants from Well and/or Surface
 Harvest Time = $t - 5.48E-03$ yr; Consumption Time = $t - 2.74E-03$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,3) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.007E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors

Irrigation Water for Livestock (Milk) Fodder from Well and/or Surface

Harvest Time = t - 1.29E-01 yr; Consumption Time = t - 1.26E-01 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,5)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.007E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Irrigation Water for Livestock (Meat) Fodder from Well and/or Surface

Harvest Time = t - 1.81E-01 yr; Consumption Time = t - 1.78E-01 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,7)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.007E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Livestock (Milk) Water from Well and/or Surface

Harvest Time = t - 5.48E-03 yr; Consumption Time = t - 2.74E-03 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,4)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.007E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors

Livestock (Meat) Water from Well and/or Surface

Harvest Time = t - 5.75E-02 yr; Consumption Time = t - 5.48E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,6)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.007E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Nonleafy Plants

Harvest Time = t - 3.83E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.100E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Leafy Plants

Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.007E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Livestock (Meat) Fodder

Harvest Time = t - 1.78E-01 yr; Consumption Time = t - 5.48E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors for Livestock (Meat) Fodder

Harvest Time = t - 1.78E-01 yr; Consumption Time = t - 5.48E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.373E+00	1.108E+00	1.031E+00	1.010E+00	1.002E+00	1.000E+00	1.009E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.009E+00	1.002E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	2.809E+00	1.531E+00	1.158E+00	1.057E+00	1.024E+00	1.015E+00	1.004E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Livestock (Milk) Fodder

Harvest Time = t - 1.26E-01 yr; Consumption Time = t - 2.74E-03 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.351E+00	1.106E+00	1.030E+00	1.010E+00	1.002E+00	1.000E+00	1.009E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.008E+00	1.002E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	2.702E+00	1.521E+00	1.157E+00	1.057E+00	1.024E+00	1.015E+00	1.004E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Meat

Harvest Time = t - 5.48E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF45(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.227E+00	1.074E+00	1.022E+00	1.007E+00	1.002E+00	1.000E+00	1.001E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.003E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.319E+00	1.149E+00	1.054E+00	1.021E+00	1.009E+00	1.005E+00	1.002E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Milk

Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF45(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.371E+00	1.124E+00	1.037E+00	1.012E+00	1.003E+00	1.001E+00	1.004E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.041E+00	1.019E+00	1.007E+00	1.003E+00	1.001E+00	1.001E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors for Fish & Crustacea
Harvest Time = t - 1.92E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CFF(j,1,t) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.005E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.996E-01

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

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Area and Depth Factors for Plant (p=3), Meat (p=4), and Milk (p=5) Pathways
Root Uptake from Contaminated Soil (q=1)

Area Factor for Plant Foods [FA(3)] = 0.50

[illegible]

Area and Depth Factors for Plant (p=3), Meat (p=4), and Milk (p=5) Pathways
Foliar Uptake from Contaminated Dust (q=2)

Area Factor for Plant Foods [FA(3)] = 0.50

[illegible]

Area and Depth Factors for Plant (p=3), Meat (p=4), and Milk (p=5) Pathways
Ditch Irrigation (q=3)

Area Factor for Plant Foods [FA(3)] = 0.50

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Area and Depth Factors for Plant (p=3), Meat (p=4), and Milk (p=5) Pathways
Overhead Irrigation (q=4)

Area Factor for Plant Foods [FA(3)] = 0.50

The Depth Factor Value

$FD(i,p,q,t) = 1.0000E+00$

is applicable for all radionuclides(i) and times(t).

Area and Depth Factors for Meat (p=4) and Milk (p=5) Pathways
Transfer from Livestock Water (q=5) and Soil (q=6) Intake

Area Factor for Meat and Milk [FA(p),p=4,5] = 0.06

The livestock water subpathway (q=5) and livestock soil intake subpathway (q=6)
occur only for the meat (p=4) and milk (p=5) pathways.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	2.175E+02	2.166E+02	2.147E+02	2.081E+02	1.905E+02	1.397E+02	5.762E+01	1.442E+00
U-234	Th-230	5.480E-04	0.000E+00	8.229E-04	2.375E-03	7.700E-03	2.203E-02	6.326E-02	1.297E-01	9.612E-02
U-234	Ra-226+D	1.321E-03	0.000E+00	6.311E-06	5.920E-05	6.561E-04	5.625E-03	5.212E-02	2.853E-01	4.254E-01
U-234	Pb-210+D	7.276E-03	0.000E+00	2.252E-08	5.088E-07	1.642E-05	3.581E-04	7.315E-03	5.821E-02	9.860E-02

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	8.455E-02	8.419E-02	8.345E-02	8.090E-02	7.404E-02	5.431E-02	2.240E-02	1.009E-03
U-234	Th-230	5.480E-04	0.000E+00	7.594E-07	2.268E-06	7.445E-06	2.138E-05	6.145E-05	1.261E-04	1.681E-04
U-234	Ra-226+D	1.321E-03	0.000E+00	1.645E-10	1.472E-09	1.605E-08	1.370E-07	1.267E-06	6.934E-06	1.861E-05
U-234	Pb-210+D	7.276E-03	0.000E+00	1.692E-12	4.473E-11	1.543E-09	3.435E-08	7.067E-07	5.634E-06	1.719E-05

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.251E-01
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.191E-07
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.349E-03
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.229E-04

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.918E+02
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.131E-04
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.292E-01
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.502E-02

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	2.276E-01	2.268E-01	2.248E-01	2.179E-01	1.994E-01	1.463E-01	6.033E-02	1.511E-03
U-234	Th-230	5.480E-04	0.000E+00	3.835E-07	8.600E-07	2.495E-06	6.896E-06	1.955E-05	3.996E-05	2.959E-05
U-234	Ra-226+D	1.321E-03	0.000E+00	1.421E-08	1.654E-07	1.964E-06	1.716E-05	1.600E-04	8.775E-04	1.310E-03
U-234	Pb-210+D	7.276E-03	0.000E+00	9.105E-11	1.725E-09	4.624E-08	9.330E-07	1.849E-05	1.460E-04	2.468E-04

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	3.561E-04	3.548E-04	3.517E-04	3.410E-04	3.121E-04	2.289E-04	9.440E-05	4.253E-06
U-234	Th-230	5.480E-04	0.000E+00	1.064E-09	2.932E-09	9.341E-09	2.659E-08	7.620E-08	1.562E-07	2.083E-07
U-234	Ra-226+D	1.321E-03	0.000E+00	1.844E-12	1.765E-11	1.970E-10	1.692E-09	1.569E-08	8.590E-08	2.306E-07
U-234	Pb-210+D	7.276E-03	0.000E+00	1.726E-14	4.490E-13	1.536E-11	3.411E-10	7.011E-09	5.588E-08	1.704E-07

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.936E-05
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.298E-11
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.881E-06
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.550E-07

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.076E-01
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.485E-06
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.600E-03
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.447E-04

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,5,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.274E-01
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.953E-07
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.488E-04
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.419E-04

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	4.744E-01	4.725E-01	4.684E-01	4.541E-01	4.156E-01	3.048E-01	1.257E-01	3.148E-03
U-234	Th-230	5.480E-04	0.000E+00	2.843E-08	5.652E-08	1.529E-07	4.123E-07	1.158E-06	2.361E-06	1.747E-06
U-234	Ra-226+D	1.321E-03	0.000E+00	1.896E-08	2.026E-07	2.344E-06	2.033E-05	1.891E-04	1.037E-03	1.547E-03
U-234	Pb-210+D	7.276E-03	0.000E+00	3.589E-11	6.894E-10	1.951E-08	4.046E-07	8.109E-06	6.420E-05	1.086E-04

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	7.423E-04	7.394E-04	7.329E-04	7.105E-04	6.503E-04	4.770E-04	1.967E-04	8.863E-06
U-234	Th-230	5.480E-04	0.000E+00	7.363E-11	1.839E-10	5.620E-10	1.580E-09	4.507E-09	9.227E-09	1.230E-08
U-234	Ra-226+D	1.321E-03	0.000E+00	2.394E-12	2.151E-11	2.348E-10	2.005E-09	1.854E-08	1.015E-07	2.723E-07
U-234	Pb-210+D	7.276E-03	0.000E+00	7.565E-15	1.976E-13	6.789E-12	1.509E-10	3.104E-09	2.474E-08	7.547E-08

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.237E-04
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.631E-12
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.222E-06
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.119E-07

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.683E+00
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.057E-07
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.890E-03
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.737E-04

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,5,t) * SF(j,t) At Time in Years (g/yr)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.700E+00	
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.446E-07	
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.033E-03	
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.985E-04	

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Fish Pathway (p=6)

Parent (i)	Product (j)	DCF(j,6)*	ETF(j,6,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.302E-01
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.048E-05
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.020E-03
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.316E-03

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Drinking Water Pathway (p=7)

Parent (i)	Product (j)	DCF(j,7)*	ETF(j,7,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.495E+03
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.652E-03
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.681E+00
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.105E+00

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	6.142E-02	6.115E-02	6.062E-02	5.877E-02	5.378E-02	3.945E-02	1.627E-02	4.069E-04
U-234	Th-230	1.000E+00	2.337E-07	6.642E-07	1.513E-06	4.425E-06	1.226E-05	3.480E-05	7.114E-05	5.262E-05
U-234	Ra-226+D	1.000E+00	2.691E-09	1.991E-08	1.074E-07	9.553E-07	7.671E-06	6.944E-05	3.777E-04	5.615E-04
U-234	Pb-210+D	1.000E+00	4.361E-11	5.612E-10	5.881E-09	1.377E-07	2.725E-06	5.382E-05	4.246E-04	7.169E-04
U-234	ΣDSR(j)		6.142E-02	6.116E-02	6.062E-02	5.877E-02	5.381E-02	3.961E-02	1.714E-02	1.738E-03

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	2.388E-05	2.377E-05	2.356E-05	2.284E-05	2.091E-05	1.533E-05	6.325E-06	2.850E-07
U-234	Th-230	1.000E+00	2.082E-10	6.235E-10	1.448E-09	4.279E-09	1.190E-08	3.381E-08	6.913E-08	9.214E-08
U-234	Ra-226+D	1.000E+00	7.249E-14	5.060E-13	2.661E-12	2.336E-11	1.868E-10	1.688E-09	9.178E-09	2.458E-08
U-234	Pb-210+D	1.000E+00	3.086E-15	4.584E-14	5.243E-13	1.296E-11	2.615E-10	5.200E-09	4.110E-08	1.251E-07
U-234	ΣDSR(j)		2.388E-05	2.377E-05	2.356E-05	2.285E-05	2.092E-05	1.538E-05	6.444E-06	5.268E-07

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	3.540E-05
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	1.202E-10
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	1.784E-06
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	1.625E-06
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.881E-05

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,4t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	5.427E-02
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	3.911E-07
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	1.709E-04
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	6.195E-04
U-234	ΣDSR(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	5.507E-02

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	6.145E-02	6.118E-02	6.064E-02	5.879E-02	5.381E-02	3.946E-02	1.628E-02	5.472E-02	
U-234	Th-230	1.000E+00	2.339E-07	6.649E-07	1.514E-06	4.429E-06	1.227E-05	3.484E-05	7.121E-05	5.311E-05	
U-234	Ra-226+D	1.000E+00	2.691E-09	1.991E-08	1.074E-07	9.553E-07	7.671E-06	6.944E-05	3.777E-04	7.342E-04	
U-234	Pb-210+D	1.000E+00	4.362E-11	5.613E-10	5.881E-09	1.377E-07	2.726E-06	5.383E-05	4.246E-04	1.338E-03	
U-234	ΣDSR(j)		6.145E-02	6.118E-02	6.064E-02	5.879E-02	5.383E-02	3.962E-02	1.715E-02	5.684E-02	

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent	Product	Thread	DSR(j,4,1t) At Time in Years (mrem/yr)/(pCi/g)								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	6.431E-05	6.403E-05	6.347E-05	6.153E-05	5.631E-05	4.130E-05	1.704E-05	4.261E-07	
U-234	Th-230	1.000E+00	1.330E-10	2.756E-10	5.362E-10	1.430E-09	3.836E-09	1.076E-08	2.191E-08	1.620E-08	
U-234	Ra-226+D	1.000E+00	5.213E-12	5.058E-11	3.046E-10	2.863E-09	2.340E-08	2.132E-07	1.162E-06	1.728E-06	
U-234	Pb-210+D	1.000E+00	1.705E-13	2.136E-12	1.931E-11	3.857E-10	7.096E-09	1.361E-07	1.065E-06	1.794E-06	
U-234	ΣDSR(j)		6.431E-05	6.403E-05	6.347E-05	6.153E-05	5.635E-05	4.166E-05	1.928E-05	3.965E-06	

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent	Product	Thread	DSR(j,4,2t) At Time in Years (mrem/yr)/(pCi/g)								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	1.006E-07	1.002E-07	9.931E-08	9.628E-08	8.812E-08	6.463E-08	2.666E-08	1.201E-09	
U-234	Th-230	1.000E+00	3.159E-13	8.399E-13	1.861E-12	5.365E-12	1.480E-11	4.193E-11	8.566E-11	1.141E-10	
U-234	Ra-226+D	1.000E+00	7.759E-16	5.883E-15	3.206E-14	2.868E-13	2.307E-12	2.090E-11	1.137E-10	3.046E-10	
U-234	Pb-210+D	1.000E+00	3.155E-17	4.639E-16	5.254E-15	1.290E-13	2.596E-12	5.159E-11	4.076E-10	1.240E-09	
U-234	ΣDSR(j)		1.006E-07	1.002E-07	9.931E-08	9.628E-08	8.814E-08	6.474E-08	2.726E-08	2.860E-09	

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent	Product	Thread	DSR(j,4,3t) At Time in Years (mrem/yr)/(pCi/g)								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	1.680E-08	
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	4.001E-14	
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	2.489E-09	
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	1.859E-09	
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.115E-08	

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	2.286E-04
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	8.143E-10
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	2.116E-06
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	6.156E-06
U-234	ΣDSR(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	2.369E-04

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,5t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	9.266E-05
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	2.716E-10
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	8.583E-07
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	2.491E-06
U-234	ΣDSR(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	9.601E-05

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	2.535E-04	2.524E-04	2.501E-04	2.425E-04	2.219E-04	1.628E-04	6.714E-05	3.239E-04	
U-234	Th-230	1.000E+00	7.270E-10	1.855E-09	4.036E-09	1.152E-08	3.167E-08	8.961E-08	1.830E-07	2.319E-07	
U-234	Ra-226+D	1.000E+00	6.672E-12	6.164E-11	3.648E-10	3.402E-09	2.774E-08	2.525E-07	1.375E-06	5.278E-06	
U-234	Pb-210+D	1.000E+00	2.298E-13	3.009E-12	2.918E-11	6.283E-10	1.198E-08	2.331E-07	1.831E-06	1.278E-05	
U-234	ΣDSR(j)		2.535E-04	2.524E-04	2.501E-04	2.425E-04	2.220E-04	1.634E-04	7.053E-05	3.422E-04	

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.340E-04	1.334E-04	1.323E-04	1.282E-04	1.174E-04	8.607E-05	3.550E-05	8.879E-07
U-234	Th-230	1.000E+00	1.057E-11	1.944E-11	3.480E-11	8.750E-11	2.293E-10	6.373E-10	1.295E-09	9.567E-10
U-234	Ra-226+D	1.000E+00	7.374E-12	6.428E-11	3.709E-10	3.415E-09	2.773E-08	2.520E-07	1.372E-06	2.041E-06
U-234	Pb-210+D	1.000E+00	6.960E-14	8.368E-13	7.778E-12	1.631E-10	3.078E-09	5.967E-08	4.683E-07	7.898E-07
U-234	ΣDSR(j)		1.340E-04	1.334E-04	1.323E-04	1.282E-04	1.174E-04	8.639E-05	3.734E-05	3.720E-06

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	2.097E-07	2.088E-07	2.069E-07	2.006E-07	1.836E-07	1.347E-07	5.555E-08	2.503E-09
U-234	Th-230	1.000E+00	2.371E-14	5.549E-14	1.158E-13	3.225E-13	8.791E-13	2.480E-12	5.060E-12	6.741E-12
U-234	Ra-226+D	1.000E+00	1.052E-15	7.380E-15	3.888E-14	3.418E-13	2.733E-12	2.471E-11	1.343E-10	3.598E-10
U-234	Pb-210+D	1.000E+00	1.387E-17	2.036E-16	2.314E-15	5.702E-14	1.149E-12	2.284E-11	1.805E-10	5.492E-10
U-234	ΣDSR(j)		2.097E-07	2.088E-07	2.069E-07	2.006E-07	1.836E-07	1.347E-07	5.587E-08	3.418E-09

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	3.502E-08
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	3.087E-15
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	2.940E-09
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	8.158E-10
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.877E-08

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,4t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	4.765E-04	
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	5.795E-11	
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	2.500E-06	
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	2.724E-06	
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.817E-04	

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,5t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	7.642E-04	
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	7.927E-11	
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	4.012E-06	
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	4.361E-06	
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.725E-04	

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	6.213E-04	6.186E-04	6.131E-04	5.944E-04	5.440E-04	3.990E-04	1.646E-04	1.247E-03	
U-234	Th-230	1.000E+00	6.568E-11	1.484E-10	3.039E-10	8.373E-10	2.273E-09	6.403E-09	1.306E-08	1.677E-08	
U-234	Ra-226+D	1.000E+00	9.819E-12	8.143E-11	4.613E-10	4.209E-09	3.408E-08	3.095E-07	1.684E-06	9.392E-06	
U-234	Pb-210+D	1.000E+00	1.019E-13	1.310E-12	1.316E-11	2.956E-10	5.748E-09	1.128E-07	8.878E-07	9.152E-06	
U-234	ΣDSR(j)		6.213E-04	6.186E-04	6.131E-04	5.944E-04	5.441E-04	3.995E-04	1.672E-04	1.266E-03	

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from the Ingestion of Fish (p=6)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,6,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	9.344E-05
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	5.748E-09
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	1.349E-06
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	1.688E-05
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.117E-04

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from the Ingestion of Drinking Water (p=7)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,7,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	7.060E-01
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	4.746E-06
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	2.224E-03
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	8.056E-03
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.163E-01

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

[illegible]

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Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Meat/Fodder, Milk/Fodder, Fodder/Air and Fodder/Water Concentration Ratios

FI(4,q): 68.0 kg/day FI(5,q): 55.0 kg/day q=1,2,3,4
 FI(4,q): 50.0 L/day FI(5,q): 160.0 L/day q=5
 FI(4,q): 0.5 kg/day FI(5,q):

Nuclide (i)	FQR(i,4) d/kg	FQR(i,5) d/kg	FAR(i,3,2,3) m**3/g	FWR(i,3,3,3) L/g	FWR(i,3,4,3) L/g
Pb-210	8.0000E-04	3.0000E-04	2.8659E-01	5.3329E-07	1.8139E-03
Ra-226	1.0000E-03	1.0000E-03	2.8659E-01	2.1329E-06	1.8139E-03
Th-230	1.0000E-04	5.0000E-06	2.8659E-01	5.3644E-08	1.8139E-03
U-234	3.4000E-04	6.0000E-04	2.8659E-01	1.3332E-07	1.8139E-03

FI(p,q) are the fodder (q=1,2,3,4), livestock water (q=5) and soil (q=6) intake rates;
 FQR(i,p) are the transfer coefficients from contaminated fodder of livestock
 water to meat (p=4) or milk (p=5). FAR(i,3,2,3) are the fodder/air
 concentration ratios, and FWR(i,3,3,3) and FWR(i,3,4,3) are the fodder/
 water concentration ratios for ditch and overhead irrigation, respectively.

[illegible]

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Soil Ingestion Pathway (p=8)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,8,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	7.730E-03	7.696E-03	7.628E-03	7.395E-03	6.768E-03	4.964E-03	2.047E-03	9.225E-05
U-234	Th-230	1.000E+00	6.742E-08	2.019E-07	4.690E-07	1.385E-06	3.852E-06	1.095E-05	2.238E-05	2.983E-05
U-234	Ra-226+D	1.000E+00	2.346E-11	1.638E-10	8.614E-10	7.564E-09	6.047E-08	5.466E-07	2.971E-06	7.958E-06
U-234	Pb-210+D	1.000E+00	9.978E-13	1.484E-11	1.697E-10	4.196E-09	8.465E-08	1.684E-06	1.330E-05	4.049E-05
U-234	ΣDSR(j)		7.730E-03	7.696E-03	7.628E-03	7.397E-03	6.772E-03	4.977E-03	2.086E-03	1.705E-04

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

Dose Conversion and Environmental Transport Factors for the Soil Ingestion Pathway (p=8)

Parent (i)	Product (j)	DCF(j,8)*	ETF(j,8,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01
U-234	Th-230	5.480E-04	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01
U-234	Ra-226+D	1.321E-03	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01
U-234	Pb-210+D	7.276E-03	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01	2.738E+01

* - The dose conversion factor units are mrem/pCi.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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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	4
Summary of Pathway Selections	8
Contaminated Zone and Total Dose Summary	9
Total Dose Components	
Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
Time = 3.000E+02	16
Time = 1.000E+03	17
Dose/Source Ratios Summed Over All Pathways	18
Single Radionuclide Soil Guidelines	18
Dose Per Nuclide Summed Over All Pathways	19
Soil Concentration Per Nuclide	19

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(11)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(12)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1(13)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(1)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(2)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(3)
B-1	U-234	1.320E-01	1.320E-01	DCF2(4)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(1)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(2)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(3)
D-1	U-234	2.830E-04	2.830E-04	DCF3(4)
D-34	Food transfer factors:			
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(2,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(2,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(2,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(4,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(4,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(4,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(2,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(2,2)

Summary : RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 12 & FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(4,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(4,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.
*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : RESRAD Default Parameters Resident Farmer Scenario

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	1.000E+01	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	5.000E+00	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): U-234	1.700E+01	0.000E+00	---	S1(4)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(4)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	3.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+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)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.000E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	1.000E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	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)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-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	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(4)
R016	Unsat. zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.426E-03	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.217E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.165E-03	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.704E-06	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	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	-1 shows non-circular AREA.	FS

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	3.333E-01	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m), ring 2:	6.667E-01	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m), ring 3:	1.000E+00	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m), ring 4:	1.333E+00	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m), ring 5:	1.667E+00	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m), ring 6:	2.000E+00	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m), ring 7:	2.333E+00	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m), ring 8:	2.667E+00	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m), ring 9:	3.000E+00	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m), ring 10:	3.333E+00	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	3.667E+00	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	4.000E+00	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	9.000E-01	1.000E+00	---	FRACA(1)
R017	Ring 2	9.000E-01	2.732E-01	---	FRACA(2)
R017	Ring 3	9.000E-01	0.000E+00	---	FRACA(3)
R017	Ring 4	6.500E-01	0.000E+00	---	FRACA(4)
R017	Ring 5	4.300E-01	0.000E+00	---	FRACA(5)
R017	Ring 6	3.400E-01	0.000E+00	---	FRACA(6)
R017	Ring 7	2.500E-01	0.000E+00	---	FRACA(7)
R017	Ring 8	1.200E-01	0.000E+00	---	FRACA(8)
R017	Ring 9	1.100E-01	0.000E+00	---	FRACA(9)
R017	Ring 10	8.500E-02	0.000E+00	---	FRACA(10)
R017	Ring 11	4.300E-03	0.000E+00	---	FRACA(11)
R017	Ring 12	0.000E+00	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
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-02	FPLANT
R018	Contamination fraction of meat	-1	-1	0.500E-03	FMEAT
R018	Contamination fraction of milk	-1	-1	0.500E-03	FMILK
R019	Livestock fodder intake for meat (kg/day)	6.800E+01	6.800E+01	---	LFIS
R019	Livestock fodder intake for milk (kg/day)	5.500E+01	5.500E+01	---	LFIS
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWIS
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWIS
R019	Livestock soil intake (kg/day)	5.000E-01	5.000E-01	---	LSI

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	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
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	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

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	10.00 square meters	U-234	1.700E+01
Thickness:	1.50 meters		
Cover Depth:	0.00 meters		

Total Dose TDOSE(t), mrem/yr

Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	8.257E-02	8.221E-02	8.148E-02	7.902E-02	7.241E-02	5.381E-02	2.568E-02	6.449E-02
M(t):	5.505E-03	5.480E-03	5.432E-03	5.268E-03	4.828E-03	3.587E-03	1.712E-03	4.299E-03

Maximum TDOSE(t): 7.926E-01 mrem/yr at t = 427.4 ± 0.9 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 = 4.274E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	5.378E-03	0.0068	1.069E-02	0.0135	0.000E+00	0.0000	1.800E-03	0.0023	5.901E-06	0.0000	1.327E-05	0.0000	2.067E-04	0.0003
Total	5.378E-03	0.0068	1.069E-02	0.0135	0.000E+00	0.0000	1.800E-03	0.0023	5.901E-06	0.0000	1.327E-05	0.0000	2.067E-04	0.0003

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

As mrem/yr and Fraction of Total Dose At t = 4.274E+02 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	7.738E-01	0.9763	4.109E-05	0.0001	0.000E+00	0.0000	5.953E-04	0.0008	2.818E-06	0.0000	1.088E-05	0.0000	7.926E-01	1.0000
Total	7.738E-01	0.9763	4.109E-05	0.0001	0.000E+00	0.0000	5.953E-04	0.0008	2.818E-06	0.0000	1.088E-05	0.0000	7.926E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

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

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-234	1.666E-03	0.0202	6.902E-02	0.8360	0.000E+00	0.0000	1.044E-02	0.1265	3.447E-05	0.0004	8.449E-05	0.0010	1.314E-03	0.0159
Total	1.666E-03	0.0202	6.902E-02	0.8360	0.000E+00	0.0000	1.044E-02	0.1265	3.447E-05	0.0004	8.449E-05	0.0010	1.314E-03	0.0159

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- 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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.257E-02	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.257E-02	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.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- 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.
U-234	1.659E-03	0.0202	6.872E-02	0.8360	0.000E+00	0.0000	1.040E-02	0.1265	3.432E-05	0.0004	8.412E-05	0.0010	1.308E-03	0.0159
Total	1.659E-03	0.0202	6.872E-02	0.8360	0.000E+00	0.0000	1.040E-02	0.1265	3.432E-05	0.0004	8.412E-05	0.0010	1.308E-03	0.0159

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- 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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.221E-02	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.221E-02	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-234	1.645E-03	0.0202	6.812E-02	0.8360	0.000E+00	0.0000	1.031E-02	0.1265	3.401E-05	0.0004	8.338E-05	0.0010	1.297E-03	0.0159
Total	1.645E-03	0.0202	6.812E-02	0.8360	0.000E+00	0.0000	1.031E-02	0.1265	3.401E-05	0.0004	8.338E-05	0.0010	1.297E-03	0.0159

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

Water Dependent Pathways

Radio- 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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.148E-02	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.148E-02	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

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

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-234	1.603E-03	0.0203	6.605E-02	0.8359	0.000E+00	0.0000	9.993E-03	0.1265	3.298E-05	0.0004	8.083E-05	0.0010	1.257E-03	0.0159
Total	1.603E-03	0.0203	6.605E-02	0.8359	0.000E+00	0.0000	9.993E-03	0.1265	3.298E-05	0.0004	8.083E-05	0.0010	1.257E-03	0.0159

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

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

Water Dependent Pathways

Radio- 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.
U-234	0.000E+00	0.0000	0.000E+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	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.902E-02	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-234	1.529E-03	0.0211	6.048E-02	0.8352	0.000E+00	0.0000	9.149E-03	0.1263	3.019E-05	0.0004	7.399E-05	0.0010	1.151E-03	0.0159
Total	1.529E-03	0.0211	6.048E-02	0.8352	0.000E+00	0.0000	9.149E-03	0.1263	3.019E-05	0.0004	7.399E-05	0.0010	1.151E-03	0.0159

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

Water Dependent Pathways

Radio- 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.
U-234	0.000E+00	0.0000	0.000E+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-02	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.241E-02	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-234	1.698E-03	0.0315	4.445E-02	0.8261	0.000E+00	0.0000	6.735E-03	0.1252	2.221E-05	0.0004	5.432E-05	0.0010	8.462E-04	0.0157
Total	1.698E-03	0.0315	4.445E-02	0.8261	0.000E+00	0.0000	6.735E-03	0.1252	2.221E-05	0.0004	5.432E-05	0.0010	8.462E-04	0.0157

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

Water Dependent Pathways

Radio- 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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.381E-02	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.381E-02	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-234	3.842E-03	0.1496	1.854E-02	0.7218	0.000E+00	0.0000	2.915E-03	0.1135	9.590E-06	0.0004	2.273E-05	0.0009	3.546E-04	0.0138
Total	3.842E-03	0.1496	1.854E-02	0.7218	0.000E+00	0.0000	2.915E-03	0.1135	9.590E-06	0.0004	2.273E-05	0.0009	3.546E-04	0.0138

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

Water Dependent Pathways

Radio- 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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.568E-02	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.568E-02	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- 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.
U-234	9.090E-03	0.1410	1.167E-03	0.0181	0.000E+00	0.0000	2.955E-04	0.0046	1.270E-06	0.0000	1.586E-06	0.0000	2.899E-05	0.0004
Total	9.090E-03	0.1410	1.167E-03	0.0181	0.000E+00	0.0000	2.955E-04	0.0046	1.270E-06	0.0000	1.586E-06	0.0000	2.899E-05	0.0004

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

Water Dependent Pathways

Radio- 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.
U-234	5.385E-02	0.8351	7.227E-06	0.0001	0.000E+00	0.0000	4.145E-05	0.0006	2.319E-07	0.0000	7.335E-07	0.0000	6.449E-02	1.0000
Total	5.385E-02	0.8351	7.227E-06	0.0001	0.000E+00	0.0000	4.145E-05	0.0006	2.319E-07	0.0000	7.335E-07	0.0000	6.449E-02	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

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

Parent	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	4.857E-03	4.835E-03	4.793E-03	4.647E-03	4.253E-03	3.119E-03	1.286E-03	2.835E-03	
U-234	Th-230	1.000E+00	4.948E-08	1.478E-07	3.430E-07	1.013E-06	2.816E-06	8.001E-06	1.636E-05	2.154E-05	
U-234	Ra-226+D	1.000E+00	1.602E-09	1.120E-08	5.893E-08	5.175E-07	4.138E-06	3.740E-05	2.033E-04	6.206E-04	
U-234	Pb-210+D	1.000E+00	4.595E-13	5.955E-12	6.267E-11	1.472E-09	2.915E-08	5.760E-07	4.544E-06	3.166E-04	
U-234	ΣDSR(j)		4.857E-03	4.836E-03	4.793E-03	4.648E-03	4.260E-03	3.165E-03	1.511E-03	3.793E-03	

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

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Nuclide (i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234		3.088E+03	3.102E+03	3.129E+03	3.227E+03	3.521E+03	4.739E+03	9.929E+03	3.954E+03

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 = 427.4 ± 0.9 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
U-234	1.700E+01	427.4 ± 0.9	4.662E-02	3.217E+02	4.662E-02	3.217E+02

Summary : RESRAD Default Parameters Resident Farmer Scenario

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr								
			t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00		8.257E-02	8.220E-02	8.148E-02	7.899E-02	7.230E-02	5.303E-02	2.187E-02	4.819E-02
Th-230	U-234	1.000E+00		8.411E-07	2.512E-06	5.831E-06	1.722E-05	4.787E-05	1.360E-04	2.781E-04	3.661E-04
Ra-226	U-234	1.000E+00		2.724E-08	1.904E-07	1.002E-06	8.798E-06	7.035E-05	6.359E-04	3.457E-03	1.055E-02
Pb-210	U-234	1.000E+00		7.812E-12	1.012E-10	1.065E-09	2.502E-08	4.956E-07	9.792E-06	7.725E-05	5.382E-03

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g								
			t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00		1.700E+01	1.692E+01	1.678E+01	1.626E+01	1.489E+01	1.092E+01	4.503E+00	2.029E-01
Th-230	U-234	1.000E+00		0.000E+00	1.527E-04	4.561E-04	1.497E-03	4.298E-03	1.236E-02	2.535E-02	3.381E-02
Ra-226	U-234	1.000E+00		0.000E+00	3.306E-08	2.959E-07	3.227E-06	2.754E-05	2.547E-04	1.394E-03	3.741E-03
Pb-210	U-234	1.000E+00		0.000E+00	3.399E-10	8.991E-09	3.103E-07	6.906E-06	1.421E-04	1.133E-03	3.455E-03

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

RESRAD.EXE execution time = 3.96 seconds

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Table of ContentsPart II: Source Terms, Factors, and Parameters for Individual Pathways

Iteration Logs

Maximum U-234 Dose/Source Ratio	3
Maximum Total Dose	9

Source Factors for Ingrowth and Decay

Radioactivity Only	15
Combined Radioactivity and Leaching	15

Ground Pathway

Source Term Parameters	16
Time Dependence of Source Geometry	16
Occupancy, Cover/Depth, and Area Factors	17
Dose Conversion and Environmental Transport Factors .	18
Dose/Source Ratios	18

Inhalation Pathway (radon excluded)

Dose/Source Ratios	19
Pathway Factors	19
Dose Conversion and Environmental Transport Factors .	19

Radon Pathway

Flux and Parameters	20
Concentration and Parameters	21
Working Levels	22
Dose/Source Ratios	23

Groundwater and Surface Water Pathway Segments

Transport Time Parameters for Unsaturated Zone Strata	24
Dilution Factor and Rise Time Parameters for	
Nondispersion (ND) Model	25
Primary Parameters Used to Calculate Ratios	25
Water/Soil Concentration Ratios	26

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Table of Contents (cont.)

Part II: Source Terms, Factors, and Parameters for Individual Pathways

Food Pathways

Storage Times for Contaminated Foodstuffs	27
Storage Time Ingrowth and Decay Factors	27
Storage Correction Factors	
Drinking Water	28
Irrigation Water	28
Livestock Water	29
Plants	30
Livestock Fodder	30
Meat and Milk	31
Fish and Crustacea	32
Area and Depth Factors	33
Dose Conversion and Environmental Transport Factors	
Plant	35
Meat	36
Milk	38
Fish	40
Drinking Water	40
Dose/Source Ratios	
Plant	41
Plant Total	42
Meat	43
Meat Total	44
Milk	45
Milk Total	46
Fish	47
Drinking Water	48
Concentration Ratios	
Plant/Air and Plant/Water	49
Plant/Soil	49
Meat/Fodder, Fodder/Air, Fodder/Water	51
Fodder/Soil	52
Meat/Soil	53
Milk/Soil	54

Soil Ingestion Pathway

Dose/Source Ratios.....	55
Dose Conversion and Environmental Transport Factors .	55

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum U-234 Dose/Source Ratio
 Pathway: Water

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	4.50657E+02	4.08116E-02		
1	4.78940E+02	3.57058E-02	2.82830E+01	parabolic
2	4.10495E+02	3.95222E-02	-4.01624E+01	golden section
3	4.35743E+02	4.37903E-02	-1.49141E+01	parabolic
4	4.32324E+02	4.45030E-02	-3.41892E+00	parabolic
5	4.23986E+02	4.44470E-02	-8.33809E+00	golden section
6	4.28339E+02	4.53484E-02	-3.98557E+00	parabolic
7	4.27910E+02	4.54402E-02	-1.16693E-01	parabolic
8	4.26411E+02	4.52995E-02	-1.49891E+00	golden section
9	4.27454E+02	4.55198E-02	-4.55879E-01	parabolic
10	4.27027E+02	4.54921E-02	-3.98402E-01	golden section
11	4.27454E+02	4.55198E-02	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum U-234 Dose/Source Ratio

Pathway: Fish

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	4.50657E+02	2.17455E-06		
1	4.81220E+02	1.89643E-06	3.05627E+01	parabolic
2	4.10495E+02	2.09599E-06	-4.01624E+01	golden section
3	4.36832E+02	2.31615E-06	-1.38248E+01	parabolic
4	4.32688E+02	2.36065E-06	-4.14464E+00	parabolic
5	4.24211E+02	2.36344E-06	-8.47694E+00	golden section
6	4.28250E+02	2.40939E-06	4.03881E+00	parabolic
7	4.28678E+02	2.40465E-06	1.37234E-01	parabolic
8	4.27361E+02	2.41694E-06	-8.88159E-01	parabolic
9	4.26158E+02	2.40010E-06	-1.20345E+00	golden section
10	4.26902E+02	2.41364E-06	-4.59681E-01	golden section
11	4.27789E+02	2.41453E-06	4.27361E-01	parabolic
12	4.27361E+02	2.41694E-06	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum U-234 Dose/Source Ratio
 Pathway: Plant (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	4.50657E+02	3.13987E-05		
1	4.78956E+02	2.74685E-05	2.82989E+01	parabolic
2	4.10495E+02	3.03936E-05	-4.01624E+01	golden section
3	4.35802E+02	3.36809E-05	-1.48548E+01	parabolic
4	4.32348E+02	3.42348E-05	-3.45391E+00	parabolic
5	4.24001E+02	3.41866E-05	-8.34733E+00	golden section
6	4.28379E+02	3.48824E-05	-3.96889E+00	parabolic
7	4.27951E+02	3.49530E-05	-1.30055E-01	parabolic
8	4.26442E+02	3.48467E-05	-1.50878E+00	golden section
9	4.27487E+02	3.50156E-05	-4.64452E-01	parabolic
10	4.27059E+02	3.49953E-05	-3.98903E-01	golden section
11	4.27487E+02	3.50156E-05	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum U-234 Dose/Source Ratio
 Pathway: Meat (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	4.50657E+02	1.48800E-07		
1	4.79288E+02	1.30084E-07	2.86306E+01	parabolic
2	4.10495E+02	1.43702E-07	-4.01624E+01	golden section
3	4.36169E+02	1.59293E-07	-1.44884E+01	parabolic
4	4.32490E+02	1.62075E-07	-3.67854E+00	parabolic
5	4.24089E+02	1.61797E-07	-8.40154E+00	golden section
6	4.28542E+02	1.65115E-07	-3.94792E+00	parabolic
7	4.28114E+02	1.65448E-07	-1.61250E-01	parabolic
8	4.26576E+02	1.64986E-07	-1.53746E+00	golden section
9	4.27619E+02	1.65761E-07	-4.94533E-01	parabolic
10	4.27192E+02	1.65678E-07	-3.98355E-01	golden section
11	4.27619E+02	1.65761E-07	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum U-234 Dose/Source Ratio
 Pathway: Milk (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	4.50657E+02	5.73825E-07		
1	4.78924E+02	5.02010E-07	2.82673E+01	parabolic
2	4.10495E+02	5.55309E-07	-4.01624E+01	golden section
3	4.35831E+02	6.15475E-07	-1.48260E+01	parabolic
4	4.32362E+02	6.25646E-07	-3.46935E+00	parabolic
5	4.24009E+02	6.24666E-07	-8.35248E+00	golden section
6	4.28413E+02	6.37425E-07	-3.94865E+00	parabolic
7	4.27985E+02	6.38716E-07	-1.44221E-01	parabolic
8	4.26466E+02	6.36804E-07	-1.51848E+00	golden section
9	4.27512E+02	6.39851E-07	-4.72420E-01	parabolic
10	4.27085E+02	6.39481E-07	-3.99568E-01	golden section
11	4.27512E+02	6.39851E-07	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum U-234 Dose/Source Ratio
All Pathways Summed

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	DSR(t) (mrem/yr)/(pCi/g)	Step Size (years)	Step Type
0	4.50657E+02	4.18566E-02		
1	4.78372E+02	3.67864E-02	2.77151E+01	parabolic
2	4.10495E+02	4.06636E-02	-4.01624E+01	golden section
3	4.35317E+02	4.49609E-02	-1.53403E+01	parabolic
4	4.32164E+02	4.56270E-02	-3.15228E+00	parabolic
5	4.23887E+02	4.55228E-02	-8.27710E+00	golden section
6	4.28347E+02	4.64470E-02	-3.81716E+00	parabolic
7	4.27919E+02	4.65399E-02	-1.97894E-01	parabolic
8	4.26379E+02	4.63934E-02	-1.53993E+00	golden section
9	4.27449E+02	4.66225E-02	-4.69942E-01	parabolic
10	4.27022E+02	4.65952E-02	-4.08695E-01	golden section
11	4.27449E+02	4.66225E-02	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest DSR(t) .
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but DSR(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Water

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDose(t) (mrem/yr)	Step Size (years)	Step Type
0	4.50657E+02	6.93797E-01		
1	4.78940E+02	6.06999E-01	2.82830E+01	parabolic
2	4.10495E+02	6.71878E-01	-4.01624E+01	golden section
3	4.35743E+02	7.44435E-01	-1.49141E+01	parabolic
4	4.32324E+02	7.56551E-01	-3.41892E+00	parabolic
5	4.23986E+02	7.55599E-01	-8.33809E+00	golden section
6	4.28339E+02	7.70923E-01	-3.98556E+00	parabolic
7	4.27910E+02	7.72484E-01	-1.16691E-01	parabolic
8	4.26411E+02	7.70091E-01	-1.49891E+00	golden section
9	4.27454E+02	7.73837E-01	-4.55880E-01	parabolic
10	4.27027E+02	7.73365E-01	-3.98402E-01	golden section
11	4.27454E+02	7.73837E-01	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDose(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDose(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Fish

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	4.50657E+02	3.69674E-05		
1	4.81220E+02	3.22393E-05	3.05627E+01	parabolic
2	4.10495E+02	3.56319E-05	-4.01624E+01	golden section
3	4.36832E+02	3.93745E-05	-1.38248E+01	parabolic
4	4.32688E+02	4.01311E-05	-4.14464E+00	parabolic
5	4.24211E+02	4.01786E-05	-8.47694E+00	golden section
6	4.28250E+02	4.09597E-05	4.03880E+00	parabolic
7	4.28678E+02	4.08790E-05	1.37262E-01	parabolic
8	4.27361E+02	4.10880E-05	-8.88096E-01	parabolic
9	4.26158E+02	4.08018E-05	-1.20346E+00	golden section
10	4.26902E+02	4.10320E-05	-4.59681E-01	golden section
11	4.27789E+02	4.10470E-05	4.27361E-01	parabolic
12	4.27361E+02	4.10880E-05	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Plant (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	4.50657E+02	5.33778E-04		
1	4.78956E+02	4.66965E-04	2.82989E+01	parabolic
2	4.10495E+02	5.16692E-04	-4.01624E+01	golden section
3	4.35802E+02	5.72576E-04	-1.48548E+01	parabolic
4	4.32348E+02	5.81991E-04	-3.45391E+00	parabolic
5	4.24001E+02	5.81173E-04	-8.34733E+00	golden section
6	4.28379E+02	5.93000E-04	-3.96889E+00	parabolic
7	4.27951E+02	5.94201E-04	-1.30054E-01	parabolic
8	4.26442E+02	5.92394E-04	-1.50878E+00	golden section
9	4.27487E+02	5.95265E-04	-4.64448E-01	parabolic
10	4.27059E+02	5.94919E-04	-3.98903E-01	golden section
11	4.27487E+02	5.95265E-04	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Meat (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	4.50657E+02	2.52960E-06		
1	4.79288E+02	2.21143E-06	2.86306E+01	parabolic
2	4.10495E+02	2.44294E-06	-4.01624E+01	golden section
3	4.36169E+02	2.70799E-06	-1.44883E+01	parabolic
4	4.32490E+02	2.75528E-06	-3.67854E+00	parabolic
5	4.24089E+02	2.75056E-06	-8.40154E+00	golden section
6	4.28542E+02	2.80695E-06	-3.94791E+00	parabolic
7	4.28114E+02	2.81262E-06	-1.61249E-01	parabolic
8	4.26576E+02	2.80476E-06	-1.53746E+00	golden section
9	4.27619E+02	2.81794E-06	-4.94530E-01	parabolic
10	4.27192E+02	2.81653E-06	-3.98355E-01	golden section
11	4.27619E+02	2.81794E-06	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose

Pathway: Milk (water dependent)

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDOSE(t) (mrem/yr)	Step Size (years)	Step Type
0	4.50657E+02	9.75502E-06		
1	4.78924E+02	8.53417E-06	2.82673E+01	parabolic
2	4.10495E+02	9.44025E-06	-4.01624E+01	golden section
3	4.35831E+02	1.04631E-05	-1.48259E+01	parabolic
4	4.32362E+02	1.06360E-05	-3.46934E+00	parabolic
5	4.24009E+02	1.06193E-05	-8.35249E+00	golden section
6	4.28413E+02	1.08362E-05	-3.94867E+00	parabolic
7	4.27985E+02	1.08582E-05	-1.44200E-01	parabolic
8	4.26466E+02	1.08257E-05	-1.51847E+00	golden section
9	4.27512E+02	1.08775E-05	-4.72420E-01	parabolic
10	4.27085E+02	1.08712E-05	-3.99556E-01	golden section
11	4.27512E+02	1.08775E-05	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDOSE(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDOSE(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Iteration Log for Computation of the Time of Maximum Total Dose
All Pathways Summed

Tolerance for tmax = 1.0E-03 (fractional accuracy)

Iteration Number	t (years)	TDose(t) (mrem/yr)	Step Size (years)	Step Type
0	4.50657E+02	7.11562E-01		
1	4.78372E+02	6.25369E-01	2.77151E+01	parabolic
2	4.10495E+02	6.91282E-01	-4.01624E+01	golden section
3	4.35317E+02	7.64336E-01	-1.53404E+01	parabolic
4	4.32164E+02	7.75660E-01	-3.15228E+00	parabolic
5	4.23887E+02	7.73888E-01	-8.27710E+00	golden section
6	4.28347E+02	7.89598E-01	-3.81716E+00	parabolic
7	4.27919E+02	7.91178E-01	-1.97892E-01	parabolic
8	4.26379E+02	7.88688E-01	-1.53993E+00	golden section
9	4.27449E+02	7.92583E-01	-4.69942E-01	parabolic
10	4.27022E+02	7.92118E-01	-4.08695E-01	golden section
11	4.27449E+02	7.92583E-01	0.00000E+00	direct

Notes:

- 1) Step size always from t with current largest TDose(t).
- 2) Parabolic step based on parabola maximum through the current best triplet.
- 3) Golden section step, $0.5 \cdot (3 - \sqrt{5})$ of larger interval bracketing maximum, taken only if trial parabolic step fails.
- 4) Direct step to a previous t only on last iteration and only if prior iteration met convergence test but TDose(t) was smaller than the previous value.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Source Factors for Ingrowth and Decay

Radioactivity Factors Only

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	ID(j,t) = THF(j)*S1(j,t)/S1(i,0) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	9.997E-01	9.991E-01	9.972E-01
U-234	Th-230	1.000E+00	0.000E+00	9.002E-06	2.701E-05	9.001E-05	2.700E-04	8.997E-04	2.696E-03	8.949E-03
U-234	Ra-226+D	1.000E+00	0.000E+00	1.950E-09	1.754E-08	1.947E-07	1.747E-06	1.921E-05	1.679E-04	1.689E-03
U-234	Pb-210+D	1.000E+00	0.000E+00	2.004E-11	5.328E-10	1.870E-08	4.373E-07	1.068E-05	1.363E-04	1.591E-03

Source Factors for Ingrowth and Decay

Combined Radioactivity and Leaching Factors

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	SF(j,t) = THF(j)*S1(j,t)/S1(i,0) At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	9.956E-01	9.868E-01	9.567E-01	8.756E-01	6.422E-01	2.649E-01	1.193E-02
U-234	Th-230	1.000E+00	0.000E+00	8.982E-06	2.683E-05	8.805E-05	2.528E-04	7.268E-04	1.491E-03	1.989E-03
U-234	Ra-226+D	1.000E+00	0.000E+00	1.945E-09	1.741E-08	1.898E-07	1.620E-06	1.498E-05	8.200E-05	2.200E-04
U-234	Pb-210+D	1.000E+00	0.000E+00	2.000E-11	5.289E-10	1.825E-08	4.062E-07	8.358E-06	6.663E-05	2.032E-04

The effect of volatilization was also considered when computing the source factors for H-3 and C-14.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Parameters Used for Calculating Cover Depth and Contaminated Zone Thicknesses

Cover Erosion rate (vcv): 0.001000 m/yr
 Contaminated Zone Erosion rate (vcz): 0.001000 m/yr
 Water Table Drop rate (vwt): 0.001000 m/yr
 Precipitation rate (Pr): 1.000000 m/yr
 Cover Removal Time (Tc): 0.000E+00 yr
 Overhead irrigation rate (Irr): 0.200 m/yr Runoff coefficient (Cr): 0.200
 Evapotranspiration coeff. (Ce): 0.500 Infiltration rate (In): 0.500 m/yr
 Bulk soil density (rhob): 1.500 g/cm**3 Effective porosity (pe): 0.000

Radio-nuclide (i)	Distribution Coefficient Kd(i), cm**3/g	Leaching Ratio q(i)
Pb-210	1.000000E+02	2.135E-03
Ra-226	7.000000E+01	3.047E-03
Th-230	6.000000E+04	3.566E-06
U-234	5.000000E+01	4.261E-03

Time Dependence of Source Geometry

Time Dependence of Cover Depth [Cd(i,t)]

Nuclide		Cd(i,t) (meters)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
Ra-226	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
Th-230	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
U-234	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Time Dependence of Contaminated Zone Thicknesses [T(i,t)]

Nuclide		T(i,t) (meters)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pb-210	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01	
Ra-226	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01	
Th-230	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01	
U-234	1.5000E+00	1.4990E+00	1.4970E+00	1.4900E+00	1.4700E+00	1.4000E+00	1.2000E+00	5.0000E-01	

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Dose Conversion and Environmental Transport Factors for the Ground Pathway (p=1)

Nuclide (i)	DCF(i,1)* t=	ETFG(i,t) At Time in Years (dimensionless)							
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
At-218	5.847E-03	2.422E-01	2.422E-01	2.422E-01	2.422E-01	2.422E-01	2.422E-01	2.422E-01	2.422E-01
Bi-210	3.606E-03	2.261E-01	2.261E-01	2.261E-01	2.261E-01	2.261E-01	2.261E-01	2.261E-01	2.261E-01
Bi-214	9.808E+00	2.158E-01	2.158E-01	2.158E-01	2.158E-01	2.158E-01	2.158E-01	2.158E-01	2.151E-01
Pb-210	2.447E-03	2.458E-01	2.458E-01	2.458E-01	2.458E-01	2.458E-01	2.458E-01	2.458E-01	2.458E-01
Pb-214	1.341E+00	2.260E-01	2.260E-01	2.260E-01	2.260E-01	2.260E-01	2.260E-01	2.260E-01	2.260E-01
Po-210	5.231E-05	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.178E-01
Po-214	5.138E-04	2.188E-01	2.188E-01	2.188E-01	2.188E-01	2.188E-01	2.188E-01	2.188E-01	2.186E-01
Po-218	5.642E-05	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.181E-01	2.178E-01
Ra-226	3.176E-02	2.327E-01	2.327E-01	2.327E-01	2.327E-01	2.327E-01	2.327E-01	2.327E-01	2.327E-01
Rn-222	2.354E-03	2.202E-01	2.202E-01	2.202E-01	2.202E-01	2.202E-01	2.202E-01	2.202E-01	2.201E-01
Th-230	1.209E-03	2.378E-01	2.378E-01	2.378E-01	2.378E-01	2.378E-01	2.378E-01	2.378E-01	2.378E-01
Tl-210	0.000E+00	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01	5.400E-01
U-234	4.017E-04	2.445E-01	2.445E-01	2.445E-01	2.445E-01	2.445E-01	2.445E-01	2.445E-01	2.445E-01

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

Dose/Source Ratios for External Radiation from the Ground (p=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,1,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	9.800E-05	9.756E-05	9.670E-05	9.375E-05	8.581E-05	6.294E-05	2.596E-05	1.170E-06
U-234	Th-230	1.000E+00	1.292E-09	3.868E-09	8.987E-09	2.655E-08	7.381E-08	2.098E-07	4.289E-07	5.717E-07
U-234	Ra-226+D	1.000E+00	1.575E-09	1.100E-08	5.783E-08	5.078E-07	4.060E-06	3.670E-05	1.995E-04	5.327E-04
U-234	Pb-210+D	1.000E+00	7.155E-15	1.064E-13	1.217E-12	3.009E-11	6.070E-10	1.207E-08	9.540E-08	2.903E-07
U-234	ΣDSR(j)		9.800E-05	9.758E-05	9.677E-05	9.429E-05	8.994E-05	9.985E-05	2.260E-04	5.347E-04

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Dose/Source Ratios for Inhalation Pathway, Excluding Radon (p=2)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,2,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	4.060E-03	4.042E-03	4.007E-03	3.884E-03	3.555E-03	2.608E-03	1.075E-03	4.846E-05
U-234	Th-230	1.000E+00	4.517E-08	1.352E-07	3.142E-07	9.281E-07	2.580E-06	7.333E-06	1.500E-05	1.999E-05
U-234	Ra-226+D	1.000E+00	1.719E-13	1.200E-12	6.311E-12	5.542E-11	4.431E-10	4.005E-09	2.177E-08	5.831E-08
U-234	Pb-210+D	1.000E+00	3.582E-15	5.326E-14	6.093E-13	1.506E-11	3.039E-10	6.044E-09	4.776E-08	1.454E-07
U-234	ΣDSR(j)		4.060E-03	4.042E-03	4.007E-03	3.885E-03	3.558E-03	2.615E-03	1.091E-03	6.864E-05

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

Pathway Factors for the Inhalation Pathway (radon excluded)

Area (A):	1.0000E+01 m**2	Occupancy Factor (FO2):	4.5000E-01
Area Factor (FA2):	8.1554E-02	Annual Air Intake (FI2):	8.4000E+03 m**3/yr
Cover Depth [Cd(0)]:	0.0000E+00 m	Mass Loading (ASR2):	1.0000E-04 g/m**3
Contaminated Zone Thickness [T(0)]:	1.5000E+00 m	FA2 * FO2 * FI2 * ASR2:	3.0827E-02 g/yr

Nuclide (i)	t=	Depth Factor [FD(i,2,t)] (dimensionless)							
		0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00	1.0000E+00

Dose Conversion and Environmental Transport Factors for the Inhalation Pathway, Excluding Radon (p=2)

Parent (i)	Product (j)	DCF(j,2)*	ETF(j,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.320E-01	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02
U-234	Th-230	3.260E-01	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02
U-234	Ra-226+D	8.594E-03	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02
U-234	Pb-210+D	2.320E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02	3.083E-02

* - The dose conversion factor units are mrem/pCi.

[illegible]

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Parameters Used for Calculating Indoor and Outdoor Radon Concentration

Radon Vertical Dimension of Mixing (HMIX):	2.000E+00	(m)
Average Annual Wind Speed (WIND):	2.000E+00	(m/sec)
Building Room Height (HRM):	2.500E+00	(m)
Building Air Exchange Rate (REXG):	5.000E-01	(1/hr)

Time Dependence of Outdoor Radon Concentration [CRNO(i,t)]

[illegible]

Time Dependence of Indoor Radon Concentration [HCONC(i,r)]

[illegible]

Outdoor Working Levels of Radon [WLOTD(i,t)]

Nuclide		WLOTD(i,t) (WL)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Indoor Working Levels of Radon [WLIND(i,t)]

Nuclide		WLIND(i,t) (WL)							
(i)	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234		0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

Fraction of Time Spent Outdoors (FOTD): 2.500E-01
Fraction of Time Spent Indoors (FIND): 5.000E-01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Radon Pathway (p=9)

Subpathway: Outdoor and Indoor Radon Flux

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,9,t) - DSRRNW(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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
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
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
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
U-234	ΣDSR(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

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

Dose/Source Ratios for Radon Pathway (p=9)

Subpathway: Indoor Radon from Water Usage

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSRRNW(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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
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
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
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
U-234	ΣDSR(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

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Transport Time Parameters for Unsaturated Zone Stratum No. 1

Stratum thickness [h(1)]: 4.000000 m
 Bulk soil material density [rhob(1)]: 1.500000 g/cm**3
 Effective porosity [peuz(1)]: 0.200000
 Hydraulic conductivity [Khuz(1)]: 10.000000 m/yr
 Total porosity [ptuz(1)]: 0.400000
 Soil specific b parameter [buz(1)]: 5.300000
 Saturation ratio [sruz(1)]: 0.802299

Radio-nuclide (i)	Distribution Coefficient Kduz(i,1), cm**3/g	Retardation Factor Rduz(i,1)	Transport Time Dtuz(i,1), yr
Pb-210	1.0000E+02	4.6841E+02	6.0128E+02
Ra-226	7.0000E+01	3.2818E+02	4.2128E+02
Th-230	6.0000E+04	2.8045E+05	3.6000E+05
U-234	5.0000E+01	2.3470E+02	3.0128E+02

Transport Time Parameters for Unsaturated Zone created by the Falling Water Table

Water table drop rate [vwt]: 0.001000 m/yr
 Bulk soil material density [rhobaq]: 1.500000 g/cm**3
 Effective porosity [peaq]: 0.200000
 Hydraulic conductivity [Khaq]: 100.000000 m/yr
 Total porosity [ptaq]: 0.400000
 Soil specific b parameter [baq]: 5.300000
 Saturation ratio [sruaq]: 0.677340

Radio-nuclide (i)	Distribution Coefficient Kdaq(i), cm**3/g	Retardation Factor Rduaq(i)	Minimum Transport Time Dtuaq(i), yr
Pb-210	1.0000E+02	5.5464E+02	1.0633E+02
Ra-226	7.0000E+01	3.8855E+02	4.9567E+01
Th-230	6.0000E+04	3.3218E+05	Infinite
U-234	5.0000E+01	2.7782E+02	2.4524E+01

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dilution Factor and Rise Time Parameters for Nondispersion (ND) Model

Aquifer contamination depth at well (z): 1.25000E+00 m
 Depth of water intake below water table (dw): 1.00000E+01 m
 Infiltration rate (In): 5.00000E-01 m/yr
 Aquifer water flow rate (Vwfr): 2.00000E+00 m/yr
 Hydraulic gradient (J): 2.00000E-02
 Hydraulic conductivity of aquifer (Kszh): 1.00000E+02 m/yr
 Contaminated zone extent parallel to gradient (l): 5.00000E+00 m
 Distance below contaminated zone to water table (h): 0.40000E+01 m
 Initial thickness of uncontaminated cover (Cd): 0.00000E+00 m
 Initial thickness of contaminated zone (T): 0.15000E+01 m
 Effective porosity of saturated zone (pesz): 0.20000E+00

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdsz(i)	Horizontal Transport Time Onsite Tauh(i), yr	Rise Time dt(i), yr	Decay Time Parameter 1/lamda(i),yr
Pb-210	2.000E-02	3.760E+02	1.880E+02	1.880E+02	3.217E+01
Ra-226	2.000E-02	2.635E+02	1.318E+02	1.318E+02	2.308E+03
Th-230	2.000E-02	2.250E+05	1.125E+05	1.125E+05	1.111E+05
U-234	2.000E-02	1.885E+02	9.425E+01	9.425E+01	3.527E+05

Primary Parameters Used for Calculating Water/Soil
Concentration Ratios for Groundwater Pathway Segment

Model used: Nondispersion (ND)

Bulk soil density in contaminated zone (rhob): 1.500 g/cm**3

Radio-nuclide (i)	Dilution Factor f(i)	Retardation Factor Rdcz(i)	Breakthrough Time Chain year	Single Nuclide Dt(i), yr	Rise Time dt(i), yr
Pb-210	2.000E-02	4.684E+02	3.258E+02	7.076E+02	1.880E+02
Ra-226	2.000E-02	3.282E+02	3.258E+02	4.709E+02	1.318E+02
Th-230	2.000E-02	2.804E+05	3.258E+02	Infinite	1.125E+05
U-234	2.000E-02	2.347E+02	3.258E+02	3.258E+02	9.425E+01

Water/Soil Concentration Ratios [WSR(j,2,t)] for Surface Water Pathway Segment

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Storage Times For Contaminated Foodstuffs

k	Food Item	STOR_T(k), days
1	non-leafy plants	14.
2	leafy plants	1.
3	milk	1.
4	meat	20.
5	fish	7.
6	crustacea	7.
7	well water	1.
8	surface water	1.
9	livestock fodder	45.

Storage Time Ingrowth and Decay Factors

Storage Time for k'th Foodstuff: $t = \text{STOR_T}(k)$, days

Parent Product Thread			STOR_ID(i,j,t) = CONCE(i,j,t)/CONCE(i,i,0)									
(i)	(j)	Fraction	t = 1.400E+01	1.000E+00	1.000E+00	2.000E+01	7.000E+00	7.000E+00	1.000E+00	1.000E+00	4.500E+01	
Pb-210	Pb-210	1.000E+00	9.988E-01	9.999E-01	9.999E-01	9.983E-01	9.994E-01	9.994E-01	9.999E-01	9.999E-01	9.962E-01	
Ra-226	Ra-226	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.999E-01	
Ra-226	Pb-210	1.000E+00	1.191E-03	8.510E-05	8.510E-05	1.701E-03	5.955E-04	5.955E-04	8.510E-05	8.510E-05	3.822E-03	
Th-230	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
Th-230	Ra-226	1.000E+00	1.661E-05	1.186E-06	1.186E-06	2.372E-05	8.303E-06	8.303E-06	1.186E-06	1.186E-06	5.337E-05	
Th-230	Pb-210	1.000E+00	9.888E-09	5.047E-11	5.047E-11	2.018E-08	2.472E-09	2.472E-09	5.047E-11	5.047E-11	1.021E-07	
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
U-234	Th-230	1.000E+00	3.450E-07	2.465E-08	2.465E-08	4.929E-07	1.725E-07	1.725E-07	2.465E-08	2.465E-08	1.109E-06	
U-234	Ra-226	1.000E+00	2.865E-12	1.462E-14	1.462E-14	5.846E-12	7.162E-13	7.162E-13	1.462E-14	1.462E-14	2.960E-11	
U-234	Pb-210	1.000E+00	1.137E-15	4.146E-19	4.146E-19	3.315E-15	1.422E-16	1.422E-16	4.146E-19	4.146E-19	3.774E-14	

CONCE(i,j,t)/CONCE(i,i,0) is the concentration ratio of Product(j) at time t to Parent(i) at start of storage time.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors
Drinking Water from Well and/or Surface
Harvest Time = $t - 2.74E-03$ yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,1)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
Irrigation Water for Nonleafy Plants from Well and/or Surface
Harvest Time = $t - 4.11E-02$ yr; Consumption Time = $t - 3.83E-02$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,2)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors
Irrigation Water for Leafy Plants from Well and/or Surface
Harvest Time = $t - 5.48E-03$ yr; Consumption Time = $t - 2.74E-03$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,3)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors

Irrigation Water for Livestock (Milk) Fodder from Well and/or Surface

Harvest Time = t - 1.29E-01 yr; Consumption Time = t - 1.26E-01 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,5)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Irrigation Water for Livestock (Meat) Fodder from Well and/or Surface

Harvest Time = t - 1.81E-01 yr; Consumption Time = t - 1.78E-01 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,7)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors

Livestock (Milk) Water from Well and/or Surface

Harvest Time = t - 5.48E-03 yr; Consumption Time = t - 2.74E-03 yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,4)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Storage Time Correction Factors
Livestock (Meat) Water from Well and/or Surface

Harvest Time = $t - 5.75E-02$ yr; Consumption Time = $t - 5.48E-02$ yr

Parent (i)	Product (j)	Thread Fraction	CFWW(j,t,6) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Nonleafy Plants
Harvest Time = $t - 3.83E-02$ yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,1,t) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.012E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Leafy Plants
Harvest Time = $t - 2.74E-03$ yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF3(j,2,t) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Livestock (Meat) Fodder
Harvest Time = $t - 1.78E-01$ yr; Consumption Time = $t - 5.48E-02$ yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,1,t) # At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03

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Storage Time Correction Factors for Livestock (Meat) Fodder
 Harvest Time = t - 1.78E-01 yr; Consumption Time = t - 5.48E-02 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.373E+00	1.108E+00	1.031E+00	1.010E+00	1.002E+00	1.000E+00	1.000E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.009E+00	1.002E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	2.809E+00	1.531E+00	1.158E+00	1.057E+00	1.024E+00	1.015E+00	1.011E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Livestock (Milk) Fodder
 Harvest Time = t - 1.26E-01 yr; Consumption Time = t - 2.74E-03 yr

Parent (i)	Product (j)	Thread Fraction	CFLF(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.351E+00	1.106E+00	1.030E+00	1.010E+00	1.002E+00	1.000E+00	1.000E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.008E+00	1.002E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	2.702E+00	1.521E+00	1.157E+00	1.057E+00	1.024E+00	1.015E+00	1.011E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Meat
 Harvest Time = t - 5.48E-02 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF45(j,1,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.227E+00	1.074E+00	1.022E+00	1.007E+00	1.002E+00	1.000E+00	1.000E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.003E+00	1.001E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.319E+00	1.149E+00	1.054E+00	1.021E+00	1.009E+00	1.005E+00	1.003E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Storage Time Correction Factors for Milk
 Harvest Time = t - 2.74E-03 yr; Consumption Time = t yr

Parent (i)	Product (j)	Thread Fraction	CF45(j,2,t)# At Time in Years							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Th-230	1.000E+00	1.000E+00	1.371E+00	1.124E+00	1.037E+00	1.012E+00	1.003E+00	1.001E+00	1.000E+00
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
U-234	Pb-210+D	1.000E+00	1.000E+00	1.041E+00	1.019E+00	1.007E+00	1.003E+00	1.001E+00	1.001E+00	1.001E+00

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

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Storage Time Correction Factors for Fish & Crustacea
 Harvest Time = t - 1.92E-02 yr; Consumption Time = t yr

Parent	Product	Thread	CFF(j,1,t)# At Time in Years								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
U-234	Th-230	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.001E+00	
U-234	Ra-226+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	
U-234	Pb-210+D	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00	9.996E-01	

#Correction factor = (concentration in media at consumption time)/(concentration at harvest time).

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Area and Depth Factors for Plant (p=3), Meat (p=4), and Milk (p=5) Pathways
Overhead Irrigation (q=4)

Area Factor for Plant Foods [FA(3)] = 0.01

The Depth Factor Value

$FD(i,p,q,t) = 1.0000E+00$

is applicable for all radionuclides(i) and times(t).

Area and Depth Factors for Meat (p=4) and Milk (p=5) Pathways
Transfer from Livestock Water (q=5) and Soil (q=6) Intake

Area Factor for Meat and Milk [FA(p),p=4,5] = 0.00

The livestock water subpathway (q=5) and livestock soil intake subpathway (q=6)
occur only for the meat (p=4) and milk (p=5) pathways.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	2.175E+00	2.166E+00	2.147E+00	2.081E+00	1.905E+00	1.397E+00	5.762E-01	1.442E-02
U-234	Th-230	5.480E-04	0.000E+00	8.229E-06	2.375E-05	7.700E-05	2.203E-04	6.326E-04	1.297E-03	9.612E-04
U-234	Ra-226+D	1.321E-03	0.000E+00	6.311E-08	5.920E-07	6.561E-06	5.625E-05	5.212E-04	2.853E-03	4.254E-03
U-234	Pb-210+D	7.276E-03	0.000E+00	2.252E-10	5.088E-09	1.642E-07	3.581E-06	7.315E-05	5.821E-04	9.860E-04

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	5.052E-04	5.030E-04	4.986E-04	4.834E-04	4.424E-04	3.245E-04	1.338E-04	6.030E-06
U-234	Th-230	5.480E-04	0.000E+00	4.538E-09	1.355E-08	4.448E-08	1.277E-07	3.672E-07	7.532E-07	1.005E-06
U-234	Ra-226+D	1.321E-03	0.000E+00	9.827E-13	8.796E-12	9.591E-11	8.185E-10	7.571E-09	4.143E-08	1.112E-07
U-234	Pb-210+D	7.276E-03	0.000E+00	1.011E-14	2.672E-13	9.221E-12	2.052E-10	4.223E-09	3.366E-08	1.027E-07

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.935E-06
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.994E-11
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.981E-07
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.532E-08

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Plant Food Pathway (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,3)*	ETF(j,3,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.565E-03
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.171E-07
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.772E-05
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.254E-05

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	1.821E-03	1.814E-03	1.798E-03	1.743E-03	1.595E-03	1.170E-03	4.826E-04	1.209E-05
U-234	Th-230	5.480E-04	0.000E+00	3.068E-09	6.880E-09	1.996E-08	5.516E-08	1.564E-07	3.197E-07	2.367E-07
U-234	Ra-226+D	1.321E-03	0.000E+00	1.137E-10	1.324E-09	1.571E-08	1.372E-07	1.280E-06	7.020E-06	1.048E-05
U-234	Pb-210+D	7.276E-03	0.000E+00	7.284E-13	1.380E-11	3.699E-10	7.464E-09	1.479E-07	1.168E-06	1.975E-06

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	1.702E-06	1.696E-06	1.681E-06	1.630E-06	1.492E-06	1.094E-06	4.512E-07	2.033E-08
U-234	Th-230	5.480E-04	0.000E+00	5.087E-12	1.402E-11	4.465E-11	1.271E-10	3.643E-10	7.466E-10	9.956E-10
U-234	Ra-226+D	1.321E-03	0.000E+00	8.814E-15	8.437E-14	9.416E-13	8.088E-12	7.499E-11	4.106E-10	1.102E-09
U-234	Pb-210+D	7.276E-03	0.000E+00	8.249E-17	2.146E-15	7.344E-14	1.630E-12	3.351E-11	2.671E-10	8.147E-10

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.975E-09
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.842E-15
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.560E-10
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.804E-11

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.551E-05
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.341E-10
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.728E-07
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.587E-07

* - The dose conversion factor units are mrem/pCi.

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Dose Conversion and Environmental Transport Factors for the Meat Pathway (p=4)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,4)*	ETF(j,4,5,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.033E-05
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.154E-11
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.917E-07
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.047E-07

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,1,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	3.795E-03	3.780E-03	3.747E-03	3.633E-03	3.325E-03	2.439E-03	1.006E-03	2.518E-05
U-234	Th-230	5.480E-04	0.000E+00	2.274E-10	4.522E-10	1.223E-09	3.299E-09	9.268E-09	1.889E-08	1.398E-08
U-234	Ra-226+D	1.321E-03	0.000E+00	1.516E-10	1.621E-09	1.875E-08	1.627E-07	1.513E-06	8.293E-06	1.237E-05
U-234	Pb-210+D	7.276E-03	0.000E+00	2.871E-13	5.515E-12	1.561E-10	3.237E-09	6.487E-08	5.136E-07	8.691E-07

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,2,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	3.548E-06	3.534E-06	3.503E-06	3.396E-06	3.108E-06	2.280E-06	9.403E-07	4.237E-08
U-234	Th-230	5.480E-04	0.000E+00	3.520E-13	8.788E-13	2.686E-12	7.551E-12	2.154E-11	4.410E-11	5.880E-11
U-234	Ra-226+D	1.321E-03	0.000E+00	1.144E-14	1.028E-13	1.122E-12	9.582E-12	8.864E-11	4.851E-10	1.302E-09
U-234	Pb-210+D	7.276E-03	0.000E+00	3.616E-17	9.447E-16	3.245E-14	7.214E-13	1.484E-11	1.193E-10	3.607E-10

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,3,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.907E-09
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.048E-16
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.568E-10
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.426E-11

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,4,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.316E-05
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.439E-11
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.585E-07
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.145E-07

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Milk Pathway (p=5)

Subpathway: Livestock Water (q=5)

Parent (i)	Product (j)	DCF(j,5)*	ETF(j,5,5,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.520E-05
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.230E-11
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.959E-07
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.833E-07

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose Conversion and Environmental Transport Factors for the Fish Pathway (p=6)

Parent (i)	Product (j)	DCF(j,6)*	ETF(j,6,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.210E-04
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.358E-07
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.506E-05
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.546E-05

* - The dose conversion factor units are mrem/pCi.

Dose Conversion and Environmental Transport Factors for the Drinking Water Pathway (p=7)

Parent (i)	Product (j)	DCF(j,7)*	ETF(j,7,t) * SF(j,t) At Time in Years (g/yr)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	2.830E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.840E+00
U-234	Th-230	5.480E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.799E-04
U-234	Ra-226+D	1.321E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.208E-02
U-234	Pb-210+D	7.276E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.231E-02

* - The dose conversion factor units are mrem/pCi.

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	6.142E-04	6.115E-04	6.062E-04	5.877E-04	5.378E-04	3.945E-04	1.627E-04	4.069E-06
U-234	Th-230	1.000E+00	2.337E-09	6.642E-09	1.513E-08	4.425E-08	1.226E-07	3.480E-07	7.114E-07	5.262E-07
U-234	Ra-226+D	1.000E+00	2.691E-11	1.991E-10	1.074E-09	9.553E-09	7.671E-08	6.944E-07	3.777E-06	5.615E-06
U-234	Pb-210+D	1.000E+00	4.361E-13	5.612E-12	5.881E-11	1.377E-09	2.725E-08	5.382E-07	4.246E-06	7.169E-06
U-234	ΣDSR(j)		6.142E-04	6.116E-04	6.062E-04	5.877E-04	5.381E-04	3.961E-04	1.714E-04	1.738E-05

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.427E-07	1.420E-07	1.408E-07	1.365E-07	1.249E-07	9.162E-08	3.779E-08	1.703E-09
U-234	Th-230	1.000E+00	1.244E-12	3.725E-12	8.655E-12	2.557E-11	7.109E-11	2.020E-10	4.131E-10	5.505E-10
U-234	Ra-226+D	1.000E+00	4.331E-16	3.024E-15	1.590E-14	1.396E-13	1.116E-12	1.009E-11	5.484E-11	1.469E-10
U-234	Pb-210+D	1.000E+00	1.844E-17	2.739E-16	3.132E-15	7.744E-14	1.562E-12	3.107E-11	2.455E-10	7.473E-10
U-234	ΣDSR(j)		1.427E-07	1.420E-07	1.408E-07	1.365E-07	1.250E-07	9.187E-08	3.850E-08	3.147E-09

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.393E-09
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	3.285E-14
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	6.581E-10
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	6.211E-10
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.672E-09

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,4t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	2.136E-06	
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	1.190E-10	
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	6.306E-08	
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	2.369E-07	
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.436E-06	

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

Dose/Source Ratios for Internal Radiation from Ingestion of Plant Foods (p=3)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,3,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	6.144E-04	6.117E-04	6.063E-04	5.878E-04	5.380E-04	3.946E-04	1.627E-04	6.208E-06	
U-234	Th-230	1.000E+00	2.339E-09	6.646E-09	1.514E-08	4.427E-08	1.227E-07	3.482E-07	7.118E-07	5.269E-07	
U-234	Ra-226+D	1.000E+00	2.691E-11	1.991E-10	1.074E-09	9.553E-09	7.671E-08	6.944E-07	3.777E-06	5.679E-06	
U-234	Pb-210+D	1.000E+00	4.362E-13	5.612E-12	5.881E-11	1.377E-09	2.726E-08	5.383E-07	4.246E-06	7.407E-06	
U-234	ΣDSR(j)		6.144E-04	6.117E-04	6.063E-04	5.878E-04	5.382E-04	3.962E-04	1.715E-04	1.982E-05	

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	5.145E-07	5.123E-07	5.077E-07	4.922E-07	4.505E-07	3.304E-07	1.363E-07	3.409E-09
U-234	Th-230	1.000E+00	1.064E-12	2.205E-12	4.290E-12	1.144E-11	3.069E-11	8.606E-11	1.753E-10	1.296E-10
U-234	Ra-226+D	1.000E+00	4.171E-14	4.046E-13	2.436E-12	2.290E-11	1.872E-10	1.705E-09	9.292E-09	1.383E-08
U-234	Pb-210+D	1.000E+00	1.364E-15	1.709E-14	1.545E-13	3.086E-12	5.677E-11	1.089E-09	8.518E-09	1.436E-08
U-234	ΣDSR(j)		5.145E-07	5.123E-07	5.077E-07	4.923E-07	4.508E-07	3.333E-07	1.543E-07	3.172E-08

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	4.810E-10	4.789E-10	4.747E-10	4.602E-10	4.212E-10	3.089E-10	1.274E-10	5.741E-12
U-234	Th-230	1.000E+00	1.510E-15	4.015E-15	8.897E-15	2.565E-14	7.073E-14	2.004E-13	4.094E-13	5.456E-13
U-234	Ra-226+D	1.000E+00	3.709E-18	2.812E-17	1.532E-16	1.371E-15	1.103E-14	9.991E-14	5.435E-13	1.456E-12
U-234	Pb-210+D	1.000E+00	1.508E-19	2.217E-18	2.511E-17	6.167E-16	1.241E-14	2.466E-13	1.948E-12	5.929E-12
U-234	ΣDSR(j)		4.810E-10	4.789E-10	4.747E-10	4.602E-10	4.213E-10	3.095E-10	1.303E-10	1.367E-11

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	5.293E-13
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	4.296E-18
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	7.347E-13
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	5.680E-13
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.832E-12

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

File : C:\RESRAD_FAMILY\RESRAD\6.5\GORGE AREA U-234 EMC 10.RAD

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,4t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	7.202E-09	
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	1.283E-13	
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	6.248E-10	
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	1.883E-09	
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.710E-09	

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,5t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	2.917E-09	
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	5.016E-14	
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	2.533E-10	
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	7.620E-10	
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.933E-09	

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

Dose/Source Ratios for Internal Radiation from Ingestion of Meat (p=4)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,4,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	2.027E-06	2.019E-06	2.001E-06	1.940E-06	1.775E-06	1.302E-06	5.370E-07	3.158E-08	
U-234	Th-230	1.000E+00	5.815E-12	1.484E-11	3.229E-11	9.215E-11	2.533E-10	7.167E-10	1.464E-09	1.847E-09	
U-234	Ra-226+D	1.000E+00	5.337E-14	4.931E-13	2.919E-12	2.721E-11	2.219E-10	2.020E-09	1.100E-08	1.929E-08	
U-234	Pb-210+D	1.000E+00	1.838E-15	2.407E-14	2.335E-13	5.026E-12	9.581E-11	1.864E-09	1.465E-08	3.565E-08	
U-234	ΣDSR(j)		2.027E-06	2.019E-06	2.001E-06	1.940E-06	1.776E-06	1.307E-06	5.641E-07	8.837E-08	

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Root Uptake from Contaminated Soil (q=1)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,1t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.072E-06	1.067E-06	1.058E-06	1.026E-06	9.388E-07	6.886E-07	2.840E-07	7.104E-09
U-234	Th-230	1.000E+00	8.454E-14	1.555E-13	2.784E-13	7.000E-13	1.835E-12	5.099E-12	1.036E-11	7.653E-12
U-234	Ra-226+D	1.000E+00	5.899E-14	5.142E-13	2.967E-12	2.732E-11	2.218E-10	2.016E-09	1.098E-08	1.633E-08
U-234	Pb-210+D	1.000E+00	5.568E-16	6.695E-15	6.222E-14	1.304E-12	2.462E-11	4.773E-10	3.747E-09	6.318E-09
U-234	ΣDSR(j)		1.072E-06	1.067E-06	1.058E-06	1.026E-06	9.391E-07	6.911E-07	2.987E-07	2.976E-08

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Fodder Foliar Uptake from Contaminated Dust (q=2)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,2t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.002E-09	9.980E-10	9.892E-10	9.590E-10	8.777E-10	6.438E-10	2.655E-10	1.196E-11
U-234	Th-230	1.000E+00	1.133E-16	2.653E-16	5.533E-16	1.542E-15	4.202E-15	1.185E-14	2.419E-14	3.222E-14
U-234	Ra-226+D	1.000E+00	5.028E-18	3.527E-17	1.858E-16	1.634E-15	1.307E-14	1.181E-13	6.421E-13	1.720E-12
U-234	Pb-210+D	1.000E+00	6.632E-20	9.733E-19	1.106E-17	2.725E-16	5.491E-15	1.092E-13	8.626E-13	2.625E-12
U-234	ΣDSR(j)		1.002E-09	9.980E-10	9.892E-10	9.590E-10	8.777E-10	6.440E-10	2.670E-10	1.634E-11

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Ditch Irrigation (q=3)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,3t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.103E-12
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	2.765E-19
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	8.678E-13
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	2.494E-13
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.220E-12

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Overhead Irrigation (q=4)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.501E-08
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	7.887E-15
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	7.380E-10
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	8.332E-10
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.658E-08

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Subpathway: Livestock Water (q=5)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	2.405E-08
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	1.222E-14
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	1.184E-09
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	1.334E-09
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.657E-08

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

Dose/Source Ratios for Internal Radiation from Ingestion of Milk (p=5)

Total for All Subpathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,5,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	4.970E-06	4.948E-06	4.904E-06	4.755E-06	4.352E-06	3.192E-06	1.316E-06	9.268E-08
U-234	Th-230	1.000E+00	5.254E-13	1.187E-12	2.431E-12	6.698E-12	1.818E-11	5.121E-11	1.045E-10	1.330E-10
U-234	Ra-226+D	1.000E+00	7.855E-14	6.514E-13	3.690E-12	3.367E-11	2.726E-10	2.476E-09	1.348E-08	2.494E-08
U-234	Pb-210+D	1.000E+00	8.149E-16	1.048E-14	1.053E-13	2.364E-12	4.598E-11	9.019E-10	7.102E-09	1.870E-08
U-234	ΣDSR(j)		4.970E-06	4.948E-06	4.904E-06	4.755E-06	4.352E-06	3.195E-06	1.337E-06	1.365E-07

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from the Ingestion of Fish (p=6)

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,6,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-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	1.471E-07
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	7.443E-11
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	1.990E-08
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	2.581E-07
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.251E-07

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

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Internal Radiation from the Ingestion of Drinking Water (p=7)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent	Product	Thread	DSR(j,7,t) At Time in Years (mrem/yr)/(pCi/g)								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-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	2.778E-03	
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	1.534E-07	
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	8.203E-05	
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	3.080E-04	
U-234	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.168E-03	

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

Area Factor for Mass Loading [FA(2)]: 8.155E-02

Nuclide (i)	FAR(i,3,2,1) m**3/g	FAR(i,3,2,2) m**3/g	FWR(i,3,3,1) L/g	FWR(i,3,3,2) L/g	FWR(i,3,4,1) L/g	FWR(i,3,4,2) L/g
Pb-210	5.4545E-02	2.6156E-01	1.1331E-06	1.6662E-06	3.4522E-04	1.6554E-03
Ra-226	5.4545E-02	2.6156E-01	4.5319E-06	6.6638E-06	3.4522E-04	1.6554E-03
Th-230	5.4545E-02	2.6156E-01	1.1802E-07	1.7166E-07	3.4522E-04	1.6554E-03
U-234	5.4545E-02	2.6156E-01	2.8322E-07	4.1644E-07	3.4522E-04	1.6554E-03

Nuclide (1)		FSR(i,3,1,k)	FSR(i,3,2,1)	FSR(i,3,2,2)
Parent	Product			
U-234	U-234	2.5000E-03	4.4484E-07	2.1331E-06
U-234	Th-230	1.0000E-03	4.4484E-07	2.1331E-06
U-234	Ra-226+D	4.0000E-02	4.4484E-07	2.1331E-06
U-234	Pb-210+D	1.0000E-02	4.4484E-07	2.1331E-06

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Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Meat/Fodder, Milk/Fodder, Fodder/Air and Fodder/Water Concentration Ratios

FI(4,q): 68.0 kg/day FI(5,q): 55.0 kg/day q=1,2,3,4
 FI(4,q): 50.0 L/day FI(5,q): 160.0 L/day q=5
 FI(4,q): 0.5 kg/day FI(5,q):

Nuclide (i)	FQR(i,4) d/kg	FQR(i,5) d/kg	FAR(i,3,2,3) m**3/g	FWR(i,3,3,3) L/g	FWR(i,3,4,3) L/g
Pb-210	8.0000E-04	3.0000E-04	2.8659E-01	5.3329E-07	1.8139E-03
Ra-226	1.0000E-03	1.0000E-03	2.8659E-01	2.1329E-06	1.8139E-03
Th-230	1.0000E-04	5.0000E-06	2.8659E-01	5.3644E-08	1.8139E-03
U-234	3.4000E-04	6.0000E-04	2.8659E-01	1.3332E-07	1.8139E-03

FI(p,q) are the fodder (q=1,2,3,4), livestock water (q=5) and soil (q=6) intake rates;

FQR(i,p) are the transfer coefficients from contaminated fodder of livestock

water to meat (p=4) or milk (p=5). FAR(i,3,2,3) are the fodder/air

concentration ratios, and FWR(i,3,3,3) and FWR(i,3,4,3) are the fodder/

water concentration ratios for ditch and overhead irrigation, respectively.

Fodder/Soil Concentration Ratio, QSR(j,p,q,t), for Meat and Milk Pathways
Livestock Water (q=5)

[illegible]

Detailed: RESRAD Default Parameters Resident Farmer Scenario

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Dose/Source Ratios for Soil Ingestion Pathway (p=8)
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,8,t) At Time in Years (mrem/yr)/(pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	7.730E-05	7.696E-05	7.628E-05	7.395E-05	6.768E-05	4.964E-05	2.047E-05	9.225E-07	
U-234	Th-230	1.000E+00	6.742E-10	2.019E-09	4.690E-09	1.385E-08	3.852E-08	1.095E-07	2.238E-07	2.983E-07	
U-234	Ra-226+D	1.000E+00	2.346E-13	1.638E-12	8.614E-12	7.564E-11	6.047E-10	5.466E-09	2.971E-08	7.958E-08	
U-234	Pb-210+D	1.000E+00	9.978E-15	1.484E-13	1.697E-12	4.196E-11	8.465E-10	1.684E-08	1.330E-07	4.049E-07	
U-234	ΣDSR(j)		7.730E-05	7.696E-05	7.628E-05	7.397E-05	6.772E-05	4.977E-05	2.086E-05	1.705E-06	

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

Dose Conversion and Environmental Transport Factors for the Soil Ingestion Pathway (p=8)

Parent (i)	Product (j)	DCF(j,8) *	ETF(j,8,t) At Time in Years (g/yr)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	2.830E-04	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	
U-234	Th-230	5.480E-04	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	
U-234	Ra-226+D	1.321E-03	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	
U-234	Pb-210+D	7.276E-03	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	2.738E-01	

* - The dose conversion factor units are mrem/pCi.

