



DandD Building Occupancy Scenario

DandD Version: 2.1.0

Run Date/Time: 8/27/2007 11:16:35 AM

Site Name: N/A

Description: DSV Determination

FileName: C:\Documents and Settings\Dave Culp\My Documents\Fe-55 DSV.mcd

Options:

Implicit progeny doses NOT included with explicit parent doses

Nuclide concentrations are distributed among all progeny

Number of simulations: 100

Seed for Random Generation: 8718721

Averages used for behavioral type parameters

External Pathway is ON

Inhalation Pathway is ON

Secondary Ingestion Pathway is ON

Initial Activities:

Nuclide	Area of Contamination (m ²)	Distribution
55Fe	UNLIMITED	CONSTANT(dpm/100 cm**2)
Justification for concentration: DSV Determination		Value 1.00E+00

Chain Data:

Number of chains: 1

Chain No. 1: **55Fe**

Nuclides in chain: 1

Nuclide	Chain Position	Half Life	First Parent	Fractional Yield	Second Parent	Fractional Yield	Ingestion CEDE Factor (Sv/Bq)	Inhalation CEDE Factor (Sv/Bq)	Surface Dose Rate Factor ((Sv/d)/(Bq/m ²))	15 cm Dose Rate Factor ((Sv/d)/(Bq/m ³))
55Fe	1	9.86E+02					1.64E-10	7.26E-10	0.00E+00	0.00E+00

Initial Concentrations:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Nuclide	Surface Concentration (dpm/100 cm**2)
55Fe	1.00E+00

Model Parameters:

General Parameters:

--	--	--

Parameter Name	Description	Distribution
To:Time In Building	The time in the building during the occupancy period	CONSTANT(hr/week)
Default value used		Value 4.50E+01
Tto:Occupancy Period	The duration of the occupancy exposure period	CONSTANT(days)
Default value used		Value 3.65E+02
Vo:Breathing Rate	The average volumetric breathing rate during building occupancy for an 8-hour work day	CONSTANT(m**3/hr)
Default value used		Value 1.40E+00
RFo*:Resuspension Factor	Effective resuspension factor during the occupancy period = RFo * FI	DERIVED(1/m)
Default value used		
GO*:Ingestion Rate	Effective secondary ingestion transfer rate of removable surface activity from building surfaces to the mouth during building occupancy = GO * FI	DERIVED(m**2/hr)
Default value used		
Tstart:Start Time	The start time of the scenario in days	CONSTANT(days)
Default value used		Value 0.00E+00
Tend:End Time	The ending time of the scenario in days	CONSTANT(days)
Default value used		Value 3.65E+02
dt:Time Step Size	The time step size	CONSTANT(days)
Default value used		Value 3.65E+02
Pstep:Print Step Size	The time steps for the history file. Doses will be written to the history file every n time steps	CONSTANT(none)
Default value used		Value 1.00E+00
AOExt:External Exposure Area	Minimum surface area to which occupant is exposed via external radiation during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AOInh:Inhalation Exposure Area	Minimum surface area to which occupant is exposed via inhalation during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AOIng:Secondary Ingestion Exposure Area	Minimum surface area to which occupant is exposed via secondary ingestion during occupancy period	CONSTANT(m**2)
Default value used		Value 1.00E+01
AO:Exposure Area	Minimum surface area to which occupant is exposed during the occupancy period	DERIVED(m**2)
Default value used		
FI:Loose Fraction	Fraction of surface contamination available for resuspension and ingestion	CONSTANT(none)
Default value used		Value 1.00E-01
Rfo:Loose Resuspension Factor	Resuspension factor for loose contamination	CONTINUOUS LOGARITHMIC(1/m)
Default value used		Value Probability 9.12E-06 0.00E+00 1.10E-04 7.67E-01 1.46E-04 9.09E-01 1.62E-04 9.50E-01 1.85E-04 9.90E-01 1.90E-04 1.00E+00
GO:Loose Ingestion	The secondary ingestion transfer rate of loose removable surface activity from	

Rate	building surfaces to the mouth during building occupancy	CONSTANT(m**2/hr)
Default value used		Value 1.10E-04

Correlation Coefficients:None**Summary Results:**

90.00% of the 100 calculated TEDE values are < 5.57E-06 mrem/year .

The 95 % Confidence Interval for the 0.9 quantile value of TEDE is 5.03E-06 to 6.26E-06 mrem/year

Detailed Results:

Note: All reported values are the upper bound of the symmetric 95% confidence interval for the 0.9 quantile value

Concentration at Time of Peak Dose:

Nuclide	Surface Concentration (dpm/100 cm**2)
55Fe	8.82E-01

Pathway Dose from All Nuclides (mrem)

All Pathways Dose	External	Inhalation	Secondary Ingestion
6.26E-06	0.00E+00	5.64E-06	6.21E-07

Radionuclide Dose through All Active Pathways (mrem)

Nuclide	All Pathways Dose
55Fe	6.26E-06
All Nuclides	6.26E-06

Dose from Each Nuclide through Each Active Pathway (mrem)

Nuclide	External	Inhalation	Secondary Ingestion
55Fe	0.00E+00	5.64E-06	6.21E-07