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Summary : RESRAD Default Parameters

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FCS FGR 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	Ba-137m (Source: FGR 12)	3.606E+00	3.606E+00	DCF1(1)
A-1	C-14 (Source: FGR 12)	1.345E-05	1.345E-05	DCF1(2)
A-1	Co-60 (Source: FGR 12)	1.622E+01	1.622E+01	DCF1(3)
A-1	Cs-137 (Source: FGR 12)	7.510E-04	7.510E-04	DCF1(4)
A-1	Eu-152 (Source: FGR 12)	7.006E+00	7.006E+00	DCF1(5)
A-1	Gd-152 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(6)
A-1	Ni-63 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(7)
A-1	Sr-90 (Source: FGR 12)	7.043E-04	7.043E-04	DCF1(8)
A-1	Y-90 (Source: FGR 12)	2.391E-02	2.391E-02	DCF1(9)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	C-14(p) (Class: ORGANIC)	2.090E-06	2.090E-06	DCF2(1)
B-1	C-14(g) (Class: CO2)	2.350E-08	2.350E-08	C14GInhDCF
B-1	Co-60	2.190E-04	2.190E-04	DCF2(2)
B-1	Cs-137+D	3.190E-05	3.190E-05	DCF2(3)
B-1	Eu-152	2.210E-04	2.210E-04	DCF2(4)
B-1	Gd-152	2.430E-01	2.430E-01	DCF2(6)
B-1	Ni-63	6.290E-06	6.290E-06	DCF2(7)
B-1	Sr-90+D	1.308E-03	1.300E-03	DCF2(8)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	C-14	2.090E-06	2.090E-06	DCF3(1)
D-1	Co-60	2.690E-05	2.690E-05	DCF3(2)
D-1	Cs-137+D	5.000E-05	5.000E-05	DCF3(3)
D-1	Eu-152	6.480E-06	6.480E-06	DCF3(4)
D-1	Gd-152	1.610E-04	1.610E-04	DCF3(6)
D-1	Ni-63	5.770E-07	5.770E-07	DCF3(7)
D-1	Sr-90+D	1.528E-04	1.420E-04	DCF3(8)
D-34	Food transfer factors:			
D-34	C-14 , plant/soil concentration ratio, dimensionless	1.280E+00	5.500E+00	RTF(1,1)
D-34	C-14 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	6.110E-02	3.100E-02	RTF(1,2)
D-34	C-14 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.250E-02	1.200E-02	RTF(1,3)
D-34	Co-60 , plant/soil concentration ratio, dimensionless	1.460E-01	8.000E-02	RTF(2,1)
D-34	Co-60 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.980E-02	2.000E-02	RTF(2,2)
D-34	Co-60 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.220E-03	2.000E-03	RTF(2,3)
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	7.830E-02	4.000E-02	RTF(3,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	6.560E-02	3.000E-02	RTF(3,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.370E-02	8.000E-03	RTF(3,3)
D-34	Eu-152 , plant/soil concentration ratio, dimensionless	4.210E-03	2.500E-03	RTF(4,1)
D-34	Eu-152 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	4.020E-03	2.000E-03	RTF(4,2)
D-34	Eu-152 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.120E-04	5.000E-05	RTF(4,3)
D-34	Gd-152 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(6,1)
D-34	Gd-152 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(6,2)
D-34	Gd-152 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(6,3)

Summary : RESRAD Default Parameters

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

Dose Library: FCS FGR 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(7,1)
D-34	Ni-63 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	9.260E-03	5.000E-03	RTF(7,2)
D-34	Ni-63 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.190E-02	2.000E-02	RTF(7,3)
D-34				
D-34	Sr-90+D , plant/soil concentration ratio, dimensionless	5.900E-01	3.000E-01	RTF(8,1)
D-34	Sr-90+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.310E-02	8.000E-03	RTF(8,2)
D-34	Sr-90+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.760E-03	2.000E-03	RTF(8,3)
D-34				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	C-14 , fish	5.000E+04	5.000E+04	BIOFAC(1,1)
D-5	C-14 , crustacea and mollusks	9.100E+03	9.100E+03	BIOFAC(1,2)
D-5				
D-5	Co-60 , fish	3.000E+02	3.000E+02	BIOFAC(2,1)
D-5	Co-60 , crustacea and mollusks	2.000E+02	2.000E+02	BIOFAC(2,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(3,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Eu-152 , fish	5.000E+01	5.000E+01	BIOFAC(4,1)
D-5	Eu-152 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(4,2)
D-5				
D-5	Gd-152 , fish	2.500E+01	2.500E+01	BIOFAC(6,1)
D-5	Gd-152 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(6,2)
D-5				
D-5	Ni-63 , fish	1.000E+02	1.000E+02	BIOFAC(7,1)
D-5	Ni-63 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5				
D-5	Sr-90+D , fish	6.000E+01	6.000E+01	BIOFAC(8,1)
D-5	Sr-90+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(8,2)

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

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

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	1.000E+00	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.000E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.000E+00	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): C-14	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Co-60	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Eu-152	1.000E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Ni-63	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Sr-90	1.000E+00	0.000E+00	---	S1(8)
R012	Concentration in groundwater (pCi/L): C-14	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Co-60	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Eu-152	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Ni-63	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Sr-90	not used	0.000E+00	---	W1(8)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	7.590E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.300E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.800E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.440E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	2.870E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	3.270E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	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	---	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

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
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)	2.140E+01	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	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	1.000E-01	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	4.300E-01	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	1.600E-01	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	2.800E-01	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	3.600E+00	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.440E+01	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for C-14				
R016	Contaminated zone (cm**3/g)	9.670E+01	0.000E+00	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	9.670E+01	0.000E+00	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	1.100E+01	0.000E+00	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.215E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for Co-60				
R016	Contaminated zone (cm**3/g)	5.050E+03	1.000E+03	---	DCNUCC (2)
R016	Unsaturated zone 1 (cm**3/g)	5.050E+03	1.000E+03	---	DCNUCU (2,1)
R016	Saturated zone (cm**3/g)	2.600E+02	1.000E+03	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.086E-06	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	3.500E+03	4.600E+03	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	3.500E+03	4.600E+03	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	5.280E+02	4.600E+03	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.167E-05	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)
R016	Distribution coefficients for Eu-152				
R016	Contaminated zone (cm**3/g)	7.270E+03	-1.000E+00	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	7.270E+03	-1.000E+00	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	8.290E+02	-1.000E+00	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.617E-06	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)

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 Ni-63				
R016	Contaminated zone (cm**3/g)	5.320E+02	1.000E+03	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	5.320E+02	1.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	1.300E+02	1.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.673E-05	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R016	Distribution coefficients for Sr-90				
R016	Contaminated zone (cm**3/g)	1.680E+02	3.000E+01	---	DCNUCC (8)
R016	Unsaturated zone 1 (cm**3/g)	1.680E+02	3.000E+01	---	DCNUCU (8,1)
R016	Saturated zone (cm**3/g)	2.200E+01	3.000E+01	---	DCNUCS (8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.428E-04	ALEACH (8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (8)
R016	Distribution coefficients for daughter Gd-152				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.950E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)
R017	Inhalation rate (m**3/yr)	8.600E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.870E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	7.500E-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)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	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
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-03	FPLANT
R018	Contamination fraction of meat	-1	-1	0.500E-04	FMEAT
R018	Contamination fraction of milk	-1	-1	0.500E-04	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)	1.230E+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)	1.750E+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)

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
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	5.800E-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	3.300E+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):				
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

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
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:	1.00 square meters	C-14	1.000E+00
Thickness:	1.00 meters	Co-60	1.000E+00
Cover Depth:	0.00 meters	Cs-137	1.000E+00
		Eu-152	1.000E+00
		Ni-63	1.000E+00
		Sr-90	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	1.000E+03
TDOSE(t):	1.241E+00	1.130E+00	9.427E-01	5.350E-01	1.729E-01	1.934E-02	1.698E-04	1.261E-09
M(t):	4.963E-02	4.519E-02	3.771E-02	2.140E-02	6.916E-03	7.736E-04	6.792E-06	5.043E-11

Maximum TDOSE(t): 1.241E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Default Parameters

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

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

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	1.265E-07	0.0000	5.736E-07	0.0000	0.000E+00	0.0000	1.308E-05	0.0000	4.252E-07	0.0000	3.350E-07	0.0000	4.489E-09	0.0000
Co-60	7.292E-01	0.5877	1.546E-06	0.0000	0.000E+00	0.0000	3.990E-04	0.0003	1.921E-05	0.0000	7.755E-06	0.0000	3.598E-07	0.0000
Cs-137	1.667E-01	0.1344	2.376E-07	0.0000	0.000E+00	0.0000	4.196E-04	0.0003	2.559E-05	0.0000	3.726E-05	0.0000	7.055E-07	0.0000
Eu-152	3.327E-01	0.2682	1.622E-06	0.0000	0.000E+00	0.0000	2.883E-06	0.0000	6.551E-08	0.0000	7.551E-09	0.0000	9.013E-08	0.0000
Ni-63	0.000E+00	0.0000	4.721E-08	0.0000	0.000E+00	0.0000	5.691E-06	0.0000	4.698E-08	0.0000	1.152E-06	0.0000	8.206E-09	0.0000
Sr-90	1.194E-03	0.0010	9.739E-06	0.0000	0.000E+00	0.0000	9.657E-03	0.0078	8.817E-05	0.0001	1.505E-04	0.0001	2.155E-06	0.0000
Total	1.230E+00	0.9913	1.377E-05	0.0000	0.000E+00	0.0000	1.050E-02	0.0085	1.335E-04	0.0001	1.971E-04	0.0002	3.323E-06	0.0000

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

As mrem/yr and Fraction of Total Dose At t = 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.
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.455E-05	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	7.296E-01	0.5881
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.672E-01	0.1348
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.327E-01	0.2682
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	6.945E-06	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	1.110E-02	0.0089
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.241E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters

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

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

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	1.648E-10	0.0000	7.474E-10	0.0000	0.000E+00	0.0000	1.979E-08	0.0000	9.360E-10	0.0000	6.562E-10	0.0000	5.849E-12	0.0000
Co-60	6.393E-01	0.5659	1.355E-06	0.0000	0.000E+00	0.0000	3.496E-04	0.0003	1.684E-05	0.0000	6.794E-06	0.0000	3.155E-07	0.0000
Cs-137	1.629E-01	0.1442	2.321E-07	0.0000	0.000E+00	0.0000	4.097E-04	0.0004	2.499E-05	0.0000	3.638E-05	0.0000	6.894E-07	0.0000
Eu-152	3.159E-01	0.2796	1.540E-06	0.0000	0.000E+00	0.0000	2.735E-06	0.0000	6.218E-08	0.0000	7.167E-09	0.0000	8.556E-08	0.0000
Ni-63	0.000E+00	0.0000	4.687E-08	0.0000	0.000E+00	0.0000	5.645E-06	0.0000	4.661E-08	0.0000	1.143E-06	0.0000	8.146E-09	0.0000
Sr-90	1.165E-03	0.0010	9.508E-06	0.0000	0.000E+00	0.0000	9.421E-03	0.0083	8.602E-05	0.0001	1.469E-04	0.0001	2.104E-06	0.0000
Total	1.119E+00	0.9907	1.268E-05	0.0000	0.000E+00	0.0000	1.019E-02	0.0090	1.280E-04	0.0001	1.912E-04	0.0002	3.202E-06	0.0000

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

As mrem/yr and Fraction of Total Dose At t = 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.
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	2.230E-08	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	6.397E-01	0.5662
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.634E-01	0.1446
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.159E-01	0.2796
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	6.889E-06	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	1.083E-02	0.0096
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.130E+00	1.0000

*Sum of all water independent and dependent pathways.

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

As mrem/yr and Fraction of Total Dose At t = 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.
C-14	2.715E-16	0.0000	1.231E-15	0.0000	0.000E+00	0.0000	3.258E-14	0.0000	1.545E-15	0.0000	1.082E-15	0.0000	9.634E-18	0.0000
Co-60	4.915E-01	0.5213	1.042E-06	0.0000	0.000E+00	0.0000	2.683E-04	0.0003	1.293E-05	0.0000	5.216E-06	0.0000	2.425E-07	0.0000
Cs-137	1.556E-01	0.1650	2.216E-07	0.0000	0.000E+00	0.0000	3.906E-04	0.0004	2.384E-05	0.0000	3.469E-05	0.0000	6.582E-07	0.0000
Eu-152	2.847E-01	0.3020	1.388E-06	0.0000	0.000E+00	0.0000	2.461E-06	0.0000	5.603E-08	0.0000	6.457E-09	0.0000	7.711E-08	0.0000
Ni-63	0.000E+00	0.0000	4.619E-08	0.0000	0.000E+00	0.0000	5.555E-06	0.0000	4.589E-08	0.0000	1.125E-06	0.0000	8.028E-09	0.0000
Sr-90	1.111E-03	0.0012	9.061E-06	0.0000	0.000E+00	0.0000	8.965E-03	0.0095	8.186E-05	0.0001	1.398E-04	0.0001	2.005E-06	0.0000
Total	9.328E-01	0.9894	1.176E-05	0.0000	0.000E+00	0.0000	9.632E-03	0.0102	1.187E-04	0.0001	1.808E-04	0.0002	2.991E-06	0.0000

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

As mrem/yr and Fraction of Total Dose At t = 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.
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	3.672E-14	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.917E-01	0.5216
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.560E-01	0.1655
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.847E-01	0.3020
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	6.779E-06	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	1.031E-02	0.0109
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.427E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters

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

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

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	1.957E-01	0.3658	4.150E-07	0.0000	0.000E+00	0.0000	1.063E-04	0.0002	5.126E-06	0.0000	2.067E-06	0.0000	9.659E-08	0.0000
Cs-137	1.323E-01	0.2473	1.885E-07	0.0000	0.000E+00	0.0000	3.305E-04	0.0006	2.020E-05	0.0000	2.938E-05	0.0001	5.599E-07	0.0000
Eu-152	1.978E-01	0.3697	9.644E-07	0.0000	0.000E+00	0.0000	1.701E-06	0.0000	3.891E-08	0.0000	4.481E-09	0.0000	5.358E-08	0.0000
Ni-63	0.000E+00	0.0000	4.389E-08	0.0000	0.000E+00	0.0000	5.250E-06	0.0000	4.343E-08	0.0000	1.064E-06	0.0000	7.629E-09	0.0000
Sr-90	9.386E-04	0.0018	7.658E-06	0.0000	0.000E+00	0.0000	7.536E-03	0.0141	6.883E-05	0.0001	1.175E-04	0.0002	1.694E-06	0.0000
Total	5.268E-01	0.9846	9.269E-06	0.0000	0.000E+00	0.0000	7.979E-03	0.0149	9.424E-05	0.0002	1.500E-04	0.0003	2.412E-06	0.0000

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

As mrem/yr and Fraction of Total Dose At t = 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.
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.959E-01	0.3661
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.327E-01	0.2480
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.978E-01	0.3697
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	6.409E-06	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	8.670E-03	0.0162
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.350E-01	1.0000

*Sum of all water independent and dependent pathways.

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

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

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	1.411E-02	0.0816	2.991E-08	0.0000	0.000E+00	0.0000	7.543E-06	0.0000	3.647E-07	0.0000	1.469E-07	0.0000	6.960E-09	0.0000
Cs-137	8.334E-02	0.4820	1.187E-07	0.0000	0.000E+00	0.0000	2.049E-04	0.0012	1.258E-05	0.0001	1.826E-05	0.0001	3.526E-07	0.0000
Eu-152	6.991E-02	0.4044	3.409E-07	0.0000	0.000E+00	0.0000	5.919E-07	0.0000	1.373E-08	0.0000	1.578E-09	0.0000	1.894E-08	0.0000
Ni-63	0.000E+00	0.0000	3.793E-08	0.0000	0.000E+00	0.0000	4.468E-06	0.0000	3.711E-08	0.0000	9.070E-07	0.0000	6.593E-09	0.0000
Sr-90	5.803E-04	0.0034	4.734E-06	0.0000	0.000E+00	0.0000	4.587E-03	0.0265	4.193E-05	0.0002	7.155E-05	0.0004	1.048E-06	0.0000
Total	1.679E-01	0.9713	5.261E-06	0.0000	0.000E+00	0.0000	4.805E-03	0.0278	5.493E-05	0.0003	9.087E-05	0.0005	1.433E-06	0.0000

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

As mrem/yr and Fraction of Total Dose At t = 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.
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.411E-02	0.0816
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.357E-02	0.4834
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.991E-02	0.4044
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	5.456E-06	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.287E-03	0.0306
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.729E-01	1.0000

*Sum of all water independent and dependent pathways.

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+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.
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	1.417E-06	0.0001	3.004E-12	0.0000	0.000E+00	0.0000	7.166E-10	0.0000	3.501E-11	0.0000	1.402E-11	0.0000	6.993E-13	0.0000
Cs-137	1.652E-02	0.8543	2.354E-08	0.0000	0.000E+00	0.0000	3.842E-05	0.0020	2.399E-06	0.0001	3.453E-06	0.0002	6.991E-08	0.0000
Eu-152	1.835E-03	0.0949	8.945E-09	0.0000	0.000E+00	0.0000	1.469E-08	0.0000	3.580E-10	0.0000	4.089E-11	0.0000	4.970E-10	0.0000
Ni-63	0.000E+00	0.0000	2.276E-08	0.0000	0.000E+00	0.0000	2.535E-06	0.0001	2.137E-08	0.0000	5.185E-07	0.0000	3.956E-09	0.0000
Sr-90	1.078E-04	0.0056	8.795E-07	0.0000	0.000E+00	0.0000	8.059E-04	0.0417	7.389E-06	0.0004	1.259E-05	0.0007	1.946E-07	0.0000
Total	1.847E-02	0.9548	9.347E-07	0.0000	0.000E+00	0.0000	8.469E-04	0.0438	9.810E-06	0.0005	1.656E-05	0.0009	2.690E-07	0.0000

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

As mrem/yr and Fraction of Total Dose At t = 1.000E+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.
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.418E-06	0.0001
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.657E-02	0.8566
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.835E-03	0.0949
Ni-63	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.102E-06	0.0002
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	9.347E-04	0.0483
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.934E-02	1.0000

*Sum of all water independent and dependent pathways.

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

As mrem/yr and Fraction of Total Dose At t = 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.
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	5.352E-18	0.0000	1.135E-23	0.0000	0.000E+00	0.0000	2.262E-21	0.0000	1.147E-22	0.0000	4.507E-23	0.0000	2.641E-24	0.0000
Cs-137	1.623E-04	0.9555	2.312E-10	0.0000	0.000E+00	0.0000	3.153E-07	0.0019	2.087E-08	0.0001	2.922E-08	0.0002	6.866E-10	0.0000
Eu-152	5.578E-08	0.0003	2.720E-13	0.0000	0.000E+00	0.0000	3.732E-13	0.0000	1.069E-14	0.0000	1.198E-15	0.0000	1.511E-14	0.0000
Ni-63	0.000E+00	0.0000	5.288E-09	0.0000	0.000E+00	0.0000	4.923E-07	0.0029	4.374E-09	0.0000	1.034E-07	0.0006	9.192E-10	0.0000
Sr-90	8.790E-07	0.0052	7.172E-09	0.0000	0.000E+00	0.0000	5.492E-06	0.0323	5.090E-08	0.0003	8.618E-08	0.0005	1.587E-09	0.0000
Total	1.632E-04	0.9610	1.269E-08	0.0001	0.000E+00	0.0000	6.299E-06	0.0371	7.614E-08	0.0004	2.189E-07	0.0013	3.193E-09	0.0000

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

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

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.
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.355E-18	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.626E-04	0.9577
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.578E-08	0.0003
Ni-63	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.063E-07	0.0036
Sr-90	3.930E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.837E-13	0.0000	2.745E-14	0.0000	3.294E-14	0.0000	6.520E-06	0.0384
Total	3.930E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.837E-13	0.0000	2.745E-14	0.0000	3.294E-14	0.0000	1.698E-04	1.0000

*Sum of all water independent and dependent pathways.

Summary : RESRAD Default Parameters

File : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\AREA FACTOR\1M\FCS SOIL AF 1 DCGL 1M.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.
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	1.316E-11	0.0104	2.170E-17	0.0000	0.000E+00	0.0000	9.225E-15	0.0000	1.075E-15	0.0000	1.202E-15	0.0000	6.443E-17	0.0000
Eu-152	7.316E-24	0.0000	6.009E-17	0.0000	0.000E+00	0.0000	3.453E-19	0.0000	2.454E-20	0.0000	9.002E-22	0.0000	7.543E-20	0.0000
Ni-63	0.000E+00	0.0000	3.199E-11	0.0254	0.000E+00	0.0000	9.282E-10	0.7362	1.391E-11	0.0110	2.649E-10	0.2101	5.560E-12	0.0044
Sr-90	3.757E-14	0.0000	3.512E-16	0.0000	0.000E+00	0.0000	8.383E-14	0.0001	8.890E-16	0.0000	1.400E-15	0.0000	7.770E-17	0.0000
Total	1.320E-11	0.0105	3.199E-11	0.0254	0.000E+00	0.0000	9.283E-10	0.7363	1.391E-11	0.0110	2.649E-10	0.2101	5.560E-12	0.0044

Total Dose 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.
C-14	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.317E-11	0.0104
Eu-152	3.726E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.902E-24	0.0000	3.936E-26	0.0000	2.232E-27	0.0000	6.057E-17	0.0000
Ni-63	3.022E-12	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	2.444E-16	0.0000	1.480E-17	0.0000	2.894E-16	0.0000	1.248E-09	0.9895
Sr-90	7.753E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.570E-21	0.0000	5.416E-22	0.0000	6.498E-22	0.0000	1.242E-13	0.0001
Total	3.022E-12	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	2.444E-16	0.0000	1.481E-17	0.0000	2.894E-16	0.0000	1.261E-09	1.0000

*Sum of all water independent and dependent pathways.

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
C-14	C-14	1.000E+00	1.455E-05	2.230E-08	3.672E-14	1.528E-34	0.000E+00	1.251E-37	0.000E+00	0.000E+00
Co-60	Co-60	1.000E+00	7.296E-01	6.397E-01	4.917E-01	1.959E-01	1.411E-02	1.418E-06	5.355E-18	0.000E+00
Cs-137+D	Cs-137+D	1.000E+00	1.672E-01	1.634E-01	1.560E-01	1.327E-01	8.357E-02	1.657E-02	1.626E-04	1.317E-11
Eu-152	Eu-152	7.208E-01	2.398E-01	2.277E-01	2.052E-01	1.426E-01	5.039E-02	1.322E-03	4.021E-08	5.274E-24
Eu-152	Eu-152	2.792E-01	9.290E-02	8.819E-02	7.948E-02	5.523E-02	1.952E-02	5.122E-04	1.557E-08	2.043E-24
Eu-152	Gd-152	2.792E-01	1.655E-18	4.849E-18	1.076E-17	2.720E-17	5.137E-17	6.397E-17	6.345E-17	6.057E-17
Eu-152	ΣDSR(j)		9.290E-02	8.819E-02	7.948E-02	5.523E-02	1.952E-02	5.122E-04	1.557E-08	6.057E-17
Ni-63	Ni-63	1.000E+00	6.945E-06	6.889E-06	6.779E-06	6.409E-06	5.456E-06	3.102E-06	6.063E-07	1.248E-09
Sr-90+D	Sr-90+D	1.000E+00	1.110E-02	1.083E-02	1.031E-02	8.670E-03	5.287E-03	9.347E-04	6.520E-06	1.242E-13

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

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
C-14	1.719E+06	1.121E+09	*4.455E+12	*4.455E+12	*4.455E+12	*4.455E+12	*4.455E+12	*4.455E+12
Co-60	3.427E+01	3.908E+01	5.084E+01	1.276E+02	1.771E+03	1.763E+07	*1.132E+15	*1.132E+15
Cs-137	1.495E+02	1.530E+02	1.602E+02	1.884E+02	2.991E+02	1.509E+03	1.537E+05	1.898E+12
Eu-152	7.513E+01	7.915E+01	8.782E+01	1.264E+02	3.576E+02	1.363E+04	4.482E+08	*1.765E+14
Ni-63	3.600E+06	3.629E+06	3.688E+06	3.901E+06	4.582E+06	8.060E+06	4.123E+07	2.004E+10
Sr-90	2.252E+03	2.308E+03	2.425E+03	2.884E+03	4.729E+03	2.675E+04	3.834E+06	*1.365E+14

*At specific activity limit

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

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
C-14	1.000E+00	0.000E+00	1.455E-05	1.719E+06	1.455E-05	1.719E+06
Co-60	1.000E+00	0.000E+00	7.296E-01	3.427E+01	7.296E-01	3.427E+01
Cs-137	1.000E+00	0.000E+00	1.672E-01	1.495E+02	1.672E-01	1.495E+02
Eu-152	1.000E+00	0.000E+00	3.327E-01	7.513E+01	3.327E-01	7.513E+01
Ni-63	1.000E+00	0.000E+00	6.945E-06	3.600E+06	6.945E-06	3.600E+06
Sr-90	1.000E+00	0.000E+00	1.110E-02	2.252E+03	1.110E-02	2.252E+03

Summary : RESRAD Default Parameters

File : C:\USERS\DNF\DOCUMENTS\FT CALHOUN\RESRAD INPUT FILES\AREA FACTOR\1M\FCS SOIL AF 1 DCGL 1M.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
C-14	C-14	1.000E+00	1.455E-05	2.230E-08	3.672E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Co-60	Co-60	1.000E+00	7.296E-01	6.397E-01	4.917E-01	1.959E-01	1.411E-02	1.418E-06	5.355E-18	0.000E+00
Cs-137	Cs-137	1.000E+00	1.672E-01	1.634E-01	1.560E-01	1.327E-01	8.357E-02	1.657E-02	1.626E-04	1.317E-11
Eu-152	Eu-152	7.208E-01	2.398E-01	2.277E-01	2.052E-01	1.426E-01	5.039E-02	1.322E-03	4.021E-08	5.274E-24
Eu-152	Eu-152	2.792E-01	9.290E-02	8.819E-02	7.948E-02	5.523E-02	1.952E-02	5.122E-04	1.557E-08	2.043E-24
Eu-152	ΣDOSE(j)		3.327E-01	3.159E-01	2.847E-01	1.978E-01	6.991E-02	1.835E-03	5.578E-08	7.316E-24
Gd-152	Eu-152	2.792E-01	1.655E-18	4.849E-18	1.076E-17	2.720E-17	5.137E-17	6.397E-17	6.345E-17	6.057E-17
Ni-63	Ni-63	1.000E+00	6.945E-06	6.889E-06	6.779E-06	6.409E-06	5.456E-06	3.102E-06	6.063E-07	1.248E-09
Sr-90	Sr-90	1.000E+00	1.110E-02	1.083E-02	1.031E-02	8.670E-03	5.287E-03	9.347E-04	6.520E-06	1.242E-13

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

Individual Nuclide Soil Concentration

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
C-14	C-14	1.000E+00	1.000E+00	1.305E-03	2.156E-09	9.067E-30	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Co-60	Co-60	1.000E+00	1.000E+00	8.768E-01	6.740E-01	2.684E-01	1.935E-02	1.944E-06	7.341E-18	0.000E+00
Cs-137	Cs-137	1.000E+00	1.000E+00	9.771E-01	9.330E-01	7.936E-01	4.998E-01	9.910E-02	9.732E-04	9.133E-11
Eu-152	Eu-152	7.208E-01	7.208E-01	6.843E-01	6.167E-01	4.285E-01	1.514E-01	3.974E-03	1.208E-07	1.873E-23
Eu-152	Eu-152	2.792E-01	2.792E-01	2.651E-01	2.389E-01	1.660E-01	5.866E-02	1.540E-03	4.681E-08	7.254E-24
Eu-152	ΣS(j):		1.000E+00	9.493E-01	8.555E-01	5.945E-01	2.101E-01	5.514E-03	1.676E-07	2.598E-23
Gd-152	Eu-152	2.792E-01	0.000E+00	1.746E-15	4.977E-15	1.397E-14	2.719E-14	3.413E-14	3.398E-14	3.282E-14
Ni-63	Ni-63	1.000E+00	1.000E+00	9.927E-01	9.783E-01	9.296E-01	8.034E-01	4.821E-01	1.120E-01	6.776E-04
Sr-90	Sr-90	1.000E+00	1.000E+00	9.762E-01	9.304E-01	7.863E-01	4.861E-01	9.030E-02	7.364E-04	3.606E-11

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

RESCALC.EXE execution time = 0.81 seconds