



**US Army Corps
of Engineers**
New York District

TECHNICAL MEMORANDUM

Estimation of Potential Annual Dose Basis for
Fort Monmouth Final Status Survey DCGLs

FORT MONMOUTH
New Jersey

09 October 2012

List of Acronyms and Abbreviations

ARA	Army Radiation Authorization
BRAC	Base Realignment and Closure
CFR	U.S. Code of Federal Regulations
cm ²	square centimeter
DCGL	derived concentration guideline level
dpm	decays per minute
ECP	Environmental Condition of Property
FSS	Final Status Survey
HSA	Historical Site Assessment
m ²	square meter
MeV	Megaelectron Volt
mrem	millirem
MARSSIM	Multi-Agency Radiation Site Survey and Investigation Manual
NRC	U.S. Nuclear Regulatory Commission
pCi	picocurie
RCOPC	Radiological Contaminant of Potential Concern
RSSP	Radiological Scoping Survey Plan
SOR	Sum of the Ratios
TEDE	Total Effective Dose Equivalent
U.S.	United States
USACE	U.S. Army Corps of Engineers
yr	year

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this technical memorandum is to estimate reasonably conservative annual potential dose to future inhabitants of Fort Monmouth based on radionuclide concentrations equivalent to each of the derived concentration guideline levels (DCGLs) implemented during recent radiological final status surveys (FSSs) at the facility.

1.2 Background Information

Fort Monmouth was identified as one of the military installations slated for closure as part of Base Realignment and Closure (BRAC) 2005 (Public Law 101-510 as amended). BRAC is the process by which the nation reshapes its military installations to become more efficient and effective in supporting its forces. As part of this process, an Environmental Condition of Property (ECP) assessment was completed for the facility. The ECP included a radiological Historical Site Assessment (HSA), as past activities involving the use of radioactive materials had occurred under U.S. Nuclear Regulatory Commission (NRC) licenses and Department of the Army Radiation Authorizations (ARAs).

Approximately 25 buildings, building complexes, and/or open areas were identified in the HSA as areas where radioactive materials were used or stored. Based on the information collected, the HSA classified four of the buildings as impacted in accordance with the Multi-Agency Radiation Site Survey and Investigation Manual (MARSSIM) (CABRERA, 2007a). Information obtained subsequent to the HSA, and documented in the HSA Supplement (USACE, 2012a), resulted in classification of an additional building as MARSSIM impacted (total of five): Buildings 275, 283, 292, 2540 and 2541.

The U.S. Army Corps of Engineers (USACE) developed a Radiological Scoping Survey Plan (RSSP) in June 2012 to address radiological survey of the five impacted buildings (USACE, 2012b). These surveys were designed in accordance with MARSSIM FSS guidance in order to generate sufficient information to release areas confirmed to be free of residual contamination for unrestricted use.

USACE implemented the RSSP in June 2012, performing FSSs in each of the five impacted buildings. A Final Status Survey Report was finalized in August 2012 (USACE, 2012c). Based on historical research and the FSS field observations and supporting laboratory analytical data, all buildings surveyed are considered suitable for unrestricted release in accordance with Subpart E to 10 CFR 20, Radiological Criteria for License Termination. There were no discernible indications of radiological contamination in any of the buildings surveyed.

1.3 Problem Identification

The FSSs performed at Fort Monmouth were designed to meet NRC unrestricted release criteria codified in 10 CFR 20.1402, which imposes an annual dose limit of 25 millirem (mrem) per year for future inhabitants. The decommissioning action was performed in accordance with NUREG 1757, Decommissioning Group 2 guidance, based on the then-presumed low potential for residual radioactivity. In accordance with the Group 2 guidance, DCGLs applied to the FSSs were based on NRC screening criteria. NRC derived these criteria based on a dose constraint of 25 mrem per year to the average member of the critical group. In derivation of the criteria, NRC used very conservative assumptions, resulting in probable overestimation of potential annual dose.

The State of New Jersey has promulgated regulations in NJAC 7:28-12.8 requiring an annual dose limit of 15 mrem/year for remediation of real property as quoted below:

7:28-12.8 Radiation dose standards applicable to remediation of radioactive contamination of all real property

(a) Sites shall be remediated so that the incremental radiation dose to any person from any residual radioactive contamination at the site above that due to natural background radionuclide concentration, under either an unrestricted use remedial action, limited restricted use remedial action, or a restricted use remedial action, shall be as specified below:

1. For the sum of annual external gamma radiation dose (in effective dose equivalent) and intake dose (in committed effective dose equivalent), including the groundwater pathway: 15 millirem (0.15 milliSievert) total annual effective dose equivalent (15 mrem/yr TEDE).

In order to meet the BRAC intent of transferring Fort Monmouth property from Federal Government ownership in a timely manner, the Army must demonstrate that any residual radioactivity from site operations meets the State of New Jersey 15 mrem/year dose criterion. This technical memorandum demonstrates the DCLGs used to design and evaluate the FSSs result in potential annual dose of less than 15 mrem per year based on reasonably conservative future use assumptions.

2.0 FSS BACKGROUND TECHNICAL INFORMATION

This section provides background technical information regarding the design of the FSSs, specifically the radiological contaminants of potential concern (RCOPCs), DCGLs, and MARSSIM compliance testing methodologies applied to the FSSs.

2.1 FSS RCOPCs and DCGLs

RCOPCs were developed from research of Fort Monmouth's NRC radioactive materials licenses, ARAs, and interviews with key personnel. Based on this research, the RCOPC list used in FSS design and evaluation is shown in Table 1 along with principal charged particle emissions and NRC screening criteria.

Table 1: Final Status Survey RCOPCs and NRC Screening Criteria

RCOPC	Half-life	Principal Emission	Max Energy (MeV)	Average Energy (MeV)	NRC Screening Criteria (dpm/100 cm ²)	
					Total	Removable ⁽¹⁾
³ H	12.3 y	Beta	0.02	0.01	1.20E+08	1.20E+07
⁶³ Ni	100 y	Beta	0.07	0.02	1.80E+06	1.80E+05
⁵⁷ Co	270.9 d	Electron	0.13	0.02	2.11E+05	2.11E+04
¹⁴ C	5700 y	Beta	0.16	0.05	3.70E+06	3.70E+05
¹⁴⁷ Pm	2.62 y	Beta	0.22	0.06	3.43E+05	3.43E+04
⁹⁹ Tc	2.13E5 y	Beta	0.29	0.08	1.30E+06	1.30E+05
⁶⁰ Co	5.27 y	Beta	0.32	0.10	7.10E+03	7.10E+02
¹³⁷ Cs	30.2 y	Beta	0.51	0.19	2.80E+04	2.80E+03
¹⁵⁴ Eu	8.6 y	Beta	1.85	0.22	1.15E+04	1.15E+03
³⁶ Cl	3.01E5 y	Beta	0.71	0.25	5.00E+05	5.00E+04
⁹⁰ Sr/ ⁹⁰ Y	29.12 y	Beta	2.28	0.56	8.70E+03	8.70E+02
²²⁶ Ra	1600 y	Alpha	4.78	NA	315	31.5
²³⁰ Th	7.54E4 y	Alpha	4.69	NA	36.9	3.69
²⁴¹ Am	432.2 y	Alpha	5.49	NA	27.0	2.7

Note: ⁽¹⁾ Removable fraction inferred from total assuming 10% is removable.

2.2 MARSSIM Compliance Testing

As can be seen in Table 1, there were numerous RCOPCs with a variety of differing charged particle emissions. The FSS implemented three primary quantification methods to determine whether or not a location or area met the NRC screening criteria: 1) wet smear collection and

off-site analysis for low energy beta emitters, 2) direct beta measurements with handheld detectors, and 3) direct alpha measurements with handheld detectors.

2.2.1 *Low Energy Beta RCOPCs – Wet Smear Analysis*

Tritium, ^{57}Co , and ^{63}Ni emit low energy beta particles and cannot be reliably quantified using handheld instrumentation. As a result, these radionuclides were quantified through collection and analysis of wet smear samples. Wet smear samples were collected over an area of approximately 100 square centimeters (cm^2). These wet smears were analyzed off-site by liquid scintillation counting. The analysis was designed to measure all betas with energies less than 0.16 megaelectron volts (MeV).

For all survey areas, the most restrictive low energy beta screening criteria was associated with ^{57}Co . To be conservative, low energy beta smear sample results were compared to the removable ^{57}Co screening criteria, which served as the DCGL for compliance testing for all low energy beta emitters. This analysis is based on the assumption that 10% of the total radioactivity is removable.

2.2.2 *Measureable Beta RCOPCs – Direct Measurement*

RCOPCs with beta endpoint energies greater than 0.15 MeV can be reliably measured using handheld detectors. These RCOPCs were quantified using a gas proportional detector.

For all survey areas, the most restrictive screening criteria for measureable betas was associated with ^{60}Co . To be conservative, gross beta results were compared to the total ^{60}Co screening criteria, which served as the DCGL for compliance testing of all measurable beta emitters.

2.2.3 *Alpha RCOPCs – Direct Measurement*

The alpha emitting RCOPCs can be reliably measured using handheld detectors. These RCOPCs were quantified using a gas proportional detector.

For survey areas where ^{230}Th and ^{241}Am were RCOPCs, the most restrictive screening criteria for alpha was associated with ^{241}Am . To be conservative, gross alpha results were compared to the total ^{241}Am screening criteria, which served as the DCGL for compliance testing of all alpha emitters.

For survey areas where ^{230}Th and ^{241}Am were not RCOPCs, the screening criteria for alpha was associated with ^{226}Ra . Gross alpha results were compared to the total ^{226}Ra screening criteria, which served as the DCGL for compliance testing.

2.2.4 *Sum of the Ratios (SOR)*

The low energy beta, measureable beta, and alpha results were evaluated collectively for compliance testing. This was accomplished through use of the unity rule, also called the “sum of

ratios” (SOR). At each measurement location, radiological conditions were evaluated using the sum of ratios, which must not exceed “1” (i.e., “unity”). The concentrations were limited as follows (MARSSIM equation 4-3):

$$\sum_{i=1}^n \frac{C_i}{DCGL_i} = \frac{C_1}{DCGL_1} + \frac{C_2}{DCGL_2} + \frac{C_3}{DCGL_3} + \dots + \frac{C_n}{DCGL_n} \leq 1$$

Where: C = concentration, and

DCGL = guideline level for each individual radionuclide (1, 2, ..., n)

3.0 DOSE ESTIMATION METHODOLOGY

The RESRAD Build, Version 3.50, dose estimating code was used to estimate potential future annual dose for each RCOPC assuming its concentration was equal to the DCGL implemented during the FSS. All RESRAD default parameters were used in the assessment with the following exceptions:

- The room size is a necessary input into the model. USACE modeled Dr. Kronenberg's office in Building 2540 as a representative office size. 4 x 2.8 x 2.5 meters.
- The removable fraction of surface contamination was set to 0.1. This is consistent with the inherent assumptions in the NRC screening criteria and is consistent with the final status survey results. The default RESRAD value is 0.5.
- The contaminated surfaces are a necessary input into model. USACE assumed the floor and lower walls (up to two meters) were contaminated.
- For each RCOPC, a unit concentration of 1 pCi/m² was entered into the model.

The receptor was positioned in the center of the small room. Doses to the receptor were assumed to originate from all four walls and the floor of the room. Consistent with the RESRAD default, the receptor was conservatively assumed to spend 50% of their time in the contaminated room, representative of residential occupancy. The RESRAD model generated annual dose estimates for two future times: 1) the time immediately following decommissioning (t=0) and 2) one year from decommissioning (t=1).

The input concentration and RESRAD estimated maximum annual dose were combined to develop a dose conversion factor in units of mrem/year per dpm/100 cm² for each RCOPC. These dose conversion factors were multiplied by the FSS DCGL to estimate maximum annual dose associated with each RCOPC, assuming its concentration was equivalent to the FSS DCGL. Appendix A includes the RESRAD output for each RCOPC.

4.0 RESULTS AND CONCLUSION

Potential future annual dose for each RCOPC was estimated using the methodology described in Section 3.0, assuming its concentration was equal to the DCGL implemented during the FSS. Table 2 presents the results of the analyses. All estimated annual doses are less than the State of New Jersey criterion of 15 mrem/year. The highest estimated annual doses were associated with ^{57}Co and ^{60}Co at 14.6 mrem/year.

There were no discernible indications of the presence of any residual radioactivity at any locations surveyed during the FSSs. The sum of the ratios at all FSS locations, including biased locations, was less than 1.0, with a maximum value of 0.64. There were a total of 729 MARSSIM systematic/random survey locations as part of the FSS. The average sum of the ratios at these locations was 0.12. If all FSS DCGLs are conservatively considered to be equivalent to 15 mrem/year, estimated annual dose from potential residual radioactivity at Fort Monmouth is 1.8 mrem/year.

This technical memorandum demonstrates that the DCGLs used for design and evaluation of FSSs at Fort Monmouth meet the State of New Jersey 15 mrem/year criterion and that potential annual dose to future inhabitants of Fort Monmouth buildings based on actual FSS results is less than 2 mrem/year. On these bases, Fort Monmouth buildings are considered suitable for release for unrestricted use in accordance with NJAC 7:28-12.8 following NRC acceptance of and concurrence with FSS results.

Table 2: RESRAD Results

FSS Quantification Group	Radionuclide	RESRAD Input/Result		Dose Conversion Factor (mrem/yr per dpm/100 cm ²)	NRC Screening Criteria (dpm/100 cm ²)	FSS DCGL (dpm/100 cm ²)	FSS DCGL Annual Dose (mrem/yr)
		Input Concentration (pCi/m ²)	Annual Dose (mrem/yr)				
Low Energy Beta	³ H	1	1.53E-09	6.89E-08	1.20E+08	2.11E+05	0.01
	⁶³ Ni	1	4.87E-08	2.19E-06	1.80E+06	2.11E+05	0.5
	⁵⁷ Co	1	1.54E-06	6.94E-05	2.11E+05	2.11E+05	14.6
Beta	¹⁴ C	1	4.87E-08	2.19E-06	3.71E+06	7.10E+03	0.02
	¹⁴⁷ Pm	1	1.80E-07	8.11E-06	3.44E+05	7.10E+03	0.1
	⁹⁹ Tc	1	7.84E-08	3.53E-06	1.30E+06	7.10E+03	0.03
	⁶⁰ Co	1	4.58E-05	2.06E-03	7.10E+03	7.10E+03	14.6
	¹³⁷ Cs	1	1.21E-05	5.45E-04	2.80E+04	7.10E+03	3.9
	¹⁵⁴ Eu	1	2.49E-05	1.12E-03	1.15E+04	7.10E+03	8.0
	³⁶ Cl	1	2.03E-07	9.14E-06	5.00E+05	7.10E+03	0.1
	⁹⁰ Sr / ⁹⁰ Y	1	1.05E-05	4.73E-04	8.70E+03	7.10E+03	3.4
Alpha-Ra only	²²⁶ Ra	1	3.14E-04	1.41E-02	3.15E+02	3.15E+02	4.5
Alpha w/ Ra, Am, and Th	²³⁰ Th	1	2.38E-03	1.07E-01	3.69E+01	2.70E+01	2.9
	²⁴¹ Am	1	2.85E-03	1.28E-01	2.70E+01	2.70E+01	3.5

Denotes most restrictive Screening Criteria in each Quantification Group; used as DCGL for all radionuclides in that group during FSS.

5.0 REFERENCES

- (CABRERA, 2007a) *Historical Site Assessment and Addendum to Environmental Condition of Property Report, Fort Monmouth, Eatontown, New Jersey*, January 2007.
- (CABRERA, 2007b) *Recommendations for Phase II Environmental Condition of Property Investigation, Fort Monmouth, Eatontown, New Jersey*, 2007.
- (USACE, 2012a) *Supplement to - Historical Site Assessment, Fort Monmouth, Eatontown, New Jersey*, U.S. Army Corps of Engineers, May 2012.
- (USACE, 2012b) *Radiological Scoping Survey Plan, Fort Monmouth, Eatontown, New Jersey, Final*, U.S. Army Corps of Engineers, June 2012.
- (USACE, 2012c) *Final Status Survey Report, Fort Monmouth, Eatontown, New Jersey, Final*, U.S. Army Corps of Engineers, August 2012.

Appendix A:

RESRAD Output Reports

Title : H3 in Dr. K

Input File : C:\temp\Am241 no daughters 2 5 meter walls.bld

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For time = 0.00E+00 yr	
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Title : H3 in Dr. K

Input File : C:\temp\Am241 no daughters 2 5 meter walls.bld

RESRAD-BUILD Input Parameters

Number of Sources : 5
Number of Receptors: 1
Total Time : 3.650000E+02 days
Fraction Inside : 5.000000E-01

Receptor Information

Receptor	Room	x [m]	y [m]	z [m]	FracTime	Inhalation [m3/day]	Ingestion(Dust) [m2/hr]
1	1	2.000	1.400	1.000	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

Title : H3 in Dr. K

Input File : C:\temp\Am241 no daughters 2 5 meter walls.bld

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

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

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

	*	*
	*	*
	*	<=Q01: 2.24E+01
H1: 2.500	* Room 1	* Q10 : 2.24E+01
	* LAMBDA: 8.00E-01	*
Area 11.200	*	*
	*	*

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

Title : H3 in Dr. K

Input File : C:\temp\Am241 no daughters 2 5 meter walls.bld

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00[m]
Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
AM-241	1.000E+00	3.640E-03	4.440E-01	9.554E-05
NP-237	0.000E+00	4.444E-03	5.400E-01	1.212E-03
U-233	0.000E+00	2.890E-04	1.350E-01	1.904E-06
TH-229	0.000E+00	4.027E-03	2.169E+00	1.741E-03

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00[m]
Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
AM-241	1.000E+00	3.640E-03	4.440E-01	9.554E-05
NP-237	0.000E+00	4.444E-03	5.400E-01	1.212E-03

Title : H3 in Dr. K

Input File : C:\temp\Am241 no daughters 2 5 meter walls.bld

U-233	0.000E+00	2.890E-04	1.350E-01	1.904E-06
TH-229	0.000E+00	4.027E-03	2.169E+00	1.741E-03

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00[m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
AM-241	1.000E+00	3.640E-03	4.440E-01	9.554E-05
NP-237	0.000E+00	4.444E-03	5.400E-01	1.212E-03
U-233	0.000E+00	2.890E-04	1.350E-01	1.904E-06
TH-229	0.000E+00	4.027E-03	2.169E+00	1.741E-03

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
AM-241	1.000E+00	3.640E-03	4.440E-01	9.554E-05
NP-237	0.000E+00	4.444E-03	5.400E-01	1.212E-03
U-233	0.000E+00	2.890E-04	1.350E-01	1.904E-06

Title : H3 in Dr. K

Input File : C:\temp\Am241 no daughters 2 5 meter walls.bld

TH-229 0.000E+00 4.027E-03 2.169E+00 1.741E-03

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
AM-241	1.000E+00	3.640E-03	4.440E-01	9.554E-05
NP-237	0.000E+00	4.444E-03	5.400E-01	1.212E-03
U-233	0.000E+00	2.890E-04	1.350E-01	1.904E-06
TH-229	0.000E+00	4.027E-03	2.169E+00	1.741E-03

Title : H3 in Dr. K

Input File : C:\temp\Am241 no daughters 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	AM-241	1.000E+00
	NP-237	0.000E+00
	U-233	0.000E+00
	TH-229	0.000E+00

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	AM-241	1.000E+00
	NP-237	0.000E+00
	U-233	0.000E+00
	TH-229	0.000E+00

Title : H3 in Dr. K

Input File : C:\temp\Am241 no daughters 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	AM-241	1.000E+00
	NP-237	0.000E+00
	U-233	0.000E+00
	TH-229	0.000E+00

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	AM-241	1.000E+00
	NP-237	0.000E+00
	U-233	0.000E+00
	TH-229	0.000E+00

Title : H3 in Dr. K

Input File : C:\temp\Am241 no daughters 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	AM-241	1.000E+00
	NP-237	0.000E+00
	U-233	0.000E+00
	TH-229	0.000E+00

Title : H3 in Dr. K

Input File : C:\temp\Am241 no daughters 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

RESRAD-BUILD Dose Tables	

Source Contributions to Receptor Doses

[mrem]						
	Source	Source	Source	Source	Source	Total
	1	2	3	4	5	
Receptor 1	8.31E-04	5.94E-04	5.94E-04	4.16E-04	4.16E-04	2.85E-03
Total	8.31E-04	5.94E-04	5.94E-04	4.16E-04	4.16E-04	2.85E-03

Title : H3 in Dr. K

Input File : C:\temp\Am241 no daughters 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	3.32E-07	3.90E-09	2.67E-11	8.13E-04	0.00E+00	1.78E-05
Total	3.32E-07	3.90E-09	2.67E-11	8.13E-04	0.00E+00	1.78E-05

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.06E-07	2.78E-09	1.90E-11	5.81E-04	0.00E+00	1.27E-05
Total	1.06E-07	2.78E-09	1.90E-11	5.81E-04	0.00E+00	1.27E-05

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.06E-07	2.78E-09	1.90E-11	5.81E-04	0.00E+00	1.27E-05
Total	1.06E-07	2.78E-09	1.90E-11	5.81E-04	0.00E+00	1.27E-05

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.41E-07	1.95E-09	1.33E-11	4.07E-04	0.00E+00	8.89E-06
Total	1.41E-07	1.95E-09	1.33E-11	4.07E-04	0.00E+00	8.89E-06

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.41E-07	1.95E-09	1.33E-11	4.07E-04	0.00E+00	8.89E-06
Total	1.41E-07	1.95E-09	1.33E-11	4.07E-04	0.00E+00	8.89E-06

Title : H3 in Dr. K

Input File : C:\temp\Am241 no daughters 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
AM-241	8.31E-04	8.31E-04
NP-237	1.61E-10	1.61E-10
U-233	5.61E-17	5.61E-17
TH-229	2.08E-20	2.08E-20

Source: 2

Nuclide	Receptor	Total
	1	
AM-241	5.94E-04	5.94E-04
NP-237	1.15E-10	1.15E-10
U-233	4.01E-17	4.01E-17
TH-229	1.48E-20	1.48E-20

Source: 3

Nuclide	Receptor	Total
	1	
AM-241	5.94E-04	5.94E-04
NP-237	1.15E-10	1.15E-10
U-233	4.01E-17	4.01E-17
TH-229	1.48E-20	1.48E-20

Source: 4

Nuclide	Receptor	Total
	1	
AM-241	4.16E-04	4.16E-04

Title : H3 in Dr. K

Input File : C:\temp\Am241 no daughters 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

NP-237	8.04E-11	8.04E-11
U-233	2.80E-17	2.80E-17
TH-229	1.04E-20	1.04E-20

Source: 5

Nuclide	Receptor	Total
	1	
AM-241	4.16E-04	4.16E-04
NP-237	8.04E-11	8.04E-11
U-233	2.80E-17	2.80E-17
TH-229	1.04E-20	1.04E-20

Title : H3 in Dr. K

Input File : C:\temp\Am241 no daughters 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	AM-241	8.986E-01
	NP-237	2.913E-07
	U-233	6.351E-13
	TH-229	1.999E-17

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	AM-241	8.986E-01
	NP-237	2.913E-07
	U-233	6.351E-13
	TH-229	1.999E-17

Title : H3 in Dr. K

Input File : C:\temp\Am241 no daughters 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	AM-241	8.986E-01
	NP-237	2.913E-07
	U-233	6.351E-13
	TH-229	1.999E-17

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	AM-241	8.986E-01
	NP-237	2.913E-07
	U-233	6.351E-13
	TH-229	1.999E-17

Title : H3 in Dr. K

Input File : C:\temp\Am241 no daughters 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	AM-241	8.986E-01
	NP-237	2.913E-07
	U-233	6.351E-13
	TH-229	1.999E-17

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

		Source 1	Source 2	Source 3	Source 4	Source 5	Total
Receptor	1	3.14E-07	1.01E-07	1.01E-07	1.34E-07	1.34E-07	7.83E-07
Total		3.14E-07	1.01E-07	1.01E-07	1.34E-07	1.34E-07	7.83E-07

Title : H3 in Dr. K

Input File : C:\temp\Am241 no daughters 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	3.14E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	3.14E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.01E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	1.01E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.01E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	1.01E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.34E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	1.34E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.34E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	1.34E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Title : H3 in Dr. K

Input File : C:\temp\Am241 no daughters 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
AM-241	3.14E-07	3.14E-07
NP-237	8.80E-13	8.80E-13
U-233	2.02E-20	2.02E-20
TH-229	2.14E-22	2.14E-22

Source: 2

Nuclide	Receptor	Total
	1	
AM-241	1.01E-07	1.01E-07
NP-237	2.84E-13	2.84E-13
U-233	6.04E-21	6.04E-21
TH-229	6.95E-23	6.95E-23

Source: 3

Nuclide	Receptor	Total
	1	
AM-241	1.01E-07	1.01E-07
NP-237	2.84E-13	2.84E-13
U-233	6.04E-21	6.04E-21
TH-229	6.95E-23	6.95E-23

Source: 4

Nuclide	Receptor	Total
	1	
AM-241	1.34E-07	1.34E-07

Title : H3 in Dr. K

Input File : C:\temp\Am241 no daughters 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

NP-237	3.75E-13	3.75E-13
U-233	8.50E-21	8.50E-21
TH-229	9.13E-23	9.13E-23

Source: 5

Nuclide	Receptor	Total
	1	
AM-241	1.34E-07	1.34E-07
NP-237	3.75E-13	3.75E-13
U-233	8.50E-21	8.50E-21
TH-229	9.13E-23	9.13E-23

Title : H3 in Dr. K

Input File : C:\temp\Am241 no daughters 2 5 meter walls.bld

Full Summary

RESRAD-BUILD Dose (Time) Tables

Receptor Dose Received for the Exposure Duration

(mrem)

Evaluation Time [yr]

0.00E+00 1.00E+00

1 2.85E-03 7.83E-07

Receptor Dose/Yr Averaged Over Exposure Duration

(mrem/yr)

Evaluation Time [yr]

0.00E+00 1.00E+00

1 2.85E-03 7.83E-07

Title : Dr. Ks office

Input File : C:\temp\C14 - 2 5 meter walls.bld

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Title : Dr. Ks office

Input File : C:\temp\C14 - 2 5 meter walls.bld

=====

=====

=====

RESRAD-BUILD Input Parameters

=====

=====

Number of Sources : 5

Number of Receptors: 1

Total Time : 3.650000E+02 days

Fraction Inside : 5.000000E-01

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

Receptor	Room	x	y	z	FracTime	Inhalation	Ingestion(Dust)
		[m]	[m]	[m]		[m3/day]	[m2/hr]
1	1	2.000	1.400	1.000	1.000	1.80E+01	1.00E-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

Title : Dr. Ks office

Input File : C:\temp\C14 - 2 5 meter walls.bld

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

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

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

	*	*
	*	*
	*	<=Q01: 2.24E+01
H1: 2.500	* Room 1	* Q10 : 2.24E+01
	* LAMBDA: 8.00E-01	*
Area 11.200	*	*
	*	*

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

Title : Dr. Ks office

Input File : C:\temp\C14 - 2 5 meter walls.bld

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00[m]
Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
C-14	1.000E+00	2.090E-06	2.090E-06	2.616E-08

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00[m]
Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
C-14	1.000E+00	2.090E-06	2.090E-06	2.616E-08

Title : Dr. Ks office

Input File : C:\temp\C14 - 2 5 meter walls.bld

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00[m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Dose Conversion Factor (Library: FGR 11)		
		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
C-14	1.000E+00	2.090E-06	2.090E-06	2.616E-08

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Dose Conversion Factor (Library: FGR 11)		
		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
C-14	1.000E+00	2.090E-06	2.090E-06	2.616E-08

Title : Dr. Ks office

Input File : C:\temp\C14 - 2 5 meter walls.bld

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
C-14	1.000E+00	2.090E-06	2.090E-06	2.616E-08

Title : Dr. Ks office

Input File : C:\temp\C14 - 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	C-14	1.000E+00

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	C-14	1.000E+00

Title : Dr. Ks office

Input File : C:\temp\C14 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	C-14	1.000E+00

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	C-14	1.000E+00

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	C-14	1.000E+00

Title : Dr. Ks office

Input File : C:\temp\C14 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

		Source	Source	Source	Source	Source	Total
		1	2	3	4	5	
Receptor	1	1.42E-08	1.01E-08	1.01E-08	7.11E-09	7.11E-09	4.87E-08
Total		1.42E-08	1.01E-08	1.01E-08	7.11E-09	7.11E-09	4.87E-08

Title : Dr. Ks office

Input File : C:\temp\C14 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.71E-10	2.01E-12	7.32E-15	3.84E-09	0.00E+00	1.02E-08
Total	1.71E-10	2.01E-12	7.32E-15	3.84E-09	0.00E+00	1.02E-08

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	5.68E-11	1.43E-12	5.23E-15	2.74E-09	0.00E+00	7.31E-09
Total	5.68E-11	1.43E-12	5.23E-15	2.74E-09	0.00E+00	7.31E-09

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	5.68E-11	1.43E-12	5.23E-15	2.74E-09	0.00E+00	7.31E-09
Total	5.68E-11	1.43E-12	5.23E-15	2.74E-09	0.00E+00	7.31E-09

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	7.31E-11	1.00E-12	3.66E-15	1.92E-09	0.00E+00	5.12E-09
Total	7.31E-11	1.00E-12	3.66E-15	1.92E-09	0.00E+00	5.12E-09

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	7.31E-11	1.00E-12	3.66E-15	1.92E-09	0.00E+00	5.12E-09
Total	7.31E-11	1.00E-12	3.66E-15	1.92E-09	0.00E+00	5.12E-09

Title : Dr. Ks office

Input File : C:\temp\C14 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
C-14	1.42E-08	1.42E-08

Source: 2

Nuclide	Receptor	Total
	1	
C-14	1.01E-08	1.01E-08

Source: 3

Nuclide	Receptor	Total
	1	
C-14	1.01E-08	1.01E-08

Source: 4

Nuclide	Receptor	Total
	1	
C-14	7.11E-09	7.11E-09

Title : Dr. Ks office

Input File : C:\temp\C14 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 5

Nuclide	Receptor	Total
	1	
C-14	7.11E-09	7.11E-09

Title : Dr. Ks office

Input File : C:\temp\C14 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	C-14	8.999E-01

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	C-14	8.999E-01

Title : Dr. Ks office

Input File : C:\temp\C14 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	C-14	8.999E-01

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	C-14	8.999E-01

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	C-14	8.999E-01

Title : Dr. Ks office

Input File : C:\temp\C14 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

RESRAD-BUILD Dose Tables	

Source Contributions to Receptor Doses

[mrem]						
	Source	Source	Source	Source	Source	Total
	1	2	3	4	5	
Receptor 1	1.62E-10	5.38E-11	5.38E-11	6.92E-11	6.92E-11	4.08E-10
Total	1.62E-10	5.38E-11	5.38E-11	6.92E-11	6.92E-11	4.08E-10

Title : Dr. Ks office

Input File : C:\temp\C14 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.62E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	1.62E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	5.38E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	5.38E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	5.38E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	5.38E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	6.92E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	6.92E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	6.92E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	6.92E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Title : Dr. Ks office

Input File : C:\temp\C14 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
C-14	1.62E-10	1.62E-10

Source: 2

Nuclide	Receptor	Total
	1	
C-14	5.38E-11	5.38E-11

Source: 3

Nuclide	Receptor	Total
	1	
C-14	5.38E-11	5.38E-11

Source: 4

Nuclide	Receptor	Total
	1	
C-14	6.92E-11	6.92E-11

Title : Dr. Ks office

Input File : C:\temp\C14 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 5

Nuclide	Receptor	Total
	1	
C-14	6.92E-11	6.92E-11

Title : Dr. Ks office

Input File : C:\temp\C14 - 2 5 meter walls.bld

Full Summary

RESRAD-BUILD Dose (Time) Tables

Receptor Dose Received for the Exposure Duration

(mrem)

Evaluation Time [yr]

0.00E+00 1.00E+00

1 4.87E-08 4.08E-10

Receptor Dose/Yr Averaged Over Exposure Duration

(mrem/yr)

Evaluation Time [yr]

0.00E+00 1.00E+00

1 4.87E-08 4.08E-10

Title : Cl36 in Dr. K

Input File : C:\temp\Cl36 2 5 meter walls.bld

RESRAD-BUILD Table of Contents

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Title : C136 in Dr. K

Input File : C:\temp\C136 2 5 meter walls.bld

RESRAD-BUILD Input Parameters

Number of Sources : 5
Number of Receptors: 1
Total Time : 3.650000E+02 days
Fraction Inside : 5.000000E-01

Receptor Information

Receptor	Room	x [m]	y [m]	z [m]	FracTime	Inhalation [m3/day]	Ingestion(Dust) [m2/hr]
1	1	2.000	1.400	1.000	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

Title : Cl36 in Dr. K

Input File : C:\temp\Cl36 2 5 meter walls.bld

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

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

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

	*	*
	*	*
	*	<=Q01: 2.24E+01
H1: 2.500	* Room 1	* Q10 : 2.24E+01
	* LAMBDA: 8.00E-01	*
Area 11.200	*	*
	*	*

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

Title : Cl36 in Dr. K

Input File : C:\temp\Cl36 2 5 meter walls.bld

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00[m]
Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
CL-36	1.000E+00	3.030E-06	2.190E-05	2.605E-06

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00[m]
Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
CL-36	1.000E+00	3.030E-06	2.190E-05	2.605E-06

Title : CL36 in Dr. K

Input File : C:\temp\CL36 2 5 meter walls.bld

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00[m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
CL-36	1.000E+00	3.030E-06	2.190E-05	2.605E-06

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
CL-36	1.000E+00	3.030E-06	2.190E-05	2.605E-06

Title : Cl36 in Dr. K

Input File : C:\temp\Cl36 2 5 meter walls.bld

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
CL-36	1.000E+00	3.030E-06	2.190E-05	2.605E-06

Title : Cl36 in Dr. K

Input File : C:\temp\Cl36 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CL-36	1.000E+00

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CL-36	1.000E+00

Title : Cl36 in Dr. K

Input File : C:\temp\Cl36 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CL-36	1.000E+00

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CL-36	1.000E+00

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CL-36	1.000E+00

Title : C136 in Dr. K

Input File : C:\temp\C136 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

		Source	Source	Source	Source	Source	Total
		1	2	3	4	5	
Receptor	1	6.06E-08	4.11E-08	4.11E-08	2.99E-08	2.99E-08	2.03E-07
Total		6.06E-08	4.11E-08	4.11E-08	2.99E-08	2.99E-08	2.03E-07

Title : C136 in Dr. K

Input File : C:\temp\C136 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	5.50E-09	6.47E-11	7.29E-13	4.02E-08	0.00E+00	1.48E-08
Total	5.50E-09	6.47E-11	7.29E-13	4.02E-08	0.00E+00	1.48E-08

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.77E-09	4.62E-11	5.20E-13	2.87E-08	0.00E+00	1.06E-08
Total	1.77E-09	4.62E-11	5.20E-13	2.87E-08	0.00E+00	1.06E-08

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.77E-09	4.62E-11	5.20E-13	2.87E-08	0.00E+00	1.06E-08
Total	1.77E-09	4.62E-11	5.20E-13	2.87E-08	0.00E+00	1.06E-08

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	2.34E-09	3.23E-11	3.64E-13	2.01E-08	0.00E+00	7.42E-09
Total	2.34E-09	3.23E-11	3.64E-13	2.01E-08	0.00E+00	7.42E-09

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	2.34E-09	3.23E-11	3.64E-13	2.01E-08	0.00E+00	7.42E-09
Total	2.34E-09	3.23E-11	3.64E-13	2.01E-08	0.00E+00	7.42E-09

Title : Cl36 in Dr. K

Input File : C:\temp\Cl36 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
CL-36	6.06E-08	6.06E-08

Source: 2

Nuclide	Receptor	Total
	1	
CL-36	4.11E-08	4.11E-08

Source: 3

Nuclide	Receptor	Total
	1	
CL-36	4.11E-08	4.11E-08

Source: 4

Nuclide	Receptor	Total
	1	
CL-36	2.99E-08	2.99E-08

Title : Cl36 in Dr. K

Input File : C:\temp\Cl36 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 5

Nuclide	Receptor	Total
	1	
CL-36	2.99E-08	2.99E-08

Title : Cl36 in Dr. K

Input File : C:\temp\Cl36 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CL-36	9.000E-01

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CL-36	9.000E-01

Title : Cl36 in Dr. K

Input File : C:\temp\Cl36 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CL-36	9.000E-01

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CL-36	9.000E-01

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CL-36	9.000E-01

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

```
[mrem]
```

		Source 1	Source 2	Source 3	Source 4	Source 5	Total
Receptor	1	5.21E-09	1.67E-09	1.67E-09	2.21E-09	2.21E-09	1.30E-08
Total		5.21E-09	1.67E-09	1.67E-09	2.21E-09	2.21E-09	1.30E-08

Title : Cl36 in Dr. K

Input File : C:\temp\Cl36 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	5.21E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	5.21E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	1.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	1.67E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	2.21E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	2.21E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	2.21E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	2.21E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Title : Cl36 in Dr. K

Input File : C:\temp\Cl36 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
CL-36	5.21E-09	5.21E-09

Source: 2

Nuclide	Receptor	Total
	1	
CL-36	1.67E-09	1.67E-09

Source: 3

Nuclide	Receptor	Total
	1	
CL-36	1.67E-09	1.67E-09

Source: 4

Nuclide	Receptor	Total
	1	
CL-36	2.21E-09	2.21E-09

Title : Cl36 in Dr. K

Input File : C:\temp\Cl36 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 5

Nuclide	Receptor	Total
	1	
CL-36	2.21E-09	2.21E-09

Title : C136 in Dr. K

Input File : C:\temp\C136 2 5 meter walls.bld

Full Summary

RESRAD-BUILD Dose (Time) Tables

Receptor Dose Received for the Exposure Duration

(mrem)

Evaluation Time [yr]

0.00E+00 1.00E+00

1 2.03E-07 1.30E-08

Receptor Dose/Yr Averaged Over Exposure Duration

(mrem/yr)

Evaluation Time [yr]

0.00E+00 1.00E+00

1 2.03E-07 1.30E-08

Title : Dr. Ks office

Input File : C:\temp\Co57 - 2 5 meter walls.bld

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Title : Dr. Ks office

Input File : C:\temp\Co57 - 2 5 meter walls.bld

RESRAD-BUILD Input Parameters

Number of Sources : 5
Number of Receptors: 1
Total Time : 3.650000E+02 days
Fraction Inside : 5.000000E-01

Receptor Information

Receptor	Room	x [m]	y [m]	z [m]	FracTime	Inhalation [m3/day]	Ingestion(Dust) [m2/hr]
1	1	2.000	1.400	1.000	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

Title : Dr. Ks office

Input File : C:\temp\Co57 - 2 5 meter walls.bld

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

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

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

	*	*
	*	*
	*	<=Q01: 2.24E+01
H1: 2.500	* Room 1	* Q10 : 2.24E+01
	* LAMBDA: 8.00E-01	*
Area 11.200	*	*
	*	*

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

Title : Dr. Ks office

Input File : C:\temp\Co57 - 2 5 meter walls.bld

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00[m]
Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
CO-57	1.000E+00	1.180E-06	9.070E-06	6.552E-04

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00[m]
Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
CO-57	1.000E+00	1.180E-06	9.070E-06	6.552E-04

Title : Dr. Ks office

Input File : C:\temp\Co57 - 2 5 meter walls.bld

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00[m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion Inhalation Submersion		
		[pCi/m2]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
CO-57	1.000E+00	1.180E-06	9.070E-06	6.552E-04

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion Inhalation Submersion		
		[pCi/m2]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
CO-57	1.000E+00	1.180E-06	9.070E-06	6.552E-04

Title : Dr. Ks office

Input File : C:\temp\Co57 - 2 5 meter walls.bld

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
CO-57	1.000E+00	1.180E-06	9.070E-06	6.552E-04

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

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

```

Location::  Room :   1   x:   2.00 y:   1.40 z:   0.00 [m]
Geometry::  Type: Area           Area:1.12E+01 [m2]   Direction: z
Pathway ::
    Direct Ingestion Rate:   0.000E+00 [1/hr]
    Fraction released to air: 1.000E-01
    Removable fraction:      1.000E-01
    Time to Remove:          3.650E+02 [day]

```

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CO-57	1.000E+00

```

Location::  Room :   1   x:    0.00 y:    1.40 z:    1.00 [m]
Geometry::  Type: Area          Area:8.00E+00 [m2]  Direction: x
Pathway ::
    Direct Ingestion Rate:    0.000E+00 [1/hr]
    Fraction released to air: 1.000E-01
    Removable fraction:       1.000E-01
    Time to Remove:           3.650E+02 [day]

```

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CO-57	1.000E+00

Title : Dr. Ks office

Input File : C:\temp\Co57 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CO-57	1.000E+00

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CO-57	1.000E+00

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CO-57	1.000E+00

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

		Source 1	Source 2	Source 3	Source 4	Source 5	Total
Receptor	1	6.10E-07	2.02E-07	2.02E-07	2.61E-07	2.61E-07	1.54E-06
Total		6.10E-07	2.02E-07	2.02E-07	2.61E-07	2.61E-07	1.54E-06

Title : Dr. Ks office

Input File : C:\temp\Co57 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	5.99E-07	3.32E-09	5.99E-11	5.44E-09	0.00E+00	1.78E-09
Total	5.99E-07	3.32E-09	5.99E-11	5.44E-09	0.00E+00	1.78E-09

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.95E-07	2.37E-09	4.28E-11	3.89E-09	0.00E+00	1.27E-09
Total	1.95E-07	2.37E-09	4.28E-11	3.89E-09	0.00E+00	1.27E-09

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.95E-07	2.37E-09	4.28E-11	3.89E-09	0.00E+00	1.27E-09
Total	1.95E-07	2.37E-09	4.28E-11	3.89E-09	0.00E+00	1.27E-09

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	2.55E-07	1.66E-09	2.99E-11	2.72E-09	0.00E+00	8.91E-10
Total	2.55E-07	1.66E-09	2.99E-11	2.72E-09	0.00E+00	8.91E-10

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	2.55E-07	1.66E-09	2.99E-11	2.72E-09	0.00E+00	8.91E-10
Total	2.55E-07	1.66E-09	2.99E-11	2.72E-09	0.00E+00	8.91E-10

Title : Dr. Ks office

Input File : C:\temp\Co57 - 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
CO-57	6.10E-07	6.10E-07

Source: 2

Nuclide	Receptor	Total
	1	
CO-57	2.02E-07	2.02E-07

Source: 3

Nuclide	Receptor	Total
	1	
CO-57	2.02E-07	2.02E-07

Source: 4

Nuclide	Receptor	Total
	1	
CO-57	2.61E-07	2.61E-07

Title : Dr. Ks office

Input File : C:\temp\Co57 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 5

Nuclide	Receptor	Total
	1	
CO-57	2.61E-07	2.61E-07

Title : Dr. Ks office

Input File : C:\temp\Co57 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CO-57	3.536E-01

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CO-57	3.536E-01

Title : Dr. Ks office

Input File : C:\temp\Co57 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CO-57	3.536E-01

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CO-57	3.536E-01

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CO-57	3.536E-01

Title : Dr. Ks office
Input File : C:\temp\Co57 - 2 5 meter walls.bld
Evaluation Time: 1.00000000 years

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

		Source	Source	Source	Source	Source	Total
		1	2	3	4	5	
Receptor	1	2.21E-07	7.20E-08	7.20E-08	9.43E-08	9.43E-08	5.54E-07
Total		2.21E-07	7.20E-08	7.20E-08	9.43E-08	9.43E-08	5.54E-07

Title : Dr. Ks office

Input File : C:\temp\Co57 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	2.21E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	2.21E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	7.20E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	7.20E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	7.20E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	7.20E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	9.43E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	9.43E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	9.43E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	9.43E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Title : Dr. Ks office

Input File : C:\temp\Co57 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
CO-57	2.21E-07	2.21E-07

Source: 2

Nuclide	Receptor	Total
	1	
CO-57	7.20E-08	7.20E-08

Source: 3

Nuclide	Receptor	Total
	1	
CO-57	7.20E-08	7.20E-08

Source: 4

Nuclide	Receptor	Total
	1	
CO-57	9.43E-08	9.43E-08

Title : Dr. Ks office

Input File : C:\temp\Co57 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 5

Nuclide	Receptor	Total
	1	
CO-57	9.43E-08	9.43E-08

Title : Dr. Ks office

Input File : C:\temp\Co57 - 2 5 meter walls.bld

Full Summary

RESRAD-BUILD Dose (Time) Tables

Receptor Dose Received for the Exposure Duration

(mrem)

Evaluation Time [yr]

0.00E+00 1.00E+00

1 1.54E-06 5.54E-07

Receptor Dose/Yr Averaged Over Exposure Duration

(mrem/yr)

Evaluation Time [yr]

0.00E+00 1.00E+00

1 1.54E-06 5.54E-07

Title : Dr. Ks office

Input File : C:\temp\Co60 2 5 meter walls.bld

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For time = 0.00E+00 yr	
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Dose by Nuclide Detail.....	11
For time = 1.00E+00 yr	
Time Specific Parameters.....	13
Receptor-Source Dose Summary.....	15
Dose by Pathway Detail.....	16
Dose by Nuclide Detail.....	17
Full Summary.....	19

Title : Dr. Ks office

Input File : C:\temp\Co60 2 5 meter walls.bld

RESRAD-BUILD Input Parameters

Number of Sources : 5
Number of Receptors: 1
Total Time : 3.650000E+02 days
Fraction Inside : 5.000000E-01

Receptor Information

Receptor	Room	x [m]	y [m]	z [m]	FracTime	Inhalation [m3/day]	Ingestion(Dust) [m2/hr]
1	1	2.000	1.400	1.000	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

Title : Dr. Ks office

Input File : C:\temp\Co60 2 5 meter walls.bld

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

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

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

	*	*
	*	*
	*	<=Q01: 2.24E+01
H1: 2.500	* Room 1	* Q10 : 2.24E+01
	* LAMBDA: 8.00E-01	*
Area 11.200	*	*
	*	*

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

Title : Dr. Ks office

Input File : C:\temp\Co60 2 5 meter walls.bld

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00[m]
Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
CO-60	1.000E+00	2.690E-05	2.190E-04	1.472E-02

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00[m]
Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
CO-60	1.000E+00	2.690E-05	2.190E-04	1.472E-02

Title : Dr. Ks office

Input File : C:\temp\Co60 2 5 meter walls.bld

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00[m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Dose Conversion Factor (Library: FGR 11)		
		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
CO-60	1.000E+00	2.690E-05	2.190E-04	1.472E-02

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Dose Conversion Factor (Library: FGR 11)		
		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
CO-60	1.000E+00	2.690E-05	2.190E-04	1.472E-02

Title : Dr. Ks office

Input File : C:\temp\Co60 2 5 meter walls.bld

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
CO-60	1.000E+00	2.690E-05	2.190E-04	1.472E-02

Title : Dr. Ks office

Input File : C:\temp\Co60 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CO-60	1.000E+00

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CO-60	1.000E+00

Title : Dr. Ks office

Input File : C:\temp\Co60 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CO-60	1.000E+00

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CO-60	1.000E+00

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CO-60	1.000E+00

	Source 1	Source 2	Source 3	Source 4	Source 5	Total
Receptor 1	1.81E-05	6.10E-06	6.10E-06	7.74E-06	7.74E-06	4.58E-05
Total	1.81E-05	6.10E-06	6.10E-06	7.74E-06	7.74E-06	4.58E-05

Title : Dr. Ks office

Input File : C:\temp\Co60 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.75E-05	1.77E-07	3.36E-09	3.28E-07	0.00E+00	1.07E-07
Total	1.75E-05	1.77E-07	3.36E-09	3.28E-07	0.00E+00	1.07E-07

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	5.66E-06	1.27E-07	2.40E-09	2.35E-07	0.00E+00	7.62E-08
Total	5.66E-06	1.27E-07	2.40E-09	2.35E-07	0.00E+00	7.62E-08

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	5.66E-06	1.27E-07	2.40E-09	2.35E-07	0.00E+00	7.62E-08
Total	5.66E-06	1.27E-07	2.40E-09	2.35E-07	0.00E+00	7.62E-08

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	7.44E-06	8.87E-08	1.68E-09	1.64E-07	0.00E+00	5.33E-08
Total	7.44E-06	8.87E-08	1.68E-09	1.64E-07	0.00E+00	5.33E-08

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	7.44E-06	8.87E-08	1.68E-09	1.64E-07	0.00E+00	5.33E-08
Total	7.44E-06	8.87E-08	1.68E-09	1.64E-07	0.00E+00	5.33E-08

Title : Dr. Ks office

Input File : C:\temp\Co60 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
CO-60	1.81E-05	1.81E-05

Source: 2

Nuclide	Receptor	Total
	1	
CO-60	6.10E-06	6.10E-06

Source: 3

Nuclide	Receptor	Total
	1	
CO-60	6.10E-06	6.10E-06

Source: 4

Nuclide	Receptor	Total
	1	
CO-60	7.74E-06	7.74E-06

Title : Dr. Ks office

Input File : C:\temp\Co60 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 5

Nuclide	Receptor	Total
	1	
CO-60	7.74E-06	7.74E-06

Title : Dr. Ks office

Input File : C:\temp\Co60 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CO-60	7.891E-01

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CO-60	7.891E-01

Title : Dr. Ks office

Input File : C:\temp\Co60 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CO-60	7.891E-01

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CO-60	7.891E-01

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CO-60	7.891E-01

Title : Dr. Ks office

Input File : C:\temp\Co60 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

		Source	Source	Source	Source	Source	Total
		1	2	3	4	5	
Receptor	1	1.45E-05	4.69E-06	4.69E-06	6.17E-06	6.17E-06	3.62E-05
Total		1.45E-05	4.69E-06	4.69E-06	6.17E-06	6.17E-06	3.62E-05

Title : Dr. Ks office

Input File : C:\temp\Co60 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.45E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	1.45E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	4.69E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	4.69E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	4.69E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	4.69E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	6.17E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	6.17E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	6.17E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	6.17E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Title : Dr. Ks office

Input File : C:\temp\Co60 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
CO-60	1.45E-05	1.45E-05

Source: 2

Nuclide	Receptor	Total
	1	
CO-60	4.69E-06	4.69E-06

Source: 3

Nuclide	Receptor	Total
	1	
CO-60	4.69E-06	4.69E-06

Source: 4

Nuclide	Receptor	Total
	1	
CO-60	6.17E-06	6.17E-06

Title : Dr. Ks office

Input File : C:\temp\Co60 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 5

Nuclide	Receptor	Total
	1	
CO-60	6.17E-06	6.17E-06

Title : Dr. Ks office

Input File : C:\temp\Co60 2 5 meter walls.bld

Full Summary

RESRAD-BUILD Dose (Time) Tables

Receptor Dose Received for the Exposure Duration

(mrem)

Evaluation Time [yr]

0.00E+00 1.00E+00

1 4.58E-05 3.62E-05

Receptor Dose/Yr Averaged Over Exposure Duration

(mrem/yr)

Evaluation Time [yr]

0.00E+00 1.00E+00

1 4.58E-05 3.62E-05

Title : Dr. Ks office

Input File : C:\temp\Cs137 - 2 5 meter walls.bld

RESRAD-BUILD Table of Contents

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Title : Dr. Ks office

Input File : C:\temp\Cs137 - 2 5 meter walls.bld

RESRAD-BUILD Input Parameters

Number of Sources : 5
Number of Receptors: 1
Total Time : 3.650000E+02 days
Fraction Inside : 5.000000E-01

Receptor Information

Receptor	Room	x [m]	y [m]	z [m]	FracTime	Inhalation [m3/day]	Ingestion(Dust) [m2/hr]
1	1	2.000	1.400	1.000	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

Title : Dr. Ks office

Input File : C:\temp\Cs137 - 2 5 meter walls.bld

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

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

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

	*	*
	*	*
	*	<=Q01: 2.24E+01
H1: 2.500	* Room 1	* Q10 : 2.24E+01
	* LAMBDA: 8.00E-01	*
Area 11.200	*	*
	*	*

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

Title : Dr. Ks office

Input File : C:\temp\Cs137 - 2 5 meter walls.bld

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00[m]
Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
CS-137	1.000E+00	5.000E-05	3.190E-05	3.183E-03

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00[m]
Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
CS-137	1.000E+00	5.000E-05	3.190E-05	3.183E-03

Title : Dr. Ks office

Input File : C:\temp\Cs137 - 2 5 meter walls.bld

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00[m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Dose Conversion Factor (Library: FGR 11)		
		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
CS-137	1.000E+00	5.000E-05	3.190E-05	3.183E-03

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Dose Conversion Factor (Library: FGR 11)		
		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
CS-137	1.000E+00	5.000E-05	3.190E-05	3.183E-03

Title : Dr. Ks office

Input File : C:\temp\Cs137 - 2 5 meter walls.bld

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
CS-137	1.000E+00	5.000E-05	3.190E-05	3.183E-03

Title : Dr. Ks office

Input File : C:\temp\Cs137 - 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CS-137	1.000E+00

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CS-137	1.000E+00

Title : Dr. Ks office

Input File : C:\temp\Cs137 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CS-137	1.000E+00

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CS-137	1.000E+00

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CS-137	1.000E+00

Title : Dr. Ks office

Input File : C:\temp\Cs137 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

		Source	Source	Source	Source	Source	Total
		1	2	3	4	5	
Receptor	1	4.73E-06	1.67E-06	1.67E-06	2.04E-06	2.04E-06	1.21E-05
Total		4.73E-06	1.67E-06	1.67E-06	2.04E-06	2.04E-06	1.21E-05

Title : Dr. Ks office

Input File : C:\temp\Cs137 - 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	4.39E-06	5.02E-08	8.58E-10	5.64E-08	0.00E+00	2.35E-07
Total	4.39E-06	5.02E-08	8.58E-10	5.64E-08	0.00E+00	2.35E-07

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.42E-06	3.59E-08	6.13E-10	4.03E-08	0.00E+00	1.68E-07
Total	1.42E-06	3.59E-08	6.13E-10	4.03E-08	0.00E+00	1.68E-07

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.42E-06	3.59E-08	6.13E-10	4.03E-08	0.00E+00	1.68E-07
Total	1.42E-06	3.59E-08	6.13E-10	4.03E-08	0.00E+00	1.68E-07

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.87E-06	2.51E-08	4.29E-10	2.82E-08	0.00E+00	1.18E-07
Total	1.87E-06	2.51E-08	4.29E-10	2.82E-08	0.00E+00	1.18E-07

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.87E-06	2.51E-08	4.29E-10	2.82E-08	0.00E+00	1.18E-07
Total	1.87E-06	2.51E-08	4.29E-10	2.82E-08	0.00E+00	1.18E-07

Title : Dr. Ks office

Input File : C:\temp\Cs137 - 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
CS-137	4.73E-06	4.73E-06

Source: 2

Nuclide	Receptor	Total
	1	
CS-137	1.67E-06	1.67E-06

Source: 3

Nuclide	Receptor	Total
	1	
CS-137	1.67E-06	1.67E-06

Source: 4

Nuclide	Receptor	Total
	1	
CS-137	2.04E-06	2.04E-06

Title : Dr. Ks office

Input File : C:\temp\Cs137 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 5

Nuclide	Receptor	Total
	1	
CS-137	2.04E-06	2.04E-06

Title : Dr. Ks office

Input File : C:\temp\Cs137 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CS-137	8.794E-01

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CS-137	8.794E-01

Title : Dr. Ks office

Input File : C:\temp\Cs137 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CS-137	8.794E-01

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CS-137	8.794E-01

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	CS-137	8.794E-01

Title : Dr. Ks office

Input File : C:\temp\Cs137 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

		Source	Source	Source	Source	Source	Total
		1	2	3	4	5	
Receptor	1	4.06E-06	1.32E-06	1.32E-06	1.73E-06	1.73E-06	1.01E-05
Total		4.06E-06	1.32E-06	1.32E-06	1.73E-06	1.73E-06	1.01E-05

Title : Dr. Ks office

Input File : C:\temp\Cs137 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	4.06E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	4.06E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.32E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	1.32E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.32E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	1.32E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.73E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	1.73E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.73E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	1.73E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Title : Dr. Ks office

Input File : C:\temp\Cs137 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
CS-137	4.06E-06	4.06E-06

Source: 2

Nuclide	Receptor	Total
	1	
CS-137	1.32E-06	1.32E-06

Source: 3

Nuclide	Receptor	Total
	1	
CS-137	1.32E-06	1.32E-06

Source: 4

Nuclide	Receptor	Total
	1	
CS-137	1.73E-06	1.73E-06

Title : Dr. Ks office

Input File : C:\temp\Cs137 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 5

Nuclide	Receptor	Total
	1	
CS-137	1.73E-06	1.73E-06

RESRAD-BUILD Dose (Time) Tables

Receptor Dose Received for the Exposure Duration

(mrem)

Evaluation Time [yr]

0.00E+00 1.00E+00

```
1      1.21E-05    1.01E-05
```

Receptor Dose/Yr Averaged Over Exposure Duration

(mrem/yr)

Evaluation Time [yr]

0.00E+00 1.00E+00

1	1.21E-05	1.02E-05
---	----------	----------

Title : Dr. Ks office

Input File : C:\temp\Eu154 - 2 5 meter walls.bld

RESRAD-BUILD Table of Contents

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Title : Dr. Ks office

Input File : C:\temp\Eul54 - 2 5 meter walls.bld

RESRAD-BUILD Input Parameters

Number of Sources : 5
Number of Receptors: 1
Total Time : 3.650000E+02 days
Fraction Inside : 5.000000E-01

Receptor Information

Receptor	Room	x [m]	y [m]	z [m]	FracTime	Inhalation [m3/day]	Ingestion(Dust) [m2/hr]
1	1	2.000	1.400	1.000	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

Title : Dr. Ks office

Input File : C:\temp\Eul54 - 2 5 meter walls.bld

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

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

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

	*	*
	*	*
	*	<=Q01: 2.24E+01
H1: 2.500	* Room 1	* Q10 : 2.24E+01
	* LAMBDA: 8.00E-01	*
Area 11.200	*	*
	*	*

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

Title : Dr. Ks office

Input File : C:\temp\Eul54 - 2 5 meter walls.bld

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00[m]
Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion Inhalation Submersion		
		[pCi/m2]	[mrem/pCi]	[mrem/pCi]
				[mrem/yr/ (pCi/m3)]
EU-154	1.000E+00	9.550E-06	2.860E-04	7.172E-03

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00[m]
Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion Inhalation Submersion		
		[pCi/m2]	[mrem/pCi]	[mrem/pCi]
				[mrem/yr/ (pCi/m3)]
EU-154	1.000E+00	9.550E-06	2.860E-04	7.172E-03

Title : Dr. Ks office

Input File : C:\temp\Eul54 - 2 5 meter walls.bld

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00[m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion Inhalation Submersion		
		[pCi/m2]	[mrem/pCi]	[mrem/pCi]
				[mrem/yr/ (pCi/m3)]
EU-154	1.000E+00	9.550E-06	2.860E-04	7.172E-03

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00[m]

Geometry:: Type: Area Area:5.40E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion Inhalation Submersion		
		[pCi/m2]	[mrem/pCi]	[mrem/pCi]
				[mrem/yr/ (pCi/m3)]
EU-154	1.000E+00	9.550E-06	2.860E-04	7.172E-03

Title : Dr. Ks office

Input File : C:\temp\Eu154 - 2 5 meter walls.bld

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00[m]

Geometry:: Type: Area Area:5.40E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
EU-154	1.000E+00	9.550E-06	2.860E-04	7.172E-03

Title : Dr. Ks office

Input File : C:\temp\Eul54 - 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	EU-154	1.000E+00

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	EU-154	1.000E+00

Title : Dr. Ks office

Input File : C:\temp\Eul54 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	EU-154	1.000E+00

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.40E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	EU-154	1.000E+00

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.40E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	EU-154	1.000E+00

Title : Dr. Ks office

Input File : C:\temp\Eul54 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

RESRAD-BUILD Dose Tables	

Source Contributions to Receptor Doses

[mrem]						
	Source	Source	Source	Source	Source	Total
	1	2	3	4	5	
Receptor 1	9.81E-06	3.42E-06	3.42E-06	4.11E-06	4.11E-06	2.49E-05
Total	9.81E-06	3.42E-06	3.42E-06	4.11E-06	4.11E-06	2.49E-05

Title : Dr. Ks office

Input File : C:\temp\Eul54 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	9.21E-06	9.90E-08	1.77E-09	4.64E-07	0.00E+00	4.11E-08
Total	9.21E-06	9.90E-08	1.77E-09	4.64E-07	0.00E+00	4.11E-08

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	2.99E-06	7.07E-08	1.27E-09	3.31E-07	0.00E+00	2.94E-08
Total	2.99E-06	7.07E-08	1.27E-09	3.31E-07	0.00E+00	2.94E-08

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	2.99E-06	7.07E-08	1.27E-09	3.31E-07	0.00E+00	2.94E-08
Total	2.99E-06	7.07E-08	1.27E-09	3.31E-07	0.00E+00	2.94E-08

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	3.82E-06	4.77E-08	8.55E-10	2.24E-07	0.00E+00	1.98E-08
Total	3.82E-06	4.77E-08	8.55E-10	2.24E-07	0.00E+00	1.98E-08

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	3.82E-06	4.77E-08	8.55E-10	2.24E-07	0.00E+00	1.98E-08
Total	3.82E-06	4.77E-08	8.55E-10	2.24E-07	0.00E+00	1.98E-08

Title : Dr. Ks office

Input File : C:\temp\Eu154 - 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
EU-154	9.81E-06	9.81E-06

Source: 2

Nuclide	Receptor	Total
	1	
EU-154	3.42E-06	3.42E-06

Source: 3

Nuclide	Receptor	Total
	1	
EU-154	3.42E-06	3.42E-06

Source: 4

Nuclide	Receptor	Total
	1	
EU-154	4.11E-06	4.11E-06

Title : Dr. Ks office

Input File : C:\temp\Eu154 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 5

Nuclide	Receptor	Total
	1	
EU-154	4.11E-06	4.11E-06

Title : Dr. Ks office

Input File : C:\temp\Eul54 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	EU-154	8.318E-01

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	EU-154	8.318E-01

Title : Dr. Ks office

Input File : C:\temp\Eul54 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	EU-154	8.318E-01

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.40E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	EU-154	8.318E-01

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.40E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	EU-154	8.318E-01

Title : Dr. Ks office

Input File : C:\temp\Eul54 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

		Source	Source	Source	Source	Source	Total
		1	2	3	4	5	
Receptor	1	8.06E-06	2.61E-06	2.61E-06	3.34E-06	3.34E-06	2.00E-05
Total		8.06E-06	2.61E-06	2.61E-06	3.34E-06	3.34E-06	2.00E-05

Title : Dr. Ks office

Input File : C:\temp\Eul54 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	8.06E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	8.06E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	2.61E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	2.61E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	2.61E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	2.61E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	3.34E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	3.34E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	3.34E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	3.34E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Title : Dr. Ks office

Input File : C:\temp\Eu154 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
EU-154	8.06E-06	8.06E-06

Source: 2

Nuclide	Receptor	Total
	1	
EU-154	2.61E-06	2.61E-06

Source: 3

Nuclide	Receptor	Total
	1	
EU-154	2.61E-06	2.61E-06

Source: 4

Nuclide	Receptor	Total
	1	
EU-154	3.34E-06	3.34E-06

Title : Dr. Ks office

Input File : C:\temp\Eu154 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 5

Nuclide	Receptor	Total
	1	
EU-154	3.34E-06	3.34E-06

Title : Dr. Ks office

Input File : C:\temp\Eul54 - 2 5 meter walls.bld

Full Summary

RESRAD-BUILD Dose (Time) Tables

Receptor Dose Received for the Exposure Duration

(mrem)

Evaluation Time [yr]

0.00E+00 1.00E+00

1 2.49E-05 2.00E-05

Receptor Dose/Yr Averaged Over Exposure Duration

(mrem/yr)

Evaluation Time [yr]

0.00E+00 1.00E+00

1 2.49E-05 2.00E-05

Title : Dr. Ks office

Input File : C:\temp\H3 - 2 5 meter walls.bld

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Title : Dr. Ks office

Input File : C:\temp\H3 - 2 5 meter walls.bld

RESRAD-BUILD Input Parameters

Number of Sources : 5
Number of Receptors: 1
Total Time : 3.650000E+02 days
Fraction Inside : 5.000000E-01

Receptor Information

Receptor	Room	x [m]	y [m]	z [m]	FracTime	Inhalation [m3/day]	Ingestion(Dust) [m2/hr]
1	1	2.000	1.400	1.000	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

Title : Dr. Ks office

Input File : C:\temp\H3 - 2 5 meter walls.bld

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

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

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

	*	*
	*	*
	*	<=Q01: 2.24E+01
H1: 2.500	* Room 1	* Q10 : 2.24E+01
	* LAMBDA: 8.00E-01	*
Area 11.200	*	*
	*	*

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

Title : Dr. Ks office

Input File : C:\temp\H3 - 2 5 meter walls.bld

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00[m]
Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
H-3	1.000E+00	6.400E-08	6.400E-08	3.866E-08

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00[m]
Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
H-3	1.000E+00	6.400E-08	6.400E-08	3.866E-08

Title : Dr. Ks office

Input File : C:\temp\H3 - 2 5 meter walls.bld

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00[m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Dose Conversion Factor (Library: FGR 11)		
		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
H-3	1.000E+00	6.400E-08	6.400E-08	3.866E-08

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Dose Conversion Factor (Library: FGR 11)		
		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
H-3	1.000E+00	6.400E-08	6.400E-08	3.866E-08

Title : Dr. Ks office

Input File : C:\temp\H3 - 2 5 meter walls.bld

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
H-3	1.000E+00	6.400E-08	6.400E-08	3.866E-08

Title : Dr. Ks office

Input File : C:\temp\H3 - 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	H-3	1.000E+00

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	H-3	1.000E+00

Title : Dr. Ks office

Input File : C:\temp\H3 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	H-3	1.000E+00

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	H-3	1.000E+00

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	H-3	1.000E+00

Title : Dr. Ks office

Input File : C:\temp\H3 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

		Source	Source	Source	Source	Source	Total
		1	2	3	4	5	
Receptor	1	4.47E-10	3.19E-10	3.19E-10	2.23E-10	2.23E-10	1.53E-09
Total		4.47E-10	3.19E-10	3.19E-10	2.23E-10	2.23E-10	1.53E-09

Title : Dr. Ks office

Input File : C:\temp\H3 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	0.00E+00	0.00E+00	9.90E-15	1.61E-10	0.00E+00	2.86E-10
Total	0.00E+00	0.00E+00	9.90E-15	1.61E-10	0.00E+00	2.86E-10

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	0.00E+00	0.00E+00	7.07E-15	1.15E-10	0.00E+00	2.04E-10
Total	0.00E+00	0.00E+00	7.07E-15	1.15E-10	0.00E+00	2.04E-10

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	0.00E+00	0.00E+00	7.07E-15	1.15E-10	0.00E+00	2.04E-10
Total	0.00E+00	0.00E+00	7.07E-15	1.15E-10	0.00E+00	2.04E-10

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	0.00E+00	0.00E+00	4.95E-15	8.06E-11	0.00E+00	1.43E-10
Total	0.00E+00	0.00E+00	4.95E-15	8.06E-11	0.00E+00	1.43E-10

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	0.00E+00	0.00E+00	4.95E-15	8.06E-11	0.00E+00	1.43E-10
Total	0.00E+00	0.00E+00	4.95E-15	8.06E-11	0.00E+00	1.43E-10

Title : Dr. Ks office

Input File : C:\temp\H3 - 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
H-3	4.47E-10	4.47E-10

Source: 2

Nuclide	Receptor	Total
	1	
H-3	3.19E-10	3.19E-10

Source: 3

Nuclide	Receptor	Total
	1	
H-3	3.19E-10	3.19E-10

Source: 4

Nuclide	Receptor	Total
	1	
H-3	2.23E-10	2.23E-10

Title : Dr. Ks office

Input File : C:\temp\H3 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 5

Nuclide	Receptor	Total
	1	
H-3	2.23E-10	2.23E-10

Title : Dr. Ks office

Input File : C:\temp\H3 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	H-3	8.511E-01

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	H-3	8.511E-01

Title : Dr. Ks office

Input File : C:\temp\H3 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	H-3	8.511E-01

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	H-3	8.511E-01

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	H-3	8.511E-01

Total	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
-------	----------	----------	----------	----------	----------	----------

Title : Dr. Ks office

Input File : C:\temp\H3 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Title : Dr. Ks office

Input File : C:\temp\H3 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
H-3	0.00E+00	0.00E+00

Source: 2

Nuclide	Receptor	Total
	1	
H-3	0.00E+00	0.00E+00

Source: 3

Nuclide	Receptor	Total
	1	
H-3	0.00E+00	0.00E+00

Source: 4

Nuclide	Receptor	Total
	1	
H-3	0.00E+00	0.00E+00

Title : Dr. Ks office

Input File : C:\temp\H3 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 5

Nuclide	Receptor	Total
	1	
H-3	0.00E+00	0.00E+00

RESRAD-BUILD Dose (Time) Tables

Receptor Dose Received for the Exposure Duration

(mrem)

Evaluation Time [yr]

0.00E+00 1.00E+00

1	1.53E-09	0.00E+00
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Receptor Dose/Yr Averaged Over Exposure Duration

(mrem/yr)

Evaluation Time [yr]

0.00E+00 1.00E+00

```
1      1.53E-09      0.00E+00
```

Title : Dr Ks office

Input File : C:\temp\Ni63 - 2 5 meter walls.bld

RESRAD-BUILD Table of Contents

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For time = 0.00E+00 yr	
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For time = 1.00E+00 yr	
Time Specific Parameters.....	13
Receptor-Source Dose Summary.....	15
Dose by Pathway Detail.....	16
Dose by Nuclide Detail.....	17
Full Summary.....	19

Title : Dr Ks office

Input File : C:\temp\Ni63 - 2 5 meter walls.bld

RESRAD-BUILD Input Parameters

Number of Sources : 5
Number of Receptors: 1
Total Time : 3.650000E+02 days
Fraction Inside : 5.000000E-01

Receptor Information

Receptor	Room	x [m]	y [m]	z [m]	FracTime	Inhalation [m3/day]	Ingestion(Dust) [m2/hr]
1	1	2.000	1.400	1.000	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

Title : Dr Ks office

Input File : C:\temp\Ni63 - 2 5 meter walls.bld

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

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

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

	*	*
	*	*
	*	<=Q01: 2.24E+01
H1: 2.500	* Room 1	* Q10 : 2.24E+01
	* LAMBDA: 8.00E-01	*
Area 11.200	*	*
	*	*

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

Title : Dr Ks office

Input File : C:\temp\Ni63 - 2 5 meter walls.bld

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00[m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion Inhalation Submersion		
		[pCi/m2]	[mrem/pCi]	[mrem/pCi]
				[mrem/yr/ (pCi/m3)]
NI-63	1.000E+00	5.770E-07	6.290E-06	0.000E+00

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00[m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion Inhalation Submersion		
		[pCi/m2]	[mrem/pCi]	[mrem/pCi]
				[mrem/yr/ (pCi/m3)]
NI-63	1.000E+00	5.770E-07	6.290E-06	0.000E+00

Title : Dr Ks office

Input File : C:\temp\Ni63 - 2 5 meter walls.bld

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00[m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Dose Conversion Factor (Library: FGR 11)		
		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
NI-63	1.000E+00	5.770E-07	6.290E-06	0.000E+00

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Dose Conversion Factor (Library: FGR 11)		
		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
NI-63	1.000E+00	5.770E-07	6.290E-06	0.000E+00

Title : Dr Ks office

Input File : C:\temp\Ni63 - 2 5 meter walls.bld

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
NI-63	1.000E+00	5.770E-07	6.290E-06	0.000E+00

Title : Dr Ks office

Input File : C:\temp\Ni63 - 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	NI-63	1.000E+00

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	NI-63	1.000E+00

Title : Dr Ks office

Input File : C:\temp\Ni63 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	NI-63	1.000E+00

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	NI-63	1.000E+00

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	NI-63	1.000E+00

Title : Dr Ks office

Input File : C:\temp\Ni63 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

		Source	Source	Source	Source	Source	Total
		1	2	3	4	5	
Receptor	1	1.42E-08	1.01E-08	1.01E-08	7.10E-09	7.10E-09	4.87E-08
Total		1.42E-08	1.01E-08	1.01E-08	7.10E-09	7.10E-09	4.87E-08

Title : Dr Ks office

Input File : C:\temp\Ni63 - 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	0.00E+00	0.00E+00	0.00E+00	1.14E-08	0.00E+00	2.79E-09
Total	0.00E+00	0.00E+00	0.00E+00	1.14E-08	0.00E+00	2.79E-09

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	0.00E+00	0.00E+00	0.00E+00	8.15E-09	0.00E+00	1.99E-09
Total	0.00E+00	0.00E+00	0.00E+00	8.15E-09	0.00E+00	1.99E-09

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	0.00E+00	0.00E+00	0.00E+00	8.15E-09	0.00E+00	1.99E-09
Total	0.00E+00	0.00E+00	0.00E+00	8.15E-09	0.00E+00	1.99E-09

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	0.00E+00	0.00E+00	0.00E+00	5.71E-09	0.00E+00	1.40E-09
Total	0.00E+00	0.00E+00	0.00E+00	5.71E-09	0.00E+00	1.40E-09

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	0.00E+00	0.00E+00	0.00E+00	5.71E-09	0.00E+00	1.40E-09
Total	0.00E+00	0.00E+00	0.00E+00	5.71E-09	0.00E+00	1.40E-09

Title : Dr Ks office

Input File : C:\temp\Ni63 - 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
NI-63	1.42E-08	1.42E-08

Source: 2

Nuclide	Receptor	Total
	1	
NI-63	1.01E-08	1.01E-08

Source: 3

Nuclide	Receptor	Total
	1	
NI-63	1.01E-08	1.01E-08

Source: 4

Nuclide	Receptor	Total
	1	
NI-63	7.10E-09	7.10E-09

Title : Dr Ks office

Input File : C:\temp\Ni63 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 5

Nuclide	Receptor	Total
	1	
NI-63	7.10E-09	7.10E-09

Title : Dr Ks office

Input File : C:\temp\Ni63 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	NI-63	8.935E-01

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	NI-63	8.935E-01

Title : Dr Ks office

Input File : C:\temp\Ni63 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	NI-63	8.935E-01

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	NI-63	8.935E-01

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	NI-63	8.935E-01

Title : Dr Ks office

Input File : C:\temp\Ni63 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

		Source	Source	Source	Source	Source	Total
		1	2	3	4	5	
Receptor	1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Title : Dr Ks office

Input File : C:\temp\Ni63 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Title : Dr Ks office

Input File : C:\temp\Ni63 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
NI-63	0.00E+00	0.00E+00

Source: 2

Nuclide	Receptor	Total
	1	
NI-63	0.00E+00	0.00E+00

Source: 3

Nuclide	Receptor	Total
	1	
NI-63	0.00E+00	0.00E+00

Source: 4

Nuclide	Receptor	Total
	1	
NI-63	0.00E+00	0.00E+00

Title : Dr Ks office

Input File : C:\temp\Ni63 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 5

Nuclide	Receptor	Total
	1	
NI-63	0.00E+00	0.00E+00

Title : Dr Ks office
Input File : C:\temp\Ni63 - 2 5 meter walls.bld
Full Summary

RESRAD-BUILD Dose (Time) Tables	

Receptor Dose Received for the Exposure Duration

(mrem)	

		Evaluation Time [yr]
		0.00E+00 1.00E+00

1	4.87E-08	0.00E+00

Receptor Dose/Yr Averaged Over Exposure Duration

(mrem/yr)	

		Evaluation Time [yr]
		0.00E+00 1.00E+00

1	4.87E-08	0.00E+00

Title : Dr. Ks office

Input File : C:\temp\Pm147- no Sm147 to start 2 5 meter walls.bld

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Title : Dr. Ks office

Input File : C:\temp\Pm147- no Sm147 to start 2 5 meter walls.bld

=====

=====

=====

RESRAD-BUILD Input Parameters

=====

=====

Number of Sources : 5

Number of Receptors: 1

Total Time : 3.650000E+02 days

Fraction Inside : 5.000000E-01

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

Receptor	Room	x	y	z	FracTime	Inhalation	Ingestion(Dust)
		[m]	[m]	[m]		[m3/day]	[m2/hr]
1	1	2.000	1.400	1.000	1.000	1.80E+01	1.00E-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

Title : Dr. Ks office

Input File : C:\temp\Pm147- no Sm147 to start 2 5 meter walls.bld

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

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

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

	*	*
	*	*
	*	<=Q01: 2.24E+01
H1: 2.500	* Room 1	* Q10 : 2.24E+01
	* LAMBDA: 8.00E-01	*
Area 11.200	*	*
	*	*

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

Title : Dr. Ks office

Input File : C:\temp\Pml47- no Sm147 to start 2 5 meter walls.bld

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00[m]
Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
SM-147	0.000E+00	1.850E-04	7.470E-02	0.000E+00
PM-147	1.000E+00	1.050E-06	3.920E-05	8.094E-08

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00[m]
Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
SM-147	0.000E+00	1.850E-04	7.470E-02	0.000E+00
PM-147	1.000E+00	1.050E-06	3.920E-05	8.094E-08

Title : Dr. Ks office

Input File : C:\temp\Pm147- no Sm147 to start 2 5 meter walls.bld

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00[m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
SM-147	0.000E+00	1.850E-04	7.470E-02	0.000E+00
PM-147	1.000E+00	1.050E-06	3.920E-05	8.094E-08

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
SM-147	0.000E+00	1.850E-04	7.470E-02	0.000E+00
PM-147	1.000E+00	1.050E-06	3.920E-05	8.094E-08

Title : Dr. Ks office

Input File : C:\temp\Pm147- no Sm147 to start 2 5 meter walls.bld

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Dose Conversion Factor (Library: FGR 11)		
		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
SM-147	0.000E+00	1.850E-04	7.470E-02	0.000E+00
PM-147	1.000E+00	1.050E-06	3.920E-05	8.094E-08

Title : Dr. Ks office

Input File : C:\temp\Pm147- no Sm147 to start 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	SM-147	0.000E+00
	PM-147	1.000E+00

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	SM-147	0.000E+00
	PM-147	1.000E+00

Title : Dr. Ks office

Input File : C:\temp\Pml47- no Sm147 to start 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	SM-147	0.000E+00
	PM-147	1.000E+00

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	SM-147	0.000E+00
	PM-147	1.000E+00

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]

Title : Dr. Ks office

Input File : C:\temp\Pm147- no Sm147 to start 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

SM-147	0.000E+00
--------	-----------

PM-147	1.000E+00
--------	-----------

		Source 1	Source 2	Source 3	Source 4	Source 5	Total
Receptor	1	5.26E-08	3.75E-08	3.75E-08	2.63E-08	2.63E-08	1.80E-07
Total		5.26E-08	3.75E-08	3.75E-08	2.63E-08	2.63E-08	1.80E-07

Title : Dr. Ks office

Input File : C:\temp\Pml47- no Sm147 to start 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	2.44E-10	2.18E-12	1.54E-14	4.89E-08	0.00E+00	3.43E-09
Total	2.44E-10	2.18E-12	1.54E-14	4.89E-08	0.00E+00	3.43E-09

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	8.05E-11	1.56E-12	1.10E-14	3.49E-08	0.00E+00	2.45E-09
Total	8.05E-11	1.56E-12	1.10E-14	3.49E-08	0.00E+00	2.45E-09

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	8.05E-11	1.56E-12	1.10E-14	3.49E-08	0.00E+00	2.45E-09
Total	8.05E-11	1.56E-12	1.10E-14	3.49E-08	0.00E+00	2.45E-09

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.04E-10	1.09E-12	7.69E-15	2.44E-08	0.00E+00	1.72E-09
Total	1.04E-10	1.09E-12	7.69E-15	2.44E-08	0.00E+00	1.72E-09

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.04E-10	1.09E-12	7.69E-15	2.44E-08	0.00E+00	1.72E-09
Total	1.04E-10	1.09E-12	7.69E-15	2.44E-08	0.00E+00	1.72E-09

Title : Dr. Ks office

Input File : C:\temp\Pm147- no Sm147 to start 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
SM-147	4.06E-16	4.06E-16
PM-147	5.26E-08	5.26E-08

Source: 2

Nuclide	Receptor	Total
	1	
SM-147	2.90E-16	2.90E-16
PM-147	3.75E-08	3.75E-08

Source: 3

Nuclide	Receptor	Total
	1	
SM-147	2.90E-16	2.90E-16
PM-147	3.75E-08	3.75E-08

Source: 4

Nuclide	Receptor	Total
	1	
SM-147	2.03E-16	2.03E-16
PM-147	2.63E-08	2.63E-08

Title : Dr. Ks office

Input File : C:\temp\Pm147- no Sm147 to start 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 5

Nuclide	Receptor	Total
	1	
SM-147	2.03E-16	2.03E-16
PM-147	2.63E-08	2.63E-08

Title : Dr. Ks office

Input File : C:\temp\Pm147- no Sm147 to start 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	SM-147	5.171E-12
	PM-147	6.908E-01

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	SM-147	5.171E-12
	PM-147	6.908E-01

Title : Dr. Ks office

Input File : C:\temp\Pml47- no Sm147 to start 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	SM-147	5.171E-12
	PM-147	6.908E-01

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	SM-147	5.171E-12
	PM-147	6.908E-01

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]

Title : Dr. Ks office

Input File : C:\temp\Pm147- no Sm147 to start 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

SM-147	5.171E-12
--------	-----------

PM-147	6.908E-01
--------	-----------

Title : Dr. Ks office

Input File : C:\temp\Pm147- no Sm147 to start 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

		Source	Source	Source	Source	Source	Total
		1	2	3	4	5	
Receptor	1	1.77E-10	5.84E-11	5.84E-11	7.57E-11	7.57E-11	4.45E-10
Total		1.77E-10	5.84E-11	5.84E-11	7.57E-11	7.57E-11	4.45E-10

Title : Dr. Ks office

Input File : C:\temp\Pml47- no Sm147 to start 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.77E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	1.77E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	5.84E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	5.84E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	5.84E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	5.84E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	7.57E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	7.57E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	7.57E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	7.57E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Title : Dr. Ks office

Input File : C:\temp\Pm147- no Sm147 to start 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
SM-147	0.00E+00	0.00E+00
PM-147	1.77E-10	1.77E-10

Source: 2

Nuclide	Receptor	Total
	1	
SM-147	0.00E+00	0.00E+00
PM-147	5.84E-11	5.84E-11

Source: 3

Nuclide	Receptor	Total
	1	
SM-147	0.00E+00	0.00E+00
PM-147	5.84E-11	5.84E-11

Source: 4

Nuclide	Receptor	Total
	1	
SM-147	0.00E+00	0.00E+00
PM-147	7.57E-11	7.57E-11

Title : Dr. Ks office

Input File : C:\temp\Pm147- no Sm147 to start 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 5

Nuclide	Receptor	Total
	1	
SM-147	0.00E+00	0.00E+00
PM-147	7.57E-11	7.57E-11

Title : Dr. Ks office

Input File : C:\temp\Pm147- no Sm147 to start 2 5 meter walls.bld

Full Summary

RESRAD-BUILD Dose (Time) Tables

Receptor Dose Received for the Exposure Duration

(mrem)

Evaluation Time [yr]

0.00E+00 1.00E+00

1 1.80E-07 4.45E-10

Receptor Dose/Yr Averaged Over Exposure Duration

(mrem/yr)

Evaluation Time [yr]

0.00E+00 1.00E+00

1 1.80E-07 4.46E-10

Title : Dr Ks office

Input File : C:\temp\Ra226 - 2 5 meter walls.bld

RESRAD-BUILD Table of Contents

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Title : Dr Ks office

Input File : C:\temp\Ra226 - 2 5 meter walls.bld

RESRAD-BUILD Input Parameters

Number of Sources : 5
Number of Receptors: 1
Total Time : 3.650000E+02 days
Fraction Inside : 5.000000E-01

Receptor Information

Receptor	Room	x [m]	y [m]	z [m]	FracTime	Inhalation [m3/day]	Ingestion(Dust) [m2/hr]
1	1	2.000	1.400	1.000	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

Title : Dr Ks office

Input File : C:\temp\Ra226 - 2 5 meter walls.bld

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

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

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

	*	*
	*	*
	*	<=Q01: 2.24E+01
H1: 2.500	* Room 1	* Q10 : 2.24E+01
	* LAMBDA: 8.00E-01	*
Area 11.200	*	*
	*	*

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

Title : Dr Ks office

Input File : C:\temp\Ra226 - 2 5 meter walls.bld

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00[m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Radon Release Fraction: 1.000E-01

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
PO-210	1.000E+00	1.900E-03	9.400E-03	4.859E-08
RA-226	1.000E+00	1.321E-03	8.594E-03	1.035E-02
PB-210	1.000E+00	5.376E-03	1.380E-02	1.043E-05

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00[m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Radon Release Fraction: 1.000E-01

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
PO-210	1.000E+00	1.900E-03	9.400E-03	4.859E-08
RA-226	1.000E+00	1.321E-03	8.594E-03	1.035E-02
PB-210	1.000E+00	5.376E-03	1.380E-02	1.043E-05

Title : Dr Ks office

Input File : C:\temp\Ra226 - 2 5 meter walls.bld

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00[m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Radon Release Fraction: 1.000E-01

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
PO-210	1.000E+00	1.900E-03	9.400E-03	4.859E-08
RA-226	1.000E+00	1.321E-03	8.594E-03	1.035E-02
PB-210	1.000E+00	5.376E-03	1.380E-02	1.043E-05

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Radon Release Fraction: 1.000E-01

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
PO-210	1.000E+00	1.900E-03	9.400E-03	4.859E-08
RA-226	1.000E+00	1.321E-03	8.594E-03	1.035E-02
PB-210	1.000E+00	5.376E-03	1.380E-02	1.043E-05

Title : Dr Ks office

Input File : C:\temp\Ra226 - 2 5 meter walls.bld

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Radon Release Fraction: 1.000E-01

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
PO-210	1.000E+00	1.900E-03	9.400E-03	4.859E-08
RA-226	1.000E+00	1.321E-03	8.594E-03	1.035E-02
PB-210	1.000E+00	5.376E-03	1.380E-02	1.043E-05

Title : Dr Ks office

Input File : C:\temp\Ra226 - 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	PO-210	1.000E+00
	RA-226	1.000E+00
	PB-210	1.000E+00

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	PO-210	1.000E+00
	RA-226	1.000E+00
	PB-210	1.000E+00

Title : Dr Ks office

Input File : C:\temp\Ra226 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	PO-210	1.000E+00
	RA-226	1.000E+00
	PB-210	1.000E+00

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	PO-210	1.000E+00
	RA-226	1.000E+00
	PB-210	1.000E+00

Title : Dr Ks office

Input File : C:\temp\Ra226 - 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	PO-210	1.000E+00
	RA-226	1.000E+00
	PB-210	1.000E+00

Title : Dr Ks office

Input File : C:\temp\Ra226 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

RESRAD-BUILD Dose Tables	

Source Contributions to Receptor Doses

[mrem]						
	Source	Source	Source	Source	Source	Total
	1	2	3	4	5	
Receptor 1	9.60E-05	6.21E-05	6.21E-05	4.68E-05	4.68E-05	3.14E-04
Total	9.60E-05	6.21E-05	6.21E-05	4.68E-05	4.68E-05	3.14E-04

Title : Dr Ks office

Input File : C:\temp\Ra226 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.66E-05	1.69E-07	2.90E-09	4.30E-05	2.99E-06	3.32E-05
Total	1.66E-05	1.69E-07	2.90E-09	4.30E-05	2.99E-06	3.32E-05

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	5.39E-06	1.20E-07	2.07E-09	3.07E-05	2.14E-06	2.37E-05
Total	5.39E-06	1.20E-07	2.07E-09	3.07E-05	2.14E-06	2.37E-05

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	5.39E-06	1.20E-07	2.07E-09	3.07E-05	2.14E-06	2.37E-05
Total	5.39E-06	1.20E-07	2.07E-09	3.07E-05	2.14E-06	2.37E-05

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	7.09E-06	8.43E-08	1.45E-09	2.15E-05	1.50E-06	1.66E-05
Total	7.09E-06	8.43E-08	1.45E-09	2.15E-05	1.50E-06	1.66E-05

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	7.09E-06	8.43E-08	1.45E-09	2.15E-05	1.50E-06	1.66E-05
Total	7.09E-06	8.43E-08	1.45E-09	2.15E-05	1.50E-06	1.66E-05

Title : Dr Ks office

Input File : C:\temp\Ra226 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
1		
PO-210	7.51E-06	7.51E-06
RA-226	3.86E-05	3.86E-05
PB-210	7.53E-07	7.53E-07
PB-210	4.91E-05	4.91E-05

Source: 2

Nuclide	Receptor	Total
1		
PO-210	4.06E-06	4.06E-06
RA-226	2.24E-05	2.24E-05
PB-210	5.38E-07	5.38E-07
PB-210	3.51E-05	3.51E-05

Source: 3

Nuclide	Receptor	Total
1		
PO-210	4.06E-06	4.06E-06
RA-226	2.24E-05	2.24E-05
PB-210	5.38E-07	5.38E-07
PB-210	3.51E-05	3.51E-05

Source: 4

Nuclide	Receptor	Total
1		
PO-210	3.51E-06	3.51E-06

Title : Dr Ks office

Input File : C:\temp\Ra226 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

RA-226	1.83E-05	1.83E-05
PB-210	3.77E-07	3.77E-07
PB-210	2.46E-05	2.46E-05

Source: 5

Nuclide	Receptor	Total
	1	
PO-210	3.51E-06	3.51E-06
RA-226	1.83E-05	1.83E-05
PB-210	3.77E-07	3.77E-07
PB-210	2.46E-05	2.46E-05

Title : Dr Ks office

Input File : C:\temp\Ra226 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	PO-210	1.445E-01
	RA-226	8.996E-01
	PB-210	9.000E-01

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	PO-210	1.445E-01
	RA-226	8.996E-01
	PB-210	9.000E-01

Title : Dr Ks office

Input File : C:\temp\Ra226 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	PO-210	1.445E-01
	RA-226	8.996E-01
	PB-210	9.000E-01

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	PO-210	1.445E-01
	RA-226	8.996E-01
	PB-210	9.000E-01

Title : Dr Ks office

Input File : C:\temp\Ra226 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	PO-210	1.445E-01
	RA-226	8.996E-01
	PB-210	9.000E-01

Title : Dr Ks office

Input File : C:\temp\Ra226 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

		Source	Source	Source	Source	Source	Total
		1	2	3	4	5	
Receptor	1	1.59E-05	6.26E-06	6.26E-06	6.99E-06	6.99E-06	4.24E-05
Total		1.59E-05	6.26E-06	6.26E-06	6.99E-06	6.99E-06	4.24E-05

Title : Dr Ks office

Input File : C:\temp\Ra226 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.31E-05	0.00E+00	0.00E+00	0.00E+00	2.83E-06	0.00E+00
Total	1.31E-05	0.00E+00	0.00E+00	0.00E+00	2.83E-06	0.00E+00

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	4.24E-06	0.00E+00	0.00E+00	0.00E+00	2.02E-06	0.00E+00
Total	4.24E-06	0.00E+00	0.00E+00	0.00E+00	2.02E-06	0.00E+00

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	4.24E-06	0.00E+00	0.00E+00	0.00E+00	2.02E-06	0.00E+00
Total	4.24E-06	0.00E+00	0.00E+00	0.00E+00	2.02E-06	0.00E+00

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	5.57E-06	0.00E+00	0.00E+00	0.00E+00	1.42E-06	0.00E+00
Total	5.57E-06	0.00E+00	0.00E+00	0.00E+00	1.42E-06	0.00E+00

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	5.57E-06	0.00E+00	0.00E+00	0.00E+00	1.42E-06	0.00E+00
Total	5.57E-06	0.00E+00	0.00E+00	0.00E+00	1.42E-06	0.00E+00

Title : Dr Ks office

Input File : C:\temp\Ra226 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
PO-210	5.02E-07	5.02E-07
RA-226	1.54E-05	1.54E-05
PB-210	2.35E-09	2.35E-09
PB-210	4.94E-08	4.94E-08

Source: 2

Nuclide	Receptor	Total
	1	
PO-210	1.63E-07	1.63E-07
RA-226	6.09E-06	6.09E-06
PB-210	7.08E-10	7.08E-10
PB-210	1.49E-08	1.49E-08

Source: 3

Nuclide	Receptor	Total
	1	
PO-210	1.63E-07	1.63E-07
RA-226	6.09E-06	6.09E-06
PB-210	7.08E-10	7.08E-10
PB-210	1.49E-08	1.49E-08

Source: 4

Nuclide	Receptor	Total
	1	
PO-210	2.14E-07	2.14E-07

Title : Dr Ks office

Input File : C:\temp\Ra226 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

RA-226	6.75E-06	6.75E-06
PB-210	9.94E-10	9.94E-10
PB-210	2.08E-08	2.08E-08

Source: 5

Nuclide	Receptor	Total
	1	
PO-210	2.14E-07	2.14E-07
RA-226	6.75E-06	6.75E-06
PB-210	9.94E-10	9.94E-10
PB-210	2.08E-08	2.08E-08

Title : Dr Ks office

Input File : C:\temp\Ra226 - 2 5 meter walls.bld

Full Summary

RESRAD-BUILD Dose (Time) Tables

Receptor Dose Received for the Exposure Duration

(mrem)

Evaluation Time [yr]

0.00E+00 1.00E+00

1 3.14E-04 4.24E-05

Receptor Dose/Yr Averaged Over Exposure Duration

(mrem/yr)

Evaluation Time [yr]

0.00E+00 1.00E+00

1 3.14E-04 4.25E-05

Title : Dr Ks office

Input File : C:\temp\Sr90Y90 - 2 5 meter walls.bld

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Title : Dr Ks office

Input File : C:\temp\Sr90Y90 - 2 5 meter walls.bld

RESRAD-BUILD Input Parameters

Number of Sources : 5
Number of Receptors: 1
Total Time : 3.650000E+02 days
Fraction Inside : 5.000000E-01

Receptor Information

Receptor	Room	x [m]	y [m]	z [m]	FracTime	Inhalation [m3/day]	Ingestion(Dust) [m2/hr]
1	1	2.000	1.400	1.000	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

Title : Dr Ks office

Input File : C:\temp\Sr90Y90 - 2 5 meter walls.bld

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

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

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

	*	*
	*	*
	*	<=Q01: 2.24E+01
H1: 2.500	* Room 1	* Q10 : 2.24E+01
	* LAMBDA: 8.00E-01	*
Area 11.200	*	*
	*	*

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

Title : Dr Ks office

Input File : C:\temp\Sr90Y90 - 2 5 meter walls.bld

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00[m]
Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
SR-90	1.000E+00	1.528E-04	1.308E-03	2.307E-05

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00[m]
Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
SR-90	1.000E+00	1.528E-04	1.308E-03	2.307E-05

Title : Dr Ks office

Input File : C:\temp\Sr90Y90 - 2 5 meter walls.bld

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00[m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
SR-90	1.000E+00	1.528E-04	1.308E-03	2.307E-05

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
SR-90	1.000E+00	1.528E-04	1.308E-03	2.307E-05

Title : Dr Ks office

Input File : C:\temp\Sr90Y90 - 2 5 meter walls.bld

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
SR-90	1.000E+00	1.528E-04	1.308E-03	2.307E-05

Title : Dr Ks office

Input File : C:\temp\Sr90Y90 - 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	SR-90	1.000E+00

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	SR-90	1.000E+00

Title : Dr Ks office

Input File : C:\temp\Sr90Y90 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	SR-90	1.000E+00

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	SR-90	1.000E+00

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	SR-90	1.000E+00

Title : Dr Ks office

Input File : C:\temp\Sr90Y90 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

		Source	Source	Source	Source	Source	Total
		1	2	3	4	5	
Receptor	1	3.08E-06	2.18E-06	2.18E-06	1.53E-06	1.53E-06	1.05E-05
Total		3.08E-06	2.18E-06	2.18E-06	1.53E-06	1.53E-06	1.05E-05

Title : Dr Ks office

Input File : C:\temp\Sr90Y90 - 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	4.45E-08	5.09E-10	6.21E-12	2.31E-06	0.00E+00	7.19E-07
Total	4.45E-08	5.09E-10	6.21E-12	2.31E-06	0.00E+00	7.19E-07

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.44E-08	3.64E-10	4.44E-12	1.65E-06	0.00E+00	5.13E-07
Total	1.44E-08	3.64E-10	4.44E-12	1.65E-06	0.00E+00	5.13E-07

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.44E-08	3.64E-10	4.44E-12	1.65E-06	0.00E+00	5.13E-07
Total	1.44E-08	3.64E-10	4.44E-12	1.65E-06	0.00E+00	5.13E-07

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.89E-08	2.54E-10	3.11E-12	1.16E-06	0.00E+00	3.59E-07
Total	1.89E-08	2.54E-10	3.11E-12	1.16E-06	0.00E+00	3.59E-07

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.89E-08	2.54E-10	3.11E-12	1.16E-06	0.00E+00	3.59E-07
Total	1.89E-08	2.54E-10	3.11E-12	1.16E-06	0.00E+00	3.59E-07

Title : Dr Ks office

Input File : C:\temp\Sr90Y90 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
SR-90	3.08E-06	3.08E-06

Source: 2

Nuclide	Receptor	Total
	1	
SR-90	2.18E-06	2.18E-06

Source: 3

Nuclide	Receptor	Total
	1	
SR-90	2.18E-06	2.18E-06

Source: 4

Nuclide	Receptor	Total
	1	
SR-90	1.53E-06	1.53E-06

Title : Dr Ks office

Input File : C:\temp\Sr90Y90 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 5

Nuclide	Receptor	Total
	1	
SR-90	1.53E-06	1.53E-06

Title : Dr Ks office

Input File : C:\temp\Sr90Y90 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	SR-90	8.788E-01

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	SR-90	8.788E-01

Title : Dr Ks office

Input File : C:\temp\Sr90Y90 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	SR-90	8.788E-01

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	SR-90	8.788E-01

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	SR-90	8.788E-01

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

```
[mrem]
```

		Source 1	Source 2	Source 3	Source 4	Source 5	Total
Receptor	1	4.11E-08	1.33E-08	1.33E-08	1.75E-08	1.75E-08	1.03E-07
Total		4.11E-08	1.33E-08	1.33E-08	1.75E-08	1.75E-08	1.03E-07

Title : Dr Ks office

Input File : C:\temp\Sr90Y90 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	4.11E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	4.11E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.33E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	1.33E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.33E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	1.33E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.75E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	1.75E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.75E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	1.75E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Title : Dr Ks office

Input File : C:\temp\Sr90Y90 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
SR-90	4.11E-08	4.11E-08

Source: 2

Nuclide	Receptor	Total
	1	
SR-90	1.33E-08	1.33E-08

Source: 3

Nuclide	Receptor	Total
	1	
SR-90	1.33E-08	1.33E-08

Source: 4

Nuclide	Receptor	Total
	1	
SR-90	1.75E-08	1.75E-08

Title : Dr Ks office

Input File : C:\temp\Sr90Y90 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 5

Nuclide	Receptor	Total
	1	
SR-90	1.75E-08	1.75E-08

Title : Dr Ks office

Input File : C:\temp\Sr90Y90 - 2 5 meter walls.bld

Full Summary

RESRAD-BUILD Dose (Time) Tables

Receptor Dose Received for the Exposure Duration

(mrem)

Evaluation Time [yr]

0.00E+00 1.00E+00

1 1.05E-05 1.03E-07

Receptor Dose/Yr Averaged Over Exposure Duration

(mrem/yr)

Evaluation Time [yr]

0.00E+00 1.00E+00

1 1.05E-05 1.03E-07

Title : Dr. Ks office

Input File : C:\temp\Tc99 - 2 5 meter walls.bld

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For time = 1.00E+00 yr	
Time Specific Parameters.....	13
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Dose by Nuclide Detail.....	17
Full Summary.....	19

Title : Dr. Ks office

Input File : C:\temp\Tc99 - 2 5 meter walls.bld

RESRAD-BUILD Input Parameters

Number of Sources : 5
Number of Receptors: 1
Total Time : 3.650000E+02 days
Fraction Inside : 5.000000E-01

Receptor Information

Receptor	Room	x [m]	y [m]	z [m]	FracTime	Inhalation [m3/day]	Ingestion(Dust) [m2/hr]
1	1	2.000	1.400	1.000	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

Title : Dr. Ks office

Input File : C:\temp\Tc99 - 2 5 meter walls.bld

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

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

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

	*	*
	*	*
	*	<=Q01: 2.24E+01
H1: 2.500	* Room 1	* Q10 : 2.24E+01
	* LAMBDA: 8.00E-01	*
Area 11.200	*	*
	*	*

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

Title : Dr. Ks office

Input File : C:\temp\Tc99 - 2 5 meter walls.bld

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00[m]
Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
TC-99	1.000E+00	1.460E-06	8.320E-06	1.892E-07

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00[m]
Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
TC-99	1.000E+00	1.460E-06	8.320E-06	1.892E-07

Title : Dr. Ks office

Input File : C:\temp\Tc99 - 2 5 meter walls.bld

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00[m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Dose Conversion Factor (Library: FGR 11)		
		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
TC-99	1.000E+00	1.460E-06	8.320E-06	1.892E-07

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Dose Conversion Factor (Library: FGR 11)		
		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
TC-99	1.000E+00	1.460E-06	8.320E-06	1.892E-07

Title : Dr. Ks office

Input File : C:\temp\Tc99 - 2 5 meter walls.bld

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
TC-99	1.000E+00	1.460E-06	8.320E-06	1.892E-07

Title : Dr. Ks office

Input File : C:\temp\Tc99 - 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	TC-99	1.000E+00

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	TC-99	1.000E+00

Title : Dr. Ks office

Input File : C:\temp\Tc99 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	TC-99	1.000E+00

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	TC-99	1.000E+00

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	TC-99	1.000E+00

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

```
[mrem]
```

		Source 1	Source 2	Source 3	Source 4	Source 5	Total
Receptor	1	2.30E-08	1.62E-08	1.62E-08	1.15E-08	1.15E-08	7.84E-08
Total		2.30E-08	1.62E-08	1.62E-08	1.15E-08	1.15E-08	7.84E-08

Title : Dr. Ks office

Input File : C:\temp\Tc99 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	6.10E-10	7.18E-12	5.29E-14	1.53E-08	0.00E+00	7.15E-09
Total	6.10E-10	7.18E-12	5.29E-14	1.53E-08	0.00E+00	7.15E-09

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	2.00E-10	5.13E-12	3.78E-14	1.09E-08	0.00E+00	5.11E-09
Total	2.00E-10	5.13E-12	3.78E-14	1.09E-08	0.00E+00	5.11E-09

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	2.00E-10	5.13E-12	3.78E-14	1.09E-08	0.00E+00	5.11E-09
Total	2.00E-10	5.13E-12	3.78E-14	1.09E-08	0.00E+00	5.11E-09

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	2.60E-10	3.59E-12	2.65E-14	7.64E-09	0.00E+00	3.57E-09
Total	2.60E-10	3.59E-12	2.65E-14	7.64E-09	0.00E+00	3.57E-09

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	2.60E-10	3.59E-12	2.65E-14	7.64E-09	0.00E+00	3.57E-09
Total	2.60E-10	3.59E-12	2.65E-14	7.64E-09	0.00E+00	3.57E-09

Title : Dr. Ks office

Input File : C:\temp\Tc99 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
TC-99	2.30E-08	2.30E-08

Source: 2

Nuclide	Receptor	Total
	1	
TC-99	1.62E-08	1.62E-08

Source: 3

Nuclide	Receptor	Total
	1	
TC-99	1.62E-08	1.62E-08

Source: 4

Nuclide	Receptor	Total
	1	
TC-99	1.15E-08	1.15E-08

Title : Dr. Ks office

Input File : C:\temp\Tc99 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 5

Nuclide	Receptor	Total
	1	
TC-99	1.15E-08	1.15E-08

Title : Dr. Ks office

Input File : C:\temp\Tc99 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	TC-99	9.000E-01

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	TC-99	9.000E-01

Title : Dr. Ks office

Input File : C:\temp\Tc99 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	TC-99	9.000E-01

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	TC-99	9.000E-01

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	TC-99	9.000E-01

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

```
[mrem]
```

		Source 1	Source 2	Source 3	Source 4	Source 5	Total
Receptor	1	5.78E-10	1.90E-10	1.90E-10	2.47E-10	2.47E-10	1.45E-09
Total		5.78E-10	1.90E-10	1.90E-10	2.47E-10	2.47E-10	1.45E-09

Title : Dr. Ks office

Input File : C:\temp\Tc99 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	5.78E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	5.78E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.90E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	1.90E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.90E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	1.90E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	2.47E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	2.47E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	2.47E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total	2.47E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Title : Dr. Ks office

Input File : C:\temp\Tc99 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
TC-99	5.78E-10	5.78E-10

Source: 2

Nuclide	Receptor	Total
	1	
TC-99	1.90E-10	1.90E-10

Source: 3

Nuclide	Receptor	Total
	1	
TC-99	1.90E-10	1.90E-10

Source: 4

Nuclide	Receptor	Total
	1	
TC-99	2.47E-10	2.47E-10

Title : Dr. Ks office

Input File : C:\temp\Tc99 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 5

Nuclide	Receptor	Total
	1	
TC-99	2.47E-10	2.47E-10

Title : Dr. Ks office
Input File : C:\temp\Tc99 - 2 5 meter walls.bld
Full Summary

RESRAD-BUILD Dose (Time) Tables	

Receptor Dose Received for the Exposure Duration

(mrem)	

		Evaluation Time [yr]	
0.00E+00		1.00E+00	
1	7.84E-08	1.45E-09	

Receptor Dose/Yr Averaged Over Exposure Duration

(mrem/yr)	

		Evaluation Time [yr]	
0.00E+00		1.00E+00	
1	7.85E-08	1.45E-09	

Title : Dr Ks office

Input File : C:\temp\Th230 - 2 5 meter walls.bld

RESRAD-BUILD Table of Contents

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Title : Dr Ks office

Input File : C:\temp\Th230 - 2 5 meter walls.bld

RESRAD-BUILD Input Parameters

Number of Sources : 5
Number of Receptors: 1
Total Time : 3.650000E+02 days
Fraction Inside : 5.000000E-01

Receptor Information

Receptor	Room	x [m]	y [m]	z [m]	FracTime	Inhalation [m3/day]	Ingestion(Dust) [m2/hr]
1	1	2.000	1.400	1.000	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

Title : Dr Ks office

Input File : C:\temp\Th230 - 2 5 meter walls.bld

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

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

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

	*	*
	*	*
	*	<=Q01: 2.24E+01
H1: 2.500	* Room 1	* Q10 : 2.24E+01
	* LAMBDA: 8.00E-01	*
Area 11.200	*	*
	*	*

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

Title : Dr Ks office

Input File : C:\temp\Th230 - 2 5 meter walls.bld

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00[m]
Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Radon Release Fraction: 1.000E-01

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
PO-210	1.000E+00	1.900E-03	9.400E-03	4.859E-08
TH-230	1.000E+00	5.480E-04	3.260E-01	2.032E-06
RA-226	1.000E+00	1.321E-03	8.594E-03	1.035E-02
PB-210	1.000E+00	5.376E-03	1.380E-02	1.043E-05

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00[m]
Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 1.000E-01
Removable fraction: 1.000E-01
Time to Remove: 3.650E+02 [day]

Radon Release Fraction: 1.000E-01

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
PO-210	1.000E+00	1.900E-03	9.400E-03	4.859E-08
TH-230	1.000E+00	5.480E-04	3.260E-01	2.032E-06

Title : Dr Ks office

Input File : C:\temp\Th230 - 2 5 meter walls.bld

RA-226	1.000E+00	1.321E-03	8.594E-03	1.035E-02
PB-210	1.000E+00	5.376E-03	1.380E-02	1.043E-05

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00[m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Radon Release Fraction: 1.000E-01

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
PO-210	1.000E+00	1.900E-03	9.400E-03	4.859E-08
TH-230	1.000E+00	5.480E-04	3.260E-01	2.032E-06
RA-226	1.000E+00	1.321E-03	8.594E-03	1.035E-02
PB-210	1.000E+00	5.376E-03	1.380E-02	1.043E-05

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Radon Release Fraction: 1.000E-01

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

		Ingestion	Inhalation	Submersion
	[pCi/m2]	[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
PO-210	1.000E+00	1.900E-03	9.400E-03	4.859E-08
TH-230	1.000E+00	5.480E-04	3.260E-01	2.032E-06
RA-226	1.000E+00	1.321E-03	8.594E-03	1.035E-02

Title : Dr Ks office

Input File : C:\temp\Th230 - 2 5 meter walls.bld

PB-210 1.000E+00 5.376E-03 1.380E-02 1.043E-05

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00[m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Radon Release Fraction: 1.000E-01

Contamination::

Nuclide Concentration Dose Conversion Factor (Library: FGR 11)

	[pCi/m2]	Ingestion Inhalation Submersion		
		[mrem/pCi]	[mrem/pCi]	[mrem/yr/ (pCi/m3)]
PO-210	1.000E+00	1.900E-03	9.400E-03	4.859E-08
TH-230	1.000E+00	5.480E-04	3.260E-01	2.032E-06
RA-226	1.000E+00	1.321E-03	8.594E-03	1.035E-02
PB-210	1.000E+00	5.376E-03	1.380E-02	1.043E-05

Title : Dr Ks office

Input File : C:\temp\Th230 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	PO-210	1.000E+00
	TH-230	1.000E+00
	RA-226	1.000E+00
	PB-210	1.000E+00

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	PO-210	1.000E+00
	TH-230	1.000E+00
	RA-226	1.000E+00
	PB-210	1.000E+00

Title : Dr Ks office

Input File : C:\temp\Th230 - 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	PO-210	1.000E+00
	TH-230	1.000E+00
	RA-226	1.000E+00
	PB-210	1.000E+00

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	PO-210	1.000E+00
	TH-230	1.000E+00
	RA-226	1.000E+00
	PB-210	1.000E+00

Title : Dr Ks office

Input File : C:\temp\Th230 - 2 5 meter walls.bld

Evaluation Time: 0.0000000E+00 years

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 1.000E-01

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	PO-210	1.000E+00
	TH-230	1.000E+00
	RA-226	1.000E+00
	PB-210	1.000E+00

Title : Dr Ks office

Input File : C:\temp\Th230 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

		Source	Source	Source	Source	Source	Total
		1	2	3	4	5	
Receptor	1	6.97E-04	4.92E-04	4.92E-04	3.47E-04	3.47E-04	2.38E-03
Total		6.97E-04	4.92E-04	4.92E-04	3.47E-04	3.47E-04	2.38E-03

Title : Dr Ks office

Input File : C:\temp\Th230 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.67E-05	1.69E-07	2.90E-09	6.42E-04	2.99E-06	3.59E-05
Total	1.67E-05	1.69E-07	2.90E-09	6.42E-04	2.99E-06	3.59E-05

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	5.40E-06	1.21E-07	2.07E-09	4.58E-04	2.14E-06	2.56E-05
Total	5.40E-06	1.21E-07	2.07E-09	4.58E-04	2.14E-06	2.56E-05

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	5.40E-06	1.21E-07	2.07E-09	4.58E-04	2.14E-06	2.56E-05
Total	5.40E-06	1.21E-07	2.07E-09	4.58E-04	2.14E-06	2.56E-05

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	7.09E-06	8.44E-08	1.45E-09	3.21E-04	1.50E-06	1.79E-05
Total	7.09E-06	8.44E-08	1.45E-09	3.21E-04	1.50E-06	1.79E-05

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	7.09E-06	8.44E-08	1.45E-09	3.21E-04	1.50E-06	1.79E-05
Total	7.09E-06	8.44E-08	1.45E-09	3.21E-04	1.50E-06	1.79E-05

Title : Dr Ks office

Input File : C:\temp\Th230 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
PO-210	7.51E-06	7.51E-06
TH-230	6.01E-04	6.01E-04
RA-226	8.21E-09	8.21E-09
PB-210	1.08E-10	1.08E-10
RA-226	3.86E-05	3.86E-05
PB-210	7.53E-07	7.53E-07
PB-210	4.91E-05	4.91E-05

Source: 2

Nuclide	Receptor	Total
	1	
PO-210	4.06E-06	4.06E-06
TH-230	4.29E-04	4.29E-04
RA-226	4.77E-09	4.77E-09
PB-210	7.71E-11	7.71E-11
RA-226	2.24E-05	2.24E-05
PB-210	5.38E-07	5.38E-07
PB-210	3.51E-05	3.51E-05

Source: 3

Nuclide	Receptor	Total
	1	
PO-210	4.06E-06	4.06E-06
TH-230	4.29E-04	4.29E-04
RA-226	4.77E-09	4.77E-09
PB-210	7.71E-11	7.71E-11
RA-226	2.24E-05	2.24E-05
PB-210	5.38E-07	5.38E-07
PB-210	3.51E-05	3.51E-05

Title : Dr Ks office

Input File : C:\temp\Th230 - 2 5 meter walls.bld

Evaluation Time: 0.00000000E+00 years

Source: 4

Nuclide	Receptor	Total
	1	
PO-210	3.51E-06	3.51E-06
TH-230	3.01E-04	3.01E-04
RA-226	3.90E-09	3.90E-09
PB-210	5.40E-11	5.40E-11
RA-226	1.83E-05	1.83E-05
PB-210	3.77E-07	3.77E-07
PB-210	2.46E-05	2.46E-05

Source: 5

Nuclide	Receptor	Total
	1	
PO-210	3.51E-06	3.51E-06
TH-230	3.01E-04	3.01E-04
RA-226	3.90E-09	3.90E-09
PB-210	5.40E-11	5.40E-11
RA-226	1.83E-05	1.83E-05
PB-210	3.77E-07	3.77E-07
PB-210	2.46E-05	2.46E-05

Title : Dr Ks office

Input File : C:\temp\Th230 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

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

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

Source: 1

Location:: Room : 1 x: 2.00 y: 1.40 z: 0.00 [m]

Geometry:: Type: Area Area:1.12E+01 [m2] Direction: z

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	PO-210	1.445E-01
	TH-230	9.000E-01
	RA-226	9.000E-01
	PB-210	9.000E-01

Source: 2

Location:: Room : 1 x: 0.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	PO-210	1.445E-01
	TH-230	9.000E-01
	RA-226	9.000E-01
	PB-210	9.000E-01

Title : Dr Ks office

Input File : C:\temp\Th230 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 3

Location:: Room : 1 x: 4.00 y: 1.40 z: 1.00 [m]

Geometry:: Type: Area Area:8.00E+00 [m2] Direction: x

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	PO-210	1.445E-01
	TH-230	9.000E-01
	RA-226	9.000E-01
	PB-210	9.000E-01

Source: 4

Location:: Room : 1 x: 2.00 y: 0.00 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	PO-210	1.445E-01
	TH-230	9.000E-01
	RA-226	9.000E-01
	PB-210	9.000E-01

Title : Dr Ks office

Input File : C:\temp\Th230 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 5

Location:: Room : 1 x: 2.00 y: 2.80 z: 1.00 [m]

Geometry:: Type: Area Area:5.60E+00 [m2] Direction: y

Pathway ::

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

Fraction released to air: 1.000E-01

Removable fraction: 0.000E+00

Time to Remove: 3.650E+02 [day]

Contamination::	Nuclide	Concentration
		[pCi/m2]
	PO-210	1.445E-01
	TH-230	9.000E-01
	RA-226	9.000E-01
	PB-210	9.000E-01

Title : Dr Ks office

Input File : C:\temp\Th230 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

RESRAD-BUILD Dose Tables

Source Contributions to Receptor Doses

[mrem]

		Source	Source	Source	Source	Source	Total
		1	2	3	4	5	
Receptor	1	1.59E-05	6.27E-06	6.27E-06	7.00E-06	7.00E-06	4.25E-05
Total		1.59E-05	6.27E-06	6.27E-06	7.00E-06	7.00E-06	4.25E-05

Title : Dr Ks office

Input File : C:\temp\Th230 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Pathway Detail of Doses

[mrem]

Source: 1

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	1.31E-05	0.00E+00	0.00E+00	0.00E+00	2.83E-06	0.00E+00
Total	1.31E-05	0.00E+00	0.00E+00	0.00E+00	2.83E-06	0.00E+00

Source: 2

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	4.25E-06	0.00E+00	0.00E+00	0.00E+00	2.02E-06	0.00E+00
Total	4.25E-06	0.00E+00	0.00E+00	0.00E+00	2.02E-06	0.00E+00

Source: 3

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	4.25E-06	0.00E+00	0.00E+00	0.00E+00	2.02E-06	0.00E+00
Total	4.25E-06	0.00E+00	0.00E+00	0.00E+00	2.02E-06	0.00E+00

Source: 4

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	5.58E-06	0.00E+00	0.00E+00	0.00E+00	1.42E-06	0.00E+00
Total	5.58E-06	0.00E+00	0.00E+00	0.00E+00	1.42E-06	0.00E+00

Source: 5

Receptor	External	Deposition	Immersion	Inhalation	Radon	Ingestion
1	5.58E-06	0.00E+00	0.00E+00	0.00E+00	1.42E-06	0.00E+00
Total	5.58E-06	0.00E+00	0.00E+00	0.00E+00	1.42E-06	0.00E+00

Title : Dr Ks office

Input File : C:\temp\Th230 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Nuclide Detail of Doses

[mrem]

Source: 1

Nuclide	Receptor	Total
	1	
PO-210	5.02E-07	5.02E-07
TH-230	1.21E-08	1.21E-08
RA-226	9.99E-09	9.99E-09
PB-210	7.99E-13	7.99E-13
RA-226	1.54E-05	1.54E-05
PB-210	2.35E-09	2.35E-09
PB-210	4.94E-08	4.94E-08

Source: 2

Nuclide	Receptor	Total
	1	
PO-210	1.63E-07	1.63E-07
TH-230	3.57E-09	3.57E-09
RA-226	3.96E-09	3.96E-09
PB-210	2.40E-13	2.40E-13
RA-226	6.09E-06	6.09E-06
PB-210	7.08E-10	7.08E-10
PB-210	1.49E-08	1.49E-08

Source: 3

Nuclide	Receptor	Total
	1	
PO-210	1.63E-07	1.63E-07
TH-230	3.57E-09	3.57E-09
RA-226	3.96E-09	3.96E-09
PB-210	2.40E-13	2.40E-13
RA-226	6.09E-06	6.09E-06
PB-210	7.08E-10	7.08E-10
PB-210	1.49E-08	1.49E-08

Title : Dr Ks office

Input File : C:\temp\Th230 - 2 5 meter walls.bld

Evaluation Time: 1.00000000 years

Source: 4

Nuclide	Receptor	Total
	1	
PO-210	2.14E-07	2.14E-07
TH-230	5.10E-09	5.10E-09
RA-226	4.39E-09	4.39E-09
PB-210	3.37E-13	3.37E-13
RA-226	6.75E-06	6.75E-06
PB-210	9.94E-10	9.94E-10
PB-210	2.08E-08	2.08E-08

Source: 5

Nuclide	Receptor	Total
	1	
PO-210	2.14E-07	2.14E-07
TH-230	5.10E-09	5.10E-09
RA-226	4.39E-09	4.39E-09
PB-210	3.37E-13	3.37E-13
RA-226	6.75E-06	6.75E-06
PB-210	9.94E-10	9.94E-10
PB-210	2.08E-08	2.08E-08

RESRAD-BUILD Dose (Time) Tables

Receptor Dose Received for the Exposure Duration

(mrem)

Evaluation Time [yr]

0.00E+00 1.00E+00

```
1      2.38E-03   4.25E-05
```

Receptor Dose/Yr Averaged Over Exposure Duration

(mrem/yr)

Evaluation Time [yr]

0.00E+00 1.00E+00

1	2.38E-03	4.25E-05
---	----------	----------