



South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

November 22, 2022  
NOC-AE-22003931  
10 CFR 20.2002  
STI: 35400482

Attention: Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

South Texas Project  
Units 1 and 2  
Docket Nos. STN 50-498 and STN 50-499  
Clarification on STPNOC Response to Request for Additional Information  
Regarding Request for Approval of Alternate Disposal Procedures for  
Very Low-Level Radioactive Material (EPID: L 2021-LLL-0022)

Reference:

Letter from K. Harshaw, STPNOC; to NRC; "STPNOC Response to Request for Additional Information Regarding Request for Approval of Alternate Disposal Procedures for Very Low-Level Radioactive Material (EPID: L 2021-LLL-0022)," August 19, 2022; NOC-AE-22003912; ML22231A469.

STP Nuclear Operating Company (STPNOC) submitted the letter referenced in response to NRC requests for additional information (RAI) regarding STPNOC's request for approval of alternate disposal procedures for very low-level radioactive material. Attachment 1 clarifies and updates information provided in the STPNOC RAI response regarding the total disposal volume being requested and the list of potentially included radionuclides and their limiting concentrations and activity.

There are no commitments in this letter.

If there are any questions regarding this letter, please contact Zachary Dibbern at (361) 972-4336 or me at (361) 972-4778.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 11/22/2022

A handwritten signature in black ink, appearing to read "Kimberly A. Harshaw".

Kimberly A. Harshaw  
Executive VP and CNO

Attachments:

1. STPNOC Clarification on Total Disposal Volume and List of Radionuclides
2. Revised RESRAD Summary Report for Onsite of the Generic Landfill

cc:

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Attachment 1

STPNOC Clarification on Total Disposal Volume and List of Radionuclides

## STPNOC Clarification on Total Disposal Volume and List of Radionuclides

### Total Disposal Volume

STPNOC is requesting approval to dispose of a total volume of 5,000 cubic meters of very low-level radioactive material over the lifetime of this request.

### Revised Response to RAI-3.a

STPNOC is revising the response to RAI-3.a, previously submitted in the August 19, 2022 letter, to include additional potential radionuclides that may be present in shipments. STPNOC is specifying an administrative concentration limit for each radionuclide as part of this 10 CFR 20.2002 Alternate Disposal Procedure request. Also listed for each radionuclide are the corresponding limiting concentrations and activity per the Texas Administrative Code (TAC).

- a. *Provide a summary of the input parameters for the sites being considered for disposal under the requested action and resulting doses from the RESRAD [RESidual RADioactive]-ONSITE and RESRAD-OFFSITE analyses (these could be the summary reports) as well as any other technical analyses performed for this submittal. Also provide the basis for considering specific modeling assumptions used in these calculations.*

### STP Response:

The list of potential radionuclides and their limiting concentrations and activity limits are provided in the table on the right titled "List of Potential Radionuclides, Concentration Limits, and Activity Limits." This table includes the expected radionuclides that have been detected in previous shipments as well as additional radionuclides that are not necessarily expected but could potentially be included in the future.

Radionuclides not listed or in excess of the STP Administrative Concentration Limits in the "List of Potential Radionuclides, Concentration Limits, and Activity Limits" would not be included in any shipments allowed by this request.

List of Potential Radionuclides, Concentration Limits, and Activity Limits			
Potential Isotopes	STP Administrative Concentration Limit pCi/gm	TAC Concentration Limit pCi/gm	TAC Activity Limit pCi
Be7	1.00E+00	2.0E+04	None
C14	1.00E+00	8.0E+03	1.00E+08
Co57	1.00E+00	5.0E+03	1.00E+08
Co58	1.00E+00	1.0E+03	1.00E+07
Co60	5.00E-01	5.0E+02	1.00E+06
Cr51	2.00E+00	2.0E+04	1.00E+09
Cs137	1.50E-01	None	1.00E+07
Fe55	1.00E+01	8.0E+03	1.00E+08
H3	2.00E+01	3.0E+04	1.00E+09
Mn54	1.00E+00	1.0E+03	1.00E+07
Ni63	6.00E+00	None	1.00E+07
Sb125	4.00E+00	1.0E+03	1.00E+07
Sr90	1.00E-05	None	1.00E+05
Zn65	1.00E+00	1.0E+03	1.00E+07
Zr95	1.00E+00	6.0E+02	1.00E+07



See Attachment 2, Revised RESRAD Summary Report for Onsite of the Generic Landfill, for the input parameters. Note that the input parameters for the Revised RESRAD Summary Report are based on the expected average shipment.

The basis for the specific modeling assumptions were developed from a generic landfill based in Southeast Texas. The parameters for disposal of waste at this generic site were used, and from these parameters conservative assumptions were used to demonstrate compliance. Any landfill used for disposal of the very low-level radioactive waste would be analyzed to meet these bases.

For activities occurring offsite, RESRAD calculations were performed to verify anticipated dose to a member of the public, landfill workers, and drivers were below 5 mrem per year, which is lower than the minimum of 100 mrem/hr required in 10 CFR 20.1301. Specific considerations were incorporated into RESRAD where appropriate for local pathways. Overall, potential dose and health impacts to the public and to workers from the disposal activities are expected to be small and maintained ALARA.

Attachment 2

Revised RESRAD Summary Report for Onsite of the Generic Landfill

Summary : RESRAD Default Parameters

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Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

---

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

Summary : RESRAD Default Parameters

File : C:\RESRAD\_FAMILY\ONSITE\7.2\USERFILES\RESRAD 11 17 22 V2.RAD

## Dose Conversion Factor (and Related) Parameter Summary

Dose Library: DOE STD-1196-2011 (Reference Person)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ba-137m (Source: DCFPAK3.02)	3.381E+00	3.381E+00	DCF1( 1)
A-1	Be-7 (Source: DCFPAK3.02)	2.709E-01	2.709E-01	DCF1( 2)
A-1	C-14 (Source: DCFPAK3.02)	1.106E-05	1.106E-05	DCF1( 3)
A-1	Co-57 (Source: DCFPAK3.02)	4.558E-01	4.558E-01	DCF1( 4)
A-1	Co-58 (Source: DCFPAK3.02)	5.604E+00	5.604E+00	DCF1( 5)
A-1	Co-60 (Source: DCFPAK3.02)	1.539E+01	1.539E+01	DCF1( 6)
A-1	Cr-51 (Source: DCFPAK3.02)	1.633E-01	1.633E-01	DCF1( 7)
A-1	Cs-137 (Source: DCFPAK3.02)	8.686E-04	8.686E-04	DCF1( 8)
A-1	Fe-55 (Source: DCFPAK3.02)	6.146E-10	6.146E-10	DCF1( 9)
A-1	H-3 (Source: DCFPAK3.02)	0.000E+00	0.000E+00	DCF1( 10)
A-1	Mn-54 (Source: DCFPAK3.02)	4.857E+00	4.857E+00	DCF1( 11)
A-1	Nb-95 (Source: DCFPAK3.02)	4.408E+00	4.408E+00	DCF1( 12)
A-1	Nb-95m (Source: DCFPAK3.02)	3.026E-01	3.026E-01	DCF1( 13)
A-1	Ni-63 (Source: DCFPAK3.02)	0.000E+00	0.000E+00	DCF1( 14)
A-1	Sb-125 (Source: DCFPAK3.02)	2.316E+00	2.316E+00	DCF1( 15)
A-1	Sr-90 (Source: DCFPAK3.02)	6.463E-04	6.463E-04	DCF1( 16)
A-1	Te-125m (Source: DCFPAK3.02)	1.111E-02	1.111E-02	DCF1( 17)
A-1	Y-90 (Source: DCFPAK3.02)	4.016E-02	4.016E-02	DCF1( 18)
A-1	Zn-65 (Source: DCFPAK3.02)	3.493E+00	3.493E+00	DCF1( 19)
A-1	Zr-95 (Source: DCFPAK3.02)	4.203E+00	4.203E+00	DCF1( 20)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Be-7	2.368E-07	2.368E-07	DCF2( 1)
B-1	C-14(p) (Class: S)	2.276E-05	2.276E-05	DCF2( 2)
B-1	C-14(g) (Class: G Dioxide)	2.479E-08	2.479E-08	C14GInhDCF
B-1	Co-57	4.144E-06	4.144E-06	DCF2( 3)
B-1	Co-58	8.658E-06	8.658E-06	DCF2( 4)
B-1	Co-60	1.221E-04	1.221E-04	DCF2( 5)
B-1	Cr-51	1.606E-07	1.606E-07	DCF2( 6)
B-1	Cs-137+D	1.543E-04	1.543E-04	DCF2( 7)
B-1	Fe-55	3.341E-06	3.341E-06	DCF2( 8)
B-1	H-3	1.069E-06	1.069E-06	DCF2( 9)
B-1	Mn-54	1.332E-05	1.332E-05	DCF2( 10)
B-1	Nb-95	7.141E-06	7.141E-06	DCF2( 11)
B-1	Ni-63	8.251E-06	8.251E-06	DCF2( 12)
B-1	Sb-125	4.810E-05	4.810E-05	DCF2( 13)
B-1	Sr-90+D	6.133E-04	6.068E-04	DCF2( 15)
B-1	Te-125m	1.669E-05	1.669E-05	DCF2( 16)
B-1	Zn-65	9.472E-06	9.472E-06	DCF2( 17)
B-1	Zr-95+D	2.768E-05	2.398E-05	DCF2( 18)
B-1	Zr-95+D1	2.401E-05	2.398E-05	DCF2( 19)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Be-7	1.288E-07	1.288E-07	DCF3( 1)
D-1	C-14	2.342E-06	2.342E-06	DCF3( 2)
D-1	Co-57	1.158E-06	1.158E-06	DCF3( 3)
D-1	Co-58	3.737E-06	3.737E-06	DCF3( 4)
D-1	Co-60	2.031E-05	2.031E-05	DCF3( 5)
D-1	Cr-51	1.861E-07	1.861E-07	DCF3( 6)

Summary : RESRAD Default Parameters

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## Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DOE STD-1196-2011 (Reference Person)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Cs-137+D	4.921E-05	4.921E-05	DCF3( 7)
D-1	Fe-55	2.039E-06	2.039E-06	DCF3( 8)
D-1	H-3	1.695E-07	1.695E-07	DCF3( 9)
D-1	Mn-54	3.293E-06	3.293E-06	DCF3( 10)
D-1	Nb-95	2.775E-06	2.775E-06	DCF3( 11)
D-1	Ni-63	7.326E-07	7.326E-07	DCF3( 12)
D-1	Sb-125	5.439E-06	5.439E-06	DCF3( 13)
D-1	Sr-90+D	1.469E-04	1.332E-04	DCF3( 15)
D-1	Te-125m	4.514E-06	4.514E-06	DCF3( 16)
D-1	Zn-65	1.765E-05	1.765E-05	DCF3( 17)
D-1	Zr-95+D	7.748E-06	4.662E-06	DCF3( 18)
D-1	Zr-95+D1	4.693E-06	4.662E-06	DCF3( 19)
D-34	Food transfer factors:			
D-34	Be-7 , plant/soil concentration ratio, dimensionless	4.000E-03	4.000E-03	RTF( 1,1)
D-34	Be-7 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF( 1,2)
D-34	Be-7 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF( 1,3)
D-34				
D-34	C-14 , plant/soil concentration ratio, dimensionless	5.500E+00	5.500E+00	RTF( 2,1)
D-34	C-14 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.100E-02	3.100E-02	RTF( 2,2)
D-34	C-14 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.200E-02	1.200E-02	RTF( 2,3)
D-34				
D-34	Co-57 , plant/soil concentration ratio, dimensionless	8.000E-02	8.000E-02	RTF( 3,1)
D-34	Co-57 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-02	2.000E-02	RTF( 3,2)
D-34	Co-57 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF( 3,3)
D-34				
D-34	Co-58 , plant/soil concentration ratio, dimensionless	8.000E-02	8.000E-02	RTF( 4,1)
D-34	Co-58 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-02	2.000E-02	RTF( 4,2)
D-34	Co-58 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF( 4,3)
D-34				
D-34	Co-60 , plant/soil concentration ratio, dimensionless	8.000E-02	8.000E-02	RTF( 5,1)
D-34	Co-60 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-02	2.000E-02	RTF( 5,2)
D-34	Co-60 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF( 5,3)
D-34				
D-34	Cr-51 , plant/soil concentration ratio, dimensionless	2.500E-04	2.500E-04	RTF( 6,1)
D-34	Cr-51 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	9.000E-03	9.000E-03	RTF( 6,2)
D-34	Cr-51 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF( 6,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF( 7,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF( 7,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF( 7,3)
D-34				
D-34	Fe-55 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF( 8,1)
D-34	Fe-55 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-02	2.000E-02	RTF( 8,2)
D-34	Fe-55 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF( 8,3)
D-34				
D-34	H-3 , plant/soil concentration ratio, dimensionless	4.800E+00	4.800E+00	RTF( 9,1)
D-34	H-3 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.200E-02	1.200E-02	RTF( 9,2)
D-34	H-3 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-02	1.000E-02	RTF( 9,3)
D-34				

Summary : RESRAD Default Parameters

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## Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DOE STD-1196-2011 (Reference Person)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Mn-54 , plant/soil concentration ratio, dimensionless	3.000E-01	3.000E-01	RTF( 10,1)
D-34	Mn-54 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-04	5.000E-04	RTF( 10,2)
D-34	Mn-54 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF( 10,3)
D-34				
D-34	Nb-95 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF( 11,1)
D-34	Nb-95 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-07	3.000E-07	RTF( 11,2)
D-34	Nb-95 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF( 11,3)
D-34				
D-34	Ni-63 , plant/soil concentration ratio, dimensionless	5.000E-02	5.000E-02	RTF( 12,1)
D-34	Ni-63 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF( 12,2)
D-34	Ni-63 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-02	2.000E-02	RTF( 12,3)
D-34				
D-34	Sb-125 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF( 13,1)
D-34	Sb-125 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF( 13,2)
D-34	Sb-125 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-04	1.000E-04	RTF( 13,3)
D-34				
D-34	Sr-90+D , plant/soil concentration ratio, dimensionless	3.000E-01	3.000E-01	RTF( 15,1)
D-34	Sr-90+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-03	8.000E-03	RTF( 15,2)
D-34	Sr-90+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF( 15,3)
D-34				
D-34	Te-125m , plant/soil concentration ratio, dimensionless	6.000E-01	6.000E-01	RTF( 16,1)
D-34	Te-125m , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	7.000E-03	7.000E-03	RTF( 16,2)
D-34	Te-125m , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-04	5.000E-04	RTF( 16,3)
D-34				
D-34	Zn-65 , plant/soil concentration ratio, dimensionless	4.000E-01	4.000E-01	RTF( 17,1)
D-34	Zn-65 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-01	1.000E-01	RTF( 17,2)
D-34	Zn-65 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-02	1.000E-02	RTF( 17,3)
D-34				
D-34	Zr-95+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF( 18,1)
D-34	Zr-95+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-06	1.000E-06	RTF( 18,2)
D-34	Zr-95+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-07	6.000E-07	RTF( 18,3)
D-34				
D-34	Zr-95+D1 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF( 19,1)
D-34	Zr-95+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-06	1.000E-06	RTF( 19,2)
D-34	Zr-95+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-07	6.000E-07	RTF( 19,3)
D-34				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Be-7 , fish	1.000E+02	1.000E+02	BIOFAC( 1,1)
D-5	Be-7 , crustacea and mollusks	1.000E+01	1.000E+01	BIOFAC( 1,2)
D-5				
D-5	C-14 , fish	5.000E+04	5.000E+04	BIOFAC( 2,1)
D-5	C-14 , crustacea and mollusks	9.100E+03	9.100E+03	BIOFAC( 2,2)
D-5				
D-5	Co-57 , fish	3.000E+02	3.000E+02	BIOFAC( 3,1)
D-5	Co-57 , crustacea and mollusks	2.000E+02	2.000E+02	BIOFAC( 3,2)
D-5				
D-5	Co-58 , fish	3.000E+02	3.000E+02	BIOFAC( 4,1)
D-5	Co-58 , crustacea and mollusks	2.000E+02	2.000E+02	BIOFAC( 4,2)
D-5				

Summary : RESRAD Default Parameters

File : C:\RESRAD\_FAMILY\ONSITE\7.2\USERFILES\RESRAD 11 17 22 V2.RAD

## Dose Conversion Factor (and Related) Parameter Summary (continued)

Dose Library: DOE STD-1196-2011 (Reference Person)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Co-60 , fish	3.000E+02	3.000E+02	BIOFAC( 5,1)
D-5	Co-60 , crustacea and mollusks	2.000E+02	2.000E+02	BIOFAC( 5,2)
D-5				
D-5	Cr-51 , fish	2.000E+02	2.000E+02	BIOFAC( 6,1)
D-5	Cr-51 , crustacea and mollusks	2.000E+03	2.000E+03	BIOFAC( 6,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC( 7,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC( 7,2)
D-5				
D-5	Fe-55 , fish	2.000E+02	2.000E+02	BIOFAC( 8,1)
D-5	Fe-55 , crustacea and mollusks	3.200E+03	3.200E+03	BIOFAC( 8,2)
D-5				
D-5	H-3 , fish	1.000E+00	1.000E+00	BIOFAC( 9,1)
D-5	H-3 , crustacea and mollusks	1.000E+00	1.000E+00	BIOFAC( 9,2)
D-5				
D-5	Mn-54 , fish	4.000E+02	4.000E+02	BIOFAC( 10,1)
D-5	Mn-54 , crustacea and mollusks	9.000E+04	9.000E+04	BIOFAC( 10,2)
D-5				
D-5	Nb-95 , fish	3.000E+02	3.000E+02	BIOFAC( 11,1)
D-5	Nb-95 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC( 11,2)
D-5				
D-5	Ni-63 , fish	1.000E+02	1.000E+02	BIOFAC( 12,1)
D-5	Ni-63 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC( 12,2)
D-5				
D-5	Sb-125 , fish	1.000E+02	1.000E+02	BIOFAC( 13,1)
D-5	Sb-125 , crustacea and mollusks	1.000E+01	1.000E+01	BIOFAC( 13,2)
D-5				
D-5	Sr-90+D , fish	6.000E+01	6.000E+01	BIOFAC( 15,1)
D-5	Sr-90+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC( 15,2)
D-5				
D-5	Te-125m , fish	4.000E+02	4.000E+02	BIOFAC( 16,1)
D-5	Te-125m , crustacea and mollusks	7.500E+01	7.500E+01	BIOFAC( 16,2)
D-5				
D-5	Zn-65 , fish	1.000E+03	1.000E+03	BIOFAC( 17,1)
D-5	Zn-65 , crustacea and mollusks	1.000E+04	1.000E+04	BIOFAC( 17,2)
D-5				
D-5	Zr-95+D , fish	3.000E+02	3.000E+02	BIOFAC( 18,1)
D-5	Zr-95+D , crustacea and mollusks	6.700E+00	6.700E+00	BIOFAC( 18,2)
D-5				
D-5	Zr-95+D1 , fish	3.000E+02	3.000E+02	BIOFAC( 19,1)
D-5	Zr-95+D1 , crustacea and mollusks	6.700E+00	6.700E+00	BIOFAC( 19,2)

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

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

Summary : RESRAD Default Parameters

File : C:\RESRAD\_FAMILY\ONSITE\7.2\USERFILES\RESRAD 11 17 22 V2.RAD

## Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	1.000E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.542E-01	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.669E+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)	5.000E+00	1.000E+01	---	T( 4)
R011	Times for calculations (yr)	1.000E+01	3.000E+01	---	T( 5)
R011	Times for calculations (yr)	3.000E+01	1.000E+02	---	T( 6)
R011	Times for calculations (yr)	5.000E+01	3.000E+02	---	T( 7)
R011	Times for calculations (yr)	not used	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): Be-7	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): C-14	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Co-57	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Co-58	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Co-60	5.000E-01	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Cr-51	2.000E+00	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.500E-01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Fe-55	1.000E+01	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): H-3	2.000E+01	0.000E+00	---	S1(9)
R012	Initial principal radionuclide (pCi/g): Mn-54	1.000E+00	0.000E+00	---	S1(10)
R012	Initial principal radionuclide (pCi/g): Ni-63	6.000E+00	0.000E+00	---	S1(12)
R012	Initial principal radionuclide (pCi/g): Sb-125	4.000E+00	0.000E+00	---	S1(13)
R012	Initial principal radionuclide (pCi/g): Sr-90	1.000E-05	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Zn-65	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Zr-95	1.000E+00	0.000E+00	---	S1(18)
R012	Concentration in groundwater (pCi/L): Be-7	not used	0.000E+00	---	W1( 1)
R012	Concentration in groundwater (pCi/L): C-14	not used	0.000E+00	---	W1( 2)
R012	Concentration in groundwater (pCi/L): Co-57	not used	0.000E+00	---	W1( 3)
R012	Concentration in groundwater (pCi/L): Co-58	not used	0.000E+00	---	W1( 4)
R012	Concentration in groundwater (pCi/L): Co-60	not used	0.000E+00	---	W1( 5)
R012	Concentration in groundwater (pCi/L): Cr-51	not used	0.000E+00	---	W1( 6)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1( 7)
R012	Concentration in groundwater (pCi/L): Fe-55	not used	0.000E+00	---	W1( 8)
R012	Concentration in groundwater (pCi/L): H-3	not used	0.000E+00	---	W1( 9)
R012	Concentration in groundwater (pCi/L): Mn-54	not used	0.000E+00	---	W1(10)
R012	Concentration in groundwater (pCi/L): Ni-63	not used	0.000E+00	---	W1(12)
R012	Concentration in groundwater (pCi/L): Sb-125	not used	0.000E+00	---	W1(13)
R012	Concentration in groundwater (pCi/L): Sr-90	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Zn-65	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): Zr-95	not used	0.000E+00	---	W1(18)
R013	Cover depth (m)	1.542E-01	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	1.500E+00	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCV



Summary : RESRAD Default Parameters

File : C:\RESRAD\_FAMILY\ONSITE\7.2\USERFILES\RESRAD 11 17 22 V2.RAD

## Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	8.000E+00	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
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 Be-7				
R016	Contaminated zone (cm**3/g)	8.100E+02	8.100E+02	---	DCNUCC( 1)
R016	Unsat. zone 1 (cm**3/g)	8.100E+02	8.100E+02	---	DCNUCU( 1,1)
R016	Saturated zone (cm**3/g)	8.100E+02	8.100E+02	---	DCNUCS( 1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.668E-03	ALEACH( 1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK( 1)
R016	Distribution coefficients for C-14				
R016	Contaminated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCC( 2)
R016	Unsat. zone 1 (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCU( 2,1)
R016	Saturated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCS( 2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.010E+01	ALEACH( 2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK( 2)

Summary : RESRAD Default Parameters

File : C:\RESRAD\_FAMILY\ONSITE\7.2\USERFILES\RESRAD 11 17 22 V2.RAD

## Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Co-57				
R016	Contaminated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCC ( 3)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCU ( 3,1)
R016	Saturated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCS ( 3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.161E-03	ALEACH ( 3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 3)
R016	Distribution coefficients for Co-58				
R016	Contaminated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCC ( 4)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCU ( 4,1)
R016	Saturated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCS ( 4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.161E-03	ALEACH ( 4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 4)
R016	Distribution coefficients for Co-60				
R016	Contaminated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCC ( 5)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCU ( 5,1)
R016	Saturated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCS ( 5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.161E-03	ALEACH ( 5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 5)
R016	Distribution coefficients for Cr-51				
R016	Contaminated zone (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCC ( 6)
R016	Unsaturated zone 1 (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCU ( 6,1)
R016	Saturated zone (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCS ( 6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.155E-02	ALEACH ( 6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 6)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCC ( 7)
R016	Unsaturated zone 1 (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCU ( 7,1)
R016	Saturated zone (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCS ( 7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.699E-04	ALEACH ( 7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 7)
R016	Distribution coefficients for Fe-55				
R016	Contaminated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCC ( 8)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCU ( 8,1)
R016	Saturated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCS ( 8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.161E-03	ALEACH ( 8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 8)
R016	Distribution coefficients for H-3				
R016	Contaminated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCC ( 9)
R016	Unsaturated zone 1 (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCU ( 9,1)
R016	Saturated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCS ( 9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.010E+01	ALEACH ( 9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 9)

Summary : RESRAD Default Parameters

File : C:\RESRAD\_FAMILY\ONSITE\7.2\USERFILES\RESRAD 11 17 22 V2.RAD

## Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Mn-54				
R016	Contaminated zone (cm**3/g)	2.000E+02	2.000E+02	---	DCNUCC (10)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+02	2.000E+02	---	DCNUCU (10,1)
R016	Saturated zone (cm**3/g)	2.000E+02	2.000E+02	---	DCNUCS (10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.080E-02	ALEACH (10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (10)
R016	Distribution coefficients for Ni-63				
R016	Contaminated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.161E-03	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for Sb-125				
R016	Contaminated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.010E+01	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for Sr-90				
R016	Contaminated zone (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCC (15)
R016	Unsaturated zone 1 (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCU (15,1)
R016	Saturated zone (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCS (15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.155E-02	ALEACH (15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (15)
R016	Distribution coefficients for Zn-65				
R016	Contaminated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCC (17)
R016	Unsaturated zone 1 (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCU (17,1)
R016	Saturated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCS (17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.010E+01	ALEACH (17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (17)
R016	Distribution coefficients for Zr-95				
R016	Contaminated zone (cm**3/g)	2.200E+03	2.200E+03	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	2.200E+03	2.200E+03	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	2.200E+03	2.200E+03	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.825E-04	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for daughter Nb-95				
R016	Contaminated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCC (11)
R016	Unsaturated zone 1 (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCU (11,1)
R016	Saturated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCS (11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.010E+01	ALEACH (11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (11)

Summary : RESRAD Default Parameters

File : C:\RESRAD\_FAMILY\ONSITE\7.2\USERFILES\RESRAD 11 17 22 V2.RAD

## Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Te-125m				
R016	Contaminated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCC(16)
R016	Unsaturated zone 1 (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCU(16,1)
R016	Saturated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCS(16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.010E+01	ALEACH(16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(16)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	7.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	5.000E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	2.500E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE( 1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE( 2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE( 3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE( 4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE( 5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE( 6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE( 7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE( 8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE( 9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA( 1)
R017	Ring 2	not used	2.732E-01	---	FRACA( 2)
R017	Ring 3	not used	0.000E+00	---	FRACA( 3)
R017	Ring 4	not used	0.000E+00	---	FRACA( 4)
R017	Ring 5	not used	0.000E+00	---	FRACA( 5)
R017	Ring 6	not used	0.000E+00	---	FRACA( 6)
R017	Ring 7	not used	0.000E+00	---	FRACA( 7)
R017	Ring 8	not used	0.000E+00	---	FRACA( 8)
R017	Ring 9	not used	0.000E+00	---	FRACA( 9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.600E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	1.400E+01	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	9.200E+01	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	6.300E+01	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	5.400E+00	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL

Summary : RESRAD Default Parameters

File : C:\RESRAD\_FAMILY\ONSITE\7.2\USERFILES\RESRAD 11 17 22 V2.RAD

## Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R018	Drinking water intake (L/yr)	5.100E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	5.000E-01	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	-1	-1	0.500E-01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.500E-01	FMILK
R019	Livestock fodder intake for meat (kg/day)	6.800E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	5.500E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	5.000E-01	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	1.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	2.000E-05	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	3.000E-02	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	2.000E-02	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	9.800E-01	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	3.000E-01	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	7.000E-07	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	1.000E-10	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	8.000E-01	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	2.000E-01	2.000E-01	---	AVFG5

Summary : RESRAD Default Parameters

File : C:\RESRAD\_FAMILY\ONSITE\7.2\USERFILES\RESRAD 11 17 22 V2.RAD

## Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T (1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T (2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T (3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T (4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T (5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T (6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T (7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T (8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T (9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

## Summary of Pathway Selections

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

Summary : RESRAD Default Parameters

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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	1000.00 square meters	Be-7	1.000E+00
Thickness:	0.15 meters	C-14	1.000E+00
Cover Depth:	0.15 meters	Co-57	1.000E+00
		Co-58	1.000E+00
		Co-60	5.000E-01
		Cr-51	2.000E+00
		Cs-137	1.500E-01
		Fe-55	1.000E+01
		H-3	2.000E+01
		Mn-54	1.000E+00
		Ni-63	6.000E+00
		Sb-125	4.000E+00
		Sr-90	1.000E-05
		Zn-65	1.000E+00
		Zr-95	1.000E+00

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	5.000E+00	1.000E+01	3.000E+01	5.000E+01
TDOSE(t):	1.182E+00	1.122E+00	9.107E-01	4.746E-01	2.060E-01	4.068E-02	2.212E-02
M(t):	4.726E-02	4.490E-02	3.643E-02	1.898E-02	8.239E-03	1.627E-03	8.850E-04

Maximum TDOSE(t): 1.275E+00 mrem/yr at t = 1.368 ± 0.003 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 = 1.368E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Be-7	4.209E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.382E-09	0.0000	5.858E-12	0.0000	1.382E-14	0.0000	0.000E+00	0.0000
C-14	5.294E-29	0.0000	9.097E-25	0.0000	0.000E+00	0.0000	3.249E-20	0.0000	3.153E-20	0.0000	2.531E-21	0.0000	0.000E+00	0.0000
Co-57	1.086E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	2.502E-04	0.0002	1.232E-05	0.0000	1.455E-06	0.0000	0.000E+00	0.0000
Co-58	7.354E-04	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	9.118E-06	0.0000	4.487E-07	0.0000	5.296E-08	0.0000	0.000E+00	0.0000
Co-60	4.924E-01	0.3862	0.000E+00	0.0000	0.000E+00	0.0000	9.443E-03	0.0074	4.651E-04	0.0004	5.493E-05	0.0000	0.000E+00	0.0000
Cr-51	4.598E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.140E-13	0.0000	1.143E-14	0.0000	2.979E-15	0.0000	0.000E+00	0.0000
Cs-137	2.752E-02	0.0216	0.000E+00	0.0000	0.000E+00	0.0000	4.213E-03	0.0033	3.112E-04	0.0002	9.801E-05	0.0001	0.000E+00	0.0000
Fe-55	5.049E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.891E-04	0.0001	9.315E-06	0.0000	1.650E-07	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	1.981E-12	0.0000	0.000E+00	0.0000	2.306E-11	0.0000	2.703E-12	0.0000	1.083E-12	0.0000	0.000E+00	0.0000
Mn-54	7.249E-02	0.0569	0.000E+00	0.0000	0.000E+00	0.0000	3.263E-03	0.0026	4.023E-06	0.0000	2.849E-06	0.0000	0.000E+00	0.0000
Ni-63	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.221E-03	0.0025	3.967E-05	0.0000	1.874E-04	0.0001	0.000E+00	0.0000
Sb-125	3.331E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.698E-09	0.0000	1.386E-10	0.0000	8.570E-12	0.0000	0.000E+00	0.0000
Sr-90	6.465E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.510E-06	0.0000	1.096E-07	0.0000	3.226E-08	0.0000	0.000E+00	0.0000
Zn-65	5.800E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.315E-09	0.0000	3.392E-09	0.0000	2.356E-10	0.0000	0.000E+00	0.0000
Zr-95	4.580E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	3.098E-07	0.0000	3.549E-13	0.0000	1.284E-12	0.0000	0.000E+00	0.0000
Total	5.947E-01	0.4665	1.981E-12	0.0000	0.000E+00	0.0000	2.059E-02	0.0162	8.422E-04	0.0007	3.449E-04	0.0003	0.000E+00	0.0000

Summary : RESRAD Default Parameters

File : C:\RESRAD\_FAMILY\ONSITE\7.2\USERFILES\RESRAD 11 17 22 V2.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 = 1.368E+00 years

## Water Dependent Pathways

Radio- Nuclide Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Be-7	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.212E-06	0.0000
C-14	2.159E-02	0.0169	1.226E-02	0.0096	0.000E+00	0.0000	1.414E-03	0.0011	8.815E-05	0.0001	2.690E-04	0.0002	3.562E-02	0.0279
Co-57	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.350E-03	0.0011
Co-58	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.450E-04	0.0006
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.024E-01	0.3941
Cr-51	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.599E-09	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.215E-02	0.0252
Fe-55	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.986E-04	0.0002
H-3	5.685E-02	0.0446	7.280E-07	0.0000	0.000E+00	0.0000	2.601E-03	0.0020	1.194E-04	0.0001	3.734E-04	0.0003	5.994E-02	0.0470
Mn-54	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.576E-02	0.0594
Ni-63	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.448E-03	0.0027
Sb-125	4.417E-01	0.3465	7.257E-04	0.0006	0.000E+00	0.0000	3.375E-02	0.0265	7.425E-04	0.0006	1.651E-04	0.0001	4.771E-01	0.3742
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.659E-06	0.0000
Zn-65	7.033E-02	0.0552	2.045E-03	0.0016	0.000E+00	0.0000	5.535E-03	0.0043	6.239E-03	0.0049	1.553E-03	0.0012	8.571E-02	0.0672
Zr-95	9.774E-07	0.0000	3.058E-09	0.0000	0.000E+00	0.0000	6.258E-08	0.0000	1.229E-13	0.0000	3.475E-12	0.0000	4.594E-04	0.0004
Total	5.905E-01	0.4632	1.503E-02	0.0118	0.000E+00	0.0000	4.331E-02	0.0340	7.189E-03	0.0056	2.361E-03	0.0019	1.275E+00	1.0000

\*Sum of all water independent and dependent pathways.



Summary : RESRAD Default Parameters

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

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

## Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Be-7	2.776E-03	0.0023	0.000E+00	0.0000	0.000E+00	0.0000	1.601E-06	0.0000	3.940E-09	0.0000	9.303E-12	0.0000	0.000E+00	0.0000
C-14	1.776E-10	0.0000	3.209E-06	0.0000	0.000E+00	0.0000	1.813E-02	0.0153	1.233E-03	0.0010	2.381E-04	0.0002	0.000E+00	0.0000
Co-57	3.770E-03	0.0032	0.000E+00	0.0000	0.000E+00	0.0000	8.977E-04	0.0008	4.421E-05	0.0000	5.222E-06	0.0000	0.000E+00	0.0000
Co-58	9.616E-02	0.0814	0.000E+00	0.0000	0.000E+00	0.0000	1.213E-03	0.0010	5.969E-05	0.0001	7.048E-06	0.0000	0.000E+00	0.0000
Co-60	5.826E-01	0.4931	0.000E+00	0.0000	0.000E+00	0.0000	1.134E-02	0.0096	5.584E-04	0.0005	6.595E-05	0.0001	0.000E+00	0.0000
Cr-51	1.334E-03	0.0011	0.000E+00	0.0000	0.000E+00	0.0000	1.512E-07	0.0000	3.353E-09	0.0000	8.783E-10	0.0000	0.000E+00	0.0000
Cs-137	2.790E-02	0.0236	0.000E+00	0.0000	0.000E+00	0.0000	4.350E-03	0.0037	3.213E-04	0.0003	1.012E-04	0.0001	0.000E+00	0.0000
Fe-55	6.926E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.682E-04	0.0002	1.321E-05	0.0000	2.340E-07	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	1.915E-03	0.0016	0.000E+00	0.0000	1.359E-02	0.0115	4.300E-04	0.0004	2.500E-04	0.0002	0.000E+00	0.0000
Mn-54	2.194E-01	0.1857	0.000E+00	0.0000	0.000E+00	0.0000	1.004E-02	0.0085	1.238E-05	0.0000	8.769E-06	0.0000	0.000E+00	0.0000
Ni-63	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.261E-03	0.0028	4.016E-05	0.0000	1.897E-04	0.0002	0.000E+00	0.0000
Sb-125	4.642E-02	0.0393	0.000E+00	0.0000	0.000E+00	0.0000	1.495E-03	0.0013	2.041E-05	0.0000	1.924E-06	0.0000	0.000E+00	0.0000
Sr-90	7.193E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.278E-06	0.0000	1.247E-07	0.0000	3.671E-08	0.0000	0.000E+00	0.0000
Zn-65	2.380E-02	0.0201	0.000E+00	0.0000	0.000E+00	0.0000	1.029E-02	0.0087	4.580E-03	0.0039	4.099E-04	0.0003	0.000E+00	0.0000
Zr-95	9.202E-02	0.0779	0.000E+00	0.0000	0.000E+00	0.0000	5.740E-05	0.0000	6.816E-11	0.0000	2.269E-10	0.0000	0.000E+00	0.0000
Total	1.096E+00	0.9277	1.919E-03	0.0016	0.000E+00	0.0000	7.494E-02	0.0634	7.313E-03	0.0062	1.278E-03	0.0011	0.000E+00	0.0000

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

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

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Be-7	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.778E-03	0.0024
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.960E-02	0.0166
Co-57	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.717E-03	0.0040
Co-58	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.744E-02	0.0825
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.945E-01	0.5032
Cr-51	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.334E-03	0.0011
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.267E-02	0.0277
Fe-55	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.816E-04	0.0002
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.618E-02	0.0137
Mn-54	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.294E-01	0.1942
Ni-63	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.491E-03	0.0030
Sb-125	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.793E-02	0.0406
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.446E-06	0.0000
Zn-65	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.907E-02	0.0331
Zr-95	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.208E-02	0.0779
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.182E+00	1.0000

\*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

## Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Be-7	2.414E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.374E-08	0.0000	3.378E-11	0.0000	7.971E-14	0.0000	0.000E+00	0.0000
C-14	5.387E-24	0.0000	9.383E-20	0.0000	0.000E+00	0.0000	3.306E-15	0.0000	3.191E-15	0.0000	2.576E-16	0.0000	0.000E+00	0.0000
Co-57	1.518E-03	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	3.529E-04	0.0003	1.738E-05	0.0000	2.052E-06	0.0000	0.000E+00	0.0000
Co-58	2.729E-03	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	3.400E-05	0.0000	1.673E-06	0.0000	1.975E-07	0.0000	0.000E+00	0.0000
Co-60	5.152E-01	0.4590	0.000E+00	0.0000	0.000E+00	0.0000	9.919E-03	0.0088	4.886E-04	0.0004	5.770E-05	0.0001	0.000E+00	0.0000
Cr-51	1.356E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.526E-11	0.0000	3.393E-13	0.0000	8.841E-14	0.0000	0.000E+00	0.0000
Cs-137	2.762E-02	0.0246	0.000E+00	0.0000	0.000E+00	0.0000	4.249E-03	0.0038	3.139E-04	0.0003	9.886E-05	0.0001	0.000E+00	0.0000
Fe-55	5.498E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.078E-04	0.0002	1.023E-05	0.0000	1.813E-07	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	5.246E-10	0.0000	0.000E+00	0.0000	6.118E-09	0.0000	7.147E-10	0.0000	2.866E-10	0.0000	0.000E+00	0.0000
Mn-54	9.765E-02	0.0870	0.000E+00	0.0000	0.000E+00	0.0000	4.416E-03	0.0039	5.444E-06	0.0000	3.856E-06	0.0000	0.000E+00	0.0000
Ni-63	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.232E-03	0.0029	3.980E-05	0.0000	1.880E-04	0.0002	0.000E+00	0.0000
Sb-125	1.499E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.657E-07	0.0000	6.157E-09	0.0000	3.822E-10	0.0000	0.000E+00	0.0000
Sr-90	6.653E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.708E-06	0.0000	1.136E-07	0.0000	3.341E-08	0.0000	0.000E+00	0.0000
Zn-65	3.490E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.003E-07	0.0000	2.049E-07	0.0000	1.424E-08	0.0000	0.000E+00	0.0000
Zr-95	1.955E-03	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	1.328E-06	0.0000	1.522E-12	0.0000	5.504E-12	0.0000	0.000E+00	0.0000
Total	6.467E-01	0.5761	5.246E-10	0.0000	0.000E+00	0.0000	2.242E-02	0.0200	8.773E-04	0.0008	3.509E-04	0.0003	0.000E+00	0.0000

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+00 years

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Be-7	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.415E-05	0.0000
C-14	1.485E-02	0.0132	8.207E-03	0.0073	0.000E+00	0.0000	9.155E-04	0.0008	5.469E-05	0.0000	1.835E-04	0.0002	2.421E-02	0.0216
Co-57	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.891E-03	0.0017
Co-58	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.765E-03	0.0025
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.257E-01	0.4683
Cr-51	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.356E-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	3.229E-02	0.0288
Fe-55	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.182E-04	0.0002
H-3	3.811E-02	0.0339	4.777E-07	0.0000	0.000E+00	0.0000	1.668E-03	0.0015	7.359E-05	0.0001	2.479E-04	0.0002	4.010E-02	0.0357
Mn-54	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.021E-01	0.0909
Ni-63	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.460E-03	0.0031
Sb-125	2.990E-01	0.2664	4.813E-04	0.0004	0.000E+00	0.0000	2.210E-02	0.0197	4.377E-04	0.0004	1.069E-04	0.0001	3.222E-01	0.2870
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.861E-06	0.0000
Zn-65	5.465E-02	0.0487	1.550E-03	0.0014	0.000E+00	0.0000	4.131E-03	0.0037	4.184E-03	0.0037	1.152E-03	0.0010	6.567E-02	0.0585
Zr-95	8.778E-07	0.0000	2.699E-09	0.0000	0.000E+00	0.0000	5.472E-08	0.0000	9.889E-14	0.0000	3.045E-12	0.0000	1.957E-03	0.0017
Total	4.066E-01	0.3623	1.024E-02	0.0091	0.000E+00	0.0000	2.882E-02	0.0257	4.750E-03	0.0042	1.690E-03	0.0015	1.122E+00	1.0000

\*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters

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

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

## Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Be-7	1.826E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.008E-12	0.0000	2.480E-15	0.0000	5.851E-18	0.0000	0.000E+00	0.0000
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-57	2.463E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	5.451E-05	0.0001	2.685E-06	0.0000	3.171E-07	0.0000	0.000E+00	0.0000
Co-58	2.198E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.668E-08	0.0000	1.313E-09	0.0000	1.550E-10	0.0000	0.000E+00	0.0000
Co-60	4.029E-01	0.4424	0.000E+00	0.0000	0.000E+00	0.0000	7.593E-03	0.0083	3.740E-04	0.0004	4.417E-05	0.0000	0.000E+00	0.0000
Cr-51	1.403E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.525E-19	0.0000	3.391E-21	0.0000	8.838E-22	0.0000	0.000E+00	0.0000
Cs-137	2.708E-02	0.0297	0.000E+00	0.0000	0.000E+00	0.0000	4.055E-03	0.0045	2.995E-04	0.0003	9.433E-05	0.0001	0.000E+00	0.0000
Fe-55	3.464E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.247E-04	0.0001	6.140E-06	0.0000	1.088E-07	0.0000	0.000E+00	0.0000
H-3	0.000E+00	0.0000	3.215E-23	0.0000	0.000E+00	0.0000	3.721E-22	0.0000	4.426E-23	0.0000	1.762E-23	0.0000	0.000E+00	0.0000
Mn-54	1.935E-02	0.0212	0.000E+00	0.0000	0.000E+00	0.0000	8.532E-04	0.0009	1.052E-06	0.0000	7.450E-07	0.0000	0.000E+00	0.0000
Ni-63	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.174E-03	0.0035	3.908E-05	0.0000	1.846E-04	0.0002	0.000E+00	0.0000
Sb-125	1.563E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.699E-16	0.0000	6.381E-18	0.0000	3.943E-19	0.0000	0.000E+00	0.0000
Sr-90	5.693E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.714E-06	0.0000	9.380E-08	0.0000	2.760E-08	0.0000	0.000E+00	0.0000
Zn-65	7.507E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.212E-17	0.0000	4.309E-17	0.0000	2.994E-18	0.0000	0.000E+00	0.0000
Zr-95	7.369E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.877E-10	0.0000	5.588E-16	0.0000	2.021E-15	0.0000	0.000E+00	0.0000
Total	4.496E-01	0.4937	3.215E-23	0.0000	0.000E+00	0.0000	1.586E-02	0.0174	7.225E-04	0.0008	3.243E-04	0.0004	0.000E+00	0.0000

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

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

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Be-7	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.827E-09	0.0000
C-14	2.167E-02	0.0238	1.233E-02	0.0135	0.000E+00	0.0000	1.427E-03	0.0016	9.212E-05	0.0001	2.707E-04	0.0003	3.579E-02	0.0393
Co-57	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.038E-04	0.0003
Co-58	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.226E-06	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.109E-01	0.4512
Cr-51	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.403E-15	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.153E-02	0.0346
Fe-55	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.309E-04	0.0001
H-3	5.321E-02	0.0584	6.859E-07	0.0000	0.000E+00	0.0000	2.473E-03	0.0027	1.178E-04	0.0001	3.518E-04	0.0004	5.615E-02	0.0617
Mn-54	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.020E-02	0.0222
Ni-63	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.397E-03	0.0037
Sb-125	3.097E-01	0.3401	5.138E-04	0.0006	0.000E+00	0.0000	2.408E-02	0.0264	6.004E-04	0.0007	1.212E-04	0.0001	3.351E-01	0.3679
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.841E-06	0.0000
Zn-65	1.389E-02	0.0153	4.091E-04	0.0004	0.000E+00	0.0000	1.119E-03	0.0012	1.493E-03	0.0016	3.263E-04	0.0004	1.724E-02	0.0189
Zr-95	3.339E-09	0.0000	1.109E-11	0.0000	0.000E+00	0.0000	2.350E-10	0.0000	6.826E-16	0.0000	1.352E-14	0.0000	7.409E-07	0.0000
Total	3.985E-01	0.4376	1.325E-02	0.0146	0.000E+00	0.0000	2.910E-02	0.0320	2.304E-03	0.0025	1.070E-03	0.0012	9.107E-01	1.0000

\*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters

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

As mrem/yr and Fraction of Total Dose At t = 5.000E+00 years

## Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Be-7	1.381E-13	0.0000	7.662E-22	0.0000	0.000E+00	0.0000	7.402E-17	0.0000	1.943E-19	0.0000	4.675E-22	0.0000	2.263E-19	0.0000
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-57	3.995E-05	0.0001	1.039E-11	0.0000	0.000E+00	0.0000	8.421E-06	0.0000	4.165E-07	0.0000	4.925E-08	0.0000	1.576E-09	0.0000
Co-58	1.770E-09	0.0000	1.434E-17	0.0000	0.000E+00	0.0000	2.094E-11	0.0000	1.034E-12	0.0000	1.222E-13	0.0000	3.363E-15	0.0000
Co-60	3.151E-01	0.6639	1.269E-08	0.0000	0.000E+00	0.0000	5.812E-03	0.0122	2.875E-04	0.0006	3.400E-05	0.0001	1.146E-06	0.0000
Cr-51	1.451E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.525E-27	0.0000	6.666E-29	0.0000	2.009E-29	0.0000	6.696E-29	0.0000
Cs-137	2.656E-02	0.0560	8.873E-09	0.0000	0.000E+00	0.0000	3.869E-03	0.0082	2.883E-04	0.0006	9.104E-05	0.0002	1.537E-06	0.0000
Fe-55	2.182E-11	0.0000	3.533E-09	0.0000	0.000E+00	0.0000	7.479E-05	0.0002	4.974E-06	0.0000	9.472E-08	0.0000	1.171E-06	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Mn-54	3.833E-03	0.0081	6.172E-11	0.0000	0.000E+00	0.0000	1.649E-04	0.0003	2.035E-07	0.0000	1.442E-07	0.0000	8.288E-09	0.0000
Ni-63	0.000E+00	0.0000	2.056E-08	0.0000	0.000E+00	0.0000	3.117E-03	0.0066	3.865E-05	0.0001	1.830E-04	0.0004	9.915E-07	0.0000
Sb-125	1.630E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.721E-25	0.0000	6.466E-27	0.0000	3.971E-28	0.0000	8.634E-30	0.0000
Sr-90	4.871E-09	0.0000	1.574E-12	0.0000	0.000E+00	0.0000	3.893E-06	0.0000	7.756E-08	0.0000	2.283E-08	0.0000	2.048E-10	0.0000
Zn-65	1.615E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.858E-27	0.0000	9.063E-27	0.0000	6.297E-28	0.0000	0.000E+00	0.0000
Zr-95	2.778E-10	0.0000	6.201E-18	0.0000	0.000E+00	0.0000	1.791E-13	0.0000	2.452E-19	0.0000	8.011E-19	0.0000	7.485E-16	0.0000
Total	3.455E-01	0.7280	4.573E-08	0.0000	0.000E+00	0.0000	1.305E-02	0.0275	6.202E-04	0.0013	3.083E-04	0.0006	4.856E-06	0.0000

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

As mrem/yr and Fraction of Total Dose At t = 5.000E+00 years

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Be-7	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.382E-13	0.0000
C-14	6.812E-03	0.0144	4.118E-03	0.0087	0.000E+00	0.0000	5.113E-04	0.0011	3.747E-05	0.0001	8.719E-05	0.0002	1.157E-02	0.0244
Co-57	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.884E-05	0.0001
Co-58	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.792E-09	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.212E-01	0.6768
Cr-51	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.451E-23	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.081E-02	0.0649
Fe-55	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.104E-05	0.0002
H-3	1.724E-02	0.0363	2.329E-07	0.0000	0.000E+00	0.0000	8.830E-04	0.0019	4.679E-05	0.0001	1.172E-04	0.0002	1.829E-02	0.0385
Mn-54	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.999E-03	0.0084
Ni-63	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.339E-03	0.0070
Sb-125	7.731E-02	0.1629	1.336E-04	0.0003	0.000E+00	0.0000	6.434E-03	0.0136	2.023E-04	0.0004	3.398E-05	0.0001	8.411E-02	0.1772
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.999E-06	0.0000
Zn-65	8.785E-04	0.0019	2.681E-05	0.0001	0.000E+00	0.0000	7.511E-05	0.0002	1.214E-04	0.0003	2.274E-05	0.0000	1.124E-03	0.0024
Zr-95	1.231E-12	0.0000	4.086E-15	0.0000	0.000E+00	0.0000	8.664E-14	0.0000	2.519E-19	0.0000	4.986E-18	0.0000	2.793E-10	0.0000
Total	1.022E-01	0.2154	4.279E-03	0.0090	0.000E+00	0.0000	7.903E-03	0.0167	4.079E-04	0.0009	2.612E-04	0.0006	4.746E-01	1.0000

\*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters

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

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

## Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Be-7	6.869E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.417E-27	0.0000	1.198E-29	0.0000	0.000E+00	0.0000	6.260E-29	0.0000
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-57	4.235E-07	0.0000	4.956E-13	0.0000	0.000E+00	0.0000	7.899E-08	0.0000	3.977E-09	0.0000	4.721E-10	0.0000	7.522E-11	0.0000
Co-58	3.259E-17	0.0000	1.425E-24	0.0000	0.000E+00	0.0000	3.614E-19	0.0000	1.816E-20	0.0000	2.155E-21	0.0000	3.341E-22	0.0000
Co-60	1.704E-01	0.8275	3.173E-08	0.0000	0.000E+00	0.0000	2.979E-03	0.0145	1.500E-04	0.0007	1.781E-05	0.0001	2.867E-06	0.0000
Cr-51	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+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	2.528E-02	0.1227	3.829E-08	0.0000	0.000E+00	0.0000	3.441E-03	0.0167	2.655E-04	0.0013	8.451E-05	0.0004	6.633E-06	0.0000
Fe-55	6.876E-12	0.0000	4.837E-09	0.0000	0.000E+00	0.0000	2.086E-05	0.0001	2.857E-06	0.0000	5.861E-08	0.0000	1.603E-06	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Mn-54	6.699E-05	0.0003	5.124E-12	0.0000	0.000E+00	0.0000	2.706E-06	0.0000	3.356E-09	0.0000	2.380E-09	0.0000	6.880E-10	0.0000
Ni-63	0.000E+00	0.0000	9.525E-08	0.0000	0.000E+00	0.0000	2.978E-03	0.0145	3.798E-05	0.0002	1.810E-04	0.0009	4.593E-06	0.0000
Sb-125	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	3.299E-09	0.0000	4.753E-12	0.0000	0.000E+00	0.0000	2.414E-06	0.0000	4.831E-08	0.0000	1.423E-08	0.0000	6.183E-10	0.0000
Zn-65	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Zr-95	7.665E-19	0.0000	9.355E-26	0.0000	0.000E+00	0.0000	4.627E-22	0.0000	1.161E-27	0.0000	2.809E-27	0.0000	1.129E-23	0.0000
Total	1.958E-01	0.9506	1.701E-07	0.0000	0.000E+00	0.0000	9.424E-03	0.0458	4.564E-04	0.0022	2.834E-04	0.0014	1.570E-05	0.0001

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

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

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Be-7	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.872E-24	0.0000
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-57	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.070E-07	0.0000
Co-58	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.298E-17	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.736E-01	0.8428
Cr-51	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+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	2.907E-02	0.1412
Fe-55	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.538E-05	0.0001
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Mn-54	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.970E-05	0.0003
Ni-63	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.202E-03	0.0155
Sb-125	1.246E-23	0.0000	2.475E-26	0.0000	0.000E+00	0.0000	1.309E-24	0.0000	1.155E-25	0.0000	9.783E-27	0.0000	1.392E-23	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.480E-06	0.0000
Zn-65	3.013E-27	0.0000	1.066E-28	0.0000	0.000E+00	0.0000	3.293E-28	0.0000	1.549E-27	0.0000	1.422E-28	0.0000	5.140E-27	0.0000
Zr-95	3.186E-21	0.0000	1.058E-23	0.0000	0.000E+00	0.0000	2.243E-22	0.0000	6.522E-28	0.0000	1.291E-26	0.0000	7.703E-19	0.0000
Total	3.198E-21	0.0000	1.060E-23	0.0000	0.000E+00	0.0000	2.256E-22	0.0000	1.177E-25	0.0000	2.283E-26	0.0000	2.060E-01	1.0000

\*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters

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

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

## Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Be-7	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-57	5.343E-15	0.0000	1.617E-20	0.0000	0.000E+00	0.0000	6.116E-16	0.0000	3.294E-17	0.0000	3.970E-18	0.0000	2.454E-18	0.0000
Co-58	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	1.459E-02	0.3586	9.157E-09	0.0000	0.000E+00	0.0000	2.057E-04	0.0051	1.108E-05	0.0003	1.335E-06	0.0000	8.274E-07	0.0000
Cr-51	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+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	2.075E-02	0.5100	1.000E-07	0.0000	0.000E+00	0.0000	2.153E-03	0.0529	1.889E-04	0.0046	6.174E-05	0.0015	1.733E-05	0.0004
Fe-55	6.775E-14	0.0000	1.224E-10	0.0000	0.000E+00	0.0000	1.262E-07	0.0000	5.283E-08	0.0000	1.133E-09	0.0000	4.057E-08	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Mn-54	6.245E-12	0.0000	1.565E-18	0.0000	0.000E+00	0.0000	1.964E-13	0.0000	2.482E-16	0.0000	1.768E-16	0.0000	2.102E-16	0.0000
Ni-63	0.000E+00	0.0000	3.316E-07	0.0000	0.000E+00	0.0000	2.483E-03	0.0610	3.517E-05	0.0009	1.713E-04	0.0042	1.599E-05	0.0004
Sb-125	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	6.941E-10	0.0000	2.934E-12	0.0000	0.000E+00	0.0000	3.566E-07	0.0000	7.271E-09	0.0000	2.151E-09	0.0000	3.816E-10	0.0000
Zn-65	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Zr-95	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	3.534E-02	0.8686	4.409E-07	0.0000	0.000E+00	0.0000	4.842E-03	0.1190	2.352E-04	0.0058	2.344E-04	0.0058	3.419E-05	0.0008

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

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

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Be-7	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-57	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.994E-15	0.0000
Co-58	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.481E-02	0.3640
Cr-51	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+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	2.317E-02	0.5695
Fe-55	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.209E-07	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Mn-54	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.442E-12	0.0000
Ni-63	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.706E-03	0.0665
Sb-125	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.671E-07	0.0000
Zn-65	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Zr-95	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.068E-02	1.0000

\*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters

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

As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

## Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Be-7	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-57	6.741E-23	0.0000	2.206E-28	0.0000	0.000E+00	0.0000	4.735E-24	0.0000	2.717E-25	0.0000	3.317E-26	0.0000	3.349E-26	0.0000
Co-58	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	1.249E-03	0.0564	1.113E-09	0.0000	0.000E+00	0.0000	1.420E-05	0.0006	8.150E-07	0.0000	9.950E-08	0.0000	1.006E-07	0.0000
Cr-51	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	1.703E-02	0.7698	1.102E-07	0.0000	0.000E+00	0.0000	1.347E-03	0.0609	1.324E-04	0.0060	4.417E-05	0.0020	1.909E-05	0.0009
Fe-55	6.677E-16	0.0000	1.304E-12	0.0000	0.000E+00	0.0000	7.639E-10	0.0000	5.344E-10	0.0000	1.156E-11	0.0000	4.320E-10	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Mn-54	5.823E-19	0.0000	2.002E-25	0.0000	0.000E+00	0.0000	1.425E-20	0.0000	1.834E-23	0.0000	1.312E-23	0.0000	2.688E-23	0.0000
Ni-63	0.000E+00	0.0000	4.868E-07	0.0000	0.000E+00	0.0000	2.071E-03	0.0936	3.225E-05	0.0015	1.599E-04	0.0072	2.347E-05	0.0011
Sb-125	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	1.461E-10	0.0000	7.631E-13	0.0000	0.000E+00	0.0000	5.267E-08	0.0000	1.094E-09	0.0000	3.250E-10	0.0000	9.926E-11	0.0000
Zn-65	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Zr-95	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	1.828E-02	0.8262	5.981E-07	0.0000	0.000E+00	0.0000	3.432E-03	0.1551	1.655E-04	0.0075	2.042E-04	0.0092	4.266E-05	0.0019

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

As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

## Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Be-7	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-57	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.248E-23	0.0000
Co-58	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.264E-03	0.0571
Cr-51	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+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	1.857E-02	0.8395
Fe-55	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.743E-09	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Mn-54	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.966E-19	0.0000
Ni-63	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.287E-03	0.1034
Sb-125	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.434E-08	0.0000
Zn-65	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Zr-95	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.212E-02	1.0000

\*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters

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

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)						
			0.000E+00	1.000E+00	3.000E+00	5.000E+00	1.000E+01	3.000E+01	5.000E+01
Be-7	Be-7	1.000E+00	2.778E-03	2.415E-05	1.827E-09	1.382E-13	6.872E-24	0.000E+00	0.000E+00
C-14	C-14	1.000E+00	1.960E-02	2.421E-02	3.579E-02	1.157E-02	0.000E+00	0.000E+00	0.000E+00
Co-57	Co-57	1.000E+00	4.717E-03	1.891E-03	3.038E-04	4.884E-05	5.070E-07	5.994E-15	7.248E-23
Co-58	Co-58	1.000E+00	9.744E-02	2.765E-03	2.226E-06	1.792E-09	3.298E-17	0.000E+00	0.000E+00
Co-60	Co-60	1.000E+00	1.189E+00	1.051E+00	8.219E-01	6.425E-01	3.472E-01	2.961E-02	2.528E-03
Cr-51	Cr-51	1.000E+00	6.669E-04	6.782E-08	7.014E-16	7.255E-24	7.847E-44	0.000E+00	0.000E+00
Cs-137+D	Cs-137+D	1.000E+00	2.178E-01	2.152E-01	2.102E-01	2.054E-01	1.938E-01	1.545E-01	1.238E-01
Fe-55	Fe-55	1.000E+00	2.816E-05	2.182E-05	1.309E-05	8.104E-06	2.538E-06	2.209E-08	1.743E-10
H-3	H-3	1.000E+00	8.092E-04	2.005E-03	2.808E-03	9.146E-04	1.186E-35	0.000E+00	0.000E+00
Mn-54	Mn-54	1.000E+00	2.294E-01	1.021E-01	2.020E-02	3.999E-03	6.970E-05	6.442E-12	5.966E-19
Ni-63	Ni-63	1.000E+00	5.819E-04	5.766E-04	5.662E-04	5.565E-04	5.336E-04	4.510E-04	3.811E-04
Sb-125	Sb-125	7.686E-01	8.986E-03	5.135E-02	5.338E-02	1.339E-02	2.209E-24	0.000E+00	0.000E+00
Sb-125	Sb-125	2.314E-01	2.705E-03	1.546E-02	1.607E-02	4.032E-03	6.650E-25	0.000E+00	0.000E+00
Sb-125	Te-125m	2.314E-01	2.928E-04	1.374E-02	1.432E-02	3.602E-03	6.048E-25	0.000E+00	0.000E+00
Sb-125	ΣDSR(j)		2.997E-03	2.919E-02	3.039E-02	7.634E-03	1.270E-24	0.000E+00	0.000E+00
Sr-90+D	Sr-90+D	1.000E+00	6.446E-01	5.861E-01	4.841E-01	3.999E-01	2.480E-01	3.671E-02	5.434E-03
Zn-65	Zn-65	1.000E+00	3.907E-02	6.567E-02	1.724E-02	1.124E-03	5.140E-27	0.000E+00	0.000E+00
Zr-95+D	Zr-95+D	6.049E-04	3.984E-05	7.737E-07	2.918E-10	1.101E-13	3.041E-22	0.000E+00	0.000E+00
Zr-95+D1	Zr-95+D1	9.994E-01	6.362E-02	1.235E-03	4.658E-07	1.756E-10	4.847E-19	0.000E+00	0.000E+00
Zr-95+D1	Nb-95	9.994E-01	2.842E-02	7.208E-04	2.749E-07	1.036E-10	2.853E-19	0.000E+00	0.000E+00
Zr-95+D1	ΣDSR(j)		9.204E-02	1.956E-03	7.406E-07	2.792E-10	7.700E-19	0.000E+00	0.000E+00

The DSR includes contributions from associated (half-life ≤ 7 days) daughters.



Summary : RESRAD Default Parameters

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

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

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	5.000E+00	1.000E+01	3.000E+01	5.000E+01
(i)								
Be-7	9.001E+03	1.035E+06	1.369E+10	1.809E+14	*3.496E+17	*3.496E+17	*3.496E+17	
C-14	1.275E+03	1.033E+03	6.986E+02	2.161E+03	*4.479E+12	*4.479E+12	*4.479E+12	
Co-57	5.300E+03	1.322E+04	8.229E+04	5.118E+05	4.931E+07	4.171E+15	*8.294E+15	
Co-58	2.566E+02	9.042E+03	1.123E+07	1.395E+10	*3.127E+16	*3.127E+16	*3.127E+16	
Co-60	2.102E+01	2.378E+01	3.042E+01	3.891E+01	7.201E+01	8.442E+02	9.890E+03	
Cr-51	3.749E+04	3.686E+08	3.564E+16	*9.074E+16	*9.074E+16	*9.074E+16	*9.074E+16	
Cs-137	1.148E+02	1.161E+02	1.189E+02	1.217E+02	1.290E+02	1.619E+02	2.019E+02	
Fe-55	8.876E+05	1.146E+06	1.910E+06	3.085E+06	9.849E+06	1.132E+09	1.434E+11	
H-3	3.089E+04	1.247E+04	8.904E+03	2.733E+04	*9.621E+15	*9.621E+15	*9.621E+15	
Mn-54	1.090E+02	2.449E+02	1.237E+03	6.252E+03	3.587E+05	3.881E+12	*7.615E+15	
Ni-63	4.296E+04	4.336E+04	4.415E+04	4.492E+04	4.685E+04	5.543E+04	6.559E+04	
Sb-125	2.086E+03	3.104E+02	2.985E+02	1.189E+03	*1.029E+15	*1.029E+15	*1.029E+15	
Sr-90	3.878E+01	4.265E+01	5.164E+01	6.252E+01	1.008E+02	6.811E+02	4.601E+03	
Zn-65	6.398E+02	3.807E+02	1.450E+03	2.223E+04	*8.115E+15	*8.115E+15	*8.115E+15	
Zr-95	2.715E+02	1.278E+04	3.374E+07	8.952E+10	*2.126E+16	*2.126E+16	*2.126E+16	

\*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)

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

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 1.368 ± 0.003 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
Be-7	1.000E+00	0.000E+00	2.778E-03	9.001E+03	4.212E-06	5.936E+06
C-14	1.000E+00	4.239 ± 0.008	3.601E-02	6.943E+02	3.562E-02	7.019E+02
Co-57	1.000E+00	0.000E+00	4.717E-03	5.300E+03	1.350E-03	1.851E+04
Co-58	1.000E+00	0.000E+00	9.744E-02	2.566E+02	7.450E-04	3.356E+04
Co-60	5.000E-01	0.000E+00	1.189E+00	2.102E+01	1.005E+00	2.488E+01
Cr-51	2.000E+00	0.000E+00	6.669E-04	3.749E+04	2.299E-09	1.087E+10
Cs-137	1.500E-01	0.000E+00	2.178E-01	1.148E+02	2.143E-01	1.167E+02
Fe-55	1.000E+01	0.000E+00	2.816E-05	8.876E+05	1.986E-05	1.259E+06
H-3	2.000E+01	1.486 ± 0.003	3.031E-03	8.248E+03	2.997E-03	8.341E+03
Mn-54	1.000E+00	0.000E+00	2.294E-01	1.090E+02	7.576E-02	3.300E+02
Ni-63	6.000E+00	0.000E+00	5.819E-04	4.296E+04	5.747E-04	4.350E+04
Sb-125	4.000E+00	1.439 ± 0.003	1.203E-01	2.078E+02	1.193E-01	2.096E+02
Sr-90	1.000E-05	0.000E+00	6.446E-01	3.878E+01	5.659E-01	4.418E+01
Zn-65	1.000E+00	1.335 ± 0.003	8.601E-02	2.907E+02	8.571E-02	2.917E+02
Zr-95	1.000E+00	0.000E+00	9.208E-02	2.715E+02	4.594E-04	5.442E+04

Summary : RESRAD Default Parameters

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## Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr						
			t= 0.000E+00	1.000E+00	3.000E+00	5.000E+00	1.000E+01	3.000E+01	5.000E+01
Be-7	Be-7	1.000E+00	2.778E-03	2.415E-05	1.827E-09	1.382E-13	6.872E-24	0.000E+00	0.000E+00
C-14	C-14	1.000E+00	1.960E-02	2.421E-02	3.579E-02	1.157E-02	0.000E+00	0.000E+00	0.000E+00
Co-57	Co-57	1.000E+00	4.717E-03	1.891E-03	3.038E-04	4.884E-05	5.070E-07	5.994E-15	7.248E-23
Co-58	Co-58	1.000E+00	9.744E-02	2.765E-03	2.226E-06	1.792E-09	3.298E-17	0.000E+00	0.000E+00
Co-60	Co-60	1.000E+00	5.945E-01	5.257E-01	4.109E-01	3.212E-01	1.736E-01	1.481E-02	1.264E-03
Cr-51	Cr-51	1.000E+00	1.334E-03	1.356E-07	1.403E-15	1.451E-23	0.000E+00	0.000E+00	0.000E+00
Cs-137	Cs-137	1.000E+00	3.267E-02	3.229E-02	3.153E-02	3.081E-02	2.907E-02	2.317E-02	1.857E-02
Fe-55	Fe-55	1.000E+00	2.816E-04	2.182E-04	1.309E-04	8.104E-05	2.538E-05	2.209E-07	1.743E-09
H-3	H-3	1.000E+00	1.618E-02	4.010E-02	5.615E-02	1.829E-02	0.000E+00	0.000E+00	0.000E+00
Mn-54	Mn-54	1.000E+00	2.294E-01	1.021E-01	2.020E-02	3.999E-03	6.970E-05	6.442E-12	5.966E-19
Ni-63	Ni-63	1.000E+00	3.491E-03	3.460E-03	3.397E-03	3.339E-03	3.202E-03	2.706E-03	2.287E-03
Sb-125	Sb-125	7.686E-01	3.594E-02	2.054E-01	2.135E-01	5.358E-02	8.837E-24	0.000E+00	0.000E+00
Sb-125	Sb-125	2.314E-01	1.082E-02	6.182E-02	6.427E-02	1.613E-02	2.660E-24	0.000E+00	0.000E+00
Sb-125	ΣDOSE(j)		4.676E-02	2.672E-01	2.778E-01	6.970E-02	1.150E-23	0.000E+00	0.000E+00
Te-125m	Sb-125	2.314E-01	1.171E-03	5.496E-02	5.729E-02	1.441E-02	2.419E-24	0.000E+00	0.000E+00
Sr-90	Sr-90	1.000E+00	6.446E-06	5.861E-06	4.841E-06	3.999E-06	2.480E-06	3.671E-07	5.434E-08
Zn-65	Zn-65	1.000E+00	3.907E-02	6.567E-02	1.724E-02	1.124E-03	5.140E-27	0.000E+00	0.000E+00
Zr-95	Zr-95	6.049E-04	3.984E-05	7.737E-07	2.918E-10	1.101E-13	3.041E-22	0.000E+00	0.000E+00
Zr-95	Zr-95	9.994E-01	6.362E-02	1.235E-03	4.658E-07	1.756E-10	4.847E-19	0.000E+00	0.000E+00
Zr-95	ΣDOSE(j)		6.366E-02	1.236E-03	4.661E-07	1.757E-10	4.850E-19	0.000E+00	0.000E+00
Nb-95	Zr-95	9.994E-01	2.842E-02	7.208E-04	2.749E-07	1.036E-10	2.853E-19	0.000E+00	0.000E+00

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

Summary : RESRAD Default Parameters

File : C:\RESRAD\_FAMILY\ONSITE\7.2\USERFILES\RESRAD 11 17 22 V2.RAD

Individual Nuclide Soil Concentration  
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g						
			t= 0.000E+00	1.000E+00	3.000E+00	5.000E+00	1.000E+01	3.000E+01	5.000E+01
Be-7	Be-7	1.000E+00	1.000E+00	8.568E-03	6.289E-07	4.616E-11	2.131E-21	0.000E+00	0.000E+00
C-14	C-14	1.000E+00	1.000E+00	2.926E-14	1.060E-41	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Co-57	Co-57	1.000E+00	1.000E+00	3.930E-01	6.072E-02	9.380E-03	8.799E-05	6.812E-13	5.274E-21
Co-58	Co-58	1.000E+00	1.000E+00	2.802E-02	2.199E-05	1.726E-08	2.978E-16	0.000E+00	0.000E+00
Co-60	Co-60	1.000E+00	5.000E-01	4.374E-01	3.348E-01	2.563E-01	1.314E-01	9.070E-03	6.261E-04
Cr-51	Cr-51	1.000E+00	2.000E+00	2.000E-04	1.999E-12	1.998E-20	1.997E-40	0.000E+00	0.000E+00
Cs-137	Cs-137	1.000E+00	1.500E-01	1.465E-01	1.398E-01	1.334E-01	1.186E-01	7.423E-02	4.645E-02
Fe-55	Fe-55	1.000E+00	1.000E+01	7.746E+00	4.648E+00	2.789E+00	7.776E-01	4.702E-03	2.843E-05
H-3	H-3	1.000E+00	2.000E+01	5.465E-06	3.333E-19	1.552E-32	0.000E+00	0.000E+00	0.000E+00
Mn-54	Mn-54	1.000E+00	1.000E+00	4.396E-01	8.494E-02	1.641E-02	2.694E-04	1.955E-11	1.419E-18
Ni-63	Ni-63	1.000E+00	6.000E+00	5.946E+00	5.839E+00	5.734E+00	5.479E+00	4.569E+00	3.809E+00
Sb-125	Sb-125	7.686E-01	3.075E+00	9.786E-05	9.913E-14	1.004E-22	5.605E-45	0.000E+00	0.000E+00
Sb-125	Sb-125	2.314E-01	9.254E-01	2.945E-05	2.984E-14	3.022E-23	0.000E+00	0.000E+00	0.000E+00
Sb-125	ΣS(j):		4.000E+00	1.273E-04	1.290E-13	1.306E-22	5.605E-45	0.000E+00	0.000E+00
Te-125m	Sb-125	2.314E-01	0.000E+00	3.075E-05	3.164E-14	3.205E-23	0.000E+00	0.000E+00	0.000E+00
Sr-90	Sr-90	1.000E+00	1.000E-05	9.088E-06	7.506E-06	6.200E-06	3.843E-06	5.677E-07	8.387E-08
Zn-65	Zn-65	1.000E+00	1.000E+00	1.450E-05	3.050E-15	6.413E-25	0.000E+00	0.000E+00	0.000E+00
Zr-95	Zr-95	6.049E-04	6.049E-04	1.159E-05	4.256E-09	1.563E-12	4.038E-21	0.000E+00	0.000E+00
Zr-95	Zr-95	9.994E-01	9.994E-01	1.915E-02	7.032E-06	2.582E-09	6.671E-18	0.000E+00	0.000E+00
Zr-95	ΣS(j):		1.000E+00	1.916E-02	7.036E-06	2.584E-09	6.675E-18	0.000E+00	0.000E+00
Nb-95	Zr-95	9.994E-01	0.000E+00	1.035E-02	3.801E-06	1.396E-09	3.606E-18	0.000E+00	0.000E+00

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

RESRAD.EXE execution time = 8.59 seconds