

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL

File : Ag108m-concrete-DCGL.RAD

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
Summary of Pathway Selections	6
Contaminated Zone and Total Dose Summary	7
Total Dose Components	
Time = 0.000E+00	8
Time = 1.000E+00	9
Time = 3.000E+00	10
Time = 1.000E+01	11
Time = 3.000E+01	12
Time = 1.000E+02	13
Time = 3.000E+02	14
Time = 1.000E+03	15
Dose/Source Ratios Summed Over All Pathways	16
Single Radionuclide Soil Guidelines	16
Dose Per Nuclide Summed Over All Pathways	17
Soil Concentration Per Nuclide	17

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Ag108m-concrete-DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary
 File: YR Concrete

0 Menu	Parameter	Current Value	Default	Parameter Name
B-1 B-1	Dose conversion factors for inhalation, mrem/pCi: Ag-108m+D	2.830E-04	2.830E-04	DCF2 (1)
D-1 D-1	Dose conversion factors for ingestion, mrem/pCi: Ag-108m+D	7.620E-06	7.620E-06	DCF3 (1)
D-34	Food transfer factors:			
D-34	Ag-108m+D, plant/soil concentration ratio, dimensionless	1.470E-05	1.500E-01	RTF (1,1)
D-34	Ag-108m+D, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	3.000E-03	RTF (1,2)
D-34	Ag-108m+D, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	9.570E-03	2.500E-02	RTF (1,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ag-108m+D, fish	5.000E+00	5.000E+00	BIOFAC (1,1)
D-5	Ag-108m+D, crustacea and mollusks	7.700E+02	7.700E+02	BIOFAC (1,2)

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Agl08m-concrete-DCGL.RAD

Site-Specific Parameter Summary					
Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	5.020E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.800E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	8.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	2.500E+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): Ag-108m	1.000E+00	0.000E+00	---	S1(1)
R012	Concentration in groundwater (pCi/L): Ag-108m	not used	0.000E+00	---	W1(1)
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)	1.540E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	8.500E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	7.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.750E-01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.030E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	6.250E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.200E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	4.350E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	6.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	7.770E+05	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)	1.540E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	2.800E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.100E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	7.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.000E-01	2.000E-02	---	HGWT
R014	Saturated zone b parameter	9.750E-01	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	0	1	---	NS

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Ag108m-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Ag-108m				
R016	Contaminated zone (cm**3/g)	6.500E+03	0.000E+00	---	DCNUCC (1)
R016	Saturated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.021E-06	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.330E-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	3.980E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.571E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.181E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+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)	2.060E+01	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	1.826E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	4.785E+02	5.100E+02	---	DWI

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Agl08m-concrete-DCGL.RAD

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	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.710E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	6.320E+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)	5.000E-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)	2.050E+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)	2.889E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.887E+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	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)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (l/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (l/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
C14	DCF correction factor for gaseous forms of C14	not used	8.894E+01	---	CO2F

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Agl08m-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

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

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
File : Ag108m-concrete-DCGL.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	5020.00 square meters	Ag-108m	1.000E+00
Thickness:	3.80 meters		
Cover Depth:	0.00 meters		

0

Total Dose TDOSE(t), mrem/yr							
Basic Radiation Dose Limit = 2.500E+01 mrem/yr							
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)							
t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02
TDOSE(t):	3.379E+00	3.361E+00	3.324E+00	3.199E+00	2.868E+00	1.956E+00	6.554E-01
M(t):	1.352E-01	1.344E-01	1.330E-01	1.280E-01	1.147E-01	7.824E-02	2.622E-02
Maximum TDOSE(t):	3.379E+00 mrem/yr	at t = 0.000E+00 years					

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Ag108m-concrete-DCGL.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

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.
Ag-108m	3.369E+00	0.9970	4.177E-06	0.0000	0.000E+00	0.0000	1.710E-05	0.0000	4.954E-04	0.0001	8.499E-03	0.0025	1.076E-04	0.0000
Total	3.369E+00	0.9970	4.177E-06	0.0000	0.000E+00	0.0000	1.710E-05	0.0000	4.954E-04	0.0001	8.499E-03	0.0025	1.076E-04	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

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.
Ag-108m	5.303E-04	0.0002	5.705E-06	0.0000	0.000E+00	0.0000	9.444E-05	0.0000	1.537E-05	0.0000	4.916E-04	0.0001	3.379E+00	1.0000
Total	5.303E-04	0.0002	5.705E-06	0.0000	0.000E+00	0.0000	9.444E-05	0.0000	1.537E-05	0.0000	4.916E-04	0.0001	3.379E+00	1.0000

0*Sum of all water independent and dependent pathways.

Part I: Mixture Sums and Single Radionuclide Guidelines

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

Summary : YR submerged concrete- Sensitivity analysis, Am-241-DCGL
 File : Am-241-concrete_DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary
 File: YR Concrete

0 Menu	Parameter	Current Value	Default	Parameter Name
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Am-241	4.440E-01	4.440E-01	DCF2 (1)
B-1	Np-237+D	5.400E-01	5.400E-01	DCF2 (2)
B-1	Th-229+D	2.160E+00	2.160E+00	DCF2 (3)
B-1	U-233	1.350E-01	1.350E-01	DCF2 (4)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Am-241	3.640E-03	3.640E-03	DCF3 (1)
D-1	Np-237+D	4.440E-03	4.440E-03	DCF3 (2)
D-1	Th-229+D	4.030E-03	4.030E-03	DCF3 (3)
D-1	U-233	2.890E-04	2.890E-04	DCF3 (4)
D-34	Food transfer factors:			
D-34	Am-241 , plant/soil concentration ratio, dimensionless	7.860E-04	1.000E-03	RTF (1,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF (1,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF (1,3)
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	3.470E-04	2.000E-02	RTF (2,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF (2,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-05	5.000E-06	RTF (2,3)
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	8.240E-05	1.000E-03	RTF (3,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF (3,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF (3,3)
D-34	U-233 , plant/soil concentration ratio, dimensionless	5.710E-03	2.500E-03	RTF (4,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	3.400E-04	RTF (4,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	4.000E-04	6.000E-04	RTF (4,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Am-241 , fish	6.290E+01	3.000E+01	BIOFAC (1,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC (1,2)
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC (2,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC (2,2)
D-5	Th-229+D , fish	9.900E+01	1.000E+02	BIOFAC (3,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (3,2)
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC (4,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (4,2)

Summary : YR submerged concrete- Sensitivity analysis, Am-241-DCGL
 File : Am-241-concrete_DCGL.RAD

Site-Specific Parameter Summary					
Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	5.020E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.800E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	8.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	2.500E+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 (1)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1 (1)
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)	1.540E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	8.500E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	7.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.750E-01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.030E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	6.250E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.200E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	4.350E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	6.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	7.770E+05	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)	1.540E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	2.800E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.100E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	7.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.000E-01	2.000E-02	---	HGWT
R014	Saturated zone b parameter	9.750E-01	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	0	1	---	NS

Summary : YR submerged concrete- Sensitivity analysis, Am-241-DCGL
 File : Am-241-concrete_DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	4.470E+02	2.000E+01	---	DCNUCC (1)
R016	Saturated zone (cm**3/g)	0.000E+00	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.312E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Np-237				
R016	Contaminated zone (cm**3/g)	7.070E+02	-1.000E+00	---	DCNUCC (2)
R016	Saturated zone (cm**3/g)	0.000E+00	-1.000E+00	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.293E-05	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	1.580E+03	6.000E+04	---	DCNUCC (3)
R016	Saturated zone (cm**3/g)	0.000E+00	6.000E+04	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.711E-05	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	1.470E+02	5.000E+01	---	DCNUCC (4)
R016	Saturated zone (cm**3/g)	0.000E+00	5.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.987E-04	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.330E-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	2.725E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.571E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.181E-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)

Summary : YR submerged concrete- Sensitivity analysis, Am-241-DCGL
 File : Am-241-concrete_DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+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)	2.060E+01	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	1.826E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	4.785E+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	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.710E+01	6.800E+01	---	LFIS
R019	Livestock fodder intake for milk (kg/day)	6.320E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.060E+01	5.000E+01	---	LWIS
R019	Livestock water intake for milk (L/day)	6.000E+01	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	5.000E-01	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	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)	2.050E+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)	2.889E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.887E+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 : YR submerged concrete- Sensitivity analysis, Am-241-DCGL
 File : Am-241-concrete_DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	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)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (l/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (l/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
C14	DCF correction factor for gaseous forms of C14	not used	8.894E+01	---	CO2F
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)

Summary : YR submerged concrete- Sensitivity analysis, Am-241-DCGL
 File : Am-241-concrete_DCGL.RAD

Site-Specific Parameter Summary (continued)					
Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	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	active
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : YR submerged concrete- Sensitivity analysis, Am-241-DCGL
 File : Am-241-concrete_DCGL.RAD

Contaminated Zone Dimensions Initial Soil Concentrations, pCi/g

Area: 5020.00 square meters
 Thickness: 3.80 meters
 Cover Depth: 0.00 meters

Am-241 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): 5.496E+00 5.760E+00 5.738E+00 5.661E+00 5.445E+00 4.753E+00 3.218E+00 8.092E-01
 M(t): 2.199E-01 2.304E-01 2.295E-01 2.264E-01 2.178E-01 1.901E-01 1.287E-01 3.237E-02
 Maximum TDOSE(t): 5.772E+00 mrem/yr at t = 0.1183 ± 0.0002 years

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

As mrem/yr and Fraction of Total Dose At t = 1.183E-01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.240E-02	0.0021	6.564E-03	0.0011	0.000E+00	0.0000	3.831E-01	0.0664	6.174E-03	0.0011	9.329E-04	0.0002	5.147E-02	0.0089
Total	1.240E-02	0.0021	6.564E-03	0.0011	0.000E+00	0.0000	3.831E-01	0.0664	6.174E-03	0.0011	9.329E-04	0.0002	5.147E-02	0.0089

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

As mrem/yr and Fraction of Total Dose At t = 1.183E-01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.893E+00	0.6743	1.156E-01	0.0200	0.000E+00	0.0000	1.299E+00	0.2251	3.350E-03	0.0006	9.423E-04	0.0002	5.772E+00	1.0000
Total	3.893E+00	0.6743	1.156E-01	0.0200	0.000E+00	0.0000	1.299E+00	0.2251	3.350E-03	0.0006	9.423E-04	0.0002	5.772E+00	1.0000

*Sum of all water independent and dependent pathways.

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
Summary of Pathway Selections	6
Contaminated Zone and Total Dose Summary	7
Total Dose Components	
Time = 0.000E+00	8
Time = 1.000E+00	9
Time = 3.000E+00	10
Time = 1.000E+01	11
Time = 3.000E+01	12
Time = 1.000E+02	13
Time = 3.000E+02	14
Time = 1.000E+03	15
Dose/Source Ratios Summed Over All Pathways	16
Single Radionuclide Soil Guidelines	16
Dose Per Nuclide Summed Over All Pathways	17
Soil Concentration Per Nuclide	17

Summary : YR submerged concrete- DCGL, C-14 File: C-14-concrete_DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary
File: YR Concrete

Menu	Parameter	Current Value	Default	Parameter Name
B-1 B-1	Dose conversion factors for inhalation, mrem/pCi: C-14	2.090E-06	2.090E-06	DCF2 (1)
D-1 D-1	Dose conversion factors for ingestion, mrem/pCi: C-14	2.090E-06	2.090E-06	DCF3 (1)
D-34	Food transfer factors:			
D-34	C-14 , plant/soil concentration ratio, dimensionless	2.120E-02	5.500E+00	RTF (1,1)
D-34	C-14 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.100E-02	3.100E-02	RTF (1,2)
D-34	C-14 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.200E-02	1.200E-02	RTF (1,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	C-14 , fish	1.030E+05	5.000E+04	BIOFAC (1,1)
D-5	C-14 , crustacea and mollusks	9.100E+03	9.100E+03	BIOFAC (1,2)

Summary : YR submerged concrete- DCGL, C-14

File: C-14-concrete_DCGL.RAD

Site-Specific Parameter Summary

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	5.020E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.800E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	8.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	2.500E+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	Concentration in groundwater (pCi/L): C-14	not used	0.000E+00	---	W1(1)
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)	1.540E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	8.500E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	7.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.750E-01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.030E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	6.250E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.200E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	4.350E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	6.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	7.770E+05	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)	1.540E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	2.800E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.100E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	7.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.000E-01	2.000E-02	---	HGWT
R014	Saturated zone b parameter	9.750E-01	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	0	1	---	NS

Summary : YR submerged concrete- DCGL, C-14

File: C-14-concrete_DCGL.RAD

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for C-14				
R016	Contaminated zone (cm**3/g)	7.070E+01	0.000E+00	---	DCNUCC (1)
R016	Saturated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.288E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.330E-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	2.725E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.571E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.181E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+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)	2.060E+01	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	1.826E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	4.785E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW

Summary : YR submerged concrete- DCGL, C-14

File: C-14-concrete_DCGL.RAD

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.710E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	6.320E+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)	5.000E-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)	2.050E+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)	2.889E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.887E+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	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)	4.270E-01	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (l/sec)	7.000E-07	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (l/sec)	1.000E-10	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	2.500E-01	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	1.000E-01	2.000E-01	---	AVFG5
C14	DCF correction factor for gaseous forms of C14	8.894E+01	8.894E+01	---	CO2F
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)

Summary : YR submerged concrete- DCGL, C-14

File: C-14-concrete_DCGL.RAD

Site-Specific Parameter Summary (continued)

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

Summary : YR submerged concrete- DCGL, C-14 File: C-14-concrete_DCGL.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	5020.00 square meters	C-14	1.000E+00
Thickness:	3.80 meters		
Cover Depth:	0.00 meters		

0

Total Dose TDOSE(t), mrem/yr							
Basic Radiation Dose Limit = 2.500E+01 mrem/yr							
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)							
t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02
TDOSE(t):	3.305E+00	2.954E-01	2.035E-03	5.328E-11	0.000E+00	0.000E+00	0.000E+00
M(t):	1.322E-01	1.182E-02	8.139E-05	2.131E-12	0.000E+00	0.000E+00	0.000E+00
Maximum TDOSE(t):	3.305E+00 mrem/yr	at t = 0.000E+00 years					

Summary : YR submerged concrete- DCGL, C-14

File: C-14-concrete_DCGL.RAD

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

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

Water Independent Pathways (Inhalation excludes radon)

0	Water Independent Pathways (Inhalation excludes radon)														
	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil		
	Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
	C-14	1.418E-06	0.0000	2.266E-04	0.0001	0.000E+00	0.0000	1.702E+00	0.5150	7.321E-01	0.2215	6.943E-01	0.2101	1.091E-05	0.0000
	Total	1.418E-06	0.0000	2.266E-04	0.0001	0.000E+00	0.0000	1.702E+00	0.5150	7.321E-01	0.2215	6.943E-01	0.2101	1.091E-05	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

0	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	5.151E-03	0.0016	1.534E-01	0.0464	0.000E+00	0.0000	1.123E-02	0.0034	3.436E-03	0.0010	2.842E-03	0.0009	3.305E+00	1.0000
Total	5.151E-03	0.0016	1.534E-01	0.0464	0.000E+00	0.0000	1.123E-02	0.0034	3.436E-03	0.0010	2.842E-03	0.0009	3.305E+00	1.0000
*Sum of all water independent and dependent pathways.														

0*Sum of all water independent and dependent pathways.

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	4
Summary of Pathway Selections	8
Contaminated Zone and Total Dose Summary	9
Total Dose Components	
Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
Time = 3.000E+02	16
Time = 1.000E+03	17
Dose/Source Ratios Summed Over All Pathways	18
Single Radionuclide Soil Guidelines	18
Dose Per Nuclide Summed Over All Pathways	19
Soil Concentration Per Nuclide	20

Summary : YR submerged concrete- DCGL, Cm-243 File: Cm-243-concrete_DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary
File: YR Concrete

Menu	Parameter	Current Value	Default	Parameter Name
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	6.720E+00	6.720E+00	DCF2 (1)
B-1	Am-243+D	4.400E-01	4.400E-01	DCF2 (2)
B-1	Cm-243	3.070E-01	3.070E-01	DCF2 (3)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 (5)
B-1	Pu-239	4.290E-01	4.290E-01	DCF2 (6)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 (7)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.480E-02	DCF3 (1)
D-1	Am-243+D	3.630E-03	3.630E-03	DCF3 (2)
D-1	Cm-243	2.510E-03	2.510E-03	DCF3 (3)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 (5)
D-1	Pu-239	3.540E-03	3.540E-03	DCF3 (6)
D-1	U-235+D	2.670E-04	2.670E-04	DCF3 (7)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	1.870E-04	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-06	2.000E-05	RTF (1,3)
D-34	Am-243+D , plant/soil concentration ratio, dimensionless	1.870E-04	1.000E-03	RTF (2,1)
D-34	Am-243+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF (2,2)
D-34	Am-243+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF (2,3)
D-34	Cm-243 , plant/soil concentration ratio, dimensionless	2.530E-03	1.000E-03	RTF (3,1)
D-34	Cm-243 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF (3,2)
D-34	Cm-243 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF (3,3)
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.460E-03	1.000E-02	RTF (5,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-06	5.000E-03	RTF (5,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF (5,3)
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	8.240E-05	1.000E-03	RTF (6,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF (6,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF (6,3)
D-34	U-235+D , plant/soil concentration ratio, dimensionless	5.710E-03	2.500E-03	RTF (7,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	3.400E-04	RTF (7,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	4.000E-04	6.000E-04	RTF (7,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC (1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC (1,2)
D-5	Am-243+D , fish	3.000E+01	3.000E+01	BIOFAC (2,1)
D-5	Am-243+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC (2,2)
D-5	Cm-243 , fish	3.000E+01	3.000E+01	BIOFAC (3,1)
D-5	Cm-243 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC (3,2)

Summary : YR submerged concrete- DCGL, Cm-243 File: Cm-243-concrete_DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary (continued)
File: YR Concrete

0 Menu	Parameter	Current Value	Default	Parameter Name
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC (5,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC (5,2)
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC (6,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC (6,2)
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC (7,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (7,2)

Summary : YR submerged concrete- DCGL, Cm-243 File: Cm-243-concrete_DCGL.RAD

Site-Specific Parameter Summary

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	5.020E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.800E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	8.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	2.500E+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): Cm-243	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Cm-243	not used	0.000E+00	---	W1(3)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.540E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	8.500E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	7.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.750E-01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.030E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	6.250E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.200E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	4.350E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	6.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	7.770E+05	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)	1.540E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	2.800E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.100E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	7.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.000E-01	2.000E-02	---	HGWT
R014	Saturated zone b parameter	9.750E-01	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	0	1	---	NS

Summary : YR submerged concrete- DCGL, Cm-243 File: Cm-243-concrete_DCGL.RAD

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Cm-243				
R016	Contaminated zone (cm**3/g)	4.000E+02	-1.000E+00	---	DCNUCC (3)
R016	Saturated zone (cm**3/g)	0.000E+00	-1.000E+00	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.466E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	1.000E+03	2.000E+01	---	DCNUCC (1)
R016	Saturated zone (cm**3/g)	0.000E+00	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.863E-05	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 (2)
R016	Saturated zone (cm**3/g)	0.000E+00	2.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.863E-05	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	3.160E+02	5.000E+01	---	DCNUCC (5)
R016	Saturated zone (cm**3/g)	0.000E+00	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.855E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter Pu-239				
R016	Contaminated zone (cm**3/g)	1.580E+03	2.000E+03	---	DCNUCC (6)
R016	Saturated zone (cm**3/g)	0.000E+00	2.000E+03	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.711E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)
R016	Distribution coefficients for daughter U-235				
R016	Contaminated zone (cm**3/g)	1.470E+02	5.000E+01	---	DCNUCC (7)
R016	Saturated zone (cm**3/g)	0.000E+00	5.000E+01	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.987E-04	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.330E-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	3.980E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.571E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.181E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : YR submerged concrete- DCGL, Cm-243 File: Cm-243-concrete_DCGL.RAD

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
R017	Ring 7	not used	0.000E+00	---	FRACA(7)
R017	Ring 8	not used	0.000E+00	---	FRACA(8)
R017	Ring 9	not used	0.000E+00	---	FRACA(9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+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)	2.060E+01	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	1.826E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	4.785E+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	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.710E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	6.320E+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)	5.000E-01	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	4.000E-04	1.000E-04	---	MLFD

Summary : YR submerged concrete- DCGL, Cm-243 File: Cm-243-concrete_DCGL.RAD

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Depth of soil mixing layer (m)	2.300E-01	1.500E-01	---	DM
R019	Depth of roots (m)	2.050E+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)	2.889E+00	1.500E+00	---	YV (2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.887E+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)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (l/sec)	not used	7.000E-07	---	EVSIN
C14	C-12 evasion flux rate from soil (l/sec)	not used	1.000E-10	---	REVSIN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
C14	DCF correction factor for gaseous forms of C14	not used	8.894E+01	---	CO2F
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

Summary : YR submerged concrete- DCGL, Cm-243 File: Cm-243-concrete_DCGL.RAD

Site-Specific Parameter Summary (continued)					
Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Volumetric water content of the 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	---	HMX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	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	active
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : YR submerged concrete- DCGL, Cm-243 File: Cm-243-concrete_DCGL.RAD

Contaminated Zone DimensionsInitial Soil Concentrations, pCi/g

Area: 5020.00 square meters
 Thickness: 3.80 meters
 Cover Depth: 0.00 meters

Cm-243 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): 4.893E+00 4.979E+00 4.740E+00 3.989E+00 2.438E+00 4.357E-01 4.838E-03 1.373E-03
 M(t): 1.957E-01 1.992E-01 1.896E-01 1.596E-01 9.750E-02 1.743E-02 1.935E-04 5.492E-05
 Maximum TDOSE(t): 5.091E+00 mrem/yr at t = 0.1001 ± 0.0002 years

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

As mrem/yr and Fraction of Total Dose At t = 1.001E-01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cm-243	2.050E-01	0.0403	4.478E-03	0.0009	0.000E+00	0.0000	8.361E-01	0.1642	1.832E-03	0.0004	7.617E-04	0.0001	3.501E-02	0.0069
Total	2.050E-01	0.0403	4.478E-03	0.0009	0.000E+00	0.0000	8.361E-01	0.1642	1.832E-03	0.0004	7.617E-04	0.0001	3.501E-02	0.0069

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

As mrem/yr and Fraction of Total Dose At t = 1.001E-01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cm-243	2.958E+00	0.5811	6.060E-02	0.0119	0.000E+00	0.0000	9.869E-01	0.1939	1.070E-03	0.0002	7.385E-04	0.0001	5.091E+00	1.0000
Total	2.958E+00	0.5811	6.060E-02	0.0119	0.000E+00	0.0000	9.869E-01	0.1939	1.070E-03	0.0002	7.385E-04	0.0001	5.091E+00	1.0000

Sum of all water independent and dependent pathways.

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
Summary of Pathway Selections	6
Contaminated Zone and Total Dose Summary	7
Total Dose Components	
Time = 0.000E+00	8
Time = 1.000E+00	9
Time = 3.000E+00	10
Time = 1.000E+01	11
Time = 3.000E+01	12
Time = 1.000E+02	13
Time = 3.000E+02	14
Time = 1.000E+03	15
Dose/Source Ratios Summed Over All Pathways	16
Single Radionuclide Soil Guidelines	16
Dose Per Nuclide Summed Over All Pathways	17
Soil Concentration Per Nuclide	17

Summary : YR submerged concrete- Sensitivity analysis, Co-60

File : Co-60-concrete_DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary

File: YR Concrete

0 Menu	Parameter	Current Value	Default	Parameter Name
B-1 B-1	Dose conversion factors for inhalation, mrem/pCi: Co-60	2.190E-04	2.190E-04	DCF2 (1)
D-1 D-1	Dose conversion factors for ingestion, mrem/pCi: Co-60	2.690E-05	2.690E-05	DCF3 (1)
D-34	Food transfer factors:			
D-34	Co-60 , plant/soil concentration ratio, dimensionless	2.500E-03	8.000E-02	RTF (1,1)
D-34	Co-60 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.850E-02	2.000E-02	RTF (1,2)
D-34	Co-60 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF (1,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Co-60 , fish	3.000E+02	3.000E+02	BIOFAC (1,1)
D-5	Co-60 , crustacea and mollusks	2.000E+02	2.000E+02	BIOFAC (1,2)

Summary : YR submerged concrete- Sensitivity analysis, Co-60
 File : Co-60-concrete_DCGL.RAD

Site-Specific Parameter Summary					
Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	5.020E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.800E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	8.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	2.500E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T (2)
R011	Times for calculations (yr)	3.000E+00	3.000E+00	---	T (3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T (4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T (5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T (6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T (7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T (8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T (9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Co-60	1.000E+00	0.000E+00	---	S1 (1)
R012	Concentration in groundwater (pCi/L): Co-60	not used	0.000E+00	---	W1 (1)
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)	1.540E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	8.500E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	7.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.750E-01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.030E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	6.250E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.200E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	4.350E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	6.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	7.770E+05	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)	1.540E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	2.800E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.100E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	7.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.000E-01	2.000E-02	---	HGWT
R014	Saturated zone b parameter	9.750E-01	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	0	1	---	NS

Summary : YR submerged concrete- Sensitivity analysis, Co-60
 File : Co-60-concrete_DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Co-60				
R016	Contaminated zone (cm**3/g)	2.820E+02	1.000E+03	---	DCNUCC (1)
R016	Saturated zone (cm**3/g)	0.000E+00	1.000E+03	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.079E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.330E-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	3.980E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.571E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.181E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+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)	2.060E+01	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	1.826E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	4.785E+02	5.100E+02	---	DWI

Summary : YR submerged concrete- Sensitivity analysis, Co-60

File : Co-60-concrete_DCGL.RAD

Site-Specific Parameter Summary (continued)

0 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	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.710E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	6.320E+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)	5.000E-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)	2.050E+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)	2.889E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.887E+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	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)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (l/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (l/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
C14	DCF correction factor for gaseous forms of C14	not used	8.894E+01	---	CO2F

Summary : YR submerged concrete- Sensitivity analysis, Co-60
 File : Co-60-concrete_DCGL.RAD

Site-Specific Parameter Summary (continued)

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

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	5020.00 square meters	Co-60	1.000E+00
Thickness:	3.80 meters		
Cover Depth:	0.00 meters		

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):	5.506E+00	4.833E+00	3.714E+00	1.477E+00	1.060E-01	1.050E-05	3.808E-17	0.000E+00
M(t):	2.202E-01	1.933E-01	1.486E-01	5.909E-02	4.241E-03	4.200E-07	1.523E-18	0.000E+00
Maximum TDOSE(t):	5.506E+00 mrem/yr		at t = 0.000E+00 years					

Summary : YR submerged concrete- Sensitivity analysis, Co-60

File : Co-60-concrete_DCGL.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

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.
Co-60	5.342E+00	0.9702	3.037E-06	0.0000	0.000E+00	0.0000	8.413E-03	0.0015	5.452E-02	0.0099	7.736E-03	0.0014	3.568E-04	0.0001
Total	5.342E+00	0.9702	3.037E-06	0.0000	0.000E+00	0.0000	8.413E-03	0.0015	5.452E-02	0.0099	7.736E-03	0.0014	3.568E-04	0.0001

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

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

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.
Co-60	4.040E-02	0.0073	3.473E-03	0.0006	0.000E+00	0.0000	7.203E-03	0.0013	3.417E-02	0.0062	7.819E-03	0.0014	5.506E+00	1.0000
Total	4.040E-02	0.0073	3.473E-03	0.0006	0.000E+00	0.0000	7.203E-03	0.0013	3.417E-02	0.0062	7.819E-03	0.0014	5.506E+00	1.0000

0*Sum of all water independent and dependent pathways.

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
Summary of Pathway Selections	6
Contaminated Zone and Total Dose Summary	7
Total Dose Components	
Time = 0.000E+00	8
Time = 1.000E+00	9
Time = 3.000E+00	10
Time = 1.000E+01	11
Time = 3.000E+01	12
Time = 1.000E+02	13
Time = 3.000E+02	14
Time = 1.000E+03	15
Dose/Source Ratios Summed Over All Pathways	16
Single Radionuclide Soil Guidelines	16
Dose Per Nuclide Summed Over All Pathways	17
Soil Concentration Per Nuclide	17

Summary : YR submerged concrete- DCGL, Cs-134 File: Cs-134-concrete_DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary
File: YR Concrete

Menu	Parameter	Current Value	Default	Parameter Name
B-1 B-1	Dose conversion factors for inhalation, mrem/pCi: Cs-134	4.630E-05	4.630E-05	DCF2 (1)
D-1 D-1	Dose conversion factors for ingestion, mrem/pCi: Cs-134	7.330E-05	7.330E-05	DCF3 (1)
D-34	Food transfer factors:			
D-34	Cs-134 , plant/soil concentration ratio, dimensionless	4.030E-02	4.000E-02	RTF (1,1)
D-34	Cs-134 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	6.510E-02	3.000E-02	RTF (1,2)
D-34	Cs-134 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.390E-02	8.000E-03	RTF (1,3)
D-5 D-5 D-5	Bioaccumulation factors, fresh water, L/kg: Cs-134 , fish Cs-134 , crustacea and mollusks	2.000E+03 1.000E+02	2.000E+03 1.000E+02	BIOFAC (1,1) BIOFAC (1,2)

Summary : YR submerged concrete- DCGL, Cs-134 File: Cs-134-concrete_DCGL.RAD

Site-Specific Parameter Summary

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	5.020E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.800E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	8.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	2.500E+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): Cs-134	1.000E+00	0.000E+00	---	S1(1)
R012	Concentration in groundwater (pCi/L): Cs-134	not used	0.000E+00	---	W1(1)
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)	1.540E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	8.500E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	7.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.750E-01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.030E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	6.250E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.200E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	4.350E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	6.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	7.770E+05	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)	1.540E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	2.800E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.100E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	7.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.000E-01	2.000E-02	---	HGWT
R014	Saturated zone b parameter	9.750E-01	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	0	1	---	NS

Summary : YR submerged concrete- DCGL, Cs-134 File: Cs-134-concrete_DCGL.RAD

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Cs-134				
R016	Contaminated zone (cm**3/g)	1.370E+02	1.000E+03	---	DCNUCC (1)
R016	Saturated zone (cm**3/g)	0.000E+00	1.000E+03	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.278E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.330E-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	3.980E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.571E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.181E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+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)	2.060E+01	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	1.826E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	4.785E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW

Summary : YR submerged concrete- DCGL, Cs-134 File: Cs-134-concrete_DCGL.RAD

Site-Specific Parameter Summary (continued)

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.710E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	6.320E+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)	5.000E-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)	2.050E+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)	2.889E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.887E+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	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	2.150E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (l/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (l/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
C14	DCF correction factor for gaseous forms of C14	not used	8.894E+01	---	CO2F
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)

Summary : YR submerged concrete- DCGL, Cs-134 File: Cs-134-concrete_DCGL.RAD

Site-Specific Parameter Summary (continued)

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

0

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):	5.126E+00	3.725E+00	1.900E+00	1.800E-01	2.145E-04	1.253E-14	0.000E+00	0.000E+00
M(t):	2.050E-01	1.490E-01	7.599E-02	7.201E-03	8.581E-06	5.011E-16	0.000E+00	0.000E+00
Maximum TDose(t):	5.126E+00 mrem/yr	at t = 0.000E+00 years						

Summary : YR submerged concrete- DCGL, Cs-134 File: Cs-134-concrete_DCGL.RAD

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

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

Water Independent Pathways (Inhalation excludes radon)

Water Independent Pathways (Inhalation excludes radon)														
0	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	Radio- Nuclide	mrem/yr fract.	mrem/yr fract.	mrem/yr fract.	mrem/yr fract.	mrem/yr fract.	mrem/yr fract.	mrem/yr fract.	mrem/yr fract.	mrem/yr fract.	mrem/yr fract.	mrem/yr fract.	mrem/yr fract.	mrem/yr fract.
	Cs-134	2.812E+00 0.5485	5.818E-07 0.0000	0.000E+00 0.0000	3.346E-01 0.0653	4.201E-01 0.0820	6.144E-01 0.1199	8.810E-04 0.0002						
	Total	2.812E+00 0.5485	5.818E-07 0.0000	0.000E+00 0.0000	3.346E-01 0.0653	4.201E-01 0.0820	6.144E-01 0.1199	8.810E-04 0.0002						

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

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

Water Dependent Pathways

0	Water Dependent Pathways													
0	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Nuclide														
Cs-134	2.042E-01	0.0398	1.140E-01	0.0222	0.000E+00	0.0000	5.437E-02	0.0106	2.278E-01	0.0445	3.438E-01	0.0671	5.126E+00	1.0000
Total	2.042E-01	0.0398	1.140E-01	0.0222	0.000E+00	0.0000	5.437E-02	0.0106	2.278E-01	0.0445	3.438E-01	0.0671	5.126E+00	1.0000
0Sum of	all water independent and dependent pathways.													

0*Sum of all water independent and dependent pathways.

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
Summary of Pathway Selections	6
Contaminated Zone and Total Dose Summary	7
Total Dose Components	
Time = 0.000E+00	8
Time = 1.000E+00	9
Time = 3.000E+00	10
Time = 1.000E+01	11
Time = 3.000E+01	12
Time = 1.000E+02	13
Time = 3.000E+02	14
Time = 1.000E+03	15
Dose/Source Ratios Summed Over All Pathways	16
Single Radionuclide Soil Guidelines	16
Dose Per Nuclide Summed Over All Pathways	17
Soil Concentration Per Nuclide	17

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Cs137-concrete-DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary
 File: YR Concrete

0 Menu	Parameter	Current Value	Default	Parameter Name
B-1 B-1	Dose conversion factors for inhalation, mrem/pCi: Cs-137+D	3.190E-05	3.190E-05	DCF2 (1)
D-1 D-1	Dose conversion factors for ingestion, mrem/pCi: Cs-137+D	5.000E-05	5.000E-05	DCF3 (1)
D-34	Food transfer factors:			
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	5.930E-02	4.000E-02	RTF (1,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	6.510E-02	3.000E-02	RTF (1,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.390E-02	8.000E-03	RTF (1,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Cs-137+D , fish	3.200E+03	2.000E+03	BIOFAC (1,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC (1,2)

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Cs137-concrete-DCGL.RAD

Site-Specific Parameter Summary					
Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	5.020E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.800E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	8.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	2.500E+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): Cs-137	1.000E+00	0.000E+00	---	S1 (1)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1 (1)
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)	1.540E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	8.500E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	7.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.750E-01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.030E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	6.250E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.200E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	4.350E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	6.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	7.770E+05	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)	1.540E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	2.800E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.100E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	7.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.000E-01	2.000E-02	---	HGWT
R014	Saturated zone b parameter	9.750E-01	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	0	1	---	NS

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Cs137-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	1.370E+02	1.000E+03	---	DCNUCC (1)
R016	Saturated zone (cm**3/g)	0.000E+00	1.000E+03	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.278E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.330E-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	3.980E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.571E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.181E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+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)	2.060E+01	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	1.826E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	4.785E+02	5.100E+02	---	DWI

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Csl37-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

0 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	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.710E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	6.320E+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)	5.000E-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)	2.050E+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)	2.889E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.887E+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	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	2.150E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (l/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (l/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
C14	DCF correction factor for gaseous forms of C14	not used	8.894E+01	---	CO2F

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Cs137-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

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

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
File : Cs137-concrete-DCGL.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	5020.00 square meters	Cs-137	1.000E+00
Thickness:	3.80 meters		
Cover Depth:	0.00 meters		

0

Total Dose TDOSE(t), mrem/yr							
Basic Radiation Dose Limit = 2.500E+01 mrem/yr							
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)							
t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02
TDOSE(t):	3.505E+00	3.487E+00	3.326E+00	2.820E+00	1.759E+00	3.375E-01	3.016E-03
M(t):	1.402E-01	1.395E-01	1.331E-01	1.128E-01	7.038E-02	1.350E-02	1.206E-04
Maximum TDOSE(t):	3.505E+00 mrem/yr	at t = 0.000E+00 years					

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Cs137-concrete-DCGL.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

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.
Cs-137	1.178E+00	0.3363	4.666E-07	0.0000	0.000E+00	0.0000	3.909E-01	0.1116	4.414E-01	0.1259	6.800E-01	0.1940	6.995E-04	0.0002
Total	1.178E+00	0.3363	4.666E-07	0.0000	0.000E+00	0.0000	3.909E-01	0.1116	4.414E-01	0.1259	6.800E-01	0.1940	6.995E-04	0.0002

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

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.
Cs-137	1.635E-01	0.0466	1.459E-01	0.0416	0.000E+00	0.0000	4.376E-02	0.0125	1.837E-01	0.0524	2.763E-01	0.0788	3.505E+00	1.0000
Total	1.635E-01	0.0466	1.459E-01	0.0416	0.000E+00	0.0000	4.376E-02	0.0125	1.837E-01	0.0524	2.763E-01	0.0788	3.505E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL

File : Eu152-concrete-DCGL.RAD

Table of ContentsPart I: Mixture Sums and Single Radionuclide Guidelines

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

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
File : Eu152-concrete-DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary
File: YR Concrete

0 Menu	Parameter	Current Value	Default	Parameter Name
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Eu-152	2.210E-04	2.210E-04	DCF2(1)
B-1	Gd-152	2.430E-01	2.430E-01	DCF2(3)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Eu-152	6.480E-06	6.480E-06	DCF3(1)
D-1	Gd-152	1.610E-04	1.610E-04	DCF3(3)
D-34	Food transfer factors:			
D-34	Eu-152 , plant/soil concentration ratio, dimensionless	1.870E-04	2.500E-03	RTF(1,1)
D-34	Eu-152 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(1,2)
D-34	Eu-152 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Gd-152 , plant/soil concentration ratio, dimensionless	1.870E-04	2.500E-03	RTF(3,1)
D-34	Gd-152 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(3,2)
D-34	Gd-152 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-05	2.000E-05	RTF(3,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Eu-152 , fish	4.900E+01	5.000E+01	BIOFAC(1,1)
D-5	Eu-152 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Gd-152 , fish	2.500E+01	2.500E+01	BIOFAC(3,1)
D-5	Gd-152 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(3,2)

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
File : Eu152-concrete-DCGL.RAD

Site-Specific Parameter Summary

0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	5.020E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.800E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	8.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	2.500E+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): Eu-152	1.000E+00	0.000E+00	---	S1(1)
R012	Concentration in groundwater (pCi/L): Eu-152	not used	0.000E+00	---	W1(1)
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)	1.540E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	8.500E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	7.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.750E-01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.030E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	6.250E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.200E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	4.350E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	6.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	7.770E+05	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)	1.540E+00	1.500E+00	---	DENSAQ

R014	Saturated zone total porosity	2.800E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.100E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	7.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.000E-01	2.000E-02	---	HGWT
R014	Saturated zone b parameter	9.750E-01	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	0	1	---	NS

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Eu152-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Eu-152				
R016	Contaminated zone (cm**3/g)	1.000E+03	-1.000E+00	---	DCNUCC (1)
R016	Saturated zone (cm**3/g)	0.000E+00	-1.000E+00	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.863E-05	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Gd-152				
R016	Contaminated zone (cm**3/g)	1.000E+03	-1.000E+00	---	DCNUCC (3)
R016	Saturated zone (cm**3/g)	0.000E+00	-1.000E+00	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.863E-05	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.330E-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	3.980E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.571E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.181E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01	1.400E+01	---	DIET (2)

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Eul52-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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)	2.060E+01	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	1.826E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	4.785E+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	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.710E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	6.320E+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)	5.000E-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)	2.050E+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)	2.889E+00	1.500E+00	---	YV (2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.887E+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	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)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Eul52-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVS_N
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVS_N
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
C14	DCF correction factor for gaseous forms of C14	not used	8.894E+01	---	CO2F
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T (1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T (2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T (3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T (4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T (5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T (6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T (7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T (8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T (9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm*3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
File : Eu152-concrete-DCGL.RAD

Summary of Pathway Selections

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

File : Eu152-concrete-DCGL.RAD

Contaminated Zone Dimensions

Initial Soil Concentrations, pCi/g

Area: 5020.00 square meters
Thickness: 3.80 meters
Cover Depth: 0.00 meters

Eu-152	1.000E+00
--------	-----------

0

Total Dose TDOSE(t), mrem/yr

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

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

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TD0SE(t):	2.407E+00	2.285E+00	2.059E+00	1.430E+00	5.049E-01	1.320E-02	3.971E-07	3.102E-15
M(t):	9.626E-02	9.139E-02	8.235E-02	5.720E-02	2.019E-02	5.280E-04	1.588E-08	1.241E-16
OMaximum TD0SE(t):	2.407E+00	mrem/yr	at t = 0.000E+00 years					

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Eu152-concrete-DCGL.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

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.
Eu-152	2.402E+00	0.9982	3.187E-06	0.0000	0.000E+00	0.0000	1.593E-04	0.0001	4.155E-04	0.0002	4.524E-05	0.0000	8.938E-05	0.0000
Total	2.402E+00	0.9982	3.187E-06	0.0000	0.000E+00	0.0000	1.593E-04	0.0001	4.155E-04	0.0002	4.524E-05	0.0000	8.938E-05	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

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.
Eu-152	2.860E-03	0.0012	7.383E-05	0.0000	0.000E+00	0.0000	5.095E-04	0.0002	8.282E-05	0.0000	1.662E-05	0.0000	2.407E+00	1.0000
Total	2.860E-03	0.0012	7.383E-05	0.0000	0.000E+00	0.0000	5.095E-04	0.0002	8.282E-05	0.0000	1.662E-05	0.0000	2.407E+00	1.0000

0*Sum of all water independent and dependent pathways.

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
Summary of Pathway Selections	6
Contaminated Zone and Total Dose Summary	7
Total Dose Components	
Time = 0.000E+00	8
Time = 1.000E+00	9
Time = 3.000E+00	10
Time = 1.000E+01	11
Time = 3.000E+01	12
Time = 1.000E+02	13
Time = 3.000E+02	14
Time = 1.000E+03	15
Dose/Source Ratios Summed Over All Pathways	16
Single Radionuclide Soil Guidelines	16
Dose Per Nuclide Summed Over All Pathways	17
Soil Concentration Per Nuclide	17

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Eu154-concrete-DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary

File: YR Concrete

0 Menu	Parameter	Current Value	Default	Parameter Name
B-1 B-1	Dose conversion factors for inhalation, mrem/pCi: Eu-154	2.860E-04	2.860E-04	DCF2 (1)
D-1 D-1	Dose conversion factors for ingestion, mrem/pCi: Eu-154	9.550E-06	9.550E-06	DCF3 (1)
D-34	Food transfer factors:			
D-34	Eu-154 , plant/soil concentration ratio, dimensionless	1.870E-04	2.500E-03	RTF (1,1)
D-34	Eu-154 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF (1,2)
D-34	Eu-154 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-05	2.000E-05	RTF (1,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Eu-154 , fish	4.900E+01	5.000E+01	BIOFAC (1,1)
D-5	Eu-154 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC (1,2)

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Eu154-concrete-DCGL.RAD

Site-Specific Parameter Summary					
Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	5.020E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.800E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	8.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	2.500E+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): Eu-154	1.000E+00	0.000E+00	---	S1(1)
R012	Concentration in groundwater (pCi/L): Eu-154	not used	0.000E+00	---	W1(1)
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)	1.540E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	8.500E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	7.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.750E-01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.030E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	6.250E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.200E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	4.350E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	6.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	7.770E+05	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)	1.540E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	2.800E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.100E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	7.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.000E-01	2.000E-02	---	HGWT
R014	Saturated zone b parameter	9.750E-01	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	0	1	---	NS

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Eu154-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Eu-154				
R016	Contaminated zone (cm**3/g)	1.000E+03	-1.000E+00	---	DCNUCC (1)
R016	Saturated zone (cm**3/g)	0.000E+00	-1.000E+00	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.863E-05	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.330E-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	3.980E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.571E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.181E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+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)	2.060E+01	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	1.826E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	4.785E+02	5.100E+02	---	DWI

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Eul54-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

0 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	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.710E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	6.320E+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)	5.000E-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)	2.050E+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)	2.889E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.887E+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	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)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (l/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (l/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
C14	DCF correction factor for gaseous forms of C14	not used	8.894E+01	---	CO2F

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Eul54-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

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


```
File      : Eu154-concrete-DCGL.RAD
```

Contaminated Zone Dimensions

Initial Soil Concentrations, pCi/g

Area: 5020.00 square meters
Thickness: 3.80 meters
Cover Depth: 0.00 meters

Eu-154	1.000E+00
--------	-----------

0

Total Dose TDOSE(t), mrem/yr

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

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

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TD0SE(t):	2.607E+00	2.410E+00	2.058E+00	1.185E+00	2.450E-01	9.837E-04	1.400E-10	0.000E+00
M(t):	1.043E-01	9.639E-02	8.234E-02	4.742E-02	9.801E-03	3.935E-05	5.600E-12	0.000E+00
OMaximum TD0SE(t):	2.607E+00	mrem/yr	at t = 0.000E+00 years					

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Eu154-concrete-DCGL.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

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.
Eu-154	2.601E+00	0.9976	4.070E-06	0.0000	0.000E+00	0.0000	2.317E-04	0.0001	6.042E-04	0.0002	6.579E-05	0.0000	1.300E-04	0.0000
Total	2.601E+00	0.9976	4.070E-06	0.0000	0.000E+00	0.0000	2.317E-04	0.0001	6.042E-04	0.0002	6.579E-05	0.0000	1.300E-04	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

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.
Eu-154	4.157E-03	0.0016	1.073E-04	0.0000	0.000E+00	0.0000	7.405E-04	0.0003	1.203E-04	0.0000	2.415E-05	0.0000	2.607E+00	1.0000
Total	4.157E-03	0.0016	1.073E-04	0.0000	0.000E+00	0.0000	7.405E-04	0.0003	1.203E-04	0.0000	2.415E-05	0.0000	2.607E+00	1.0000

0*Sum of all water independent and dependent pathways.

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
Summary of Pathway Selections	6
Contaminated Zone and Total Dose Summary	7
Total Dose Components	
Time = 0.000E+00	8
Time = 1.000E+00	9
Time = 3.000E+00	10
Time = 1.000E+01	11
Time = 3.000E+01	12
Time = 1.000E+02	13
Time = 3.000E+02	14
Time = 1.000E+03	15
Dose/Source Ratios Summed Over All Pathways	16
Single Radionuclide Soil Guidelines	16
Dose Per Nuclide Summed Over All Pathways	17
Soil Concentration Per Nuclide	17

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Eu155-concrete-DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary
 File: YR Concrete

0 Menu	Parameter	Current Value	Default	Parameter Name
B-1 B-1	Dose conversion factors for inhalation, mrem/pCi: Eu-155	4.140E-05	4.140E-05	DCF2 (1)
D-1 D-1	Dose conversion factors for ingestion, mrem/pCi: Eu-155	1.530E-06	1.530E-06	DCF3 (1)
D-34	Food transfer factors:			
D-34	Eu-155 , plant/soil concentration ratio, dimensionless	1.870E-04	2.500E-03	RTF (1,1)
D-34	Eu-155 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF (1,2)
D-34	Eu-155 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-05	2.000E-05	RTF (1,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Eu-155 , fish	4.900E+01	5.000E+01	BIOFAC (1,1)
D-5	Eu-155 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC (1,2)

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Eu155-concrete-DCGL.RAD

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	5.020E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.800E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	8.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	2.500E+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): Eu-155	1.000E+00	0.000E+00	---	S1(1)
R012	Concentration in groundwater (pCi/L): Eu-155	not used	0.000E+00	---	W1(1)
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)	1.540E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	8.500E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	7.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.750E-01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.030E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	6.250E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.200E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	4.350E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	6.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	7.770E+05	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)	1.540E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	2.800E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.100E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	7.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.000E-01	2.000E-02	---	HGWT
R014	Saturated zone b parameter	9.750E-01	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	0	1	---	NS

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Eu155-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Eu-155				
R016	Contaminated zone (cm**3/g)	1.000E+03	-1.000E+00	---	DCNUCC (1)
R016	Saturated zone (cm**3/g)	0.000E+00	-1.000E+00	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.863E-05	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.330E-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	3.980E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.571E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.181E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+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)	2.060E+01	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	1.826E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	4.785E+02	5.100E+02	---	DWI

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Eul55-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

0 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	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.710E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	6.320E+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)	5.000E-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)	2.050E+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)	2.889E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.887E+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	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)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (l/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (l/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
C14	DCF correction factor for gaseous forms of C14	not used	8.894E+01	---	CO2F

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Eul55-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

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


```
File      : Eu155-concrete-DCGL.RAD
```

Contaminated Zone Dimensions

Initial Soil Concentrations, pCi/g

Area: 5020.00 square meters
Thickness: 3.80 meters
Cover Depth: 0.00 meters

Eu-155	1.000E+00
--------	-----------

0

Total Dose TDOSE(t), mrem/yr

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

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

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TD0SE(t):	6.229E-02	5.420E-02	4.098E-02	1.540E-02	9.401E-04	5.283E-08	3.795E-20	0.000E+00
M(t):	2.491E-03	2.168E-03	1.639E-03	6.160E-04	3.760E-05	2.113E-09	1.518E-21	0.000E+00
OMaximum TD0SE(t):	6.229E-02	mrem/yr	at t = 0.000E+00 years					

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Eu155-concrete-DCGL.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

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.
Eu-155	6.132E-02	0.9846	5.718E-07	0.0000	0.000E+00	0.0000	3.603E-05	0.0006	9.395E-05	0.0015	1.023E-05	0.0002	2.021E-05	0.0003
Total	6.132E-02	0.9846	5.718E-07	0.0000	0.000E+00	0.0000	3.603E-05	0.0006	9.395E-05	0.0015	1.023E-05	0.0002	2.021E-05	0.0003

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

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.
Eu-155	6.453E-04	0.0104	1.666E-05	0.0003	0.000E+00	0.0000	1.150E-04	0.0018	1.866E-05	0.0003	3.747E-06	0.0001	6.229E-02	1.0000
Total	6.453E-04	0.0104	1.666E-05	0.0003	0.000E+00	0.0000	1.150E-04	0.0018	1.866E-05	0.0003	3.747E-06	0.0001	6.229E-02	1.0000

0*Sum of all water independent and dependent pathways.

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL

File : Fe55-concrete-DCGL.RAD

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
Summary of Pathway Selections	6
Contaminated Zone and Total Dose Summary	7
Total Dose Components	
Time = 0.000E+00	8
Time = 1.000E+00	9
Time = 3.000E+00	10
Time = 1.000E+01	11
Time = 3.000E+01	12
Time = 1.000E+02	13
Time = 3.000E+02	14
Time = 1.000E+03	15
Dose/Source Ratios Summed Over All Pathways	16
Single Radionuclide Soil Guidelines	16
Dose Per Nuclide Summed Over All Pathways	17
Soil Concentration Per Nuclide	17

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Fe55-concrete-DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary
 File: YR Concrete

0 Menu	Parameter	Current Value	Default	Parameter Name
B-1 B-1	Dose conversion factors for inhalation, mrem/pCi: Fe-55	2.690E-06	2.690E-06	DCF2 (1)
D-1 D-1	Dose conversion factors for ingestion, mrem/pCi: Fe-55	6.070E-07	6.070E-07	DCF3 (1)
D-34	Food transfer factors:			
D-34	Fe-55 , plant/soil concentration ratio, dimensionless	1.050E+00	1.000E-03	RTF (1,1)
D-34	Fe-55 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.910E-02	2.000E-02	RTF (1,2)
D-34	Fe-55 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	4.810E-04	3.000E-04	RTF (1,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Fe-55 , fish	4.200E+02	2.000E+02	BIOFAC (1,1)
D-5	Fe-55 , crustacea and mollusks	3.200E+03	3.200E+03	BIOFAC (1,2)

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Fe55-concrete-DCGL.RAD

Site-Specific Parameter Summary					
Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	5.020E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.800E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	8.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	2.500E+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): Fe-55	1.000E+00	0.000E+00	---	S1 (1)
R012	Concentration in groundwater (pCi/L): Fe-55	not used	0.000E+00	---	W1 (1)
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)	1.540E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	8.500E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	7.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.750E-01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.030E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	6.250E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.200E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	4.350E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	6.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	7.770E+05	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)	1.540E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	2.800E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.100E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	7.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.000E-01	2.000E-02	---	HGWT
R014	Saturated zone b parameter	9.750E-01	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	0	1	---	NS

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Fe55-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Fe-55				
R016	Contaminated zone (cm**3/g)	1.250E+01	1.000E+03	---	DCNUCC (1)
R016	Saturated zone (cm**3/g)	0.000E+00	1.000E+03	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.674E-03	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.330E-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	2.725E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.571E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.181E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+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)	2.060E+01	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	1.826E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	4.785E+02	5.100E+02	---	DWI

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Fe55-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

0 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	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.710E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	6.320E+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)	5.000E-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)	2.050E+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)	2.889E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.887E+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	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	2.150E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (l/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (l/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
C14	DCF correction factor for gaseous forms of C14	not used	8.894E+01	---	CO2F

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Fe55-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

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

File : Fe55-concrete-DCGL.RAD

Contaminated Zone Dimensions

Initial Soil Concentrations, pCi/g

Area: 5020.00 square meters
Thickness: 3.80 meters
Cover Depth: 0.00 meters

Fe-55	1.000E+00
-------	-----------

0

Total Dose TDOSE(t), mrem/yr

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

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

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TD0SE(t):	1.613E-01	1.270E-01	7.531E-02	1.208E-02	6.471E-05	7.286E-13	0.000E+00	0.000E+00
M(t):	6.452E-03	5.081E-03	3.012E-03	4.831E-04	2.588E-06	2.914E-14	0.000E+00	0.000E+00
OMaximum TD0SE(t):	1.613E-01 mrem/yr	at t = 0.000E+00 years						

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Fe55-concrete-DCGL.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

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.
Fe-55	0.000E+00	0.0000	3.503E-08	0.0000	0.000E+00	0.0000	7.483E-02	0.4639	3.940E-02	0.2442	4.005E-03	0.0248	7.561E-06	0.0000
Total	0.000E+00	0.0000	3.503E-08	0.0000	0.000E+00	0.0000	7.483E-02	0.4639	3.940E-02	0.2442	4.005E-03	0.0248	7.561E-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

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.
Fe-55	1.919E-02	0.1189	2.991E-03	0.0185	0.000E+00	0.0000	6.599E-03	0.0409	1.314E-02	0.0815	1.148E-03	0.0071	1.613E-01	1.0000
Total	1.919E-02	0.1189	2.991E-03	0.0185	0.000E+00	0.0000	6.599E-03	0.0409	1.314E-02	0.0815	1.148E-03	0.0071	1.613E-01	1.0000

0*Sum of all water independent and dependent pathways.

Part I: Mixture Sums and Single Radionuclide Guidelines

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

Summary : Yankee Rowe DCGL=concrete grading
 File : H-3_graded concrete-dcgl.RAD

Dose Conversion Factor (and Related) Parameter Summary
 File: FGR 13 Morbidity

0 Menu	Parameter	Current Value	Default	Parameter Name
B-1 B-1	Dose conversion factors for inhalation, mrem/pCi: H-3	6.400E-08	6.400E-08	DCF2 (1)
D-1 D-1	Dose conversion factors for ingestion, mrem/pCi: H-3	6.400E-08	6.400E-08	DCF3 (1)
D-34	Food transfer factors:			
D-34	H-3 , plant/soil concentration ratio, dimensionless	4.800E+00	4.800E+00	RTF (1,1)
D-34	H-3 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.200E-02	1.200E-02	RTF (1,2)
D-34	H-3 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-02	1.000E-02	RTF (1,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	H-3 , fish	1.000E+00	1.000E+00	BIOFAC (1,1)
D-5	H-3 , crustacea and mollusks	1.000E+00	1.000E+00	BIOFAC (1,2)

Summary : Yankee Rowe DCGL=concrete grading
 File : H-3_graded concrete-dcgl.RAD

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	5.020E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	2.887E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	8.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	2.500E+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): H-3	1.000E+00	0.000E+00	---	S1(1)
R012	Concentration in groundwater (pCi/L): H-3	not used	0.000E+00	---	W1(1)
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)	1.540E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	8.500E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	7.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.750E-01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.030E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	6.100E+00	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	6.250E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.200E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	4.350E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	6.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	7.770E+05	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)	1.510E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.830E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	5.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	2.506E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.000E-01	2.000E-02	---	HGWT
R014	Saturated zone b parameter	9.750E-01	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.451E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	1.323E+03	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS

Summary : Yankee Rowe DCGL=concrete grading
 File : H-3_graded concrete-dcgl.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R015	Unsat. zone 1, thickness (m)	1.820E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.510E+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	3.830E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	5.000E-02	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	9.750E-01	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	2.506E+03	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for H-3				
R016	Contaminated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	6.000E-02	0.000E+00	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.698E+00	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.330E-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	2.725E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.571E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.181E-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)

Summary : Yankee Rowe DCGL=concrete grading
 File : H-3_graded concrete-dcgl.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+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)	2.060E+01	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	1.826E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	4.785E+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	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.710E+01	6.800E+01	---	LFIS
R019	Livestock fodder intake for milk (kg/day)	6.320E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.060E+01	5.000E+01	---	LWIS
R019	Livestock water intake for milk (L/day)	6.000E+01	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	5.000E-01	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	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)	1.174E+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)	2.889E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.887E+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 : Yankee Rowe DCGL=concrete grading
 File : H-3_graded concrete-dcgl.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	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)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (l/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (l/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
C14	DCF correction factor for gaseous forms of C14	not used	8.894E+01	---	CO2F
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)

Summary : Yankee Rowe DCGL=concrete grading
 File : H-3_graded concrete-dcgl.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	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	active
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Contaminated Zone Dimensions

Initial Soil Concentrations, pCi/g

Area: 5020.00 square meters
Thickness: 2.89 meters
Cover Depth: 0.00 meters

H-3	1.000E+00
-----	-----------

0

Total Dose TDOSE(t), mrem/yr

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

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

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	8.239E-02	3.391E-03	3.536E-07	3.731E-21	0.000E+00	0.000E+00	0.000E+00	0.000E+00
M(t):	3.296E-03	1.356E-04	1.414E-08	1.492E-22	0.000E+00	0.000E+00	0.000E+00	0.000E+00
OMaximum TDOSE(t):	8.239E-02 mrem/yr	at t = 0.000E+00 years						

Summary : Yankee Rowe DCGL=concrete grading
 File : H-3_graded concrete-dcgl.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

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.
H-3	0.000E+00	0.0000	4.693E-04	0.0057	0.000E+00	0.0000	3.506E-02	0.4255	5.786E-03	0.0702	3.951E-02	0.4795	1.954E-07	0.0000
Total	0.000E+00	0.0000	4.693E-04	0.0057	0.000E+00	0.0000	3.506E-02	0.4255	5.786E-03	0.0702	3.951E-02	0.4795	1.954E-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 = 0.000E+00 years

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.
H-3	5.376E-04	0.0065	1.873E-05	0.0002	0.000E+00	0.0000	7.616E-04	0.0092	2.373E-05	0.0003	2.276E-04	0.0028	8.239E-02	1.0000
Total	5.376E-04	0.0065	1.873E-05	0.0002	0.000E+00	0.0000	7.616E-04	0.0092	2.373E-05	0.0003	2.276E-04	0.0028	8.239E-02	1.0000

0*Sum of all water independent and dependent pathways.

Summary : YR concrete-H3-cellar area-DCGL

File : H3-concrete-cellar-area-DCGL.RAD

Table of ContentsPart I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
Summary of Pathway Selections	6
Contaminated Zone and Total Dose Summary	7
Total Dose Components	
Time = 0.000E+00	8
Time = 1.000E+00	9
Time = 3.000E+00	10
Time = 1.000E+01	11
Time = 3.000E+01	12
Time = 1.000E+02	13
Time = 3.000E+02	14
Time = 1.000E+03	15
Dose/Source Ratios Summed Over All Pathways	16
Single Radionuclide Soil Guidelines	16
Dose Per Nuclide Summed Over All Pathways	17
Soil Concentration Per Nuclide	17

Summary : YR concrete-H3-cellar area-DCGL
 File : H3-concrete-cellar-area-DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary
 File: YR Concrete

0 Menu	Parameter	Current Value	Default	Parameter Name
B-1 B-1	Dose conversion factors for inhalation, mrem/pCi: H-3	6.400E-08	6.400E-08	DCF2 (1)
D-1 D-1	Dose conversion factors for ingestion, mrem/pCi: H-3	6.400E-08	6.400E-08	DCF3 (1)
D-34	Food transfer factors:			
D-34	H-3 , plant/soil concentration ratio, dimensionless	4.800E+00	4.800E+00	RTF (1,1)
D-34	H-3 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.200E-02	1.200E-02	RTF (1,2)
D-34	H-3 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-02	1.000E-02	RTF (1,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	H-3 , fish	1.000E+00	1.000E+00	BIOFAC (1,1)
D-5	H-3 , crustacea and mollusks	1.000E+00	1.000E+00	BIOFAC (1,2)

Summary : YR concrete-H3-cellar area-DCGL
 File : H3-concrete-cellar-area-DCGL.RAD

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	1.700E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.800E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	1.472E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	2.500E+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): H-3	1.000E+00	0.000E+00	---	S1(1)
R012	Concentration in groundwater (pCi/L): H-3	not used	0.000E+00	---	W1(1)
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)	1.600E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	8.500E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	7.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.750E-01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.030E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	6.100E+00	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	6.250E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.200E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	3.434E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	6.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	7.770E+05	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)	1.540E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	2.800E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.100E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	7.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.000E-01	2.000E-02	---	HGWT
R014	Saturated zone b parameter	9.750E-01	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	5.000E+01	2.500E+02	---	UW
R015	Number of unsaturated zone strata	0	1	---	NS

Summary : YR concrete-H3-cellar area-DCGL
 File : H3-concrete-cellar-area-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for H-3				
R016	Contaminated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCC (1)
R016	Saturated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.161E+00	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.330E-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	2.725E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.571E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.181E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+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)	2.060E+01	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	1.826E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	4.785E+02	5.100E+02	---	DWI

Summary : YR concrete-H3-cellar area-DCGL
 File : H3-concrete-cellar-area-DCGL.RAD

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	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.850E-01	FPLANT
R018	Contamination fraction of meat	-1	-1	0.850E-02	FMEAT
R018	Contamination fraction of milk	-1	-1	0.850E-02	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.710E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	6.320E+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)	5.000E-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)	2.050E+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)	2.889E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.887E+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	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)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (l/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (l/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
C14	DCF correction factor for gaseous forms of C14	not used	8.894E+01	---	CO2F

Summary : YR concrete-H3-cellar area-DCGL
 File : H3-concrete-cellar-area-DCGL.RAD

Site-Specific Parameter Summary (continued)

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

Summary : YR concrete-H3-cellar area-DCGL
File : H3-concrete-cellar-area-DCGL.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	170.00 square meters	H-3	1.000E+00
Thickness:	3.80 meters		
Cover Depth:	0.00 meters		

0

Total Dose TDOSE(t), mrem/yr							
Basic Radiation Dose Limit = 2.500E+01 mrem/yr							
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)							
t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02
TDOSE(t):	2.470E-01	1.261E-02	2.285E-05	5.639E-15	0.000E+00	0.000E+00	0.000E+00
M(t):	9.882E-03	5.043E-04	9.141E-07	2.256E-16	0.000E+00	0.000E+00	0.000E+00
Maximum TDOSE(t):	2.470E-01 mrem/yr	at t = 0.000E+00 years					

Summary : YR concrete-H3-cellar area-DCGL
 File : H3-concrete-cellar-area-DCGL.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

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.
H-3	0.000E+00	0.0000	1.136E-04	0.0005	0.000E+00	0.0000	4.290E-03	0.0174	6.414E-05	0.0003	4.570E-04	0.0018	4.673E-08	0.0000
Total	0.000E+00	0.0000	1.136E-04	0.0005	0.000E+00	0.0000	4.290E-03	0.0174	6.414E-05	0.0003	4.570E-04	0.0018	4.673E-08	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

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.
H-3	2.103E-01	0.8513	2.155E-06	0.0000	0.000E+00	0.0000	2.996E-02	0.1213	2.587E-04	0.0010	1.591E-03	0.0064	2.470E-01	1.0000
Total	2.103E-01	0.8513	2.155E-06	0.0000	0.000E+00	0.0000	2.996E-02	0.1213	2.587E-04	0.0010	1.591E-03	0.0064	2.470E-01	1.0000

0*Sum of all water independent and dependent pathways.

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
Summary of Pathway Selections	6
Contaminated Zone and Total Dose Summary	7
Total Dose Components	
Time = 0.000E+00	8
Time = 1.000E+00	9
Time = 3.000E+00	10
Time = 1.000E+01	11
Time = 3.000E+01	12
Time = 1.000E+02	13
Time = 3.000E+02	14
Time = 1.000E+03	15
Dose/Source Ratios Summed Over All Pathways	16
Single Radionuclide Soil Guidelines	16
Dose Per Nuclide Summed Over All Pathways	17
Soil Concentration Per Nuclide	17

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Nb94-concrete-DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary
 File: YR Concrete

0 Menu	Parameter	Current Value	Default	Parameter Name
B-1 B-1	Dose conversion factors for inhalation, mrem/pCi: Nb-94	4.140E-04	4.140E-04	DCF2 (1)
D-1 D-1	Dose conversion factors for ingestion, mrem/pCi: Nb-94	7.140E-06	7.140E-06	DCF3 (1)
D-34	Food transfer factors:			
D-34	Nb-94 , plant/soil concentration ratio, dimensionless	1.460E-03	1.000E-02	RTF (1,1)
D-34	Nb-94 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-06	3.000E-07	RTF (1,2)
D-34	Nb-94 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF (1,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Nb-94 , fish	3.000E+02	3.000E+02	BIOFAC (1,1)
D-5	Nb-94 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC (1,2)

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Nb94-concrete-DCGL.RAD

Site-Specific Parameter Summary					
Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	5.020E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.800E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	8.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	2.500E+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): Nb-94	1.000E+00	0.000E+00	---	S1 (1)
R012	Concentration in groundwater (pCi/L): Nb-94	not used	0.000E+00	---	W1 (1)
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)	1.540E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	8.500E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	7.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.750E-01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.030E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	6.250E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.200E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	4.350E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	6.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	7.770E+05	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)	1.540E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	2.800E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.100E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	7.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.000E-01	2.000E-02	---	HGWT
R014	Saturated zone b parameter	9.750E-01	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	0	1	---	NS

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Nb94-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Nb-94				
R016	Contaminated zone (cm**3/g)	3.160E+02	0.000E+00	---	DCNUCC (1)
R016	Saturated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.855E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.330E-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	3.980E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.571E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.181E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+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)	2.060E+01	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	1.826E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	4.785E+02	5.100E+02	---	DWI

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Nb94-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

0 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	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.710E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	6.320E+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)	5.000E-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)	2.050E+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)	2.889E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.887E+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	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)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (l/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (l/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
C14	DCF correction factor for gaseous forms of C14	not used	8.894E+01	---	CO2F

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Nb94-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

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

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
File : Nb94-concrete-DCGL.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	5020.00 square meters	Nb-94	1.000E+00
Thickness:	3.80 meters		
Cover Depth:	0.00 meters		

0

Total Dose TDOSE(t), mrem/yr							
Basic Radiation Dose Limit = 2.500E+01 mrem/yr							
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)							
t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02
TDOSE(t):	3.399E+00	3.399E+00	3.397E+00	3.392E+00	3.377E+00	3.325E+00	3.182E+00
M(t):	1.360E-01	1.360E-01	1.359E-01	1.357E-01	1.351E-01	1.330E-01	1.273E-01
0Maximum TDOSE(t):	3.399E+00 mrem/yr	at t = 0.000E+00 years					

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Nb94-concrete-DCGL.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

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.
Nb-94	3.384E+00	0.9957	6.127E-06	0.0000	0.000E+00	0.0000	1.393E-03	0.0004	2.509E-07	0.0000	1.973E-06	0.0000	1.011E-04	0.0000
Total	3.384E+00	0.9957	6.127E-06	0.0000	0.000E+00	0.0000	1.393E-03	0.0004	2.509E-07	0.0000	1.973E-06	0.0000	1.011E-04	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

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.
Nb-94	1.025E-02	0.0030	8.685E-04	0.0003	0.000E+00	0.0000	1.826E-03	0.0005	1.485E-07	0.0000	1.986E-06	0.0000	3.399E+00	1.0000
Total	1.025E-02	0.0030	8.685E-04	0.0003	0.000E+00	0.0000	1.826E-03	0.0005	1.485E-07	0.0000	1.986E-06	0.0000	3.399E+00	1.0000

0*Sum of all water independent and dependent pathways.

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
Summary of Pathway Selections	6
Contaminated Zone and Total Dose Summary	7
Total Dose Components	
Time = 0.000E+00	8
Time = 1.000E+00	9
Time = 3.000E+00	10
Time = 1.000E+01	11
Time = 3.000E+01	12
Time = 1.000E+02	13
Time = 3.000E+02	14
Time = 1.000E+03	15
Dose/Source Ratios Summed Over All Pathways	16
Single Radionuclide Soil Guidelines	16
Dose Per Nuclide Summed Over All Pathways	17
Soil Concentration Per Nuclide	17

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Ni63-concrete-DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary
 File: YR Concrete

0 Menu	Parameter	Current Value	Default	Parameter Name
B-1 B-1	Dose conversion factors for inhalation, mrem/pCi: Ni-63	6.290E-06	6.290E-06	DCF2 (1)
D-1 D-1	Dose conversion factors for ingestion, mrem/pCi: Ni-63	5.770E-07	5.770E-07	DCF3 (1)
D-34	Food transfer factors:			
D-34	Ni-63 , plant/soil concentration ratio, dimensionless	5.290E-01	5.000E-02	RTF (1,1)
D-34	Ni-63 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF (1,2)
D-34	Ni-63 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.210E-02	2.000E-02	RTF (1,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ni-63 , fish	9.900E+01	1.000E+02	BIOFAC (1,1)
D-5	Ni-63 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC (1,2)

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Ni63-concrete-DCGL.RAD

Site-Specific Parameter Summary					
Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	5.020E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.800E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	8.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	2.500E+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): Ni-63	1.000E+00	0.000E+00	---	S1 (1)
R012	Concentration in groundwater (pCi/L): Ni-63	not used	0.000E+00	---	W1 (1)
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)	1.540E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	8.500E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	7.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.750E-01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.030E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	6.250E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.200E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	4.350E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	6.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	7.770E+05	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)	1.540E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	2.800E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.100E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	7.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.000E-01	2.000E-02	---	HGWT
R014	Saturated zone b parameter	9.750E-01	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	0	1	---	NS

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Ni63-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Ni-63				
R016	Contaminated zone (cm**3/g)	3.550E+01	1.000E+03	---	DCNUCC (1)
R016	Saturated zone (cm**3/g)	0.000E+00	1.000E+03	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.650E-03	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.330E-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	2.725E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.571E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.181E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+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)	2.060E+01	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	1.826E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	4.785E+02	5.100E+02	---	DWI

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Ni63-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

0 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	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.710E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	6.320E+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)	5.000E-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)	2.050E+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)	2.889E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.887E+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	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	2.150E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (l/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (l/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
C14	DCF correction factor for gaseous forms of C14	not used	8.894E+01	---	CO2F

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Ni63-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

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

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Ni63-concrete-DCGL.RAD

Contaminated Zone Dimensions

Initial Soil Concentrations, pCi/g

Area: 5020.00 square meters
 Thickness: 3.80 meters
 Cover Depth: 0.00 meters

Ni-63 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): 2.285E-01 2.295E-01 2.255E-01 2.119E-01 1.773E-01 9.500E-02 1.599E-02 3.122E-05
 M(t): 9.140E-03 9.182E-03 9.019E-03 8.474E-03 7.091E-03 3.800E-03 6.394E-04 1.249E-06
 Maximum TDOSE(t): 2.314E-01 mrem/yr at t = 0.1001 ± 0.0002 years

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

As mrem/yr and Fraction of Total Dose At t = 1.001E-01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ni-63	0.000E+00	0.0000	9.260E-08	0.0000	0.000E+00	0.0000	4.050E-02	0.1751	2.772E-03	0.0120	1.457E-01	0.6297	8.124E-06	0.0000
Total	0.000E+00	0.0000	9.260E-08	0.0000	0.000E+00	0.0000	4.050E-02	0.1751	2.772E-03	0.0120	1.457E-01	0.6297	8.124E-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 = 1.001E-01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Ni-63	7.726E-03	0.0334	2.221E-04	0.0010	0.000E+00	0.0000	2.346E-03	0.0101	7.167E-04	0.0031	3.140E-02	0.1357	2.314E-01	1.0000
Total	7.726E-03	0.0334	2.221E-04	0.0010	0.000E+00	0.0000	2.346E-03	0.0101	7.167E-04	0.0031	3.140E-02	0.1357	2.314E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL

File : Pu238-concrete-DCGL.RAD

Table of ContentsPart I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	4
Summary of Pathway Selections	8
Contaminated Zone and Total Dose Summary	9
Total Dose Components	
Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
Time = 3.000E+02	16
Time = 1.000E+03	17
Dose/Source Ratios Summed Over All Pathways	18
Single Radionuclide Soil Guidelines	18
Dose Per Nuclide Summed Over All Pathways	19
Soil Concentration Per Nuclide	19

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Pu238-concrete-DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary
 File: YR Concrete

0 Menu	Parameter	Current Value	Default	Parameter Name
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Pb-210+D	2.320E-02	2.320E-02	DCF2 (1)
B-1	Pu-238	3.920E-01	3.920E-01	DCF2 (2)
B-1	Ra-226+D	8.600E-03	8.600E-03	DCF2 (3)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (4)
B-1	U-234	1.320E-01	1.320E-01	DCF2 (5)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Pb-210+D	7.270E-03	7.270E-03	DCF3 (1)
D-1	Pu-238	3.200E-03	3.200E-03	DCF3 (2)
D-1	Ra-226+D	1.330E-03	1.330E-03	DCF3 (3)
D-1	Th-230	5.480E-04	5.480E-04	DCF3 (4)
D-1	U-234	2.830E-04	2.830E-04	DCF3 (5)
D-34	Food transfer factors:			
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.880E-07	1.000E-02	RTF (1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF (1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF (1,3)
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	8.240E-05	1.000E-03	RTF (2,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF (2,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF (2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF (3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF (3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF (3,3)
D-34	Th-230 , plant/soil concentration ratio, dimensionless	8.240E-05	1.000E-03	RTF (4,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF (4,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF (4,3)
D-34	U-234 , plant/soil concentration ratio, dimensionless	5.710E-03	2.500E-03	RTF (5,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	3.400E-04	RTF (5,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	4.000E-04	6.000E-04	RTF (5,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC (1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC (1,2)
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC (2,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC (2,2)
D-5	Ra-226+D , fish	4.900E+01	5.000E+01	BIOFAC (3,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC (3,2)
D-5	Th-230 , fish	9.900E+01	1.000E+02	BIOFAC (4,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (4,2)

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
File : Pu238-concrete-DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary (continued)
File: YR Concrete

0 Menu	Parameter		Current Value	Default	Parameter Name
D-5	U-234	, fish	1.000E+01	1.000E+01	BIOFAC (5,1)
D-5	U-234	, crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (5,2)

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Pu238-concrete-DCGL.RAD

Site-Specific Parameter Summary					
Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	5.020E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.800E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	8.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	2.500E+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): Pu-238	1.000E+00	0.000E+00	---	S1 (2)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1 (2)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.540E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	8.500E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	7.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.750E-01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.030E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	6.250E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.200E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	4.350E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	6.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	7.770E+05	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)	1.540E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	2.800E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.100E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	7.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.000E-01	2.000E-02	---	HGWT
R014	Saturated zone b parameter	9.750E-01	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	0	1	---	NS

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Pu238-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	8.880E+02	2.000E+03	---	DCNUCC (2)
R016	Saturated zone (cm**3/g)	0.000E+00	2.000E+03	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.603E-05	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	4.760E+04	1.000E+02	---	DCNUCC (1)
R016	Saturated zone (cm**3/g)	0.000E+00	1.000E+02	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.232E-06	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	1.000E+02	7.000E+01	---	DCNUCC (3)
R016	Saturated zone (cm**3/g)	0.000E+00	7.000E+01	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.861E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	1.580E+03	6.000E+04	---	DCNUCC (4)
R016	Saturated zone (cm**3/g)	0.000E+00	6.000E+04	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.711E-05	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for daughter U-234				
R016	Contaminated zone (cm**3/g)	1.470E+02	5.000E+01	---	DCNUCC (5)
R016	Saturated zone (cm**3/g)	0.000E+00	5.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.987E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.330E-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	2.725E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.571E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.181E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Pu238-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+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)	2.060E+01	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	1.826E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	4.785E+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	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.710E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	6.320E+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)	5.000E-01	5.000E-01	---	LSI

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Pu238-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	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)	2.050E+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)	2.889E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.887E+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)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
C14	DCF correction factor for gaseous forms of C14	not used	8.894E+01	---	CO2F
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

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Pu238-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	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	active
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Pu238-concrete-DCGL.RAD

Contaminated Zone Dimensions

Initial Soil Concentrations, pCi/g

Area: 5020.00 square meters
 Thickness: 3.80 meters
 Cover Depth: 0.00 meters

Pu-238 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): 2.288E+00 2.389E+00 2.350E+00 2.219E+00 1.884E+00 1.063E+00 2.069E-01 9.788E-04
 M(t): 9.152E-02 9.554E-02 9.399E-02 8.876E-02 7.537E-02 4.251E-02 8.277E-03 3.915E-05
 Maximum TDOSE(t): 2.407E+00 mrem/yr at t = 0.1182 ± 0.0002 years

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

As mrem/yr and Fraction of Total Dose At t = 1.182E-01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pu-238	4.400E-05	0.0000	5.773E-03	0.0024	0.000E+00	0.0000	3.662E-02	0.0152	1.042E-02	0.0043	3.755E-04	0.0002	4.507E-02	0.0187
Total	4.400E-05	0.0000	5.773E-03	0.0024	0.000E+00	0.0000	3.662E-02	0.0152	1.042E-02	0.0043	3.755E-04	0.0002	4.507E-02	0.0187

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

As mrem/yr and Fraction of Total Dose At t = 1.182E-01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pu-238	1.716E+00	0.7130	1.643E-02	0.0068	0.000E+00	0.0000	5.728E-01	0.2380	2.953E-03	0.0012	2.077E-04	0.0001	2.407E+00	1.0000
Total	1.716E+00	0.7130	1.643E-02	0.0068	0.000E+00	0.0000	5.728E-01	0.2380	2.953E-03	0.0012	2.077E-04	0.0001	2.407E+00	1.0000

*Sum of all water independent and dependent pathways.

Part I: Mixture Sums and Single Radionuclide Guidelines

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

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Pu239-concrete-DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary
 File: YR Concrete

0 Menu	Parameter	Current Value	Default	Parameter Name
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	6.720E+00	6.720E+00	DCF2 (1)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 (2)
B-1	Pu-239	4.290E-01	4.290E-01	DCF2 (3)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 (4)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.480E-02	DCF3 (1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 (2)
D-1	Pu-239	3.540E-03	3.540E-03	DCF3 (3)
D-1	U-235+D	2.670E-04	2.670E-04	DCF3 (4)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	1.870E-04	2.500E-03	RTF (1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF (1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF (1,3)
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.460E-03	1.000E-02	RTF (2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-06	5.000E-03	RTF (2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF (2,3)
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	8.240E-05	1.000E-03	RTF (3,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF (3,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF (3,3)
D-34	U-235+D , plant/soil concentration ratio, dimensionless	5.710E-03	2.500E-03	RTF (4,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	3.400E-04	RTF (4,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	4.000E-04	6.000E-04	RTF (4,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC (1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC (1,2)
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC (2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC (2,2)
D-5	Pu-239 , fish	6.290E+01	3.000E+01	BIOFAC (3,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC (3,2)
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC (4,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (4,2)

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Pu239-concrete-DCGL.RAD

Site-Specific Parameter Summary					
Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	5.020E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.800E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	8.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	2.500E+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): Pu-239	1.000E+00	0.000E+00	---	S1 (3)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1 (3)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.540E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	8.500E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	7.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.750E-01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.030E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	6.250E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.200E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	4.350E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	6.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	7.770E+05	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)	1.540E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	2.800E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.100E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	7.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.000E-01	2.000E-02	---	HGWT
R014	Saturated zone b parameter	9.750E-01	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	0	1	---	NS

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Pu239-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	8.880E+02	2.000E+03	---	DCNUCC (3)
R016	Saturated zone (cm**3/g)	0.000E+00	2.000E+03	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.603E-05	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	1.000E+03	2.000E+01	---	DCNUCC (1)
R016	Saturated zone (cm**3/g)	0.000E+00	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.863E-05	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	3.160E+02	5.000E+01	---	DCNUCC (2)
R016	Saturated zone (cm**3/g)	0.000E+00	5.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.855E-04	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)
R016	Distribution coefficients for daughter U-235				
R016	Contaminated zone (cm**3/g)	1.470E+02	5.000E+01	---	DCNUCC (4)
R016	Saturated zone (cm**3/g)	0.000E+00	5.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.987E-04	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.330E-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	2.725E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.571E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.181E-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)

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Pu239-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+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)	2.060E+01	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	1.826E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	4.785E+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	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.710E+01	6.800E+01	---	LFIS
R019	Livestock fodder intake for milk (kg/day)	6.320E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.060E+01	5.000E+01	---	LWIS
R019	Livestock water intake for milk (L/day)	6.000E+01	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	5.000E-01	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	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)	2.050E+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)	2.889E+00	1.500E+00	---	YV (2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.887E+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 : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Pu239-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	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)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (l/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (l/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
C14	DCF correction factor for gaseous forms of C14	not used	8.894E+01	---	CO2F
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)

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Pu239-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)					
Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	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	active
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Pu239-concrete-DCGL.RAD

Contaminated Zone Dimensions Initial Soil Concentrations, pCi/g

Area: 5020.00 square meters
 Thickness: 3.80 meters
 Cover Depth: 0.00 meters

Pu-239 1.000E+00

0

Total Dose TDOSE(t), mrem/yr

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

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

t (years): 0.000E+00 1.000E+00 3.000E+00 1.000E+01 3.000E+01 1.000E+02 3.000E+02 1.000E+03
 TDOSE(t): 2.558E+00 2.691E+00 2.689E+00 2.684E+00 2.667E+00 2.609E+00 2.448E+00 1.923E+00
 M(t): 1.023E-01 1.076E-01 1.076E-01 1.073E-01 1.067E-01 1.044E-01 9.792E-02 7.692E-02

0Maximum TDOSE(t): 2.692E+00 mrem/yr at t = 0.2811 ± 0.0006 years

0

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

As mrem/yr and Fraction of Total Dose At t = 2.811E-01 years

Water Independent Pathways (Inhalation excludes radon)

0

0

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pu-239	8.326E-05	0.0000	6.349E-03	0.0024	0.000E+00	0.0000	4.071E-02	0.0151	1.158E-02	0.0043	4.174E-04	0.0002	5.011E-02	0.0186
Total	8.326E-05	0.0000	6.349E-03	0.0024	0.000E+00	0.0000	4.071E-02	0.0151	1.158E-02	0.0043	4.174E-04	0.0002	5.011E-02	0.0186

0

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

As mrem/yr and Fraction of Total Dose At t = 2.811E-01 years

Water Dependent Pathways

0

0

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pu-239	1.907E+00	0.7085	3.568E-02	0.0133	0.000E+00	0.0000	6.360E-01	0.2363	3.499E-03	0.0013	2.382E-04	0.0001	2.692E+00	1.0000
Total	1.907E+00	0.7085	3.568E-02	0.0133	0.000E+00	0.0000	6.360E-01	0.2363	3.499E-03	0.0013	2.382E-04	0.0001	2.692E+00	1.0000

0*Sum of all water independent and dependent pathways.

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	4
Summary of Pathway Selections	8
Contaminated Zone and Total Dose Summary	9
Total Dose Components	
Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
Time = 3.000E+02	16
Time = 1.000E+03	17
Dose/Source Ratios Summed Over All Pathways	18
Single Radionuclide Soil Guidelines	18
Dose Per Nuclide Summed Over All Pathways	19
Soil Concentration Per Nuclide	19

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Pu241-concrete-DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary
 File: YR Concrete

Menu	Parameter	Current Value	Default	Parameter Name
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Am-241	4.440E-01	4.440E-01	DCF2 (1)
B-1	Np-237+D	5.400E-01	5.400E-01	DCF2 (2)
B-1	Pu-241+D	8.250E-03	8.250E-03	DCF2 (3)
B-1	Th-229+D	2.160E+00	2.160E+00	DCF2 (5)
B-1	U-233	1.350E-01	1.350E-01	DCF2 (6)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Am-241	3.640E-03	3.640E-03	DCF3 (1)
D-1	Np-237+D	4.440E-03	4.440E-03	DCF3 (2)
D-1	Pu-241+D	6.850E-05	6.850E-05	DCF3 (3)
D-1	Th-229+D	4.030E-03	4.030E-03	DCF3 (5)
D-1	U-233	2.890E-04	2.890E-04	DCF3 (6)
D-34	Food transfer factors:			
D-34	Am-241 , plant/soil concentration ratio, dimensionless	7.860E-04	1.000E-03	RTF (1,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF (1,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF (1,3)
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	3.470E-04	2.000E-02	RTF (2,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF (2,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-05	5.000E-06	RTF (2,3)
D-34	Pu-241+D , plant/soil concentration ratio, dimensionless	8.240E-05	1.000E-03	RTF (3,1)
D-34	Pu-241+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF (3,2)
D-34	Pu-241+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF (3,3)
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	8.240E-05	1.000E-03	RTF (5,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF (5,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF (5,3)
D-34	U-233 , plant/soil concentration ratio, dimensionless	5.710E-03	2.500E-03	RTF (6,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	3.400E-04	RTF (6,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	4.000E-04	6.000E-04	RTF (6,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Am-241 , fish	6.290E+01	3.000E+01	BIOFAC (1,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC (1,2)
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC (2,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC (2,2)
D-5	Pu-241+D , fish	3.000E+01	3.000E+01	BIOFAC (3,1)
D-5	Pu-241+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC (3,2)
D-5	Th-229+D , fish	9.900E+01	1.000E+02	BIOFAC (5,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (5,2)

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
File : Pu241-concrete-DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary (continued)
File: YR Concrete

0 Menu	Parameter		Current Value	Default	Parameter Name
D-5	U-233	, fish	1.000E+01	1.000E+01	BIOFAC (6,1)
D-5	U-233	, crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC (6,2)

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Pu241-concrete-DCGL.RAD

Site-Specific Parameter Summary					
Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	5.020E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.800E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	8.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	2.500E+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): Pu-241	1.000E+00	0.000E+00	---	S1 (3)
R012	Concentration in groundwater (pCi/L): Pu-241	not used	0.000E+00	---	W1 (3)
R013	Cover depth (m)	0.000E+00	0.000E+00	---	COVER0
R013	Density of cover material (g/cm**3)	not used	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.540E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	8.500E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	7.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.750E-01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.030E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	6.250E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.200E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	4.350E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	6.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	7.770E+05	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)	1.540E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	2.800E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.100E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	7.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.000E-01	2.000E-02	---	HGWT
R014	Saturated zone b parameter	9.750E-01	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	0	1	---	NS

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Pu241-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Pu-241				
R016	Contaminated zone (cm**3/g)	1.580E+03	2.000E+03	---	DCNUCC (3)
R016	Saturated zone (cm**3/g)	0.000E+00	2.000E+03	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.711E-05	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)
R016	Distribution coefficients for daughter Am-241				
R016	Contaminated zone (cm**3/g)	4.470E+02	2.000E+01	---	DCNUCC (1)
R016	Saturated zone (cm**3/g)	0.000E+00	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.312E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Np-237				
R016	Contaminated zone (cm**3/g)	7.070E+02	-1.000E+00	---	DCNUCC (2)
R016	Saturated zone (cm**3/g)	0.000E+00	-1.000E+00	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.293E-05	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	1.580E+03	6.000E+04	---	DCNUCC (5)
R016	Saturated zone (cm**3/g)	0.000E+00	6.000E+04	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.711E-05	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	1.470E+02	5.000E+01	---	DCNUCC (6)
R016	Saturated zone (cm**3/g)	0.000E+00	5.000E+01	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.987E-04	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.330E-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	2.725E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.571E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.181E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Pu241-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+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)	2.060E+01	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	1.826E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	4.785E+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	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.710E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	6.320E+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)	5.000E-01	5.000E-01	---	LSI

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Pu241-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R019	Mass loading for foliar deposition (g/m**3)	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)	2.050E+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)	2.889E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.887E+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)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
C14	DCF correction factor for gaseous forms of C14	not used	8.894E+01	---	CO2F
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

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Pu241-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA (1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA (2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	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	active
7 -- drinking water	active
8 -- soil ingestion	active
9 -- radon	suppressed
Find peak pathway doses	suppressed

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Pu241-concrete-DCGL.RAD

Contaminated Zone Dimensions Initial Soil Concentrations, pCi/g

Area: 5020.00 square meters
 Thickness: 3.80 meters
 Cover Depth: 0.00 meters

Pu-241 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):	3.207E-02	4.094E-02	5.474E-02	9.326E-02	1.492E-01	1.628E-01	1.111E-01	2.795E-02
M(t):	1.283E-03	1.638E-03	2.190E-03	3.731E-03	5.968E-03	6.513E-03	4.446E-03	1.118E-03

Maximum TDOSE(t): 1.685E-01 mrem/yr at t = 65.3 ± 0.1 years

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

As mrem/yr and Fraction of Total Dose At t = 6.534E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pu-241	3.647E-04	0.0022	1.981E-04	0.0012	0.000E+00	0.0000	1.129E-02	0.0670	1.910E-04	0.0011	2.776E-05	0.0002	1.553E-03	0.0092
Total	3.647E-04	0.0022	1.981E-04	0.0012	0.000E+00	0.0000	1.129E-02	0.0670	1.910E-04	0.0011	2.776E-05	0.0002	1.553E-03	0.0092

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

As mrem/yr and Fraction of Total Dose At t = 6.534E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Pu-241	1.136E-01	0.6738	3.349E-03	0.0199	0.000E+00	0.0000	3.788E-02	0.2247	1.050E-04	0.0006	2.826E-05	0.0002	1.685E-01	1.0000
Total	1.136E-01	0.6738	3.349E-03	0.0199	0.000E+00	0.0000	3.788E-02	0.2247	1.050E-04	0.0006	2.826E-05	0.0002	1.685E-01	1.0000

*Sum of all water independent and dependent pathways.

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
Summary of Pathway Selections	6
Contaminated Zone and Total Dose Summary	7
Total Dose Components	
Time = 0.000E+00	8
Time = 1.000E+00	9
Time = 3.000E+00	10
Time = 1.000E+01	11
Time = 3.000E+01	12
Time = 1.000E+02	13
Time = 3.000E+02	14
Time = 1.000E+03	15
Dose/Source Ratios Summed Over All Pathways	16
Single Radionuclide Soil Guidelines	16
Dose Per Nuclide Summed Over All Pathways	17
Soil Concentration Per Nuclide	17

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : SB125-concrete-DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary
 File: YR Concrete

0 Menu	Parameter	Current Value	Default	Parameter Name
B-1 B-1	Dose conversion factors for inhalation, mrem/pCi: Sb-125+D	1.386E-05	1.386E-05	DCF2 (1)
D-1 D-1	Dose conversion factors for ingestion, mrem/pCi: Sb-125+D	3.647E-06	3.647E-06	DCF3 (1)
D-34	Food transfer factors:			
D-34	Sb-125+D , plant/soil concentration ratio, dimensionless	8.500E-05	1.000E-02	RTF (1,1)
D-34	Sb-125+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF (1,2)
D-34	Sb-125+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-05	1.000E-04	RTF (1,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Sb-125+D , fish	9.900E+01	1.000E+02	BIOFAC (1,1)
D-5	Sb-125+D , crustacea and mollusks	1.000E+01	1.000E+01	BIOFAC (1,2)

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : SB125-concrete-DCGL.RAD

Site-Specific Parameter Summary					
Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	5.020E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.800E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	8.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	2.500E+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): Sb-125	1.000E+00	0.000E+00	---	S1 (1)
R012	Concentration in groundwater (pCi/L): Sb-125	not used	0.000E+00	---	W1 (1)
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)	1.540E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	8.500E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	7.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.750E-01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.030E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	6.250E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.200E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	4.350E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	6.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	7.770E+05	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)	1.540E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	2.800E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.100E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	7.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.000E-01	2.000E-02	---	HGWT
R014	Saturated zone b parameter	9.750E-01	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	0	1	---	NS

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : SB125-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Sb-125				
R016	Contaminated zone (cm**3/g)	1.550E+03	0.000E+00	---	DCNUCC (1)
R016	Saturated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.783E-05	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.330E-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	3.980E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.571E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.181E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+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)	2.060E+01	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	1.826E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	4.785E+02	5.100E+02	---	DWI

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : SB125-concrete-DCGL.RAD

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	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.710E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	6.320E+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)	5.000E-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)	2.050E+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)	2.889E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.887E+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	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)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (l/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (l/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
C14	DCF correction factor for gaseous forms of C14	not used	8.894E+01	---	CO2F

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : SB125-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

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

Initial Soil Concentrations, pCi/g

Area: 5020.00 square meters
Thickness: 3.80 meters
Cover Depth: 0.00 meters

Sb-125 1.000E+00

0

Total Dose TDOSE(t), mrem/yr

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

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

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	7.636E-01	5.946E-01	3.605E-01	6.252E-02	4.190E-04	1.032E-11	0.000E+00	0.000E+00
M(t):	3.055E-02	2.378E-02	1.442E-02	2.501E-03	1.676E-05	4.129E-13	0.000E+00	0.000E+00
OMaximum TDOSE(t):	7.636E-01 mrem/yr	at t = 0.000E+00 years						

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : SB125-concrete-DCGL.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

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.
Sb-125	7.623E-01	0.9982	1.815E-07	0.0000	0.000E+00	0.0000	3.752E-05	0.0000	1.056E-04	0.0001	2.282E-05	0.0000	4.567E-05	0.0001
Total	7.623E-01	0.9982	1.815E-07	0.0000	0.000E+00	0.0000	3.752E-05	0.0000	1.056E-04	0.0001	2.282E-05	0.0000	4.567E-05	0.0001

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

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.
Sb-125	9.380E-04	0.0012	2.597E-05	0.0000	0.000E+00	0.0000	1.671E-04	0.0002	1.353E-05	0.0000	5.440E-06	0.0000	7.636E-01	1.0000
Total	9.380E-04	0.0012	2.597E-05	0.0000	0.000E+00	0.0000	1.671E-04	0.0002	1.353E-05	0.0000	5.440E-06	0.0000	7.636E-01	1.0000

0*Sum of all water independent and dependent pathways.

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL

File : Sr-90-concrete-DCGL.RAD

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
Summary of Pathway Selections	6
Contaminated Zone and Total Dose Summary	7
Total Dose Components	
Time = 0.000E+00	8
Time = 1.000E+00	9
Time = 3.000E+00	10
Time = 1.000E+01	11
Time = 3.000E+01	12
Time = 1.000E+02	13
Time = 3.000E+02	14
Time = 1.000E+03	15
Dose/Source Ratios Summed Over All Pathways	16
Single Radionuclide Soil Guidelines	16
Dose Per Nuclide Summed Over All Pathways	17
Soil Concentration Per Nuclide	17

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Sr-90-concrete-DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary
 File: YR Concrete

0 Menu	Parameter	Current Value	Default	Parameter Name
B-1 B-1	Dose conversion factors for inhalation, mrem/pCi: Sr-90+D	1.310E-03	1.310E-03	DCF2 (1)
D-1 D-1	Dose conversion factors for ingestion, mrem/pCi: Sr-90+D	1.530E-04	1.530E-04	DCF3 (1)
D-34	Food transfer factors:			
D-34	Sr-90+D , plant/soil concentration ratio, dimensionless	6.420E-01	3.000E-01	RTF (1,1)
D-34	Sr-90+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.300E-02	8.000E-03	RTF (1,2)
D-34	Sr-90+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.810E-03	2.000E-03	RTF (1,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Sr-90+D , fish	6.000E+01	6.000E+01	BIOFAC (1,1)
D-5	Sr-90+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC (1,2)

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Sr-90-concrete-DCGL.RAD

Site-Specific Parameter Summary					
Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	5.020E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.800E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	8.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	2.500E+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): Sr-90	1.000E+00	0.000E+00	---	S1 (1)
R012	Concentration in groundwater (pCi/L): Sr-90	not used	0.000E+00	---	W1 (1)
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)	1.540E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	8.500E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	7.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.750E-01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.030E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	6.250E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.200E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	4.350E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	6.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	7.770E+05	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)	1.540E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	2.800E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.100E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	7.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.000E-01	2.000E-02	---	HGWT
R014	Saturated zone b parameter	9.750E-01	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	0	1	---	NS

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Sr-90-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Sr-90				
R016	Contaminated zone (cm**3/g)	1.050E+01	3.000E+01	---	DCNUCC (1)
R016	Saturated zone (cm**3/g)	0.000E+00	3.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.560E-03	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.330E-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	2.725E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.571E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.181E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+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)	2.060E+01	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	1.826E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	4.785E+02	5.100E+02	---	DWI

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Sr-90-concrete-DCGL.RAD

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	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.710E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	6.320E+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)	5.000E-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)	2.050E+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)	2.889E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.887E+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	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	2.150E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (l/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (l/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
C14	DCF correction factor for gaseous forms of C14	not used	8.894E+01	---	CO2F

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Sr-90-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

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

```
File      : Sr-90-concrete-DCGL.RAD
```

Contaminated Zone Dimensions

Initial Soil Concentrations, pCi/g

Area: 5020.00 square meters
Thickness: 3.80 meters
Cover Depth: 0.00 meters

Sr-90	1.000E+00
-------	-----------

0

Total Dose TDOSE(t), mrem/yr

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

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

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TD0SE(t):	3.161E+01	3.153E+01	2.972E+01	2.418E+01	1.342E+01	1.707E+00	4.718E-03	5.223E-12
M(t):	1.264E+00	1.261E+00	1.189E+00	9.674E-01	5.367E-01	6.829E-02	1.887E-04	2.089E-13
OMaximum TD0SE(t):	3.161E+01 mrem/yr	at t = 0.000E+00 years						

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Sr-90-concrete-DCGL.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

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.
Sr-90	6.674E-03	0.0002	1.911E-05	0.0000	0.000E+00	0.0000	1.291E+01	0.4085	2.286E+00	0.0723	4.057E+00	0.1283	2.134E-03	0.0001
Total	6.674E-03	0.0002	1.911E-05	0.0000	0.000E+00	0.0000	1.291E+01	0.4085	2.286E+00	0.0723	4.057E+00	0.1283	2.134E-03	0.0001

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

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.
Sr-90	6.483E+00	0.2051	1.162E-01	0.0037	0.000E+00	0.0000	2.026E+00	0.0641	1.472E+00	0.0466	2.248E+00	0.0711	3.161E+01	1.0000
Total	6.483E+00	0.2051	1.162E-01	0.0037	0.000E+00	0.0000	2.026E+00	0.0641	1.472E+00	0.0466	2.248E+00	0.0711	3.161E+01	1.0000

0*Sum of all water independent and dependent pathways.

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL

File : Tc99-concrete-DCGL.RAD

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
Summary of Pathway Selections	6
Contaminated Zone and Total Dose Summary	7
Total Dose Components	
Time = 0.000E+00	8
Time = 1.000E+00	9
Time = 3.000E+00	10
Time = 1.000E+01	11
Time = 3.000E+01	12
Time = 1.000E+02	13
Time = 3.000E+02	14
Time = 1.000E+03	15
Dose/Source Ratios Summed Over All Pathways	16
Single Radionuclide Soil Guidelines	16
Dose Per Nuclide Summed Over All Pathways	17
Soil Concentration Per Nuclide	17

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Tc99-concrete-DCGL.RAD

Dose Conversion Factor (and Related) Parameter Summary

File: YR Concrete

0 Menu	Parameter	Current Value	Default	Parameter Name
B-1 B-1	Dose conversion factors for inhalation, mrem/pCi: Tc-99	8.330E-06	8.330E-06	DCF2 (1)
D-1 D-1	Dose conversion factors for ingestion, mrem/pCi: Tc-99	1.460E-06	1.460E-06	DCF3 (1)
D-34	Food transfer factors:			
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	1.340E+00	5.000E+00	RTF (1,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF (1,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.600E-03	1.000E-03	RTF (1,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC (1,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC (1,2)

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Tc99-concrete-DCGL.RAD

Site-Specific Parameter Summary					
0 Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	5.020E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	3.800E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	8.000E+01	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	2.500E+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): Tc-99	1.000E+00	0.000E+00	---	S1 (1)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1 (1)
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)	1.540E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	8.500E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	7.000E-02	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.750E-01	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.030E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	6.250E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.200E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	4.350E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	6.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	7.770E+05	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)	1.540E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	2.800E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.100E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	7.000E-02	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.160E+05	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.000E-01	2.000E-02	---	HGWT
R014	Saturated zone b parameter	9.750E-01	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	0	1	---	NS

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Tc99-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	1.350E+01	0.000E+00	---	DCNUCC (1)
R016	Saturated zone (cm**3/g)	0.000E+00	0.000E+00	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.329E-03	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.330E-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	2.725E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.571E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.181E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE (10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE (11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE (12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA (10)
R017	Ring 11	not used	0.000E+00	---	FRACA (11)
R017	Ring 12	not used	0.000E+00	---	FRACA (12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET (1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+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)	2.060E+01	5.400E+00	---	DIET (5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET (6)
R018	Soil ingestion rate (g/yr)	1.826E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	4.785E+02	5.100E+02	---	DWI

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Tc99-concrete-DCGL.RAD

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	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	2.710E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	6.320E+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)	5.000E-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)	2.050E+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)	2.889E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.887E+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	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	2.150E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (l/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (l/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
C14	DCF correction factor for gaseous forms of C14	not used	8.894E+01	---	CO2F

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Tc99-concrete-DCGL.RAD

Site-Specific Parameter Summary (continued)

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

Summary : YR submerged concrete- Intruder (no cover) Scenario-DCGL
 File : Tc99-concrete-DCGL.RAD

Contaminated Zone Dimensions Initial Soil Concentrations, pCi/g

Area: 5020.00 square meters
 Thickness: 3.80 meters
 Cover Depth: 0.00 meters

Tc-99 1.000E+00

0

Total Dose TDOSE(t), mrem/yr

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

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

t (years): 0.000E+00 1.000E+00 3.000E+00 1.000E+01 3.000E+01 1.000E+02 3.000E+02 1.000E+03
 TDOSE(t): 3.840E-01 3.868E-01 3.834E-01 3.718E-01 3.407E-01 2.507E-01 1.044E-01 4.867E-03
 M(t): 1.536E-02 1.547E-02 1.534E-02 1.487E-02 1.363E-02 1.003E-02 4.177E-03 1.947E-04

Maximum TDOSE(t): 3.881E-01 mrem/yr at t = 0.2263 ± 0.0005 years

0

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

As mrem/yr and Fraction of Total Dose At t = 2.263E-01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio- Nuclide Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Tc-99	3.527E-05	0.0001	1.229E-07	0.0000	0.000E+00	0.0000	2.602E-01	0.6705	3.491E-04	0.0009	4.625E-02	0.1192	2.060E-05	0.0001
Total	3.527E-05	0.0001	1.229E-07	0.0000	0.000E+00	0.0000	2.602E-01	0.6705	3.491E-04	0.0009	4.625E-02	0.1192	2.060E-05	0.0001

0

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

As mrem/yr and Fraction of Total Dose At t = 2.263E-01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio- Nuclide Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Tc-99	5.141E-02	0.1325	2.889E-04	0.0007	0.000E+00	0.0000	1.880E-02	0.0484	9.422E-05	0.0002	1.062E-02	0.0274	3.881E-01	1.0000
Total	5.141E-02	0.1325	2.889E-04	0.0007	0.000E+00	0.0000	1.880E-02	0.0484	9.422E-05	0.0002	1.062E-02	0.0274	3.881E-01	1.0000

*Sum of all water independent and dependent pathways.