

Title : Default Case for RESRAD-BUILD

Input File : C:\RESRAD_Family\BUILD\4.0\UserFiles\OBM TEST 1.bld

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==	==
RESRAD-BUILD Input Parameters	==
==	==
=====	
=====	

Number of Sources : 5
Number of Receptors: 1
Total Time : 3.650000E+02 days
Fraction Inside : 8.000000E-01

Transformations data from: ICRP38

Cut off half life : 30.0000000 days

Library information in the Dose Coefficients and Slope Factors report

=====	Receptor Information	=====
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Receptor	Room	x	y	z	FracTime	Inhalation	Ingestion(Dust)
		[m]	[m]	[m]		[m3/day]	[m2/hr]
1	1	2.000	2.000	1.500	1.000	2.00E+01	1.00E-04

==	Receptor-Source Shielding Relationship	==
----	--	----

Receptor	Source	Density	Thickness	Material
		[g/cm3]	[cm]	
1	1	2.40E+00	1.50E+01	Concrete
1	2	2.40E+00	1.50E+01	Concrete
1	3	2.40E+00	1.50E+01	Concrete
1	4	2.40E+00	1.50E+01	Concrete
1	5	2.40E+00	1.50E+01	Concrete

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===== Building Information =====

Building Air Exchange Rate: 8.00E-01 1/hr

Height[m]	Air Exchanges [m3/hr]	
Area [m2]		

	*	*
	*	*
	*	<=Q01: 0.00E+00
H1: 2.500	* Room 1	* Q10 : 0.00E+00
	* LAMBDA: 0.00E+00	*
Area 36.000	*	*
	*	*

Deposition velocity: 1.00E-02 [m/s] Resuspension Rate: 0.00E+00 [1/s]
Deposition velocity: 5.00E-07 [m/s] Resuspension Rate:

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===== Source Information =====

Source: 1

Location:: Room : 1 x: 2.00 y: 2.00 z: 0.00[m]

Geometry:: Type: Volume Length[m]:4.00E+00 Width[m]:4.00E+00 Direction: -z

Pathway ::

Direct Ingestion Rate: 0.000E+00 [gm/hr]

Fraction released to air: 1.000E-01

Containment :: Number of Regions: 4 Contaminated Region: 1

Region	:	1	2	3	4
Thickness [cm]	:	1.50E+01	1.50E+01	1.50E+01	1.50E+01
Density [g/cm3]	:	2.40E+00	2.40E+00	2.40E+00	2.40E+00
Material	:	Concrete			
Erosion Rate [cm/day]	:	2.40E-08	2.40E-08	2.40E-08	2.40E-08
Porosity	:	1.00E-01	1.00E-01	1.00E-01	1.00E-01
Eff. Diffusion [m2/s]	:	2.00E-05	2.00E-05	2.00E-05	2.00E-05
Emanation Fractions(1)	:	2.00E-01	2.00E-01	2.00E-01	2.00E-01
	(2):	3.80E-01	2.00E-01	2.00E-01	2.00E-01

Contamination::

Nuclide Concentration

	[Bq /g]
K-40	1.270E-01
Ra-226	4.900E-02
Th-232	1.400E-02

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Source: 2

Location:: Room : 1 x: 0.00 y: 2.00 z: 2.00[m]

Geometry:: Type: Volume Length[m]:4.00E+00 Width[m]:3.00E+00 Direction: -x

Pathway ::

Direct Ingestion Rate: 0.000E+00 [gm/hr]

Fraction released to air: 1.000E-01

Containment :: Number of Regions: 4 Contaminated Region: 1

Region	:	1	2	3	4
Thickness [cm]	:	1.50E+01	1.50E+01	1.50E+01	1.50E+01
Density [g/cm3]	:	2.40E+00	2.40E+00	2.40E+00	2.40E+00
Material	:	Concrete			
Erosion Rate [cm/day]	:	2.40E-08	2.40E-08	2.40E-08	2.40E-08
Porosity	:	1.00E-01	1.00E-01	1.00E-01	1.00E-01
Eff. Diffusion [m2/s]	:	2.00E-05	2.00E-05	2.00E-05	2.00E-05
Emanation Fractions(1)	:	2.00E-01	2.00E-01	2.00E-01	2.00E-01
	(2):	3.80E-01	2.00E-01	2.00E-01	2.00E-01

Contamination::

Nuclide Concentration

	[Bq /g]
K-40	1.270E-01
Ra-226	4.900E-02
Th-232	1.400E-02

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Source: 3

Location:: Room : 1 x: 2.00 y: 0.00 z: 2.00[m]

Geometry:: Type: Volume Length[m]:4.00E+00 Width[m]:3.00E+00 Direction: -y

Pathway ::

Direct Ingestion Rate: 0.000E+00 [gm/hr]

Fraction released to air: 1.000E-01

Containment :: Number of Regions: 4 Contaminated Region: 1

Region	:	1	2	3	4
Thickness [cm]	:	1.50E+01	1.50E+01	1.50E+01	1.50E+01
Density [g/cm3]	:	2.40E+00	2.40E+00	2.40E+00	2.40E+00
Material	:	Concrete			
Erosion Rate [cm/day]	:	2.40E-08	2.40E-08	2.40E-08	2.40E-08
Porosity	:	1.00E-01	1.00E-01	1.00E-01	1.00E-01
Eff. Diffusion [m2/s]	:	2.00E-05	2.00E-05	2.00E-05	2.00E-05
Emanation Fractions(1)	:	2.00E-01	2.00E-01	2.00E-01	2.00E-01
	(2):	3.80E-01	2.00E-01	2.00E-01	2.00E-01

Contamination::

Nuclide Concentration

	[Bq /g]
K-40	1.270E-01
Ra-226	4.900E-02
Th-232	1.400E-02

Title : Default Case for RESRAD-BUILD

Input File : C:\RESRAD_Family\BUILD\4.0\UserFiles\OBM TEST 1.bld

Source: 4

Location:: Room : 1 x: 2.00 y: 4.00 z: 2.00[m]

Geometry:: Type: Volume Length[m]:4.00E+00 Width[m]:3.00E+00 Direction: -y

Pathway ::

Direct Ingestion Rate: 0.000E+00 [gm/hr]

Fraction released to air: 1.000E-01

Containment :: Number of Regions: 4 Contaminated Region: 1

Region	:	1	2	3	4
Thickness [cm]	:	1.50E+01	1.50E+01	1.50E+01	1.50E+01
Density [g/cm3]	:	2.40E+00	2.40E+00	2.40E+00	2.40E+00
Material	:	Concrete			
Erosion Rate [cm/day]	:	2.40E-08	2.40E-08	2.40E-08	2.40E-08
Porosity	:	1.00E-01	1.00E-01	1.00E-01	1.00E-01
Eff. Diffusion [m2/s]	:	2.00E-05	2.00E-05	2.00E-05	2.00E-05
Emanation Fractions(1)	:	2.00E-01	2.00E-01	2.00E-01	2.00E-01
	(2):	3.80E-01	2.00E-01	2.00E-01	2.00E-01

Contamination::

Nuclide Concentration

	[Bq /g]
K-40	1.270E-01
Ra-226	4.900E-02
Th-232	1.400E-02

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Source: 5

Location:: Room : 1 x: 4.00 y: 2.00 z: 2.00[m]

Geometry:: Type: Volume Length[m]:4.00E+00 Width[m]:3.00E+00 Direction: -x

Pathway ::

Direct Ingestion Rate: 0.000E+00 [gm/hr]

Fraction released to air: 1.000E-01

Containment :: Number of Regions: 4 Contaminated Region: 1

Region	:	1	2	3	4
Thickness [cm]	:	1.50E+01	1.50E+01	1.50E+01	1.50E+01
Density [g/cm3]	:	2.40E+00	2.40E+00	2.40E+00	2.40E+00
Material	:	Concrete			
Erosion Rate [cm/day]	:	2.40E-08	2.40E-08	2.40E-08	2.40E-08
Porosity	:	1.00E-01	1.00E-01	1.00E-01	1.00E-01
Eff. Diffusion [m2/s]	:	2.00E-05	2.00E-05	2.00E-05	2.00E-05
Emanation Fractions(1)	:	2.00E-01	2.00E-01	2.00E-01	2.00E-01
	(2):	3.80E-01	2.00E-01	2.00E-01	2.00E-01

Contamination::

Nuclide Concentration

	[Bq /g]
K-40	1.270E-01
Ra-226	4.900E-02
Th-232	1.400E-02

Evaluation Time years	Receptor 1	Total
0.000000000	1.01E-01	1.01E-01
1.000000000	1.13E-01	1.13E-01

		Source 1	Source 2	Source 3	Source 4	Source 5	Total
Receptor	1	2.29E-02	1.72E-02	1.72E-02	2.17E-02	2.17E-02	1.01E-01
Total		2.29E-02	1.72E-02	1.72E-02	2.17E-02	2.17E-02	1.01E-01

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Input File : C:\RESRAD_Family\BUILD\4.0\UserFiles\OBM TEST 1.bld

Evaluation Time: 0.00000000E+00 years

Pathway Detail of Doses

[mSv]

Source: 1

	External directly from Source	Inhalation	External from Deposition on floor	External from Suspension in air	Ingestion of Deposition	Radon	Ingestion of Source	Total
Receptor								
1	1.99E-06	2.26E-06	2.19E-09	2.48E-11	4.71E-08	2.29E-02	0.00E+00	2.29E-02
Total	1.99E-06	2.26E-06	2.19E-09	2.48E-11	4.71E-08	2.29E-02	0.00E+00	2.29E-02

Source: 2

	External directly from Source	Inhalation	External from Deposition on floor	External from Suspension in air	Ingestion of Deposition	Radon	Ingestion of Source	Total
Receptor								
1	1.80E-06	1.69E-06	1.65E-09	1.86E-11	3.53E-08	1.72E-02	0.00E+00	1.72E-02
Total	1.80E-06	1.69E-06	1.65E-09	1.86E-11	3.53E-08	1.72E-02	0.00E+00	1.72E-02

Source: 3

	External directly from Source	Inhalation	External from Deposition on floor	External from Suspension in air	Ingestion of Deposition	Radon	Ingestion of Source	Total
Receptor								
1	1.80E-06	1.69E-06	1.65E-09	1.86E-11	3.53E-08	1.72E-02	0.00E+00	1.72E-02
Total	1.80E-06	1.69E-06	1.65E-09	1.86E-11	3.53E-08	1.72E-02	0.00E+00	1.72E-02

Source: 4

	External directly from Source	Inhalation	External from Deposition on floor	External from Suspension in air	Ingestion of Deposition	Radon	Ingestion of Source	Total
Receptor								
1	4.47E-03	1.69E-06	1.65E-09	1.86E-11	3.53E-08	1.72E-02	0.00E+00	2.17E-02
Total	4.47E-03	1.69E-06	1.65E-09	1.86E-11	3.53E-08	1.72E-02	0.00E+00	2.17E-02

Source: 5

	External directly from Source	Inhalation	External from Deposition on floor	External from Suspension in air	Ingestion of Deposition	Radon	Ingestion of Source	Total
Receptor								
1	4.47E-03	1.69E-06	1.65E-09	1.86E-11	3.53E-08	1.72E-02	0.00E+00	2.17E-02
Total	4.47E-03	1.69E-06	1.65E-09	1.86E-11	3.53E-08	1.72E-02	0.00E+00	2.17E-02

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Evaluation Time: 0.00000000E+00 years

Nuclide Detail of Doses

[mSv]

Source: 1

Nuclide	Receptor	Total
	1	
K-40	4.98E-07	4.98E-07
Ra-226	2.23E-02	2.23E-02
Pb-210	7.53E-09	7.53E-09
Po-210	3.19E-09	3.19E-09
Th-232	1.72E-06	1.72E-06
Ra-228	2.48E-08	2.48E-08
Th-228	6.14E-04	6.14E-04

Source: 2

Nuclide	Receptor	Total
	1	
K-40	4.50E-07	4.50E-07
Ra-226	1.67E-02	1.67E-02
Pb-210	5.65E-09	5.65E-09
Po-210	2.40E-09	2.40E-09
Th-232	1.29E-06	1.29E-06
Ra-228	1.95E-08	1.95E-08
Th-228	4.60E-04	4.60E-04

Source: 3

Nuclide	Receptor	Total
	1	
K-40	4.50E-07	4.50E-07
Ra-226	1.67E-02	1.67E-02
Pb-210	5.65E-09	5.65E-09
Po-210	2.40E-09	2.40E-09
Th-232	1.29E-06	1.29E-06
Ra-228	1.95E-08	1.95E-08
Th-228	4.60E-04	4.60E-04

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Evaluation Time: 0.00000000E+00 years

Source: 4

Nuclide	Receptor	Total
1		
K-40	9.59E-04	9.59E-04
Ra-226	2.02E-02	2.02E-02
Pb-210	8.22E-09	8.22E-09
Po-210	2.48E-09	2.48E-09
Th-232	1.29E-06	1.29E-06
Ra-228	2.74E-05	2.74E-05
Th-228	4.67E-04	4.67E-04

Source: 5

Nuclide	Receptor	Total
1		
K-40	9.59E-04	9.59E-04
Ra-226	2.02E-02	2.02E-02
Pb-210	8.22E-09	8.22E-09
Po-210	2.48E-09	2.48E-09
Th-232	1.29E-06	1.29E-06
Ra-228	2.74E-05	2.74E-05
Th-228	4.67E-04	4.67E-04

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mSv]

		Source 1	Source 2	Source 3	Source 4	Source 5	Total
Receptor	1	2.61E-02	1.96E-02	1.96E-02	2.41E-02	2.41E-02	1.13E-01
Total		2.61E-02	1.96E-02	1.96E-02	2.41E-02	2.41E-02	1.13E-01

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Evaluation Time: 1.00000000 years

Pathway Detail of Doses

[mSv]

Source: 1

	External directly from Source	Inhalation	External from Deposition on floor	External from Suspension in air	Ingestion of Deposition	Radon	Ingestion of Source	Total
Receptor								
1	2.05E-06	4.68E-06	4.90E-09	5.10E-11	1.20E-07	2.61E-02	0.00E+00	2.61E-02
Total	2.05E-06	4.68E-06	4.90E-09	5.10E-11	1.20E-07	2.61E-02	0.00E+00	2.61E-02

Source: 2

	External directly from Source	Inhalation	External from Deposition on floor	External from Suspension in air	Ingestion of Deposition	Radon	Ingestion of Source	Total
Receptor								
1	1.85E-06	3.51E-06	3.68E-09	3.82E-11	9.01E-08	1.96E-02	0.00E+00	1.96E-02
Total	1.85E-06	3.51E-06	3.68E-09	3.82E-11	9.01E-08	1.96E-02	0.00E+00	1.96E-02

Source: 3

	External directly from Source	Inhalation	External from Deposition on floor	External from Suspension in air	Ingestion of Deposition	Radon	Ingestion of Source	Total
Receptor								
1	1.85E-06	3.51E-06	3.68E-09	3.82E-11	9.01E-08	1.96E-02	0.00E+00	1.96E-02
Total	1.85E-06	3.51E-06	3.68E-09	3.82E-11	9.01E-08	1.96E-02	0.00E+00	1.96E-02

Source: 4

	External directly from Source	Inhalation	External from Deposition on floor	External from Suspension in air	Ingestion of Deposition	Radon	Ingestion of Source	Total
Receptor								
1	4.56E-03	3.51E-06	3.68E-09	3.82E-11	9.01E-08	1.96E-02	0.00E+00	2.41E-02
Total	4.56E-03	3.51E-06	3.68E-09	3.82E-11	9.01E-08	1.96E-02	0.00E+00	2.41E-02

Source: 5

	External directly from Source	Inhalation	External from Deposition on floor	External from Suspension in air	Ingestion of Deposition	Radon	Ingestion of Source	Total
Receptor								
1	4.56E-03	3.51E-06	3.68E-09	3.82E-11	9.01E-08	1.96E-02	0.00E+00	2.41E-02
Total	4.56E-03	3.51E-06	3.68E-09	3.82E-11	9.01E-08	1.96E-02	0.00E+00	2.41E-02

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Evaluation Time: 1.00000000 years

Nuclide Detail of Doses

[mSv]

Source: 1

Nuclide	Receptor	Total
	1	
K-40	5.01E-07	5.01E-07
Ra-226	2.23E-02	2.23E-02
Pb-210	3.72E-08	3.72E-08
Po-210	2.43E-08	2.43E-08
Th-232	3.47E-06	3.47E-06
Ra-228	1.08E-07	1.08E-07
Th-228	3.80E-03	3.80E-03

Source: 2

Nuclide	Receptor	Total
	1	
K-40	4.52E-07	4.52E-07
Ra-226	1.67E-02	1.67E-02
Pb-210	2.79E-08	2.79E-08
Po-210	1.82E-08	1.82E-08
Th-232	2.60E-06	2.60E-06
Ra-228	8.33E-08	8.33E-08
Th-228	2.85E-03	2.85E-03

Source: 3

Nuclide	Receptor	Total
	1	
K-40	4.52E-07	4.52E-07
Ra-226	1.67E-02	1.67E-02
Pb-210	2.79E-08	2.79E-08
Po-210	1.82E-08	1.82E-08
Th-232	2.60E-06	2.60E-06
Ra-228	8.33E-08	8.33E-08
Th-228	2.85E-03	2.85E-03

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Evaluation Time: 1.00000000 years

Source: 4

Nuclide	Receptor	Total
1		
K-40	9.59E-04	9.59E-04
Ra-226	2.02E-02	2.02E-02
Pb-210	3.55E-08	3.55E-08
Po-210	1.86E-08	1.86E-08
Th-232	2.60E-06	2.60E-06
Ra-228	7.82E-05	7.82E-05
Th-228	2.89E-03	2.89E-03

Source: 5

Nuclide	Receptor	Total
1		
K-40	9.59E-04	9.59E-04
Ra-226	2.02E-02	2.02E-02
Pb-210	3.55E-08	3.55E-08
Po-210	1.86E-08	1.86E-08
Th-232	2.60E-06	2.60E-06
Ra-228	7.82E-05	7.82E-05
Th-228	2.89E-03	2.89E-03