Response to Request for Additional Information Concerning License Amendment, Control No. 142822, Aberdeen Proving Ground Rad Yard, December 5, 2008

License number 19-10306-01 (docket number 03004552) granted by the U.S. Nuclear Regulatory Commission (NRC) incorporates several areas at the Aberdeen Proving Ground Edgewater Arsenal, including the Bush River Study Area Radioactive Waste Management Facility (Rad Yard). Radioactive contamination in soil has been cleaned up at the Rad Yard, and a Final Status Survey Report was submitted to the NRC on September 18, 2008 documenting current site conditions. The NRC requested additional information in a letter dated October 7, 2008. This document provides information in response to that letter.

Guidance provided in NUREG-1757 (NRC, 2006), Section 15.5 states that when proposing partial site decommissioning, the licensee must consider the residual radioactivity remaining at the proposed partial site, *plus any dose contribution from all previous site releases* (meaning sites released from NRC regulatory control) when computing the final dose. This document follows that guidance.

Nearby Sites Previously Released from Licensing

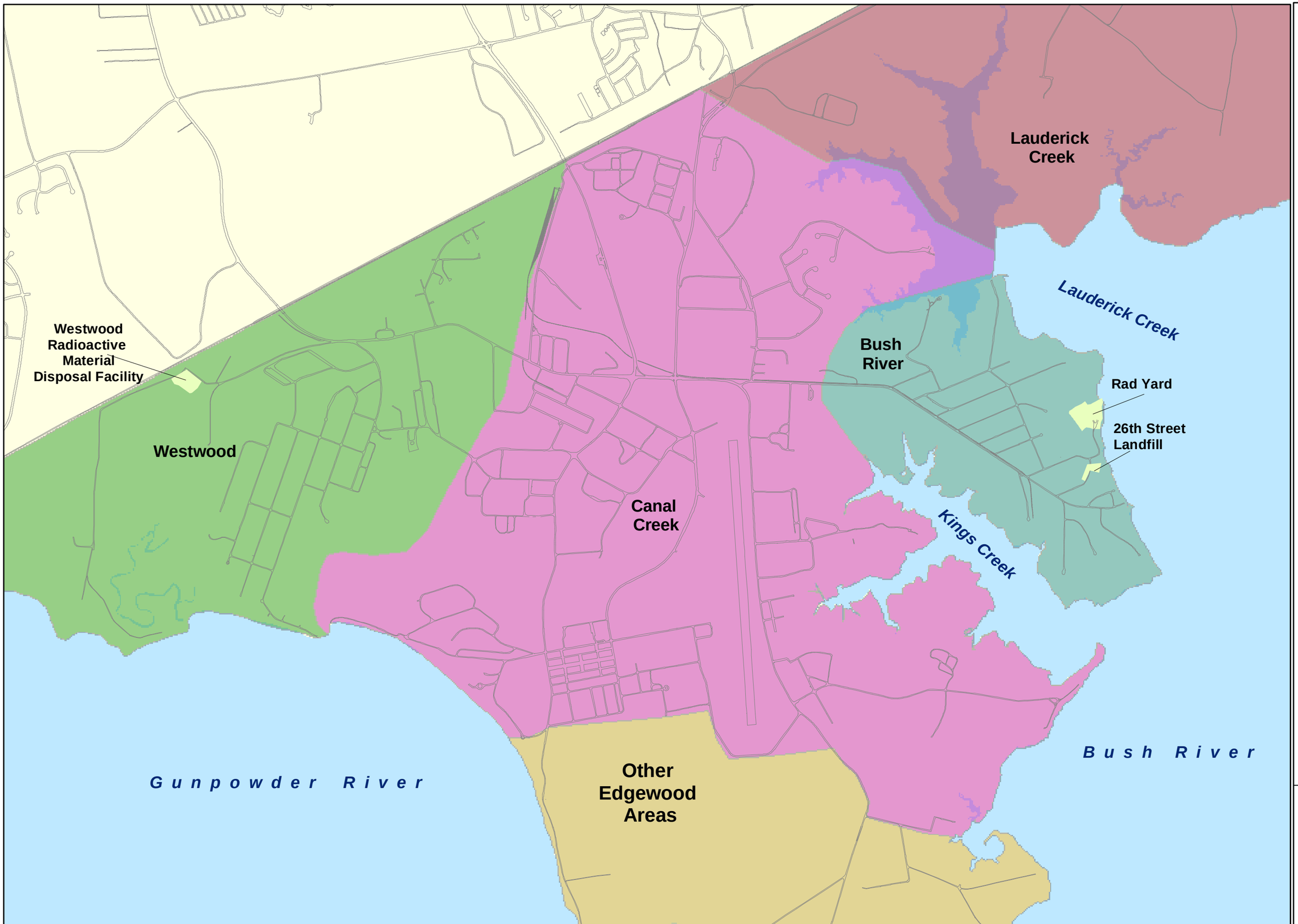
There have been two areas at Aberdeen Proving Ground that would be considered partial site releases. Both of these sites have been previously released from NRC regulatory control. They are the:

- Edgewood 26th Street Disposal Site, and
- Westwood Radioactive Material Disposal Facility.

The locations of these sites and the Rad Yard are depicted on Figure 1. The Westwood site is located approximately four miles west of the Rad Yard and is considered too far away to contribute any significant direct radiation exposure or inhalation dose to a potential recipient at the Rad Yard. The Westwood site is located on a separate water shed system that drains to the Gunpowder River whereas the Rad Yard drains to the Bush River. Therefore, the contribution from the residual radioactivity at the Westwood site to the estimated dose at the Rad Yard will not be considered further in this write-up.

The Edgewood 26th Street Disposal Site (26th Street Site) is located approximately 1000 feet south of the Rad Yard. Residual radioactivity remaining on this site could contribute to the total dose at the Rad Yard, and is further evaluated in this document.

As described in Section 4.3 of the Final Status Survey Plan (WESTON, 2007) for the Rad Yard, groundwater from the Rad Yard has been sampled extensively. A total of 47 groundwater samples were collected from across the site and in the Bush River, and neither Cs-137 nor Co-60 was detected in any of those samples. From these data it was concluded that groundwater from the Rad Yard appears not to have been impacted from historical activities. Since no radioactivity was detected in these samples, and the 26th Street Site has been in existence for decades, it can be concluded that neither prior activities at the Rad Yard nor the 26th Street Site have impacted the groundwater at the Rad Yard. Therefore, only terrestrial or airborne pathways originating on the



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26th Street Site will be considered when calculating the residual dose at the Rad Yard in this write-up.

The Bush River Study Area Human Health Radiological Risk Assessment (HHRRA) (GP, 2004) addresses the scenarios that led to remediation goals for the Rad Yard. That report was issued by the U.S. Army Garrison, Aberdeen Proving Ground, Maryland, and accepted by the U.S. EPA and the NRC.

The HHRRA evaluated several pathway scenarios in order to develop the cleanup criteria to be used during the Removal Action at the Rad Yard. Those scenarios included the resident farmer, suburban resident, and industrial worker. Site studies determined that the radionuclides of concern at the Rad Yard were Cs-137 and Co-60. In addition, the resident farmer scenario was the most restrictive of the spectrum of possible future land uses, and reported the 25 mrem/yr cleanup goals for a resident farmer provided in Table 1. The study showed that a Cs-137 soil concentration of 11.2 pCi/g or a Co-60 soil concentration of 2.83 pCi/g would result in a dose of 25 mrem/y to a resident farmer. However, it should be noted that the current and future use of this site is "industrial", and supply and storage are specifically identified in the APG Master Plan. When evaluating the industrial worker scenario, the cleanup goals calculated to nearly 4 times higher than the resident farmer values. These cleanup goals correspond to the dose per unit concentration values given in Table 1. The average residual concentrations after completion of the remediation are also provided in Table 1. These concentrations are the average soil concentrations for Cs-137 and Co-60 of the 11 survey units as presented in the FSSR.

Table 1. Rad Yard Concentrations and Factors.

Radionuclide	Cleanup Goal, pCi/g	Dose per Unit Concentration: mrem-g/pCi-yr	Average Residual Concentration, pCi/g
Cs-137	11.2	2.23	0.48
Co-60	2.83	8.83	0.01

Using the Dose per Unit Concentration factors and Average Residual Concentration values, a maximum total dose to a resident farmer from residual activity in the Rad Yard land parcel would be 1.2 mrem/yr.

Dose Contribution from 26th Street to Resident Farmer at the Rad Yard

The 26th Street Site contains low residual concentrations of Ra-226, Th-232, U-238, Co-60, and Cs-137. The average concentrations of radionuclides in excess of background for the 26th Street Site are summarized in Table 2. These data were taken from the "Confirmatory Survey of the Edgewood Area 26th Street Disposal Site", prepared by Oak Ridge Institute for Science and Education (ORISE, 1998).

Table 2. Calculated Average Net Concentrations
in Excess of Background at the 26th Street Disposal Site (pCi/g).

Co-60	1.000E-01
Cs-137	2.920E+00
Pb-210	1.540E+00
Ra-226	1.540E+00
Ra-228	1.700E-01
Th-228	1.700E-01
Th-230	4.600E-01
Th-232	1.700E-01
U-234	4.600E-01
U-238	4.600E-01

The question is now considered, "How much dose could a resident farmer at the Rad Yard receive as a result of formerly licensed residual radioactive materials that are located about 1,000 feet away at the 26th Street Site?" There are four potential routes of exposure to consider:

- Inhalation,
- External gamma radiation,
- Soil ingestion,
- Gathering wild-grown foods such as nuts, berries, mushrooms and hunting small game.

Inhalation

Inhalation of radioactive materials could occur as a result of resuspension of radioactive materials at the 26th Street Site. The resulting airborne radioactive material could be inhaled while the resident farmer is at the 26th Street Site gathering wild-grown foods. It could also be transported downwind and inhaled by the resident farmer at the Rad Yard. The concentrations of airborne dust would be diluted by atmospheric diffusion processes as it is transported by the winds from the 26th Street Site to the Rad Yard. Thus it is safe to assume the dose to the resident farmer at the Rad Yard from inhalation of dust originating at the 26th Street Site would be no larger than the dose if the resident farmer were actually residing at the 26th Street property itself. The inhalation dose that would result if the resident farmer resided at the 26th Street Site was modeled using RESRAD 6.4 (ANL, 2001) with the pathways set as shown in Table 3. The changes to default values are provided in Table 4.

Table. 3. Pathways for Modeling
26th Street Site Inhalation Dose.

Pathway	Status
external gamma	suppressed
inhalation (w/o radon)	active
plant ingestion	suppressed
meat ingestion	suppressed
milk ingestion	suppressed
aquatic foods	suppressed
drinking water	suppressed
soil ingestion	suppressed
radon	suppressed

Table 4. Changes to Defaults for Modeling Inhalation of 26th Street Site Air.

Description	User Input	Default	RESRAD Symbol
Initial principal radionuclide (pCi/g): Co-60	1.00E-01	0.00E+00	S1(1)
Initial principal radionuclide (pCi/g): Cs-137	2.92E+00	0.00E+00	S1(2)
Initial principal radionuclide (pCi/g): Pb-210	1.54E+00	0.00E+00	S1(3)
Initial principal radionuclide (pCi/g): Ra-226	1.54E+00	0.00E+00	S1(4)
Initial principal radionuclide (pCi/g): Ra-228	1.70E-01	0.00E+00	S1(5)
Initial principal radionuclide (pCi/g): Th-228	1.70E-01	0.00E+00	S1(6)
Initial principal radionuclide (pCi/g): Th-230	4.60E-01	0.00E+00	S1(7)
Initial principal radionuclide (pCi/g): Th-232	1.70E-01	0.00E+00	S1(8)
Initial principal radionuclide (pCi/g): U-234	4.60E-01	0.00E+00	S1(9)
Initial principal radionuclide (pCi/g): U-238	4.60E-01	0.00E+00	S1(10)

Based on this scenario, the incremental dose due to inhalation of dusts arising from the 26th Street Site property is 0.042 mrem/y, with the majority of the dose resulting from Th-232 (43%) and Th-230 (23%). The residual Cs-137 and Co-60 contribute less than a fraction of 1% of the total inhalation dose. Attachment 1 provides the RESRAD summary report for the inhalation pathway.

External Dose, and Ingestion of Food and Soil

Three exposure pathways: external dose, food ingestion, and soil ingestion, are considered in a separate RESRAD calculation. It is assumed that the resident farmer frequents the 26th Street Site property as a hunter-gatherer. At this site, it is assumed that:

- He spends 1% of his time at the site,
- He obtains 5% of his entire diet from hunter-gatherer activities, and
- 5% of his soil ingestion comes from this site.

This is modeled by making changes to default RESRAD parameters and disabling certain pathways, as provided in Tables 5 and 6.

Table 5. Changes to Default RESRAD Parameters

Description	User Input	Default	RESRAD Symbol
Initial principal radionuclide (pCi/g): Co-60	1.00E-01	0.00E+00	S1(1)
Initial principal radionuclide (pCi/g): Cs-137	2.92E+00	0.00E+00	S1(2)
Initial principal radionuclide (pCi/g): Pb-210	1.54E+00	0.00E+00	S1(3)
Initial principal radionuclide (pCi/g): Ra-226	1.54E+00	0.00E+00	S1(4)
Initial principal radionuclide (pCi/g): Ra-228	1.70E-01	0.00E+00	S1(5)
Initial principal radionuclide (pCi/g): Th-228	1.70E-01	0.00E+00	S1(6)
Initial principal radionuclide (pCi/g): Th-230	4.60E-01	0.00E+00	S1(7)
Initial principal radionuclide (pCi/g): Th-232	1.70E-01	0.00E+00	S1(8)
Initial principal radionuclide (pCi/g): U-234	4.60E-01	0.00E+00	S1(9)
Initial principal radionuclide (pCi/g): U-238	4.60E-01	0.00E+00	S1(10)
Fraction of time spent indoors	0.00E+00	5.00E-01	FIND

Description	User Input	Default	RESRAD Symbol
Fraction of time spent outdoors (on site)	1.00E-02	2.50E-01	FOTD
Soil ingestion rate (g/yr)	1.82E+00	3.65E+01	SOIL
Contamination fraction of irrigation water	0.00E+00	1.00E+00	FIRW
Contamination fraction of plant food	5.00E-02	-1	FPLANT
Contamination fraction of meat food	5.00E-02	-1	FMEAT

Table 6. Pathway Status

Pathway	Status
External	active
Inhalation	suppressed
Plant Ingestion	active
Meat Ingestion	active
Milk Ingestion	suppressed
Aquatic Foods	suppressed
Drinking Water	suppressed
Soil Ingestion	active
Radon	suppressed

Based on this scenario, the incremental dose due to external gamma would be 0.29 mrem/y, and ingestion arising from hunter gatherer activities at the 26th Street Site property would be 1.93 mrem/y. Attachment 2 provides the RESRAD summary report for this scenario.

Conclusion

The dose received by a resident farmer living at the Rad Yard from residual activity on the Rad Yard plus the dose from the nearby 26th Street Site is unlikely to exceed an incremental dose of more than 3.5 mrem. Therefore the NRC license termination criterion of 25 mrem/year is satisfied.

In all probability, the remedial action exceeds ALARA requirements and the site was cleaned-up to levels that are lower than could have been justified by an ALARA analysis. This would be the case even when a reasonable estimate of dose from the 26th Street Site land parcel is factored in.

References

ANL, 2001. Users Manual for RESRAD Version 6, ANL/EAD-4. Environmental Assessment Division, Argonne National Laboratory. July 2001.

GP, 2004. Human Health Radiological Risk Assessment. Radioactive Waste Management Facility, Bush River Study Area. Prepared by General Physics Corporation, Edgewood, MD. Prepared for Directorate of Safety, Health and Environment, APG, MD. June, 2004.

NRC, 2006. Consolidated NMSS Decommissioning Guidance Decommissioning Process for Materials Licenses, Final Report. NUREG-1757, Vol. 1, Rev. 2. U.S. Nuclear Regulatory

Commission, Office of Nuclear Material Safety and Safeguards, Washington, DC, September 2006.

ORISE, 1998. Confirmatory Survey of the Edgewood Area 26th Street Disposal Site Aberdeen Proving Ground, Maryland. Prepared by Oak Ridge Institute for Science and Education, Oak Ridge, TN. Prepared for the U.S. Nuclear Regulatory Commission Region 1 Office. April 1998.

WESTON, 2007. Final Status Survey Plan Bush River Study Area Radioactive Waste Management Facility. Edgewater Area, APG, MD. Prepared by Weston Solutions, Inc. Prepared for Directorate of Safety, Health, and Environment. October, 2007.

ATTACHMENT 1

RESRAD SUMMARY REPORT FOR THE INHALATION PATHWAY

1RESRAD, Version 6.4 T« Limit = 180 days 12/01/2008 00:22 Page 1
Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ABERDEEN-26THST-INHALATION.RAD

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Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ABERDEEN-26THST-INHALATION.RAD

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

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(2)
A-1	Ba-137m (Source: FGR 12)	3.606E+00	3.606E+00	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(5)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(6)
A-1	Co-60 (Source: FGR 12)	1.622E+01	1.622E+01	DCF1(7)
A-1	Cs-137 (Source: FGR 12)	7.510E-04	7.510E-04	DCF1(8)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(9)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(10)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(11)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(12)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(13)

A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(14)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(15)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(16)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(17)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(18)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(19)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(20)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(21)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(22)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(23)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(24)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(25)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1(26)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1(27)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(28)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(29)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1(30)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1(31)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Co-60	2.190E-04	2.190E-04	DCF2(1)
B-1	Cs-137+D	3.190E-05	3.190E-05	DCF2(2)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(6)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-238	1.180E-01	1.180E-01	DCF2(10)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2(11)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Co-60	2.690E-05	2.690E-05	DCF3(1)
D-1	Cs-137+D	5.000E-05	5.000E-05	DCF3(2)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)

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

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(5)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(6)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(7)

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 D-1  ³ Th-232                                                  ³ 2.730E-03 ³ 2.730E-03 ³ DCF3(  8)
 D-1  ³ U-234                                                   ³ 2.830E-04 ³ 2.830E-04 ³ DCF3(  9)
 D-1  ³ U-238                                                   ³ 2.550E-04 ³ 2.550E-04 ³ DCF3( 10)
 D-1  ³ U-238+D                                                 ³ 2.687E-04 ³ 2.550E-04 ³ DCF3( 11)
      ³                                                         ³           ³           ³
 D-34 ³ Food transfer factors:                                  ³           ³           ³
 D-34 ³ Co-60     , plant/soil concentration ratio, dimensionless ³ 8.000E-02 ³ 8.000E-02 ³ RTF(  1,1)
 D-34 ³ Co-60     , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 2.000E-02 ³ 2.000E-02 ³ RTF(  1,2)
 D-34 ³ Co-60     , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 2.000E-03 ³ 2.000E-03 ³ RTF(  1,3)
 D-34 ³                                                         ³           ³           ³
 D-34 ³ Cs-137+D  , plant/soil concentration ratio, dimensionless ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  2,1)
 D-34 ³ Cs-137+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 3.000E-02 ³ 3.000E-02 ³ RTF(  2,2)
 D-34 ³ Cs-137+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 8.000E-03 ³ 8.000E-03 ³ RTF(  2,3)
 D-34 ³                                                         ³           ³           ³
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 D-34 ³ Ra-226+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,3)
 D-34 ³                                                         ³           ³           ³
 D-34 ³ Ra-228+D  , plant/soil concentration ratio, dimensionless ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  5,1)
 D-34 ³ Ra-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,2)
 D-34 ³ Ra-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,3)
 D-34 ³                                                         ³           ³           ³
 D-34 ³ Th-228+D  , plant/soil concentration ratio, dimensionless ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  6,1)
 D-34 ³ Th-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  6,2)
 D-34 ³ Th-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  6,3)
 D-34 ³                                                         ³           ³           ³
 D-34 ³ Th-230    , plant/soil concentration ratio, dimensionless ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  7,1)
 D-34 ³ Th-230    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  7,2)
 D-34 ³ Th-230    , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  7,3)
 D-34 ³                                                         ³           ³           ³
 D-34 ³ Th-232    , plant/soil concentration ratio, dimensionless ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  8,1)
 D-34 ³ Th-232    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  8,2)
 D-34 ³ Th-232    , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  8,3)
 D-34 ³                                                         ³           ³           ³
 D-34 ³ U-234     , plant/soil concentration ratio, dimensionless ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  9,1)
 D-34 ³ U-234     , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 3.400E-04 ³ 3.400E-04 ³ RTF(  9,2)
 D-34 ³ U-234     , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 6.000E-04 ³ 6.000E-04 ³ RTF(  9,3)
 D-34 ³                                                         ³           ³           ³
 D-34 ³ U-238     , plant/soil concentration ratio, dimensionless ³ 2.500E-03 ³ 2.500E-03 ³ RTF( 10,1)
 D-34 ³ U-238     , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 3.400E-04 ³ 3.400E-04 ³ RTF( 10,2)
 D-34 ³ U-238     , milk/livestock-intake ratio, (pCi/L)/(pCi/d) ³ 6.000E-04 ³ 6.000E-04 ³ RTF( 10,3)
 D-34 ³                                                         ³           ³           ³
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Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(11,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(11,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Co-60 , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Co-60 , crustacea and mollusks	2.000E+02	2.000E+02	BIOFAC(1,2)
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(2,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(4,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(4,2)
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(7,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(7,2)
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(8,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(8,2)
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(9,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(11,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(11,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.
*Base Case means Default.Lib w/o Associate Nuclide contributions.

Site-Specific Parameter Summary

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	1.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	2.000E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	not used	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	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): Co-60	1.000E-01	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Cs-137	2.920E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.540E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.540E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	1.700E-01	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	1.700E-01	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Th-230	4.600E-01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Th-232	1.700E-01	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-234	4.600E-01	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): U-238	4.600E-01	0.000E+00	---	S1(10)
R012	Concentration in groundwater (pCi/L): Co-60	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(10)
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

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	not used	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	not used	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	not used	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	not used	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	not used	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	not used	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	not used	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	not used	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	not used	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	not used	2.500E+02	---	UW
R015	Number of unsaturated zone strata	not used	1	---	NS
R015	Unsat. zone 1, thickness (m)	not used	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	not used	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	not used	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	not used	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	not used	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	not used	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	not used	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Co-60				
R016	Contaminated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+03	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+03	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.666E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCC(2)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Unsaturated zone 1 (cm**3/g)	not used	4.600E+03	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	4.600E+03	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.623E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.663E-03	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.374E-03	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.374E-03	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(6,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.778E-06	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(7,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.778E-06	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(8)

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 R016 ³   Unsaturated zone 1 (cm**3/g)                ³ not used  ³ 6.000E+04 ³              ---               ³ DCNUCU( 8,1)
 R016 ³   Saturated zone (cm**3/g)                    ³ not used  ³ 6.000E+04 ³              ---               ³ DCNUCS( 8)
 R016 ³   Leach rate (/yr)                            ³ 0.000E+00 ³ 0.000E+00 ³           2.778E-06            ³ ALEACH( 8)
 R016 ³   Solubility constant                         ³ 0.000E+00 ³ 0.000E+00 ³           not used             ³ SOLUBK( 8)
      ³                                               ³           ³           ³                                ³
 R016 ³ Distribution coefficients for U-234           ³           ³           ³                                ³
 R016 ³   Contaminated zone (cm**3/g)                 ³ 5.000E+01 ³ 5.000E+01 ³              ---               ³ DCNUCC( 9)
 R016 ³   Unsaturated zone 1 (cm**3/g)                ³ not used  ³ 5.000E+01 ³              ---               ³ DCNUCU( 9,1)
 R016 ³   Saturated zone (cm**3/g)                    ³ not used  ³ 5.000E+01 ³              ---               ³ DCNUCS( 9)
 R016 ³   Leach rate (/yr)                            ³ 0.000E+00 ³ 0.000E+00 ³           3.319E-03            ³ ALEACH( 9)
 R016 ³   Solubility constant                         ³ 0.000E+00 ³ 0.000E+00 ³           not used             ³ SOLUBK( 9)
      ³                                               ³           ³           ³                                ³
 R016 ³ Distribution coefficients for U-238           ³           ³           ³                                ³
 R016 ³   Contaminated zone (cm**3/g)                 ³ 5.000E+01 ³ 5.000E+01 ³              ---               ³ DCNUCC(10)
 R016 ³   Unsaturated zone 1 (cm**3/g)                ³ not used  ³ 5.000E+01 ³              ---               ³ DCNUCU(10,1)
 R016 ³   Saturated zone (cm**3/g)                    ³ not used  ³ 5.000E+01 ³              ---               ³ DCNUCS(10)
 R016 ³   Leach rate (/yr)                            ³ 0.000E+00 ³ 0.000E+00 ³           3.319E-03            ³ ALEACH(10)
 R016 ³   Solubility constant                         ³ 0.000E+00 ³ 0.000E+00 ³           not used             ³ SOLUBK(10)
 R017 ³ Inhalation rate (m**3/yr)                     ³ 8.400E+03 ³ 8.400E+03 ³              ---               ³ INHALR
 R017 ³ Mass loading for inhalation (g/m**3)          ³ 1.000E-04 ³ 1.000E-04 ³              ---               ³ MLINH
 R017 ³ Exposure duration                             ³ 3.000E+01 ³ 3.000E+01 ³              ---               ³ ED
 R017 ³ Shielding factor, inhalation                  ³ 4.000E-01 ³ 4.000E-01 ³              ---               ³ SHF3
1RESRAD, Version 6.4      T« Limit = 180 days        12/01/2008  00:22  Page   8
 Summary : RESRAD Default Parameters
 File    : C:\RESRAD_FAMILY\RESRAD\USERFILES\ABERDEEN-26THST-INHALATION.RAD

                                        Site-Specific Parameter Summary (continued)
0     ³                                               ³   User    ³           ³         Used by RESRAD         ³  Parameter
 Menu ³                    Parameter                  ³   Input   ³  Default  ³ (If different from user input) ³    Name
 ÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÅÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
 R017 ³ Shielding factor, external gamma              ³ not used  ³ 7.000E-01 ³              ---               ³ SHF1
 R017 ³ Fraction of time spent indoors                ³ 5.000E-01 ³ 5.000E-01 ³              ---               ³ FIND
 R017 ³ Fraction of time spent outdoors (on site)     ³ 2.500E-01 ³ 2.500E-01 ³              ---               ³ FOTD
 R017 ³ Shape factor flag, external gamma             ³ not used  ³ 1.000E+00 ³    >0 shows circular AREA.     ³ FS
 R017 ³ Radii of shape factor array (used if FS = -1):³           ³           ³                                ³
 R017 ³   Outer annular radius (m), ring  1:          ³ not used  ³ 5.000E+01 ³              ---               ³ RAD_SHAPE( 1)
 R017 ³   Outer annular radius (m), ring  2:          ³ not used  ³ 7.071E+01 ³              ---               ³ RAD_SHAPE( 2)
 R017 ³   Outer annular radius (m), ring  3:          ³ not used  ³ 0.000E+00 ³              ---               ³ RAD_SHAPE( 3)
 R017 ³   Outer annular radius (m), ring  4:          ³ not used  ³ 0.000E+00 ³              ---               ³ RAD_SHAPE( 4)
 R017 ³   Outer annular radius (m), ring  5:          ³ not used  ³ 0.000E+00 ³              ---               ³ RAD_SHAPE( 5)
 R017 ³   Outer annular radius (m), ring  6:          ³ not used  ³ 0.000E+00 ³              ---               ³ RAD_SHAPE( 6)
 R017 ³   Outer annular radius (m), ring  7:          ³ not used  ³ 0.000E+00 ³              ---               ³ RAD_SHAPE( 7)
 R017 ³   Outer annular radius (m), ring  8:          ³ not used  ³ 0.000E+00 ³              ---               ³ RAD_SHAPE( 8)
 R017 ³   Outer annular radius (m), ring  9:          ³ not used  ³ 0.000E+00 ³              ---               ³ RAD_SHAPE( 9)
 R017 ³   Outer annular radius (m), ring 10:          ³ not used  ³ 0.000E+00 ³              ---               ³ RAD_SHAPE(10)
 R017 ³   Outer annular radius (m), ring 11:          ³ not used  ³ 0.000E+00 ³              ---               ³ RAD_SHAPE(11)
 R017 ³   Outer annular radius (m), ring 12:          ³ not used  ³ 0.000E+00 ³              ---               ³ RAD_SHAPE(12)
      ³                                               ³           ³           ³                                ³
 R017 ³ Fractions of annular areas within AREA:       ³           ³           ³                                ³
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R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
R017	Ring 7	not used	0.000E+00	---	FRACA(7)
R017	Ring 8	not used	0.000E+00	---	FRACA(8)
R017	Ring 9	not used	0.000E+00	---	FRACA(9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	not used	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	not used	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	not used	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	not used	1.000E+00	---	FGWLW

R019	Irrigation fraction from ground water	not used	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	not used	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	not used	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	not used	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	not used	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	not used	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	not used	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	not used	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	not used	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	not used	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
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)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1

R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

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

Contaminated Zone Dimensions

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

Initial Soil Concentrations, pCi/g

Co-60	1.000E-01
Cs-137	2.920E+00
Pb-210	1.540E+00
Ra-226	1.540E+00

Ra-228	1.700E-01
Th-228	1.700E-01
Th-230	4.600E-01
Th-232	1.700E-01
U-234	4.600E-01
U-238	4.600E-01

0

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

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	4.174E-02	4.170E-02	4.163E-02	4.139E-02	4.076E-02	3.889E-02	3.532E-02	3.162E-02
M(t):	1.669E-03	1.668E-03	1.665E-03	1.655E-03	1.630E-03	1.556E-03	1.413E-03	1.265E-03

0Maximum TDOSE(t): 4.174E-02 mrem/yr at t = 0.000E+00 years

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Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ABERDEEN-26THST-INHALATION.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Co-60	0.000E+00	0.0000	1.313E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	5.893E-06	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	2.249E-03	0.0539	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	8.809E-04	0.0211	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	0.000E+00	0.0000	6.326E-04	0.0152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	3.152E-03	0.0755	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	9.597E-03	0.2299	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	0.000E+00	0.0000	1.787E-02	0.4282	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	3.879E-03	0.0930	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	3.469E-03	0.0831	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	4.174E-02	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.313E-06	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.893E-06	0.0001
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.249E-03	0.0539

Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.809E-04	0.0211
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.326E-04	0.0152
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.152E-03	0.0755
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.597E-03	0.2299
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.787E-02	0.4282
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.879E-03	0.0930
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.469E-03	0.0831
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.174E-02	1.0000

0*Sum of all water independent and dependent pathways.

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Summary : RESRAD Default Parameters

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ABERDEEN-26THST-INHALATION.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Co-60	0.000E+00	0.0000	1.151E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	5.758E-06	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	2.177E-03	0.0522	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	9.471E-04	0.0227	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	0.000E+00	0.0000	1.457E-03	0.0349	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	2.194E-03	0.0526	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	9.597E-03	0.2301	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	0.000E+00	0.0000	1.800E-02	0.4316	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	3.867E-03	0.0927	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	3.457E-03	0.0829	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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Total	0.000E+00	0.0000	4.170E-02	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.151E-06	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.758E-06	0.0001
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.177E-03	0.0522
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.471E-04	0.0227
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.457E-03	0.0349
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.194E-03	0.0526
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.597E-03	0.2301
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.800E-02	0.4316

U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.867E-03	0.0927
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.457E-03	0.0829
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.170E-02	1.0000

0*Sum of all water independent and dependent pathways.

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Summary : RESRAD Default Parameters

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ABERDEEN-26THST-INHALATION.RAD

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Co-60	0.000E+00	0.0000	8.846E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	5.497E-06	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	2.039E-03	0.0490	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	1.072E-03	0.0258	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	0.000E+00	0.0000	2.128E-03	0.0511	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	1.063E-03	0.0255	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	9.597E-03	0.2305	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	0.000E+00	0.0000	1.845E-02	0.4432	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	3.841E-03	0.0923	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	3.435E-03	0.0825	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	4.163E-02	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.846E-07	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.497E-06	0.0001
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.039E-03	0.0490
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.072E-03	0.0258
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.128E-03	0.0511
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.063E-03	0.0255
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.597E-03	0.2305
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.845E-02	0.4432
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.841E-03	0.0923
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.435E-03	0.0825
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.163E-02	1.0000

0*Sum of all water independent and dependent pathways.

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Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ABERDEEN-26THST-INHALATION.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Co-60	0.000E+00	0.0000	3.520E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	4.675E-06	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	1.621E-03	0.0392	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	1.444E-03	0.0349	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	0.000E+00	0.0000	1.453E-03	0.0351	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	8.414E-05	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	9.597E-03	0.2319	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	0.000E+00	0.0000	2.007E-02	0.4850	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	3.753E-03	0.0907	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	3.356E-03	0.0811	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	4.139E-02	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.520E-07	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.675E-06	0.0001
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.621E-03	0.0392
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.444E-03	0.0349
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.453E-03	0.0351
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.414E-05	0.0020
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.597E-03	0.2319
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.007E-02	0.4850
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.753E-03	0.0907
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.356E-03	0.0811
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.139E-02	1.0000

0*Sum of all water independent and dependent pathways.

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Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ABERDEEN-26THST-INHALATION.RAD

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Co-60	0.000E+00	0.0000	2.528E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	2.943E-06	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	8.421E-04	0.0207	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	2.082E-03	0.0511	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	0.000E+00	0.0000	1.351E-04	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	5.997E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	9.600E-03	0.2355	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	0.000E+00	0.0000	2.145E-02	0.5261	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	3.514E-03	0.0862	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	3.140E-03	0.0770	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	4.076E-02	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.528E-08	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.943E-06	0.0001
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.421E-04	0.0207
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.082E-03	0.0511
Ra-228	0.000E+00	0.0000	0.000E+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-04	0.0033
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.997E-08	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.600E-03	0.2355
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.145E-02	0.5261
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.514E-03	0.0862
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.140E-03	0.0770
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.076E-02	1.0000

0*Sum of all water independent and dependent pathways.

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Summary : RESRAD Default Parameters

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ABERDEEN-26THST-INHALATION.RAD

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+02 years

0 Water Independent Pathways (Inhalation excludes radon)

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

ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ
Co-60	0.000E+00	0.0000	2.512E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	5.825E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	8.508E-05	0.0022	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	2.340E-03	0.0602	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	0.000E+00	0.0000	2.479E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	5.797E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	9.613E-03	0.2472	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	0.000E+00	0.0000	2.157E-02	0.5547	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	2.790E-03	0.0717	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	2.490E-03	0.0640	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ
Total	0.000E+00	0.0000	3.889E-02	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.512E-12	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.825E-07	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.508E-05	0.0022
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.340E-03	0.0602
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.479E-08	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.797E-19	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.613E-03	0.2472
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.157E-02	0.5547
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.790E-03	0.0717
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.490E-03	0.0640
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.889E-02	1.0000

0*Sum of all water independent and dependent pathways.

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Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ABERDEEN-26THST-INHALATION.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ
Co-60	0.000E+00	0.0000	9.192E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	5.692E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	1.218E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	1.385E-03	0.0392	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Ra-228	0.000E+00	0.0000	5.217E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	9.638E-03	0.2729	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	0.000E+00	0.0000	2.156E-02	0.6105	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	1.448E-03	0.0410	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-238	0.000E+00	0.0000	1.283E-03	0.0363	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	3.532E-02	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.192E-24	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.692E-09	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.218E-07	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.385E-03	0.0392
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.217E-19	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.638E-03	0.2729
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.156E-02	0.6105
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.448E-03	0.0410
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.283E-03	0.0363
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.532E-02	1.0000

0*Sum of all water independent and dependent pathways.

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Summary : RESRAD Default Parameters
File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ABERDEEN-26THST-INHALATION.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	5.251E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pb-210	0.000E+00	0.0000	1.351E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	1.942E-04	0.0061	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	9.613E-03	0.3040	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-232	0.000E+00	0.0000	2.152E-02	0.6806	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
U-234	0.000E+00	0.0000	1.651E-04	0.0052	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

U-238	0.000E+00	0.0000	1.259E-04	0.0040	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	3.162E-02	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.251E-16	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.351E-17	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.942E-04	0.0061
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.613E-03	0.3040
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.152E-02	0.6806
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.651E-04	0.0052
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.259E-04	0.0040
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.162E-02	1.0000

0*Sum of all water independent and dependent pathways.

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

0 Parent	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
ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ
Co-60	Co-60	1.000E+00	1.313E-05	1.151E-05	8.846E-06	3.520E-06	2.528E-07	2.512E-11	9.192E-23	0.000E+00
0Cs-137+D	Cs-137+D	1.000E+00	2.018E-06	1.972E-06	1.883E-06	1.601E-06	1.008E-06	1.995E-07	1.949E-09	1.798E-16
0Pb-210+D	Pb-210+D	1.000E+00	1.460E-03	1.413E-03	1.324E-03	1.053E-03	5.468E-04	5.525E-05	7.908E-08	8.772E-18
0Ra-226+D	Ra-226+D	1.000E+00	5.492E-04	5.477E-04	5.446E-04	5.340E-04	5.049E-04	4.148E-04	2.366E-04	3.317E-05
Ra-226+D	Pb-210+D	1.000E+00	2.280E-05	6.733E-05	1.518E-04	4.036E-04	8.470E-04	1.105E-03	6.629E-04	9.294E-05
Ra-226+D	äDSR(j)		5.720E-04	6.150E-04	6.964E-04	9.376E-04	1.352E-03	1.520E-03	8.996E-04	1.261E-04
0Ra-228+D	Ra-228+D	1.000E+00	3.058E-04	2.704E-04	2.115E-04	8.945E-05	7.654E-06	1.403E-09	2.953E-20	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	3.415E-03	8.303E-03	1.230E-02	8.458E-03	7.873E-04	1.444E-07	3.039E-18	0.000E+00
Ra-228+D	äDSR(j)		3.721E-03	8.573E-03	1.252E-02	8.547E-03	7.950E-04	1.458E-07	3.069E-18	0.000E+00
0Th-228+D	Th-228+D	1.000E+00	1.854E-02	1.290E-02	6.252E-03	4.950E-04	3.528E-07	3.410E-18	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	2.086E-02	2.086E-02	2.086E-02	2.086E-02	2.085E-02	2.084E-02	2.079E-02	2.062E-02
Th-230	Ra-226+D	1.000E+00	1.190E-07	3.566E-07	8.298E-07	2.465E-06	6.964E-06	2.085E-05	4.827E-05	7.910E-05
Th-230	Pb-210+D	1.000E+00	3.302E-09	2.288E-08	1.182E-07	9.764E-07	6.637E-06	3.882E-05	1.149E-04	2.015E-04
Th-230	äDSR(j)		2.086E-02	2.086E-02	2.086E-02	2.086E-02	2.087E-02	2.090E-02	2.095E-02	2.090E-02
0Th-232	Th-232	1.000E+00	1.050E-01	1.050E-01	1.050E-01	1.049E-01	1.049E-01	1.049E-01	1.049E-01	1.047E-01
Th-232	Ra-228+D	1.000E+00	1.881E-05	5.349E-05	1.113E-04	2.310E-04	3.112E-04	3.186E-04	3.184E-04	3.178E-04

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 Th-232     Th-228+D   1.000E+00  1.428E-04 8.756E-04 3.475E-03 1.289E-02 2.090E-02 2.167E-02 2.166E-02 2.161E-02
 Th-232     äDSR(j)               1.051E-01 1.059E-01 1.085E-01 1.181E-01 1.262E-01 1.269E-01 1.268E-01 1.266E-01
0U-234      U-234      1.000E+00  8.433E-03 8.405E-03 8.350E-03 8.158E-03 7.633E-03 6.050E-03 3.113E-03 3.043E-04
 U-234      Th-230     1.000E+00  9.380E-08 2.810E-07 6.535E-07 1.938E-06 5.446E-06 1.604E-05 3.563E-05 5.403E-05
 U-234      Ra-226+D   1.000E+00  3.569E-13 2.494E-12 1.313E-11 1.158E-10 9.376E-10 8.842E-09 5.366E-08 1.846E-07
 U-234      Pb-210+D   1.000E+00  7.439E-15 1.107E-13 1.268E-12 3.147E-11 6.427E-10 1.333E-08 1.178E-07 4.646E-07
 U-234      äDSR(j)               8.433E-03 8.406E-03 8.350E-03 8.160E-03 7.639E-03 6.066E-03 3.149E-03 3.590E-04
0U-238      U-238      5.400E-05  4.071E-07 4.058E-07 4.031E-07 3.938E-07 3.685E-07 2.921E-07 1.504E-07 1.473E-08
0U-238+D    U-238+D    9.999E-01  7.541E-03 7.516E-03 7.466E-03 7.295E-03 6.826E-03 5.411E-03 2.786E-03 2.729E-04
 U-238+D    U-234      9.999E-01  1.195E-08 3.573E-08 8.284E-08 2.428E-07 6.600E-07 1.724E-06 2.653E-06 8.643E-07
 U-238+D    Th-230     9.999E-01  8.858E-14 6.189E-13 3.257E-12 2.869E-11 2.315E-10 2.158E-09 1.270E-08 4.050E-08
 U-238+D    Ra-226+D   9.999E-01  2.529E-19 3.785E-18 4.396E-17 1.147E-15 2.676E-14 8.126E-13 1.375E-11 1.185E-10
 U-238+D    Pb-210+D   9.999E-01  4.222E-21 1.299E-19 3.221E-18 2.378E-16 1.438E-14 1.032E-12 2.786E-11 2.931E-10
 U-238+D    äDSR(j)               7.541E-03 7.516E-03 7.466E-03 7.295E-03 6.827E-03 5.413E-03 2.789E-03 2.738E-04
 ÍÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍÍ
 The DSR includes contributions from associated (half-life ó 180 days) daughters.
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                           Single Radionuclide Soil Guidelines G(i,t) in pCi/g
                              Basic Radiation Dose Limit = 2.500E+01 mrem/yr
0Nuclide
   (i)    t= 0.000E+00   1.000E+00   3.000E+00   1.000E+01   3.000E+01   1.000E+02   3.000E+02   1.000E+03
 ÄÄÄÄÄÄÄ     ÄÄÄÄÄÄÄÄÄÄ   ÄÄÄÄÄÄÄÄÄÄ   ÄÄÄÄÄÄÄÄÄÄ   ÄÄÄÄÄÄÄÄÄÄ   ÄÄÄÄÄÄÄÄÄÄ   ÄÄÄÄÄÄÄÄÄÄ   ÄÄÄÄÄÄÄÄÄÄ   ÄÄÄÄÄÄÄÄÄÄ
 Co-60       1.904E+06   2.172E+06   2.826E+06   7.103E+06   9.888E+07   9.952E+11  *1.132E+15  *1.132E+15
 Cs-137      1.239E+07   1.268E+07   1.328E+07   1.561E+07   2.480E+07   1.253E+08   1.282E+10  *8.704E+13
 Pb-210      1.712E+04   1.769E+04   1.889E+04   2.375E+04   4.572E+04   4.525E+05   3.161E+08  *7.634E+13
 Ra-226      4.370E+04   4.065E+04   3.590E+04   2.666E+04   1.849E+04   1.645E+04   2.779E+04   1.982E+05
 Ra-228      6.718E+03   2.916E+03   1.997E+03   2.925E+03   3.145E+04   1.715E+08  *2.726E+14  *2.726E+14
 Th-228      1.348E+03   1.937E+03   3.998E+03   5.051E+04   7.086E+07  *8.195E+14  *8.195E+14  *8.195E+14
 Th-230      1.198E+03   1.198E+03   1.198E+03   1.198E+03   1.198E+03   1.196E+03   1.193E+03   1.196E+03
 Th-232      2.378E+02   2.361E+02   2.303E+02   2.117E+02   1.982E+02   1.970E+02   1.971E+02   1.975E+02
 U-234       2.964E+03   2.974E+03   2.994E+03   3.064E+03   3.273E+03   4.122E+03   7.939E+03   6.964E+04
 U-238       3.315E+03   3.326E+03   3.348E+03   3.427E+03   3.662E+03   4.619E+03   8.965E+03   9.132E+04
 ÍÍÍÍÍÍÍ     ÍÍÍÍÍÍÍÍÍÍ   ÍÍÍÍÍÍÍÍÍÍ   ÍÍÍÍÍÍÍÍÍÍ   ÍÍÍÍÍÍÍÍÍÍ   ÍÍÍÍÍÍÍÍÍÍ   ÍÍÍÍÍÍÍÍÍÍ   ÍÍÍÍÍÍÍÍÍÍ   ÍÍÍÍÍÍÍÍÍÍ
 *At specific activity limit
0
             Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
             and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
          at tmin = time of minimum single radionuclide soil guideline
      and at tmax = time of maximum total dose = 0.000E+00 years
0Nuclide  Initial         tmin       DSR(i,tmin) G(i,tmin) DSR(i,tmax) G(i,tmax)
   (i)    (pCi/g)       (years)                   (pCi/g)              (pCi/g)
 ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄ
 Co-60   1.000E-01     0.000E+00      1.313E-05  1.904E+06  1.313E-05  1.904E+06
 Cs-137  2.920E+00     0.000E+00      2.018E-06  1.239E+07  2.018E-06  1.239E+07
 Pb-210  1.540E+00     0.000E+00      1.460E-03  1.712E+04  1.460E-03  1.712E+04
 Ra-226  1.540E+00     71.4 ñ 0.1     1.563E-03  1.600E+04  5.720E-04  4.370E+04
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 Ra-228  1.700E-01    3.997 ñ 0.008   1.285E-02  1.946E+03  3.721E-03  6.718E+03
 Th-228  1.700E-01     0.000E+00      1.854E-02  1.348E+03  1.854E-02  1.348E+03
 Th-230  4.600E-01    462.8 ñ 0.9     2.096E-02  1.193E+03  2.086E-02  1.198E+03
 Th-232  1.700E-01     75.8 ñ 0.2     1.269E-01  1.970E+02  1.051E-01  2.378E+02
 U-234   4.600E-01     0.000E+00      8.433E-03  2.964E+03  8.433E-03  2.964E+03
 U-238   4.600E-01     0.000E+00      7.541E-03  3.315E+03  7.541E-03  3.315E+03
 ÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ  ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ  ÍÍÍÍÍÍÍÍÍ  ÍÍÍÍÍÍÍÍÍ  ÍÍÍÍÍÍÍÍÍ  ÍÍÍÍÍÍÍÍÍ

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                              Individual Nuclide Dose Summed Over All Pathways
                                Parent Nuclide and Branch Fraction Indicated
0Nuclide Parent   THF(i)                                   DOSE(j,t), mrem/yr
   (j)     (i)             t= 0.000E+00 1.000E+00 3.000E+00 1.000E+01 3.000E+01 1.000E+02 3.000E+02 1.000E+03
 ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ    ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ
 Co-60   Co-60   1.000E+00    1.313E-06 1.151E-06 8.846E-07 3.520E-07 2.528E-08 2.512E-12 9.192E-24 0.000E+00
0Cs-137  Cs-137  1.000E+00    5.893E-06 5.758E-06 5.497E-06 4.675E-06 2.943E-06 5.825E-07 5.692E-09 5.251E-16
0Pb-210  Pb-210  1.000E+00    2.249E-03 2.177E-03 2.039E-03 1.621E-03 8.421E-04 8.508E-05 1.218E-07 1.351E-17
 Pb-210  Ra-226  1.000E+00    3.511E-05 1.037E-04 2.337E-04 6.215E-04 1.304E-03 1.702E-03 1.021E-03 1.431E-04
 Pb-210  Th-230  1.000E+00    1.519E-09 1.053E-08 5.439E-08 4.491E-07 3.053E-06 1.786E-05 5.287E-05 9.269E-05
 Pb-210  U-234   1.000E+00    3.422E-15 5.091E-14 5.831E-13 1.448E-11 2.957E-10 6.134E-09 5.420E-08 2.137E-07
 Pb-210  U-238   9.999E-01    1.942E-21 5.976E-20 1.482E-18 1.094E-16 6.615E-15 4.748E-13 1.282E-11 1.348E-10
 Pb-210  äDOSE(j)             2.284E-03 2.280E-03 2.272E-03 2.243E-03 2.150E-03 1.805E-03 1.074E-03 2.360E-04
0Ra-226  Ra-226  1.000E+00    8.458E-04 8.434E-04 8.387E-04 8.224E-04 7.775E-04 6.388E-04 3.644E-04 5.108E-05
 Ra-226  Th-230  1.000E+00    5.475E-08 1.640E-07 3.817E-07 1.134E-06 3.203E-06 9.592E-06 2.220E-05 3.639E-05
 Ra-226  U-234   1.000E+00    1.642E-13 1.147E-12 6.040E-12 5.327E-11 4.313E-10 4.067E-09 2.468E-08 8.490E-08
 Ra-226  U-238   9.999E-01    1.163E-19 1.741E-18 2.022E-17 5.276E-16 1.231E-14 3.738E-13 6.327E-12 5.451E-11
 Ra-226  äDOSE(j)             8.459E-04 8.436E-04 8.391E-04 8.235E-04 7.807E-04 6.484E-04 3.866E-04 8.755E-05
0Ra-228  Ra-228  1.000E+00    5.198E-05 4.597E-05 3.595E-05 1.521E-05 1.301E-06 2.385E-10 5.020E-21 0.000E+00
 Ra-228  Th-232  1.000E+00    3.197E-06 9.094E-06 1.892E-05 3.926E-05 5.290E-05 5.416E-05 5.413E-05 5.403E-05
 Ra-228  äDOSE(j)             5.518E-05 5.507E-05 5.487E-05 5.447E-05 5.420E-05 5.416E-05 5.413E-05 5.403E-05
0Th-228  Ra-228  1.000E+00    5.806E-04 1.412E-03 2.092E-03 1.438E-03 1.338E-04 2.455E-08 5.167E-19 0.000E+00
 Th-228  Th-228  1.000E+00    3.152E-03 2.194E-03 1.063E-03 8.414E-05 5.997E-08 5.797E-19 0.000E+00 0.000E+00
 Th-228  Th-232  1.000E+00    2.428E-05 1.489E-04 5.908E-04 2.192E-03 3.553E-03 3.684E-03 3.682E-03 3.674E-03
 Th-228  äDOSE(j)             3.757E-03 3.754E-03 3.745E-03 3.714E-03 3.687E-03 3.684E-03 3.682E-03 3.674E-03
0Th-230  Th-230  1.000E+00    9.597E-03 9.597E-03 9.596E-03 9.596E-03 9.593E-03 9.585E-03 9.563E-03 9.484E-03
 Th-230  U-234   1.000E+00    4.315E-08 1.292E-07 3.006E-07 8.914E-07 2.505E-06 7.377E-06 1.639E-05 2.485E-05
 Th-230  U-238   9.999E-01    4.075E-14 2.847E-13 1.498E-12 1.320E-11 1.065E-10 9.928E-10 5.843E-09 1.863E-08
 Th-230  äDOSE(j)             9.597E-03 9.597E-03 9.597E-03 9.596E-03 9.596E-03 9.593E-03 9.579E-03 9.509E-03
0Th-232  Th-232  1.000E+00    1.784E-02 1.784E-02 1.784E-02 1.784E-02 1.784E-02 1.784E-02 1.783E-02 1.779E-02
0U-234   U-234   1.000E+00    3.879E-03 3.866E-03 3.841E-03 3.753E-03 3.511E-03 2.783E-03 1.432E-03 1.400E-04
 U-234   U-238   9.999E-01    5.496E-09 1.644E-08 3.811E-08 1.117E-07 3.036E-07 7.929E-07 1.220E-06 3.976E-07
 U-234   äDOSE(j)             3.879E-03 3.866E-03 3.841E-03 3.753E-03 3.512E-03 2.784E-03 1.433E-03 1.404E-04
0U-238   U-238   5.400E-05    1.873E-07 1.866E-07 1.854E-07 1.812E-07 1.695E-07 1.344E-07 6.919E-08 6.776E-09
 U-238   U-238   9.999E-01    3.469E-03 3.457E-03 3.434E-03 3.355E-03 3.140E-03 2.489E-03 1.282E-03 1.255E-04
 U-238   äDOSE(j)             3.469E-03 3.457E-03 3.435E-03 3.356E-03 3.140E-03 2.489E-03 1.282E-03 1.255E-04
 ÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍ    ÍÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍÍ ÍÍÍÍÍÍÍÍÍÍ
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THF(i) is the thread fraction of the parent nuclide.

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Summary : RESRAD Default Parameters

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ABERDEEN-26THST-INHALATION.RAD

Individual Nuclide Soil Concentration

Parent Nuclide and Branch Fraction Indicated

0Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ
Co-60	Co-60	1.000E+00	1.000E-01	8.766E-02	6.737E-02	2.680E-02	1.925E-03	1.913E-07	7.000E-19	0.000E+00
0Cs-137	Cs-137	1.000E+00	2.920E+00	2.853E+00	2.724E+00	2.317E+00	1.458E+00	2.887E-01	2.821E-03	2.602E-10
0Pb-210	Pb-210	1.000E+00	1.540E+00	1.490E+00	1.396E+00	1.110E+00	5.766E-01	5.826E-02	8.339E-05	9.250E-15
Pb-210	Ra-226	1.000E+00	0.000E+00	4.703E-02	1.362E-01	4.022E-01	8.711E-01	1.147E+00	6.887E-01	9.656E-02
Pb-210	Th-230	1.000E+00	0.000E+00	3.061E-06	2.691E-05	2.758E-04	2.000E-03	1.195E-02	3.557E-02	6.244E-02
Pb-210	U-234	1.000E+00	0.000E+00	9.204E-12	2.437E-10	8.447E-09	1.903E-07	4.085E-06	3.641E-05	1.439E-04
Pb-210	U-238	9.999E-01	0.000E+00	6.531E-18	5.202E-16	6.060E-14	4.186E-12	3.146E-10	8.596E-09	9.077E-08
Pb-210	äS(j):		1.540E+00	1.537E+00	1.532E+00	1.512E+00	1.450E+00	1.217E+00	7.244E-01	1.591E-01
0Ra-226	Ra-226	1.000E+00	1.540E+00	1.536E+00	1.527E+00	1.497E+00	1.416E+00	1.163E+00	6.635E-01	9.300E-02
Ra-226	Th-230	1.000E+00	0.000E+00	1.990E-04	5.953E-04	1.965E-03	5.733E-03	1.736E-02	4.033E-02	6.615E-02
Ra-226	U-234	1.000E+00	0.000E+00	8.951E-10	8.023E-09	8.788E-08	7.594E-07	7.329E-06	4.477E-05	1.543E-04
Ra-226	U-238	9.999E-01	0.000E+00	8.456E-16	2.272E-14	8.278E-13	2.132E-11	6.703E-10	1.146E-08	9.906E-08
Ra-226	äS(j):		1.540E+00	1.536E+00	1.528E+00	1.499E+00	1.421E+00	1.180E+00	7.038E-01	1.593E-01
0Ra-228	Ra-228	1.000E+00	1.700E-01	1.503E-01	1.176E-01	4.973E-02	4.255E-03	7.799E-07	1.642E-17	0.000E+00
Ra-228	Th-232	1.000E+00	0.000E+00	1.928E-02	5.142E-02	1.179E-01	1.625E-01	1.667E-01	1.666E-01	1.663E-01
Ra-228	äS(j):		1.700E-01	1.696E-01	1.690E-01	1.677E-01	1.668E-01	1.667E-01	1.666E-01	1.663E-01
0Th-228	Ra-228	1.000E+00	0.000E+00	4.844E-02	9.117E-02	6.839E-02	6.435E-03	1.180E-06	2.484E-17	0.000E+00
Th-228	Th-228	1.000E+00	1.700E-01	1.183E-01	5.733E-02	4.539E-03	3.235E-06	3.127E-17	0.000E+00	0.000E+00
Th-228	Th-232	1.000E+00	0.000E+00	3.167E-03	2.108E-02	9.519E-02	1.604E-01	1.667E-01	1.666E-01	1.663E-01
Th-228	äS(j):		1.700E-01	1.699E-01	1.696E-01	1.681E-01	1.668E-01	1.667E-01	1.666E-01	1.663E-01
0Th-230	Th-230	1.000E+00	4.600E-01	4.600E-01	4.600E-01	4.599E-01	4.598E-01	4.595E-01	4.584E-01	4.546E-01
Th-230	U-234	1.000E+00	0.000E+00	4.134E-06	1.236E-05	4.073E-05	1.182E-04	3.521E-04	7.848E-04	1.191E-03
Th-230	U-238	9.999E-01	0.000E+00	5.856E-12	5.247E-11	5.741E-10	4.944E-09	4.716E-08	2.794E-07	8.927E-07
Th-230	äS(j):		4.600E-01	4.600E-01	4.600E-01	4.600E-01	4.600E-01	4.598E-01	4.592E-01	4.558E-01
0Th-232	Th-232	1.000E+00	1.700E-01	1.700E-01	1.700E-01	1.700E-01	1.700E-01	1.700E-01	1.699E-01	1.695E-01
0U-234	U-234	1.000E+00	4.600E-01	4.585E-01	4.554E-01	4.450E-01	4.164E-01	3.300E-01	1.698E-01	1.660E-02
U-234	U-238	9.999E-01	0.000E+00	1.300E-06	3.873E-06	1.261E-05	3.541E-05	9.356E-05	1.445E-04	4.712E-05
U-234	äS(j):		4.600E-01	4.585E-01	4.554E-01	4.450E-01	4.164E-01	3.301E-01	1.699E-01	1.664E-02
0U-238	U-238	5.400E-05	2.484E-05	2.476E-05	2.459E-05	2.403E-05	2.249E-05	1.782E-05	9.177E-06	8.988E-07
U-238	U-238	9.999E-01	4.600E-01	4.585E-01	4.554E-01	4.450E-01	4.164E-01	3.301E-01	1.699E-01	1.664E-02
U-238	äS(j):		4.600E-01	4.585E-01	4.554E-01	4.450E-01	4.164E-01	3.301E-01	1.699E-01	1.664E-02
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ

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

0RESCALC.EXE execution time = 1.72 seconds

ATTACHMENT 2

RESRAD SUMMARY REPORT FOR DIRECT GAMMA EXPOSURE, AND INGESTION OF PLANTS AND MEAT FROM HUNTER/GATHERER ACTIVITIES

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

0 Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(2)
A-1	Ba-137m (Source: FGR 12)	3.606E+00	3.606E+00	DCF1(3)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(4)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(5)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(6)
A-1	Co-60 (Source: FGR 12)	1.622E+01	1.622E+01	DCF1(7)
A-1	Cs-137 (Source: FGR 12)	7.510E-04	7.510E-04	DCF1(8)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1(9)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1(10)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(11)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(12)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(13)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(14)

A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(15)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(16)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(17)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(18)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(19)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(20)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(21)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(22)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(23)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(24)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(25)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1(26)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1(27)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(28)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(29)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1(30)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1(31)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Co-60	2.190E-04	2.190E-04	DCF2(1)
B-1	Cs-137+D	3.190E-05	3.190E-05	DCF2(2)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(3)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(4)
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(5)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(6)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(7)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(8)
B-1	U-234	1.320E-01	1.320E-01	DCF2(9)
B-1	U-238	1.180E-01	1.180E-01	DCF2(10)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2(11)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Co-60	2.690E-05	2.690E-05	DCF3(1)
D-1	Cs-137+D	5.000E-05	5.000E-05	DCF3(2)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(3)

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

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(4)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(5)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(6)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(7)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(8)
D-1	U-234	2.830E-04	2.830E-04	DCF3(9)

```
 D-1  ³ U-238                                                    ³ 2.550E-04 ³ 2.550E-04 ³ DCF3( 10)
 D-1  ³ U-238+D                                                  ³ 2.687E-04 ³ 2.550E-04 ³ DCF3( 11)
      ³                                                          ³           ³           ³
 D-34 ³ Food transfer factors:                                   ³           ³           ³
 D-34 ³ Co-60     , plant/soil concentration ratio, dimensionless ³ 8.000E-02 ³ 8.000E-02 ³ RTF(  1,1)
 D-34 ³ Co-60     , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 2.000E-02 ³ 2.000E-02 ³ RTF(  1,2)
 D-34 ³ Co-60     , milk/livestock-intake ratio, (pCi/L)/(pCi/d)  ³ 2.000E-03 ³ 2.000E-03 ³ RTF(  1,3)
 D-34 ³                                                          ³           ³           ³
 D-34 ³ Cs-137+D  , plant/soil concentration ratio, dimensionless ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  2,1)
 D-34 ³ Cs-137+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 3.000E-02 ³ 3.000E-02 ³ RTF(  2,2)
 D-34 ³ Cs-137+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)  ³ 8.000E-03 ³ 8.000E-03 ³ RTF(  2,3)
 D-34 ³                                                          ³           ³           ³
 D-34 ³ Pb-210+D  , plant/soil concentration ratio, dimensionless ³ 1.000E-02 ³ 1.000E-02 ³ RTF(  3,1)
 D-34 ³ Pb-210+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 8.000E-04 ³ 8.000E-04 ³ RTF(  3,2)
 D-34 ³ Pb-210+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)  ³ 3.000E-04 ³ 3.000E-04 ³ RTF(  3,3)
 D-34 ³                                                          ³           ³           ³
 D-34 ³ Ra-226+D  , plant/soil concentration ratio, dimensionless ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  4,1)
 D-34 ³ Ra-226+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,2)
 D-34 ³ Ra-226+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  4,3)
 D-34 ³                                                          ³           ³           ³
 D-34 ³ Ra-228+D  , plant/soil concentration ratio, dimensionless ³ 4.000E-02 ³ 4.000E-02 ³ RTF(  5,1)
 D-34 ³ Ra-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,2)
 D-34 ³ Ra-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)  ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  5,3)
 D-34 ³                                                          ³           ³           ³
 D-34 ³ Th-228+D  , plant/soil concentration ratio, dimensionless ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  6,1)
 D-34 ³ Th-228+D  , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  6,2)
 D-34 ³ Th-228+D  , milk/livestock-intake ratio, (pCi/L)/(pCi/d)  ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  6,3)
 D-34 ³                                                          ³           ³           ³
 D-34 ³ Th-230    , plant/soil concentration ratio, dimensionless ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  7,1)
 D-34 ³ Th-230    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  7,2)
 D-34 ³ Th-230    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)  ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  7,3)
 D-34 ³                                                          ³           ³           ³
 D-34 ³ Th-232    , plant/soil concentration ratio, dimensionless ³ 1.000E-03 ³ 1.000E-03 ³ RTF(  8,1)
 D-34 ³ Th-232    , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 1.000E-04 ³ 1.000E-04 ³ RTF(  8,2)
 D-34 ³ Th-232    , milk/livestock-intake ratio, (pCi/L)/(pCi/d)  ³ 5.000E-06 ³ 5.000E-06 ³ RTF(  8,3)
 D-34 ³                                                          ³           ³           ³
 D-34 ³ U-234     , plant/soil concentration ratio, dimensionless ³ 2.500E-03 ³ 2.500E-03 ³ RTF(  9,1)
 D-34 ³ U-234     , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 3.400E-04 ³ 3.400E-04 ³ RTF(  9,2)
 D-34 ³ U-234     , milk/livestock-intake ratio, (pCi/L)/(pCi/d)  ³ 6.000E-04 ³ 6.000E-04 ³ RTF(  9,3)
 D-34 ³                                                          ³           ³           ³
 D-34 ³ U-238     , plant/soil concentration ratio, dimensionless ³ 2.500E-03 ³ 2.500E-03 ³ RTF( 10,1)
 D-34 ³ U-238     , beef/livestock-intake ratio, (pCi/kg)/(pCi/d) ³ 3.400E-04 ³ 3.400E-04 ³ RTF( 10,2)
 D-34 ³ U-238     , milk/livestock-intake ratio, (pCi/L)/(pCi/d)  ³ 6.000E-04 ³ 6.000E-04 ³ RTF( 10,3)
 D-34 ³                                                          ³           ³           ³
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Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(11,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(11,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(11,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Co-60 , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Co-60 , crustacea and mollusks	2.000E+02	2.000E+02	BIOFAC(1,2)
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(2,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(4,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(4,2)
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(6,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(6,2)
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(7,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(7,2)
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(8,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(8,2)
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(9,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(9,2)
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(10,2)
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(11,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(11,2)

#For DCF1(xxx) only, factors are for infinite depth & area. See ETFG table in Ground Pathway of Detailed Report.
*Base Case means Default.Lib w/o Associate Nuclide contributions.

Site-Specific Parameter Summary

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

R011	Area of contaminated zone (m**2)	1.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	2.000E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	1.000E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	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): Co-60	1.000E-01	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Cs-137	2.920E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.540E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.540E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ra-228	1.700E-01	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Th-228	1.700E-01	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Th-230	4.600E-01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Th-232	1.700E-01	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-234	4.600E-01	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): U-238	4.600E-01	0.000E+00	---	S1(10)
R012	Concentration in groundwater (pCi/L): Co-60	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(9)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(10)
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

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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
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 Co-60				
R016	Contaminated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.666E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.623E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Pb-210				

R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.663E-03	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.374E-03	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.374E-03	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(6,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.778E-06	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(7,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.778E-06	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.778E-06	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(9)

R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.319E-03	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R017	Inhalation rate (m**3/yr)	not used	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	not used	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	not used	4.000E-01	---	SHF3

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Shielding factor, external gamma	7.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	0.000E+00	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.000E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
R017	Ring 7	not used	0.000E+00	---	FRACA(7)
R017	Ring 8	not used	0.000E+00	---	FRACA(8)

R017	Ring 9	not used	0.000E+00	---	FRACA(9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.600E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	1.400E+01	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	6.300E+01	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	1.820E+00	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	not used	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	not used	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	0.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	5.000E-02	-1	---	FPLANT
R018	Contamination fraction of meat	5.000E-02	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	6.800E+01	6.800E+01	---	LFI5

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	5.000E-01	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	not used	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	1.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	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)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX

R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

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

Contaminated Zone Dimensions

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

Initial Soil Concentrations, pCi/g

Co-60	1.000E-01
Cs-137	2.920E+00
Pb-210	1.540E+00
Ra-226	1.540E+00
Ra-228	1.700E-01
Th-228	1.700E-01
Th-230	4.600E-01
Th-232	1.700E-01
U-234	4.600E-01
U-238	4.600E-01

0

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

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	2.231E+00	2.221E+00	2.201E+00	2.138E+00	1.991E+00	1.623E+00	1.004E+00	3.189E-01
M(t):	8.926E-02	8.885E-02	8.804E-02	8.551E-02	7.965E-02	6.493E-02	4.015E-02	1.276E-02

0Maximum TDOSE(t): 2.231E+00 mrem/yr at t = 0.000E+00 years

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

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Co-60	1.430E-02	0.0064	0.000E+00	0.0000	0.000E+00	0.0000	1.754E-03	0.0008	9.433E-04	0.0004	0.000E+00	0.0000	4.587E-08	0.0000
Cs-137	9.219E-02	0.0413	0.000E+00	0.0000	0.000E+00	0.0000	5.023E-02	0.0225	4.392E-02	0.0197	0.000E+00	0.0000	2.627E-06	0.0000
Pb-210	8.875E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.593E-01	0.4299	3.280E-02	0.0147	0.000E+00	0.0000	2.006E-04	0.0001
Ra-226	1.618E-01	0.0725	0.000E+00	0.0000	0.000E+00	0.0000	7.247E-01	0.3248	2.143E-02	0.0096	0.000E+00	0.0000	4.010E-05	0.0000
Ra-228	1.153E-02	0.0052	0.000E+00	0.0000	0.000E+00	0.0000	8.095E-02	0.0363	2.370E-03	0.0011	0.000E+00	0.0000	4.585E-06	0.0000
Th-228	1.370E-02	0.0061	0.000E+00	0.0000	0.000E+00	0.0000	1.004E-03	0.0005	2.064E-05	0.0000	0.000E+00	0.0000	2.099E-06	0.0000
Th-230	1.581E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.240E-03	0.0010	4.615E-05	0.0000	0.000E+00	0.0000	4.590E-06	0.0000
Th-232	6.603E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	8.717E-03	0.0039	1.892E-04	0.0001	0.000E+00	0.0000	8.721E-06	0.0000
U-234	1.779E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.828E-03	0.0013	9.333E-05	0.0000	0.000E+00	0.0000	2.365E-06	0.0000
U-238	6.572E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	2.686E-03	0.0012	8.861E-05	0.0000	0.000E+00	0.0000	2.246E-06	0.0000
Total	2.949E-01	0.1322	0.000E+00	0.0000	0.000E+00	0.0000	1.834E+00	0.8220	1.019E-01	0.0457	0.000E+00	0.0000	2.680E-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 = 0.000E+00 years
0 Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.700E-02	0.0076
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.863E-01	0.0835
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.924E-01	0.4447
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.080E-01	0.4069
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.486E-02	0.0425
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.473E-02	0.0066
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.306E-03	0.0010
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.575E-03	0.0043
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.926E-03	0.0013
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.434E-03	0.0015
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.231E+00	1.0000

0*Sum of all water independent and dependent pathways.

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

0	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.
Co-60	1.254E-02	0.0056	0.000E+00	0.0000	0.000E+00	0.0000	1.538E-03	0.0007	8.269E-04	0.0004	0.000E+00	0.0000	4.021E-08	0.0000
Cs-137	9.008E-02	0.0406	0.000E+00	0.0000	0.000E+00	0.0000	4.908E-02	0.0221	4.292E-02	0.0193	0.000E+00	0.0000	2.567E-06	0.0000
Pb-210	8.589E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.284E-01	0.4179	3.174E-02	0.0143	0.000E+00	0.0000	1.942E-04	0.0001
Ra-226	1.613E-01	0.0726	0.000E+00	0.0000	0.000E+00	0.0000	7.524E-01	0.3387	2.242E-02	0.0101	0.000E+00	0.0000	4.612E-05	0.0000
Ra-228	1.410E-02	0.0063	0.000E+00	0.0000	0.000E+00	0.0000	7.195E-02	0.0324	2.106E-03	0.0009	0.000E+00	0.0000	4.653E-06	0.0000
Th-228	9.538E-03	0.0043	0.000E+00	0.0000	0.000E+00	0.0000	6.991E-04	0.0003	1.437E-05	0.0000	0.000E+00	0.0000	1.461E-06	0.0000
Th-230	3.671E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.335E-03	0.0011	4.892E-05	0.0000	0.000E+00	0.0000	4.596E-06	0.0000
Th-232	2.223E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	1.788E-02	0.0080	4.522E-04	0.0002	0.000E+00	0.0000	9.280E-06	0.0000
U-234	1.773E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.819E-03	0.0013	9.302E-05	0.0000	0.000E+00	0.0000	2.358E-06	0.0000
U-238	6.550E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	2.677E-03	0.0012	8.832E-05	0.0000	0.000E+00	0.0000	2.238E-06	0.0000
Total	2.906E-01	0.1308	0.000E+00	0.0000	0.000E+00	0.0000	1.830E+00	0.8237	1.007E-01	0.0453	0.000E+00	0.0000	2.675E-04	0.0001

0

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

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.490E-02	0.0067
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.821E-01	0.0820
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.604E-01	0.4323
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.363E-01	0.4215
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.816E-02	0.0397
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.025E-02	0.0046
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.425E-03	0.0011
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.056E-02	0.0093
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.916E-03	0.0013
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.422E-03	0.0015
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.221E+00	1.0000

0*Sum of all water independent and dependent pathways.

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

0	Ground	Inhalation	Radon	Plant	Meat	Milk	Soil

Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Co-60	9.634E-03	0.0044	0.000E+00	0.0000	0.000E+00	0.0000	1.182E-03	0.0005	6.355E-04	0.0003	0.000E+00	0.0000	3.090E-08	0.0000
Cs-137	8.600E-02	0.0391	0.000E+00	0.0000	0.000E+00	0.0000	4.686E-02	0.0213	4.098E-02	0.0186	0.000E+00	0.0000	2.451E-06	0.0000
Pb-210	8.045E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.695E-01	0.3951	2.973E-02	0.0135	0.000E+00	0.0000	1.819E-04	0.0001
Ra-226	1.604E-01	0.0729	0.000E+00	0.0000	0.000E+00	0.0000	8.039E-01	0.3653	2.420E-02	0.0110	0.000E+00	0.0000	5.751E-05	0.0000
Ra-228	1.532E-02	0.0070	0.000E+00	0.0000	0.000E+00	0.0000	5.658E-02	0.0257	1.654E-03	0.0008	0.000E+00	0.0000	4.297E-06	0.0000
Th-228	4.621E-03	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	3.387E-04	0.0002	6.962E-06	0.0000	0.000E+00	0.0000	7.077E-07	0.0000
Th-230	7.835E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.536E-03	0.0012	5.496E-05	0.0000	0.000E+00	0.0000	4.609E-06	0.0000
Th-232	5.847E-03	0.0027	0.000E+00	0.0000	0.000E+00	0.0000	3.330E-02	0.0151	9.033E-04	0.0004	0.000E+00	0.0000	1.037E-05	0.0000
U-234	1.762E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.800E-03	0.0013	9.241E-05	0.0000	0.000E+00	0.0000	2.342E-06	0.0000
U-238	6.507E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	2.659E-03	0.0012	8.774E-05	0.0000	0.000E+00	0.0000	2.224E-06	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	2.827E-01	0.1284	0.000E+00	0.0000	0.000E+00	0.0000	1.820E+00	0.8268	9.834E-02	0.0447	0.000E+00	0.0000	2.664E-04	0.0001

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.145E-02	0.0052
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.738E-01	0.0790
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.995E-01	0.4087
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.886E-01	0.4492
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.356E-02	0.0334
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.968E-03	0.0023
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.674E-03	0.0012
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.006E-02	0.0182
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.897E-03	0.0013
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.400E-03	0.0015
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.201E+00	1.0000

0*Sum of all water independent and dependent pathways.

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Co-60	3.833E-03	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	4.702E-04	0.0002	2.528E-04	0.0001	0.000E+00	0.0000	1.229E-08	0.0000
Cs-137	7.314E-02	0.0342	0.000E+00	0.0000	0.000E+00	0.0000	3.985E-02	0.0186	3.485E-02	0.0163	0.000E+00	0.0000	2.084E-06	0.0000
Pb-210	6.397E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.914E-01	0.3234	2.364E-02	0.0111	0.000E+00	0.0000	1.446E-04	0.0001

Ra-226	1.573E-01	0.0736	0.000E+00	0.0000	0.000E+00	0.0000	9.557E-01	0.4470	2.945E-02	0.0138	0.000E+00	0.0000	9.140E-05	0.0000
Ra-228	8.886E-03	0.0042	0.000E+00	0.0000	0.000E+00	0.0000	2.411E-02	0.0113	7.030E-04	0.0003	0.000E+00	0.0000	2.186E-06	0.0000
Th-228	3.658E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	2.681E-05	0.0000	5.511E-07	0.0000	0.000E+00	0.0000	5.603E-08	0.0000
Th-230	2.223E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	3.336E-03	0.0016	7.936E-05	0.0000	0.000E+00	0.0000	4.677E-06	0.0000
Th-232	1.633E-02	0.0076	0.000E+00	0.0000	0.000E+00	0.0000	6.545E-02	0.0306	1.842E-03	0.0009	0.000E+00	0.0000	1.308E-05	0.0000
U-234	1.731E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.736E-03	0.0013	9.029E-05	0.0000	0.000E+00	0.0000	2.288E-06	0.0000
U-238	6.358E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	2.598E-03	0.0012	8.573E-05	0.0000	0.000E+00	0.0000	2.173E-06	0.0000
Total	2.608E-01	0.1220	0.000E+00	0.0000	0.000E+00	0.0000	1.786E+00	0.8353	9.099E-02	0.0426	0.000E+00	0.0000	2.626E-04	0.0001

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.556E-03	0.0021
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.478E-01	0.0692
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.152E-01	0.3346
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.143E+00	0.5345
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.370E-02	0.0158
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.933E-04	0.0002
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.642E-03	0.0017
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.364E-02	0.0391
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.831E-03	0.0013
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.322E-03	0.0016
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.138E+00	1.0000

0*Sum of all water independent and dependent pathways.

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Co-60	2.753E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	3.378E-05	0.0000	1.816E-05	0.0000	0.000E+00	0.0000	8.832E-10	0.0000
Cs-137	4.604E-02	0.0231	0.000E+00	0.0000	0.000E+00	0.0000	2.509E-02	0.0126	2.194E-02	0.0110	0.000E+00	0.0000	1.312E-06	0.0000
Pb-210	3.323E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.592E-01	0.1804	1.228E-02	0.0062	0.000E+00	0.0000	7.512E-05	0.0000
Ra-226	1.488E-01	0.0747	0.000E+00	0.0000	0.000E+00	0.0000	1.209E+00	0.6073	3.830E-02	0.0192	0.000E+00	0.0000	1.504E-04	0.0001
Ra-228	8.073E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	2.067E-03	0.0010	6.023E-05	0.0000	0.000E+00	0.0000	1.942E-07	0.0000
Th-228	2.608E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.911E-08	0.0000	3.928E-10	0.0000	0.000E+00	0.0000	3.993E-11	0.0000
Th-230	6.182E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	6.184E-03	0.0031	1.686E-04	0.0001	0.000E+00	0.0000	4.999E-06	0.0000
Th-232	2.461E-02	0.0124	0.000E+00	0.0000	0.000E+00	0.0000	8.709E-02	0.0437	2.473E-03	0.0012	0.000E+00	0.0000	1.508E-05	0.0000
U-234	1.694E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.561E-03	0.0013	8.450E-05	0.0000	0.000E+00	0.0000	2.142E-06	0.0000

U-238	5.949E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	2.431E-03	0.0012	8.023E-05	0.0000	0.000E+00	0.0000	2.033E-06	0.0000
Total	2.218E-01	0.1114	0.000E+00	0.0000	0.000E+00	0.0000	1.694E+00	0.8506	7.540E-02	0.0379	0.000E+00	0.0000	2.512E-04	0.0001

0

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

0 Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.273E-04	0.0002
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.307E-02	0.0467
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.716E-01	0.1866
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.396E+00	0.7013
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.934E-03	0.0015
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.803E-07	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.975E-03	0.0035
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.142E-01	0.0573
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.650E-03	0.0013
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.108E-03	0.0016
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.991E+00	1.0000

0*Sum of all water independent and dependent pathways.

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

0 Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Co-60	2.736E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.356E-09	0.0000	1.804E-09	0.0000	0.000E+00	0.0000	8.775E-14	0.0000
Cs-137	9.113E-03	0.0056	0.000E+00	0.0000	0.000E+00	0.0000	4.965E-03	0.0031	4.342E-03	0.0027	0.000E+00	0.0000	2.597E-07	0.0000
Pb-210	3.358E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.629E-02	0.0224	1.241E-03	0.0008	0.000E+00	0.0000	7.591E-06	0.0000
Ra-226	1.223E-01	0.0753	0.000E+00	0.0000	0.000E+00	0.0000	1.262E+00	0.7776	4.065E-02	0.0250	0.000E+00	0.0000	1.797E-04	0.0001
Ra-228	1.480E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.788E-07	0.0000	1.104E-08	0.0000	0.000E+00	0.0000	3.561E-11	0.0000
Th-228	2.521E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.848E-19	0.0000	3.797E-21	0.0000	0.000E+00	0.0000	3.860E-22	0.0000
Th-230	1.841E-03	0.0011	0.000E+00	0.0000	0.000E+00	0.0000	1.786E-02	0.0110	5.428E-04	0.0003	0.000E+00	0.0000	6.595E-06	0.0000
Th-232	2.540E-02	0.0156	0.000E+00	0.0000	0.000E+00	0.0000	8.910E-02	0.0549	2.531E-03	0.0016	0.000E+00	0.0000	1.527E-05	0.0000
U-234	2.058E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.037E-03	0.0013	6.718E-05	0.0000	0.000E+00	0.0000	1.701E-06	0.0000
U-238	4.716E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	1.928E-03	0.0012	6.361E-05	0.0000	0.000E+00	0.0000	1.612E-06	0.0000
Total	1.591E-01	0.0980	0.000E+00	0.0000	0.000E+00	0.0000	1.414E+00	0.8714	4.944E-02	0.0305	0.000E+00	0.0000	2.128E-04	0.0001

0

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

0 Water Dependent Pathways

Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.252E-08	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.842E-02	0.0113
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.754E-02	0.0231
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.425E+00	0.8781
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.379E-07	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.710E-18	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.025E-02	0.0125
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.170E-01	0.0721
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.108E-03	0.0013
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.464E-03	0.0015
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.623E+00	1.0000

0*Sum of all water independent and dependent pathways.

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

0 Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Co-60	1.001E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.228E-20	0.0000	6.603E-21	0.0000	0.000E+00	0.0000	3.211E-25	0.0000
Cs-137	8.905E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	4.852E-05	0.0000	4.243E-05	0.0000	0.000E+00	0.0000	2.537E-09	0.0000
Pb-210	4.806E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.194E-05	0.0001	1.776E-06	0.0000	0.000E+00	0.0000	1.086E-08	0.0000
Ra-226	6.974E-02	0.0695	0.000E+00	0.0000	0.000E+00	0.0000	7.414E-01	0.7386	2.392E-02	0.0238	0.000E+00	0.0000	1.070E-04	0.0001
Ra-228	3.116E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.972E-18	0.0000	2.324E-19	0.0000	0.000E+00	0.0000	7.495E-22	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	4.255E-03	0.0042	0.000E+00	0.0000	0.000E+00	0.0000	4.338E-02	0.0432	1.366E-03	0.0014	0.000E+00	0.0000	1.026E-05	0.0000
Th-232	2.539E-02	0.0253	0.000E+00	0.0000	0.000E+00	0.0000	8.905E-02	0.0887	2.530E-03	0.0025	0.000E+00	0.0000	1.526E-05	0.0000
U-234	5.390E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.092E-03	0.0011	3.593E-05	0.0000	0.000E+00	0.0000	8.869E-07	0.0000
U-238	2.428E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	9.931E-04	0.0010	3.277E-05	0.0000	0.000E+00	0.0000	8.305E-07	0.0000
Total	9.972E-02	0.0993	0.000E+00	0.0000	0.000E+00	0.0000	8.760E-01	0.8727	2.793E-02	0.0278	0.000E+00	0.0000	1.343E-04	0.0001

0

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

0 Water Dependent Pathways

Radio- Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.190E-19	0.0000

Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.800E-04	0.0002
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.373E-05	0.0001
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.352E-01	0.8320
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.132E-17	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.901E-02	0.0488
Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.170E-01	0.1165
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.134E-03	0.0011
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.269E-03	0.0013
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.004E+00	1.0000

0*Sum of all water independent and dependent pathways.

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Summary : RESRAD Default Parameters

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\ABERDEEN-26THST-ONSITE.RAD

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

0 Water Independent Pathways (Inhalation excludes radon)

0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	8.215E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.476E-12	0.0000	3.914E-12	0.0000	0.000E+00	0.0000	2.341E-16	0.0000
Pb-210	5.331E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.762E-15	0.0000	1.970E-16	0.0000	0.000E+00	0.0000	1.205E-18	0.0000
Ra-226	9.776E-03	0.0307	0.000E+00	0.0000	0.000E+00	0.0000	1.039E-01	0.3259	3.354E-03	0.0105	0.000E+00	0.0000	1.500E-05	0.0000
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	6.969E-03	0.0219	0.000E+00	0.0000	0.000E+00	0.0000	7.226E-02	0.2265	2.298E-03	0.0072	0.000E+00	0.0000	1.439E-05	0.0000
Th-232	2.533E-02	0.0794	0.000E+00	0.0000	0.000E+00	0.0000	8.888E-02	0.2787	2.525E-03	0.0079	0.000E+00	0.0000	1.523E-05	0.0000
U-234	1.633E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	2.702E-04	0.0008	8.705E-06	0.0000	0.000E+00	0.0000	1.200E-07	0.0000
U-238	2.379E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	9.757E-05	0.0003	3.220E-06	0.0000	0.000E+00	0.0000	8.153E-08	0.0000
ÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍ
Total	4.212E-02	0.1321	0.000E+00	0.0000	0.000E+00	0.0000	2.654E-01	0.8322	8.188E-03	0.0257	0.000E+00	0.0000	4.483E-05	0.0001

0

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

0 Water Dependent Pathways

0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ		ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
ÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄ
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.660E-11	0.0000
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.610E-17	0.0000	0.000E+00	0.0000	6.017E-15	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.958E-03	0.0093	0.000E+00	0.0000	1.200E-01	0.3764
Ra-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-228	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.064E-04	0.0003	0.000E+00	0.0000	8.165E-02	0.2560

Th-232	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.168E-01	0.3661
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.468E-05	0.0001	0.000E+00	0.0000	3.400E-04	0.0011
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.129E-05	0.0001	0.000E+00	0.0000	1.660E-04	0.0005
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Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.151E-03	0.0099	0.000E+00	0.0000	3.189E-01	1.0000

0*Sum of all water independent and dependent pathways.

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

0 Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ	ÄÄÄÄÄÄÄÄÄÄ
Co-60	Co-60	1.000E+00	1.700E-01	1.490E-01	1.145E-01	4.556E-02	3.273E-03	3.252E-07	1.190E-18	0.000E+00
0Cs-137+D	Cs-137+D	1.000E+00	6.381E-02	6.235E-02	5.953E-02	5.063E-02	3.187E-02	6.308E-03	6.164E-05	5.686E-12
0Pb-210+D	Pb-210+D	1.000E+00	6.444E-01	6.236E-01	5.841E-01	4.644E-01	2.413E-01	2.438E-02	3.489E-05	3.907E-15
0Ra-226+D	Ra-226+D	1.000E+00	5.775E-01	5.759E-01	5.727E-01	5.616E-01	5.309E-01	4.362E-01	2.488E-01	3.535E-02
Ra-226+D	Pb-210+D	1.000E+00	1.204E-02	3.202E-02	6.926E-02	1.803E-01	3.759E-01	4.893E-01	2.935E-01	4.260E-02
Ra-226+D	äDSR(j)		5.896E-01	6.080E-01	6.420E-01	7.419E-01	9.068E-01	9.255E-01	5.423E-01	7.795E-02
0Ra-228+D	Ra-228+D	1.000E+00	5.391E-01	4.767E-01	3.728E-01	1.577E-01	1.349E-02	2.473E-06	5.206E-17	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	1.891E-02	4.188E-02	5.992E-02	4.055E-02	3.767E-03	6.909E-07	1.454E-17	0.000E+00
Ra-228+D	äDSR(j)		5.580E-01	5.186E-01	4.327E-01	1.982E-01	1.726E-02	3.164E-06	6.660E-17	0.000E+00
0Th-228+D	Th-228+D	1.000E+00	8.665E-02	6.031E-02	2.922E-02	2.313E-03	1.649E-06	1.594E-17	0.000E+00	0.000E+00
0Th-230	Th-230	1.000E+00	4.893E-03	4.893E-03	4.893E-03	4.892E-03	4.891E-03	4.887E-03	4.876E-03	4.836E-03
Th-230	Ra-226+D	1.000E+00	1.185E-04	3.672E-04	8.648E-04	2.584E-03	7.315E-03	2.192E-02	5.075E-02	8.323E-02
Th-230	Pb-210+D	1.000E+00	1.899E-06	1.154E-05	5.562E-05	4.412E-04	2.958E-03	1.722E-02	5.092E-02	8.942E-02
Th-230	äDSR(j)		5.013E-03	5.272E-03	5.813E-03	7.918E-03	1.516E-02	4.402E-02	1.065E-01	1.775E-01
0Th-232	Th-232	1.000E+00	2.432E-02	2.432E-02	2.432E-02	2.432E-02	2.432E-02	2.432E-02	2.430E-02	2.426E-02
Th-232	Ra-228+D	1.000E+00	3.114E-02	9.195E-02	1.938E-01	4.048E-01	5.462E-01	5.593E-01	5.590E-01	5.579E-01
Th-232	Th-228+D	1.000E+00	8.600E-04	4.681E-03	1.749E-02	6.287E-02	1.012E-01	1.049E-01	1.048E-01	1.046E-01
Th-232	äDSR(j)		5.633E-02	1.210E-01	2.357E-01	4.920E-01	6.717E-01	6.885E-01	6.881E-01	6.868E-01
0U-234	U-234	1.000E+00	6.361E-03	6.340E-03	6.298E-03	6.153E-03	5.757E-03	4.563E-03	2.348E-03	3.235E-04
U-234	Th-230	1.000E+00	2.409E-08	6.834E-08	1.557E-07	4.568E-07	1.280E-06	3.763E-06	8.357E-06	1.267E-05
U-234	Ra-226+D	1.000E+00	3.429E-10	2.520E-09	1.357E-08	1.211E-07	9.839E-07	9.292E-06	5.642E-05	1.949E-04
U-234	Pb-210+D	1.000E+00	4.549E-12	5.861E-11	6.130E-10	1.437E-08	2.875E-07	5.921E-06	5.222E-05	2.081E-04
U-234	äDSR(j)		6.361E-03	6.340E-03	6.298E-03	6.153E-03	5.760E-03	4.582E-03	2.465E-03	7.391E-04
0U-238	U-238	5.400E-05	3.094E-07	3.083E-07	3.063E-07	2.993E-07	2.800E-07	2.220E-07	1.143E-07	1.578E-08
0U-238+D	U-238+D	9.999E-01	7.464E-03	7.439E-03	7.390E-03	7.220E-03	6.757E-03	5.356E-03	2.758E-03	3.596E-04
U-238+D	U-234	9.999E-01	9.011E-09	2.695E-08	6.248E-08	1.831E-07	4.978E-07	1.300E-06	2.001E-06	9.188E-07
U-238+D	Th-230	9.999E-01	2.406E-14	1.554E-13	7.878E-13	6.800E-12	5.449E-11	5.067E-10	2.980E-09	9.499E-09
U-238+D	Ra-226+D	9.999E-01	2.358E-16	3.758E-15	4.504E-14	1.195E-12	2.806E-11	8.538E-10	1.446E-08	1.257E-07
U-238+D	Pb-210+D	9.999E-01	2.714E-18	7.168E-17	1.598E-15	1.097E-13	6.458E-12	4.589E-10	1.235E-08	1.328E-07
U-238+D	äDSR(j)		7.464E-03	7.439E-03	7.390E-03	7.221E-03	6.757E-03	5.357E-03	2.760E-03	3.608E-04
ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ	ÍÍÍÍÍÍÍÍÍÍ

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

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

0Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Co-60	1.471E+02	1.678E+02	2.183E+02	5.487E+02	7.639E+03	7.688E+07	*1.132E+15	*1.132E+15
Cs-137	3.918E+02	4.009E+02	4.199E+02	4.938E+02	7.844E+02	3.963E+03	4.056E+05	4.396E+12
Pb-210	3.880E+01	4.009E+01	4.280E+01	5.383E+01	1.036E+02	1.025E+03	7.165E+05	*7.634E+13
Ra-226	4.240E+01	4.112E+01	3.894E+01	3.370E+01	2.757E+01	2.701E+01	4.610E+01	3.207E+02
Ra-228	4.481E+01	4.821E+01	5.777E+01	1.261E+02	1.448E+03	7.901E+06	*2.726E+14	*2.726E+14
Th-228	2.885E+02	4.145E+02	8.555E+02	1.081E+04	1.516E+07	*8.195E+14	*8.195E+14	*8.195E+14
Th-230	4.987E+03	4.742E+03	4.301E+03	3.157E+03	1.649E+03	5.679E+02	2.346E+02	1.409E+02
Th-232	4.439E+02	2.067E+02	1.061E+02	5.081E+01	3.722E+01	3.631E+01	3.633E+01	3.640E+01
U-234	3.930E+03	3.943E+03	3.970E+03	4.063E+03	4.340E+03	5.456E+03	1.014E+04	3.382E+04
U-238	3.349E+03	3.360E+03	3.383E+03	3.462E+03	3.700E+03	4.666E+03	9.059E+03	6.929E+04

*At specific activity limit

0

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 0.000E+00 years

0Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Co-60	1.000E-01	0.000E+00	1.700E-01	1.471E+02	1.700E-01	1.471E+02
Cs-137	2.920E+00	0.000E+00	6.381E-02	3.918E+02	6.381E-02	3.918E+02
Pb-210	1.540E+00	0.000E+00	6.444E-01	3.880E+01	6.444E-01	3.880E+01
Ra-226	1.540E+00	60.9 ñ 0.1	9.701E-01	2.577E+01	5.896E-01	4.240E+01
Ra-228	1.700E-01	0.000E+00	5.580E-01	4.481E+01	5.580E-01	4.481E+01
Th-228	1.700E-01	0.000E+00	8.665E-02	2.885E+02	8.665E-02	2.885E+02
Th-230	4.600E-01	1.000E+03	1.775E-01	1.409E+02	5.013E-03	4.987E+03
Th-232	1.700E-01	87.2 ñ 0.2	6.885E-01	3.631E+01	5.633E-02	4.439E+02
U-234	4.600E-01	0.000E+00	6.361E-03	3.930E+03	6.361E-03	3.930E+03
U-238	4.600E-01	0.000E+00	7.464E-03	3.349E+03	7.464E-03	3.349E+03

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

0Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Co-60	Co-60	1.000E+00	1.700E-02	1.490E-02	1.145E-02	4.556E-03	3.273E-04	3.252E-08	1.190E-19	0.000E+00
0Cs-137	Cs-137	1.000E+00	1.863E-01	1.821E-01	1.738E-01	1.478E-01	9.307E-02	1.842E-02	1.800E-04	1.660E-11
0Pb-210	Pb-210	1.000E+00	9.924E-01	9.604E-01	8.995E-01	7.152E-01	3.716E-01	3.754E-02	5.373E-05	6.017E-15

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 Pb-210  Ra-226  1.000E+00    1.854E-02 4.932E-02 1.067E-01 2.777E-01 5.788E-01 7.535E-01 4.520E-01 6.561E-02
 Pb-210  Th-230  1.000E+00    8.736E-07 5.311E-06 2.558E-05 2.029E-04 1.361E-03 7.919E-03 2.342E-02 4.113E-02
 Pb-210  U-234   1.000E+00    2.092E-12 2.696E-11 2.820E-10 6.611E-09 1.323E-07 2.724E-06 2.402E-05 9.573E-05
 Pb-210  U-238   9.999E-01    1.248E-18 3.297E-17 7.352E-16 5.045E-14 2.971E-12 2.111E-10 5.682E-09 6.108E-08
 Pb-210  äDOSE(j)             1.011E+00 1.010E+00 1.006E+00 9.932E-01 9.518E-01 7.990E-01 4.755E-01 1.068E-01
0Ra-226  Ra-226  1.000E+00    8.894E-01 8.869E-01 8.820E-01 8.648E-01 8.176E-01 6.718E-01 3.832E-01 5.443E-02
 Ra-226  Th-230  1.000E+00    5.451E-05 1.689E-04 3.978E-04 1.189E-03 3.365E-03 1.008E-02 2.335E-02 3.829E-02
 Ra-226  U-234   1.000E+00    1.577E-10 1.159E-09 6.241E-09 5.569E-08 4.526E-07 4.274E-06 2.595E-05 8.964E-05
 Ra-226  U-238   9.999E-01    1.085E-16 1.729E-15 2.072E-14 5.499E-13 1.291E-11 3.927E-10 6.651E-09 5.780E-08
 Ra-226  äDOSE(j)             8.895E-01 8.871E-01 8.824E-01 8.660E-01 8.210E-01 6.818E-01 4.066E-01 9.281E-02
0Ra-228  Ra-228  1.000E+00    9.164E-02 8.104E-02 6.338E-02 2.681E-02 2.294E-03 4.204E-07 8.849E-18 0.000E+00
 Ra-228  Th-232  1.000E+00    5.294E-03 1.563E-02 3.295E-02 6.882E-02 9.285E-02 9.508E-02 9.503E-02 9.485E-02
 Ra-228  äDOSE(j)             9.694E-02 9.667E-02 9.633E-02 9.562E-02 9.515E-02 9.508E-02 9.503E-02 9.485E-02
0Th-228  Ra-228  1.000E+00    3.214E-03 7.120E-03 1.019E-02 6.893E-03 6.404E-04 1.174E-07 2.472E-18 0.000E+00
 Th-228  Th-228  1.000E+00    1.473E-02 1.025E-02 4.968E-03 3.933E-04 2.803E-07 2.710E-18 0.000E+00 0.000E+00
 Th-228  Th-232  1.000E+00    1.462E-04 7.958E-04 2.973E-03 1.069E-02 1.720E-02 1.783E-02 1.782E-02 1.778E-02
 Th-228  äDOSE(j)             1.809E-02 1.817E-02 1.813E-02 1.797E-02 1.785E-02 1.783E-02 1.782E-02 1.778E-02
0Th-230  Th-230  1.000E+00    2.251E-03 2.251E-03 2.251E-03 2.251E-03 2.250E-03 2.248E-03 2.243E-03 2.224E-03
 Th-230  U-234   1.000E+00    1.108E-08 3.143E-08 7.161E-08 2.101E-07 5.886E-07 1.731E-06 3.844E-06 5.829E-06
 Th-230  U-238   9.999E-01    1.107E-14 7.148E-14 3.624E-13 3.128E-12 2.507E-11 2.331E-10 1.371E-09 4.370E-09
 Th-230  äDOSE(j)             2.251E-03 2.251E-03 2.251E-03 2.251E-03 2.251E-03 2.250E-03 2.247E-03 2.230E-03
0Th-232  Th-232  1.000E+00    4.135E-03 4.135E-03 4.135E-03 4.135E-03 4.135E-03 4.134E-03 4.131E-03 4.123E-03
0U-234   U-234   1.000E+00    2.926E-03 2.916E-03 2.897E-03 2.830E-03 2.648E-03 2.099E-03 1.080E-03 1.488E-04
 U-234   U-238   9.999E-01    4.145E-09 1.240E-08 2.874E-08 8.424E-08 2.290E-07 5.980E-07 9.204E-07 4.226E-07
 U-234   äDOSE(j)             2.926E-03 2.916E-03 2.897E-03 2.830E-03 2.649E-03 2.099E-03 1.081E-03 1.492E-04
0U-238   U-238   5.400E-05    1.423E-07 1.418E-07 1.409E-07 1.377E-07 1.288E-07 1.021E-07 5.257E-08 7.259E-09
 U-238   U-238   9.999E-01    3.433E-03 3.422E-03 3.399E-03 3.321E-03 3.108E-03 2.464E-03 1.269E-03 1.654E-04
 U-238   äDOSE(j)             3.434E-03 3.422E-03 3.400E-03 3.322E-03 3.108E-03 2.464E-03 1.269E-03 1.654E-04
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 THF(i) is the thread fraction of the parent nuclide.
1RESRAD, Version 6.4      T« Limit = 180 days        12/03/2008  15:50  Page  23
 Summary : RESRAD Default Parameters
 File    : C:\RESRAD_FAMILY\RESRAD\USERFILES\ABERDEEN-26THST-ONSITE.RAD

                                   Individual Nuclide Soil Concentration
                                 Parent Nuclide and Branch Fraction Indicated
0Nuclide Parent   THF(i)                                      S(j,t), pCi/g
   (j)     (i)            t= 0.000E+00 1.000E+00 3.000E+00 1.000E+01 3.000E+01 1.000E+02 3.000E+02 1.000E+03
 ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ    ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄ
 Co-60   Co-60   1.000E+00    1.000E-01 8.766E-02 6.737E-02 2.680E-02 1.925E-03 1.913E-07 7.000E-19 0.000E+00
0Cs-137  Cs-137  1.000E+00    2.920E+00 2.853E+00 2.724E+00 2.317E+00 1.458E+00 2.887E-01 2.821E-03 2.602E-10
0Pb-210  Pb-210  1.000E+00    1.540E+00 1.490E+00 1.396E+00 1.110E+00 5.766E-01 5.826E-02 8.339E-05 9.250E-15
 Pb-210  Ra-226  1.000E+00    0.000E+00 4.703E-02 1.362E-01 4.022E-01 8.711E-01 1.147E+00 6.887E-01 9.656E-02
 Pb-210  Th-230  1.000E+00    0.000E+00 3.061E-06 2.691E-05 2.758E-04 2.000E-03 1.195E-02 3.557E-02 6.244E-02
 Pb-210  U-234   1.000E+00    0.000E+00 9.204E-12 2.437E-10 8.447E-09 1.903E-07 4.085E-06 3.641E-05 1.439E-04
 Pb-210  U-238   9.999E-01    0.000E+00 6.531E-18 5.202E-16 6.060E-14 4.186E-12 3.146E-10 8.596E-09 9.077E-08
 Pb-210  äS(j):               1.540E+00 1.537E+00 1.532E+00 1.512E+00 1.450E+00 1.217E+00 7.244E-01 1.591E-01
0Ra-226  Ra-226  1.000E+00    1.540E+00 1.536E+00 1.527E+00 1.497E+00 1.416E+00 1.163E+00 6.635E-01 9.300E-02
 Ra-226  Th-230  1.000E+00    0.000E+00 1.990E-04 5.953E-04 1.965E-03 5.733E-03 1.736E-02 4.033E-02 6.615E-02
 Ra-226  U-234   1.000E+00    0.000E+00 8.951E-10 8.023E-09 8.788E-08 7.594E-07 7.329E-06 4.477E-05 1.543E-04
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 Ra-226  U-238   9.999E-01    0.000E+00 8.456E-16 2.272E-14 8.278E-13 2.132E-11 6.703E-10 1.146E-08 9.906E-08
 Ra-226  äS(j):               1.540E+00 1.536E+00 1.528E+00 1.499E+00 1.421E+00 1.180E+00 7.038E-01 1.593E-01
0Ra-228  Ra-228  1.000E+00    1.700E-01 1.503E-01 1.176E-01 4.973E-02 4.255E-03 7.799E-07 1.642E-17 0.000E+00
 Ra-228  Th-232  1.000E+00    0.000E+00 1.928E-02 5.142E-02 1.179E-01 1.625E-01 1.667E-01 1.666E-01 1.663E-01
 Ra-228  äS(j):               1.700E-01 1.696E-01 1.690E-01 1.677E-01 1.668E-01 1.667E-01 1.666E-01 1.663E-01
0Th-228  Ra-228  1.000E+00    0.000E+00 4.844E-02 9.117E-02 6.839E-02 6.435E-03 1.180E-06 2.484E-17 0.000E+00
 Th-228  Th-228  1.000E+00    1.700E-01 1.183E-01 5.733E-02 4.539E-03 3.235E-06 3.127E-17 0.000E+00 0.000E+00
 Th-228  Th-232  1.000E+00    0.000E+00 3.167E-03 2.108E-02 9.519E-02 1.604E-01 1.667E-01 1.666E-01 1.663E-01
 Th-228  äS(j):               1.700E-01 1.699E-01 1.696E-01 1.681E-01 1.668E-01 1.667E-01 1.666E-01 1.663E-01
0Th-230  Th-230  1.000E+00    4.600E-01 4.600E-01 4.600E-01 4.599E-01 4.598E-01 4.595E-01 4.584E-01 4.546E-01
 Th-230  U-234   1.000E+00    0.000E+00 4.134E-06 1.236E-05 4.073E-05 1.182E-04 3.521E-04 7.848E-04 1.191E-03
 Th-230  U-238   9.999E-01    0.000E+00 5.856E-12 5.247E-11 5.741E-10 4.944E-09 4.716E-08 2.794E-07 8.927E-07
 Th-230  äS(j):               4.600E-01 4.600E-01 4.600E-01 4.600E-01 4.600E-01 4.598E-01 4.592E-01 4.558E-01
0Th-232  Th-232  1.000E+00    1.700E-01 1.700E-01 1.700E-01 1.700E-01 1.700E-01 1.700E-01 1.699E-01 1.695E-01
0U-234   U-234   1.000E+00    4.600E-01 4.585E-01 4.554E-01 4.450E-01 4.164E-01 3.300E-01 1.698E-01 1.660E-02
 U-234   U-238   9.999E-01    0.000E+00 1.300E-06 3.873E-06 1.261E-05 3.541E-05 9.356E-05 1.445E-04 4.712E-05
 U-234   äS(j):               4.600E-01 4.585E-01 4.554E-01 4.450E-01 4.164E-01 3.301E-01 1.699E-01 1.664E-02
0U-238   U-238   5.400E-05    2.484E-05 2.476E-05 2.459E-05 2.403E-05 2.249E-05 1.782E-05 9.177E-06 8.988E-07
 U-238   U-238   9.999E-01    4.600E-01 4.585E-01 4.554E-01 4.450E-01 4.164E-01 3.301E-01 1.699E-01 1.664E-02
 U-238   äS(j):               4.600E-01 4.585E-01 4.554E-01 4.450E-01 4.164E-01 3.301E-01 1.699E-01 1.664E-02
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 THF(i) is the thread fraction of the parent nuclide.
0RESCALC.EXE execution time =    2.86 seconds
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