

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

RESRAD-BUILD Table of Contents

RESRAD-BUILD Input Parameters.....	2
Building Information.....	3
Source Information.....	4
For time = 0.00E+00 yr	
Time Specific Parameters.....	7
Receptor-Source Dose Summary.....	10
Dose by Pathway Detail.....	11
Dose by Nuclide Detail.....	12
For time = 1.00E+00 yr	
Time Specific Parameters.....	14
Receptor-Source Dose Summary.....	17
Dose by Pathway Detail.....	18
Dose by Nuclide Detail.....	19
For time = 3.00E+01 yr	
Time Specific Parameters.....	21
Receptor-Source Dose Summary.....	24
Dose by Pathway Detail.....	25
Dose by Nuclide Detail.....	26
Full Summary.....	28

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RESRAD-BUILD Input Parameters

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Number of Sources : 6
Number of Receptors: 1
Total Time : 3.652500E+02 days
Fraction Inside : 2.700000E-01

===== Receptor Information =====

Receptor	Room	x	y	z	FracTime	Inhalation	Ingestion(Dust)
		[m]	[m]	[m]		[m3/day]	[m2/hr]
1	1	9.000	15.100	1.000	1.000	3.36E+01	1.10E-04

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

Receptor	Source	Density	Thickness	Material
		[g/cm3]	[cm]	
1	1	2.40E+00	0.00E+00	Concrete
1	2	2.40E+00	0.00E+00	Concrete
1	3	2.40E+00	0.00E+00	Concrete
1	4	2.40E+00	0.00E+00	Concrete
1	5	2.40E+00	0.00E+00	Concrete
1	6	2.40E+00	0.00E+00	Concrete

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==== Building Information =====

Building Air Exchange Rate: 8.30E-01 1/hr

Height [m]	Air Exchanges [m3/hr]
Area [m2]	*****
	* * *
	* * *
	* * * <=Q01: 3.30E+03
H1: 7.300	* Room 1 * Q10 : 3.30E+03
	* LAMBDA: 8.30E-01 * *
Area 544.000	* * *
	* * *

Deposition velocity: 8.07E-05 [m/s] Resuspension Rate: 5.73E-08 [1/s]

Title : Large Warehouse - Occupancy - Th-232+C

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==== Source Information =====

Source: 1

Location:: Room : 1 x: 9.00 y: 15.10 z: 0.00[m]

Geometry:: Type: Area Length[m]:1.80E+01 Width[m]:3.02E+01 Direction: z

Pathway ::

Direct Ingestion Rate: 6.140E-08 [1/hr]

Fraction released to air: 7.000E-02

Removable fraction: 1.000E-01

Time to Remove: 1.792E+04 [day]

Radon Release Fraction: 0.000E+00

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[dpm/m2]	[mrem/dpm]	[mrem/dpm]	[mrem/yr/ (dpm/m3)]
TH-232	1.000E+02	1.230E-03	7.387E-01	4.588E-07
TH-228	1.000E+02	3.642E-04	1.556E-01	4.224E-03
RA-228	1.000E+02	6.496E-04	2.287E-03	2.515E-03

Source: 2

Location:: Room : 1 x: 9.00 y: 15.10 z: 7.30[m]

Geometry:: Type: Area Length[m]:1.80E+01 Width[m]:3.02E+01 Direction: z

Pathway ::

Direct Ingestion Rate: 6.140E-08 [1/hr]

Fraction released to air: 7.000E-02

Removable fraction: 1.000E-01

Time to Remove: 1.792E+04 [day]

Radon Release Fraction: 0.000E+00

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[dpm/m2]	[mrem/dpm]	[mrem/dpm]	[mrem/yr/ (dpm/m3)]
TH-232	1.000E+02	1.230E-03	7.387E-01	4.588E-07
TH-228	1.000E+02	3.642E-04	1.556E-01	4.224E-03
RA-228	1.000E+02	6.496E-04	2.287E-03	2.515E-03

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Source: 3

Location:: Room : 1 x: 0.00 y: 15.10 z: 3.70[m]

Geometry:: Type: Area Length[m]:3.02E+01 Width[m]:7.30E+00 Direction: x

Pathway ::

Direct Ingestion Rate: 6.140E-08 [1/hr]

Fraction released to air: 7.000E-02

Removable fraction: 1.000E-01

Time to Remove: 1.792E+04 [day]

Radon Release Fraction: 0.000E+00

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[dpm/m2]	[mrem/dpm]	[mrem/dpm]	[mrem/yr/ (dpm/m3)]
TH-232	1.000E+02	1.230E-03	7.387E-01	4.588E-07
TH-228	1.000E+02	3.642E-04	1.556E-01	4.224E-03
RA-228	1.000E+02	6.496E-04	2.287E-03	2.515E-03

Source: 4

Location:: Room : 1 x: 9.00 y: 30.20 z: 3.70[m]

Geometry:: Type: Area Length[m]:1.80E+01 Width[m]:7.30E+00 Direction: y

Pathway ::

Direct Ingestion Rate: 6.140E-08 [1/hr]

Fraction released to air: 7.000E-02

Removable fraction: 1.000E-01

Time to Remove: 1.792E+04 [day]

Radon Release Fraction: 0.000E+00

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[dpm/m2]	[mrem/dpm]	[mrem/dpm]	[mrem/yr/ (dpm/m3)]
TH-232	1.000E+02	1.230E-03	7.387E-01	4.588E-07
TH-228	1.000E+02	3.642E-04	1.556E-01	4.224E-03
RA-228	1.000E+02	6.496E-04	2.287E-03	2.515E-03

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Source: 5

Location:: Room : 1 x: 18.00 y: 15.10 z: 3.70[m]

Geometry:: Type: Area Length[m]:3.02E+01 Width[m]:7.30E+00 Direction: x

Pathway ::

Direct Ingestion Rate: 6.140E-08 [1/hr]

Fraction released to air: 7.000E-02

Removable fraction: 1.000E-01

Time to Remove: 1.792E+04 [day]

Radon Release Fraction: 0.000E+00

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[dpm/m2]	[mrem/dpm]	[mrem/dpm]	[mrem/yr/ (dpm/m3)]
TH-232	1.000E+02	1.230E-03	7.387E-01	4.588E-07
TH-228	1.000E+02	3.642E-04	1.556E-01	4.224E-03
RA-228	1.000E+02	6.496E-04	2.287E-03	2.515E-03

Source: 6

Location:: Room : 1 x: 9.00 y: 0.00 z: 3.70[m]

Geometry:: Type: Area Length[m]:1.80E+01 Width[m]:7.30E+00 Direction: y

Pathway ::

Direct Ingestion Rate: 6.140E-08 [1/hr]

Fraction released to air: 7.000E-02

Removable fraction: 1.000E-01

Time to Remove: 1.792E+04 [day]

Radon Release Fraction: 0.000E+00

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[dpm/m2]	[mrem/dpm]	[mrem/dpm]	[mrem/yr/ (dpm/m3)]
TH-232	1.000E+02	1.230E-03	7.387E-01	4.588E-07
TH-228	1.000E+02	3.642E-04	1.556E-01	4.224E-03
RA-228	1.000E+02	6.496E-04	2.287E-03	2.515E-03

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Evaluation Time: 0.0000000E+00 years

```
=====
=====
=====
Assessment for Time: 1
Time =0.00E+00 yr
=====
=====
```

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

Source: 1

Location:: Room : 1 x: 9.00 y: 15.10 z: 0.00 [m]

Geometry:: Type: Area Length[m]:1.80E+01 Width[m]:3.02E+01 Direction: z

Pathway ::

Direct Ingestion Rate: 6.140E-08 [1/hr]

Fraction released to air: 7.000E-02

Removable fraction: 1.000E-01

Time to Remove: 1.792E+04 [day]

Contamination::	Nuclide	Concentration
		[dpm/m2]
	TH-232	1.000E+02
	TH-228	1.000E+02
	RA-228	1.000E+02

Source: 2

Location:: Room : 1 x: 9.00 y: 15.10 z: 7.30 [m]

Geometry:: Type: Area Length[m]:1.80E+01 Width[m]:3.02E+01 Direction: z

Pathway ::

Direct Ingestion Rate: 6.140E-08 [1/hr]

Fraction released to air: 7.000E-02

Removable fraction: 1.000E-01

Time to Remove: 1.792E+04 [day]

Contamination::	Nuclide	Concentration
		[dpm/m2]
	TH-232	1.000E+02
	TH-228	1.000E+02
	RA-228	1.000E+02

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Evaluation Time: 0.0000000E+00 years

Source: 3

Location:: Room : 1 x: 0.00 y: 15.10 z: 3.70 [m]

Geometry:: Type: Area Length[m]:3.02E+01 Width[m]:7.30E+00 Direction: x

Pathway ::

Direct Ingestion Rate: 6.140E-08 [1/hr]

Fraction released to air: 7.000E-02

Removable fraction: 1.000E-01

Time to Remove: 1.792E+04 [day]

Contamination::	Nuclide	Concentration
		[dpm/m2]
	TH-232	1.000E+02
	TH-228	1.000E+02
	RA-228	1.000E+02

Source: 4

Location:: Room : 1 x: 9.00 y: 30.20 z: 3.70 [m]

Geometry:: Type: Area Length[m]:1.80E+01 Width[m]:7.30E+00 Direction: y

Pathway ::

Direct Ingestion Rate: 6.140E-08 [1/hr]

Fraction released to air: 7.000E-02

Removable fraction: 1.000E-01

Time to Remove: 1.792E+04 [day]

Contamination::	Nuclide	Concentration
		[dpm/m2]
	TH-232	1.000E+02
	TH-228	1.000E+02
	RA-228	1.000E+02

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Evaluation Time: 0.0000000E+00 years

Source: 5

Location:: Room : 1 x: 18.00 y: 15.10 z: 3.70 [m]

Geometry:: Type: Area Length[m]:3.02E+01 Width[m]:7.30E+00 Direction: x

Pathway ::

Direct Ingestion Rate: 6.140E-08 [1/hr]

Fraction released to air: 7.000E-02

Removable fraction: 1.000E-01

Time to Remove: 1.792E+04 [day]

Contamination::	Nuclide	Concentration
		[dpm/m2]
	TH-232	1.000E+02
	TH-228	1.000E+02
	RA-228	1.000E+02

Source: 6

Location:: Room : 1 x: 9.00 y: 0.00 z: 3.70 [m]

Geometry:: Type: Area Length[m]:1.80E+01 Width[m]:7.30E+00 Direction: y

Pathway ::

Direct Ingestion Rate: 6.140E-08 [1/hr]

Fraction released to air: 7.000E-02

Removable fraction: 1.000E-01

Time to Remove: 1.792E+04 [day]

Contamination::	Nuclide	Concentration
		[dpm/m2]
	TH-232	1.000E+02
	TH-228	1.000E+02
	RA-228	1.000E+02

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Evaluation Time: 0.0000000E+00 years

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

	Source	Source	Source	Source	Source	Source	Total
	1	2	3	4	5	6	
Receptor 1	4.12E-03	3.05E-03	1.19E-03	6.66E-04	1.19E-03	6.66E-04	1.09E-02
Total	4.12E-03	3.05E-03	1.19E-03	6.66E-04	1.19E-03	6.66E-04	1.09E-02

Title : Large Warehouse - Occupancy - Th-232+C

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Evaluation Time: 0.0000000E+00 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.57E-03	5.18E-09	4.86E-10	7.96E-04	1.08E-09	1.75E-03
Total	1.57E-03	5.18E-09	4.86E-10	7.96E-04	1.08E-09	1.75E-03

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	4.99E-04	5.18E-09	4.86E-10	7.96E-04	1.08E-09	1.75E-03
Total	4.99E-04	5.18E-09	4.86E-10	7.96E-04	1.08E-09	1.75E-03

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.51E-04	2.10E-09	1.97E-10	3.23E-04	4.38E-10	7.12E-04
Total	1.51E-04	2.10E-09	1.97E-10	3.23E-04	4.38E-10	7.12E-04

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	4.89E-05	1.25E-09	1.18E-10	1.93E-04	2.61E-10	4.24E-04
Total	4.89E-05	1.25E-09	1.18E-10	1.93E-04	2.61E-10	4.24E-04

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.51E-04	2.10E-09	1.97E-10	3.23E-04	4.38E-10	7.12E-04
Total	1.51E-04	2.10E-09	1.97E-10	3.23E-04	4.38E-10	7.12E-04

Source: 6

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	4.89E-05	1.25E-09	1.18E-10	1.93E-04	2.61E-10	4.24E-04
Total	4.89E-05	1.25E-09	1.18E-10	1.93E-04	2.61E-10	4.24E-04

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Evaluation Time: 0.0000000E+00 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
TH-232	1.62E-03	1.62E-03
RA-228		
TH-228	8.80E-06	8.80E-06
TH-228		
TH-228	1.14E-03	1.14E-03
RA-228		
TH-228	2.10E-04	2.10E-04

Source: 2

Nuclide	Receptor	Total
	1	
TH-232	1.62E-03	1.62E-03
RA-228		
TH-228	4.66E-06	4.66E-06
TH-228		
TH-228	6.04E-04	6.04E-04
RA-228		
TH-228	1.11E-04	1.11E-04

Source: 3

Nuclide	Receptor	Total
	1	
TH-232	6.57E-04	6.57E-04
RA-228		
TH-228	1.69E-06	1.69E-06
TH-228		
TH-228	2.19E-04	2.19E-04
RA-228		
TH-228	4.05E-05	4.05E-05

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Evaluation Time: 0.0000000E+00 years

Source: 4

Nuclide	Receptor	Total
	1	
TH-232	3.91E-04	3.91E-04
RA-228		
TH-228	8.50E-07	8.50E-07
TH-228		
TH-228	1.10E-04	1.10E-04
RA-228		
TH-228	2.03E-05	2.03E-05

Source: 5

Nuclide	Receptor	Total
	1	
TH-232	6.57E-04	6.57E-04
RA-228		
TH-228	1.69E-06	1.69E-06
TH-228		
TH-228	2.19E-04	2.19E-04
RA-228		
TH-228	4.05E-05	4.05E-05

Source: 6

Nuclide	Receptor	Total
	1	
TH-232	3.91E-04	3.91E-04
RA-228		
TH-228	8.50E-07	8.50E-07
TH-228		
TH-228	1.10E-04	1.10E-04
RA-228		
TH-228	2.03E-05	2.03E-05

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Evaluation Time: 1.00000000 years

```
=====
=====
=====
Assessment for Time: 2
Time =1.00E+00 yr
=====
=====
```

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

Source: 1

Location:: Room : 1 x: 9.00 y: 15.10 z: 0.00 [m]
Geometry:: Type: Area Length[m]:1.80E+01 Width[m]:3.02E+01 Direction: z
Pathway ::
Direct Ingestion Rate: 6.140E-08 [1/hr]
Fraction released to air: 7.000E-02
Removable fraction: 9.816E-02
Time to Remove: 1.792E+04 [day]

Contamination::	Nuclide	Concentration
		[dpm/m2]
	TH-232	9.980E+01
	TH-228	9.980E+01
	RA-228	9.980E+01

Source: 2

Location:: Room : 1 x: 9.00 y: 15.10 z: 7.30 [m]
Geometry:: Type: Area Length[m]:1.80E+01 Width[m]:3.02E+01 Direction: z
Pathway ::
Direct Ingestion Rate: 6.140E-08 [1/hr]
Fraction released to air: 7.000E-02
Removable fraction: 9.816E-02
Time to Remove: 1.792E+04 [day]

Contamination::	Nuclide	Concentration
		[dpm/m2]
	TH-232	9.980E+01
	TH-228	9.980E+01
	RA-228	9.980E+01

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Evaluation Time: 1.00000000 years

Source: 3

Location:: Room : 1 x: 0.00 y: 15.10 z: 3.70 [m]

Geometry:: Type: Area Length[m]:3.02E+01 Width[m]:7.30E+00 Direction: x

Pathway ::

Direct Ingestion Rate: 6.140E-08 [1/hr]

Fraction released to air: 7.000E-02

Removable fraction: 9.816E-02

Time to Remove: 1.792E+04 [day]

Contamination::	Nuclide	Concentration
		[dpm/m2]
	TH-232	9.980E+01
	TH-228	9.980E+01
	RA-228	9.980E+01

Source: 4

Location:: Room : 1 x: 9.00 y: 30.20 z: 3.70 [m]

Geometry:: Type: Area Length[m]:1.80E+01 Width[m]:7.30E+00 Direction: y

Pathway ::

Direct Ingestion Rate: 6.140E-08 [1/hr]

Fraction released to air: 7.000E-02

Removable fraction: 9.816E-02

Time to Remove: 1.792E+04 [day]

Contamination::	Nuclide	Concentration
		[dpm/m2]
	TH-232	9.980E+01
	TH-228	9.980E+01
	RA-228	9.980E+01

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Evaluation Time: 1.00000000 years

Source: 5

Location:: Room : 1 x: 18.00 y: 15.10 z: 3.70 [m]

Geometry:: Type: Area Length[m]:3.02E+01 Width[m]:7.30E+00 Direction: x

Pathway ::

Direct Ingestion Rate: 6.140E-08 [1/hr]

Fraction released to air: 7.000E-02

Removable fraction: 9.816E-02

Time to Remove: 1.792E+04 [day]

Contamination::	Nuclide	Concentration
		[dpm/m2]
	TH-232	9.980E+01
	TH-228	9.980E+01
	RA-228	9.980E+01

Source: 6

Location:: Room : 1 x: 9.00 y: 0.00 z: 3.70 [m]

Geometry:: Type: Area Length[m]:1.80E+01 Width[m]:7.30E+00 Direction: y

Pathway ::

Direct Ingestion Rate: 6.140E-08 [1/hr]

Fraction released to air: 7.000E-02

Removable fraction: 9.816E-02

Time to Remove: 1.792E+04 [day]

Contamination::	Nuclide	Concentration
		[dpm/m2]
	TH-232	9.980E+01
	TH-228	9.980E+01
	RA-228	9.980E+01

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Evaluation Time: 1.00000000 years

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

	Source	Source	Source	Source	Source	Source	Total
	1	2	3	4	5	6	
Receptor 1	4.08E-03	3.01E-03	1.17E-03	6.57E-04	1.17E-03	6.57E-04	1.08E-02
Total	4.08E-03	3.01E-03	1.17E-03	6.57E-04	1.17E-03	6.57E-04	1.08E-02

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Evaluation Time: 1.00000000 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.57E-03	5.18E-09	4.86E-10	7.96E-04	1.08E-09	1.72E-03
Total	1.57E-03	5.18E-09	4.86E-10	7.96E-04	1.08E-09	1.72E-03

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	4.98E-04	5.18E-09	4.86E-10	7.96E-04	1.08E-09	1.72E-03
Total	4.98E-04	5.18E-09	4.86E-10	7.96E-04	1.08E-09	1.72E-03

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.51E-04	2.10E-09	1.97E-10	3.23E-04	4.38E-10	6.97E-04
Total	1.51E-04	2.10E-09	1.97E-10	3.23E-04	4.38E-10	6.97E-04

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	4.88E-05	1.25E-09	1.18E-10	1.93E-04	2.61E-10	4.15E-04
Total	4.88E-05	1.25E-09	1.18E-10	1.93E-04	2.61E-10	4.15E-04

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.51E-04	2.10E-09	1.97E-10	3.23E-04	4.38E-10	6.97E-04
Total	1.51E-04	2.10E-09	1.97E-10	3.23E-04	4.38E-10	6.97E-04

Source: 6

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	4.88E-05	1.25E-09	1.18E-10	1.93E-04	2.61E-10	4.15E-04
Total	4.88E-05	1.25E-09	1.18E-10	1.93E-04	2.61E-10	4.15E-04

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Evaluation Time: 1.00000000 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
TH-232	1.60E-03	1.60E-03
RA-228		
TH-228	5.37E-05	5.37E-05
TH-228		
TH-228	7.88E-04	7.88E-04
RA-228		
TH-228	5.09E-04	5.09E-04

Source: 2

Nuclide	Receptor	Total
	1	
TH-232	1.60E-03	1.60E-03
RA-228		
TH-228	2.83E-05	2.83E-05
TH-228		
TH-228	4.16E-04	4.16E-04
RA-228		
TH-228	2.69E-04	2.69E-04

Source: 3

Nuclide	Receptor	Total
	1	
TH-232	6.49E-04	6.49E-04
RA-228		
TH-228	1.03E-05	1.03E-05
TH-228		
TH-228	1.51E-04	1.51E-04
RA-228		
TH-228	9.75E-05	9.75E-05

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Evaluation Time: 1.00000000 years

Source: 4

Nuclide	Receptor	Total
	1	
TH-232	3.87E-04	3.87E-04
RA-228		
TH-228	5.15E-06	5.15E-06
TH-228		
TH-228	7.57E-05	7.57E-05
RA-228		
TH-228	4.89E-05	4.89E-05

Source: 5

Nuclide	Receptor	Total
	1	
TH-232	6.49E-04	6.49E-04
RA-228		
TH-228	1.03E-05	1.03E-05
TH-228		
TH-228	1.51E-04	1.51E-04
RA-228		
TH-228	9.75E-05	9.75E-05

Source: 6

Nuclide	Receptor	Total
	1	
TH-232	3.87E-04	3.87E-04
RA-228		
TH-228	5.15E-06	5.15E-06
TH-228		
TH-228	7.57E-05	7.57E-05
RA-228		
TH-228	4.89E-05	4.89E-05

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Evaluation Time: 30.000000 years

```
=====
=====
=====
Assessment for Time: 3
Time =3.00E+01 yr
=====
=====
```

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

Source: 1

Location:: Room : 1 x: 9.00 y: 15.10 z: 0.00 [m]

Geometry:: Type: Area Length[m]:1.80E+01 Width[m]:3.02E+01 Direction: z

Pathway ::

Direct Ingestion Rate: 6.140E-08 [1/hr]

Fraction released to air: 7.000E-02

Removable fraction: 4.138E-02

Time to Remove: 1.792E+04 [day]

Contamination::	Nuclide	Concentration
		[dpm/m2]
	TH-232	9.388E+01
	TH-228	9.388E+01
	RA-228	9.388E+01

Source: 2

Location:: Room : 1 x: 9.00 y: 15.10 z: 7.30 [m]

Geometry:: Type: Area Length[m]:1.80E+01 Width[m]:3.02E+01 Direction: z

Pathway ::

Direct Ingestion Rate: 6.140E-08 [1/hr]

Fraction released to air: 7.000E-02

Removable fraction: 4.138E-02

Time to Remove: 1.792E+04 [day]

Contamination::	Nuclide	Concentration
		[dpm/m2]
	TH-232	9.388E+01
	TH-228	9.388E+01
	RA-228	9.388E+01

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Evaluation Time: 30.000000 years

Source: 3

Location:: Room : 1 x: 0.00 y: 15.10 z: 3.70 [m]

Geometry:: Type: Area Length[m]:3.02E+01 Width[m]:7.30E+00 Direction: x

Pathway ::

Direct Ingestion Rate: 6.140E-08 [1/hr]

Fraction released to air: 7.000E-02

Removable fraction: 4.138E-02

Time to Remove: 1.792E+04 [day]

Contamination::	Nuclide	Concentration
		[dpm/m2]
	TH-232	9.388E+01
	TH-228	9.388E+01
	RA-228	9.388E+01

Source: 4

Location:: Room : 1 x: 9.00 y: 30.20 z: 3.70 [m]

Geometry:: Type: Area Length[m]:1.80E+01 Width[m]:7.30E+00 Direction: y

Pathway ::

Direct Ingestion Rate: 6.140E-08 [1/hr]

Fraction released to air: 7.000E-02

Removable fraction: 4.138E-02

Time to Remove: 1.792E+04 [day]

Contamination::	Nuclide	Concentration
		[dpm/m2]
	TH-232	9.388E+01
	TH-228	9.388E+01
	RA-228	9.388E+01

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Evaluation Time: 30.000000 years

Source: 5

Location:: Room : 1 x: 18.00 y: 15.10 z: 3.70 [m]

Geometry:: Type: Area Length[m]:3.02E+01 Width[m]:7.30E+00 Direction: x

Pathway ::

Direct Ingestion Rate: 6.140E-08 [1/hr]

Fraction released to air: 7.000E-02

Removable fraction: 4.138E-02

Time to Remove: 1.792E+04 [day]

Contamination::	Nuclide	Concentration
		[dpm/m2]
	TH-232	9.388E+01
	TH-228	9.388E+01
	RA-228	9.388E+01

Source: 6

Location:: Room : 1 x: 9.00 y: 0.00 z: 3.70 [m]

Geometry:: Type: Area Length[m]:1.80E+01 Width[m]:7.30E+00 Direction: y

Pathway ::

Direct Ingestion Rate: 6.140E-08 [1/hr]

Fraction released to air: 7.000E-02

Removable fraction: 4.138E-02

Time to Remove: 1.792E+04 [day]

Contamination::	Nuclide	Concentration
		[dpm/m2]
	TH-232	9.388E+01
	TH-228	9.388E+01
	RA-228	9.388E+01

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Evaluation Time: 30.0000000 years

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

	Source	Source	Source	Source	Source	Source	Total
	1	2	3	4	5	6	
Receptor 1	2.94E-03	1.94E-03	7.37E-04	4.01E-04	7.37E-04	4.01E-04	7.15E-03
Total	2.94E-03	1.94E-03	7.37E-04	4.01E-04	7.37E-04	4.01E-04	7.15E-03

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Evaluation Time: 30.0000000 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.48E-03	5.18E-09	4.86E-10	7.96E-04	1.08E-09	6.71E-04
Total	1.48E-03	5.18E-09	4.86E-10	7.96E-04	1.08E-09	6.71E-04

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	4.69E-04	5.18E-09	4.86E-10	7.96E-04	1.08E-09	6.71E-04
Total	4.69E-04	5.18E-09	4.86E-10	7.96E-04	1.08E-09	6.71E-04

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.42E-04	2.10E-09	1.97E-10	3.23E-04	4.38E-10	2.72E-04
Total	1.42E-04	2.10E-09	1.97E-10	3.23E-04	4.38E-10	2.72E-04

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	4.59E-05	1.25E-09	1.18E-10	1.93E-04	2.61E-10	1.62E-04
Total	4.59E-05	1.25E-09	1.18E-10	1.93E-04	2.61E-10	1.62E-04

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.42E-04	2.10E-09	1.97E-10	3.23E-04	4.38E-10	2.72E-04
Total	1.42E-04	2.10E-09	1.97E-10	3.23E-04	4.38E-10	2.72E-04

Source: 6

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	4.59E-05	1.25E-09	1.18E-10	1.93E-04	2.61E-10	1.62E-04
Total	4.59E-05	1.25E-09	1.18E-10	1.93E-04	2.61E-10	1.62E-04

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Evaluation Time: 30.000000 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
TH-232	1.03E-03	1.03E-03
RA-228		
TH-228	1.08E-03	1.08E-03
TH-228		
TH-228	1.76E-08	1.76E-08
RA-228		
TH-228	4.26E-05	4.26E-05

Source: 2

Nuclide	Receptor	Total
	1	
TH-232	1.02E-03	1.02E-03
RA-228		
TH-228	5.06E-04	5.06E-04
TH-228		
TH-228	8.25E-09	8.25E-09
RA-228		
TH-228	1.99E-05	1.99E-05

Source: 3

Nuclide	Receptor	Total
	1	
TH-232	4.16E-04	4.16E-04
RA-228		
TH-228	1.77E-04	1.77E-04
TH-228		
TH-228	2.89E-09	2.89E-09
RA-228		
TH-228	6.99E-06	6.99E-06

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Evaluation Time: 30.000000 years

Source: 4

Nuclide	Receptor	Total
	1	
TH-232	2.48E-04	2.48E-04
RA-228		
TH-228	8.36E-05	8.36E-05
TH-228		
TH-228	1.36E-09	1.36E-09
RA-228		
TH-228	3.29E-06	3.29E-06

Source: 5

Nuclide	Receptor	Total
	1	
TH-232	4.16E-04	4.16E-04
RA-228		
TH-228	1.77E-04	1.77E-04
TH-228		
TH-228	2.89E-09	2.89E-09
RA-228		
TH-228	6.99E-06	6.99E-06

Source: 6

Nuclide	Receptor	Total
	1	
TH-232	2.48E-04	2.48E-04
RA-228		
TH-228	8.36E-05	8.36E-05
TH-228		
TH-228	1.36E-09	1.36E-09
RA-228		
TH-228	3.29E-06	3.29E-06

Title : Large Warehouse - Occupancy - Th-232+C

Input File : C:\RESRAD_Family\BUILD\HEMATITE - Large Warehouse - Th-232+C.bld

Full Summary

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RESRAD-BUILD Dose (Time) Tables

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Receptor Dose Received for the Exposure Duration

(mrem)

Evaluation Time [yr]

0.00E+00 1.00E+00 3.00E+01

1 1.09E-02 1.08E-02 7.15E-03

Receptor Dose/Yr Averaged Over Exposure Duration

(mrem/yr)

Evaluation Time [yr]

0.00E+00 1.00E+00 3.00E+01

1 1.09E-02 1.08E-02 7.15E-03