

Title : DHS NUSTL Room 544, Surficial Contaminat

Input File : C:\RESRAD_Family\BUILD\3.5\NUSTL_Rm_544_Surficial_Ac-227_Rev1.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 : 2.283105E-01

Receptor Information

Receptor	Room	x [m]	y [m]	z [m]	FracTime	Inhalation [m3/day]	Ingestion(Dust) [m2/hr]
1	1	1.510	2.780	0.910	1.000	1.80E+01	1.00E-04

Receptor-Source Shielding Relationship

Receptor	Source	Density [g/cm3]	Thickness [cm]	Material
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

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

Building Air Exchange Rate: 3.00E-01 1/hr

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

	*	*
	*	*
	*	<=Q01: 1.76E+01
H1: 3.500	* Room 1	* Q10 : 1.76E+01
	* LAMBDA: 3.00E-01	*
Area 16.770	*	*
	*	*

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

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

Source: 1

Location:: Room : 1 x: 0.00 y: 2.78 z: 0.91[m]

Geometry:: Type: Area Length[m]:3.02E+00 Width[m]:1.83E+00 Direction: x

Pathway ::

Direct Ingestion Rate: 0.000E+00 [1/hr]

Fraction released to air: 1.000E-01

Removable fraction: 5.000E-01

Time to Remove: 1.000E+04 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
AC-227	1.400E+03	1.480E-02	6.724E+00	2.161E-03

Source: 2

Location:: Room : 1 x: 1.51 y: 5.56 z: 0.91[m]

Geometry:: Type: Area Length[m]:5.56E+00 Width[m]:1.83E+00 Direction: y

Pathway ::

Direct Ingestion Rate: 0.000E+00 [1/hr]

Fraction released to air: 1.000E-01

Removable fraction: 5.000E-01

Time to Remove: 1.000E+04 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
AC-227	9.870E+02	1.480E-02	6.724E+00	2.161E-03

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Source: 3

Location:: Room : 1 x: 3.02 y: 2.78 z: 0.91[m]

Geometry:: Type: Area Length[m]:5.56E+00 Width[m]:1.83E+00 Direction: x

Pathway ::

Direct Ingestion Rate: 0.000E+00 [1/hr]

Fraction released to air: 1.000E-01

Removable fraction: 5.000E-01

Time to Remove: 1.000E+04 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
AC-227	4.680E+03	1.480E-02	6.724E+00	2.161E-03

Source: 4

Location:: Room : 1 x: 1.51 y: 0.00 z: 0.91[m]

Geometry:: Type: Area Length[m]:5.56E+00 Width[m]:1.83E+00 Direction: y

Pathway ::

Direct Ingestion Rate: 0.000E+00 [1/hr]

Fraction released to air: 1.000E-01

Removable fraction: 5.000E-01

Time to Remove: 1.000E+04 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
AC-227	2.840E+03	1.480E-02	6.724E+00	2.161E-03

Title : DHS NUSTL Room 544, Surficial Contaminat

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Source: 5

Location:: Room : 1 x: 1.51 y: 2.78 z: 0.00[m]

Geometry:: Type: Area Length[m]:3.02E+00 Width[m]:5.56E+00 Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 5.000E-01

Time to Remove: 1.000E+04 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
AC-227	2.530E+03	1.480E-02	6.724E+00	2.161E-03

Title : DHS NUSTL Room 544, Surficial Contaminat

Input File : C:\RESRAD_Family\BUILD\3.5\NUSTL_Rm_544_Surficial_Ac-227_Rev1.bld

Evaluation Time: 0.0000000E+00 years

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

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

Source: 1

Location:: Room : 1 x: 0.00 y: 2.78 z: 0.91 [m]

Geometry:: Type: Area Length[m]:3.02E+00 Width[m]:1.83E+00 Direction: x

Pathway ::

Direct Ingestion Rate: 0.000E+00 [1/hr]

Fraction released to air: 1.000E-01

Removable fraction: 5.000E-01

Time to Remove: 1.000E+04 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	AC-227	1.400E+03

Source: 2

Location:: Room : 1 x: 1.51 y: 5.56 z: 0.91 [m]

Geometry:: Type: Area Length[m]:5.56E+00 Width[m]:1.83E+00 Direction: y

Pathway ::

Direct Ingestion Rate: 0.000E+00 [1/hr]

Fraction released to air: 1.000E-01

Removable fraction: 5.000E-01

Time to Remove: 1.000E+04 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	AC-227	9.870E+02

Title : DHS NUSTL Room 544, Surficial Contaminat

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Evaluation Time: 0.0000000E+00 years

Source: 3

Location:: Room : 1 x: 3.02 y: 2.78 z: 0.91 [m]

Geometry:: Type: Area Length[m]:5.56E+00 Width[m]:1.83E+00 Direction: x

Pathway ::

Direct Ingestion Rate: 0.000E+00 [1/hr]

Fraction released to air: 1.000E-01

Removable fraction: 5.000E-01

Time to Remove: 1.000E+04 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	AC-227	4.680E+03

Source: 4

Location:: Room : 1 x: 1.51 y: 0.00 z: 0.91 [m]

Geometry:: Type: Area Length[m]:5.56E+00 Width[m]:1.83E+00 Direction: y

Pathway ::

Direct Ingestion Rate: 0.000E+00 [1/hr]

Fraction released to air: 1.000E-01

Removable fraction: 5.000E-01

Time to Remove: 1.000E+04 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	AC-227	2.840E+03

Source: 5

Location:: Room : 1 x: 1.51 y: 2.78 z: 0.00 [m]

Geometry:: Type: Area Length[m]:3.02E+00 Width[m]:5.56E+00 Direction: z

Pathway ::

Direct Ingestion Rate: 0.000E+00 [1/hr]

Fraction released to air: 1.000E-01

Removable fraction: 5.000E-01

Time to Remove: 1.000E+04 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	AC-227	2.530E+03

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

```
[mrem]
```

		Source 1	Source 2	Source 3	Source 4	Source 5	Total
Receptor	1	8.56E-01	1.11E+00	5.27E+00	3.19E+00	4.70E+00	1.51E+01
Total		8.56E-01	1.11E+00	5.27E+00	3.19E+00	4.70E+00	1.51E+01

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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	7.50E-04	4.94E-06	4.16E-08	8.50E-01	0.00E+00	4.98E-03
Total	7.50E-04	4.94E-06	4.16E-08	8.50E-01	0.00E+00	4.98E-03

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	3.05E-04	6.42E-06	5.40E-08	1.10E+00	0.00E+00	6.46E-03
Total	3.05E-04	6.42E-06	5.40E-08	1.10E+00	0.00E+00	6.46E-03

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	3.47E-03	3.04E-05	2.56E-07	5.23E+00	0.00E+00	3.06E-02
Total	3.47E-03	3.04E-05	2.56E-07	5.23E+00	0.00E+00	3.06E-02

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	8.79E-04	1.85E-05	1.55E-07	3.18E+00	0.00E+00	1.86E-02
Total	8.79E-04	1.85E-05	1.55E-07	3.18E+00	0.00E+00	1.86E-02

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	4.68E-03	2.72E-05	2.29E-07	4.67E+00	0.00E+00	2.73E-02
Total	4.68E-03	2.72E-05	2.29E-07	4.67E+00	0.00E+00	2.73E-02

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
AC-227	8.56E-01	8.56E-01

Source: 2

Nuclide	Receptor	Total
	1	
AC-227	1.11E+00	1.11E+00

Source: 3

Nuclide	Receptor	Total
	1	
AC-227	5.27E+00	5.27E+00

Source: 4

Nuclide	Receptor	Total
	1	
AC-227	3.19E+00	3.19E+00

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Input File : C:\RESRAD_Family\BUILD\3.5\NUSTL_Rm_544_Surficial_Ac-227_Rev1.bld

Evaluation Time: 0.00000000E+00 years

Source: 5

Nuclide	Receptor	Total
	1	
AC-227	4.70E+00	4.70E+00

Title : DHS NUSTL Room 544, Surficial Contaminat

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Evaluation Time: 1.00000000 years

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

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

Source: 1

Location:: Room : 1 x: 0.00 y: 2.78 z: 0.91 [m]

Geometry:: Type: Area Length[m]:3.02E+00 Width[m]:1.83E+00 Direction: x

Pathway ::

Direct Ingestion Rate: 0.000E+00 [1/hr]

Fraction released to air: 1.000E-01

Removable fraction: 4.907E-01

Time to Remove: 1.000E+04 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	AC-227	1.331E+03

Source: 2

Location:: Room : 1 x: 1.51 y: 5.56 z: 0.91 [m]

Geometry:: Type: Area Length[m]:5.56E+00 Width[m]:1.83E+00 Direction: y

Pathway ::

Direct Ingestion Rate: 0.000E+00 [1/hr]

Fraction released to air: 1.000E-01

Removable fraction: 4.907E-01

Time to Remove: 1.000E+04 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	AC-227	9.387E+02

Title : DHS NUSTL Room 544, Surficial Contaminat

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Evaluation Time: 1.00000000 years

Source: 3

Location:: Room : 1 x: 3.02 y: 2.78 z: 0.91 [m]

Geometry:: Type: Area Length[m]:5.56E+00 Width[m]:1.83E+00 Direction: x

Pathway ::

Direct Ingestion Rate: 0.000E+00 [1/hr]

Fraction released to air: 1.000E-01

Removable fraction: 4.907E-01

Time to Remove: 1.000E+04 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	AC-227	4.451E+03

Source: 4

Location:: Room : 1 x: 1.51 y: 0.00 z: 0.91 [m]

Geometry:: Type: Area Length[m]:5.56E+00 Width[m]:1.83E+00 Direction: y

Pathway ::

Direct Ingestion Rate: 0.000E+00 [1/hr]

Fraction released to air: 1.000E-01

Removable fraction: 4.907E-01

Time to Remove: 1.000E+04 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	AC-227	2.701E+03

Source: 5

Location:: Room : 1 x: 1.51 y: 2.78 z: 0.00 [m]

Geometry:: Type: Area Length[m]:3.02E+00 Width[m]:5.56E+00 Direction: z

Pathway ::

Direct Ingestion Rate: 0.000E+00 [1/hr]

Fraction released to air: 1.000E-01

Removable fraction: 4.907E-01

Time to Remove: 1.000E+04 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	AC-227	2.406E+03

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

```
[mrem]
```

		Source 1	Source 2	Source 3	Source 4	Source 5	Total
Receptor	1	8.29E-01	1.08E+00	5.10E+00	3.09E+00	4.55E+00	1.47E+01
Total		8.29E-01	1.08E+00	5.10E+00	3.09E+00	4.55E+00	1.47E+01

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Evaluation Time: 1.00000000 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	7.13E-04	4.79E-06	4.03E-08	8.24E-01	0.00E+00	4.82E-03
Total	7.13E-04	4.79E-06	4.03E-08	8.24E-01	0.00E+00	4.82E-03

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	2.90E-04	6.22E-06	5.23E-08	1.07E+00	0.00E+00	6.26E-03
Total	2.90E-04	6.22E-06	5.23E-08	1.07E+00	0.00E+00	6.26E-03

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	3.30E-03	2.95E-05	2.48E-07	5.07E+00	0.00E+00	2.97E-02
Total	3.30E-03	2.95E-05	2.48E-07	5.07E+00	0.00E+00	2.97E-02

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	8.36E-04	1.79E-05	1.51E-07	3.08E+00	0.00E+00	1.80E-02
Total	8.36E-04	1.79E-05	1.51E-07	3.08E+00	0.00E+00	1.80E-02

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	4.45E-03	2.63E-05	2.21E-07	4.52E+00	0.00E+00	2.65E-02
Total	4.45E-03	2.63E-05	2.21E-07	4.52E+00	0.00E+00	2.65E-02

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
AC-227	8.29E-01	8.29E-01

Source: 2

Nuclide	Receptor	Total
	1	
AC-227	1.08E+00	1.08E+00

Source: 3

Nuclide	Receptor	Total
	1	
AC-227	5.10E+00	5.10E+00

Source: 4

Nuclide	Receptor	Total
	1	
AC-227	3.09E+00	3.09E+00

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Evaluation Time: 1.00000000 years

Source: 5

Nuclide	Receptor	Total
	1	
AC-227	4.55E+00	4.55E+00

RESRAD-BUILD Dose (Time) Tables

Receptor Dose Received for the Exposure Duration

(mrem)

Evaluation Time [yr]

0.00E+00 1.00E+00

1 1.51E+01 1.47E+01

Receptor Dose/Yr Averaged Over Exposure Duration

(mrem/yr)

Evaluation Time [yr]

0.00E+00 1.00E+00

1 1.51E+01 1.47E+01