

Summary : RESRAD Default Parameters

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## Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FCS FGR11 Plus FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: FGR 12)	6.371E-02	6.371E-02	DCF1 ( 1)
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1 ( 2)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1 ( 3)
A-1	Am-241 (Source: FGR 12)	4.372E-02	4.372E-02	DCF1 ( 4)
A-1	Am-243 (Source: FGR 12)	1.420E-01	1.420E-01	DCF1 ( 5)
A-1	At-217 (Source: FGR 12)	1.773E-03	1.773E-03	DCF1 ( 6)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 ( 7)
A-1	Ba-137m (Source: FGR 12)	3.606E+00	3.606E+00	DCF1 ( 8)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 ( 9)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1 ( 10)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1 ( 11)
A-1	Bi-213 (Source: FGR 12)	7.660E-01	7.660E-01	DCF1 ( 12)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 ( 13)
A-1	C-14 (Source: FGR 12)	1.345E-05	1.345E-05	DCF1 ( 14)
A-1	Ce-144 (Source: FGR 12)	7.174E-02	7.174E-02	DCF1 ( 15)
A-1	Cm-243 (Source: FGR 12)	5.829E-01	5.829E-01	DCF1 ( 16)
A-1	Cm-244 (Source: FGR 12)	1.259E-04	1.259E-04	DCF1 ( 17)
A-1	Co-58 (Source: FGR 12)	5.960E+00	5.960E+00	DCF1 ( 18)
A-1	Co-60 (Source: FGR 12)	1.622E+01	1.622E+01	DCF1 ( 19)
A-1	Cs-134 (Source: FGR 12)	9.472E+00	9.472E+00	DCF1 ( 20)
A-1	Cs-137 (Source: FGR 12)	7.510E-04	7.510E-04	DCF1 ( 21)
A-1	Eu-152 (Source: FGR 12)	7.006E+00	7.006E+00	DCF1 ( 22)
A-1	Eu-154 (Source: FGR 12)	7.678E+00	7.678E+00	DCF1 ( 23)
A-1	Eu-155 (Source: FGR 12)	1.822E-01	1.822E-01	DCF1 ( 24)
A-1	Fe-55 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1 ( 25)
A-1	Fr-221 (Source: FGR 12)	1.536E-01	1.536E-01	DCF1 ( 26)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1 ( 27)
A-1	Gd-152 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1 ( 28)
A-1	H-3 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1 ( 29)
A-1	Ni-59 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1 ( 30)
A-1	Ni-63 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1 ( 31)
A-1	Np-237 (Source: FGR 12)	7.790E-02	7.790E-02	DCF1 ( 32)
A-1	Np-239 (Source: FGR 12)	7.529E-01	7.529E-01	DCF1 ( 33)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1 ( 34)
A-1	Pa-233 (Source: FGR 12)	1.020E+00	1.020E+00	DCF1 ( 35)
A-1	Pb-209 (Source: FGR 12)	7.734E-04	7.734E-04	DCF1 ( 36)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 ( 37)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1 ( 38)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1 ( 39)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 ( 40)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 ( 41)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1 ( 42)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1 ( 43)
A-1	Po-213 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1 ( 44)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 ( 45)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1 ( 46)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1 ( 47)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 ( 48)
A-1	Pr-144 (Source: FGR 12)	2.522E-01	2.522E-01	DCF1 ( 49)

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

Dose Library: FCS FGR11 Plus FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Pr-144m (Source: FGR 12)	1.437E-02	1.437E-02	DCF1 ( 50)
A-1	Pu-238 (Source: FGR 12)	1.513E-04	1.513E-04	DCF1 ( 51)
A-1	Pu-239 (Source: FGR 12)	2.952E-04	2.952E-04	DCF1 ( 52)
A-1	Pu-240 (Source: FGR 12)	1.467E-04	1.467E-04	DCF1 ( 53)
A-1	Pu-241 (Source: FGR 12)	5.904E-06	5.904E-06	DCF1 ( 54)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1 ( 55)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1 ( 56)
A-1	Ra-225 (Source: FGR 12)	1.102E-02	1.102E-02	DCF1 ( 57)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 ( 58)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1 ( 59)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1 ( 60)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1 ( 61)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 ( 62)
A-1	Sb-125 (Source: FGR 12)	2.447E+00	2.447E+00	DCF1 ( 63)
A-1	Sr-90 (Source: FGR 12)	7.043E-04	7.043E-04	DCF1 ( 64)
A-1	Tc-99 (Source: FGR 12)	1.255E-04	1.255E-04	DCF1 ( 65)
A-1	Te-125m (Source: FGR 12)	1.515E-02	1.515E-02	DCF1 ( 66)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1 ( 67)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1 ( 68)
A-1	Th-229 (Source: FGR 12)	3.213E-01	3.213E-01	DCF1 ( 69)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 ( 70)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1 ( 71)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1 ( 72)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1 ( 73)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1 ( 74)
A-1	Tl-209 (Source: FGR 12)	1.293E+01	1.293E+01	DCF1 ( 75)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 ( 76)
A-1	U-233 (Source: FGR 12)	1.397E-03	1.397E-03	DCF1 ( 77)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1 ( 78)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1 ( 79)
A-1	U-236 (Source: FGR 12)	2.148E-04	2.148E-04	DCF1 ( 80)
A-1	U-237 (Source: FGR 12)	5.306E-01	5.306E-01	DCF1 ( 81)
A-1	Y-90 (Source: FGR 12)	2.391E-02	2.391E-02	DCF1 ( 82)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2 ( 1)
B-1	Am-241	4.440E-01	4.440E-01	DCF2 ( 2)
B-1	Am-243+D	4.400E-01	4.400E-01	DCF2 ( 3)
B-1	C-14(p) (Class: ORGANIC)	2.090E-06	2.090E-06	DCF2 ( 4)
B-1	C-14(g) (Class: CO2)	2.350E-08	2.350E-08	C14GInhDCF
B-1	Ce-144+D	3.740E-04	3.740E-04	DCF2 ( 5)
B-1	Cm-243	3.070E-01	3.070E-01	DCF2 ( 6)
B-1	Cm-244	2.480E-01	2.480E-01	DCF2 ( 8)
B-1	Co-58	1.090E-05	1.090E-05	DCF2 ( 11)
B-1	Co-60	2.190E-04	2.190E-04	DCF2 ( 12)
B-1	Cs-134	4.620E-05	4.620E-05	DCF2 ( 13)
B-1	Cs-137+D	3.190E-05	3.190E-05	DCF2 ( 14)
B-1	Eu-152	2.210E-04	2.210E-04	DCF2 ( 15)
B-1	Eu-154	2.860E-04	2.860E-04	DCF2 ( 17)
B-1	Eu-155	4.140E-05	4.140E-05	DCF2 ( 18)

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

Dose Library: FCS FGR11 Plus FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
B-1	Fe-55	2.690E-06	2.690E-06	DCF2 ( 19)
B-1	Gd-152	2.430E-01	2.430E-01	DCF2 ( 20)
B-1	H-3	6.400E-08	6.400E-08	DCF2 ( 21)
B-1	Ni-59	2.700E-06	2.700E-06	DCF2 ( 22)
B-1	Ni-63	6.290E-06	6.290E-06	DCF2 ( 23)
B-1	Np-237+D	5.400E-01	5.400E-01	DCF2 ( 24)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 ( 25)
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2 ( 26)
B-1	Po-210	9.400E-03	9.400E-03	DCF2 ( 27)
B-1	Pu-238	3.920E-01	3.920E-01	DCF2 ( 28)
B-1	Pu-239	4.290E-01	4.290E-01	DCF2 ( 30)
B-1	Pu-240	4.290E-01	4.290E-01	DCF2 ( 31)
B-1	Pu-241	8.250E-03	8.250E-03	DCF2 ( 33)
B-1	Pu-241+D	8.254E-03	8.250E-03	DCF2 ( 34)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 ( 35)
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2 ( 36)
B-1	Sb-125	1.220E-05	1.220E-05	DCF2 ( 37)
B-1	Sr-90+D	1.308E-03	1.300E-03	DCF2 ( 39)
B-1	Tc-99	8.320E-06	8.320E-06	DCF2 ( 40)
B-1	Te-125m	7.290E-06	7.290E-06	DCF2 ( 41)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2 ( 42)
B-1	Th-229+D	2.169E+00	2.150E+00	DCF2 ( 43)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 ( 44)
B-1	Th-232	1.640E+00	1.640E+00	DCF2 ( 45)
B-1	U-233	1.350E-01	1.350E-01	DCF2 ( 46)
B-1	U-234	1.320E-01	1.320E-01	DCF2 ( 47)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 ( 48)
B-1	U-236	1.250E-01	1.250E-01	DCF2 ( 49)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3 ( 1)
D-1	Am-241	3.640E-03	3.640E-03	DCF3 ( 2)
D-1	Am-243+D	3.623E-03	3.620E-03	DCF3 ( 3)
D-1	C-14	2.090E-06	2.090E-06	DCF3 ( 4)
D-1	Ce-144+D	2.112E-05	2.100E-05	DCF3 ( 5)
D-1	Cm-243	2.510E-03	2.510E-03	DCF3 ( 6)
D-1	Cm-244	2.020E-03	2.020E-03	DCF3 ( 8)
D-1	Co-58	3.580E-06	3.580E-06	DCF3 ( 11)
D-1	Co-60	2.690E-05	2.690E-05	DCF3 ( 12)
D-1	Cs-134	7.330E-05	7.330E-05	DCF3 ( 13)
D-1	Cs-137+D	5.000E-05	5.000E-05	DCF3 ( 14)
D-1	Eu-152	6.480E-06	6.480E-06	DCF3 ( 15)
D-1	Eu-154	9.550E-06	9.550E-06	DCF3 ( 17)
D-1	Eu-155	1.530E-06	1.530E-06	DCF3 ( 18)
D-1	Fe-55	6.070E-07	6.070E-07	DCF3 ( 19)
D-1	Gd-152	1.610E-04	1.610E-04	DCF3 ( 20)
D-1	H-3	6.400E-08	6.400E-08	DCF3 ( 21)
D-1	Ni-59	2.100E-07	2.100E-07	DCF3 ( 22)
D-1	Ni-63	5.770E-07	5.770E-07	DCF3 ( 23)
D-1	Np-237+D	4.444E-03	4.440E-03	DCF3 ( 24)

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

Dose Library: FCS FGR11 Plus FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 ( 25)
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3 ( 26)
D-1	Po-210	1.900E-03	1.900E-03	DCF3 ( 27)
D-1	Pu-238	3.200E-03	3.200E-03	DCF3 ( 28)
D-1	Pu-239	3.540E-03	3.540E-03	DCF3 ( 30)
D-1	Pu-240	3.540E-03	3.540E-03	DCF3 ( 31)
D-1	Pu-241	6.840E-05	6.840E-05	DCF3 ( 33)
D-1	Pu-241+D	7.157E-05	6.840E-05	DCF3 ( 34)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 ( 35)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3 ( 36)
D-1	Sb-125	2.810E-06	2.810E-06	DCF3 ( 37)
D-1	Sr-90+D	1.528E-04	1.420E-04	DCF3 ( 39)
D-1	Tc-99	1.460E-06	1.460E-06	DCF3 ( 40)
D-1	Te-125m	3.670E-06	3.670E-06	DCF3 ( 41)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3 ( 42)
D-1	Th-229+D	4.027E-03	3.530E-03	DCF3 ( 43)
D-1	Th-230	5.480E-04	5.480E-04	DCF3 ( 44)
D-1	Th-232	2.730E-03	2.730E-03	DCF3 ( 45)
D-1	U-233	2.890E-04	2.890E-04	DCF3 ( 46)
D-1	U-234	2.830E-04	2.830E-04	DCF3 ( 47)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3 ( 48)
D-1	U-236	2.690E-04	2.690E-04	DCF3 ( 49)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF( 1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF( 1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF( 1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.830E-03	1.000E-03	RTF( 2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.740E-05	5.000E-05	RTF( 2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.260E-06	2.000E-06	RTF( 2,3)
D-34				
D-34	Am-243+D , plant/soil concentration ratio, dimensionless	1.830E-03	1.000E-03	RTF( 3,1)
D-34	Am-243+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.740E-05	5.000E-05	RTF( 3,2)
D-34	Am-243+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.260E-06	2.000E-06	RTF( 3,3)
D-34				
D-34	C-14 , plant/soil concentration ratio, dimensionless	1.280E+00	5.500E+00	RTF( 4,1)
D-34	C-14 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	6.110E-02	3.100E-02	RTF( 4,2)
D-34	C-14 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.250E-02	1.200E-02	RTF( 4,3)
D-34				
D-34	Ce-144+D , plant/soil concentration ratio, dimensionless	3.940E-03	2.000E-03	RTF( 5,1)
D-34	Ce-144+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.790E-05	2.000E-05	RTF( 5,2)
D-34	Ce-144+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	4.840E-05	5.000E-05	RTF( 5,3)
D-34				
D-34	Cm-243 , plant/soil concentration ratio, dimensionless	1.830E-03	1.000E-03	RTF( 6,1)
D-34	Cm-243 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	4.080E-05	2.000E-05	RTF( 6,2)
D-34	Cm-243 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.800E-06	2.000E-06	RTF( 6,3)
D-34				

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

Dose Library: FCS FGR11 Plus FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Cm-244 , plant/soil concentration ratio, dimensionless	1.830E-03	1.000E-03	RTF( 8,1)
D-34	Cm-244 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	4.080E-05	2.000E-05	RTF( 8,2)
D-34	Cm-244 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.800E-06	2.000E-06	RTF( 8,3)
D-34				
D-34	Co-58 , plant/soil concentration ratio, dimensionless	1.460E-01	8.000E-02	RTF( 11,1)
D-34	Co-58 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.980E-02	2.000E-02	RTF( 11,2)
D-34	Co-58 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.220E-03	2.000E-03	RTF( 11,3)
D-34				
D-34	Co-60 , plant/soil concentration ratio, dimensionless	1.460E-01	8.000E-02	RTF( 12,1)
D-34	Co-60 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.980E-02	2.000E-02	RTF( 12,2)
D-34	Co-60 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.220E-03	2.000E-03	RTF( 12,3)
D-34				
D-34	Cs-134 , plant/soil concentration ratio, dimensionless	7.830E-02	4.000E-02	RTF( 13,1)
D-34	Cs-134 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	6.560E-02	3.000E-02	RTF( 13,2)
D-34	Cs-134 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.370E-02	8.000E-03	RTF( 13,3)
D-34				
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	7.830E-02	4.000E-02	RTF( 14,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	6.560E-02	3.000E-02	RTF( 14,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.370E-02	8.000E-03	RTF( 14,3)
D-34				
D-34	Eu-152 , plant/soil concentration ratio, dimensionless	4.210E-03	2.500E-03	RTF( 15,1)
D-34	Eu-152 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	4.020E-03	2.000E-03	RTF( 15,2)
D-34	Eu-152 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.120E-04	5.000E-05	RTF( 15,3)
D-34				
D-34	Eu-154 , plant/soil concentration ratio, dimensionless	4.210E-03	2.500E-03	RTF( 17,1)
D-34	Eu-154 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	4.020E-03	2.000E-03	RTF( 17,2)
D-34	Eu-154 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.120E-04	5.000E-05	RTF( 17,3)
D-34				
D-34	Eu-155 , plant/soil concentration ratio, dimensionless	4.210E-03	2.500E-03	RTF( 18,1)
D-34	Eu-155 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	4.020E-03	2.000E-03	RTF( 18,2)
D-34	Eu-155 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.120E-04	5.000E-05	RTF( 18,3)
D-34				
D-34	Fe-55 , plant/soil concentration ratio, dimensionless	1.830E-03	1.000E-03	RTF( 19,1)
D-34	Fe-55 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.940E-02	2.000E-02	RTF( 19,2)
D-34	Fe-55 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	4.780E-04	3.000E-04	RTF( 19,3)
D-34				
D-34	Gd-152 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF( 20,1)
D-34	Gd-152 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF( 20,2)
D-34	Gd-152 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF( 20,3)
D-34				
D-34	H-3 , plant/soil concentration ratio, dimensionless	1.010E+01	4.800E+00	RTF( 21,1)
D-34	H-3 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.360E-02	1.200E-02	RTF( 21,2)
D-34	H-3 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.850E-02	1.000E-02	RTF( 21,3)
D-34				
D-34	Ni-59 , plant/soil concentration ratio, dimensionless	9.130E-02	5.000E-02	RTF( 22,1)
D-34	Ni-59 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	9.260E-03	5.000E-03	RTF( 22,2)
D-34	Ni-59 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.190E-02	2.000E-02	RTF( 22,3)
D-34				

Summary : RESRAD Default Parameters

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

Dose Library: FCS FGR11 Plus FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Ni-63 , plant/soil concentration ratio, dimensionless	9.130E-02	5.000E-02	RTF( 23,1)
D-34	Ni-63 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	9.260E-03	5.000E-03	RTF( 23,2)
D-34	Ni-63 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.190E-02	2.000E-02	RTF( 23,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	3.670E-02	2.000E-02	RTF( 24,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.590E-03	1.000E-03	RTF( 24,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.610E-05	5.000E-06	RTF( 24,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF( 25,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF( 25,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF( 25,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF( 26,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF( 26,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF( 26,3)
D-34				
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF( 27,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF( 27,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF( 27,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.830E-03	1.000E-03	RTF( 28,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.140E-04	1.000E-04	RTF( 28,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.390E-06	1.000E-06	RTF( 28,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.830E-03	1.000E-03	RTF( 30,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.140E-04	1.000E-04	RTF( 30,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.390E-06	1.000E-06	RTF( 30,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.830E-03	1.000E-03	RTF( 31,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.140E-04	1.000E-04	RTF( 31,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.390E-06	1.000E-06	RTF( 31,3)
D-34				
D-34	Pu-241 , plant/soil concentration ratio, dimensionless	1.830E-03	1.000E-03	RTF( 33,1)
D-34	Pu-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.140E-04	1.000E-04	RTF( 33,2)
D-34	Pu-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.390E-06	1.000E-06	RTF( 33,3)
D-34				
D-34	Pu-241+D , plant/soil concentration ratio, dimensionless	1.830E-03	1.000E-03	RTF( 34,1)
D-34	Pu-241+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.140E-04	1.000E-04	RTF( 34,2)
D-34	Pu-241+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.390E-06	1.000E-06	RTF( 34,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF( 35,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF( 35,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF( 35,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF( 36,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF( 36,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF( 36,3)
D-34				

Summary : RESRAD Default Parameters

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

Dose Library: FCS FGR11 Plus FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Sb-125 , plant/soil concentration ratio, dimensionless	1.950E-02	1.000E-02	RTF( 37,1)
D-34	Sb-125 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.850E-03	1.000E-03	RTF( 37,2)
D-34	Sb-125 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.120E-04	1.000E-04	RTF( 37,3)
D-34				
D-34	Sr-90+D , plant/soil concentration ratio, dimensionless	5.900E-01	3.000E-01	RTF( 39,1)
D-34	Sr-90+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.310E-02	8.000E-03	RTF( 39,2)
D-34	Sr-90+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.760E-03	2.000E-03	RTF( 39,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	9.170E+00	5.000E+00	RTF( 40,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.590E-04	1.000E-04	RTF( 40,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.590E-03	1.000E-03	RTF( 40,3)
D-34				
D-34	Te-125m , plant/soil concentration ratio, dimensionless	6.000E-01	6.000E-01	RTF( 41,1)
D-34	Te-125m , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	7.000E-03	7.000E-03	RTF( 41,2)
D-34	Te-125m , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-04	5.000E-04	RTF( 41,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF( 42,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF( 42,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF( 42,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF( 43,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF( 43,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF( 43,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF( 44,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF( 44,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF( 44,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF( 45,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF( 45,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF( 45,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF( 46,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF( 46,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF( 46,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF( 47,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF( 47,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF( 47,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF( 48,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF( 48,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF( 48,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF( 49,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF( 49,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF( 49,3)
D-34				



Summary : RESRAD Default Parameters

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

Dose Library: FCS FGR11 Plus FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC( 1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC( 1,2)
D-5				
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC( 2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC( 2,2)
D-5				
D-5	Am-243+D , fish	3.000E+01	3.000E+01	BIOFAC( 3,1)
D-5	Am-243+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC( 3,2)
D-5				
D-5	C-14 , fish	5.000E+04	5.000E+04	BIOFAC( 4,1)
D-5	C-14 , crustacea and mollusks	9.100E+03	9.100E+03	BIOFAC( 4,2)
D-5				
D-5	Ce-144+D , fish	3.000E+01	3.000E+01	BIOFAC( 5,1)
D-5	Ce-144+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC( 5,2)
D-5				
D-5	Cm-243 , fish	3.000E+01	3.000E+01	BIOFAC( 6,1)
D-5	Cm-243 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC( 6,2)
D-5				
D-5	Cm-244 , fish	3.000E+01	3.000E+01	BIOFAC( 8,1)
D-5	Cm-244 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC( 8,2)
D-5				
D-5	Co-58 , fish	3.000E+02	3.000E+02	BIOFAC( 11,1)
D-5	Co-58 , crustacea and mollusks	2.000E+02	2.000E+02	BIOFAC( 11,2)
D-5				
D-5	Co-60 , fish	3.000E+02	3.000E+02	BIOFAC( 12,1)
D-5	Co-60 , crustacea and mollusks	2.000E+02	2.000E+02	BIOFAC( 12,2)
D-5				
D-5	Cs-134 , fish	2.000E+03	2.000E+03	BIOFAC( 13,1)
D-5	Cs-134 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC( 13,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC( 14,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC( 14,2)
D-5				
D-5	Eu-152 , fish	5.000E+01	5.000E+01	BIOFAC( 15,1)
D-5	Eu-152 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC( 15,2)
D-5				
D-5	Eu-154 , fish	5.000E+01	5.000E+01	BIOFAC( 17,1)
D-5	Eu-154 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC( 17,2)
D-5				
D-5	Eu-155 , fish	5.000E+01	5.000E+01	BIOFAC( 18,1)
D-5	Eu-155 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC( 18,2)
D-5				
D-5	Fe-55 , fish	2.000E+02	2.000E+02	BIOFAC( 19,1)
D-5	Fe-55 , crustacea and mollusks	3.200E+03	3.200E+03	BIOFAC( 19,2)
D-5				
D-5	Gd-152 , fish	2.500E+01	2.500E+01	BIOFAC( 20,1)
D-5	Gd-152 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC( 20,2)
D-5				

Summary : RESRAD Default Parameters

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

Dose Library: FCS FGR11 Plus FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	H-3 , fish	1.000E+00	1.000E+00	BIOFAC( 21,1)
D-5	H-3 , crustacea and mollusks	1.000E+00	1.000E+00	BIOFAC( 21,2)
D-5				
D-5	Ni-59 , fish	1.000E+02	1.000E+02	BIOFAC( 22,1)
D-5	Ni-59 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC( 22,2)
D-5				
D-5	Ni-63 , fish	1.000E+02	1.000E+02	BIOFAC( 23,1)
D-5	Ni-63 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC( 23,2)
D-5				
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC( 24,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC( 24,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC( 25,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC( 25,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC( 26,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC( 26,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC( 27,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC( 27,2)
D-5				
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC( 28,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC( 28,2)
D-5				
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC( 30,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC( 30,2)
D-5				
D-5	Pu-240 , fish	3.000E+01	3.000E+01	BIOFAC( 31,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC( 31,2)
D-5				
D-5	Pu-241 , fish	3.000E+01	3.000E+01	BIOFAC( 33,1)
D-5	Pu-241 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC( 33,2)
D-5				
D-5	Pu-241+D , fish	3.000E+01	3.000E+01	BIOFAC( 34,1)
D-5	Pu-241+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC( 34,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC( 35,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC( 35,2)
D-5				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC( 36,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC( 36,2)
D-5				
D-5	Sb-125 , fish	1.000E+02	1.000E+02	BIOFAC( 37,1)
D-5	Sb-125 , crustacea and mollusks	1.000E+01	1.000E+01	BIOFAC( 37,2)
D-5				
D-5	Sr-90+D , fish	6.000E+01	6.000E+01	BIOFAC( 39,1)
D-5	Sr-90+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC( 39,2)
D-5				
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC( 40,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC( 40,2)

Summary : RESRAD Default Parameters

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

Dose Library: FCS FGR11 Plus FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Te-125m , fish	4.000E+02	4.000E+02	BIOFAC( 41,1)
D-5	Te-125m , crustacea and mollusks	7.500E+01	7.500E+01	BIOFAC( 41,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC( 42,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC( 42,2)
D-5				
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC( 43,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC( 43,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC( 44,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC( 44,2)
D-5				
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC( 45,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC( 45,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC( 46,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC( 46,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC( 47,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC( 47,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC( 48,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC( 48,2)
D-5				
D-5	U-236 , fish	1.000E+01	1.000E+01	BIOFAC( 49,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC( 49,2)

#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

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	2.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.000E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	1.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	4.900E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T ( 2)
R011	Times for calculations (yr)	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): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): C-14	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ce-144	1.000E+00	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Cm-243	1.000E+00	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Cm-244	1.000E+00	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): Co-58	1.000E+00	0.000E+00	---	S1(11)
R012	Initial principal radionuclide (pCi/g): Co-60	1.000E+00	0.000E+00	---	S1(12)
R012	Initial principal radionuclide (pCi/g): Cs-134	1.000E+00	0.000E+00	---	S1(13)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Eu-152	1.000E+00	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Eu-154	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): Eu-155	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): Fe-55	1.000E+00	0.000E+00	---	S1(19)
R012	Initial principal radionuclide (pCi/g): H-3	1.000E+00	0.000E+00	---	S1(21)
R012	Initial principal radionuclide (pCi/g): Ni-59	1.000E+00	0.000E+00	---	S1(22)
R012	Initial principal radionuclide (pCi/g): Ni-63	1.000E+00	0.000E+00	---	S1(23)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(24)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.000E+00	0.000E+00	---	S1(28)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(30)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(31)
R012	Initial principal radionuclide (pCi/g): Pu-241	1.000E+00	0.000E+00	---	S1(33)
R012	Initial principal radionuclide (pCi/g): Sb-125	1.000E+00	0.000E+00	---	S1(37)
R012	Initial principal radionuclide (pCi/g): Sr-90	1.000E+00	0.000E+00	---	S1(39)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(40)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1( 2)
R012	Concentration in groundwater (pCi/L): C-14	not used	0.000E+00	---	W1( 4)
R012	Concentration in groundwater (pCi/L): Ce-144	not used	0.000E+00	---	W1( 5)
R012	Concentration in groundwater (pCi/L): Cm-243	not used	0.000E+00	---	W1( 6)
R012	Concentration in groundwater (pCi/L): Cm-244	not used	0.000E+00	---	W1( 8)
R012	Concentration in groundwater (pCi/L): Co-58	not used	0.000E+00	---	W1(11)
R012	Concentration in groundwater (pCi/L): Co-60	not used	0.000E+00	---	W1(12)
R012	Concentration in groundwater (pCi/L): Cs-134	not used	0.000E+00	---	W1(13)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Eu-152	not used	0.000E+00	---	W1(15)

Summary : RESRAD Default Parameters

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## Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R012	Concentration in groundwater (pCi/L): Eu-154	not used	0.000E+00	---	W1 (17)
R012	Concentration in groundwater (pCi/L): Eu-155	not used	0.000E+00	---	W1 (18)
R012	Concentration in groundwater (pCi/L): Fe-55	not used	0.000E+00	---	W1 (19)
R012	Concentration in groundwater (pCi/L): H-3	not used	0.000E+00	---	W1 (21)
R012	Concentration in groundwater (pCi/L): Ni-59	not used	0.000E+00	---	W1 (22)
R012	Concentration in groundwater (pCi/L): Ni-63	not used	0.000E+00	---	W1 (23)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1 (24)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1 (28)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1 (30)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1 (31)
R012	Concentration in groundwater (pCi/L): Pu-241	not used	0.000E+00	---	W1 (33)
R012	Concentration in groundwater (pCi/L): Sb-125	not used	0.000E+00	---	W1 (37)
R012	Concentration in groundwater (pCi/L): Sr-90	not used	0.000E+00	---	W1 (39)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1 (40)
R013	Cover depth (m)	3.920E+00	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)	2.920E-03	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.490E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.400E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	4.350E+03	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	3.600E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	3.750E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	7.240E+00	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	8.700E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	7.600E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	1.900E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	6.300E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	Romberg failures occurred	EPS
R014	Density of saturated zone (g/cm**3)	1.490E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.400E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	4.350E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	8.400E-04	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	4.000E+00	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	4.550E+03	2.500E+02	---	UW
R015	Number of unsaturated zone strata	0	1	---	NS

Summary : RESRAD Default Parameters

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## Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	2.690E+02	2.000E+01	---	DCNUCC ( 2)
R016	Saturated zone (cm**3/g)	2.690E+02	2.000E+01	---	DCNUCS ( 2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.385E-04	ALEACH ( 2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 2)
R016	Distribution coefficients for C-14				
R016	Contaminated zone (cm**3/g)	1.260E+00	0.000E+00	---	DCNUCC ( 4)
R016	Saturated zone (cm**3/g)	1.260E+00	0.000E+00	---	DCNUCS ( 4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.836E-02	ALEACH ( 4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 4)
R016	Distribution coefficients for Ce-144				
R016	Contaminated zone (cm**3/g)	3.990E+02	1.000E+03	---	DCNUCC ( 5)
R016	Saturated zone (cm**3/g)	3.990E+02	1.000E+03	---	DCNUCS ( 5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.283E-04	ALEACH ( 5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 5)
R016	Distribution coefficients for Cm-243				
R016	Contaminated zone (cm**3/g)	5.720E+02	-1.000E+00	---	DCNUCC ( 6)
R016	Saturated zone (cm**3/g)	5.720E+02	-1.000E+00	---	DCNUCS ( 6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.593E-04	ALEACH ( 6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 6)
R016	Distribution coefficients for Cm-244				
R016	Contaminated zone (cm**3/g)	5.720E+02	-1.000E+00	---	DCNUCC ( 8)
R016	Saturated zone (cm**3/g)	5.720E+02	-1.000E+00	---	DCNUCS ( 8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.593E-04	ALEACH ( 8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 8)
R016	Distribution coefficients for Co-58				
R016	Contaminated zone (cm**3/g)	3.700E+01	1.000E+03	---	DCNUCC (11)
R016	Saturated zone (cm**3/g)	3.700E+01	1.000E+03	---	DCNUCS (11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.444E-03	ALEACH (11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (11)
R016	Distribution coefficients for Co-60				
R016	Contaminated zone (cm**3/g)	3.700E+01	1.000E+03	---	DCNUCC (12)
R016	Saturated zone (cm**3/g)	3.700E+01	1.000E+03	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.444E-03	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for Cs-134				
R016	Contaminated zone (cm**3/g)	1.580E+02	4.600E+03	---	DCNUCC (13)
R016	Saturated zone (cm**3/g)	1.580E+02	4.600E+03	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.759E-04	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)

Summary : RESRAD Default Parameters

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## Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	1.580E+02	4.600E+03	---	DCNUCC (14)
R016	Saturated zone (cm**3/g)	1.580E+02	4.600E+03	---	DCNUCS (14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.759E-04	ALEACH (14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (14)
R016	Distribution coefficients for Eu-152				
R016	Contaminated zone (cm**3/g)	9.450E+01	-1.000E+00	---	DCNUCC (15)
R016	Saturated zone (cm**3/g)	9.450E+01	-1.000E+00	---	DCNUCS (15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.616E-04	ALEACH (15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (15)
R016	Distribution coefficients for Eu-154				
R016	Contaminated zone (cm**3/g)	9.450E+01	-1.000E+00	---	DCNUCC (17)
R016	Saturated zone (cm**3/g)	9.450E+01	-1.000E+00	---	DCNUCS (17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.616E-04	ALEACH (17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (17)
R016	Distribution coefficients for Eu-155				
R016	Contaminated zone (cm**3/g)	9.450E+01	-1.000E+00	---	DCNUCC (18)
R016	Saturated zone (cm**3/g)	9.450E+01	-1.000E+00	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.616E-04	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for Fe-55				
R016	Contaminated zone (cm**3/g)	3.210E+02	1.000E+03	---	DCNUCC (19)
R016	Saturated zone (cm**3/g)	3.210E+02	1.000E+03	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.837E-04	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R016	Distribution coefficients for H-3				
R016	Contaminated zone (cm**3/g)	4.300E-02	0.000E+00	---	DCNUCC (21)
R016	Saturated zone (cm**3/g)	4.300E-02	0.000E+00	---	DCNUCS (21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.642E-01	ALEACH (21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (21)
R016	Distribution coefficients for Ni-59				
R016	Contaminated zone (cm**3/g)	2.760E+01	1.000E+03	---	DCNUCC (22)
R016	Saturated zone (cm**3/g)	2.760E+01	1.000E+03	---	DCNUCS (22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.267E-03	ALEACH (22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (22)
R016	Distribution coefficients for Ni-63				
R016	Contaminated zone (cm**3/g)	2.760E+01	1.000E+03	---	DCNUCC (23)
R016	Saturated zone (cm**3/g)	2.760E+01	1.000E+03	---	DCNUCS (23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.267E-03	ALEACH (23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (23)

Summary : RESRAD Default Parameters

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## Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	5.490E+00	-1.000E+00	---	DCNUCC (24)
R016	Saturated zone (cm**3/g)	5.490E+00	-1.000E+00	---	DCNUCS (24)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.574E-02	ALEACH (24)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (24)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	1.560E+02	2.000E+03	---	DCNUCC (28)
R016	Saturated zone (cm**3/g)	1.560E+02	2.000E+03	---	DCNUCS (28)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.832E-04	ALEACH (28)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (28)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	1.560E+02	2.000E+03	---	DCNUCC (30)
R016	Saturated zone (cm**3/g)	1.560E+02	2.000E+03	---	DCNUCS (30)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.832E-04	ALEACH (30)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (30)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	1.560E+02	2.000E+03	---	DCNUCC (31)
R016	Saturated zone (cm**3/g)	1.560E+02	2.000E+03	---	DCNUCS (31)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.832E-04	ALEACH (31)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (31)
R016	Distribution coefficients for Pu-241				
R016	Contaminated zone (cm**3/g)	1.560E+02	2.000E+03	---	DCNUCC (33)
R016	Saturated zone (cm**3/g)	1.560E+02	2.000E+03	---	DCNUCS (33)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.832E-04	ALEACH (33)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (33)
R016	Distribution coefficients for Sb-125				
R016	Contaminated zone (cm**3/g)	5.070E+00	0.000E+00	---	DCNUCC (37)
R016	Saturated zone (cm**3/g)	5.070E+00	0.000E+00	---	DCNUCS (37)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.697E-02	ALEACH (37)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (37)
R016	Distribution coefficients for Sr-90				
R016	Contaminated zone (cm**3/g)	6.570E+00	3.000E+01	---	DCNUCC (39)
R016	Saturated zone (cm**3/g)	6.570E+00	3.000E+01	---	DCNUCS (39)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.327E-02	ALEACH (39)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (39)
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	1.900E-02	0.000E+00	---	DCNUCC (40)
R016	Saturated zone (cm**3/g)	1.900E-02	0.000E+00	---	DCNUCS (40)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.840E-01	ALEACH (40)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (40)



Summary : RESRAD Default Parameters

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## Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	8.290E+02	2.000E+01	---	DCNUCC ( 1)
R016	Saturated zone (cm**3/g)	8.290E+02	2.000E+01	---	DCNUCS ( 1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.099E-04	ALEACH ( 1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 1)
R016	Distribution coefficients for daughter Am-243				
R016	Contaminated zone (cm**3/g)	1.000E+03	2.000E+01	---	DCNUCC ( 3)
R016	Saturated zone (cm**3/g)	1.000E+03	2.000E+01	---	DCNUCS ( 3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.113E-05	ALEACH ( 3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK ( 3)
R016	Distribution coefficients for daughter Gd-152				
R016	Contaminated zone (cm**3/g)	8.280E+02	-1.000E+00	---	DCNUCC (20)
R016	Saturated zone (cm**3/g)	8.290E+02	-1.000E+00	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.101E-04	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	3.800E+02	5.000E+01	---	DCNUCC (25)
R016	Saturated zone (cm**3/g)	3.800E+02	5.000E+01	---	DCNUCS (25)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.397E-04	ALEACH (25)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (25)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	2.190E+02	1.000E+02	---	DCNUCC (26)
R016	Saturated zone (cm**3/g)	2.190E+02	1.000E+02	---	DCNUCS (26)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.157E-04	ALEACH (26)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (26)
R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+01	---	DCNUCC (27)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+01	---	DCNUCS (27)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.088E-04	ALEACH (27)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (27)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	3.100E+03	7.000E+01	---	DCNUCC (35)
R016	Saturated zone (cm**3/g)	3.100E+03	7.000E+01	---	DCNUCS (35)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.940E-05	ALEACH (35)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (35)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	3.100E+03	7.000E+01	---	DCNUCC (36)
R016	Saturated zone (cm**3/g)	3.100E+03	7.000E+01	---	DCNUCS (36)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.940E-05	ALEACH (36)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (36)

Summary : RESRAD Default Parameters

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## Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Te-125m				
R016	Contaminated zone (cm**3/g)	3.810E+01	0.000E+00	---	DCNUCC (41)
R016	Saturated zone (cm**3/g)	3.810E+01	0.000E+00	---	DCNUCS (41)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.374E-03	ALEACH (41)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (41)
R016	Distribution coefficients for daughter Th-228				
R016	Contaminated zone (cm**3/g)	6.990E+02	6.000E+04	---	DCNUCC (42)
R016	Saturated zone (cm**3/g)	6.990E+02	6.000E+04	---	DCNUCS (42)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.304E-04	ALEACH (42)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (42)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	6.990E+02	6.000E+04	---	DCNUCC (43)
R016	Saturated zone (cm**3/g)	6.990E+02	6.000E+04	---	DCNUCS (43)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.304E-04	ALEACH (43)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (43)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	6.990E+02	6.000E+04	---	DCNUCC (44)
R016	Saturated zone (cm**3/g)	6.990E+02	6.000E+04	---	DCNUCS (44)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.304E-04	ALEACH (44)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (44)
R016	Distribution coefficients for daughter Th-232				
R016	Contaminated zone (cm**3/g)	6.990E+02	6.000E+04	---	DCNUCC (45)
R016	Saturated zone (cm**3/g)	6.990E+02	6.000E+04	---	DCNUCS (45)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.304E-04	ALEACH (45)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (45)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	1.100E+02	5.000E+01	---	DCNUCC (46)
R016	Saturated zone (cm**3/g)	1.100E+02	5.000E+01	---	DCNUCS (46)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.265E-04	ALEACH (46)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (46)
R016	Distribution coefficients for daughter U-234				
R016	Contaminated zone (cm**3/g)	1.100E+02	5.000E+01	---	DCNUCC (47)
R016	Saturated zone (cm**3/g)	1.100E+02	5.000E+01	---	DCNUCS (47)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.265E-04	ALEACH (47)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (47)
R016	Distribution coefficients for daughter U-235				
R016	Contaminated zone (cm**3/g)	1.100E+02	5.000E+01	---	DCNUCC (48)
R016	Saturated zone (cm**3/g)	1.100E+02	5.000E+01	---	DCNUCS (48)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.265E-04	ALEACH (48)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (48)

Summary : RESRAD Default Parameters

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## Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	1.100E+02	5.000E+01	---	DCNUCC (49)
R016	Saturated zone (cm**3/g)	1.100E+02	5.000E+01	---	DCNUCS (49)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.265E-04	ALEACH (49)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (49)
R017	Inhalation rate (m**3/yr)	8.600E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.350E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	5.500E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	5.520E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.600E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.200E-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)	2.240E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	4.280E+01	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	2.330E+02	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	6.510E+01	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	1.830E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	4.780E+02	5.100E+02	---	DWI

Summary : RESRAD Default Parameters

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## Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	-1	-1	0.100E+01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.100E+01	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.710E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	6.321E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.060E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	6.000E+01	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	7.000E-01	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	4.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	2.300E-01	1.500E-01	---	DM
R019	Depth of roots (m)	3.080E+00	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)	1.270E+00	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	2.890E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.890E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	2.460E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	1.230E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.200E-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	3.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	3.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	3.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	3.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	7.000E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	3.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.150E+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	9.000E-02	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	3.000E-02	2.000E-01	---	AVFG5
STOR	Storage times of contaminated foodstuffs (days):				

Summary : RESRAD Default Parameters

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## Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	128	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

## Summary of Pathway Selections

Pathway	User Selection
1 -- external gamma	active
2 -- inhalation (w/o radon)	active
3 -- plant ingestion	active
4 -- meat ingestion	active
5 -- milk ingestion	active
6 -- aquatic foods	suppressed
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:	20000.00 square meters	Am-241	1.000E+00
Thickness:	1.00 meters	C-14	1.000E+00
Cover Depth:	3.92 meters	Ce-144	1.000E+00
		Cm-243	1.000E+00
		Cm-244	1.000E+00
		Co-58	1.000E+00
		Co-60	1.000E+00
		Cs-134	1.000E+00
		Cs-137	1.000E+00
		Eu-152	1.000E+00
		Eu-154	1.000E+00
		Eu-155	1.000E+00
		Fe-55	1.000E+00
		H-3	1.000E+00
		Ni-59	1.000E+00
		Ni-63	1.000E+00
		Np-237	1.000E+00
		Pu-238	1.000E+00
		Pu-239	1.000E+00
		Pu-240	1.000E+00
		Pu-241	1.000E+00
		Sb-125	1.000E+00
		Sr-90	1.000E+00
		Tc-99	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	1.000E+01	3.000E+01	1.000E+02	3.000E+02
TDOSE(t):	1.255E+02	1.266E+02	1.284E+02	1.340E+02	1.485E+02	7.810E+01	1.129E+01
M(t):	5.020E+00	5.063E+00	5.137E+00	5.360E+00	5.941E+00	3.124E+00	4.518E-01
							3.357E-01

Maximum TDOSE(t): 1.596E+02 mrem/yr at t = 50.6 ± 0.1 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide 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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	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
Ce-144	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cm-243	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cm-244	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-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	5.346E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-134	2.052E-30	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	2.108E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	4.788E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	2.353E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-155	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ni-59	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000
Np-237	2.017E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	3.557E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-240	1.448E-30	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	1.251E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Summary : RESRAD Default Parameters

File : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\EMBEDDED PIPE DSR\FCS EMBEDDED PIPE DSR.RAD

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

As mrem/yr and Fraction of Total Dose At t = 5.060E+01 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.
Am-241	1.507E+00	0.0094	0.000E+00	0.0000	0.000E+00	0.0000	2.199E-01	0.0014	1.062E-03	0.0000	3.506E-04	0.0000	1.729E+00	0.0108
C-14	2.500E-02	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.623E-02	0.0001	1.475E-02	0.0001	1.007E-02	0.0001	6.605E-02	0.0004
Ce-144	1.135E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.657E-23	0.0000	5.118E-26	0.0000	3.903E-25	0.0000	1.305E-22	0.0000
Cm-243	1.544E-01	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	2.252E-02	0.0001	7.694E-05	0.0000	4.127E-05	0.0000	1.770E-01	0.0011
Cm-244	6.651E-02	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	9.700E-03	0.0001	3.794E-05	0.0000	1.683E-05	0.0000	7.626E-02	0.0005
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	1.124E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.694E-05	0.0000	8.014E-05	0.0000	2.579E-05	0.0000	2.353E-04	0.0000
Cs-134	1.965E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.915E-10	0.0000	1.535E-09	0.0000	1.914E-09	0.0000	5.705E-09	0.0000
Cs-137	1.182E-02	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.754E-03	0.0000	9.234E-03	0.0001	1.152E-02	0.0001	3.433E-02	0.0002
Eu-152	5.919E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.638E-05	0.0000	2.830E-05	0.0000	4.708E-06	0.0000	7.113E-04	0.0000
Eu-154	2.222E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.242E-05	0.0000	1.062E-05	0.0000	1.767E-06	0.0000	2.670E-04	0.0000
Eu-155	1.578E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.304E-07	0.0000	7.548E-08	0.0000	1.256E-08	0.0000	1.897E-06	0.0000
Fe-55	4.588E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.692E-11	0.0000	2.150E-10	0.0000	1.558E-11	0.0000	7.563E-10	0.0000
H-3	5.374E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.496E-10	0.0000	3.382E-10	0.0000	1.465E-09	0.0000	7.827E-09	0.0000
Ni-59	9.940E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.479E-04	0.0000	1.096E-04	0.0000	2.256E-03	0.0000	3.507E-03	0.0000
Ni-63	1.889E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.811E-04	0.0000	2.083E-04	0.0000	4.288E-03	0.0000	6.666E-03	0.0000
Np-237	1.265E+02	0.7925	0.000E+00	0.0000	0.000E+00	0.0000	1.859E+01	0.1165	2.393E+00	0.0150	1.447E-01	0.0009	1.476E+02	0.9249
Pu-238	1.667E+00	0.0104	0.000E+00	0.0000	0.000E+00	0.0000	2.431E-01	0.0015	2.261E-03	0.0000	1.662E-04	0.0000	1.912E+00	0.0120
Pu-239	2.757E+00	0.0173	0.000E+00	0.0000	0.000E+00	0.0000	4.021E-01	0.0025	3.739E-03	0.0000	2.722E-04	0.0000	3.163E+00	0.0198
Pu-240	2.746E+00	0.0172	0.000E+00	0.0000	0.000E+00	0.0000	4.006E-01	0.0025	3.724E-03	0.0000	2.711E-04	0.0000	3.151E+00	0.0197
Pu-241	5.180E-02	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	7.556E-03	0.0000	3.913E-05	0.0000	1.142E-05	0.0000	5.941E-02	0.0004
Sb-125	2.394E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.582E-08	0.0000	6.773E-09	0.0000	2.716E-09	0.0000	2.847E-07	0.0000
Sr-90	1.054E+00	0.0066	0.000E+00	0.0000	0.000E+00	0.0000	1.741E-01	0.0011	1.655E-01	0.0010	2.089E-01	0.0013	1.602E+00	0.0100
Tc-99	8.444E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.735E-07	0.0000	1.859E-09	0.0000	1.149E-07	0.0000	1.335E-06	0.0000
Total	1.365E+02	0.8555	0.000E+00	0.0000	0.000E+00	0.0000	2.009E+01	0.1259	2.594E+00	0.0163	3.829E-01	0.0024	1.596E+02	1.0000

\*Sum of all water independent and dependent pathways.



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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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	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
Ce-144	5.048E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cm-243	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cm-244	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-58	7.604E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	8.335E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-134	6.561E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	8.508E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	1.085E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	2.112E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-155	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ni-59	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sb-125	9.224E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	8.706E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Summary : RESRAD Default Parameters

File : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\EMBEDDED PIPE DSR\FCS EMBEDDED PIPE DSR.RAD

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

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

## Water 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.
Am-241	1.614E+00	0.0129	0.000E+00	0.0000	0.000E+00	0.0000	2.354E-01	0.0019	1.102E-03	0.0000	3.737E-04	0.0000	1.851E+00	0.0148
C-14	1.630E-01	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	1.054E-01	0.0008	9.557E-02	0.0008	6.548E-02	0.0005	4.295E-01	0.0034
Ce-144	4.184E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.106E-04	0.0000	1.886E-06	0.0000	1.438E-05	0.0000	4.811E-03	0.0000
Cm-243	5.178E-01	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	7.553E-02	0.0006	2.514E-04	0.0000	1.398E-04	0.0000	5.938E-01	0.0047
Cm-244	4.140E-01	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	6.038E-02	0.0005	2.010E-04	0.0000	1.117E-04	0.0000	4.747E-01	0.0038
Co-58	3.120E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.701E-04	0.0000	2.223E-03	0.0000	7.155E-04	0.0000	6.528E-03	0.0001
Co-60	8.082E-02	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	1.217E-02	0.0001	5.760E-02	0.0005	1.853E-02	0.0001	1.691E-01	0.0013
Cs-134	4.700E-02	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	6.974E-03	0.0001	3.672E-02	0.0003	4.580E-02	0.0004	1.365E-01	0.0011
Cs-137	3.732E-02	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	5.538E-03	0.0000	2.915E-02	0.0002	3.637E-02	0.0003	1.084E-01	0.0009
Eu-152	7.962E-03	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.162E-03	0.0000	3.807E-04	0.0000	6.334E-05	0.0000	9.568E-03	0.0001
Eu-154	1.158E-02	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.690E-03	0.0000	5.537E-04	0.0000	9.211E-05	0.0000	1.392E-02	0.0001
Eu-155	1.800E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.628E-04	0.0000	8.610E-05	0.0000	1.432E-05	0.0000	2.164E-03	0.0000
Fe-55	1.991E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.904E-05	0.0000	9.333E-05	0.0000	6.760E-06	0.0000	3.283E-04	0.0000
H-3	2.333E-02	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	2.782E-03	0.0000	1.432E-03	0.0000	6.308E-03	0.0001	3.385E-02	0.0003
Ni-59	9.004E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.340E-04	0.0000	9.929E-05	0.0000	2.043E-03	0.0000	3.177E-03	0.0000
Ni-63	2.465E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.668E-04	0.0000	2.718E-04	0.0000	5.594E-03	0.0000	8.698E-03	0.0001
Np-237	9.217E+01	0.7345	0.000E+00	0.0000	0.000E+00	0.0000	1.355E+01	0.1080	1.742E+00	0.0139	1.054E-01	0.0008	1.076E+02	0.8572
Pu-238	2.437E+00	0.0194	0.000E+00	0.0000	0.000E+00	0.0000	3.555E-01	0.0028	3.305E-03	0.0000	2.406E-04	0.0000	2.796E+00	0.0223
Pu-239	2.707E+00	0.0216	0.000E+00	0.0000	0.000E+00	0.0000	3.948E-01	0.0031	3.671E-03	0.0000	2.672E-04	0.0000	3.106E+00	0.0247
Pu-240	2.707E+00	0.0216	0.000E+00	0.0000	0.000E+00	0.0000	3.948E-01	0.0031	3.671E-03	0.0000	2.672E-04	0.0000	3.106E+00	0.0247
Pu-241	5.234E-02	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	7.639E-03	0.0001	7.037E-05	0.0000	5.363E-06	0.0000	6.006E-02	0.0005
Sb-125	5.758E-02	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	8.579E-03	0.0001	1.555E-03	0.0000	6.158E-04	0.0000	6.833E-02	0.0005
Sr-90	2.638E+00	0.0210	0.000E+00	0.0000	0.000E+00	0.0000	4.358E-01	0.0035	4.140E-01	0.0033	5.227E-01	0.0042	4.010E+00	0.0320
Tc-99	5.917E-01	0.0047	0.000E+00	0.0000	0.000E+00	0.0000	2.585E-01	0.0021	1.241E-03	0.0000	7.777E-02	0.0006	9.291E-01	0.0074
Total	1.063E+02	0.8470	0.000E+00	0.0000	0.000E+00	0.0000	1.591E+01	0.1268	2.396E+00	0.0191	8.889E-01	0.0071	1.255E+02	1.0000

\*Sum of all water independent and dependent pathways.

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File      : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\EMBEDDED PIPE DSR\FCS EMBEDDED PIPE DSR.RAD
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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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	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
Ce-144	2.144E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cm-243	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cm-244	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-58	2.209E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	7.543E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-134	4.880E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	8.661E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	1.068E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	2.023E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-155	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ni-59	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sb-125	7.371E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	7.874E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Summary : RESRAD Default Parameters

File : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\EMBEDDED PIPE DSR\FCS EMBEDDED PIPE DSR.RAD

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

## Water 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.
Am-241	1.612E+00	0.0127	0.000E+00	0.0000	0.000E+00	0.0000	2.351E-01	0.0019	1.101E-03	0.0000	3.733E-04	0.0000	1.849E+00	0.0146
C-14	1.690E-01	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	1.093E-01	0.0009	9.909E-02	0.0008	6.790E-02	0.0005	4.454E-01	0.0035
Ce-144	1.718E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.507E-04	0.0000	7.744E-07	0.0000	5.905E-06	0.0000	1.975E-03	0.0000
Cm-243	5.055E-01	0.0040	0.000E+00	0.0000	0.000E+00	0.0000	7.374E-02	0.0006	2.454E-04	0.0000	1.364E-04	0.0000	5.797E-01	0.0046
Cm-244	3.988E-01	0.0032	0.000E+00	0.0000	0.000E+00	0.0000	5.816E-02	0.0005	1.939E-04	0.0000	1.075E-04	0.0000	4.572E-01	0.0036
Co-58	8.750E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.319E-05	0.0000	6.232E-05	0.0000	2.006E-05	0.0000	1.831E-04	0.0000
Co-60	7.098E-02	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	1.069E-02	0.0001	5.058E-02	0.0004	1.628E-02	0.0001	1.485E-01	0.0012
Cs-134	3.360E-02	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	4.985E-03	0.0000	2.624E-02	0.0002	3.274E-02	0.0003	9.757E-02	0.0008
Cs-137	3.648E-02	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	5.413E-03	0.0000	2.850E-02	0.0002	3.555E-02	0.0003	1.059E-01	0.0008
Eu-152	7.564E-03	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.104E-03	0.0000	3.617E-04	0.0000	6.017E-05	0.0000	9.089E-03	0.0001
Eu-154	1.071E-02	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.563E-03	0.0000	5.121E-04	0.0000	8.519E-05	0.0000	1.287E-02	0.0001
Eu-155	1.567E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.286E-04	0.0000	7.492E-05	0.0000	1.246E-05	0.0000	1.883E-03	0.0000
Fe-55	1.541E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.247E-05	0.0000	7.221E-05	0.0000	5.231E-06	0.0000	2.540E-04	0.0000
H-3	2.492E-02	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	2.974E-03	0.0000	1.531E-03	0.0000	6.741E-03	0.0001	3.617E-02	0.0003
Ni-59	9.024E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.343E-04	0.0000	9.950E-05	0.0000	2.048E-03	0.0000	3.184E-03	0.0000
Ni-63	2.453E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.650E-04	0.0000	2.705E-04	0.0000	5.566E-03	0.0000	8.654E-03	0.0001
Np-237	9.315E+01	0.7359	0.000E+00	0.0000	0.000E+00	0.0000	1.369E+01	0.1082	1.761E+00	0.0139	1.065E-01	0.0008	1.087E+02	0.8588
Pu-238	2.419E+00	0.0191	0.000E+00	0.0000	0.000E+00	0.0000	3.529E-01	0.0028	3.281E-03	0.0000	2.389E-04	0.0000	2.776E+00	0.0219
Pu-239	2.708E+00	0.0214	0.000E+00	0.0000	0.000E+00	0.0000	3.950E-01	0.0031	3.672E-03	0.0000	2.673E-04	0.0000	3.107E+00	0.0245
Pu-240	2.708E+00	0.0214	0.000E+00	0.0000	0.000E+00	0.0000	3.949E-01	0.0031	3.672E-03	0.0000	2.673E-04	0.0000	3.107E+00	0.0245
Pu-241	5.243E-02	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	7.652E-03	0.0001	6.886E-05	0.0000	5.703E-06	0.0000	6.016E-02	0.0005
Sb-125	4.585E-02	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	6.857E-03	0.0001	1.292E-03	0.0000	5.186E-04	0.0000	5.451E-02	0.0004
Sr-90	2.599E+00	0.0205	0.000E+00	0.0000	0.000E+00	0.0000	4.294E-01	0.0034	4.079E-01	0.0032	5.149E-01	0.0041	3.951E+00	0.0312
Tc-99	6.721E-01	0.0053	0.000E+00	0.0000	0.000E+00	0.0000	2.938E-01	0.0023	1.415E-03	0.0000	8.855E-02	0.0007	1.056E+00	0.0083
Total	1.072E+02	0.8472	0.000E+00	0.0000	0.000E+00	0.0000	1.608E+01	0.1270	2.391E+00	0.0189	8.789E-01	0.0069	1.266E+02	1.0000

\*Sum of all water independent and dependent pathways.

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File      : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\EMBEDDED PIPE DSR\FCS EMBEDDED PIPE DSR.RAD
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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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	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
Ce-144	3.870E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cm-243	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cm-244	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-58	1.863E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	6.178E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-134	2.700E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	8.978E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	1.034E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	1.854E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-155	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ni-59	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000
Np-237	2.357E-30	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sb-125	4.707E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	6.471E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Summary : RESRAD Default Parameters

File : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\EMBEDDED PIPE DSR\FCS EMBEDDED PIPE DSR.RAD

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

## Water 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.
Am-241	1.608E+00	0.0125	0.000E+00	0.0000	0.000E+00	0.0000	2.345E-01	0.0018	1.100E-03	0.0000	3.723E-04	0.0000	1.844E+00	0.0144
C-14	1.801E-01	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	1.165E-01	0.0009	1.056E-01	0.0008	7.235E-02	0.0006	4.746E-01	0.0037
Ce-144	2.895E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.224E-05	0.0000	1.305E-07	0.0000	9.951E-07	0.0000	3.328E-04	0.0000
Cm-243	4.818E-01	0.0038	0.000E+00	0.0000	0.000E+00	0.0000	7.027E-02	0.0005	2.341E-04	0.0000	1.300E-04	0.0000	5.524E-01	0.0043
Cm-244	3.700E-01	0.0029	0.000E+00	0.0000	0.000E+00	0.0000	5.397E-02	0.0004	1.804E-04	0.0000	9.970E-05	0.0000	4.243E-01	0.0033
Co-58	6.878E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.037E-08	0.0000	4.899E-08	0.0000	1.577E-08	0.0000	1.439E-07	0.0000
Co-60	5.474E-02	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	8.245E-03	0.0001	3.901E-02	0.0003	1.255E-02	0.0001	1.146E-01	0.0009
Cs-134	1.717E-02	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	2.547E-03	0.0000	1.341E-02	0.0001	1.673E-02	0.0001	4.985E-02	0.0004
Cs-137	3.486E-02	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	5.173E-03	0.0000	2.723E-02	0.0002	3.397E-02	0.0003	1.012E-01	0.0008
Eu-152	6.825E-03	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	9.961E-04	0.0000	3.264E-04	0.0000	5.429E-05	0.0000	8.202E-03	0.0001
Eu-154	9.161E-03	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.337E-03	0.0000	4.381E-04	0.0000	7.287E-05	0.0000	1.101E-02	0.0001
Eu-155	1.186E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.731E-04	0.0000	5.672E-05	0.0000	9.436E-06	0.0000	1.426E-03	0.0000
Fe-55	9.224E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.345E-05	0.0000	4.323E-05	0.0000	3.131E-06	0.0000	1.521E-04	0.0000
H-3	2.252E-02	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	2.719E-03	0.0000	1.413E-03	0.0000	6.133E-03	0.0000	3.279E-02	0.0003
Ni-59	9.064E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.349E-04	0.0000	9.994E-05	0.0000	2.057E-03	0.0000	3.198E-03	0.0000
Ni-63	2.428E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.614E-04	0.0000	2.678E-04	0.0000	5.511E-03	0.0000	8.568E-03	0.0001
Np-237	9.506E+01	0.7401	0.000E+00	0.0000	0.000E+00	0.0000	1.397E+01	0.1088	1.797E+00	0.0140	1.087E-01	0.0008	1.109E+02	0.8638
Pu-238	2.383E+00	0.0186	0.000E+00	0.0000	0.000E+00	0.0000	3.476E-01	0.0027	3.232E-03	0.0000	2.354E-04	0.0000	2.734E+00	0.0213
Pu-239	2.710E+00	0.0211	0.000E+00	0.0000	0.000E+00	0.0000	3.953E-01	0.0031	3.675E-03	0.0000	2.675E-04	0.0000	3.109E+00	0.0242
Pu-240	2.709E+00	0.0211	0.000E+00	0.0000	0.000E+00	0.0000	3.952E-01	0.0031	3.674E-03	0.0000	2.675E-04	0.0000	3.108E+00	0.0242
Pu-241	5.258E-02	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	7.673E-03	0.0001	6.596E-05	0.0000	6.324E-06	0.0000	6.033E-02	0.0005
Sb-125	2.841E-02	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	4.249E-03	0.0000	8.009E-04	0.0000	3.215E-04	0.0000	3.378E-02	0.0003
Sr-90	2.521E+00	0.0196	0.000E+00	0.0000	0.000E+00	0.0000	4.165E-01	0.0032	3.957E-01	0.0031	4.995E-01	0.0039	3.833E+00	0.0298
Tc-99	6.270E-01	0.0049	0.000E+00	0.0000	0.000E+00	0.0000	2.774E-01	0.0022	1.380E-03	0.0000	8.533E-02	0.0007	9.911E-01	0.0077
Total	1.089E+02	0.8478	0.000E+00	0.0000	0.000E+00	0.0000	1.631E+01	0.1270	2.395E+00	0.0186	8.447E-01	0.0066	1.284E+02	1.0000

\*Sum of all water independent and dependent pathways.

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

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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	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
Ce-144	9.660E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cm-243	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cm-244	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-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	3.073E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-134	3.400E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	1.018E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	9.231E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	1.369E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-155	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ni-59	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000
Np-237	2.582E-29	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00					

Summary : RESRAD Default Parameters

File : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\EMBEDDED PIPE DSR\FCS EMBEDDED PIPE DSR.RAD

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

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

## Water 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.
Am-241	1.592E+00	0.0119	0.000E+00	0.0000	0.000E+00	0.0000	2.323E-01	0.0017	1.093E-03	0.0000	3.690E-04	0.0000	1.826E+00	0.0136
C-14	2.100E-01	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	1.359E-01	0.0010	1.232E-01	0.0009	8.438E-02	0.0006	5.535E-01	0.0041
Ce-144	5.687E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.299E-08	0.0000	2.564E-10	0.0000	1.955E-09	0.0000	6.539E-07	0.0000
Cm-243	4.072E-01	0.0030	0.000E+00	0.0000	0.000E+00	0.0000	5.939E-02	0.0004	1.982E-04	0.0000	1.098E-04	0.0000	4.669E-01	0.0035
Cm-244	2.850E-01	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	4.157E-02	0.0003	1.405E-04	0.0000	7.650E-05	0.0000	3.268E-01	0.0024
Co-58	9.366E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.412E-19	0.0000	6.671E-19	0.0000	2.148E-19	0.0000	1.960E-18	0.0000
Co-60	2.206E-02	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	3.322E-03	0.0000	1.572E-02	0.0001	5.058E-03	0.0000	4.615E-02	0.0003
Cs-134	1.637E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.428E-04	0.0000	1.278E-03	0.0000	1.595E-03	0.0000	4.753E-03	0.0000
Cs-137	2.974E-02	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	4.413E-03	0.0000	2.323E-02	0.0002	2.898E-02	0.0002	8.636E-02	0.0006
Eu-152	4.765E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.954E-04	0.0000	2.278E-04	0.0000	3.790E-05	0.0000	5.726E-03	0.0000
Eu-154	5.302E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.738E-04	0.0000	2.536E-04	0.0000	4.218E-05	0.0000	6.372E-03	0.0000
Eu-155	4.480E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.539E-05	0.0000	2.142E-05	0.0000	3.564E-06	0.0000	5.384E-04	0.0000
Fe-55	1.531E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.233E-06	0.0000	7.177E-06	0.0000	5.198E-07	0.0000	2.524E-05	0.0000
H-3	2.393E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.893E-04	0.0000	1.506E-04	0.0000	6.524E-04	0.0000	3.486E-03	0.0000
Ni-59	9.202E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.369E-04	0.0000	1.015E-04	0.0000	2.088E-03	0.0000	3.247E-03	0.0000
Ni-63	2.344E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.488E-04	0.0000	2.585E-04	0.0000	5.319E-03	0.0000	8.270E-03	0.0001
Np-237	1.013E+02	0.7559	0.000E+00	0.0000	0.000E+00	0.0000	1.489E+01	0.1111	1.915E+00	0.0143	1.158E-01	0.0009	1.182E+02	0.8821
Pu-238	2.261E+00	0.0169	0.000E+00	0.0000	0.000E+00	0.0000	3.298E-01	0.0025	3.066E-03	0.0000	2.236E-04	0.0000	2.594E+00	0.0194
Pu-239	2.717E+00	0.0203	0.000E+00	0.0000	0.000E+00	0.0000	3.963E-01	0.0030	3.684E-03	0.0000	2.682E-04	0.0000	3.117E+00	0.0233
Pu-240	2.715E+00	0.0203	0.000E+00	0.0000	0.000E+00	0.0000	3.960E-01	0.0030	3.681E-03	0.0000	2.680E-04	0.0000	3.115E+00	0.0232
Pu-241	5.291E-02	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	7.720E-03	0.0001	5.768E-05	0.0000	8.064E-06	0.0000	6.070E-02	0.0005
Sb-125	5.273E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.887E-04	0.0000	1.487E-04	0.0000	5.969E-05	0.0000	6.270E-03	0.0000
Sr-90	2.254E+00	0.0168	0.000E+00	0.0000	0.000E+00	0.0000	3.725E-01	0.0028	3.539E-01	0.0026	4.468E-01	0.0033	3.428E+00	0.0256
Tc-99	8.589E-02	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	3.800E-02	0.0003	1.891E-04	0.0000	1.169E-02	0.0001	1.358E-01	0.0010
Total	1.139E+02	0.8503	0.000E+00	0.0000	0.000E+00	0.0000	1.691E+01	0.1262	2.445E+00	0.0183	7.038E-01	0.0053	1.340E+02	1.0000

\*Sum of all water independent and dependent pathways.



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

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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	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
Ce-144	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cm-243	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cm-244	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-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	4.177E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-134	9.131E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	1.457E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	6.680E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	5.749E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-155	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ni-59	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000
Np-237	3.918E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	4.038E-29	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00					

Summary : RESRAD Default Parameters

File : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\EMBEDDED PIPE DSR\FCS EMBEDDED PIPE DSR.RAD

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

## Water 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.
Am-241	1.550E+00	0.0104	0.000E+00	0.0000	0.000E+00	0.0000	2.261E-01	0.0015	1.077E-03	0.0000	3.598E-04	0.0000	1.777E+00	0.0120
C-14	8.342E-02	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	5.413E-02	0.0004	4.922E-02	0.0003	3.359E-02	0.0002	2.204E-01	0.0015
Ce-144	1.050E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.533E-15	0.0000	4.736E-18	0.0000	3.611E-17	0.0000	1.208E-14	0.0000
Cm-243	2.521E-01	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	3.678E-02	0.0002	1.238E-04	0.0000	6.776E-05	0.0000	2.891E-01	0.0019
Cm-244	1.369E-01	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	1.997E-02	0.0001	7.096E-05	0.0000	3.606E-05	0.0000	1.570E-01	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	0.000E+00	0.0000
Co-60	1.640E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.470E-04	0.0000	1.169E-03	0.0000	3.760E-04	0.0000	3.431E-03	0.0000
Cs-134	1.984E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.944E-07	0.0000	1.550E-06	0.0000	1.933E-06	0.0000	5.761E-06	0.0000
Cs-137	1.888E-02	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	2.801E-03	0.0000	1.475E-02	0.0001	1.840E-02	0.0001	5.482E-02	0.0004
Eu-152	1.706E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.489E-04	0.0000	8.157E-05	0.0000	1.357E-05	0.0000	2.050E-03	0.0000
Eu-154	1.111E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.622E-04	0.0000	5.315E-05	0.0000	8.841E-06	0.0000	1.336E-03	0.0000
Eu-155	2.774E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.048E-06	0.0000	1.326E-06	0.0000	2.206E-07	0.0000	3.333E-05	0.0000
Fe-55	9.055E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.321E-08	0.0000	4.244E-08	0.0000	3.074E-09	0.0000	1.493E-07	0.0000
H-3	3.949E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.774E-07	0.0000	2.485E-07	0.0000	1.077E-06	0.0000	5.752E-06	0.0000
Ni-59	9.578E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.425E-04	0.0000	1.056E-04	0.0000	2.173E-03	0.0000	3.379E-03	0.0000
Ni-63	2.112E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.143E-04	0.0000	2.329E-04	0.0000	4.793E-03	0.0000	7.452E-03	0.0001
Np-237	1.157E+02	0.7791	0.000E+00	0.0000	0.000E+00	0.0000	1.701E+01	0.1145	2.188E+00	0.0147	1.323E-01	0.0009	1.350E+02	0.9092
Pu-238	1.946E+00	0.0131	0.000E+00	0.0000	0.000E+00	0.0000	2.838E-01	0.0019	2.639E-03	0.0000	1.931E-04	0.0000	2.233E+00	0.0150
Pu-239	2.737E+00	0.0184	0.000E+00	0.0000	0.000E+00	0.0000	3.992E-01	0.0027	3.711E-03	0.0000	2.702E-04	0.0000	3.140E+00	0.0211
Pu-240	2.730E+00	0.0184	0.000E+00	0.0000	0.000E+00	0.0000	3.983E-01	0.0027	3.703E-03	0.0000	2.696E-04	0.0000	3.133E+00	0.0211
Pu-241	5.276E-02	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	7.696E-03	0.0001	4.459E-05	0.0000	1.062E-05	0.0000	6.051E-02	0.0004
Sb-125	4.063E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.077E-06	0.0000	1.146E-06	0.0000	4.599E-07	0.0000	4.831E-05	0.0000
Sr-90	1.580E+00	0.0106	0.000E+00	0.0000	0.000E+00	0.0000	2.610E-01	0.0018	2.481E-01	0.0017	3.131E-01	0.0021	2.402E+00	0.0162
Tc-99	2.933E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.298E-04	0.0000	6.458E-07	0.0000	3.992E-05	0.0000	4.637E-04	0.0000
Total	1.268E+02	0.8538	0.000E+00	0.0000	0.000E+00	0.0000	1.870E+01	0.1259	2.513E+00	0.0169	5.061E-01	0.0034	1.485E+02	1.0000

\*Sum of all water independent and dependent pathways.

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

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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	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
Ce-144	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cm-243	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cm-244	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-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	3.867E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-134	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+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	5.110E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	2.154E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	2.761E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-155	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ni-59	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	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	0.000E+00	0.0000
Np-237	3.413E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	1.223E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-240	2.650E-29	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00					

Summary : RESRAD Default Parameters

File : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\EMBEDDED PIPE DSR\FCS EMBEDDED PIPE DSR.RAD

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

## Water 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.
Am-241	1.409E+00	0.0180	0.000E+00	0.0000	0.000E+00	0.0000	2.056E-01	0.0026	1.017E-03	0.0000	3.291E-04	0.0000	1.616E+00	0.0207
C-14	1.391E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.028E-04	0.0000	8.209E-04	0.0000	5.602E-04	0.0000	3.675E-03	0.0000
Ce-144	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cm-243	4.899E-02	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	7.146E-03	0.0001	2.639E-05	0.0000	1.271E-05	0.0000	5.618E-02	0.0007
Cm-244	1.662E-02	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	2.424E-03	0.0000	1.461E-05	0.0000	3.199E-06	0.0000	1.906E-02	0.0002
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	1.806E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.720E-08	0.0000	1.287E-07	0.0000	4.141E-08	0.0000	3.779E-07	0.0000
Cs-134	1.229E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.824E-17	0.0000	9.601E-17	0.0000	1.198E-16	0.0000	3.569E-16	0.0000
Cs-137	3.845E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.705E-04	0.0000	3.003E-03	0.0000	3.747E-03	0.0000	1.117E-02	0.0001
Eu-152	4.669E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.814E-06	0.0000	2.233E-06	0.0000	3.714E-07	0.0000	5.611E-05	0.0000
Eu-154	4.671E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.817E-07	0.0000	2.234E-07	0.0000	3.716E-08	0.0000	5.613E-06	0.0000
Eu-155	1.632E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.382E-10	0.0000	7.805E-11	0.0000	1.298E-11	0.0000	1.961E-09	0.0000
Fe-55	1.439E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.099E-16	0.0000	6.746E-16	0.0000	4.886E-17	0.0000	2.373E-15	0.0000
H-3	7.209E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.714E-17	0.0000	4.536E-17	0.0000	1.965E-16	0.0000	1.050E-15	0.0000
Ni-59	1.071E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.594E-04	0.0000	1.182E-04	0.0000	2.432E-03	0.0000	3.781E-03	0.0000
Ni-63	1.426E-03	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.122E-04	0.0000	1.573E-04	0.0000	3.237E-03	0.0000	5.032E-03	0.0001
Np-237	5.852E+01	0.7493	0.000E+00	0.0000	0.000E+00	0.0000	8.605E+00	0.1102	1.109E+00	0.0142	6.704E-02	0.0009	6.830E+01	0.8745
Pu-238	1.149E+00	0.0147	0.000E+00	0.0000	0.000E+00	0.0000	1.676E-01	0.0021	1.559E-03	0.0000	1.161E-04	0.0000	1.319E+00	0.0169
Pu-239	2.804E+00	0.0359	0.000E+00	0.0000	0.000E+00	0.0000	4.090E-01	0.0052	3.803E-03	0.0000	2.768E-04	0.0000	3.217E+00	0.0412
Pu-240	2.783E+00	0.0356	0.000E+00	0.0000	0.000E+00	0.0000	4.059E-01	0.0052	3.773E-03	0.0000	2.747E-04	0.0000	3.193E+00	0.0409
Pu-241	4.869E-02	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	7.102E-03	0.0001	3.509E-05	0.0000	1.129E-05	0.0000	5.584E-02	0.0007
Sb-125	4.442E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.647E-14	0.0000	1.259E-14	0.0000	5.054E-15	0.0000	5.283E-13	0.0000
Sr-90	1.988E-01	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	3.287E-02	0.0004	3.128E-02	0.0004	3.946E-02	0.0005	3.024E-01	0.0039
Tc-99	6.828E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.021E-13	0.0000	1.503E-15	0.0000	9.293E-14	0.0000	1.079E-12	0.0000
Total	6.698E+01	0.8577	0.000E+00	0.0000	0.000E+00	0.0000	9.844E+00	0.1260	1.155E+00	0.0148	1.175E-01	0.0015	7.810E+01	1.0000

\*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters

File : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\EMBEDDED PIPE DSR\FCS EMBEDDED PIPE DSR.RAD

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	5.442E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.017E-03	0.0005	4.584E-06	0.0000	2.155E-06	0.0000	0.000E+00	0.0000
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.845E-11	0.0000	6.111E-12	0.0000	6.407E-12	0.0000	0.000E+00	0.0000
Ce-144	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cm-243	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.533E-05	0.0000	1.824E-08	0.0000	3.609E-09	0.0000	0.000E+00	0.0000
Cm-244	1.437E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.400E-05	0.0000	3.572E-08	0.0000	3.673E-09	0.0000	0.000E+00	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	2.101E-20	0.0000	1.643E-20	0.0000	7.417E-21	0.0000	0.000E+00	0.0000
Cs-134	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+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	1.844E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.144E-06	0.0000	4.412E-06	0.0000	7.724E-06	0.0000	0.000E+00	0.0000
Eu-152	8.489E-24	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.410E-12	0.0000	2.844E-13	0.0000	6.641E-14	0.0000	0.000E+00	0.0000
Eu-154	4.716E-27	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.560E-15	0.0000	1.346E-16	0.0000	3.143E-17	0.0000	0.000E+00	0.0000
Eu-155	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.516E-24	0.0000	2.374E-25	0.0000	5.543E-26	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ni-59	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.159E-05	0.0000	1.404E-06	0.0000	4.055E-05	0.0000	0.000E+00	0.0000
Ni-63	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.648E-06	0.0000	4.419E-07	0.0000	1.276E-05	0.0000	0.000E+00	0.0000
Np-237	1.495E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.332E-03	0.0002	4.858E-05	0.0000	4.137E-06	0.0000	0.000E+00	0.0000
Pu-238	1.544E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.408E-04	0.0001	1.105E-06	0.0000	1.327E-07	0.0000	0.000E+00	0.0000
Pu-239	8.830E-30	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.723E-03	0.0008	1.300E-05	0.0000	1.329E-06	0.0000	0.000E+00	0.0000
Pu-240	6.157E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.523E-03	0.0008	1.270E-05	0.0000	1.299E-06	0.0000	0.000E+00	0.0000
Pu-241	1.543E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.063E-04	0.0000	1.572E-07	0.0000	7.387E-08	0.0000	0.000E+00	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	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.121E-06	0.0000	3.640E-07	0.0000	6.423E-07	0.0000	0.000E+00	0.0000
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	4.969E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.660E-02	0.0024	8.681E-05	0.0000	7.080E-05	0.0000	0.000E+00	0.0000

Summary : RESRAD Default Parameters

File : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\EMBEDDED PIPE DSR\FCS EMBEDDED PIPE DSR.RAD

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

## Water 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.
Am-241	1.067E+00	0.0945	0.000E+00	0.0000	0.000E+00	0.0000	1.556E-01	0.0138	7.833E-04	0.0001	2.498E-04	0.0000	1.230E+00	0.1089
C-14	1.158E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.516E-09	0.0000	6.834E-09	0.0000	4.664E-09	0.0000	3.063E-08	0.0000
Ce-144	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cm-243	3.856E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	5.625E-04	0.0000	4.911E-06	0.0000	4.433E-07	0.0000	4.440E-03	0.0004
Cm-244	8.045E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	1.173E-03	0.0001	1.091E-05	0.0000	7.953E-07	0.0000	9.254E-03	0.0008
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	8.068E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.215E-19	0.0000	5.750E-19	0.0000	1.850E-19	0.0000	1.733E-18	0.0000
Cs-134	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+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	4.042E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.997E-06	0.0000	3.157E-05	0.0000	3.939E-05	0.0000	1.347E-04	0.0000
Eu-152	1.567E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.287E-10	0.0000	7.495E-11	0.0000	1.247E-11	0.0000	1.889E-09	0.0000
Eu-154	7.418E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.083E-13	0.0000	3.547E-14	0.0000	5.901E-15	0.0000	8.942E-13	0.0000
Eu-155	1.309E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.910E-22	0.0000	6.259E-23	0.0000	1.041E-23	0.0000	1.578E-21	0.0000
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	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ni-59	1.043E-03	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.552E-04	0.0000	1.151E-04	0.0000	2.368E-03	0.0002	3.735E-03	0.0003
Ni-63	3.282E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.885E-05	0.0000	3.621E-05	0.0000	7.451E-04	0.0001	1.175E-03	0.0001
Np-237	2.513E+00	0.2225	0.000E+00	0.0000	0.000E+00	0.0000	3.696E-01	0.0327	4.763E-02	0.0042	2.887E-03	0.0003	2.936E+00	0.2599
Pu-238	2.531E-01	0.0224	0.000E+00	0.0000	0.000E+00	0.0000	3.692E-02	0.0033	3.435E-04	0.0000	2.982E-05	0.0000	2.911E-01	0.0258
Pu-239	2.980E+00	0.2638	0.000E+00	0.0000	0.000E+00	0.0000	4.346E-01	0.0385	4.041E-03	0.0004	2.942E-04	0.0000	3.427E+00	0.3035
Pu-240	2.911E+00	0.2578	0.000E+00	0.0000	0.000E+00	0.0000	4.246E-01	0.0376	3.948E-03	0.0003	2.875E-04	0.0000	3.349E+00	0.2965
Pu-241	3.688E-02	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	5.380E-03	0.0005	2.705E-05	0.0000	8.633E-06	0.0000	4.250E-02	0.0038
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	1.199E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.982E-05	0.0000	1.886E-05	0.0000	2.379E-05	0.0000	1.855E-04	0.0000
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	9.775E+00	0.8655	0.000E+00	0.0000	0.000E+00	0.0000	1.429E+00	0.1265	5.699E-02	0.0050	6.934E-03	0.0006	1.129E+01	1.0000

\*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters

File : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\EMBEDDED PIPE DSR\FCS EMBEDDED PIPE DSR.RAD

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.401E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.135E-02	0.0049	3.187E-05	0.0000	1.492E-05	0.0000	0.000E+00	0.0000
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.229E-28	0.0000	2.755E-28	0.0000	2.877E-28	0.0000	0.000E+00	0.0000
Ce-144	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cm-243	2.486E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.854E-04	0.0000	2.778E-07	0.0000	2.891E-08	0.0000	0.000E+00	0.0000
Cm-244	3.346E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.955E-04	0.0000	5.964E-07	0.0000	6.077E-08	0.0000	0.000E+00	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	0.000E+00	0.0000
Cs-134	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+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	5.204E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.705E-12	0.0000	7.553E-12	0.0000	1.317E-11	0.0000	0.000E+00	0.0000
Eu-152	1.032E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.294E-16	0.0000	1.400E-17	0.0000	1.169E-18	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-155	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ni-59	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.131E-05	0.0000	3.836E-06	0.0000	1.103E-04	0.0000	0.000E+00	0.0000
Ni-63	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.330E-08	0.0000	7.756E-09	0.0000	2.230E-07	0.0000	0.000E+00	0.0000
Np-237	1.561E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.668E-06	0.0000	4.307E-08	0.0000	2.681E-07	0.0000	0.000E+00	0.0000
Pu-238	1.939E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.880E-05	0.0000	1.239E-07	0.0000	4.486E-07	0.0000	0.000E+00	0.0000
Pu-239	1.033E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.521E-01	0.0181	2.293E-04	0.0000	2.334E-05	0.0000	0.000E+00	0.0000
Pu-240	1.262E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.408E-01	0.0168	2.123E-04	0.0000	2.163E-05	0.0000	0.000E+00	0.0000
Pu-241	1.162E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.418E-03	0.0002	1.093E-06	0.0000	5.114E-07	0.0000	0.000E+00	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	1.733E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.056E-16	0.0000	5.304E-17	0.0000	9.323E-17	0.0000	0.000E+00	0.0000
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	3.514E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.363E-01	0.0401	4.795E-04	0.0001	1.717E-04	0.0000	0.000E+00	0.0000

Summary : RESRAD Default Parameters

File : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\EMBEDDED PIPE DSR\FCS EMBEDDED PIPE DSR.RAD

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+03 years

## Water 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.
Am-241	3.896E-01	0.0464	0.000E+00	0.0000	0.000E+00	0.0000	5.683E-02	0.0068	2.819E-04	0.0000	9.100E-05	0.0000	4.882E-01	0.0582
C-14	1.928E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.251E-26	0.0000	1.138E-26	0.0000	7.764E-27	0.0000	5.232E-26	0.0000
Ce-144	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cm-243	4.039E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	5.891E-04	0.0001	5.474E-06	0.0000	3.992E-07	0.0000	4.819E-03	0.0006
Cm-244	8.778E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	1.280E-03	0.0002	1.190E-05	0.0000	8.678E-07	0.0000	1.047E-02	0.0012
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	0.000E+00	0.0000
Cs-134	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+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	4.486E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.656E-13	0.0000	3.504E-12	0.0000	4.371E-12	0.0000	4.245E-11	0.0000
Eu-152	8.653E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.262E-16	0.0000	2.059E-17	0.0000	1.229E-18	0.0000	1.558E-15	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-155	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000
H-3	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ni-59	1.053E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.567E-05	0.0000	1.161E-05	0.0000	2.390E-04	0.0000	5.170E-04	0.0001
Ni-63	2.128E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.167E-08	0.0000	2.348E-08	0.0000	4.831E-07	0.0000	1.045E-06	0.0000
Np-237	1.952E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.853E-05	0.0000	1.320E-06	0.0000	5.348E-06	0.0000	2.384E-04	0.0000
Pu-238	1.331E-03	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.942E-04	0.0000	2.283E-06	0.0000	6.570E-06	0.0000	1.594E-03	0.0002
Pu-239	3.429E+00	0.4086	0.000E+00	0.0000	0.000E+00	0.0000	5.001E-01	0.0596	4.650E-03	0.0006	3.385E-04	0.0000	4.086E+00	0.4870
Pu-240	3.174E+00	0.3782	0.000E+00	0.0000	0.000E+00	0.0000	4.629E-01	0.0552	4.304E-03	0.0005	3.138E-04	0.0000	3.782E+00	0.4508
Pu-241	1.344E-02	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	1.960E-03	0.0002	9.723E-06	0.0000	3.139E-06	0.0000	1.683E-02	0.0020
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	6.452E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.067E-16	0.0000	1.015E-16	0.0000	1.281E-16	0.0000	1.433E-15	0.0000
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	7.020E+00	0.8366	0.000E+00	0.0000	0.000E+00	0.0000	1.024E+00	0.1220	9.278E-03	0.0011	9.991E-04	0.0001	8.391E+00	1.0000

\*Sum of all water independent and dependent pathways.



Summary : RESRAD Default Parameters

File : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\EMBEDDED PIPE DSR\FCS EMBEDDED PIPE DSR.RAD

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

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.851E+00	1.848E+00	1.843E+00	1.826E+00	1.776E+00	1.613E+00	1.226E+00	4.872E-01
Am-241	Np-237+D	1.000E+00	1.719E-05	5.213E-05	1.230E-04	3.805E-04	1.181E-03	3.498E-03	3.512E-03	1.041E-03
Am-241	U-233	1.000E+00	1.235E-13	7.376E-13	3.582E-12	3.103E-11	2.703E-10	2.995E-09	1.421E-08	2.796E-08
Am-241	Th-229+D	1.000E+00	7.667E-16	1.611E-15	4.337E-15	3.211E-14	5.625E-13	2.038E-11	3.659E-10	3.728E-09
Am-241	ΣDSR(j)		1.851E+00	1.849E+00	1.844E+00	1.826E+00	1.777E+00	1.616E+00	1.230E+00	4.882E-01
C-14	C-14	1.000E+00	4.295E-01	4.454E-01	4.746E-01	5.535E-01	2.204E-01	3.675E-03	3.063E-08	5.232E-26
Ce-144+D	Ce-144+D	1.000E+00	4.811E-03	1.975E-03	3.328E-04	6.539E-07	1.208E-14	1.019E-41	0.000E+00	0.000E+00
Cm-243	Cm-243	2.400E-03	1.425E-03	1.391E-03	1.325E-03	1.119E-03	6.892E-04	1.265E-04	1.009E-06	5.400E-14
Cm-243	Am-243+D	2.400E-03	5.584E-08	1.651E-07	3.757E-07	1.037E-06	2.412E-06	4.207E-06	4.673E-06	6.680E-06
Cm-243	Pu-239	2.400E-03	3.292E-12	2.311E-11	1.206E-10	1.024E-09	7.465E-09	5.298E-08	2.253E-07	9.415E-07
Cm-243	U-235+D	2.400E-03	4.935E-22	2.616E-21	9.962E-21	3.863E-19	8.828E-18	2.294E-16	3.383E-15	5.304E-14
Cm-243	Pa-231	2.400E-03	1.422E-19	1.340E-19	1.412E-19	1.849E-19	3.169E-19	2.177E-18	7.785E-17	6.508E-15
Cm-243	Ac-227+D	2.400E-03	2.980E-20	2.405E-20	2.883E-20	5.795E-20	1.311E-19	7.264E-19	3.391E-17	2.955E-15
Cm-243	ΣDSR(j)		1.425E-03	1.391E-03	1.325E-03	1.120E-03	6.916E-04	1.308E-04	5.907E-06	7.622E-06
Cm-243	Cm-243	9.976E-01	5.923E-01	5.781E-01	5.508E-01	4.649E-01	2.865E-01	5.260E-02	4.192E-04	2.245E-11
Cm-243	Pu-239	9.976E-01	4.399E-05	1.311E-04	2.992E-04	8.286E-04	1.936E-03	3.445E-03	4.014E-03	4.811E-03
Cm-243	U-235+D	9.976E-01	1.732E-15	1.134E-14	5.868E-14	4.978E-13	3.643E-12	2.626E-11	1.167E-10	5.266E-10
Cm-243	Pa-231	9.976E-01	2.965E-17	4.470E-17	5.948E-17	4.861E-16	9.688E-15	2.511E-13	3.858E-12	8.976E-11
Cm-243	Ac-227+D	9.976E-01	1.027E-17	1.865E-17	1.900E-17	4.047E-17	1.254E-15	7.676E-14	1.824E-12	4.279E-11
Cm-243	ΣDSR(j)		5.923E-01	5.783E-01	5.511E-01	4.658E-01	2.884E-01	5.605E-02	4.434E-03	4.811E-03
Cm-244	Cm-244	1.350E-06	6.406E-07	6.166E-07	5.713E-07	4.374E-07	2.039E-07	1.409E-08	6.895E-12	2.115E-23
Cm-244	Cm-244	4.950E-08	2.349E-08	2.261E-08	2.095E-08	1.604E-08	7.475E-09	5.168E-10	2.528E-13	7.755E-25
Cm-244	Pu-240	4.950E-08	7.998E-12	2.369E-11	5.335E-11	1.412E-10	2.952E-10	4.268E-10	4.578E-10	5.181E-10
Cm-244	ΣDSR(j)		2.350E-08	2.263E-08	2.100E-08	1.618E-08	7.770E-09	9.436E-10	4.581E-10	5.181E-10
Cm-244	Cm-244	1.000E+00	4.745E-01	4.567E-01	4.232E-01	3.240E-01	1.510E-01	1.044E-02	5.107E-06	1.567E-17
Cm-244	Pu-240	1.000E+00	1.616E-04	4.785E-04	1.078E-03	2.852E-03	5.964E-03	8.622E-03	9.249E-03	1.047E-02
Cm-244	U-236	1.000E+00	1.659E-13	1.223E-12	6.400E-12	5.296E-11	3.599E-10	2.213E-09	8.683E-09	3.657E-08
Cm-244	Th-232	1.000E+00	3.334E-22	2.281E-21	6.293E-21	3.498E-20	4.167E-19	7.176E-18	9.018E-17	1.392E-15
Cm-244	Ra-228+D	1.000E+00	8.607E-23	3.369E-22	7.971E-22	3.146E-21	3.518E-20	7.633E-19	2.377E-17	3.283E-15
Cm-244	Th-228+D	1.000E+00	1.724E-22	7.527E-22	1.800E-21	6.631E-21	6.951E-20	1.644E-18	2.466E-17	4.210E-16
Cm-244	ΣDSR(j)		4.747E-01	4.572E-01	4.243E-01	3.268E-01	1.570E-01	1.906E-02	9.254E-03	1.047E-02
Co-58	Co-58	1.000E+00	6.528E-03	1.831E-04	1.439E-07	1.960E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Co-60	Co-60	1.000E+00	1.691E-01	1.485E-01	1.146E-01	4.615E-02	3.431E-03	3.779E-07	1.733E-18	0.000E+00
Cs-134	Cs-134	1.000E+00	1.365E-01	9.757E-02	4.985E-02	4.753E-03	5.761E-06	3.569E-16	0.000E+00	0.000E+00
Cs-137+D	Cs-137+D	1.000E+00	1.084E-01	1.059E-01	1.012E-01	8.636E-02	5.482E-02	1.117E-02	1.347E-04	4.245E-11

Summary : RESRAD Default Parameters

File : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\EMBEDDED PIPE DSR\FCS EMBEDDED PIPE DSR.RAD

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

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr) / (pCi/g)								
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Eu-152	Eu-152	7.208E-01	6.897E-03	6.552E-03	5.912E-03	4.127E-03	1.478E-03	4.045E-05	1.362E-09	2.226E-25	
Eu-152	Eu-152	2.792E-01	2.671E-03	2.538E-03	2.290E-03	1.599E-03	5.723E-04	1.567E-05	5.274E-10	8.621E-26	
Eu-152	Gd-152	2.792E-01	2.658E-17	7.320E-17	1.587E-16	3.976E-16	7.527E-16	9.493E-16	9.903E-16	1.558E-15	
Eu-152	ΣDSR(j)		2.671E-03	2.538E-03	2.290E-03	1.599E-03	5.723E-04	1.567E-05	5.274E-10	1.558E-15	
Eu-154	Eu-154	1.000E+00	1.392E-02	1.287E-02	1.101E-02	6.372E-03	1.336E-03	5.613E-06	8.942E-13	9.097E-37	
Eu-155	Eu-155	1.000E+00	2.164E-03	1.883E-03	1.426E-03	5.384E-04	3.333E-05	1.961E-09	1.578E-21	0.000E+00	
Fe-55	Fe-55	1.000E+00	3.283E-04	2.540E-04	1.521E-04	2.524E-05	1.493E-07	2.373E-15	1.198E-37	0.000E+00	
H-3	H-3	1.000E+00	3.385E-02	3.617E-02	3.279E-02	3.486E-03	5.752E-06	1.050E-15	1.569E-43	0.000E+00	
Ni-59	Ni-59	1.000E+00	3.177E-03	3.184E-03	3.198E-03	3.247E-03	3.379E-03	3.781E-03	3.735E-03	5.170E-04	
Ni-63	Ni-63	1.000E+00	8.698E-03	8.654E-03	8.568E-03	8.270E-03	7.452E-03	5.032E-03	1.175E-03	1.045E-06	
Np-237+D	Np-237+D	1.000E+00	1.076E+02	1.087E+02	1.109E+02	1.182E+02	1.350E+02	6.830E+01	2.935E+00	4.919E-05	
Np-237+D	U-233	1.000E+00	1.034E-06	2.724E-06	6.086E-06	1.839E-05	5.753E-05	1.799E-04	2.268E-04	1.523E-04	
Np-237+D	Th-229+D	1.000E+00	1.539E-10	6.576E-10	2.672E-09	2.018E-08	1.684E-07	1.936E-06	1.054E-05	3.690E-05	
Np-237+D	ΣDSR(j)		1.076E+02	1.087E+02	1.109E+02	1.182E+02	1.350E+02	6.830E+01	2.936E+00	2.384E-04	
Pu-238	Pu-238	1.840E-09	5.145E-09	5.107E-09	5.031E-09	4.774E-09	4.108E-09	2.426E-09	5.354E-10	2.583E-12	
Pu-238	Pu-238	1.000E+00	2.796E+00	2.776E+00	2.734E+00	2.594E+00	2.233E+00	1.319E+00	2.910E-01	1.404E-03	
Pu-238	U-234	1.000E+00	5.149E-07	1.544E-06	3.581E-06	1.049E-05	2.850E-05	7.533E-05	1.357E-04	1.841E-04	
Pu-238	Th-230	1.000E+00	4.891E-13	3.297E-12	1.703E-11	1.485E-10	1.193E-09	1.118E-08	7.099E-08	4.216E-07	
Pu-238	Ra-226+D	1.000E+00	2.593E-15	7.181E-15	1.326E-14	1.337E-13	3.114E-12	9.863E-11	4.469E-09	9.048E-07	
Pu-238	Pb-210+D	1.000E+00	8.342E-13	1.229E-12	1.477E-12	1.823E-12	3.572E-11	2.598E-09	8.487E-08	2.626E-06	
Pu-238	Po-210	1.000E+00	1.100E-13	2.943E-13	4.257E-13	5.677E-13	2.580E-11	2.033E-09	6.593E-08	1.524E-06	
Pu-238	ΣDSR(j)		2.796E+00	2.776E+00	2.734E+00	2.594E+00	2.233E+00	1.319E+00	2.911E-01	1.594E-03	
Pu-239	Pu-239	1.000E+00	3.106E+00	3.107E+00	3.109E+00	3.117E+00	3.140E+00	3.217E+00	3.427E+00	4.086E+00	
Pu-239	U-235+D	1.000E+00	1.694E-10	5.098E-10	1.192E-09	3.589E-09	1.052E-08	3.574E-08	1.154E-07	4.663E-07	
Pu-239	Pa-231	1.000E+00	1.759E-14	1.100E-13	5.335E-13	4.670E-12	3.938E-11	4.377E-10	4.298E-09	8.225E-08	
Pu-239	Ac-227+D	1.000E+00	1.109E-15	3.693E-15	9.747E-15	2.887E-13	6.190E-12	1.494E-10	2.085E-09	3.946E-08	
Pu-239	ΣDSR(j)		3.106E+00	3.107E+00	3.109E+00	3.117E+00	3.140E+00	3.217E+00	3.427E+00	4.086E+00	
Pu-240	Pu-240	4.950E-08	1.537E-07	1.538E-07	1.539E-07	1.542E-07	1.551E-07	1.580E-07	1.658E-07	1.872E-07	
Pu-240	Pu-240	1.000E+00	3.106E+00	3.107E+00	3.108E+00	3.115E+00	3.133E+00	3.193E+00	3.349E+00	3.782E+00	
Pu-240	U-236	1.000E+00	5.124E-09	1.542E-08	3.604E-08	1.085E-07	3.178E-07	1.077E-06	3.450E-06	1.358E-05	
Pu-240	Th-232	1.000E+00	9.825E-21	2.773E-18	1.033E-17	6.124E-17	4.289E-16	4.214E-15	3.880E-14	5.306E-13	
Pu-240	Ra-228+D	1.000E+00	1.999E-24	3.096E-19	7.951E-19	4.061E-18	3.626E-17	4.618E-16	1.022E-14	1.238E-12	
Pu-240	Th-228+D	1.000E+00	7.747E-20	8.053E-19	1.938E-18	7.728E-18	7.112E-17	1.006E-15	1.068E-14	1.605E-13	
Pu-240	ΣDSR(j)		3.106E+00	3.107E+00	3.108E+00	3.115E+00	3.133E+00	3.193E+00	3.349E+00	3.782E+00	

Summary : RESRAD Default Parameters

File : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\EMBEDDED PIPE DSR\FCS EMBEDDED PIPE DSR.RAD

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

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Pu-241	Pu-241	1.000E+00	5.859E-02	5.586E-02	5.077E-02	3.635E-02	1.399E-02	4.942E-04	3.491E-08	9.877E-23
Pu-241	Am-241	1.000E+00	1.470E-03	4.300E-03	9.555E-03	2.434E-02	4.650E-02	5.525E-02	4.238E-02	1.680E-02
Pu-241	Np-237+D	1.000E+00	9.018E-09	6.303E-08	3.266E-07	2.693E-06	1.832E-05	9.917E-05	1.197E-04	3.575E-05
Pu-241	U-233	1.000E+00	7.883E-17	7.106E-16	6.792E-15	1.554E-13	3.140E-12	6.827E-11	4.363E-10	9.239E-10
Pu-241	Th-229+D	1.000E+00	2.450E-17	6.614E-17	1.571E-16	5.351E-16	6.083E-15	3.981E-13	1.042E-11	1.198E-10
Pu-241	ΣDSR(j)		6.006E-02	6.016E-02	6.033E-02	6.070E-02	6.051E-02	5.584E-02	4.250E-02	1.683E-02
Pu-241+D	Pu-241+D	2.450E-05	1.502E-06	1.432E-06	1.302E-06	9.318E-07	3.586E-07	1.267E-08	8.948E-13	2.532E-27
Pu-241+D	Np-237+D	2.450E-05	4.148E-10	1.233E-09	2.783E-09	7.414E-09	1.596E-08	1.515E-08	7.063E-10	1.184E-14
Pu-241+D	U-233	2.450E-05	2.988E-18	1.759E-17	8.299E-17	6.503E-16	4.398E-15	2.489E-14	3.727E-14	2.528E-14
Pu-241+D	Th-229+D	2.450E-05	1.254E-21	5.195E-21	3.043E-20	5.174E-19	9.672E-18	2.166E-16	1.580E-15	5.946E-15
Pu-241+D	ΣDSR(j)		1.502E-06	1.433E-06	1.304E-06	9.393E-07	3.746E-07	2.782E-08	7.072E-10	4.306E-14
Sb-125	Sb-125	7.720E-01	5.050E-02	3.977E-02	2.464E-02	4.573E-03	3.524E-05	3.845E-13	2.377E-36	0.000E+00
Sb-125	Sb-125	2.280E-01	1.491E-02	1.174E-02	7.277E-03	1.351E-03	1.041E-05	1.136E-13	7.022E-37	0.000E+00
Sb-125	Te-125m	2.280E-01	2.913E-03	3.001E-03	1.866E-03	3.463E-04	2.661E-06	3.028E-14	1.983E-37	0.000E+00
Sb-125	ΣDSR(j)		1.783E-02	1.475E-02	9.143E-03	1.697E-03	1.307E-05	1.438E-13	9.005E-37	0.000E+00
Sr-90+D	Sr-90+D	1.000E+00	4.010E+00	3.951E+00	3.833E+00	3.428E+00	2.402E+00	3.024E-01	1.855E-04	1.433E-15
Tc-99	Tc-99	1.000E+00	9.291E-01	1.056E+00	9.911E-01	1.358E-01	4.637E-04	1.079E-12	2.352E-37	0.000E+00

The DSR includes contributions from associated (half-life ≤ 30 days) daughters.

Summary : RESRAD Default Parameters

File : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\EMBEDDED PIPE DSR\FCS EMBEDDED PIPE DSR.RAD

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

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

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Am-241	1.351E+01	1.352E+01	1.356E+01	1.369E+01	1.406E+01	1.547E+01	2.033E+01	5.121E+01
C-14	5.821E+01	5.614E+01	5.268E+01	4.517E+01	1.135E+02	6.803E+03	8.163E+08	*4.455E+12
Ce-144	5.196E+03	1.266E+04	7.511E+04	3.823E+07	2.070E+15	*3.191E+15	*3.191E+15	*3.191E+15
Cm-243	4.210E+01	4.313E+01	4.525E+01	5.355E+01	8.647E+01	4.450E+02	5.631E+03	5.188E+03
Cm-244	5.267E+01	5.468E+01	5.893E+01	7.649E+01	1.593E+02	1.311E+03	2.701E+03	2.388E+03
Co-58	3.829E+03	1.366E+05	1.737E+08	*3.183E+16	*3.183E+16	*3.183E+16	*3.183E+16	*3.183E+16
Co-60	1.478E+02	1.683E+02	2.182E+02	5.417E+02	7.286E+03	6.616E+07	*1.132E+15	*1.132E+15
Cs-134	1.832E+02	2.562E+02	5.015E+02	5.260E+03	4.339E+06	*1.295E+15	*1.295E+15	*1.295E+15
Cs-137	2.307E+02	2.360E+02	2.469E+02	2.895E+02	4.560E+02	2.239E+03	1.857E+05	5.889E+11
Eu-152	2.613E+03	2.751E+03	3.048E+03	4.366E+03	1.220E+04	4.455E+05	1.323E+10	*1.765E+14
Eu-154	1.797E+03	1.942E+03	2.271E+03	3.923E+03	1.872E+04	4.454E+06	2.796E+13	*2.639E+14
Eu-155	1.155E+04	1.328E+04	1.754E+04	4.643E+04	7.501E+05	1.275E+10	*4.652E+14	*4.652E+14
Fe-55	7.616E+04	9.843E+04	1.644E+05	9.904E+05	1.675E+08	*2.410E+15	*2.410E+15	*2.410E+15
H-3	7.385E+02	6.913E+02	7.625E+02	7.172E+03	4.346E+06	*9.597E+15	*9.597E+15	*9.597E+15
Ni-59	7.869E+03	7.852E+03	7.817E+03	7.700E+03	7.398E+03	6.613E+03	6.694E+03	4.836E+04
Ni-63	2.874E+03	2.889E+03	2.918E+03	3.023E+03	3.355E+03	4.968E+03	2.127E+04	2.392E+07
Np-237	2.324E-01	2.300E-01	2.254E-01	2.115E-01	1.851E-01	3.660E-01	8.516E+00	1.049E+05
Pu-238	8.940E+00	9.007E+00	9.143E+00	9.636E+00	1.120E+01	1.896E+01	8.587E+01	1.569E+04
Pu-239	8.050E+00	8.047E+00	8.041E+00	8.020E+00	7.962E+00	7.770E+00	7.294E+00	6.118E+00
Pu-240	8.050E+00	8.047E+00	8.043E+00	8.026E+00	7.980E+00	7.831E+00	7.465E+00	6.610E+00
Pu-241	4.163E+02	4.156E+02	4.144E+02	4.119E+02	4.131E+02	4.477E+02	5.882E+02	1.485E+03
Sb-125	3.659E+02	4.586E+02	7.400E+02	3.987E+03	5.175E+05	4.732E+13	*1.033E+15	*1.033E+15
Sr-90	6.234E+00	6.328E+00	6.523E+00	7.294E+00	1.041E+01	8.266E+01	1.348E+05	*1.365E+14
Tc-99	2.691E+01	2.368E+01	2.522E+01	1.841E+02	5.392E+04	*1.697E+10	*1.697E+10	*1.697E+10

\*At specific activity limit

Summary : RESRAD Default Parameters

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Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)  
 and Single Radionuclide Soil Guidelines G(i,t) in pCi/g  
 at tmin = time of minimum single radionuclide soil guideline  
 and at tmax = time of maximum total dose = 50.6 ± 0.1 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	0.000E+00	1.851E+00	1.351E+01	1.729E+00	1.446E+01
C-14	1.000E+00	13.12 ± 0.03	5.787E-01	4.320E+01	6.605E-02	3.785E+02
Ce-144	1.000E+00	0.000E+00	4.811E-03	5.196E+03	1.305E-22	*3.191E+15
Cm-243	1.000E+00	0.000E+00	5.938E-01	4.210E+01	1.770E-01	1.412E+02
Cm-244	1.000E+00	0.000E+00	4.747E-01	5.267E+01	7.626E-02	3.278E+02
Co-58	1.000E+00	0.000E+00	6.528E-03	3.829E+03	0.000E+00	*3.183E+16
Co-60	1.000E+00	0.000E+00	1.691E-01	1.478E+02	2.353E-04	1.062E+05
Cs-134	1.000E+00	0.000E+00	1.365E-01	1.832E+02	5.705E-09	4.382E+09
Cs-137	1.000E+00	0.000E+00	1.084E-01	2.307E+02	3.433E-02	7.283E+02
Eu-152	1.000E+00	0.000E+00	9.568E-03	2.613E+03	7.113E-04	3.515E+04
Eu-154	1.000E+00	0.000E+00	1.392E-02	1.797E+03	2.670E-04	9.364E+04
Eu-155	1.000E+00	0.000E+00	2.164E-03	1.155E+04	1.897E-06	1.318E+07
Fe-55	1.000E+00	0.000E+00	3.283E-04	7.616E+04	7.563E-10	3.305E+10
H-3	1.000E+00	2.088 ± 0.004	3.725E-02	6.712E+02	7.827E-09	3.194E+09
Ni-59	1.000E+00	247.1 ± 0.5	4.373E-03	5.717E+03	3.507E-03	7.128E+03
Ni-63	1.000E+00	0.000E+00	8.698E-03	2.874E+03	6.666E-03	3.750E+03
Np-237	1.000E+00	50.7 ± 0.1	1.476E+02	1.694E-01	1.476E+02	1.694E-01
Pu-238	1.000E+00	0.000E+00	2.796E+00	8.940E+00	1.912E+00	1.307E+01
Pu-239	1.000E+00	1.000E+03	4.086E+00	6.118E+00	3.163E+00	7.903E+00
Pu-240	1.000E+00	1.000E+03	3.782E+00	6.610E+00	3.151E+00	7.935E+00
Pu-241	1.000E+00	16.66 ± 0.03	6.079E-02	4.112E+02	5.941E-02	4.208E+02
Sb-125	1.000E+00	0.000E+00	6.833E-02	3.659E+02	2.847E-07	8.782E+07
Sr-90	1.000E+00	0.000E+00	4.010E+00	6.234E+00	1.602E+00	1.560E+01
Tc-99	1.000E+00	2.084 ± 0.004	1.151E+00	2.171E+01	1.335E-06	1.873E+07

\*At specific activity limit

Summary : RESRAD Default Parameters

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## Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.851E+00	1.848E+00	1.843E+00	1.826E+00	1.776E+00	1.613E+00	1.226E+00	4.872E-01
Am-241	Pu-241	1.000E+00	1.470E-03	4.300E-03	9.555E-03	2.434E-02	4.650E-02	5.525E-02	4.238E-02	1.680E-02
Am-241	ΣDOSE (j)		1.852E+00	1.853E+00	1.853E+00	1.850E+00	1.823E+00	1.668E+00	1.268E+00	5.040E-01
Np-237	Am-241	1.000E+00	1.719E-05	5.213E-05	1.230E-04	3.805E-04	1.181E-03	3.498E-03	3.512E-03	1.041E-03
Np-237	Np-237	1.000E+00	1.076E+02	1.087E+02	1.109E+02	1.182E+02	1.350E+02	6.830E+01	2.935E+00	4.919E-05
Np-237	Pu-241	1.000E+00	9.018E-09	6.303E-08	3.266E-07	2.693E-06	1.832E-05	9.917E-05	1.197E-04	3.575E-05
Np-237	Pu-241	2.450E-05	4.148E-10	1.233E-09	2.783E-09	7.414E-09	1.596E-08	1.515E-08	7.063E-10	1.184E-14
Np-237	ΣDOSE (j)		1.076E+02	1.087E+02	1.109E+02	1.182E+02	1.350E+02	6.830E+01	2.939E+00	1.126E-03
U-233	Am-241	1.000E+00	1.235E-13	7.376E-13	3.582E-12	3.103E-11	2.703E-10	2.995E-09	1.421E-08	2.796E-08
U-233	Np-237	1.000E+00	1.034E-06	2.724E-06	6.086E-06	1.839E-05	5.753E-05	1.799E-04	2.268E-04	1.523E-04
U-233	Pu-241	1.000E+00	7.883E-17	7.106E-16	6.792E-15	1.554E-13	3.140E-12	6.827E-11	4.363E-10	9.239E-10
U-233	Pu-241	2.450E-05	2.988E-18	1.759E-17	8.299E-17	6.503E-16	4.398E-15	2.489E-14	3.727E-14	2.528E-14
U-233	ΣDOSE (j)		1.034E-06	2.724E-06	6.086E-06	1.839E-05	5.753E-05	1.799E-04	2.268E-04	1.523E-04
Th-229	Am-241	1.000E+00	7.667E-16	1.611E-15	4.337E-15	3.211E-14	5.625E-13	2.038E-11	3.659E-10	3.728E-09
Th-229	Np-237	1.000E+00	1.539E-10	6.576E-10	2.672E-09	2.018E-08	1.684E-07	1.936E-06	1.054E-05	3.690E-05
Th-229	Pu-241	1.000E+00	2.450E-17	6.614E-17	1.571E-16	5.351E-16	6.083E-15	3.981E-13	1.042E-11	1.198E-10
Th-229	Pu-241	2.450E-05	1.254E-21	5.195E-21	3.043E-20	5.174E-19	9.672E-18	2.166E-16	1.580E-15	5.946E-15
Th-229	ΣDOSE (j)		1.539E-10	6.576E-10	2.672E-09	2.018E-08	1.684E-07	1.936E-06	1.054E-05	3.690E-05
C-14	C-14	1.000E+00	4.295E-01	4.454E-01	4.746E-01	5.535E-01	2.204E-01	3.675E-03	3.063E-08	5.232E-26
Ce-144	Ce-144	1.000E+00	4.811E-03	1.975E-03	3.328E-04	6.539E-07	1.208E-14	0.000E+00	0.000E+00	0.000E+00
Cm-243	Cm-243	2.400E-03	1.425E-03	1.391E-03	1.325E-03	1.119E-03	6.892E-04	1.265E-04	1.009E-06	5.400E-14
Cm-243	Cm-243	9.976E-01	5.923E-01	5.781E-01	5.508E-01	4.649E-01	2.865E-01	5.260E-02	4.192E-04	2.245E-11
Cm-243	ΣDOSE (j)		5.937E-01	5.795E-01	5.521E-01	4.661E-01	2.872E-01	5.273E-02	4.202E-04	2.250E-11
Am-243	Cm-243	2.400E-03	5.584E-08	1.651E-07	3.757E-07	1.037E-06	2.412E-06	4.207E-06	4.673E-06	6.680E-06
Pu-239	Cm-243	2.400E-03	3.292E-12	2.311E-11	1.206E-10	1.024E-09	7.465E-09	5.298E-08	2.253E-07	9.415E-07
Pu-239	Cm-243	9.976E-01	4.399E-05	1.311E-04	2.992E-04	8.286E-04	1.936E-03	3.445E-03	4.014E-03	4.811E-03
Pu-239	Pu-239	1.000E+00	3.106E+00	3.107E+00	3.109E+00	3.117E+00	3.140E+00	3.217E+00	3.427E+00	4.086E+00
Pu-239	ΣDOSE (j)		3.106E+00	3.107E+00	3.110E+00	3.118E+00	3.142E+00	3.221E+00	3.431E+00	4.091E+00
U-235	Cm-243	2.400E-03	4.935E-22	2.616E-21	9.962E-21	3.863E-19	8.828E-18	2.294E-16	3.383E-15	5.304E-14
U-235	Cm-243	9.976E-01	1.732E-15	1.134E-14	5.868E-14	4.978E-13	3.643E-12	2.626E-11	1.167E-10	5.266E-10
U-235	Pu-239	1.000E+00	1.694E-10	5.098E-10	1.192E-09	3.589E-09	1.052E-08	3.574E-08	1.154E-07	4.663E-07
U-235	ΣDOSE (j)		1.694E-10	5.098E-10	1.192E-09	3.589E-09	1.053E-08	3.577E-08	1.155E-07	4.668E-07
Pa-231	Cm-243	2.400E-03	1.422E-19	1.340E-19	1.412E-19	1.849E-19	3.169E-19	2.177E-18	7.785E-17	6.508E-15
Pa-231	Cm-243	9.976E-01	2.965E-17	4.470E-17	5.948E-17	4.861E-16	9.688E-15	2.511E-13	3.858E-12	8.976E-11
Pa-231	Pu-239	1.000E+00	1.759E-14	1.100E-13	5.335E-13	4.670E-12	3.938E-11	4.377E-10	4.298E-09	8.225E-08
Pa-231	ΣDOSE (j)		1.762E-14	1.101E-13	5.336E-13	4.671E-12	3.939E-11	4.380E-10	4.302E-09	8.234E-08
Ac-227	Cm-243	2.400E-03	2.980E-20	2.405E-20	2.883E-20	5.795E-20	1.311E-19	7.264E-19	3.391E-17	2.955E-15
Ac-227	Cm-243	9.976E-01	1.027E-17	1.865E-17	1.900E-17	4.047E-17	1.254E-15	7.676E-14	1.824E-12	4.279E-11

Summary : RESRAD Default Parameters

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## Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ac-227	Pu-239	1.000E+00	1.109E-15	3.693E-15	9.747E-15	2.887E-13	6.190E-12	1.494E-10	2.085E-09	3.946E-08
Ac-227	ΣDOSE(j)		1.119E-15	3.712E-15	9.766E-15	2.888E-13	6.192E-12	1.494E-10	2.087E-09	3.950E-08
Cm-244	Cm-244	1.350E-06	6.406E-07	6.166E-07	5.713E-07	4.374E-07	2.039E-07	1.409E-08	6.895E-12	2.115E-23
Cm-244	Cm-244	4.950E-08	2.349E-08	2.261E-08	2.095E-08	1.604E-08	7.475E-09	5.168E-10	2.528E-13	7.755E-25
Cm-244	ΣDOSE(j)		6.641E-07	6.392E-07	5.922E-07	4.534E-07	2.113E-07	1.461E-08	7.148E-12	2.193E-23
Pu-240	Cm-244	4.950E-08	7.998E-12	2.369E-11	5.335E-11	1.412E-10	2.952E-10	4.268E-10	4.578E-10	5.181E-10
Pu-240	Pu-240	4.950E-08	1.537E-07	1.538E-07	1.539E-07	1.542E-07	1.551E-07	1.580E-07	1.658E-07	1.872E-07
Pu-240	ΣDOSE(j)		1.537E-07	1.538E-07	1.539E-07	1.543E-07	1.554E-07	1.585E-07	1.662E-07	1.877E-07
Cm-244	Cm-244	1.000E+00	4.745E-01	4.567E-01	4.232E-01	3.240E-01	1.510E-01	1.044E-02	5.107E-06	1.567E-17
Pu-240	Cm-244	1.000E+00	1.616E-04	4.785E-04	1.078E-03	2.852E-03	5.964E-03	8.622E-03	9.249E-03	1.047E-02
U-236	Cm-244	1.000E+00	1.659E-13	1.223E-12	6.400E-12	5.296E-11	3.599E-10	2.213E-09	8.683E-09	3.657E-08
U-236	Pu-240	1.000E+00	5.124E-09	1.542E-08	3.604E-08	1.085E-07	3.178E-07	1.077E-06	3.450E-06	1.358E-05
U-236	ΣDOSE(j)		5.124E-09	1.542E-08	3.604E-08	1.085E-07	3.182E-07	1.079E-06	3.459E-06	1.362E-05
Th-232	Cm-244	1.000E+00	3.334E-22	2.281E-21	6.293E-21	3.498E-20	4.167E-19	7.176E-18	9.018E-17	1.392E-15
Th-232	Pu-240	1.000E+00	9.825E-21	2.773E-18	1.033E-17	6.124E-17	4.289E-16	4.214E-15	3.880E-14	5.306E-13
Th-232	ΣDOSE(j)		1.016E-20	2.775E-18	1.033E-17	6.127E-17	4.293E-16	4.221E-15	3.889E-14	5.320E-13
Ra-228	Cm-244	1.000E+00	8.607E-23	3.369E-22	7.971E-22	3.146E-21	3.518E-20	7.633E-19	2.377E-17	3.283E-15
Ra-228	Pu-240	1.000E+00	1.999E-24	3.096E-19	7.951E-19	4.061E-18	3.626E-17	4.618E-16	1.022E-14	1.238E-12
Ra-228	ΣDOSE(j)		8.807E-23	3.099E-19	7.959E-19	4.064E-18	3.629E-17	4.626E-16	1.024E-14	1.242E-12
Th-228	Cm-244	1.000E+00	1.724E-22	7.527E-22	1.800E-21	6.631E-21	6.951E-20	1.644E-18	2.466E-17	4.210E-16
Th-228	Pu-240	1.000E+00	7.747E-20	8.053E-19	1.938E-18	7.728E-18	7.112E-17	1.006E-15	1.068E-14	1.605E-13
Th-228	ΣDOSE(j)		7.764E-20	8.061E-19	1.940E-18	7.735E-18	7.119E-17	1.008E-15	1.070E-14	1.609E-13
Co-58	Co-58	1.000E+00	6.528E-03	1.831E-04	1.439E-07	1.960E-18	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Co-60	Co-60	1.000E+00	1.691E-01	1.485E-01	1.146E-01	4.615E-02	3.431E-03	3.779E-07	1.733E-18	0.000E+00
Cs-134	Cs-134	1.000E+00	1.365E-01	9.757E-02	4.985E-02	4.753E-03	5.761E-06	3.569E-16	0.000E+00	0.000E+00
Cs-137	Cs-137	1.000E+00	1.084E-01	1.059E-01	1.012E-01	8.636E-02	5.482E-02	1.117E-02	1.347E-04	4.245E-11
Eu-152	Eu-152	7.208E-01	6.897E-03	6.552E-03	5.912E-03	4.127E-03	1.478E-03	4.045E-05	1.362E-09	2.226E-25
Eu-152	Eu-152	2.792E-01	2.671E-03	2.538E-03	2.290E-03	1.599E-03	5.723E-04	1.567E-05	5.274E-10	8.621E-26
Eu-152	ΣDOSE(j)		9.568E-03	9.089E-03	8.202E-03	5.726E-03	2.050E-03	5.611E-05	1.889E-09	3.088E-25
Gd-152	Eu-152	2.792E-01	2.658E-17	7.320E-17	1.587E-16	3.976E-16	7.527E-16	9.493E-16	9.903E-16	1.558E-15
Eu-154	Eu-154	1.000E+00	1.392E-02	1.287E-02	1.101E-02	6.372E-03	1.336E-03	5.613E-06	8.942E-13	0.000E+00
Eu-155	Eu-155	1.000E+00	2.164E-03	1.883E-03	1.426E-03	5.384E-04	3.333E-05	1.961E-09	1.578E-21	0.000E+00
Fe-55	Fe-55	1.000E+00	3.283E-04	2.540E-04	1.521E-04	2.524E-05	1.493E-07	2.373E-15	0.000E+00	0.000E+00

Summary : RESRAD Default Parameters

File : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\EMBEDDED PIPE DSR\FCS EMBEDDED PIPE DSR.RAD

## Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
H-3	H-3	1.000E+00	3.385E-02	3.617E-02	3.279E-02	3.486E-03	5.752E-06	1.050E-15	0.000E+00	0.000E+00
Ni-59	Ni-59	1.000E+00	3.177E-03	3.184E-03	3.198E-03	3.247E-03	3.379E-03	3.781E-03	3.735E-03	5.170E-04
Ni-63	Ni-63	1.000E+00	8.698E-03	8.654E-03	8.568E-03	8.270E-03	7.452E-03	5.032E-03	1.175E-03	1.045E-06
Pu-238	Pu-238	1.840E-09	5.145E-09	5.107E-09	5.031E-09	4.774E-09	4.108E-09	2.426E-09	5.354E-10	2.583E-12
Pu-238	Pu-238	1.000E+00	2.796E+00	2.776E+00	2.734E+00	2.594E+00	2.233E+00	1.319E+00	2.910E-01	1.404E-03
Pu-238	ΣDOSE(j)		2.796E+00	2.776E+00	2.734E+00	2.594E+00	2.233E+00	1.319E+00	2.910E-01	1.404E-03
U-234	Pu-238	1.000E+00	5.149E-07	1.544E-06	3.581E-06	1.049E-05	2.850E-05	7.533E-05	1.357E-04	1.841E-04
Th-230	Pu-238	1.000E+00	4.891E-13	3.297E-12	1.703E-11	1.485E-10	1.193E-09	1.118E-08	7.099E-08	4.216E-07
Ra-226	Pu-238	1.000E+00	2.593E-15	7.181E-15	1.326E-14	1.337E-13	3.114E-12	9.863E-11	4.469E-09	9.048E-07
Pb-210	Pu-238	1.000E+00	8.342E-13	1.229E-12	1.477E-12	1.823E-12	3.572E-11	2.598E-09	8.487E-08	2.626E-06
Po-210	Pu-238	1.000E+00	1.100E-13	2.943E-13	4.257E-13	5.677E-13	2.580E-11	2.033E-09	6.593E-08	1.524E-06
Pu-240	Pu-240	1.000E+00	3.106E+00	3.107E+00	3.108E+00	3.115E+00	3.133E+00	3.193E+00	3.349E+00	3.782E+00
Pu-241	Pu-241	1.000E+00	5.859E-02	5.586E-02	5.077E-02	3.635E-02	1.399E-02	4.942E-04	3.491E-08	9.877E-23
Pu-241	Pu-241	2.450E-05	1.502E-06	1.432E-06	1.302E-06	9.318E-07	3.586E-07	1.267E-08	8.948E-13	2.532E-27
Pu-241	ΣDOSE(j)		5.859E-02	5.586E-02	5.077E-02	3.635E-02	1.399E-02	4.942E-04	3.491E-08	9.877E-23
Sb-125	Sb-125	7.720E-01	5.050E-02	3.977E-02	2.464E-02	4.573E-03	3.524E-05	3.845E-13	0.000E+00	0.000E+00
Sb-125	Sb-125	2.280E-01	1.491E-02	1.174E-02	7.277E-03	1.351E-03	1.041E-05	1.136E-13	0.000E+00	0.000E+00
Sb-125	ΣDOSE(j)		6.541E-02	5.151E-02	3.192E-02	5.924E-03	4.565E-05	4.981E-13	0.000E+00	0.000E+00
Te-125m	Sb-125	2.280E-01	2.913E-03	3.001E-03	1.866E-03	3.463E-04	2.661E-06	3.028E-14	0.000E+00	0.000E+00
Sr-90	Sr-90	1.000E+00	4.010E+00	3.951E+00	3.833E+00	3.428E+00	2.402E+00	3.024E-01	1.855E-04	1.433E-15
Tc-99	Tc-99	1.000E+00	9.291E-01	1.056E+00	9.911E-01	1.358E-01	4.637E-04	1.079E-12	0.000E+00	0.000E+00

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



Summary : RESRAD Default Parameters

File : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\EMBEDDED PIPE DSR\FCS EMBEDDED PIPE DSR.RAD

Individual Nuclide Soil Concentration  
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.000E+00	9.981E-01	9.942E-01	9.808E-01	9.434E-01	8.235E-01	5.584E-01	1.434E-01
Am-241	Pu-241	1.000E+00	0.000E+00	1.564E-03	4.463E-03	1.256E-02	2.439E-02	2.797E-02	1.914E-02	4.916E-03
Am-241	ΣS(j):		1.000E+00	9.996E-01	9.987E-01	9.933E-01	9.678E-01	8.514E-01	5.775E-01	1.483E-01
Np-237	Am-241	1.000E+00	0.000E+00	3.211E-07	9.463E-07	2.967E-06	7.507E-06	1.447E-05	1.290E-05	3.366E-06
Np-237	Np-237	1.000E+00	1.000E+00	9.844E-01	9.539E-01	8.544E-01	6.236E-01	2.072E-01	8.900E-03	1.461E-07
Np-237	Pu-241	1.000E+00	0.000E+00	2.541E-10	2.188E-09	2.091E-08	1.254E-07	4.288E-07	4.393E-07	1.154E-07
Np-237	Pu-241	2.450E-05	0.000E+00	7.684E-12	2.162E-11	5.775E-11	9.427E-11	4.802E-11	2.141E-12	3.515E-17
Np-237	ΣS(j):		1.000E+00	9.844E-01	9.539E-01	8.544E-01	6.237E-01	2.072E-01	8.913E-03	3.627E-06
U-233	Am-241	1.000E+00	0.000E+00	7.039E-13	6.258E-12	6.662E-11	5.324E-10	4.032E-09	1.511E-08	2.400E-08
U-233	Np-237	1.000E+00	0.000E+00	4.337E-06	1.280E-05	4.029E-05	1.032E-04	2.092E-04	2.260E-04	1.278E-04
U-233	Pu-241	1.000E+00	0.000E+00	3.723E-16	9.723E-15	3.212E-13	6.373E-12	9.586E-11	4.658E-10	7.932E-10
U-233	Pu-241	2.450E-05	0.000E+00	1.698E-17	1.464E-16	1.403E-15	8.489E-15	3.028E-14	3.726E-14	2.118E-14
U-233	ΣS(j):		0.000E+00	4.337E-06	1.280E-05	4.029E-05	1.032E-04	2.092E-04	2.260E-04	1.278E-04
Th-229	Am-241	1.000E+00	0.000E+00	2.219E-17	5.936E-16	2.128E-14	5.249E-13	1.449E-11	1.972E-10	1.540E-09
Th-229	Np-237	1.000E+00	0.000E+00	2.053E-10	1.828E-09	1.954E-08	1.580E-07	1.252E-06	5.450E-06	1.517E-05
Th-229	Pu-241	1.000E+00	0.000E+00	8.819E-21	6.955E-19	7.832E-17	4.948E-15	2.927E-13	5.613E-12	4.940E-11
Th-229	Pu-241	2.450E-05	0.000E+00	5.373E-22	1.405E-20	4.654E-19	9.324E-18	1.460E-16	8.193E-16	2.441E-15
Th-229	ΣS(j):		0.000E+00	2.053E-10	1.828E-09	1.954E-08	1.580E-07	1.252E-06	5.450E-06	1.517E-05
C-14	C-14	1.000E+00	1.000E+00	9.432E-01	8.391E-01	5.572E-01	1.730E-01	2.885E-03	2.402E-08	3.999E-26
Ce-144	Ce-144	1.000E+00	1.000E+00	4.104E-01	6.910E-02	1.354E-04	2.482E-12	2.069E-39	0.000E+00	0.000E+00
Cm-243	Cm-243	2.400E-03	2.400E-03	2.342E-03	2.230E-03	1.879E-03	1.151E-03	2.075E-04	1.551E-06	5.605E-14
Cm-243	Cm-243	9.976E-01	9.976E-01	9.735E-01	9.270E-01	7.810E-01	4.786E-01	8.626E-02	6.449E-04	2.330E-11
Cm-243	ΣS(j):		1.000E+00	9.758E-01	9.292E-01	7.829E-01	4.798E-01	8.646E-02	6.464E-04	2.335E-11
Am-243	Cm-243	2.400E-03	0.000E+00	2.227E-07	6.518E-07	1.998E-06	4.775E-06	8.306E-06	8.771E-06	7.711E-06
Pu-239	Cm-243	2.400E-03	0.000E+00	3.219E-12	2.849E-11	2.989E-10	2.301E-09	1.612E-08	6.187E-08	1.747E-07
Pu-239	Cm-243	9.976E-01	0.000E+00	2.838E-05	8.304E-05	2.541E-04	6.044E-04	1.028E-03	1.001E-03	6.528E-04
Pu-239	Pu-239	1.000E+00	1.000E+00	9.994E-01	9.982E-01	9.939E-01	9.818E-01	9.406E-01	8.323E-01	5.422E-01
Pu-239	ΣS(j):		1.000E+00	9.994E-01	9.982E-01	9.942E-01	9.824E-01	9.417E-01	8.333E-01	5.429E-01
U-235	Cm-243	2.400E-03	0.000E+00	1.059E-21	2.822E-20	9.995E-19	2.388E-17	6.095E-16	7.774E-15	7.211E-14
U-235	Cm-243	9.976E-01	0.000E+00	1.403E-14	1.241E-13	1.300E-12	9.962E-12	6.852E-11	2.476E-10	5.567E-10
U-235	Pu-239	1.000E+00	0.000E+00	9.842E-10	2.948E-09	9.778E-09	2.892E-08	9.165E-08	2.382E-07	4.807E-07
U-235	ΣS(j):		0.000E+00	9.842E-10	2.948E-09	9.779E-09	2.893E-08	9.172E-08	2.384E-07	4.812E-07
Pa-231	Cm-243	2.400E-03	0.000E+00	5.608E-27	4.495E-25	5.352E-23	3.924E-21	3.558E-19	1.505E-17	5.222E-16
Pa-231	Cm-243	9.976E-01	0.000E+00	9.914E-20	2.642E-18	9.357E-17	2.235E-15	5.695E-14	7.229E-13	6.577E-12
Pa-231	Pu-239	1.000E+00	0.000E+00	1.041E-14	9.361E-14	1.036E-12	9.219E-12	9.846E-11	7.917E-10	5.954E-09
Pa-231	ΣS(j):		0.000E+00	1.041E-14	9.361E-14	1.036E-12	9.221E-12	9.852E-11	7.924E-10	5.960E-09
Ac-227	Cm-243	2.400E-03	0.000E+00	3.555E-29	8.472E-27	3.261E-24	6.588E-22	1.523E-19	1.097E-17	4.790E-16
Ac-227	Cm-243	9.976E-01	0.000E+00	7.851E-22	6.214E-20	7.082E-18	4.603E-16	2.873E-14	5.786E-13	6.242E-12

Summary : RESRAD Default Parameters

File : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\EMBEDDED PIPE DSR\FCS EMBEDDED PIPE DSR.RAD

Individual Nuclide Soil Concentration  
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g						
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02
Ac-227	Pu-239	1.000E+00	0.000E+00	1.096E-16	2.911E-15	1.018E-13	2.356E-12	5.563E-11	6.506E-10
Ac-227	ΣS(j):		0.000E+00	1.096E-16	2.911E-15	1.018E-13	2.357E-12	5.566E-11	6.512E-10
Cm-244	Cm-244	1.350E-06	1.350E-06	1.299E-06	1.203E-06	9.192E-07	4.262E-07	2.892E-08	1.327E-11
Cm-244	Cm-244	4.950E-08	4.950E-08	4.763E-08	4.411E-08	3.370E-08	1.563E-08	1.060E-09	4.866E-13
Cm-244	ΣS(j):		1.399E-06	1.347E-06	1.247E-06	9.529E-07	4.418E-07	2.998E-08	1.376E-11
Pu-240	Cm-244	4.950E-08	0.000E+00	5.147E-12	1.486E-11	4.342E-11	9.231E-11	1.268E-10	1.131E-10
Pu-240	Pu-240	4.950E-08	4.950E-08	4.947E-08	4.940E-08	4.916E-08	4.849E-08	4.620E-08	4.025E-08
Pu-240	ΣS(j):		4.950E-08	4.947E-08	4.941E-08	4.920E-08	4.858E-08	4.633E-08	4.037E-08
Cm-244	Cm-244	1.000E+00	1.000E+00	9.623E-01	8.911E-01	6.809E-01	3.157E-01	2.142E-02	9.830E-06
Pu-240	Cm-244	1.000E+00	0.000E+00	1.040E-04	3.001E-04	8.771E-04	1.865E-03	2.562E-03	2.284E-03
U-236	Cm-244	1.000E+00	0.000E+00	1.549E-12	1.358E-11	1.379E-10	9.797E-10	5.721E-09	1.815E-08
U-236	Pu-240	1.000E+00	0.000E+00	2.958E-08	8.861E-08	2.938E-07	8.681E-07	2.744E-06	7.075E-06
U-236	ΣS(j):		0.000E+00	2.958E-08	8.862E-08	2.939E-07	8.691E-07	2.750E-06	7.093E-06
Th-232	Cm-244	1.000E+00	0.000E+00	2.555E-23	6.764E-22	2.341E-20	5.278E-19	1.177E-17	1.311E-16
Th-232	Pu-240	1.000E+00	0.000E+00	7.298E-19	6.561E-18	7.262E-17	6.465E-16	6.913E-15	5.580E-14
Th-232	ΣS(j):		0.000E+00	7.298E-19	6.562E-18	7.265E-17	6.470E-16	6.925E-15	5.593E-14
Ra-228	Cm-244	1.000E+00	0.000E+00	7.534E-25	5.730E-23	5.738E-21	2.762E-19	9.678E-18	1.240E-16
Ra-228	Pu-240	1.000E+00	0.000E+00	2.847E-20	7.246E-19	2.217E-17	3.861E-16	5.882E-15	5.301E-14
Ra-228	ΣS(j):		0.000E+00	2.847E-20	7.246E-19	2.217E-17	3.863E-16	5.892E-15	5.314E-14
Th-228	Cm-244	1.000E+00	0.000E+00	5.172E-26	1.065E-23	2.616E-21	2.075E-19	9.007E-18	1.216E-16
Th-228	Pu-240	1.000E+00	0.000E+00	2.416E-21	1.633E-19	1.161E-17	3.097E-16	5.548E-15	5.208E-14
Th-228	ΣS(j):		0.000E+00	2.416E-21	1.633E-19	1.162E-17	3.099E-16	5.557E-15	5.220E-14
Co-58	Co-58	1.000E+00	1.000E+00	2.792E-02	2.177E-05	2.881E-16	0.000E+00	0.000E+00	0.000E+00
Co-60	Co-60	1.000E+00	1.000E+00	8.746E-01	6.691E-01	2.620E-01	1.798E-02	1.523E-06	3.535E-18
Cs-134	Cs-134	1.000E+00	1.000E+00	7.141E-01	3.642E-01	3.448E-02	4.100E-05	2.377E-15	1.401E-44
Cs-137	Cs-137	1.000E+00	1.000E+00	9.766E-01	9.314E-01	7.891E-01	4.914E-01	9.366E-02	8.216E-04
Eu-152	Eu-152	7.208E-01	7.208E-01	6.836E-01	6.149E-01	4.244E-01	1.472E-01	3.612E-03	9.071E-08
Eu-152	Eu-152	2.792E-01	2.792E-01	2.648E-01	2.382E-01	1.644E-01	5.700E-02	1.399E-03	3.514E-08
Eu-152	ΣS(j):		1.000E+00	9.484E-01	8.531E-01	5.888E-01	2.042E-01	5.011E-03	1.258E-07
Gd-152	Eu-152	2.792E-01	0.000E+00	1.745E-15	4.970E-15	1.390E-14	2.687E-14	3.336E-14	3.280E-14
Eu-154	Eu-154	1.000E+00	1.000E+00	9.234E-01	7.873E-01	4.506E-01	9.146E-02	3.447E-04	4.096E-11
Eu-155	Eu-155	1.000E+00	1.000E+00	8.687E-01	6.557E-01	2.449E-01	1.468E-02	7.746E-07	4.648E-19
Fe-55	Fe-55	1.000E+00	1.000E+00	7.734E-01	4.625E-01	7.653E-02	4.483E-04	6.893E-12	3.275E-34

Summary : RESRAD Default Parameters

File : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\EMBEDDED PIPE DSR\FCS EMBEDDED PIPE DSR.RAD

Individual Nuclide Soil Concentration  
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF (i)	S(j,t), pCi/g							
			t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02
H-3	H-3	1.000E+00	1.000E+00	7.259E-01	3.825E-01	4.062E-02	6.703E-05	1.223E-14	1.831E-42	0.000E+00
Ni-59	Ni-59	1.000E+00	1.000E+00	9.967E-01	9.902E-01	9.678E-01	9.064E-01	7.206E-01	3.742E-01	3.777E-02
Ni-63	Ni-63	1.000E+00	1.000E+00	9.896E-01	9.690E-01	9.004E-01	7.301E-01	3.504E-01	4.301E-02	2.789E-05
Pu-238	Pu-238	1.840E-09	1.840E-09	1.824E-09	1.794E-09	1.690E-09	1.427E-09	7.878E-10	1.444E-10	3.807E-13
Pu-238	Pu-238	1.000E+00	1.000E+00	9.916E-01	9.749E-01	9.187E-01	7.753E-01	4.281E-01	7.848E-02	2.069E-04
Pu-238	ΣS(j):		1.000E+00	9.916E-01	9.749E-01	9.187E-01	7.753E-01	4.281E-01	7.848E-02	2.069E-04
U-234	Pu-238	1.000E+00	0.000E+00	2.822E-06	8.387E-06	2.707E-05	7.412E-05	1.823E-04	2.597E-04	1.615E-04
Th-230	Pu-238	1.000E+00	0.000E+00	1.272E-11	1.138E-10	1.237E-09	1.046E-08	9.473E-08	5.147E-07	1.748E-06
Ra-226	Pu-238	1.000E+00	0.000E+00	1.838E-15	4.938E-14	1.798E-12	4.624E-11	1.455E-09	2.601E-08	3.376E-07
Pb-210	Pu-238	1.000E+00	0.000E+00	1.420E-17	1.131E-15	1.320E-13	9.141E-12	6.941E-10	1.994E-08	3.146E-07
Po-210	Pu-238	1.000E+00	0.000E+00	3.951E-18	6.244E-16	1.077E-13	8.539E-12	6.811E-10	1.983E-08	3.141E-07
Pu-240	Pu-240	1.000E+00	1.000E+00	9.993E-01	9.979E-01	9.931E-01	9.795E-01	9.334E-01	8.132E-01	5.019E-01
Pu-241	Pu-241	1.000E+00	1.000E+00	9.524E-01	8.640E-01	6.143E-01	2.319E-01	7.659E-03	4.493E-07	6.948E-22
Pu-241	Pu-241	2.450E-05	2.450E-05	2.334E-05	2.117E-05	1.505E-05	5.681E-06	1.877E-07	1.101E-11	1.702E-26
Pu-241	ΣS(j):		1.000E+00	9.524E-01	8.640E-01	6.144E-01	2.319E-01	7.659E-03	4.493E-07	6.948E-22
Sb-125	Sb-125	7.720E-01	7.720E-01	5.910E-01	3.463E-01	5.335E-02	2.548E-04	1.919E-12	1.186E-35	0.000E+00
Sb-125	Sb-125	2.280E-01	2.280E-01	1.745E-01	1.023E-01	1.576E-02	7.526E-05	5.668E-13	3.504E-36	0.000E+00
Sb-125	ΣS(j):		1.000E+00	7.655E-01	4.486E-01	6.911E-02	3.301E-04	2.486E-12	1.537E-35	0.000E+00
Te-125m	Sb-125	2.280E-01	0.000E+00	1.827E-01	1.089E-01	1.678E-02	8.013E-05	6.034E-13	3.730E-36	0.000E+00
Sr-90	Sr-90	1.000E+00	1.000E+00	9.636E-01	8.948E-01	6.903E-01	3.289E-01	2.455E-02	1.481E-05	7.969E-17
Tc-99	Tc-99	1.000E+00	1.000E+00	7.528E-01	4.266E-01	5.844E-02	1.996E-04	4.646E-13	1.003E-37	0.000E+00

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

RESRAD.EXE execution time = 53.91 seconds

Total water/soil iteration failures = 3.000E+00.