Rancho Seco Nuclear Generating Station Decommissioning Technical Basis Document	DTBD–04-004 Revision No. 0 DPT 04-079 RIC 2A.900

DCGLs for RSNGS Structural Surfaces

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1.0 PURPOSE

The purpose of this Decommissioning Technical Basis Document (DTBD) is to establish single nuclide derived concentration guideline levels (DCGLs) that are appropriate for evaluating structural surfaces at the Rancho Seco Nuclear Generating Station (RSNGS).

2.0 DISCUSSION

The single nuclide DCGL values derived by this DTBD are intended to be used for evaluating the acceptability of residual contamination on RSNGS structural surfaces during characterization and final status surveys.

3.0 DEFINITIONS

DCGL: A derived, radionuclide-specific activity concentration within a survey unit corresponding to the release criterion. The DCGL is based on the spatial distribution of the contaminant and hence is derived differently for the nonparametric statistical test ($DCGL_W$) and the Elevated Measurement Comparison ($DCGL_{EMC}$). DCGLs are derived from activity/dose relationships through various exposure pathway scenarios.

Deterministic treatment: While using RESRAD-BUILD in the probabilistic mode, deterministic treatment is the assignment of a single conservative value to a parameter rather than a statistical distribution.

District: Sacramento Municipal Utility District (SMUD)

Industrial Area: An approximately 87-acre fence-enclosed area containing the nuclear facility.

Single nuclide DCGL: A radionuclide-specific activity concentration that would result in an annual total effective dose equivalent (TEDE) dose of 25 mrem with no other radionuclides present.

Stochastic treatment: While using RESRAD-BUILD in the probabilistic mode, stochastic treatment is the assignment of a statistical distribution for the value of a RESRAD-BUILD parameter.

Unity rule (mixture rule): A rule applied when more than one radionuclide is present at a concentration that is distinguishable from background and where a single concentration comparison does not apply. In this case, the mixture of radionuclides is compared against default concentrations by applying the unity rule. This is accomplished by determining: 1) the ratio between the concentration of each radionuclide in the mixture, and 2) the concentration for that radionuclide in an appropriate listing of default values. The sum of the ratios for all radionuclides in the mixture should not exceed 1.

4.0 TECHNICAL POSITION

The appropriate single nuclide dose correction factors and DCGL values for evaluation of RSNGS structural surfaces are provided in Attachment 8.10.

5.0 LIMITATIONS

This DTBD has derived single nuclide DCGL values based on a theoretical site-specific suite of 26 radionuclides potentially present at RSNGS. Selection of appropriate radionuclides and/or the combination of multiple DCGL values into a single, gross DCGL value are the subject of other DTBDs or procedures.

6.0 TECHNICAL BASES

6.1 Identification Of RESRAD-BUILD Sensitive Parameters

A theoretical site-specific suite of 26 radionuclides potentially present at RSNGS was derived in DTBD-04-001, Rev. 2 [Reference 7.1]. Single nuclide DCGL values were derived in this DTBD for each radionuclide in this theoretical site-specific suite presented in Attachment 8.1.

RESRAD-BUILD v3.22 was used to generate the single nuclide DCGL values based on an industrial worker building occupancy scenario introduced in NUREG/CR-6755, “Technical Basis for Calculating Radiation Doses for the Building Occupancy Scenario Using the Probabilistic RESRAD-BUILD 3.0 Code” [Reference 7.2]. The RESRAD-BUILD code is a pathway analysis model designed to evaluate the potential radiological dose to an individual who works in a building contaminated with radioactive material. It considers the releases of radionuclides into the indoor air by diffusion, mechanical removal, or erosion. RESRAD-BUILD considers seven exposure pathways:

(1) External exposure directly from the source,

(2) External exposure to materials deposited on the floor,

(3) External exposure due to air submersion,

(4) Inhalation of airborne radioactive particulates,

(5) Inhalation of aerosol indoor radon progeny (in the case of the presence of radon predecessors) and tritiated water vapor (the radon pathway was turned off for purposes of this DTBD because the nuclear regulatory commission (NRC) does not regulate dose received from radon and progeny),

(6) Inadvertent ingestion of radioactive material directly from the source, and

(7) Ingestion of materials deposited on the surfaces of the building compartments.

A sensitivity analysis was performed first to identify the parameters that are sensitive in the industrial worker building occupancy scenario. As shown schematically in Attachment 8.2, the parameter selection process starts with the selection of the RESRAD-BUILD parameter to be evaluated. The selected parameter must then be classified as behavioral, metabolic or physical. Some parameters may belong to more than one of these types.

A physical parameter is any parameter whose value would not change if a different group of receptors were considered. Physical parameters are determined by the source, its location, and characteristics of the structural surface.

A behavioral parameter is any parameter whose value would depend on the receptor's behavior and the scenario definition. For the same group of receptors, a parameter value could change if the scenario changed.

If a parameter represents the metabolic characteristics of the potential receptor and is independent of scenario, it is classified as a metabolic parameter. The parameter values may be different in different population age groups. According to the recommendations of the International Commission on Radiological Protection, Report 43 (ICRP 1985) [Reference 7.3], parameters representing metabolic characteristics are defined by average values for the general population. These values are not expected to be modified for a site-specific analysis because the parameter values would not depend on site conditions.

In 1999, the NRC tasked Argonne National Laboratory (Argonne) with adapting the existing RESRAD-BUILD code for use in site-specific dose modeling and analysis in accordance with the NRC's guidance in the Standard Review Plan (SRP) for Decommissioning to demonstrate compliance with the license termination rule. For this reason, Argonne revised and customized the code to be consistent with the current NRC guidance for both deterministic and probabilistic dose modeling being developed in the SRP for Decommissioning. The first step in the procedure used by Argonne to develop the probabilistic code involved listing and classifying the parameters. The parameter classification has been documented in Attachment A to NUREG/CR-6697, "Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes" [Reference 7.4]. The assigned classification for each parameter selected for performing sensitivity analyses is listed in Attachment 8.3.

If the parameters were classified as behavioral or metabolic, site-specific parameter values or the default values used in RESRAD-BUILD v3.22 were used for performing sensitivity analyses. These parameter values are also provided in Attachment 8.3.

If the parameters were classified as physical, then they were reviewed to determine if measured, site-specific values for the parameters are available. Measured, site-specific values for physical parameters are provided in Attachment 8.3.

If measured, site-specific values for physical parameters were not available; the parameters were then ranked by priority as 1, 2, or 3 where 1 represents high priority, 2 represents medium priority and 3 represents low priority. This ranking was the second step in the procedure used by Argonne to develop the probabilistic code. The parameter ranking has been documented in Attachment B to NUREG/CR-6697. The assigned priority ranking for each physical parameter for which measured, site-specific values are not available is provided in Attachment 8.3.

If the physical parameters were ranked as priority 3, the assigned default values in RESRAD-BUILD v3.22 were used for performing sensitivity analyses. These parameter values are also provided in Attachment 8.3.

Argonne developed statistical parameter distributions for the physical parameters ranked as priority 1 or 2. These parameter distributions have been documented in Section 3.0 and Appendix A to NUREG/CR-6755 [Reference 7.2]. The parameter distributions for RSNGS priority 1 and 2 physical parameters from NUREG/CR-6755; where measured, site-specific values for physical parameters were not available; are listed in Attachment 8.5, Table 8.5-1.

Once the parameter values listed in Attachment 8.3 and the statistical parameter distributions listed in Attachment 8.5, Table 8.5-1 were loaded into RESRAD-BUILD v3.22 (see Attachment 8.4), the code was run in the probabilistic mode for each radionuclide of concern to identify the sensitive parameters. The absolute value of the calculated partial ranked correlation coefficient (PRCC) at time 1 was then used to classify the parameters with statistical distributions as sensitive or non-sensitive. PRCC was chosen because Reference 7.5 recommends that it be used when nonlinear relationships, widely disparate scales or long tails are present in the inputs and outputs. The maximum calculated PRCC values for sensitive parameters are listed in Attachment 8.5, Table 8.5-2. RESRAD-BUILD v3.22 Probabilistic Output Report excerpts are also provided in Attachment 8.6. If the absolute value of the PRCC was greater than 0.10, then the parameter was classified as sensitive. If the absolute value of the PRCC was equal to or less than 0.10, then the parameter was classified as non-sensitive. The sensitive parameters for each radionuclide and the sensitive parameter PRCC values are listed in Attachment 8.5, Table 8.5-2.

Finally, values for use in dose modeling for the physical parameters with sensitive parameters were selected based on sensitivity of the calculated PRCC following the guidance of Reference 7.6. If the absolute value of the PRCC was greater than 0.10, then the parameter value at either the 75% quartile or the 25%

quartile was selected based on total effective dose equivalent (TEDE) correlation with the parameter. If the PRCC value was negative, the parameter to dose correlation is negative and the parameter value at the 25th quartile was selected. If the PRCC value was positive, the parameter to dose correlation is positive and the parameter value at the 75th quartile was selected.

The parameter values were obtained from the RESRAD-BUILD probabilistic calculation results using the interactive output feature of the uncertainty results. A double click on the left mouse button opens the interactive output dropdown window. From the interactive output dropdown window the “Results” folder is selected. From the “Results” folder the “Graphics” sub-folder is selected. The “Cumulative Density” is then selected as the Plot Type and the “Input Vector” is selected as the Primary Object. The parameter value is determined by a right mouse button click on the plot and selecting “Edit Chart Data” from the dropdown window. This opens the Data Grid Editor dropdown window. From this window, 0.25 or 0.75 is selected, as appropriate from the C2 column, which represents the appropriate quartile value. The corresponding parameter value is contained in the C1 column.

6.2 Derivation Of Single Nuclide DCGL Values

Next, single nuclide DCGL values for the radionuclides of concern were calculated by performing an individual RESRAD-BUILD calculation for each radionuclide of concern. First, the applicable priority 2 and 3 parameter values listed in Attachment 8.7 were loaded into RESRAD-BUILD v3.22. Next, the non-sensitive priority 1 parameters were treated stochastically by loading the appropriate statistical parameter distributions listed in Attachment 8.5, Table 8.5-1. Finally, the priority 1 sensitive parameters were treated deterministically by loading the assigned parameter value listed in Attachment 8.5, Table 8.5-1 and running the code in the probabilistic mode to identify the “Statistics for Dose” for Time 1 for each radionuclide of concern. For each calculation, the Latin Hypercube sampling technique was used with a random seed of 1000, 300 observations and one repetition. Excerpts from the RESRAD-BUILD v3.22 output reports showing the input parameters used in each radionuclide calculation are provided in Attachment 8.8.

Five parameter values that could be treated stochastically for certain radionuclides (not all radionuclides have the same sensitive parameters as shown in Table 8.5-2 to Attachment 8.5) were treated deterministically for all radionuclides. These parameters included room height, room floor area, deposition velocity and air exchange rate, which were assigned the sensitive parameter values listed in Attachment 8.5, Table 8.5-1. Due to the large variation in room size in the structures expected to remain at RSNGS, the sensitive parameter values for room height and room floor area were selected to provide conservative calculations. The sensitive parameter values for deposition

velocity and air exchange rate were selected to provide consistency in calculation assumptions.

The value of the fifth parameter, resuspension rate, was calculated based on the NUREG-1720, "Re-evaluation of the Indoor Resuspension Factor for the Screening Analysis of the Building Occupancy Scenario for NRC's License Termination Rule" [Reference 7.7] recommended DandD resuspension factor of 9.6E-07 m^{-1} and the sensitive parameter values for deposition velocity, air exchange rate and room height in accordance with the following equation (Equation 3.5 of NUREG/CR-6755):

$$\lambda_r = R_f \left(v_{dep} + \lambda_a \times H \right)$$

where

λ_r = the RESRAD-BUILD parameter, resuspension rate (DKSUS),

R_f = the DandD parameter, resuspension factor,

v_{dep} = the RESRAD-BUILD parameter, deposition velocity (UD),

λ_a = the RESRAD-BUILD parameter, air exchange rate (LAMBDATE), and

H = room height (H).

Radionuclide dose conversion factors (DCFs) were calculated by performing a probabilistic RESRAD-BUILD v3.22 calculation for each of the 26 radionuclides present in the theoretical site-specific suite. Excerpts from the probabilistic output reports from each of these calculations are provided in Attachment 8.9. The DCFs selected (in units of mrem/yr per 100 dpm/100 cm^2) are the average total dose values for the receptor. DCGL values were then calculated by dividing the dose limit (25 mrem/yr) by the DCF value to give DCGL values in units of dpm/100 cm^2. Results of these calculations and the associated DCF values are listed in Attachment 8.10.

7.0 REFERENCES

7.1 DTBD-04-001, Radionuclides for Consideration During Rancho Seco Nuclear Generating Station Characterization or Final Status Surveys, Rev. 2, December 2004

7.2 Argonne National Laboratory / U.S. Nuclear Regulatory Commission, NUREG/CR-6755, "Technical Basis for Calculating Radiation Doses for the Building Occupancy Scenario Using the Probabilistic RESRAD-BUILD 3.0 Code", February 2002

7.3 International Commission on Radiological Protection, ICRP Report 43, 1985

7.4 Argonne National Laboratory / U.S. Nuclear Regulatory Commission, NUREG/CR-6697, "Development of Probabilistic RESRAD 6.0 and RESRAD-BUILD 3.0 Computer Codes", December 2000

7.5 Argonne National Laboratory / U.S. Nuclear Regulatory Commission, NUREG/CR-6692, "Probabilistic Modules for the RESRAD and RESRAD-BUILD Computer Codes", November 2000

7.6 Argonne National Laboratory / U.S. Nuclear Regulatory Commission, NUREG/CR-6676, "Probabilistic Dose Analysis Using Parameter Distributions Developed for RESRAD and RESRAD-BUILD Computer", May 2000

7.7 U.S. Nuclear Regulatory Commission, NUREG-1720, Draft Report for Comment, "Re-evaluation of the Indoor Resuspension Factor for the Screening Analysis of the Building Occupancy Scenario for NRC's License Termination Rule," June 2002

7.8 U.S. Nuclear Regulatory Commission, NUREG-1575, Rev. 1, "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)", August 2000

8.0 ATTACHMENTS

8.1 Radionuclides Potentially Present at RSNGS

8.2 RESRAD-BUILD Parameter Selection Process

8.3 RESRAD-BUILD v3.22 Input Parameters for Probabilistic Sensitivity Analysis

8.4 RESRAD-BUILD v3.22 Output Report Nuclide Specific Information for Input Parameters, Building Information and Source Information Used In Parameter Sensitivity Analysis

8.5 RESRAD-BUILD v3.22 Sensitivity Analysis Distribution Parameters and Sensitive Parameter Results

8.6 RESRAD-BUILD v3.22 Probabilistic Output Report Nuclide Specific Information for Probabilistic Input Parameters and Parameter Sensitivity Results

8.7 RESRAD-BUILD v3.22 Input Parameters for Probabilistic Derivation of DCGL Values

8.8 RESRAD-BUILD v3.22 Output Report Nuclide Specific Information for Deterministic and Stochastic Input Parameters Used In DCGL Derivation

8.9 RESRAD-BUILD v3.22 Probabilistic Output Report for Dose Conversion Factor Results

8.10 Calculated Single Nuclide DCGL Values

9.0 RESPONSIBLE INDIVIDUAL

Leon E. Brown

Attachment 8.1

Radionuclides Potentially Present at RSNGS

Site-Specific Suite of Radionuclides for Use at RSNGS

Radionuclide	Half Life (Years)	Decay Mode	Radionuclide	Half Life (Years)	Decay Mode
*H-3	1.23E+01	β	Cs-137	3.02E+01	β
*C-14	5.73E+03	β	*Pm-147	2.62E+00	β
Na-22	2.60E+00	β^+, γ	Eu-152	1.36E+01	β, γ
*Fe-55	2.70E+00	γ	Eu-154	8.80E+00	β, γ
*Ni-59	7.50E+04	γ	Eu-155	4.96E+00	β, γ
Co-60	5.27E+00	β, γ	*Np-237	2.14E+6	α, γ
*Ni-63	1.00E+02	β	*Pu-238	8.78E+01	α, γ
*Sr-90	2.86E+01	β	*Pu-239	2.41E+04	α, γ
Nb-94	2.03E+04	β, γ	*Pu-240	6.60E+03	α, γ
*Tc-99	2.13E+05	β, γ	*Pu-241	1.44E+01	β
Ag-108m	1.27E+02	γ	Am-241	4.32E+02	α, γ
Sb-125	2.77E+00	β, γ	*Pu-242	3.76E+05	α, γ
Cs-134	2.06E+00	β, γ	*Cm-244	1.81E+01	α, γ

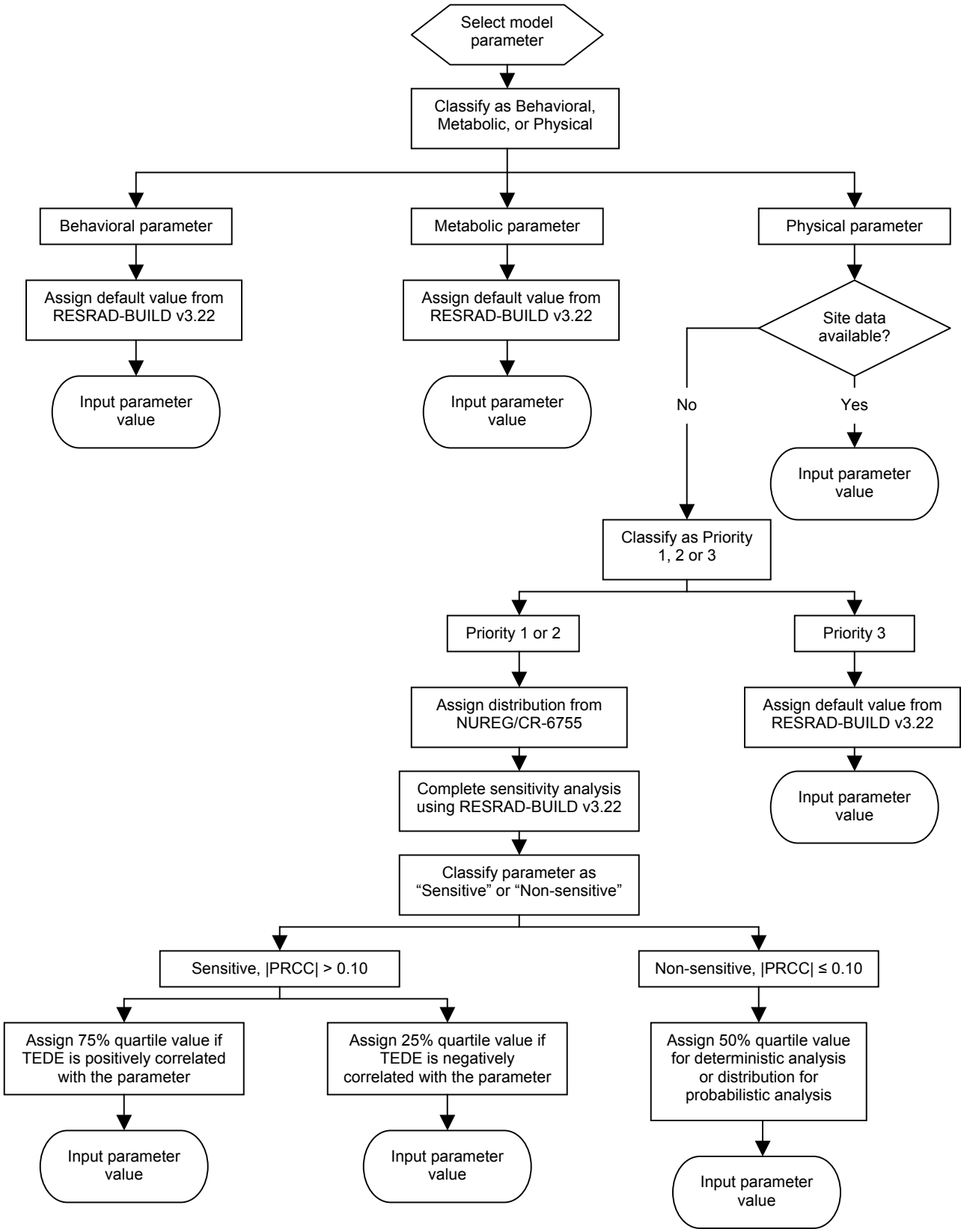
α – Alpha decay
β – Beta decay
β^+ – Positron decay
γ – Gamma decay

*Hard to Detect Nuclides (HTDN – radionuclides not readily detected by gamma spectroscopy, e.g., Ni-63 or Cm-244, and requiring offsite, contract laboratory analysis)

Attachment 8.2

RESRAD-BUILD Parameter Selection Process

Parameter Selection Process



Attachment 8.3

RESRAD-BUILD v3.22 Input Parameters for Probabilistic Sensitivity Analysis

Selected RESRAD-BUILD v3.22 Parameters for RSNGS Structural Surfaces Sensitivity Analysis – Industrial Worker Scenario

Parameter							
Name	**Description**	**Class[1]**	**Priority[2]**	**Treatment[3]**	**Units**	**Parameter Value**	**Basis for Parameter Selection**
TIME PARAMETERS							
TTIME	Exposure duration	B	3	D	d	365.25	NUREG/CR-5512, Vol. 1
FTIN	Indoor fraction	B	2	D	-	0.267	NUREG/CR-5512, Vol. 3 Section 5.2.2.4
NTIME	Number of times for calculation	P	3	D	-	2	RESRAD-BUILD default value
DOSE_TIME	Time	P	3	D	yr	1	NUREG/CR-5512, Vol. 3 Section 5.2.2.4
POINT	Maximum time integration points	P	3	D	-	257	RESRAD-BUILD default value
BUILDING PARAMETERS							
NROOM	Number of rooms	P	3	D	-	1	NUREG/CR-5512
UD	Deposition velocity	P	2	S	m/s	Loguniform distribution	NUREG/CR-6755, Section 3.3
DKSUS	Resuspension rate	P, B	1	S	s^{-1}	Loguniform distribution	NUREG/CR-6755, Section 3.1
H	Room height	P	2	S	m	Triangular distribution	NUREG/CR-6755, Appendix A
AREA	Room area	P	2	S	m^2	Triangular distribution	NUREG/CR-6755, Appendix A
LAMBDAT (building); LINPUT (room)	Air exchange rate	B	2	S	1/h	Truncated lognormal-n	NUREG/CR-6755, Section 3.2
Q12 and Q21; Q23 and Q32	Flow rate between rooms	B	3	D	m^3/h	0	This dose model contains only one receptor room
Q10 and Q01; Q20 and Q02; Q30 and Q03	Outdoor inflow and outflow	B, P	3	D	m^3/h	Not used	Outdoor inflow is calculated from room volume and air exchange rate
RECEPTOR PARAMETERS							
ND	Number of receptors	B	3	D	-	1	This dose model contains only one receptor
DLVL	Receptor room	B	3	D	-	1	This dose model contains only one receptor room
DX	Receptor location (x, y, z)	B	3	D	m	3, 3, 1	Center of the room's floor

Selected RESRAD-BUILD v3.22 Parameters for RSNGS Structural Surfaces Sensitivity Analysis – Industrial Worker Scenario

Parameter							
Name	**Description**	**Class[1]**	**Priority[2]**	**Treatment[3]**	**Units**	**Parameter Value**	**Basis for Parameter Selection**
TWGHT	Receptor time fraction	B	3	D	-	1	NUREG/CR-5512, Vol. 3
BRTRATE	Receptor breathing/inhalation rate	M, B	2	S	m^3/d	Triangular distribution	NUREG/CR-6755, Appendix A
INGE2	Indirect ingestion rate	B	2	S	m^2/h	Loguniform distribution	NUREG/CR-6755, Appendix A
SOURCE PARAMETERS							
NS	Number of sources	P	3	D	-	5	Assumes contamination on four walls plus the floor
Source 1 - Floor							
SLVL	Source room (also primary room)	P	3	D	-	1	This dose model contains only one room
STYPE	Source type	P	3	D	-	Area	NUREG/CR-5512
SDIR	Source direction	P	3	D	-	z	NUREG/CR-5512
SX	Source location (x, y, z)	P	3	D	m	3, 3, 0	X and Y distances are half of the square root of the most likely room area from NUREG/CR-6755, Appendix A, triangular distribution
SAREA	Source area	P	2	D	m^2	36	Most likely room area from NUREG/CR-6755, Appendix A, triangular distribution
AIRFR	Air release fraction	B	2	S	-	Triangular distribution	NUREG/CR-6755, Appendix A
INGE1	Direct ingestion rate	B	2	D	g/h or 1/h	1.34E-06	NUREG/CR-5512, Vol. 3, Section 5.2.3 1.1E04 m^2/h / 82.03 m^2
RMVFR	Removable fraction	P, B	1	S	-	Triangular distribution	NUREG/CR-6755, Section 3.5
RF0	Source lifetime (also time for source removal)	P, B	2	S	d	Triangular distribution	NUREG/CR-6755, Section 3.6
RRF	Radon release fraction	P, B	3	D	-	0	Radon exposure is not regulated by the NRC
RNUCACT	Radionuclide concentration/activity	P	2	D	Act/m^2	1	Allows for proportional DCGL calculation
NREGI0	Number of regions in volume source	P	3	D	-	Not used	A volume source is not used in this dose model

Selected RESRAD-BUILD v3.22 Parameters for RSNGS Structural Surfaces Sensitivity Analysis – Industrial Worker Scenario							
Parameter							
Name	Description	Class[1]	Priority[2]	Treatment[3]	Units	Parameter Value	Basis for Parameter Selection
FCONT0	Contaminated region (volume source)	P	3	D	-	Not used	A volume source is not used in this dose model
THICK0	Source region thickness (volume source)	P	2	S	cm	Not used	A volume source is not used in this dose model
DENSI0	Source density (volume source)	P	1	S	g/cm^3	Not used	A volume source is not used in this dose model
EROS0	Source erosion rate (volume source)	P, B	2	S	cm/d	Not used	A volume source is not used in this dose model
POROS0	Source porosity	P	2	S	-	Not used	A volume source is not used in this dose model
EFDIF0	Radon effective diffusion coefficient	P	3	D	m^2/sec	0	Radon exposure is not regulated by the NRC
EMANA0	Radon emanation fraction	P	3	D	-	0	Radon exposure is not regulated by the NRC
MTLS	Source material			D	-	Not used	A volume source is not used in this dose model
Source 2 – West wall							
SLVL	Source room (also primary room)	P	3	D	-	1	This dose model contains only one room
STYPE	Source type	P	3	D	-	Area	NUREG/CR-5512
SDIR	Source direction	P	3	D	-	x	NUREG/CR-5512
SX	Source location (x, y, z)	P	3	D	m	0, 3, 1.85	Y distance is half of the square root of the most likely room area and z distance is half of the most likely room height from NUREG/CR-6755, Appendix A, triangular distributions
SAREA	Source area	P	2	D	m/m^2	22.2	Square root of the most likely room area times the most likely room height from NUREG/CR-6755, Appendix A, triangular distributions
AIRFR	Air release fraction	B	2	S	-	Triangular distribution	NUREG/CR-6755, Appendix A
INGE1	Direct ingestion rate	B	2	D	g/h or 1/h	1.34E-06	NUREG/CR-5512, Vol. 3, Section 5.2.3 1.1E04 m^2/h / 82.03 m^2

Selected RESRAD-BUILD v3.22 Parameters for RSNGS Structural Surfaces Sensitivity Analysis – Industrial Worker Scenario							
Parameter							
Name	Description	Class[1]	Priority[2]	Treatment[3]	Units	Parameter Value	Basis for Parameter Selection
RMVFR	Removable fraction	P, B	1	S	-	Triangular distribution	NUREG/CR-6755, Section 3.5
RF0	Source lifetime (also time for source removal)	P, B	2	S	d	Triangular distribution	NUREG/CR-6755, Section 3.6
RRF	Radon release fraction	P, B	3	D	-	0	Radon exposure is not regulated by the NRC
RNUCACT	Radionuclide concentration/activity	P	2	D	Act/m Act/m^2 Act/g	1	Allows for proportional DCGL calculation
NREGI0	Number of regions in volume source	P	3	D	-	Not used	A volume source is not used in this dose model
FCONT0	Contaminated region (volume source)	P	3	D	-	Not used	A volume source is not used in this dose model
THICK0	Source region thickness (volume source)	P	2	S	cm	Not used	A volume source is not used in this dose model
DENSI0	Source density (volume source)	P	1	S	g/cm^3	Not used	A volume source is not used in this dose model
EROS0	Source erosion rate (volume source)	P, B	2	S	cm/d	Not used	A volume source is not used in this dose model
POROS0	Source porosity	P	2	S	-	Not used	A volume source is not used in this dose model
EFDIF0	Radon effective diffusion coefficient	P	3	D	m^2/sec	0	Radon exposure is not regulated by the NRC
EMANA0	Radon emanation fraction	P	3	D	-	0	Radon exposure is not regulated by the NRC
MTLS	Source material			D	-	Not used	A volume source is not used in this dose model
Source 3 – North wall							
SLVL	Source room (also primary room)	P	3	D	-	1	This dose model contains only one room
STYPE	Source type	P	3	D	-	Area	NUREG/CR-5512
SDIR	Source direction	P	3	D	-	y	NUREG/CR-5512

Selected RESRAD-BUILD v3.22 Parameters for RSNGS Structural Surfaces Sensitivity Analysis – Industrial Worker Scenario							
Parameter							
Name	Description	Class[1]	Priority[2]	Treatment[3]	Units	Parameter Value	Basis for Parameter Selection
SX	Source location (x, y, z)	P	3	D	m	3, 6, 1.85	X distance is the half of square root of the most likely room area, Y distance is the square root of the most likely room area and Z distance is half of the most likely room height from Attachment 8.4, Table 8.4-1 triangular distributions
SAREA	Source area	P	2	D	m/m^2	22.2	Square root of the most likely room area times the most likely room height from Attachment 8.4, Table 8.4-1 triangular distribution
AIRFR	Air release fraction	B	2	S	-	Triangular distribution	NUREG/CR-6755, Appendix A
INGE1	Direct ingestion rate	B	2	D	g/h or 1/h	1.34E-06	NUREG/CR-5512, Vol. 3, Section 5.2.3 1.1E04 m^2/h / 82.03 m^2
RMVFR	Removable fraction	P, B	1	S	-	Triangular distribution	NUREG/CR-6755, Section 3.5
RF0	Source lifetime (also time for source removal)	P, B	2	S	d	Triangular distribution	NUREG/CR-6755, Section 3.6
RRF	Radon release fraction	P, B	3	D	-	0	Radon exposure is not regulated by the NRC
RNUCACT	Radionuclide concentration/activity	P	2	D	Act/m Act/m^2 Act/g	1	Allows for proportional DCGL calculation
NREGI0	Number of regions in volume source	P	3	D	-	Not used	A volume source is not used in this dose model
FCONT0	Contaminated region (volume source)	P	3	D	-	Not used	A volume source is not used in this dose model
THICK0	Source region thickness (volume source)	P	2	S	cm	Not used	A volume source is not used in this dose model
DENSI0	Source density (volume source)	P	1	S	g/cm^3	Not used	A volume source is not used in this dose model
EROS0	Source erosion rate (volume source)	P, B	2	S	cm/d	Not used	A volume source is not used in this dose model
POROS0	Source porosity	P	2	S	-	Not used	A volume source is not used in this dose model

Selected RESRAD-BUILD v3.22 Parameters for RSNGS Structural Surfaces Sensitivity Analysis – Industrial Worker Scenario							
Parameter							
Name	Description	Class[1]	Priority[2]	Treatment[3]	Units	Parameter Value	Basis for Parameter Selection
EFDIF0	Radon effective diffusion coefficient	P	3	D	m^2/sec	0	Radon exposure is not regulated by the NRC
EMANA0	Radon emanation fraction	P	3	D	-	0	Radon exposure is not regulated by the NRC
MTLS	Source material			D	-	Not used	A volume source is not used in this dose model
Source 4 – East wall							
SLVL	Source room (also primary room)	P	3	D	-	1	This dose model contains only one room
STYPE	Source type	P	3	D	-	Area	NUREG/CR-5512
SDIR	Source direction	P	3	D	-	x	NUREG/CR-5512
SX	Source location	P	3	D	m	6, 3, 1.85	X distance is the square root of the most likely room area, Y distance is half of the square root of the most likely room area and Z distance is half of the most likely room height from NUREG/CR-6755, Appendix A, triangular distributions
SAREA	Source area	P	2	D	m/m^2	22.2	Square root of the most likely room area times the most likely room height from NUREG/CR-6755, Appendix A, triangular distributions
AIRFR	Air release fraction	B	2	S	-	Triangular distribution	NUREG/CR-6755, Appendix A
INGE1	Direct ingestion rate	B	2	D	g/h or 1/h	1.34E-06	NUREG/CR-5512, Vol. 3, Section 5.2.3 1.1E04 m^2/h / 82.03 m^2
RMVFR	Removable fraction	P, B	1	S	-	Triangular distribution	NUREG/CR-6755, Section 3.5
RF0	Source lifetime (also time for source removal)	P, B	2	S	d	Triangular distribution	NUREG/CR-6755, Section 3.6
RRF	Radon release fraction	P, B	3	D	-	0	Radon exposure is not regulated by the NRC
RNUCACT	Radionuclide concentration/activity	P	2	D	Act/m Act/m^2 Act/g	1	Allows for proportional DCGL calculation

Selected RESRAD-BUILD v3.22 Parameters for RSNGS Structural Surfaces Sensitivity Analysis – Industrial Worker Scenario							
Parameter							
Name	Description	Class[1]	Priority[2]	Treatment[3]	Units	Parameter Value	Basis for Parameter Selection
NREGI0	Number of regions in volume source	P	3	D	-	Not used	A volume source is not used in this dose model
FCONT0	Contaminated region (volume source)	P	3	D	-	Not used	A volume source is not used in this dose model
THICK0	Source region thickness (volume source)	P	2	S	cm	Not used	A volume source is not used in this dose model
DENSI0	Source density (volume source)	P	1	S	g/cm^3	Not used	A volume source is not used in this dose model
EROS0	Source erosion rate (volume source)	P, B	2	S	cm/d	Not used	A volume source is not used in this dose model
POROS0	Source porosity	P	2	S	-	Not used	A volume source is not used in this dose model
EFDIF0	Radon effective diffusion coefficient	P	3	D	m^2/sec	0	Radon exposure is not regulated by the NRC
EMANA0	Radon emanation fraction	P	3	D	-	0	Radon exposure is not regulated by the NRC
MTLS	Source material			D	-	Not used	A volume source is not used in this dose model
Source 5 – South wall							
SLVL	Source room (also primary room)	P	3	D	-	1	This dose model contains only one room
STYPE	Source type	P	3	D	-	Area	NUREG/CR-5512
SDIR	Source direction	P	3	D	-	y	NUREG/CR-5512
SX	Source location	P	3	D	m	3, 0, 1.85	X and Y distances are half of the square root of the most likely room area and Z distance is half of the most likely room height from NUREG/CR-6755, Appendix A, triangular distributions
SAREA	Source area	P	2	D	m/m^2	22.2	Square root of the most likely room area times the most likely room height from NUREG/CR-6755, Appendix A, triangular distributions
AIRFR	Air release fraction	B	2	S	-	Triangular distribution	NUREG/CR-6755, Appendix A

Selected RESRAD-BUILD v3.22 Parameters for RSNGS Structural Surfaces Sensitivity Analysis – Industrial Worker Scenario

Parameter							
Name	**Description**	**Class[1]**	**Priority[2]**	**Treatment[3]**	**Units**	**Parameter Value**	**Basis for Parameter Selection**
INGE1	Direct ingestion rate	B	2	D	g/h or 1/h	1.34E-06	NUREG/CR-5512, Vol. 3, Section 5.2.3 1.1E04 m^2/h / 82.03 m^2
RMVFR	Removable fraction	P, B	1	S	-	Triangular distribution	NUREG/CR-6755, Section 3.5
RF0	Source lifetime (also time for source removal)	P, B	2	S	d	Triangular distribution	NUREG/CR-6755, Section 3.6
RRF	Radon release fraction	P, B	3	D	-	0	Radon exposure is not regulated by the NRC
RNUCACT	Radionuclide concentration/activity	P	2	D	Act/m Act/m^2 Act/g	1	Allows for proportional DCGL calculation
NREGI0	Number of regions in volume source	P	3	D	-	Not used	A volume source is not used in this dose model
FCONT0	Contaminated region (volume source)	P	3	D	-	Not used	A volume source is not used in this dose model
THICK0	Source region thickness (volume source)	P	2	S	cm	Not used	A volume source is not used in this dose model
DENSI0	Source density (volume source)	P	1	S	g/cm^3	Not used	A volume source is not used in this dose model
EROS0	Source erosion rate (volume source)	P, B	2	S	cm/d	Not used	A volume source is not used in this dose model
POROS0	Source porosity	P	2	S	-	Not used	A volume source is not used in this dose model
EFDIF0	Radon effective diffusion coefficient	P	3	D	m^2/sec	0	Radon exposure is not regulated by the NRC
EMANA0	Radon emanation fraction	P	3	D	-	0	Radon exposure is not regulated by the NRC
MTLS	Source material			D	-	Not used	A volume source is not used in this dose model
SHIELDING PARAMETERS							
DSTH	Shielding thickness	P, B	2	S	cm	0	Shielding is not used in this dose model
DSDEN	Shielding density	P	1	S	g/cm^3	0	Shielding is not used in this dose model
MTLC	Shielding material	P	3	D	-	None	Shielding is not used in this dose model

Selected RESRAD-BUILD v3.22 Parameters for RSNGS Structural Surfaces Sensitivity Analysis – Industrial Worker Scenario							
Parameter							
Name	Description	Class[1]	Priority[2]	Treatment[3]	Units	Parameter Value	Basis for Parameter Selection
TRITIUM MODEL PARAMETERS							
DRYTHICK	Dry zone thickness	P	3		cm	Not Used	This parameter is not used for a surface source
H3THICK	Wet + dry zone thickness	P	2	S	cm	Not Used	This parameter is not used for a surface source
H3VOLFRACT	Volumetric water content	P	2	S	-	Not Used	This parameter is not used for a surface source
H3RMVF	Water fraction available for vaporization	P	2	S	-	Not Used	This parameter is not used for a surface source
HUMIDITY	Humidity	P, B	2	S	g/m^3	Not Used	This parameter is not used for a surface source

[1]Parameter Classification: P = Physical; B = Behavioral; M = Metabolic
[2]1 = high priority parameter, 2 = medium priority parameter, 3 = low priority parameter
[3]D = Deterministic treatment, S = Stochastic treatment

Attachment 8.4

RESRAD-BUILD v3.22 Output Report Nuclide Specific Information for Input Parameters, Building Information and Source Information Used In Parameter Sensitivity Analysis

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 15:36:35  Page:   2 **
 Title : Sensitivity Analysis for Tritium
 Input File : C:\Program Files\RESRAD_Family\BUILD\H3Sens.bld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             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
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                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 15:36:35  Page:   3 **
 Title : Sensitivity Analysis for Tritium
 Input File : C:\Program Files\RESRAD_Family\BUILD\H3Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 15:36:35  Page:   4 **
 Title : Sensitivity Analysis for Tritium
 Input File : C:\Program Files\RESRAD_Family\BUILD\H3Sens.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
        Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    H-3       1.000E+00   6.400E-08   6.400E-08   0.000E+00

 Source:  2
        Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    H-3       1.000E+00   6.400E-08   6.400E-08   0.000E+00
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 15:36:35  Page:   5 **
 Title : Sensitivity Analysis for Tritium
 Input File : C:\Program Files\RESRAD_Family\BUILD\H3Sens.bld



 Source:  3
        Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    H-3       1.000E+00   6.400E-08   6.400E-08   0.000E+00

 Source:  4
        Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    H-3       1.000E+00   6.400E-08   6.400E-08   0.000E+00
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 15:36:35  Page:   6 **
 Title : Sensitivity Analysis for Tritium
 Input File : C:\Program Files\RESRAD_Family\BUILD\H3Sens.bld



 Source:  5
        Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    H-3       1.000E+00   6.400E-08   6.400E-08   0.000E+00
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 15:48:37  Page:   1 **
 Title : Sensitivity Analysis for C-14
 Input File : C:\Program Files\RESRAD_Family\BUILD\C14Sens.bld


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              ÍÍÍ                                          ÍÍÍ
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               Source Information.......................   4
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                  Time Specific Parameters..............   7
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                  Dose by Pathway Detail................  10
                  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
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```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 15:48:37  Page:   2 **
 Title : Sensitivity Analysis for C-14
 Input File : C:\Program Files\RESRAD_Family\BUILD\C14Sens.bld


              ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
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              ÍÍÍ                                          ÍÍÍ
              ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
              ÍÍÍ                                          ÍÍÍ
              ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
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                        Number of Sources  :   5
                        Number of Receptors:   1
                        Total Time         :  3.652500E+02 days
                        Fraction Inside    :  2.670000E-01



              ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



              ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 15:48:37  Page:   3 **
 Title : Sensitivity Analysis for C-14
 Input File : C:\Program Files\RESRAD_Family\BUILD\C14Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 15:48:37  Page:   4 **
 Title : Sensitivity Analysis for C-14
 Input File : C:\Program Files\RESRAD_Family\BUILD\C14Sens.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
        Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    C-14      1.000E+00   2.090E-06   2.090E-06   2.620E-08

 Source:  2
        Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    C-14      1.000E+00   2.090E-06   2.090E-06   2.620E-08
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 15:48:37  Page:   5 **
 Title : Sensitivity Analysis for C-14
 Input File : C:\Program Files\RESRAD_Family\BUILD\C14Sens.bld



 Source:  3
        Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    C-14      1.000E+00   2.090E-06   2.090E-06   2.620E-08

 Source:  4
        Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    C-14      1.000E+00   2.090E-06   2.090E-06   2.620E-08
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 15:48:37  Page:   6 **
 Title : Sensitivity Analysis for C-14
 Input File : C:\Program Files\RESRAD_Family\BUILD\C14Sens.bld


 Source:  5
        Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]


   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
              [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                  (pCi/m3)]
    C-14      1.000E+00   2.090E-06   2.090E-06   2.620E-08
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 16:15:20  Page:   2 **
 Title : Sensitivity Analysis for Na-22
 Input File : C:\Program Files\RESRAD_Family\BUILD\Na22Sens.bld


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             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
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                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 16:15:20  Page:   3 **
 Title : Sensitivity Analysis for Na-22
 Input File : C:\Program Files\RESRAD_Family\BUILD\Na22Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 16:15:20  Page:   4 **
 Title : Sensitivity Analysis for Na-22
 Input File : C:\Program Files\RESRAD_Family\BUILD\Na22Sens.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
        Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    NA-22     1.000E+00   1.150E-05   7.660E-06   1.260E-02

 Source:  2
        Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    NA-22     1.000E+00   1.150E-05   7.660E-06   1.260E-02
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 16:15:20  Page:   5 **
 Title : Sensitivity Analysis for Na-22
 Input File : C:\Program Files\RESRAD_Family\BUILD\Na22Sens.bld



 Source:  3
        Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    NA-22     1.000E+00   1.150E-05   7.660E-06   1.260E-02

 Source:  4
        Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    NA-22     1.000E+00   1.150E-05   7.660E-06   1.260E-02
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 16:15:20  Page:   6 **
 Title : Sensitivity Analysis for Na-22
 Input File : C:\Program Files\RESRAD_Family\BUILD\Na22Sens.bld



 Source:  5
        Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    NA-22     1.000E+00   1.150E-05   7.660E-06   1.260E-02
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 07:27:08  Page:   2 **
 Title : Sensitivity Analysis for Fe-55
 Input File : C:\Program Files\RESRAD_Family\BUILD\Fe55Sens.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
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             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
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                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 07:27:08  Page:   3 **
 Title : Sensitivity Analysis for Fe-55
 Input File : C:\Program Files\RESRAD_Family\BUILD\Fe55Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 07:27:08  Page:   4 **
 Title : Sensitivity Analysis for Fe-55
 Input File : C:\Program Files\RESRAD_Family\BUILD\Fe55Sens.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
        Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    FE-55     1.000E+00   6.070E-07   2.690E-06   0.000E+00

 Source:  2
        Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    FE-55     1.000E+00   6.070E-07   2.690E-06   0.000E+00
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 07:27:08  Page:   5 **
 Title : Sensitivity Analysis for Fe-55
 Input File : C:\Program Files\RESRAD_Family\BUILD\Fe55Sens.bld



 Source:  3
        Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    FE-55     1.000E+00   6.070E-07   2.690E-06   0.000E+00

 Source:  4
        Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    FE-55     1.000E+00   6.070E-07   2.690E-06   0.000E+00
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 07:27:08  Page:   6 **
 Title : Sensitivity Analysis for Fe-55
 Input File : C:\Program Files\RESRAD_Family\BUILD\Fe55Sens.bld



 Source:  5
        Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    FE-55     1.000E+00   6.070E-07   2.690E-06   0.000E+00
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 07:50:26  Page:   2 **
 Title : Sensitivity Analysis for Ni-59
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni59Sens.bld


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              ÍÍÍ                                          ÍÍÍ
              ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
              ÍÍÍ                                          ÍÍÍ
              ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
              ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ


                         Number of Sources  :   5
                         Number of Receptors:   1
                         Total Time         :  3.652500E+02 days
                         Fraction Inside    :  2.670000E-01


              ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]       [m]          [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



              ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 07:50:26  Page:   3 **
 Title : Sensitivity Analysis for Ni-59
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni59Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 07:50:26  Page:   4 **
 Title : Sensitivity Analysis for Ni-59
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni59Sens.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
        Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    NI-59     1.000E+00   2.100E-07   2.700E-06   0.000E+00

 Source:  2
        Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    NI-59     1.000E+00   2.100E-07   2.700E-06   0.000E+00
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 07:50:26  Page:   5 **
 Title : Sensitivity Analysis for Ni-59
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni59Sens.bld



 Source:  3
        Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    NI-59     1.000E+00   2.100E-07   2.700E-06   0.000E+00

 Source:  4
        Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    NI-59     1.000E+00   2.100E-07   2.700E-06   0.000E+00
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 07:50:26  Page:   6 **
 Title : Sensitivity Analysis for Ni-59
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni59Sens.bld



 Source:  5
        Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    NI-59     1.000E+00   2.100E-07   2.700E-06   0.000E+00
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 12:50:39  Page:   2 **
 Title : Sensitivity Analysis for Co-60
 Input File : C:\Program Files\RESRAD_Family\BUILD\Co60Sens.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 12:50:39  Page:   3 **
 Title : Sensitivity Analysis for Co-60
 Input File : C:\Program Files\RESRAD_Family\BUILD\Co60Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 12:50:39  Page:   4 **
 Title : Sensitivity Analysis for Co-60
 Input File : C:\Program Files\RESRAD_Family\BUILD\Co60Sens.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
        Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    CO-60     1.000E+00   2.690E-05   2.190E-04   1.470E-02

 Source:  2
        Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    CO-60     1.000E+00   2.690E-05   2.190E-04   1.470E-02
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 12:50:39  Page:   5 **
 Title : Sensitivity Analysis for Co-60
 Input File : C:\Program Files\RESRAD_Family\BUILD\Co60Sens.bld



 Source:  3
        Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    CO-60     1.000E+00   2.690E-05   2.190E-04   1.470E-02

 Source:  4
        Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    CO-60     1.000E+00   2.690E-05   2.190E-04   1.470E-02
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 12:50:39  Page:   6 **
 Title : Sensitivity Analysis for Co-60
 Input File : C:\Program Files\RESRAD_Family\BUILD\Co60Sens.bld



 Source:  5
        Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    CO-60     1.000E+00   2.690E-05   2.190E-04   1.470E-02
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 08:13:17  Page:   2 **
 Title : Sensitivity Analysis for Ni-63
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni63Sens.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 08:13:17  Page:   3 **
 Title : Sensitivity Analysis for Ni-63
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni63Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 08:13:17  Page:   4 **
 Title : Sensitivity Analysis for Ni-63
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni63Sens.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
        Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           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:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           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
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 08:13:17  Page:   5 **
 Title : Sensitivity Analysis for Ni-63
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni63Sens.bld



 Source:  3
        Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            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:   6.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            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
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 08:13:17  Page:   6 **
 Title : Sensitivity Analysis for Ni-63
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni63Sens.bld



 Source:  5
        Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            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
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 08:24:56  Page:   2 **
 Title : Sensitivity Analysis for Sr-90
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sr90Sens.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
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             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 08:24:56  Page:   3 **
 Title : Sensitivity Analysis for Sr-90
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sr90Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 08:24:56  Page:   4 **
 Title : Sensitivity Analysis for Sr-90
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sr90Sens.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
        Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    SR-90     1.000E+00   1.530E-04   1.310E-03   2.310E-05

 Source:  2
        Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    SR-90     1.000E+00   1.530E-04   1.310E-03   2.310E-05
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 08:24:56  Page:   5 **
 Title : Sensitivity Analysis for Sr-90
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sr90Sens.bld



 Source:  3
        Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    SR-90     1.000E+00   1.530E-04   1.310E-03   2.310E-05

 Source:  4
        Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    SR-90     1.000E+00   1.530E-04   1.310E-03   2.310E-05
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 08:24:56  Page:   6 **
 Title : Sensitivity Analysis for Sr-90
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sr90Sens.bld



 Source:  5
        Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
              [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                  (pCi/m3)]
    SR-90     1.000E+00   1.530E-04   1.310E-03   2.310E-05
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 09:26:50  Page:   2 **
 Title : Sensitivity Analysis for Nb-94
 Input File : C:\Program Files\RESRAD_Family\BUILD\Nb94Sens.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
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             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
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                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 09:26:50  Page:   3 **
 Title : Sensitivity Analysis for Nb-94
 Input File : C:\Program Files\RESRAD_Family\BUILD\Nb94Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 09:26:50  Page:   4 **
 Title : Sensitivity Analysis for Nb-94
 Input File : C:\Program Files\RESRAD_Family\BUILD\Nb94Sens.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
        Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    NB-94     1.000E+00   7.140E-06   4.140E-04   9.010E-03

 Source:  2
        Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    NB-94     1.000E+00   7.140E-06   4.140E-04   9.010E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 09:26:50  Page:   5 **
 Title : Sensitivity Analysis for Nb-94
 Input File : C:\Program Files\RESRAD_Family\BUILD\Nb94Sens.bld



 Source:  3
        Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    NB-94     1.000E+00   7.140E-06   4.140E-04   9.010E-03

 Source:  4
        Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    NB-94     1.000E+00   7.140E-06   4.140E-04   9.010E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 09:26:50  Page:   6 **
 Title : Sensitivity Analysis for Nb-94
 Input File : C:\Program Files\RESRAD_Family\BUILD\Nb94Sens.bld



 Source:  5
        Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    NB-94     1.000E+00   7.140E-06   4.140E-04   9.010E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 10:08:35  Page:   2 **
 Title : Sensitivity Analysis for Tc-99
 Input File : C:\Program Files\RESRAD_Family\BUILD\Tc99Sens.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
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             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 10:08:35  Page:   3 **
 Title : Sensitivity Analysis for Tc-99
 Input File : C:\Program Files\RESRAD_Family\BUILD\Tc99Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 10:08:35  Page:   4 **
 Title : Sensitivity Analysis for Tc-99
 Input File : C:\Program Files\RESRAD_Family\BUILD\Tc99Sens.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
        Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    TC-99     1.000E+00   1.460E-06   8.330E-06   1.900E-07

 Source:  2
        Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    TC-99     1.000E+00   1.460E-06   8.330E-06   1.900E-07
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 10:08:35  Page:   5 **
 Title : Sensitivity Analysis for Tc-99
 Input File : C:\Program Files\RESRAD_Family\BUILD\Tc99Sens.bld



 Source:  3
        Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    TC-99     1.000E+00   1.460E-06   8.330E-06   1.900E-07

 Source:  4
        Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    TC-99     1.000E+00   1.460E-06   8.330E-06   1.900E-07
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 10:08:35  Page:   6 **
 Title : Sensitivity Analysis for Tc-99
 Input File : C:\Program Files\RESRAD_Family\BUILD\Tc99Sens.bld



 Source:  5
        Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
              [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                  (pCi/m3)]
    TC-99     1.000E+00   1.460E-06   8.330E-06   1.900E-07
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 10:46:38  Page:   2 **
 Title : Sensitivity Analysis for Ag-108m
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ag108Sens.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
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             ÍÍÍ                                              ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters           ÍÍÍ
             ÍÍÍ                                              ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 10:46:38  Page:   3 **
 Title : Sensitivity Analysis for Ag-108m
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ag108Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 10:46:38  Page:   4 **
 Title : Sensitivity Analysis for Ag-108m
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ag108Sens.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
        Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    AG-108M   1.000E+00   7.620E-06   2.830E-04   9.140E-03

 Source:  2
        Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    AG-108M   1.000E+00   7.620E-06   2.830E-04   9.140E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 10:46:38  Page:   5 **
 Title : Sensitivity Analysis for Ag-108m
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ag108Sens.bld



 Source:  3
        Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    AG-108M   1.000E+00   7.620E-06   2.830E-04   9.140E-03

 Source:  4
        Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    AG-108M   1.000E+00   7.620E-06   2.830E-04   9.140E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 10:46:38  Page:   6 **
 Title : Sensitivity Analysis for Ag-108m
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ag108Sens.bld



 Source:  5
        Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
              [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                  (pCi/m3)]
    AG-108M   1.000E+00   7.620E-06   2.830E-04   9.140E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 11:51:51  Page:   2 **
 Title : Sensitivity Analysis for Sb-125
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sb125Sens.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
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             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
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                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 11:51:51  Page:   3 **
 Title : Sensitivity Analysis for Sb-125
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sb125Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 11:51:51  Page:   4 **
 Title : Sensitivity Analysis for Sb-125
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sb125Sens.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
        Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    SB-125    1.000E+00   3.650E-06   1.390E-05   2.360E-03

 Source:  2
        Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    SB-125    1.000E+00   3.650E-06   1.390E-05   2.360E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 11:51:51  Page:   5 **
 Title : Sensitivity Analysis for Sb-125
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sb125Sens.bld



 Source:  3
        Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    SB-125    1.000E+00   3.650E-06   1.390E-05   2.360E-03

 Source:  4
        Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    SB-125    1.000E+00   3.650E-06   1.390E-05   2.360E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 11:51:51  Page:   6 **
 Title : Sensitivity Analysis for Sb-125
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sb125Sens.bld



 Source:  5
        Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    SB-125    1.000E+00   3.650E-06   1.390E-05   2.360E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 12/21/04 11:02:38  Page:   2 **
 Title : Sensitivity Analysis for Cs-134
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs134Sens.bld


              ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
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              ÍÍÍ                                          ÍÍÍ
              ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
              ÍÍÍ                                          ÍÍÍ
              ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
              ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                        Number of Sources  :   5
                        Number of Receptors:   1
                        Total Time         :  3.652500E+02 days
                        Fraction Inside    :  2.670000E-01



              ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



              ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 12/21/04 11:02:38  Page:   3 **
 Title : Sensitivity Analysis for Cs-134
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs134Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 12/21/04 11:02:38  Page:   4 **
 Title : Sensitivity Analysis for Cs-134
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs134Sens.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
        Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    CS-134    1.000E+00   7.330E-05   4.630E-05   8.860E-03

 Source:  2
        Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    CS-134    1.000E+00   7.330E-05   4.630E-05   8.860E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 12/21/04 11:02:38  Page:   5 **
 Title : Sensitivity Analysis for Cs-134
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs134Sens.bld



 Source:  3
        Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    CS-134    1.000E+00   7.330E-05   4.630E-05   8.860E-03

 Source:  4
        Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    CS-134    1.000E+00   7.330E-05   4.630E-05   8.860E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 12/21/04 11:02:38  Page:   6 **
 Title : Sensitivity Analysis for Cs-134
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs134Sens.bld



 Source:  5
        Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    CS-134    1.000E+00   7.330E-05   4.630E-05   8.860E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 13:37:11  Page:   2 **
 Title : Sensitivity Analysis for Cs-137
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs137Sens.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 13:37:11  Page:   3 **
 Title : Sensitivity Analysis for Cs-137
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs137Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 13:37:11  Page:   4 **
 Title : Sensitivity Analysis for Cs-137
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs137Sens.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
        Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    CS-137    1.000E+00   5.000E-05   3.190E-05   3.190E-03

 Source:  2
        Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    CS-137    1.000E+00   5.000E-05   3.190E-05   3.190E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 13:37:11  Page:   5 **
 Title : Sensitivity Analysis for Cs-137
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs137Sens.bld



 Source:  3
        Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    CS-137    1.000E+00   5.000E-05   3.190E-05   3.190E-03

 Source:  4
        Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    CS-137    1.000E+00   5.000E-05   3.190E-05   3.190E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/28/04 13:37:11  Page:   6 **
 Title : Sensitivity Analysis for Cs-137
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs137Sens.bld



 Source:  5
        Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    CS-137    1.000E+00   5.000E-05   3.190E-05   3.190E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 12:50:42  Page:   2 **
 Title : Sensitivity Analysis for Pm-147
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pm147Sens.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 12:50:42  Page:   3 **
 Title : Sensitivity Analysis for Pm-147
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pm147Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 12:50:42  Page:   4 **
 Title : Sensitivity Analysis for Pm-147
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pm147Sens.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
        Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           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   8.110E-08

 Source:  2
        Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           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   8.110E-08
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 12:50:42  Page:   5 **
 Title : Sensitivity Analysis for Pm-147
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pm147Sens.bld


 Source:  3
        Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           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   8.110E-08

 Source:  4
        Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           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   8.110E-08
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 12:50:42  Page:   6 **
 Title : Sensitivity Analysis for Pm-147
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pm147Sens.bld



 Source:  5
        Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           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   8.110E-08
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 13:40:36  Page:   2 **
 Title : Sensitivity Analysis for Eu-152
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu-152Sens.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 13:40:36  Page:   3 **
 Title : Sensitivity Analysis for Eu-152
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu-152Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 13:40:36  Page:   4 **
 Title : Sensitivity Analysis for Eu-152
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu-152Sens.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
        Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    GD-152    0.000E+00   1.610E-04   2.430E-01   0.000E+00
    EU-152    1.000E+00   6.480E-06   2.210E-04   6.610E-03

 Source:  2
        Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    GD-152    0.000E+00   1.610E-04   2.430E-01   0.000E+00
    EU-152    1.000E+00   6.480E-06   2.210E-04   6.610E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 13:40:36  Page:   5 **
 Title : Sensitivity Analysis for Eu-152
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu-152Sens.bld


 Source:  3
        Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    GD-152    0.000E+00   1.610E-04   2.430E-01   0.000E+00
    EU-152    1.000E+00   6.480E-06   2.210E-04   6.610E-03

 Source:  4
        Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    GD-152    0.000E+00   1.610E-04   2.430E-01   0.000E+00
    EU-152    1.000E+00   6.480E-06   2.210E-04   6.610E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 13:40:36  Page:   6 **
 Title : Sensitivity Analysis for Eu-152
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu-152Sens.bld



 Source:  5
        Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    GD-152    0.000E+00   1.610E-04   2.430E-01   0.000E+00
    EU-152    1.000E+00   6.480E-06   2.210E-04   6.610E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 15:10:05  Page:   2 **
 Title : Sensitivity Analysis for Eu-154
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu154Sens.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 15:10:05  Page:   3 **
 Title : Sensitivity Analysis for Eu-154
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu154Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 15:10:05  Page:   4 **
 Title : Sensitivity Analysis for Eu-154
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu154Sens.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
        Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    EU-154    1.000E+00   9.550E-06   2.860E-04   7.180E-03

 Source:  2
        Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    EU-154    1.000E+00   9.550E-06   2.860E-04   7.180E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 15:10:05  Page:   5 **
 Title : Sensitivity Analysis for Eu-154
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu154Sens.bld



 Source:  3
        Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    EU-154    1.000E+00   9.550E-06   2.860E-04   7.180E-03

 Source:  4
        Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    EU-154    1.000E+00   9.550E-06   2.860E-04   7.180E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 15:10:05  Page:   6 **
 Title : Sensitivity Analysis for Eu-154
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu154Sens.bld



 Source:  5
        Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    EU-154    1.000E+00   9.550E-06   2.860E-04   7.180E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 16:36:54  Page:   2 **
 Title : Sensitivity Analysis for Eu-155
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu155Sens.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 16:36:54  Page:   3 **
 Title : Sensitivity Analysis for Eu-155
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu155Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 16:36:54  Page:   4 **
 Title : Sensitivity Analysis for Eu-155
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu155Sens.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
        Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    EU-155    1.000E+00   1.530E-06   4.140E-05   2.910E-04

 Source:  2
        Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    EU-155    1.000E+00   1.530E-06   4.140E-05   2.910E-04
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 16:36:54  Page:   5 **
 Title : Sensitivity Analysis for Eu-155
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu155Sens.bld



 Source:  3
        Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    EU-155    1.000E+00   1.530E-06   4.140E-05   2.910E-04

 Source:  4
        Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    EU-155    1.000E+00   1.530E-06   4.140E-05   2.910E-04
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 06/29/04 16:36:54  Page:   6 **
 Title : Sensitivity Analysis for Eu-155
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu155Sens.bld



 Source:  5
        Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    EU-155    1.000E+00   1.530E-06   4.140E-05   2.910E-04
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/01/04 07:23:05  Page:   2 **
 Title : Sensitivity Analysis for Np-237
 Input File : C:\Program Files\RESRAD_Family\BUILD\Np237Sens.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/01/04 07:23:05  Page:   3 **
 Title : Sensitivity Analysis for Np-237
 Input File : C:\Program Files\RESRAD_Family\BUILD\Np237Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/01/04 07:23:05  Page:   4 **
 Title : Sensitivity Analysis for Np-237
 Input File : C:\Program Files\RESRAD_Family\BUILD\Np237Sens.bld


              ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
         Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
         Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     NP-237    1.000E+00   4.440E-03   5.400E-01   1.210E-03
     U-233     0.000E+00   2.890E-04   1.350E-01   1.910E-06
     TH-229    0.000E+00   4.030E-03   2.160E+00   1.720E-03

 Source:  2
         Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     NP-237    1.000E+00   4.440E-03   5.400E-01   1.210E-03
     U-233     0.000E+00   2.890E-04   1.350E-01   1.910E-06
     TH-229    0.000E+00   4.030E-03   2.160E+00   1.720E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/01/04 07:23:05  Page:   5 **
 Title : Sensitivity Analysis for Np-237
 Input File : C:\Program Files\RESRAD_Family\BUILD\Np237Sens.bld


 Source:  3
        Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    NP-237    1.000E+00   4.440E-03   5.400E-01   1.210E-03
    U-233     0.000E+00   2.890E-04   1.350E-01   1.910E-06
    TH-229    0.000E+00   4.030E-03   2.160E+00   1.720E-03

 Source:  4
        Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    NP-237    1.000E+00   4.440E-03   5.400E-01   1.210E-03
    U-233     0.000E+00   2.890E-04   1.350E-01   1.910E-06
    TH-229    0.000E+00   4.030E-03   2.160E+00   1.720E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/01/04 07:23:05  Page:   6 **
 Title : Sensitivity Analysis for Np-237
 Input File : C:\Program Files\RESRAD_Family\BUILD\Np237Sens.bld



 Source:  5
        Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    NP-237    1.000E+00   4.440E-03   5.400E-01   1.210E-03
    U-233     0.000E+00   2.890E-04   1.350E-01   1.910E-06
    TH-229    0.000E+00   4.030E-03   2.160E+00   1.720E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/01/04 08:27:09  Page:   2 **
 Title : Sensitivity Analysis for Pu-238
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu238Sens.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/01/04 08:27:09  Page:   3 **
 Title : Sensitivity Analysis for Pu-238
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu238Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/01/04 08:27:09  Page:   4 **
 Title : Sensitivity Analysis for Pu-238
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu238Sens.bld


              ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
         Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
         Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     PU-238    1.000E+00   3.200E-03   3.920E-01   5.710E-07
     U-234     0.000E+00   2.830E-04   1.320E-01   8.930E-07
     TH-230    0.000E+00   5.480E-04   3.260E-01   2.040E-06
     RA-226    0.000E+00   1.330E-03   8.600E-03   1.040E-02
     PB-210    0.000E+00   7.270E-03   2.320E-02   1.050E-05

 Source:  2
         Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     PU-238    1.000E+00   3.200E-03   3.920E-01   5.710E-07
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/01/04 08:27:09  Page:   5 **
 Title : Sensitivity Analysis for Pu-238
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu238Sens.bld


     U-234     0.000E+00   2.830E-04   1.320E-01   8.930E-07
     TH-230    0.000E+00   5.480E-04   3.260E-01   2.040E-06
     RA-226    0.000E+00   1.330E-03   8.600E-03   1.040E-02
     PB-210    0.000E+00   7.270E-03   2.320E-02   1.050E-05

 Source:  3
         Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     PU-238    1.000E+00   3.200E-03   3.920E-01   5.710E-07
     U-234     0.000E+00   2.830E-04   1.320E-01   8.930E-07
     TH-230    0.000E+00   5.480E-04   3.260E-01   2.040E-06
     RA-226    0.000E+00   1.330E-03   8.600E-03   1.040E-02
     PB-210    0.000E+00   7.270E-03   2.320E-02   1.050E-05

 Source:  4
         Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/01/04 08:27:09  Page:   6 **
 Title : Sensitivity Analysis for Pu-238
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu238Sens.bld


     PU-238    1.000E+00   3.200E-03   3.920E-01   5.710E-07
     U-234     0.000E+00   2.830E-04   1.320E-01   8.930E-07
     TH-230    0.000E+00   5.480E-04   3.260E-01   2.040E-06
     RA-226    0.000E+00   1.330E-03   8.600E-03   1.040E-02
     PB-210    0.000E+00   7.270E-03   2.320E-02   1.050E-05

 Source:  5
         Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     PU-238    1.000E+00   3.200E-03   3.920E-01   5.710E-07
     U-234     0.000E+00   2.830E-04   1.320E-01   8.930E-07
     TH-230    0.000E+00   5.480E-04   3.260E-01   2.040E-06
     RA-226    0.000E+00   1.330E-03   8.600E-03   1.040E-02
     PB-210    0.000E+00   7.270E-03   2.320E-02   1.050E-05
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/01/04 12:13:21  Page:   2 **
 Title : Sensitivity Analysis for Pu-239
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu239Sens.bld


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             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/01/04 12:13:21  Page:   3 **
 Title : Sensitivity Analysis for Pu-239
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu239Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/01/04 12:13:21  Page:   4 **
 Title : Sensitivity Analysis for Pu-239
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu239Sens.bld


              ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
         Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
         Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     PU-239    1.000E+00   3.540E-03   4.290E-01   4.960E-07
     U-235     0.000E+00   2.670E-04   1.230E-01   9.030E-04
     PA-231    0.000E+00   1.060E-02   1.280E+00   2.010E-04
     AC-227    0.000E+00   1.480E-02   6.720E+00   2.160E-03

 Source:  2
         Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     PU-239    1.000E+00   3.540E-03   4.290E-01   4.960E-07
     U-235     0.000E+00   2.670E-04   1.230E-01   9.030E-04
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/01/04 12:13:21  Page:   5 **
 Title : Sensitivity Analysis for Pu-239
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu239Sens.bld


     PA-231    0.000E+00   1.060E-02   1.280E+00   2.010E-04
     AC-227    0.000E+00   1.480E-02   6.720E+00   2.160E-03

 Source:  3
         Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     PU-239    1.000E+00   3.540E-03   4.290E-01   4.960E-07
     U-235     0.000E+00   2.670E-04   1.230E-01   9.030E-04
     PA-231    0.000E+00   1.060E-02   1.280E+00   2.010E-04
     AC-227    0.000E+00   1.480E-02   6.720E+00   2.160E-03

 Source:  4
         Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     PU-239    1.000E+00   3.540E-03   4.290E-01   4.960E-07
     U-235     0.000E+00   2.670E-04   1.230E-01   9.030E-04
     PA-231    0.000E+00   1.060E-02   1.280E+00   2.010E-04
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/01/04 12:13:21  Page:   6 **
 Title : Sensitivity Analysis for Pu-239
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu239Sens.bld


     AC-227    0.000E+00   1.480E-02   6.720E+00   2.160E-03

 Source:  5
         Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     PU-239    1.000E+00   3.540E-03   4.290E-01   4.960E-07
     U-235     0.000E+00   2.670E-04   1.230E-01   9.030E-04
     PA-231    0.000E+00   1.060E-02   1.280E+00   2.010E-04
     AC-227    0.000E+00   1.480E-02   6.720E+00   2.160E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/06/04 06:33:05  Page:   2 **
 Title : Sensitivity Analysis for Pu-240
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu240Sens.bld


              ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
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              ÍÍÍ                                          ÍÍÍ
              ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
              ÍÍÍ                                          ÍÍÍ
              ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
              ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ


                         Number of Sources  :   5
                         Number of Receptors:   1
                         Total Time         :  3.652500E+02 days
                         Fraction Inside    :  2.670000E-01


              ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]       [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



              ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/06/04 06:33:05  Page:   3 **
 Title : Sensitivity Analysis for Pu-240
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu240Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/06/04 06:33:05  Page:   4 **
 Title : Sensitivity Analysis for Pu-240
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu240Sens.bld


              ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
         Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
         Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     PU-240    1.000E+00   3.540E-03   4.290E-01   5.560E-07
     U-236     0.000E+00   2.690E-04   1.250E-01   5.860E-07
     TH-232    0.000E+00   2.730E-03   1.640E+00   1.020E-06
     TH-228    0.000E+00   8.080E-04   3.450E-01   9.410E-03
     RA-228    0.000E+00   1.440E-03   5.080E-03   5.590E-03

 Source:  2
         Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     PU-240    1.000E+00   3.540E-03   4.290E-01   5.560E-07
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/06/04 06:33:05  Page:   5 **
 Title : Sensitivity Analysis for Pu-240
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu240Sens.bld


     U-236     0.000E+00   2.690E-04   1.250E-01   5.860E-07
     TH-232    0.000E+00   2.730E-03   1.640E+00   1.020E-06
     TH-228    0.000E+00   8.080E-04   3.450E-01   9.410E-03
     RA-228    0.000E+00   1.440E-03   5.080E-03   5.590E-03

 Source:  3
         Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     PU-240    1.000E+00   3.540E-03   4.290E-01   5.560E-07
     U-236     0.000E+00   2.690E-04   1.250E-01   5.860E-07
     TH-232    0.000E+00   2.730E-03   1.640E+00   1.020E-06
     TH-228    0.000E+00   8.080E-04   3.450E-01   9.410E-03
     RA-228    0.000E+00   1.440E-03   5.080E-03   5.590E-03

 Source:  4
         Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/06/04 06:33:05  Page:   6 **
 Title : Sensitivity Analysis for Pu-240
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu240Sens.bld


     PU-240    1.000E+00   3.540E-03   4.290E-01   5.560E-07
     U-236     0.000E+00   2.690E-04   1.250E-01   5.860E-07
     TH-232    0.000E+00   2.730E-03   1.640E+00   1.020E-06
     TH-228    0.000E+00   8.080E-04   3.450E-01   9.410E-03
     RA-228    0.000E+00   1.440E-03   5.080E-03   5.590E-03

 Source:  5
         Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     PU-240    1.000E+00   3.540E-03   4.290E-01   5.560E-07
     U-236     0.000E+00   2.690E-04   1.250E-01   5.860E-07
     TH-232    0.000E+00   2.730E-03   1.640E+00   1.020E-06
     TH-228    0.000E+00   8.080E-04   3.450E-01   9.410E-03
     RA-228    0.000E+00   1.440E-03   5.080E-03   5.590E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/06/04 06:54:56  Page:   2 **
 Title : Sensitivity Analysis for Pu-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu241Sens.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
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             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
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                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/06/04 06:54:56  Page:   3 **
 Title : Sensitivity Analysis for Pu-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu241Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/06/04 06:54:56  Page:   4 **
 Title : Sensitivity Analysis for Pu-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu241Sens.bld


              ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
         Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
         Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     PU-241    1.000E+00   6.850E-05   8.250E-03   2.560E-08
     AM-241    0.000E+00   3.640E-03   4.440E-01   9.570E-05
     NP-237    0.000E+00   4.440E-03   5.400E-01   1.210E-03
     U-233     0.000E+00   2.890E-04   1.350E-01   1.910E-06
     TH-229    0.000E+00   4.030E-03   2.160E+00   1.720E-03

 Source:  2
         Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     PU-241    1.000E+00   6.850E-05   8.250E-03   2.560E-08
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/06/04 06:54:56  Page:   5 **
 Title : Sensitivity Analysis for Pu-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu241Sens.bld


     AM-241    0.000E+00   3.640E-03   4.440E-01   9.570E-05
     NP-237    0.000E+00   4.440E-03   5.400E-01   1.210E-03
     U-233     0.000E+00   2.890E-04   1.350E-01   1.910E-06
     TH-229    0.000E+00   4.030E-03   2.160E+00   1.720E-03

 Source:  3
         Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     PU-241    1.000E+00   6.850E-05   8.250E-03   2.560E-08
     AM-241    0.000E+00   3.640E-03   4.440E-01   9.570E-05
     NP-237    0.000E+00   4.440E-03   5.400E-01   1.210E-03
     U-233     0.000E+00   2.890E-04   1.350E-01   1.910E-06
     TH-229    0.000E+00   4.030E-03   2.160E+00   1.720E-03

 Source:  4
         Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/06/04 06:54:56  Page:   6 **
 Title : Sensitivity Analysis for Pu-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu241Sens.bld


     PU-241    1.000E+00   6.850E-05   8.250E-03   2.560E-08
     AM-241    0.000E+00   3.640E-03   4.440E-01   9.570E-05
     NP-237    0.000E+00   4.440E-03   5.400E-01   1.210E-03
     U-233     0.000E+00   2.890E-04   1.350E-01   1.910E-06
     TH-229    0.000E+00   4.030E-03   2.160E+00   1.720E-03

 Source:  5
         Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     PU-241    1.000E+00   6.850E-05   8.250E-03   2.560E-08
     AM-241    0.000E+00   3.640E-03   4.440E-01   9.570E-05
     NP-237    0.000E+00   4.440E-03   5.400E-01   1.210E-03
     U-233     0.000E+00   2.890E-04   1.350E-01   1.910E-06
     TH-229    0.000E+00   4.030E-03   2.160E+00   1.720E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/07/04 07:20:01  Page:   2 **
 Title : Sensitivity Analysis for Am-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Am241Sens.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
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             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/07/04 07:20:01  Page:   3 **
 Title : Sensitivity Analysis for Am-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Am241Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/07/04 07:20:01  Page:   4 **
 Title : Sensitivity Analysis for Am-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Am241Sens.bld


              ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
         Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
         Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     AM-241    1.000E+00   3.640E-03   4.440E-01   9.570E-05
     NP-237    0.000E+00   4.440E-03   5.400E-01   1.210E-03
     U-233     0.000E+00   2.890E-04   1.350E-01   1.910E-06
     TH-229    0.000E+00   4.030E-03   2.160E+00   1.720E-03

 Source:  2
         Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     AM-241    1.000E+00   3.640E-03   4.440E-01   9.570E-05
     NP-237    0.000E+00   4.440E-03   5.400E-01   1.210E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/07/04 07:20:01  Page:   5 **
 Title : Sensitivity Analysis for Am-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Am241Sens.bld


     U-233     0.000E+00   2.890E-04   1.350E-01   1.910E-06
     TH-229    0.000E+00   4.030E-03   2.160E+00   1.720E-03

 Source:  3
         Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     AM-241    1.000E+00   3.640E-03   4.440E-01   9.570E-05
     NP-237    0.000E+00   4.440E-03   5.400E-01   1.210E-03
     U-233     0.000E+00   2.890E-04   1.350E-01   1.910E-06
     TH-229    0.000E+00   4.030E-03   2.160E+00   1.720E-03

 Source:  4
         Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     AM-241    1.000E+00   3.640E-03   4.440E-01   9.570E-05
     NP-237    0.000E+00   4.440E-03   5.400E-01   1.210E-03
     U-233     0.000E+00   2.890E-04   1.350E-01   1.910E-06
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/07/04 07:20:01  Page:   6 **
 Title : Sensitivity Analysis for Am-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Am241Sens.bld


     TH-229    0.000E+00   4.030E-03   2.160E+00   1.720E-03

 Source:  5
         Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     AM-241    1.000E+00   3.640E-03   4.440E-01   9.570E-05
     NP-237    0.000E+00   4.440E-03   5.400E-01   1.210E-03
     U-233     0.000E+00   2.890E-04   1.350E-01   1.910E-06
     TH-229    0.000E+00   4.030E-03   2.160E+00   1.720E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 15:22:55  Page:   2 **
 Title : Sensitivity Analysis for Pu-242
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu242Sens.bld


              ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
              ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
              ÍÍÍ                                          ÍÍÍ
              ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
              ÍÍÍ                                          ÍÍÍ
              ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
              ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ


                         Number of Sources  :   5
                         Number of Receptors:   1
                         Total Time         :  3.652500E+02 days
                         Fraction Inside    :  2.670000E-01


              ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]       [m]          [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



              ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ

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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 15:22:55  Page:   3 **
 Title : Sensitivity Analysis for Pu-242
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu242Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 15:22:55  Page:   4 **
 Title : Sensitivity Analysis for Pu-242
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu242Sens.bld


              ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
         Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
         Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     PU-242    1.000E+00   3.360E-03   4.110E-01   4.690E-07
     U-238     0.000E+00   2.690E-04   1.180E-01   1.600E-04
     U-234     0.000E+00   2.830E-04   1.320E-01   8.930E-07
     TH-230    0.000E+00   5.480E-04   3.260E-01   2.040E-06
     RA-226    0.000E+00   1.330E-03   8.600E-03   1.040E-02
     PB-210    0.000E+00   7.270E-03   2.320E-02   1.050E-05

 Source:  2
         Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 15:22:55  Page:   5 **
 Title : Sensitivity Analysis for Pu-242
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu242Sens.bld


     PU-242    1.000E+00   3.360E-03   4.110E-01   4.690E-07
     U-238     0.000E+00   2.690E-04   1.180E-01   1.600E-04
     U-234     0.000E+00   2.830E-04   1.320E-01   8.930E-07
     TH-230    0.000E+00   5.480E-04   3.260E-01   2.040E-06
     RA-226    0.000E+00   1.330E-03   8.600E-03   1.040E-02
     PB-210    0.000E+00   7.270E-03   2.320E-02   1.050E-05

 Source:  3
         Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     PU-242    1.000E+00   3.360E-03   4.110E-01   4.690E-07
     U-238     0.000E+00   2.690E-04   1.180E-01   1.600E-04
     U-234     0.000E+00   2.830E-04   1.320E-01   8.930E-07
     TH-230    0.000E+00   5.480E-04   3.260E-01   2.040E-06
     RA-226    0.000E+00   1.330E-03   8.600E-03   1.040E-02
     PB-210    0.000E+00   7.270E-03   2.320E-02   1.050E-05
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 15:22:55  Page:   6 **
 Title : Sensitivity Analysis for Pu-242
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu242Sens.bld



 Source:  4
        Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]

             Radon Release Fraction:   1.000E-01



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    PU-242    1.000E+00   3.360E-03   4.110E-01   4.690E-07
    U-238     0.000E+00   2.690E-04   1.180E-01   1.600E-04
    U-234     0.000E+00   2.830E-04   1.320E-01   8.930E-07
    TH-230    0.000E+00   5.480E-04   3.260E-01   2.040E-06
    RA-226    0.000E+00   1.330E-03   8.600E-03   1.040E-02
    PB-210    0.000E+00   7.270E-03   2.320E-02   1.050E-05

 Source:  5
        Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]

             Radon Release Fraction:   1.000E-01



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    PU-242    1.000E+00   3.360E-03   4.110E-01   4.690E-07
    U-238     0.000E+00   2.690E-04   1.180E-01   1.600E-04
    U-234     0.000E+00   2.830E-04   1.320E-01   8.930E-07
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 15:22:55  Page:   7 **
 Title : Sensitivity Analysis for Pu-242
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu242Sens.bld


     TH-230    0.000E+00   5.480E-04   3.260E-01   2.040E-06
     RA-226    0.000E+00   1.330E-03   8.600E-03   1.040E-02
     PB-210    0.000E+00   7.270E-03   2.320E-02   1.050E-05
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 07:11:45  Page:   2 **
 Title : Sensitivity Analysis for Cm-244
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cm244Sens.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    3.000    3.000    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 07:11:45  Page:   3 **
 Title : Sensitivity Analysis for Cm-244
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cm244Sens.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


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


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 1.07E+02
    H1:   3.700      *           Room  1           *      Q10 :  1.07E+02
                     *   LAMBDA: 8.00E-01          *
   Area  36.000      *                            *
                     *                            *
                     ******************************


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 07:11:45  Page:   4 **
 Title : Sensitivity Analysis for Cm-244
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cm244Sens.bld


              ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
         Location::  Room :  1  x:   3.00 y:   3.00  z:   0.00[m]
         Geometry::  Type: Area        Area:3.60E+01 [m2]  Direction: z
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     CM-244    1.000E+00   2.020E-03   2.480E-01   5.740E-07
     PU-240    0.000E+00   3.540E-03   4.290E-01   5.560E-07
     U-236     0.000E+00   2.690E-04   1.250E-01   5.860E-07
     TH-232    0.000E+00   2.730E-03   1.640E+00   1.020E-06
     TH-228    0.000E+00   8.080E-04   3.450E-01   9.410E-03
     RA-228    0.000E+00   1.440E-03   5.080E-03   5.590E-03

 Source:  2
         Location::  Room :  1  x:   0.00 y:   3.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 07:11:45  Page:   5 **
 Title : Sensitivity Analysis for Cm-244
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cm244Sens.bld


     CM-244    1.000E+00   2.020E-03   2.480E-01   5.740E-07
     PU-240    0.000E+00   3.540E-03   4.290E-01   5.560E-07
     U-236     0.000E+00   2.690E-04   1.250E-01   5.860E-07
     TH-232    0.000E+00   2.730E-03   1.640E+00   1.020E-06
     TH-228    0.000E+00   8.080E-04   3.450E-01   9.410E-03
     RA-228    0.000E+00   1.440E-03   5.080E-03   5.590E-03

 Source:  3
         Location::  Room :  1  x:   3.00 y:   6.00  z:   1.85[m]
         Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    1.340E-06 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       5.000E-01
              Time to Remove:           3.653E+02 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                    (pCi/m3)]
     CM-244    1.000E+00   2.020E-03   2.480E-01   5.740E-07
     PU-240    0.000E+00   3.540E-03   4.290E-01   5.560E-07
     U-236     0.000E+00   2.690E-04   1.250E-01   5.860E-07
     TH-232    0.000E+00   2.730E-03   1.640E+00   1.020E-06
     TH-228    0.000E+00   8.080E-04   3.450E-01   9.410E-03
     RA-228    0.000E+00   1.440E-03   5.080E-03   5.590E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 07:11:45  Page:   6 **
 Title : Sensitivity Analysis for Cm-244
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cm244Sens.bld



 Source:  4
        Location::  Room :  1  x:   6.00 y:   3.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]

             Radon Release Fraction:   1.000E-01



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    CM-244    1.000E+00   2.020E-03   2.480E-01   5.740E-07
    PU-240    0.000E+00   3.540E-03   4.290E-01   5.560E-07
    U-236     0.000E+00   2.690E-04   1.250E-01   5.860E-07
    TH-232    0.000E+00   2.730E-03   1.640E+00   1.020E-06
    TH-228    0.000E+00   8.080E-04   3.450E-01   9.410E-03
    RA-228    0.000E+00   1.440E-03   5.080E-03   5.590E-03

 Source:  5
        Location::  Room :  1  x:   3.00 y:   0.00  z:   1.85[m]
        Geometry::  Type: Area        Area:2.22E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    1.340E-06 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       5.000E-01
             Time to Remove:           3.653E+02 [day]

             Radon Release Fraction:   1.000E-01



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [pCi/m2]    [mrem/pCi]  [mrem/pCi]  [mrem/yr/
                                                   (pCi/m3)]
    CM-244    1.000E+00   2.020E-03   2.480E-01   5.740E-07
    PU-240    0.000E+00   3.540E-03   4.290E-01   5.560E-07
    U-236     0.000E+00   2.690E-04   1.250E-01   5.860E-07
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 07:11:45  Page:   7 **
 Title : Sensitivity Analysis for Cm-244
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cm244Sens.bld


     TH-232    0.000E+00   2.730E-03   1.640E+00   1.020E-06
     TH-228    0.000E+00   8.080E-04   3.450E-01   9.410E-03
     RA-228    0.000E+00   1.440E-03   5.080E-03   5.590E-03
```

Attachment 8.5

RESRAD-BUILD v3.22 Sensitivity Analysis Distribution Parameters and Sensitive Parameter Results

Table 8.5-1, RESRAD-BUILD v3.22 Sensitivity Analysis Distribution Parameters and Sensitive Parameter Results – Industrial Worker Scenario

Parameter	Priority[1]	Distribution	Distribution's Statistical Parameters[2]				PRCC[3]	25% or 75% Quartile	Assigned Parameter Value
			1	2	3	4			
Resuspension rate	1	Loguniform	2.5E-11	1.3E-05			-0.30	25%	4.15E-09
Removable fraction	1	Triangular	0.0	1.0	0.1		0.94	75%	0.552
Deposition velocity	2	Loguniform	2.7E-06	2.7E-03			0.27	75%	4.78E-04
Room height	2	Triangular	2.4	9.1	3.7		-0.18	25%	3.89
Room area	2	Triangular	3	900	36		-0.40	25%	137
Air exchange rate	2	Truncated lognormal-n	0.4187	0.88	0.001	0.999	-0.29	25%	0.835
Receptor breathing/inhalation rate	2	Triangular	12	46	33.6		0.18	75%	35.7
Indirect ingestion rate	2	Loguniform	2.8E-05	2.9E-04			0.11	75%	1.61E-04
Air release fraction	2	Triangular	1E-06	1	0.07		0.21	75%	0.517
Source lifetime	2	Triangular	1,000	100,000	10,000		0.21	75%	52800

Notes:

[1]1 = high priority parameter, 2 = medium priority parameter

[2]Distribution's Statistical Parameter
Loguniform: 1 = minimum, 2 = maximum
Triangular: 1 = minimum, 2 = maximum, 3 = most likely
Truncated lognormal-n: 1 = underlying mean value, 2 = underlying standard deviation, 3 = lower quantile, 4 = upper quantile

[3]PRCC = Partial ranked correlation coefficient for Time 1

Table 8.5-2, Radionuclide Specific RESRAD-BUILD Sensitive Parameters

	Radionuclide											
	H-3		C-14		Na-22		Fe-55		Ni-59		Co-60	
Rank	Parameter	PRCC	Parameter	PRCC	Parameter	PRCC	Parameter	PRCC	Parameter	PRCC	Parameter	PRCC
1	RMVFR(S1)	0.94	RMVFR(S1)	0.93	RMVFR(S1)	0.92	RMVFR(S1)	0.94	RMVFR(S1)	0.93	RMVFR(S1)	0.93
2	RMVFR(S3)	0.87	RMVFR(S3)	0.85	RMVFR(S3)	0.86	RMVFR(S3)	0.87	RMVFR(S3)	0.84	RMVFR(S3)	0.87
3	RMVFR(S2)	0.87	RMVFR(S5)	0.85	RMVFR(S5)	0.85	RMVFR(S2)	0.87	RMVFR(S5)	0.84	RMVFR(S5)	0.86
4	RMVFR(S5)	0.86	RMVFR(S2)	0.85	RMVFR(S2)	0.84	RMVFR(S5)	0.86	RMVFR(S2)	0.84	RMVFR(S2)	0.86
5	RMVFR(S4)	0.86	RMVFR(S4)	0.85	RMVFR(S4)	0.84	RMVFR(S4)	0.86	RMVFR(S4)	0.83	RMVFR(S4)	0.85
6			UD	0.13	RF0(S1)	0.34	AREA	-0.11	AREA	-0.23	AREA	-0.19
7					RF0(S4)	0.16			BRTRATE	0.12	RF0(S1)	0.17
8					RF0(S2)	0.14			H	-0.11		
9					AREA	-0.11						
10					RF0(S3)	0.11						
11												
12												
13												
14												
15												

	Radionuclide											
	Ni-63		Sr-90		Nb-94		Tc-99		Ag-108m		Sb-125	
Rank	Parameter	PRCC	Parameter	PRCC	Parameter	PRCC	Parameter	PRCC	Parameter	PRCC	Parameter	PRCC
1	RMVFR(S1)	0.93	RMVFR(S1)	0.94	RMVFR(S1)	0.77	RMVFR(S1)	0.93	RMVFR(S1)	0.80	RMVFR(S1)	0.93
2	RMVFR(S3)	0.86	RMVFR(S3)	0.87	RMVFR(S5)	0.65	RMVFR(S3)	0.85	RMVFR(S5)	0.69	RMVFR(S3)	0.87
3	RMVFR(S2)	0.85	RMVFR(S2)	0.86	RMVFR(S3)	0.65	RMVFR(S5)	0.85	RMVFR(S3)	0.69	RMVFR(S5)	0.86
4	RMVFR(S5)	0.85	RMVFR(S5)	0.86	RMVFR(S2)	0.64	RMVFR(S2)	0.84	RMVFR(S2)	0.67	RMVFR(S2)	0.86
5	RMVFR(S4)	0.85	RMVFR(S4)	0.86	RMVFR(S4)	0.61	RMVFR(S4)	0.84	RMVFR(S4)	0.65	RMVFR(S4)	0.85
6	AREA	-0.21	AREA	-0.17	AREA	-0.37	AREA	-0.16	AREA	-0.34	RF0(S1)	0.23
7	BRTRATE	0.11			DKSUS	-0.30	UD	0.12	DKSUS	-0.29	AREA	-0.14
8					LAMBDAT	-0.29			UD	0.27	RF0(S4)	0.13
9					UD	0.27			LAMBDAT	-0.24	RF0(S2)	0.11
10					AIRFR(S4)	0.21			AIRFR(S4)	0.21		
11					AIRFR(S5)	0.20			RF0(S1)	0.20		
12					H	-0.17			AIRFR(S5)	0.19		
13					RF0(S1)	0.15			H	-0.18		
14					BRTRATE	0.15			BRTRATE	0.12		
15												

Table 8.5-2, Radionuclide Specific Sensitive RESRAD-BUILD Parameters, Cont.												
	Radionuclide											
	Cs-134		Cs-137		Pm-147		Eu-152		Eu-154		Eu-155	
Rank	Parameter	PRCC	Parameter	PRCC	Parameter	PRCC	Parameter	PRCC	Parameter	PRCC	Parameter	PRCC
1	RMVFR(S1)	0.94	RMVFR(S1)	0.94	RMVFR(S1)	0.92	RMVFR(S1)	0.88	RMVFR(S1)	0.71	RMVFR(S1)	0.93
2	RMVFR(S3)	0.87	RMVFR(S3)	0.87	RMVFR(S3)	0.83	RMVFR(S3)	0.79	RMVFR(S3)	0.67	RMVFR(S3)	0.85
3	RMVFR(S5)	0.87	RMVFR(S5)	0.86	RMVFR(S2)	0.83	RMVFR(S5)	0.78	RMVFR(S5)	0.67	RMVFR(S2)	0.84
4	RMVFR(S2)	0.87	RMVFR(S2)	0.86	RMVFR(S5)	0.81	RMVFR(S2)	0.77	RMVFR(S2)	0.61	RMVFR(S5)	0.84
5	RMVFR(S4)	0.86	RMVFR(S4)	0.86	RMVFR(S4)	0.81	RMVFR(S4)	0.76	RMVFR(S4)	0.60	RMVFR(S4)	0.84
6					AREA	-0.37	AREA	-0.40	RF0(S1)	0.52	AREA	-0.34
7					LAMBDAT	-0.18	LAMBDAT	-0.23	AREA	-0.34	BRTRATE	0.16
8					BRTRATE	0.18	RF0(S1)	0.23	UD	0.22	LAMBDAT	-0.15
9					AIRFR(S5)	0.12	AIRFR(S5)	0.18	RF0(S4)	0.21	AIRFR(S4)	0.12
10					AIRFR(S4)	0.12	H	-0.17	AIRFR(S4)	0.20		
11							AIRFR(S4)	0.17	DKSUS	-0.20		
12							UD	0.16	LAMBDAT	-0.19		
13							BRTRATE	0.15	AIRFR(S5)	0.19		
14							DKSUS	-0.12	H	-0.17		
15							RF0(S2)	0.11	RF0(S3)	0.17		
16									RF0(S5)	0.16		
17									RF0(S2)	0.15		

Table 8.5-2, Radionuclide Specific Sensitive RESRAD-BUILD Parameters, Cont.

	Radionuclide											
	Np-237		Pu-238		Pu-239		Pu-240		Pu-241		Am-241	
Rank	Parameter	PRCC	Parameter	PRCC	Parameter	PRCC	Parameter	PRCC	Parameter	PRCC	Parameter	PRCC
1	RMVFR(S1)	0.84	RMVFR(S1)	0.85	RMVFR(S1)	0.79	RMVFR(S1)	0.80	RMVFR(S1)	0.86	RMVFR(S1)	0.82
2	RMVFR(S4)	0.69	RMVFR(S2)	0.71	RMVFR(S2)	0.64	RMVFR(S2)	0.64	RMVFR(S2)	0.74	RMVFR(S4)	0.67
3	RMVFR(S2)	0.69	RMVFR(S4)	0.71	RMVFR(S5)	0.62	RMVFR(S3)	0.63	RMVFR(S4)	0.73	RMVFR(S2)	0.67
4	RMVFR(S3)	0.68	RMVFR(S3)	0.70	RMVFR(S3)	0.62	RMVFR(S5)	0.63	RMVFR(S3)	0.73	RMVFR(S3)	0.67
5	RMVFR(S5)	0.68	RMVFR(S5)	0.70	RMVFR(S4)	0.62	RMVFR(S4)	0.63	RMVFR(S5)	0.72	RMVFR(S5)	0.65
6	AREA	-0.55	AREA	-0.53	AREA	-0.47	AREA	-0.48	AREA	-0.53	AREA	-0.51
7	LAMBDAT	-0.42	LAMBDAT	-0.39	LAMBDAT	-0.37	LAMBDAT	-0.38	LAMBDAT	-0.37	LAMBDAT	-0.39
8	BRTRATE	0.27	BRTRATE	0.26	BRTRATE	0.24	BRTRATE	0.24	BRTRATE	0.26	BRTRATE	0.26
9	AIRFR(S5)	0.19	AIRFR(S5)	0.18	DKSUS	-0.20	DKSUS		AIRFR(S5)	0.17	AIRFR(S5)	0.17
10	H	-0.16	H	-0.15	AIRFR(S5)	0.19	AIRFR(S5)	0.19	AIRFR(S4)	0.13	H	-0.17
11	AIRFR(S4)	0.15	AIRFR(S4)	0.14	UD	0.18	H	-0.18	H	-0.13	AIRFR(S4)	0.14
12	RF0(S4)	-0.12	RF0(S4)	-0.12	H	-0.18	UD	0.17	RF0(S4)	-0.13	UD	0.12
13			INGE2	0.11	AIRFR(S4)	0.16	AIRFR(S4)	0.16	INGE2	0.11	RF0(S4)	-0.11
14					RF0(S4)	-0.11	RF0(S4)	-0.11				
15												

	Radionuclide											
	Pu-242		Cm-244									
Rank	Parameter	PRCC	Parameter	PRCC	Parameter	PRCC	Parameter	PRCC	Parameter	PRCC	Parameter	PRCC
1	RMVFR(S1)	0.79	RMVFR(S1)	0.86								
2	RMVFR(S2)	0.63	RMVFR(S2)	0.74								
3	RMVFR(S5)	0.62	RMVFR(S4)	0.73								
4	RMVFR(S3)	0.62	RMVFR(S3)	0.72								
5	RMVFR(S4)	0.62	RMVFR(S5)	0.72								
6	AREA	-0.47	AREA	-0.53								
7	LAMBDAT	-0.38	LAMBDAT	-0.37								
8	BRTRATE	0.23	BRTRATE	0.26								
9	DKSUS	-0.20	AIRFR(S5)	0.17								
10	AIRFR(S5)	0.19	AIRFR(S4)	0.13								
11	UD	0.18	RF0(S4)	-0.12								
12	H	-0.18	H	-0.12								
13	AIRFR(S4)	0.16	INGE2	0.11								
14	RF0(S4)	-0.11										
15												

Parameter Code Explanation

UD--Deposition velocity
AIRFR--Air release fraction
AREA--Room area
BRTRATE--Receptor breathing/inhalation rate
DKSUS--Resuspension rate
H--Room height
INGE2--Indirect ingestion rate
LAMBDAT--Air exchange rate
RF0--Source lifetime (also time for source removal)
RMVFR--Removable fraction
(S#) Source number

Attachment 8.6

RESRAD-BUILD v3.22 Probabilistic Output Report Nuclide Specific Information for Probabilistic Input Parameters and Parameter Sensitivity Results

```
** RESRAD-BUILD Probabilistic Output 3.22 06/28/04 15:36:35 Page:   2 **
 Title      : Sensitivity Analysis for Tritium
 Input File : C:\Program Files\RESRAD_Family\BUILD\H3Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.8E-10	.000014		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.2	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.2	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.2	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.2	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.2	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 06/28/04 15:36:35 Page:  25 **
 Title      : Sensitivity Analysis for Tritium
 Input File : C:\Program Files\RESRAD_Family\BUILD\H3Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	8	0.06
Resuspension Rate	21	0.00
Room height	13	-0.05
Floor area	6	-0.08
Building Exchange Rate	7	0.08
Breathing Rate of receptor 1	12	0.05
Receptor Ingestion Rate of receptor 1	15	0.04
Air fraction of 1	11	-0.05
Removable fraction of 1	1	0.94
Release time of 1	19	-0.01
Air fraction of 2	20	0.01
Removable fraction of 2	3	0.87
Release time of 2	9	0.06
Air fraction of 3	14	0.05
Removable fraction of 3	2	0.87
Release time of 3	18	0.02
Air fraction of 4	16	0.04
Removable fraction of 4	5	0.86
Release time of 4	10	0.06
Air fraction of 5	22	0.00
Removable fraction of 5	4	0.86
Release time of 5	17	0.02
R-SQUARE		0.95

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 06/28/04 15:48:37 Page:   2 **
 Title      : Sensitivity Analysis for C-14
 Input File : C:\Program Files\RESRAD_Family\BUILD\C14Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.8E-10	.000014		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.2	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.2	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.2	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.2	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.2	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 06/28/04 15:48:37 Page:  25 **
 Title      : Sensitivity Analysis for C-14
 Input File : C:\Program Files\RESRAD_Family\BUILD\C14Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	6	0.13
Resuspension Rate	8	-0.09
Room height	10	-0.08
Floor area	7	-0.10
Building Exchange Rate	17	0.03
Breathing Rate of receptor 1	13	0.06
Receptor Ingestion Rate of receptor 1	18	0.03
Air fraction of 1	15	-0.04
Removable fraction of 1	1	0.93
Release time of 1	22	-0.01
Air fraction of 2	11	0.06
Removable fraction of 2	4	0.85
Release time of 2	9	0.09
Air fraction of 3	16	0.04
Removable fraction of 3	2	0.85
Release time of 3	21	0.01
Air fraction of 4	12	0.06
Removable fraction of 4	5	0.85
Release time of 4	14	0.05
Air fraction of 5	20	0.02
Removable fraction of 5	3	0.85
Release time of 5	19	0.02
R-SQUARE		0.95

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 06/28/04 16:15:20 Page:   2 **
 Title      : Sensitivity Analysis for Na-22
 Input File : C:\Program Files\RESRAD_Family\BUILD\Na22Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.8E-10	.000014		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.2	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.2	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.2	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.2	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.2	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 06/28/04 16:15:20 Page:  25 **
 Title      : Sensitivity Analysis for Na-22
 Input File : C:\Program Files\RESRAD_Family\BUILD\Na22Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	11	0.10
Resuspension Rate	17	-0.04
Room height	14	-0.06
Floor area	9	-0.11
Building Exchange Rate	20	0.03
Breathing Rate of receptor 1	22	0.01
Receptor Ingestion Rate of receptor 1	18	0.03
Air fraction of 1	19	-0.03
Removable fraction of 1	1	0.92
Release time of 1	6	0.34
Air fraction of 2	21	-0.02
Removable fraction of 2	4	0.84
Release time of 2	8	0.14
Air fraction of 3	15	0.05
Removable fraction of 3	2	0.86
Release time of 3	10	0.11
Air fraction of 4	13	0.08
Removable fraction of 4	5	0.84
Release time of 4	7	0.16
Air fraction of 5	16	0.04
Removable fraction of 5	3	0.85
Release time of 5	12	0.10
R-SQUARE		0.94

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 06/29/04 07:27:08 Page:   2 **
 Title      : Sensitivity Analysis for Fe-55
 Input File : C:\Program Files\RESRAD_Family\BUILD\Fe55Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.8E-10	.000014		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.2	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.2	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.2	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.2	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.2	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 06/29/04 07:27:08 Page:  25 **
 Title      : Sensitivity Analysis for Fe-55
 Input File : C:\Program Files\RESRAD_Family\BUILD\Fe55Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	11	0.05
Resuspension Rate	17	0.03
Room height	14	-0.05
Floor area	6	-0.11
Building Exchange Rate	9	0.05
Breathing Rate of receptor 1	7	0.07
Receptor Ingestion Rate of receptor 1	16	0.04
Air fraction of 1	13	-0.05
Removable fraction of 1	1	0.94
Release time of 1	21	-0.01
Air fraction of 2	22	0.00
Removable fraction of 2	3	0.87
Release time of 2	8	0.05
Air fraction of 3	10	0.05
Removable fraction of 3	2	0.87
Release time of 3	18	0.02
Air fraction of 4	12	0.05
Removable fraction of 4	5	0.86
Release time of 4	15	0.05
Air fraction of 5	19	0.02
Removable fraction of 5	4	0.86
Release time of 5	20	0.01
R-SQUARE		0.95

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 06/29/04 07:50:26 Page:   2 **
 Title      : Sensitivity Analysis for Ni-59
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni59Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.8E-10	.000014		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.2	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.2	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.2	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.2	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.2	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 06/29/04 07:50:26 Page:  25 **
 Title      : Sensitivity Analysis for Ni-59
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni59Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	9	0.10
Resuspension Rate	11	-0.08
Room height	8	-0.11
Floor area	6	-0.23
Building Exchange Rate	12	-0.07
Breathing Rate of receptor 1	7	0.12
Receptor Ingestion Rate of receptor 1	16	0.04
Air fraction of 1	17	-0.03
Removable fraction of 1	1	0.93
Release time of 1	22	-0.01
Air fraction of 2	15	0.06
Removable fraction of 2	4	0.84
Release time of 2	14	0.07
Air fraction of 3	18	0.03
Removable fraction of 3	2	0.84
Release time of 3	19	0.02
Air fraction of 4	10	0.10
Removable fraction of 4	5	0.83
Release time of 4	20	0.01
Air fraction of 5	13	0.07
Removable fraction of 5	3	0.84
Release time of 5	21	0.01
R-SQUARE		0.94

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 06/28/04 12:50:39 Page:   2 **
 Title      : Sensitivity Analysis for Co-60
 Input File : C:\Program Files\RESRAD_Family\BUILD\Co60Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.8E-10	.000014		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.2	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.2	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.2	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.2	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.2	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 06/28/04 12:50:39 Page:  25 **
 Title      : Sensitivity Analysis for Co-60
 Input File : C:\Program Files\RESRAD_Family\BUILD\Co60Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	11	0.09
Resuspension Rate	21	-0.03
Room height	13	-0.08
Floor area	6	-0.19
Building Exchange Rate	20	-0.03
Breathing Rate of receptor 1	12	0.08
Receptor Ingestion Rate of receptor 1	18	0.03
Air fraction of 1	19	-0.03
Removable fraction of 1	1	0.93
Release time of 1	7	0.17
Air fraction of 2	22	0.00
Removable fraction of 2	4	0.86
Release time of 2	8	0.10
Air fraction of 3	17	0.05
Removable fraction of 3	2	0.87
Release time of 3	16	0.05
Air fraction of 4	10	0.09
Removable fraction of 4	5	0.85
Release time of 4	9	0.09
Air fraction of 5	15	0.05
Removable fraction of 5	3	0.86
Release time of 5	14	0.06
R-SQUARE		0.95

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 06/29/04 08:13:17 Page:   2 **
 Title      : Sensitivity Analysis for Ni-63
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni63Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.8E-10	.000014		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.2	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.2	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.2	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.2	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.2	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 06/29/04 08:13:17 Page:  25 **
 Title      : Sensitivity Analysis for Ni-63
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni63Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	9	0.08
Resuspension Rate	16	-0.04
Room height	8	-0.10
Floor area	6	-0.21
Building Exchange Rate	13	-0.05
Breathing Rate of receptor 1	7	0.11
Receptor Ingestion Rate of receptor 1	14	0.04
Air fraction of 1	15	-0.04
Removable fraction of 1	1	0.93
Release time of 1	22	0.00
Air fraction of 2	18	0.04
Removable fraction of 2	3	0.85
Release time of 2	11	0.06
Air fraction of 3	17	0.04
Removable fraction of 3	2	0.86
Release time of 3	21	0.02
Air fraction of 4	10	0.08
Removable fraction of 4	5	0.85
Release time of 4	19	0.03
Air fraction of 5	12	0.06
Removable fraction of 5	4	0.85
Release time of 5	20	0.02
R-SQUARE		0.95

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 06/29/04 08:24:56 Page:   2 **
 Title      : Sensitivity Analysis for Sr-90
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sr90Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.8E-10	.000014		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.2	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.2	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.2	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.2	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.2	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Probabilistic Output 3.22 06/29/04 09:26:50 Page:   2 **
 Title      : Sensitivity Analysis for Nb-94
 Input File : C:\Program Files\RESRAD_Family\BUILD\Nb94Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.8E-10	.000014		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.2	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.2	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.2	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.2	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.2	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 06/29/04 09:26:50 Page:  25 **
 Title      : Sensitivity Analysis for Nb-94
 Input File : C:\Program Files\RESRAD_Family\BUILD\Nb94Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	9	0.27
Resuspension Rate	7	-0.30
Room height	12	-0.17
Floor area	6	-0.37
Building Exchange Rate	8	-0.29
Breathing Rate of receptor 1	14	0.15
Receptor Ingestion Rate of receptor 1	21	0.02
Air fraction of 1	18	0.03
Removable fraction of 1	1	0.77
Release time of 1	13	0.15
Air fraction of 2	15	0.09
Removable fraction of 2	4	0.64
Release time of 2	16	0.06
Air fraction of 3	17	0.05
Removable fraction of 3	3	0.65
Release time of 3	20	0.02
Air fraction of 4	10	0.21
Removable fraction of 4	5	0.61
Release time of 4	22	-0.01
Air fraction of 5	11	0.20
Removable fraction of 5	2	0.65
Release time of 5	19	0.03
R-SQUARE		0.83

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 06/29/04 10:08:35 Page:   2 **
 Title      : Sensitivity Analysis for Tc-99
 Input File : C:\Program Files\RESRAD_Family\BUILD\Tc99Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.8E-10	.000014		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.2	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.2	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.2	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.2	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.2	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 06/29/04 10:08:35 Page:  25 **
 Title      : Sensitivity Analysis for Tc-99
 Input File : C:\Program Files\RESRAD_Family\BUILD\Tc99Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	7	0.12
Resuspension Rate	10	-0.08
Room height	9	-0.09
Floor area	6	-0.16
Building Exchange Rate	20	-0.02
Breathing Rate of receptor 1	8	0.09
Receptor Ingestion Rate of receptor 1	18	0.03
Air fraction of 1	15	-0.04
Removable fraction of 1	1	0.93
Release time of 1	22	-0.01
Air fraction of 2	13	0.06
Removable fraction of 2	4	0.84
Release time of 2	12	0.08
Air fraction of 3	14	0.04
Removable fraction of 3	2	0.85
Release time of 3	21	0.01
Air fraction of 4	11	0.08
Removable fraction of 4	5	0.84
Release time of 4	17	0.03
Air fraction of 5	16	0.04
Removable fraction of 5	3	0.85
Release time of 5	19	0.02
R-SQUARE		0.94

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 06/29/04 10:46:38 Page:   2 **
 Title      : Sensitivity Analysis for Ag-108m
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ag108Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.8E-10	.000014		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.2	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.2	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.2	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.2	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.2	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 06/29/04 10:46:38 Page:  25 **
 Title      : Sensitivity Analysis for Ag-108m
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ag108Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	8	0.27
Resuspension Rate	7	-0.29
Room height	13	-0.18
Floor area	6	-0.34
Building Exchange Rate	9	-0.24
Breathing Rate of receptor 1	14	0.12
Receptor Ingestion Rate of receptor 1	22	-0.01
Air fraction of 1	21	0.03
Removable fraction of 1	1	0.80
Release time of 1	11	0.20
Air fraction of 2	16	0.08
Removable fraction of 2	4	0.67
Release time of 2	15	0.09
Air fraction of 3	18	0.04
Removable fraction of 3	3	0.69
Release time of 3	19	0.04
Air fraction of 4	10	0.21
Removable fraction of 4	5	0.65
Release time of 4	20	0.03
Air fraction of 5	12	0.19
Removable fraction of 5	2	0.69
Release time of 5	17	0.05
R-SQUARE		0.85

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 06/29/04 11:51:51 Page:   2 **
 Title      : Sensitivity Analysis for Sb-125
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sb125Sens.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300
```

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.8E-10	.000014		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.2	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.2	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.2	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.2	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.2	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 06/29/04 11:51:51 Page:  25 **
 Title      : Sensitivity Analysis for Sb-125
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sb125Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	10	0.09
Resuspension Rate	21	-0.02
Room height	14	-0.07
Floor area	7	-0.14
Building Exchange Rate	20	0.03
Breathing Rate of receptor 1	18	0.04
Receptor Ingestion Rate of receptor 1	16	0.04
Air fraction of 1	19	-0.03
Removable fraction of 1	1	0.93
Release time of 1	6	0.23
Air fraction of 2	22	-0.01
Removable fraction of 2	4	0.86
Release time of 2	9	0.11
Air fraction of 3	15	0.05
Removable fraction of 3	2	0.87
Release time of 3	12	0.08
Air fraction of 4	11	0.08
Removable fraction of 4	5	0.85
Release time of 4	8	0.13
Air fraction of 5	17	0.04
Removable fraction of 5	3	0.86
Release time of 5	13	0.07
R-SQUARE		0.95

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 12/21/04 11:02:38 Page:   2 **
 Title      : Sensitivity Analysis for Cs-134
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs134Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.8E-10	.000014		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.2	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.2	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.2	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.2	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.2	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 12/21/04 11:02:38 Page:  25 **
 Title      : Sensitivity Analysis for Cs-134
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs134Sens.BLD
 ____________________________________________________________________________________

  Coefficients for Total     at Time:   1
          Coefficient  =                                  PRCC
           Repetition  =                                     1
  ____________________________________________________ ___________
  Description of Probabilistic Variable                Sig Coeff
  ____________________________________________________ ___ _____
  Deposition Velocity                                   10  0.06
  Resuspension Rate                                     20  0.01
  Room height                                           13 -0.04
  Floor area                                             9 -0.06
  Building Exchange Rate                                 6  0.08
  Breathing Rate of receptor  1                         16  0.04
  Receptor Ingestion Rate of receptor  1                14  0.04
  Air fraction of  1                                    12 -0.05
  Removable fraction of  1                               1  0.94
  Release time of  1                                    15  0.04
  Air fraction of  2                                    21  0.00
  Removable fraction of  2                               4  0.87
  Release time of  2                                     7  0.07
  Air fraction of  3                                    11  0.05
  Removable fraction of  3                               2  0.87
  Release time of  3                                    19  0.02
  Air fraction of  4                                    17  0.04
  Removable fraction of  4                               5  0.86
  Release time of  4                                     8  0.07
  Air fraction of  5                                    22  0.00
  Removable fraction of  5                               3  0.87
  Release time of  5                                    18  0.04
  ____________________________________________________      _____
  R-SQUARE                                                  0.95
  ____________________________________________________      _____
 -Rank is set to zero if the dose is zero or the correlation matrix is singular.
 -R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it
 provides a measure of the variation in the dependent variable (Dose) explained
 by regression on the independent variables.
```

```
** RESRAD-BUILD Probabilistic Output 3.22 06/28/04 13:37:11 Page:   2 **
 Title      : Sensitivity Analysis for Cs-137
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs137Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.8E-10	.000014		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.2	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.2	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.2	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.2	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.2	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 06/28/04 13:37:11 Page:  25 **
 Title      : Sensitivity Analysis for Cs-137
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs137Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	6	0.10
Resuspension Rate	15	-0.04
Room height	10	-0.06
Floor area	7	-0.08
Building Exchange Rate	11	0.06
Breathing Rate of receptor 1	12	0.05
Receptor Ingestion Rate of receptor 1	19	0.03
Air fraction of 1	13	-0.05
Removable fraction of 1	1	0.94
Release time of 1	20	0.02
Air fraction of 2	17	0.03
Removable fraction of 2	4	0.86
Release time of 2	8	0.08
Air fraction of 3	16	0.04
Removable fraction of 3	2	0.87
Release time of 3	21	0.02
Air fraction of 4	14	0.05
Removable fraction of 4	5	0.86
Release time of 4	9	0.07
Air fraction of 5	22	0.01
Removable fraction of 5	3	0.86
Release time of 5	18	0.03
R-SQUARE		0.95

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 06/29/04 12:50:42 Page:   2 **
 Title      : Sensitivity Analysis for Pm-147
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pm147Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.8E-10	.000014		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.2	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.2	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.2	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.2	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.2	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 06/29/04 12:50:42 Page:  25 **
 Title      : Sensitivity Analysis for Pm-147
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pm147Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	20	-0.01
Resuspension Rate	13	0.07
Room height	11	-0.09
Floor area	6	-0.37
Building Exchange Rate	7	-0.18
Breathing Rate of receptor 1	8	0.18
Receptor Ingestion Rate of receptor 1	12	0.07
Air fraction of 1	16	-0.02
Removable fraction of 1	1	0.92
Release time of 1	18	-0.02
Air fraction of 2	17	-0.02
Removable fraction of 2	3	0.83
Release time of 2	22	0.00
Air fraction of 3	14	0.07
Removable fraction of 3	2	0.83
Release time of 3	21	0.00
Air fraction of 4	10	0.12
Removable fraction of 4	5	0.81
Release time of 4	15	-0.05
Air fraction of 5	9	0.12
Removable fraction of 5	4	0.81
Release time of 5	19	-0.01
R-SQUARE		0.93

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 06/29/04 13:40:36 Page:   2 **
 Title      : Sensitivity Analysis for Eu-152
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu-152Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.8E-10	.000014		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.2	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.2	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.2	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.2	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.2	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 06/29/04 13:40:36 Page:  25 **
 Title      : Sensitivity Analysis for Eu-152
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu-152Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	12	0.16
Resuspension Rate	14	-0.12
Room height	10	-0.17
Floor area	6	-0.40
Building Exchange Rate	7	-0.23
Breathing Rate of receptor 1	13	0.15
Receptor Ingestion Rate of receptor 1	21	0.01
Air fraction of 1	22	0.00
Removable fraction of 1	1	0.88
Release time of 1	8	0.23
Air fraction of 2	20	0.03
Removable fraction of 2	4	0.77
Release time of 2	15	0.11
Air fraction of 3	18	0.04
Removable fraction of 3	2	0.79
Release time of 3	17	0.07
Air fraction of 4	11	0.17
Removable fraction of 4	5	0.76
Release time of 4	16	0.08
Air fraction of 5	9	0.18
Removable fraction of 5	3	0.78
Release time of 5	19	0.04
R-SQUARE		0.91

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 06/29/04 15:10:05 Page:   2 **
 Title      : Sensitivity Analysis for Eu-154
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu154Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.8E-10	.000014		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.2	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.2	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.2	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.2	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.2	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 06/29/04 15:10:05 Page:  25 **
 Title      : Sensitivity Analysis for Eu-154
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu154Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	8	0.22
Resuspension Rate	11	-0.20
Room height	14	-0.17
Floor area	7	-0.34
Building Exchange Rate	12	-0.19
Breathing Rate of receptor 1	19	0.04
Receptor Ingestion Rate of receptor 1	20	0.02
Air fraction of 1	21	0.01
Removable fraction of 1	1	0.71
Release time of 1	6	0.52
Air fraction of 2	22	-0.01
Removable fraction of 2	4	0.61
Release time of 2	17	0.15
Air fraction of 3	18	0.04
Removable fraction of 3	2	0.67
Release time of 3	15	0.17
Air fraction of 4	10	0.20
Removable fraction of 4	5	0.60
Release time of 4	9	0.21
Air fraction of 5	13	0.19
Removable fraction of 5	3	0.67
Release time of 5	16	0.16
R-SQUARE		0.83

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 06/29/04 16:36:54 Page:   2 **
 Title      : Sensitivity Analysis for Eu-155
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu155Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.8E-10	.000014		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.2	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.2	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.2	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.2	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.2	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 06/29/04 16:36:54 Page:  25 **
 Title      : Sensitivity Analysis for Eu-155
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu155Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	20	0.02
Resuspension Rate	15	0.04
Room height	11	-0.10
Floor area	6	-0.34
Building Exchange Rate	8	-0.15
Breathing Rate of receptor 1	7	0.16
Receptor Ingestion Rate of receptor 1	13	0.06
Air fraction of 1	18	-0.03
Removable fraction of 1	1	0.93
Release time of 1	12	0.06
Air fraction of 2	21	-0.01
Removable fraction of 2	3	0.84
Release time of 2	16	0.03
Air fraction of 3	14	0.05
Removable fraction of 3	2	0.85
Release time of 3	17	0.03
Air fraction of 4	9	0.12
Removable fraction of 4	5	0.84
Release time of 4	22	0.00
Air fraction of 5	10	0.11
Removable fraction of 5	4	0.84
Release time of 5	19	0.02
R-SQUARE		0.94

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 07/01/04 07:23:05 Page:   2 **
 Title      : Sensitivity Analysis for Np-237
 Input File : C:\Program Files\RESRAD_Family\BUILD\Np237Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.8E-10	.000014		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.2	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.2	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.2	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.2	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.2	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 07/01/04 07:23:05 Page:  25 **
 Title      : Sensitivity Analysis for Np-237
 Input File : C:\Program Files\RESRAD_Family\BUILD\Np237Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	16	0.07
Resuspension Rate	21	0.01
Room height	10	-0.16
Floor area	6	-0.55
Building Exchange Rate	7	-0.42
Breathing Rate of receptor 1	8	0.27
Receptor Ingestion Rate of receptor 1	14	0.08
Air fraction of 1	22	0.01
Removable fraction of 1	1	0.84
Release time of 1	15	-0.07
Air fraction of 2	20	0.03
Removable fraction of 2	3	0.69
Release time of 2	19	-0.03
Air fraction of 3	13	0.08
Removable fraction of 3	4	0.68
Release time of 3	18	-0.05
Air fraction of 4	11	0.15
Removable fraction of 4	2	0.69
Release time of 4	12	-0.12
Air fraction of 5	9	0.19
Removable fraction of 5	5	0.68
Release time of 5	17	-0.05
R-SQUARE		0.87

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 07/01/04 08:27:09 Page:   2 **
 Title      : Sensitivity Analysis for Pu-238
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu238Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.5E-11	.000013		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.1	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.1	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.1	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.1	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.1	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 07/01/04 08:27:09 Page:  25 **
 Title      : Sensitivity Analysis for Pu-238
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu238Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	16	0.06
Resuspension Rate	20	0.01
Room height	10	-0.15
Floor area	6	-0.53
Building Exchange Rate	7	-0.39
Breathing Rate of receptor 1	8	0.26
Receptor Ingestion Rate of receptor 1	13	0.11
Air fraction of 1	22	0.00
Removable fraction of 1	1	0.85
Release time of 1	15	-0.08
Air fraction of 2	21	0.01
Removable fraction of 2	2	0.71
Release time of 2	18	-0.04
Air fraction of 3	14	0.09
Removable fraction of 3	4	0.70
Release time of 3	17	-0.04
Air fraction of 4	11	0.14
Removable fraction of 4	3	0.71
Release time of 4	12	-0.12
Air fraction of 5	9	0.18
Removable fraction of 5	5	0.70
Release time of 5	19	-0.04
R-SQUARE		0.88

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 07/01/04 12:13:21 Page:   2 **
 Title      : Sensitivity Analysis for Pu-239
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu239Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.5E-11	.000013		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.1	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.1	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.1	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.1	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.1	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 07/01/04 12:13:21 Page:  25 **
 Title      : Sensitivity Analysis for Pu-239
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu239Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	11	0.18
Resuspension Rate	9	-0.20
Room height	12	-0.18
Floor area	6	-0.47
Building Exchange Rate	7	-0.37
Breathing Rate of receptor 1	8	0.24
Receptor Ingestion Rate of receptor 1	16	0.09
Air fraction of 1	22	0.02
Removable fraction of 1	1	0.79
Release time of 1	15	-0.09
Air fraction of 2	18	0.08
Removable fraction of 2	2	0.64
Release time of 2	21	-0.03
Air fraction of 3	17	0.08
Removable fraction of 3	4	0.62
Release time of 3	19	-0.05
Air fraction of 4	13	0.16
Removable fraction of 4	5	0.62
Release time of 4	14	-0.11
Air fraction of 5	10	0.19
Removable fraction of 5	3	0.62
Release time of 5	20	-0.04
R-SQUARE		0.84

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 07/06/04 06:33:05 Page:   2 **
 Title      : Sensitivity Analysis for Pu-240
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu240Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.5E-11	.000013		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.1	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.1	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.1	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.1	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.1	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 07/06/04 06:33:05 Page:  25 **
 Title      : Sensitivity Analysis for Pu-240
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu240Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	12	0.17
Resuspension Rate	9	-0.19
Room height	11	-0.18
Floor area	6	-0.48
Building Exchange Rate	7	-0.38
Breathing Rate of receptor 1	8	0.24
Receptor Ingestion Rate of receptor 1	16	0.09
Air fraction of 1	22	0.02
Removable fraction of 1	1	0.80
Release time of 1	15	-0.09
Air fraction of 2	18	0.08
Removable fraction of 2	2	0.64
Release time of 2	21	-0.03
Air fraction of 3	17	0.09
Removable fraction of 3	3	0.63
Release time of 3	19	-0.05
Air fraction of 4	13	0.16
Removable fraction of 4	5	0.63
Release time of 4	14	-0.11
Air fraction of 5	10	0.19
Removable fraction of 5	4	0.63
Release time of 5	20	-0.04
R-SQUARE		0.84

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 07/06/04 06:54:56 Page:   2 **
 Title      : Sensitivity Analysis for Pu-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu241Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.5E-11	.000013		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.1	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.1	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.1	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.1	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.1	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 07/06/04 06:54:56 Page:  25 **
 Title      : Sensitivity Analysis for Pu-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu241Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	22	0.00
Resuspension Rate	15	0.08
Room height	11	-0.13
Floor area	6	-0.53
Building Exchange Rate	7	-0.37
Breathing Rate of receptor 1	8	0.26
Receptor Ingestion Rate of receptor 1	13	0.11
Air fraction of 1	21	0.00
Removable fraction of 1	1	0.86
Release time of 1	16	-0.07
Air fraction of 2	20	-0.02
Removable fraction of 2	2	0.74
Release time of 2	17	-0.07
Air fraction of 3	14	0.10
Removable fraction of 3	4	0.73
Release time of 3	18	-0.04
Air fraction of 4	10	0.13
Removable fraction of 4	3	0.73
Release time of 4	12	-0.13
Air fraction of 5	9	0.17
Removable fraction of 5	5	0.72
Release time of 5	19	-0.04
R-SQUARE		0.89

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 07/07/04 07:20:01 Page:   2 **
 Title      : Sensitivity Analysis for Am-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Am241Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.5E-11	.000013		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.1	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.1	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.1	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.1	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.1	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 07/07/04 07:20:01 Page:  25 **
 Title      : Sensitivity Analysis for Am-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Am241Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	12	0.12
Resuspension Rate	14	-0.10
Room height	10	-0.17
Floor area	6	-0.51
Building Exchange Rate	7	-0.39
Breathing Rate of receptor 1	8	0.26
Receptor Ingestion Rate of receptor 1	15	0.10
Air fraction of 1	22	0.01
Removable fraction of 1	1	0.82
Release time of 1	16	-0.09
Air fraction of 2	19	0.05
Removable fraction of 2	3	0.67
Release time of 2	21	-0.03
Air fraction of 3	17	0.08
Removable fraction of 3	4	0.67
Release time of 3	18	-0.06
Air fraction of 4	11	0.14
Removable fraction of 4	2	0.67
Release time of 4	13	-0.11
Air fraction of 5	9	0.17
Removable fraction of 5	5	0.65
Release time of 5	20	-0.03
R-SQUARE		0.86

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 07/08/04 15:22:55 Page:   2 **
 Title      : Sensitivity Analysis for Pu-242
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu242Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.5E-11	.000013		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.1	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.1	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.1	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.1	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.1	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 07/08/04 15:22:55 Page:  25 **
 Title      : Sensitivity Analysis for Pu-242
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu242Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	11	0.18
Resuspension Rate	9	-0.20
Room height	12	-0.18
Floor area	6	-0.47
Building Exchange Rate	7	-0.38
Breathing Rate of receptor 1	8	0.23
Receptor Ingestion Rate of receptor 1	17	0.08
Air fraction of 1	22	0.02
Removable fraction of 1	1	0.79
Release time of 1	15	-0.09
Air fraction of 2	18	0.08
Removable fraction of 2	2	0.63
Release time of 2	21	-0.03
Air fraction of 3	16	0.09
Removable fraction of 3	4	0.62
Release time of 3	19	-0.05
Air fraction of 4	13	0.16
Removable fraction of 4	5	0.62
Release time of 4	14	-0.11
Air fraction of 5	10	0.19
Removable fraction of 5	3	0.62
Release time of 5	20	-0.04
R-SQUARE		0.84

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

```
** RESRAD-BUILD Probabilistic Output 3.22 07/08/04 07:11:45 Page:   2 **
 Title      : Sensitivity Analysis for Cm-244
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cm244Sens.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters			
1	UD	LOGUNIFORM	.0000027	.0027		
2	DKSUS	LOGUNIFORM	2.5E-11	.000013		
3	H(1)	TRIANGULAR	2.4	3.7	9.1	
4	AREA(1)	TRIANGULAR	3	36	900	
5	LAMBDAT	TRUNCATED LOGNORMAL-N	.4187	.88	.001	.999
6	BRTRATE(1)	TRIANGULAR	12	33.6	46	
7	INGE2(1)	LOGUNIFORM	.000028	.00029		
8	AIRFR(1)	TRIANGULAR	.000001	.07	1	
9	RMVFR(1)	TRIANGULAR	0	.1	1	
10	RF0(1, 1)	TRIANGULAR	1000	10000	100000	
11	AIRFR(2)	TRIANGULAR	.000001	.07	1	
12	RMVFR(2)	TRIANGULAR	0	.1	1	
13	RF0(2, 1)	TRIANGULAR	1000	10000	100000	
14	AIRFR(3)	TRIANGULAR	.000001	.07	1	
15	RMVFR(3)	TRIANGULAR	0	.1	1	
16	RF0(3, 1)	TRIANGULAR	1000	10000	100000	
17	AIRFR(4)	TRIANGULAR	.000001	.07	1	
18	RMVFR(4)	TRIANGULAR	0	.1	1	
19	RF0(4, 1)	TRIANGULAR	1000	10000	100000	
20	AIRFR(5)	TRIANGULAR	.000001	.07	1	
21	RMVFR(5)	TRIANGULAR	0	.1	1	
22	RF0(5, 1)	TRIANGULAR	1000	10000	100000	

```
** RESRAD-BUILD Regression and Correlation output 3.22 07/08/04 07:11:45 Page:  25 **
 Title      : Sensitivity Analysis for Cm-244
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cm244Sens.BLD
```

Coefficients for Total at Time: 1

Coefficient = PRCC

Repetition = 1

Description of Probabilistic Variable	Sig	Coeff
Deposition Velocity	22	0.00
Resuspension Rate	15	0.09
Room height	12	-0.12
Floor area	6	-0.53
Building Exchange Rate	7	-0.37
Breathing Rate of receptor 1	8	0.26
Receptor Ingestion Rate of receptor 1	13	0.11
Air fraction of 1	21	0.00
Removable fraction of 1	1	0.86
Release time of 1	16	-0.08
Air fraction of 2	20	-0.02
Removable fraction of 2	2	0.74
Release time of 2	17	-0.07
Air fraction of 3	14	0.10
Removable fraction of 3	4	0.72
Release time of 3	19	-0.04
Air fraction of 4	10	0.13
Removable fraction of 4	3	0.73
Release time of 4	11	-0.12
Air fraction of 5	9	0.17
Removable fraction of 5	5	0.72
Release time of 5	18	-0.04
R-SQUARE		0.89

-Rank is set to zero if the dose is zero or the correlation matrix is singular.
-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

Attachment 8.7

RESRAD-BUILD v3.22 Input Parameters for Probabilistic Derivation of DCGL Values

RESRAD-BUILD v3.22 Parameters for RSNGS Structural Surfaces DCGL Derivation – Industrial Worker Building Occupancy Scenario

Parameter							
Name	**Description**	**Class[1]**	**Priority[2]**	**Treatment[3]**	**Units**	**Parameter Value**	**Basis for Parameter Selection**
TIME PARAMETERS							
TTIME	Exposure duration	B	3	D	d	365.25	NUREG/CR-5512, Vol. 1
FTIN	Indoor fraction	B	2	D	-	0.267	NUREG/CR-5512, Vol. 3 Section 5.2.2.4 to match the 97.4 d/yr time in the building. This is the time the average member of the group spends in the building.
NTIME	Number of times for calculation	P	3	D	-	2	RESRAD-BUILD current default
DOSE_TIME	Time	P	3	D	yr	1	NUREG/CR-5512, Vol. 3 Section 5.2.2.4
POINT	Maximum time integration points	P	3	D	-	1	Argonne recommended value for probabilistic calculations
BUILDING PARAMETERS							
NROOM	Number of rooms	P	3	D	-	1	NUREG/CR-5512 building occupancy scenario assumes only one contaminated room
UD	Deposition velocity	P	2	S or D	m/s	4.78E-04	The result of sensitivity analysis
DKSUS	Resuspension rate	P, B	1	S or D	s^{-1}	1.33E-09	Calculated from the NUREG-1720 recommended DandD resuspension factor of 9.6E-07 m^{-1}, deposition velocity, air exchange rate and room height (see Section 6.2)
H	Room height	P	2	S	m	3.89	Result of sensitivity analysis
AREA	Room area	P	2	S	m^2	137	Result of sensitivity analysis
LAMBDAT (building); LINPUT (room)	Air exchange rate	B	2	S or D	1/h	0.835	The result of sensitivity analysis
Q12 and Q21; Q23 and Q32	Flow rate between rooms	B	3	D	m^3/h	0	This dose model contains only one receptor room
Q10 and Q01; Q20 and Q02; Q30 and Q03	Outdoor inflow and outflow	B, P	3	D	m^3/h	Not used	Outdoor inflow is calculated from room volume and air exchange rate
RECEPTOR PARAMETERS							

RESRAD-BUILD v3.22 Parameters for RSNGS Structural Surfaces DCGL Derivation – Industrial Worker Building Occupancy Scenario

Parameter							
Name	**Description**	**Class[1]**	**Priority[2]**	**Treatment[3]**	**Units**	**Parameter Value**	**Basis for Parameter Selection**
ND	Number of receptors	B	3	D	-	1	This dose model contains only one receptor
DLVL	Receptor room	B	3	D	-	1	This dose model contains only one receptor room
DX	Receptor location (x, y, z)	B	3	D	m	5.85, 5.85, 1	Center of the room's floor
TWGHT	Receptor time fraction	B	3	D	-	1	NUREG/CR-5512, Vol. 3
BRTRATE	Receptor breathing/inhalation rate	M, B	2	S or D	m^3/d	Triangular distribution or 35.7	NUREG/CR-6755, Appendix A or the result of sensitivity analysis
INGE2	Indirect ingestion rate	B	2	S	m^2/h	Loguniform distribution or 1.61E-04	NUREG/CR-6755, Appendix A or the result of sensitivity analysis
SOURCE PARAMETERS							
NS	Number of sources	P	3	D	-	5	Assumes contamination on four walls plus the floor
Source 1 - Floor							
SLVL	Source room (also primary room)	P	3	D	-	1	This dose model contains only one room
STYPE	Source type	P	3	D	-	Area	NUREG/CR-5512
SDIR	Source direction	P	3	D	-	z	NUREG/CR-5512
SX	Source location (x, y, z)	P	3	D	m	5.85, 5.85, 0	X and Y distances are half of the square root of the room area derived from sensitivity analysis
SAREA	Source area	P	2	D	m^2	137	Room area from derived from sensitivity analysis
AIRFR	Air release fraction	B	2	S or D	-	Triangular distribution or 0.517	NUREG/CR-6755, Appendix A or the result of sensitivity analysis
INGE1	Direct ingestion rate	B	2	D	g/h or 1/h	3.45E-07	Calculated from the default ingestion rate of 1.1E-04 m^2/h in the NUREG/CR-5512 industrial worker building occupancy scenario. 3.45E-07 h^{-1} is 1.1E-04 m^2/h divided by the total contaminated area of 319 m^2.

RESRAD-BUILD v3.22 Parameters for RSNGS Structural Surfaces DCGL Derivation – Industrial Worker Building Occupancy Scenario							
Parameter							
Name	**Description**	**Class[1]**	**Priority[2]**	**Treatment[3]**	**Units**	**Parameter Value**	**Basis for Parameter Selection**
RMVFR	Removable fraction	P, B	1	D	-	0.1	10% of the contamination is removable (NUREG/CR-5512 industrial worker building occupancy scenario default). The default parameter value for the loose fraction for the building occupancy scenario is 0.1 (Table C7.1, NUREG/CR-1727).
RF0	Source lifetime (also time for source removal)	P, B	2	S or D	d	Triangular distribution or 52800	NUREG/CR-6755, Section 3.6 or the result of sensitivity analysis
RRF	Radon release fraction	P, B	3	D	-	0	Radon exposure is not regulated by the NRC
RNUCACT	Radionuclide concentration/activity	P	2	D	dpm/m^2	100	Calculates a dose conversion factor in units of mrem/yr per dpm/100 cm^2
NREGI0	Number of regions in volume source	P	3	D	-	Not used	A volume source is not used in this dose model
FCONT0	Contaminated region (volume source)	P	3	D	-	Not used	A volume source is not used in this dose model
THICK0	Source region thickness (volume source)	P	2	S	cm	Not used	A volume source is not used in this dose model
DENSI0	Source density (volume source)	P	1	S	g/cm^3	Not used	A volume source is not used in this dose model
EROS0	Source erosion rate (volume source)	P, B	2	S	cm/d	Not used	A volume source is not used in this dose model
POROS0	Source porosity	P	2	S	-	Not used	A volume source is not used in this dose model
EFDIF0	Radon effective diffusion coefficient	P	3	D	m^2/sec	0	Radon exposure is not regulated by the NRC
EMANA0	Radon emanation fraction	P	3	D	-	0	Radon exposure is not regulated by the NRC
MTLS	Source material			D	-	Not used	A volume source is not used in this dose model
Source 2 – West wall							
SLVL	Source room (also primary room)	P	3	D	-	1	This dose model contains only one room

RESRAD-BUILD v3.22 Parameters for RSNGS Structural Surfaces DCGL Derivation – Industrial Worker Building Occupancy Scenario

Parameter							
Name	**Description**	**Class[1]**	**Priority[2]**	**Treatment[3]**	**Units**	**Parameter Value**	**Basis for Parameter Selection**
STYPE	Source type	P	3	D	-	Area	NUREG/CR-5512
SDIR	Source direction	P	3	D	-	x	NUREG/CR-5512
SX	Source location (x, y, z)	P	3	D	m	0, 5.85, 1.945	Y distance is half of the square root of the room area and z distance is half of the room height derived from sensitivity analysis
SAREA	Source area	P	2	D	m/m^2	45.5	Square root of the room area times the room height derived from sensitivity analysis
AIRFR	Air release fraction	B	2	S or D	-	Triangular distribution or 0.517	NUREG/CR-6755, Appendix A or the result of sensitivity analysis
INGE1	Direct ingestion rate	B	2	D	g/h or 1/h	3.45E-07	Calculated from the default ingestion rate of 1.1E-04 m^2/h in the NUREG/CR-5512 industrial worker building occupancy scenario. 3.45E-07 h^{-1} is 1.1E-04 m^2/h divided by the total contaminated area of 319 m^2.
RMVFR	Removable fraction	P, B	1	D	-	0.1	10% of the contamination is removable (NUREG/CR-5512 industrial worker building occupancy scenario default). The default parameter value for the loose fraction for the building occupancy scenario is 0.1 (Table C7.1, NUREG/CR-1727).
RF0	Source lifetime (also time for source removal)	P, B	2	S or D	d	Triangular distribution or 52800	NUREG/CR-6755, Section 3.6 or the result of sensitivity analysis
RRF	Radon release fraction	P, B	3	D	-	0	Radon exposure is not regulated by the NRC
RNUCACT	Radionuclide concentration/activity	P	2	D	dpm/m^2	100	Calculates a dose conversion factor in units of mrem/yr per dpm/100 cm^2
NREGI0	Number of regions in volume source	P	3	D	-	Not used	A volume source is not used in this dose model

RESRAD-BUILD v3.22 Parameters for RSNGS Structural Surfaces DCGL Derivation – Industrial Worker Building Occupancy Scenario							
Parameter							
Name	**Description**	**Class[1]**	**Priority[2]**	**Treatment[3]**	**Units**	**Parameter Value**	**Basis for Parameter Selection**
FCONT0	Contaminated region (volume source)	P	3	D	-	Not used	A volume source is not used in this dose model
THICK0	Source region thickness (volume source)	P	2	S	cm	Not used	A volume source is not used in this dose model
DENSI0	Source density (volume source)	P	1	S	g/cm^3	Not used	A volume source is not used in this dose model
EROS0	Source erosion rate (volume source)	P, B	2	S	cm/d	Not used	A volume source is not used in this dose model
POROS0	Source porosity	P	2	S	-	Not used	A volume source is not used in this dose model
EFDIF0	Radon effective diffusion coefficient	P	3	D	m^2/sec	0	Radon exposure is not regulated by the NRC
EMANA0	Radon emanation fraction	P	3	D	-	0	Radon exposure is not regulated by the NRC
MTLS	Source material			D	-	Not used	A volume source is not used in this dose model
Source 3 – North wall							
SLVL	Source room (also primary room)	P	3	D	-	1	This dose model contains only one room
STYPE	Source type	P	3	D	-	Area	NUREG/CR-5512
SDIR	Source direction	P	3	D	-	y	NUREG/CR-5512
SX	Source location (x, y, z)	P	3	D	m	5.85, 11.7, 1.945	X distance is half of the square root of the room area, Y distance is the square root of the room area and Z distance is half of the room height derived from sensitivity analysis
SAREA	Source area	P	2	D	m/m^2	45.5	Square root of the room area times the room height derived from sensitivity analysis
AIRFR	Air release fraction	B	2	S or D	-	Triangular distribution or 0.517	NUREG/CR-6755, Appendix A or the result of sensitivity analysis

RESRAD-BUILD v3.22 Parameters for RSNGS Structural Surfaces DCGL Derivation – Industrial Worker Building Occupancy Scenario

Parameter							
Name	**Description**	**Class[1]**	**Priority[2]**	**Treatment[3]**	**Units**	**Parameter Value**	**Basis for Parameter Selection**
INGE1	Direct ingestion rate	B	2	D	g/h or 1/h	3.45E-07	Calculated from the default ingestion rate of 1.1E-04 m^2/h in the NUREG/CR-5512 industrial worker building occupancy scenario. 3.45E-07 h^{-1} is 1.1E-04 m^2/h divided by the total contaminated area of 319 m^2.
RMVFR	Removable fraction	P, B	1	D	-	0.1	10% of the contamination is removable (NUREG/CR-5512 industrial worker building occupancy scenario default). The default parameter value for the loose fraction for the building occupancy scenario is 0.1 (Table C7.1, NUREG/CR-1727).
RF0	Source lifetime (also time for source removal)	P, B	2	S or D	d	Triangular distribution or 52800	NUREG/CR-6755, Section 3.6 or the result of sensitivity analysis
RRF	Radon release fraction	P, B	3	D	-	0	Radon exposure is not regulated by the NRC
RNUCACT	Radionuclide concentration/activity	P	2	D	dpm/m^2	100	Calculates a dose conversion factor in units of mrem/yr per dpm/100 cm^2
NREGI0	Number of regions in volume source	P	3	D	-	Not used	A volume source is not used in this dose model
FCONT0	Contaminated region (volume source)	P	3	D	-	Not used	A volume source is not used in this dose model
THICK0	Source region thickness (volume source)	P	2	S	cm	Not used	A volume source is not used in this dose model
DENSI0	Source density (volume source)	P	1	S	g/cm^3	Not used	A volume source is not used in this dose model
EROS0	Source erosion rate (volume source)	P, B	2	S	cm/d	Not used	A volume source is not used in this dose model
POROS0	Source porosity	P	2	S	-	Not used	A volume source is not used in this dose model
EFDIF0	Radon effective diffusion coefficient	P	3	D	m^2/sec	0	Radon exposure is not regulated by the NRC

RESRAD-BUILD v3.22 Parameters for RSNGS Structural Surfaces DCGL Derivation – Industrial Worker Building Occupancy Scenario							
Parameter							
Name	**Description**	**Class[1]**	**Priority[2]**	**Treatment[3]**	**Units**	**Parameter Value**	**Basis for Parameter Selection**
EMANA0	Radon emanation fraction	P	3	D	-	0	Radon exposure is not regulated by the NRC
MTLS	Source material			D	-	Not used	A volume source is not used in this dose model
Source 4 – East wall							
SLVL	Source room (also primary room)	P	3	D	-	1	This dose model contains only one room
STYPE	Source type	P	3	D	-	Area	NUREG/CR-5512
SDIR	Source direction	P	3	D	-	x	NUREG/CR-5512
SX	Source location	P	3	D	m	11.7, 5.85, 1.945	X distance is the square root of the room area, Y distance is half of the square root of the room area and Z distance is half of the room height derived from sensitivity analysis
SAREA	Source area	P	2	D	m/m^2	45.5	Square root of the room area times the room height derived from sensitivity analysis
AIRFR	Air release fraction	B	2	S or D	-	Triangular distribution or 0.517	NUREG/CR-6755, Appendix A or the result of sensitivity analysis
INGE1	Direct ingestion rate	B	2	D	g/h or 1/h	3.45E-07	Calculated from the default ingestion rate of 1.1E-04 m^2/h in the NUREG/CR-5512 industrial worker building occupancy scenario. 3.45E-07 h^{-1} is 1.1E-04 m^2/h divided by the total contaminated area of 319 m^2.
RMVFR	Removable fraction	P, B	1	D	-	0.1	10% of the contamination is removable (NUREG/CR-5512 industrial worker building occupancy scenario default). The default parameter value for the loose fraction for the building occupancy scenario is 0.1 (Table C7.1, NUREG/CR-1727).

RESRAD-BUILD v3.22 Parameters for RSNGS Structural Surfaces DCGL Derivation – Industrial Worker Building Occupancy Scenario							
Parameter							
Name	**Description**	**Class[1]**	**Priority[2]**	**Treatment[3]**	**Units**	**Parameter Value**	**Basis for Parameter Selection**
RF0	Source lifetime (also time for source removal)	P, B	2	S or D	d	Triangular distribution or 52800	NUREG/CR-6755, Section 3.6 or the result of sensitivity analysis
RRF	Radon release fraction	P, B	3	D	-	0	Radon exposure is not regulated by the NRC
RNUCACT	Radionuclide concentration/activity	P	2	D	dpm/m^2	100	Calculates a dose conversion factor in units of mrem/yr per dpm/100 cm^2
NREGI0	Number of regions in volume source	P	3	D	-	Not used	A volume source is not used in this dose model
FCONT0	Contaminated region (volume source)	P	3	D	-	Not used	A volume source is not used in this dose model
THICK0	Source region thickness (volume source)	P	2	S	cm	Not used	A volume source is not used in this dose model
DENSI0	Source density (volume source)	P	1	S	g/cm^3	Not used	A volume source is not used in this dose model
EROS0	Source erosion rate (volume source)	P, B	2	S	cm/d	Not used	A volume source is not used in this dose model
POROS0	Source porosity	P	2	S	-	Not used	A volume source is not used in this dose model
EFDIF0	Radon effective diffusion coefficient	P	3	D	m^2/sec	0	Radon exposure is not regulated by the NRC
EMANA0	Radon emanation fraction	P	3	D	-	0	Radon exposure is not regulated by the NRC
MTLS	Source material			D	-	Not used	A volume source is not used in this dose model
Source 5 – South wall							
SLVL	Source room (also primary room)	P	3	D	-	1	This dose model contains only one room
STYPE	Source type	P	3	D	-	Area	NUREG/CR-5512
SDIR	Source direction	P	3	D	-	y	NUREG/CR-5512
SX	Source location	P	3	D	m	5.85, 0, 1.945	X and Y distances are half of the square root of the room area and Z distance is half of the room height derived from sensitivity analysis

RESRAD-BUILD v3.22 Parameters for RSNGS Structural Surfaces DCGL Derivation – Industrial Worker Building Occupancy Scenario

Parameter							
Name	**Description**	**Class[1]**	**Priority[2]**	**Treatment[3]**	**Units**	**Parameter Value**	**Basis for Parameter Selection**
SAREA	Source area	P	2	D	m/m^2	45.5	Square root of the room area times the room height derived from sensitivity analysis
AIRFR	Air release fraction	B	2	S or D	-	Triangular distribution or 0.517	NUREG/CR-6755, Appendix A or the result of sensitivity analysis
INGE1	Direct ingestion rate	B	2	D	g/h or 1/h	3.45E-07	Calculated from the default ingestion rate of 1.1E-04 m^2/h in the NUREG/CR-5512 industrial worker building occupancy scenario. 3.45E-07 h^{-1} is 1.1E-04 m^2/h divided by the total contaminated area of 319 m^2.
RMVFR	Removable fraction	P, B	1	D	-	0.1	10% of the contamination is removable (NUREG/CR-5512 industrial worker building occupancy scenario default). The default parameter value for the loose fraction for the building occupancy scenario is 0.1 (Table C7.1, NUREG/CR-1727).
RF0	Source lifetime (also time for source removal)	P, B	2	S or D	d	Triangular distribution or 52800	NUREG/CR-6755, Section 3.6 or the result of sensitivity analysis
RRF	Radon release fraction	P, B	3	D	-	0	Radon exposure is not regulated by the NRC
RNUCACT	Radionuclide concentration/activity	P	2	D	dpm/m^2	100	Calculates a dose conversion factor in units of mrem/yr per dpm/100 cm^2
NREGI0	Number of regions in volume source	P	3	D	-	Not used	A volume source is not used in this dose model
FCONT0	Contaminated region (volume source)	P	3	D	-	Not used	A volume source is not used in this dose model
THICK0	Source region thickness (volume source)	P	2	S	cm	Not used	A volume source is not used in this dose model
DENSI0	Source density (volume source)	P	1	S	g/cm^3	Not used	A volume source is not used in this dose model

RESRAD-BUILD v3.22 Parameters for RSNGS Structural Surfaces DCGL Derivation – Industrial Worker Building Occupancy Scenario							
Parameter							
Name	Description	Class[1]	Priority[2]	Treatment[3]	Units	Parameter Value	Basis for Parameter Selection
EROS0	Source erosion rate (volume source)	P, B	2	S	cm/d	Not used	A volume source is not used in this dose model
POROS0	Source porosity	P	2	S	-	Not used	A volume source is not used in this dose model
EFDIF0	Radon effective diffusion coefficient	P	3	D	m^2/sec	0	Radon exposure is not regulated by the NRC
EMANA0	Radon emanation fraction	P	3	D	-	0	Radon exposure is not regulated by the NRC
MTLS	Source material			D	-	Not used	A volume source is not used in this dose model
SHIELDING PARAMETERS							
DSTH	Shielding thickness	P, B	2	S	cm	0	Shielding is not used in this dose model
DSDEN	Shielding density	P	1	S	g/cm^3	0	Shielding is not used in this dose model
MTLC	Shielding material	P	3	D	-	None	Shielding is not used in this dose model
TRITIUM MODEL PARAMETERS							
DRYTHICK	Dry zone thickness	P	3		cm	Not Used	This parameter is not used for a surface source
H3THICK	Wet + dry zone thickness	P	2	S	cm	Not Used	This parameter is not used for a surface source
H3VOLFRACT	Volumetric water content	P	2	S	-	Not Used	This parameter is not used for a surface source
H3RMVF	Water fraction available for vaporization	P	2	S	-	Not Used	This parameter is not used for a surface source
HUMIDITY	Humidity	P, B	2	S	g/m^3	Not Used	This parameter is not used for a surface source

Notes:

[1]Parameter Classification: P = Physical; B = Behavioral; M = Metabolic

[2]1 = high priority parameter, 2 = medium priority parameter, 3 = low priority parameter

[3]D = Deterministic treatment, S = Stochastic treatment

Attachment 8.8

RESRAD-BUILD v3.22 Output Report Nuclide Specific Information for Deterministic and Stochastic Input Parameters Used In DCGL Derivation

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 13:54:04  Page:   2 **
 Title : Single Nuclide DCGL for Tritium
 Input File : C:\Program Files\RESRAD_Family\BUILD\H3DCGL.bld


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             ÍÍÍ                                             ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters          ÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
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                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 13:54:04  Page:   3 **
 Title : Single Nuclide DCGL for Tritium
 Input File : C:\Program Files\RESRAD_Family\BUILD\H3DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


      Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 13:54:04  Page:   4 **
 Title : Single Nuclide DCGL for Tritium
 Input File : C:\Program Files\RESRAD_Family\BUILD\H3DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
    H-3       1.000E+02   2.883E-08   2.883E-08   0.000E+00

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
    H-3       1.000E+02   2.883E-08   2.883E-08   0.000E+00
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 13:54:04  Page:   5 **
 Title : Single Nuclide DCGL for Tritium
 Input File : C:\Program Files\RESRAD_Family\BUILD\H3DCGL.bld


 Source:  3
        Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     H-3       1.000E+02   2.883E-08   2.883E-08   0.000E+00

 Source:  4
        Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     H-3       1.000E+02   2.883E-08   2.883E-08   0.000E+00
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 13:54:04  Page:   6 **
 Title : Single Nuclide DCGL for Tritium
 Input File : C:\Program Files\RESRAD_Family\BUILD\H3DCGL.bld


 Source:  5
        Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]


   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    H-3       1.000E+02   2.883E-08   2.883E-08   0.000E+00
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/08/04 13:54:04 Page:   2 **
 Title      : Single Nuclide DCGL for Tritium
 Input File : C:\Program Files\RESRAD_Family\BUILD\H3DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300
```

Number	Name	Distribution	Parameters		
1	BRTRATE(1)	TRIANGULAR	12	33.6	46
2	INGE2(1)	LOGUNIFORM	.000028	.00029	
3	AIRFR(1)	TRIANGULAR	.000001	.07	1
4	RF0(2, 1)	TRIANGULAR	1000	10000	100000
5	AIRFR(3)	TRIANGULAR	.000001	.07	1
6	RF0(3, 1)	TRIANGULAR	1000	10000	100000
7	AIRFR(4)	TRIANGULAR	.000001	.07	1
8	RF0(4, 1)	TRIANGULAR	1000	10000	100000
9	AIRFR(5)	TRIANGULAR	.000001	.07	1
10	RF0(5, 1)	TRIANGULAR	1000	10000	100000
11	RF0(1, 1)	TRIANGULAR	1000	10000	100000

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 13:59:28  Page:   2 **
 Title : Single Nuclide DCGL for C-14
 Input File : C:\Program Files\RESRAD_Family\BUILD\C14DCGL.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                                ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters             ÍÍÍ
             ÍÍÍ                                                ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 13:59:28  Page:   3 **
 Title : Single Nuclide DCGL for C-14
 Input File : C:\Program Files\RESRAD_Family\BUILD\C14DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


      Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 13:59:28  Page:   4 **
 Title : Single Nuclide DCGL for C-14
 Input File : C:\Program Files\RESRAD_Family\BUILD\C14DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
    C-14      1.000E+02   9.414E-07   9.414E-07   1.180E-08

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
    C-14      1.000E+02   9.414E-07   9.414E-07   1.180E-08
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 13:59:28  Page:   5 **
 Title : Single Nuclide DCGL for C-14
 Input File : C:\Program Files\RESRAD_Family\BUILD\C14DCGL.bld



 Source:  3
        Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    C-14      1.000E+02   9.414E-07   9.414E-07   1.180E-08

 Source:  4
        Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    C-14      1.000E+02   9.414E-07   9.414E-07   1.180E-08
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 13:59:28  Page:   6 **
 Title : Single Nuclide DCGL for C-14
 Input File : C:\Program Files\RESRAD_Family\BUILD\C14DCGL.bld



 Source:  5
        Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     C-14      1.000E+02   9.414E-07   9.414E-07   1.180E-08
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/08/04 13:59:28 Page:   2 **
 Title      : Single Nuclide DCGL for C-14
 Input File : C:\Program Files\RESRAD_Family\BUILD\C14DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300
```

Number	Name	Distribution	Parameters		
1	BRTRATE(1)	TRIANGULAR	12	33.6	46
2	INGE2(1)	LOGUNIFORM	.000028	.00029	
3	AIRFR(1)	TRIANGULAR	.000001	.07	1
4	RF0(2, 1)	TRIANGULAR	1000	10000	100000
5	AIRFR(3)	TRIANGULAR	.000001	.07	1
6	RF0(3, 1)	TRIANGULAR	1000	10000	100000
7	AIRFR(4)	TRIANGULAR	.000001	.07	1
8	RF0(4, 1)	TRIANGULAR	1000	10000	100000
9	AIRFR(5)	TRIANGULAR	.000001	.07	1
10	RF0(5, 1)	TRIANGULAR	1000	10000	100000
11	RF0(1, 1)	TRIANGULAR	1000	10000	100000

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 14:25:40  Page:   2 **
 Title : Single Nuclide DCGL for Na-22
 Input File : C:\Program Files\RESRAD_Family\BUILD\Na22DCGL.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters          ÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 14:25:40  Page:   3 **
 Title : Single Nuclide DCGL for Na-22
 Input File : C:\Program Files\RESRAD_Family\BUILD\Na22DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


       Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 14:25:40  Page:   4 **
 Title : Single Nuclide DCGL for Na-22
 Input File : C:\Program Files\RESRAD_Family\BUILD\Na22DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                          Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    NA-22     1.000E+02   5.180E-06   3.450E-06   5.676E-03

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                          Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    NA-22     1.000E+02   5.180E-06   3.450E-06   5.676E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 14:25:40  Page:   5 **
 Title : Single Nuclide DCGL for Na-22
 Input File : C:\Program Files\RESRAD_Family\BUILD\Na22DCGL.bld



 Source:  3
        Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     NA-22     1.000E+02   5.180E-06   3.450E-06   5.676E-03

 Source:  4
        Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     NA-22     1.000E+02   5.180E-06   3.450E-06   5.676E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 14:25:40  Page:   6 **
 Title : Single Nuclide DCGL for Na-22
 Input File : C:\Program Files\RESRAD_Family\BUILD\Na22DCGL.bld


 Source:  5
        Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]


    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     NA-22     1.000E+02   5.180E-06   3.450E-06   5.676E-03
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/08/04 14:25:40 Page:   2 **
 Title      : Single Nuclide DCGL for Na-22
 Input File : C:\Program Files\RESRAD_Family\BUILD\Na22DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300


 Number  Name                        Distribution             Parameters
 ______  __________________________  _______________________  ______________________________
    1    BRTRATE( 1)                 TRIANGULAR               12        33.6      46
    2    INGE2( 1)                   LOGUNIFORM               .000028   .00029
    3    AIRFR( 1)                   TRIANGULAR               .000001   .07       1
    4    AIRFR( 3)                   TRIANGULAR               .000001   .07       1
    5    AIRFR( 4)                   TRIANGULAR               .000001   .07       1
    6    AIRFR( 5)                   TRIANGULAR               .000001   .07       1
    7    RF0( 5, 1)                  TRIANGULAR               1000      10000     100000
 ======  ========================  =======================  ==============================
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 15:01:39  Page:   2 **
 Title : Single Nuclide DCGL for Fe-55
 Input File : C:\Program Files\RESRAD_Family\BUILD\Fe55DCGL.bld


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             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters          ÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 15:01:39  Page:   3 **
 Title : Single Nuclide DCGL for Fe-55
 Input File : C:\Program Files\RESRAD_Family\BUILD\Fe55DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


       Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 15:01:39  Page:   4 **
 Title : Single Nuclide DCGL for Fe-55
 Input File : C:\Program Files\RESRAD_Family\BUILD\Fe55DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
    FE-55     1.000E+02   2.734E-07   1.212E-06   0.000E+00

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
    FE-55     1.000E+02   2.734E-07   1.212E-06   0.000E+00
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 15:01:39  Page:   5 **
 Title : Single Nuclide DCGL for Fe-55
 Input File : C:\Program Files\RESRAD_Family\BUILD\Fe55DCGL.bld



 Source:  3
        Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    FE-55     1.000E+02   2.734E-07   1.212E-06   0.000E+00

 Source:  4
        Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    FE-55     1.000E+02   2.734E-07   1.212E-06   0.000E+00
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 15:01:39  Page:   6 **
 Title : Single Nuclide DCGL for Fe-55
 Input File : C:\Program Files\RESRAD_Family\BUILD\Fe55DCGL.bld



 Source:  5
        Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     FE-55     1.000E+02   2.734E-07   1.212E-06   0.000E+00
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/08/04 15:01:39 Page:   2 **
 Title      : Single Nuclide DCGL for Fe-55
 Input File : C:\Program Files\RESRAD_Family\BUILD\Fe55DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300


 Number  Name                        Distribution             Parameters
 ______  __________________________  _______________________  ____________________________
    1    BRTRATE( 1)                 TRIANGULAR               12        33.6      46
    2    INGE2( 1)                   LOGUNIFORM               .000028   .00029
    3    AIRFR( 1)                   TRIANGULAR               .000001   .07       1
    4    RF0( 2, 1)                  TRIANGULAR               1000      10000     100000
    5    AIRFR( 3)                   TRIANGULAR               .000001   .07       1
    6    RF0( 3, 1)                  TRIANGULAR               1000      10000     100000
    7    AIRFR( 4)                   TRIANGULAR               .000001   .07       1
    8    RF0( 4, 1)                  TRIANGULAR               1000      10000     100000
    9    AIRFR( 5)                   TRIANGULAR               .000001   .07       1
   10    RF0( 5, 1)                  TRIANGULAR               1000      10000     100000
   11    RF0( 1, 1)                  TRIANGULAR               1000      10000     100000
 ======  ========================== ======================   ============================
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/19/04 17:02:18  Page:   2 **
 Title : Single Nuclide DCGL for Ni-59
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni59DCGL.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters          ÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/19/04 17:02:18  Page:   3 **
 Title : Single Nuclide DCGL for Ni-59
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni59DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


      Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/19/04 17:02:18  Page:   4 **
 Title : Single Nuclide DCGL for Ni-59
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni59DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                          Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    NI-59     1.000E+02   9.459E-08   1.216E-06   0.000E+00

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                          Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    NI-59     1.000E+02   9.459E-08   1.216E-06   0.000E+00
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/19/04 17:02:18  Page:   5 **
 Title : Single Nuclide DCGL for Ni-59
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni59DCGL.bld


 Source:  3
        Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    NI-59     1.000E+02   9.459E-08   1.216E-06   0.000E+00

 Source:  4
        Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    NI-59     1.000E+02   9.459E-08   1.216E-06   0.000E+00
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/19/04 17:02:18  Page:   6 **
 Title : Single Nuclide DCGL for Ni-59
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni59DCGL.bld



 Source:  5
        Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     NI-59     1.000E+02   9.459E-08   1.216E-06   0.000E+00
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/26/04 13:09:35 Page:   2 **
 Title      : Single Nuclide DCGL for Ni-59
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni59DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300


 Number  Name                        Distribution             Parameters
 ______  __________________________  _______________________  ____________________________
    1    INGE2( 1)                   LOGUNIFORM               .000028   .00029
    2    AIRFR( 1)                   TRIANGULAR               .000001   .07       1
    3    RF0( 2, 1)                  TRIANGULAR               1000      10000     100000
    4    AIRFR( 3)                   TRIANGULAR               .000001   .07       1
    5    RF0( 3, 1)                  TRIANGULAR               1000      10000     100000
    6    AIRFR( 4)                   TRIANGULAR               .000001   .07       1
    7    RF0( 4, 1)                  TRIANGULAR               1000      10000     100000
    8    AIRFR( 5)                   TRIANGULAR               .000001   .07       1
    9    RF0( 5, 1)                  TRIANGULAR               1000      10000     100000
   10    RF0( 1, 1)                  TRIANGULAR               1000      10000     100000
 ======  ========================== ======================   ============================
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 09:29:23  Page:   2 **
 Title : Single Nuclide DCGL for Co-60
 Input File : C:\Program Files\RESRAD_Family\BUILD\Co60DCGL.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters          ÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 09:29:23  Page:   3 **
 Title : Single Nuclide DCGL for Co-60
 Input File : C:\Program Files\RESRAD_Family\BUILD\Co60DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


       Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 09:29:23  Page:   4 **
 Title : Single Nuclide DCGL for Co-60
 Input File : C:\Program Files\RESRAD_Family\BUILD\Co60DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                          Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    CO-60     1.000E+02   1.212E-05   9.865E-05   6.622E-03

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                          Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    CO-60     1.000E+02   1.212E-05   9.865E-05   6.622E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 09:29:23  Page:   5 **
 Title : Single Nuclide DCGL for Co-60
 Input File : C:\Program Files\RESRAD_Family\BUILD\Co60DCGL.bld



 Source:  3
        Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     CO-60     1.000E+02   1.212E-05   9.865E-05   6.622E-03

 Source:  4
        Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     CO-60     1.000E+02   1.212E-05   9.865E-05   6.622E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 09:29:23  Page:   6 **
 Title : Single Nuclide DCGL for Co-60
 Input File : C:\Program Files\RESRAD_Family\BUILD\Co60DCGL.bld



 Source:  5
        Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     CO-60     1.000E+02   1.212E-05   9.865E-05   6.622E-03
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/08/04 09:29:23 Page:   2 **
 Title      : Single Nuclide DCGL for Co-60
 Input File : C:\Program Files\RESRAD_Family\BUILD\Co60DCGL.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters		
1	BRTRATE(1)	TRIANGULAR	12	33.6	46
2	INGE2(1)	LOGUNIFORM	.000028	.00029	
3	AIRFR(1)	TRIANGULAR	.000001	.07	1
4	RF0(2, 1)	TRIANGULAR	1000	10000	100000
5	AIRFR(3)	TRIANGULAR	.000001	.07	1
6	RF0(3, 1)	TRIANGULAR	1000	10000	100000
7	AIRFR(4)	TRIANGULAR	.000001	.07	1
8	RF0(4, 1)	TRIANGULAR	1000	10000	100000
9	AIRFR(5)	TRIANGULAR	.000001	.07	1
10	RF0(5, 1)	TRIANGULAR	1000	10000	100000

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 08:03:26  Page:   2 **
 Title : Single Nuclide DCGL for Ni-63
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni63DCGL.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
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             ÍÍÍ                                             ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters          ÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
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                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   3.57E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 08:03:26  Page:   3 **
 Title : Single Nuclide DCGL for Ni-63
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni63DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


       Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 08:03:26  Page:   4 **
 Title : Single Nuclide DCGL for Ni-63
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni63DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    NI-63     1.000E+02   2.599E-07   2.833E-06   0.000E+00

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    NI-63     1.000E+02   2.599E-07   2.833E-06   0.000E+00
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 08:03:26  Page:   5 **
 Title : Single Nuclide DCGL for Ni-63
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni63DCGL.bld



 Source:  3
        Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    NI-63     1.000E+02   2.599E-07   2.833E-06   0.000E+00

 Source:  4
        Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    NI-63     1.000E+02   2.599E-07   2.833E-06   0.000E+00
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 08:03:26  Page:   6 **
 Title : Single Nuclide DCGL for Ni-63
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni63DCGL.bld



 Source:  5
        Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     NI-63     1.000E+02   2.599E-07   2.833E-06   0.000E+00
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 08:03:26 Page:   2 **
 Title      : Single Nuclide DCGL for Ni-63
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni63DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300


 Number  Name                        Distribution             Parameters
 ______  __________________________  _______________________  ____________________________
    1    INGE2( 1)                   LOGUNIFORM               .000028   .00029
    2    AIRFR( 1)                   TRIANGULAR               .000001   .07       1
    3    RF0( 2, 1)                  TRIANGULAR               1000      10000     100000
    4    AIRFR( 3)                   TRIANGULAR               .000001   .07       1
    5    RF0( 3, 1)                  TRIANGULAR               1000      10000     100000
    6    AIRFR( 4)                   TRIANGULAR               .000001   .07       1
    7    RF0( 4, 1)                  TRIANGULAR               1000      10000     100000
    8    AIRFR( 5)                   TRIANGULAR               .000001   .07       1
    9    RF0( 5, 1)                  TRIANGULAR               1000      10000     100000
   10    RF0( 1, 1)                  TRIANGULAR               1000      10000     100000
 ======  ========================== ======================   ============================
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 08:16:25  Page:   2 **
 Title : Single Nuclide DCGL for Sr-90
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sr90DCGL.bld


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             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters          ÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 08:16:25  Page:   3 **
 Title : Single Nuclide DCGL for Sr-90
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sr90DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


       Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 08:16:25  Page:   4 **
 Title : Single Nuclide DCGL for Sr-90
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sr90DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
    SR-90     1.000E+02   6.892E-05   5.901E-04   1.041E-05

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
    SR-90     1.000E+02   6.892E-05   5.901E-04   1.041E-05
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 08:16:25  Page:   5 **
 Title : Single Nuclide DCGL for Sr-90
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sr90DCGL.bld



 Source:  3
        Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    SR-90     1.000E+02   6.892E-05   5.901E-04   1.041E-05

 Source:  4
        Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    SR-90     1.000E+02   6.892E-05   5.901E-04   1.041E-05
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 08:16:25  Page:   6 **
 Title : Single Nuclide DCGL for Sr-90
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sr90DCGL.bld



 Source:  5
        Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     SR-90     1.000E+02   6.892E-05   5.901E-04   1.041E-05
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 08:16:25 Page:   2 **
 Title      : Single Nuclide DCGL for Sr-90
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sr90DCGL.bld
 ____________________________________________________________________
```

Probabilistic Input

Number of Sample Runs: 300

Number	Name	Distribution	Parameters		
1	BRTRATE(1)	TRIANGULAR	12	33.6	46
2	INGE2(1)	LOGUNIFORM	.000028	.00029	
3	AIRFR(1)	TRIANGULAR	.000001	.07	1
4	RF0(2, 1)	TRIANGULAR	1000	10000	100000
5	AIRFR(3)	TRIANGULAR	.000001	.07	1
6	RF0(3, 1)	TRIANGULAR	1000	10000	100000
7	AIRFR(4)	TRIANGULAR	.000001	.07	1
8	RF0(4, 1)	TRIANGULAR	1000	10000	100000
9	AIRFR(5)	TRIANGULAR	.000001	.07	1
10	RF0(5, 1)	TRIANGULAR	1000	10000	100000
11	RF0(1, 1)	TRIANGULAR	1000	10000	100000

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 09:06:04  Page:   2 **
 Title : Single Nuclide DCGL for Nb-94
 Input File : C:\Program Files\RESRAD_Family\BUILD\Nb94DCGL.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters          ÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   3.57E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 09:06:04  Page:   3 **
 Title : Single Nuclide DCGL for Nb-94
 Input File : C:\Program Files\RESRAD_Family\BUILD\Nb94DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


      Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 09:06:04  Page:   4 **
 Title : Single Nuclide DCGL for Nb-94
 Input File : C:\Program Files\RESRAD_Family\BUILD\Nb94DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    NB-94     1.000E+02   3.216E-06   1.865E-04   4.059E-03

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    NB-94     1.000E+02   3.216E-06   1.865E-04   4.059E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 09:06:04  Page:   5 **
 Title : Single Nuclide DCGL for Nb-94
 Input File : C:\Program Files\RESRAD_Family\BUILD\Nb94DCGL.bld



 Source:  3
        Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    NB-94     1.000E+02   3.216E-06   1.865E-04   4.059E-03

 Source:  4
        Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    NB-94     1.000E+02   3.216E-06   1.865E-04   4.059E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 09:06:04  Page:   6 **
 Title : Single Nuclide DCGL for Nb-94
 Input File : C:\Program Files\RESRAD_Family\BUILD\Nb94DCGL.bld



 Source:  5
        Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     NB-94     1.000E+02   3.216E-06   1.865E-04   4.059E-03
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 09:06:04 Page:   2 **
 Title      : Single Nuclide DCGL for Nb-94
 Input File : C:\Program Files\RESRAD_Family\BUILD\Nb94DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300


 Number  Name                        Distribution             Parameters
 ______  __________________________  _______________________  ______________________________
    1    INGE2( 1)                   LOGUNIFORM               .000028   .00029
    2    AIRFR( 1)                   TRIANGULAR               .000001   .07       1
    3    RF0( 2, 1)                  TRIANGULAR               1000      10000     100000
    4    AIRFR( 3)                   TRIANGULAR               .000001   .07       1
    5    RF0( 3, 1)                  TRIANGULAR               1000      10000     100000
    6    RF0( 4, 1)                  TRIANGULAR               1000      10000     100000
    7    RF0( 5, 1)                  TRIANGULAR               1000      10000     100000
    8    AIRFR( 2)                   TRIANGULAR               .000001   .07       1
 ======  ========================== ======================   ==============================
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/26/04 16:51:32  Page:   2 **
 Title : Single Nuclide DCGL for Tc-99
 Input File : C:\Program Files\RESRAD_Family\BUILD\Tc99DCGL.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters          ÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/26/04 16:51:32  Page:   3 **
 Title : Single Nuclide DCGL for Tc-99
 Input File : C:\Program Files\RESRAD_Family\BUILD\Tc99DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


       Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/26/04 16:51:32  Page:   4 **
 Title : Single Nuclide DCGL for Tc-99
 Input File : C:\Program Files\RESRAD_Family\BUILD\Tc99DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    TC-99     1.000E+02   6.577E-07   3.752E-06   8.559E-08

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    TC-99     1.000E+02   6.577E-07   3.752E-06   8.559E-08
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/26/04 16:51:32  Page:   5 **
 Title : Single Nuclide DCGL for Tc-99
 Input File : C:\Program Files\RESRAD_Family\BUILD\Tc99DCGL.bld



 Source:  3
        Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    TC-99     1.000E+02   6.577E-07   3.752E-06   8.559E-08

 Source:  4
        Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    TC-99     1.000E+02   6.577E-07   3.752E-06   8.559E-08
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/26/04 16:51:32  Page:   6 **
 Title : Single Nuclide DCGL for Tc-99
 Input File : C:\Program Files\RESRAD_Family\BUILD\Tc99DCGL.bld



 Source:  5
        Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     TC-99     1.000E+02   6.577E-07   3.752E-06   8.559E-08
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/26/04 16:51:32 Page:   2 **
 Title      : Single Nuclide DCGL for Tc-99
 Input File : C:\Program Files\RESRAD_Family\BUILD\Tc99DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300


 Number  Name                        Distribution             Parameters
 ______  __________________________  _______________________  ______________________________
    1    BRTRATE( 1)                 TRIANGULAR               12        33.6      46
    2    INGE2( 1)                   LOGUNIFORM               .000028   .00029
    3    AIRFR( 1)                   TRIANGULAR               .000001   .07       1
    4    RF0( 2, 1)                  TRIANGULAR               1000      10000     100000
    5    AIRFR( 3)                   TRIANGULAR               .000001   .07       1
    6    RF0( 3, 1)                  TRIANGULAR               1000      10000     100000
    7    AIRFR( 4)                   TRIANGULAR               .000001   .07       1
    8    RF0( 4, 1)                  TRIANGULAR               1000      10000     100000
    9    AIRFR( 5)                   TRIANGULAR               .000001   .07       1
   10    RF0( 5, 1)                  TRIANGULAR               1000      10000     100000
   11    RF0( 1, 1)                  TRIANGULAR               1000      10000     100000
 ======  ========================== ======================   ==============================
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 09:47:52  Page:   2 **
 Title : Single Nuclide DCGL for Ag-108m
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ag108mDCGL.bld

             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   3.57E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 09:47:52  Page:   3 **
 Title : Single Nuclide DCGL for Ag-108m
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ag108mDCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


       Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 09:47:52  Page:   4 **
 Title : Single Nuclide DCGL for Ag-108m
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ag108mDCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    AG-108M   1.000E+02   3.432E-06   1.275E-04   4.117E-03

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    AG-108M   1.000E+02   3.432E-06   1.275E-04   4.117E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 09:47:52  Page:   5 **
 Title : Single Nuclide DCGL for Ag-108m
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ag108mDCGL.bld



 Source:  3
        Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     AG-108M   1.000E+02   3.432E-06   1.275E-04   4.117E-03

 Source:  4
        Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     AG-108M   1.000E+02   3.432E-06   1.275E-04   4.117E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 09:47:52  Page:   6 **
 Title : Single Nuclide DCGL for Ag-108m
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ag108mDCGL.bld



 Source:  5
        Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     AG-108M   1.000E+02   3.432E-06   1.275E-04   4.117E-03
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 09:47:52 Page:   2 **
 Title      : Single Nuclide DCGL for Ag-108m
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ag108mDCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300


 Number  Name                        Distribution             Parameters
 ______  __________________________  _______________________  ______________________________
    1    INGE2( 1)                   LOGUNIFORM               .000028   .00029
    2    AIRFR( 1)                   TRIANGULAR               .000001   .07       1
    3    RF0( 2, 1)                  TRIANGULAR               1000      10000     100000
    4    AIRFR( 3)                   TRIANGULAR               .000001   .07       1
    5    RF0( 3, 1)                  TRIANGULAR               1000      10000     100000
    6    RF0( 4, 1)                  TRIANGULAR               1000      10000     100000
    7    RF0( 5, 1)                  TRIANGULAR               1000      10000     100000
    8    AIRFR( 2)                   TRIANGULAR               .000001   .07       1
 ======  ========================== ======================   ==============================
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 10:16:29  Page:   2 **
 Title : Single Nuclide DCGL for Sb-125
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sb125DCGL.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                                ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters             ÍÍÍ
             ÍÍÍ                                                ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 10:16:29  Page:   3 **
 Title : Single Nuclide DCGL for Sb-125
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sb125DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


       Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 10:16:29  Page:   4 **
 Title : Single Nuclide DCGL for Sb-125
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sb125DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    SB-125    1.000E+02   1.644E-06   6.261E-06   1.063E-03

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    SB-125    1.000E+02   1.644E-06   6.261E-06   1.063E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 10:16:29  Page:   5 **
 Title : Single Nuclide DCGL for Sb-125
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sb125DCGL.bld



 Source:  3
        Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    SB-125    1.000E+02   1.644E-06   6.261E-06   1.063E-03

 Source:  4
        Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    SB-125    1.000E+02   1.644E-06   6.261E-06   1.063E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 10:16:29  Page:   6 **
 Title : Single Nuclide DCGL for Sb-125
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sb125DCGL.bld



 Source:  5
        Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     SB-125    1.000E+02   1.644E-06   6.261E-06   1.063E-03
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 10:16:29 Page:   2 **
 Title      : Single Nuclide DCGL for Sb-125
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sb125DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300
```

Number	Name	Distribution	Parameters		
1	BRTRATE(1)	TRIANGULAR	12	33.6	46
2	INGE2(1)	LOGUNIFORM	.000028	.00029	
3	AIRFR(1)	TRIANGULAR	.000001	.07	1
4	AIRFR(3)	TRIANGULAR	.000001	.07	1
5	RF0(3, 1)	TRIANGULAR	1000	10000	100000
6	AIRFR(4)	TRIANGULAR	.000001	.07	1
7	AIRFR(5)	TRIANGULAR	.000001	.07	1
8	RF0(5, 1)	TRIANGULAR	1000	10000	100000

```
** RESRAD-BUILD Dose Program Output, Version 3.22 12/21/04 13:14:08  Page:   2 **
 Title : Single Nuclide DCGL for Cs-134
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs134DCGL.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters          ÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 12/21/04 13:14:08  Page:   3 **
 Title : Single Nuclide DCGL for Cs-134
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs134DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


      Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 12/21/04 13:14:08  Page:   4 **
 Title : Single Nuclide DCGL for Cs-134
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs134DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                          Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    CS-134    1.000E+02   3.302E-05   2.086E-05   3.991E-03

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                          Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    CS-134    1.000E+02   3.302E-05   2.086E-05   3.991E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 12/21/04 13:14:08  Page:   5 **
 Title : Single Nuclide DCGL for Cs-134
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs134DCGL.bld



 Source:  3
        Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    CS-134    1.000E+02   3.302E-05   2.086E-05   3.991E-03

 Source:  4
        Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    CS-134    1.000E+02   3.302E-05   2.086E-05   3.991E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 12/21/04 13:14:08  Page:   6 **
 Title : Single Nuclide DCGL for Cs-134
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs134DCGL.bld



 Source:  5
        Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     CS-134    1.000E+02   3.302E-05   2.086E-05   3.991E-03
```

```
** RESRAD-BUILD Probabilistic Output 3.22 12/21/04 13:14:08 Page:   2 **
 Title      : Single Nuclide DCGL for Cs-134
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs134DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300


 Number  Name                      Distribution            Parameters
 ______  _________________________ _______________________ ______________________________
    1    BRTRATE( 1)               TRIANGULAR              12        33.6      46
    2    INGE2( 1)                 LOGUNIFORM              .000028   .00029
    3    AIRFR( 1)                 TRIANGULAR              .000001   .07       1
    4    RF0( 2, 1)                TRIANGULAR              1000      10000     100000
    5    AIRFR( 3)                 TRIANGULAR              .000001   .07       1
    6    RF0( 3, 1)                TRIANGULAR              1000      10000     100000
    7    AIRFR( 4)                 TRIANGULAR              .000001   .07       1
    8    RF0( 4, 1)                TRIANGULAR              1000      10000     100000
    9    AIRFR( 5)                 TRIANGULAR              .000001   .07       1
   10    RF0( 5, 1)                TRIANGULAR              1000      10000     100000
   11    RF0( 1, 1)                TRIANGULAR              1000      10000     100000
 ======  ========================  =======================  ==============================
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 14:05:37  Page:   2 **
 Title : Single Nuclide DCGL for Cs-137
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs137DCGL.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
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             ÍÍÍ                                              ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters           ÍÍÍ
             ÍÍÍ                                              ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   1.80E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 14:05:37  Page:   3 **
 Title : Single Nuclide DCGL for Cs-137
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs137DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


       Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 14:05:37  Page:   4 **
 Title : Single Nuclide DCGL for Cs-137
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs137DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    CS-137    1.000E+02   2.252E-05   1.437E-05   1.437E-03

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    CS-137    1.000E+02   2.252E-05   1.437E-05   1.437E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 14:05:37  Page:   5 **
 Title : Single Nuclide DCGL for Cs-137
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs137DCGL.bld



 Source:  3
        Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    CS-137    1.000E+02   2.252E-05   1.437E-05   1.437E-03

 Source:  4
        Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    CS-137    1.000E+02   2.252E-05   1.437E-05   1.437E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/08/04 14:05:37  Page:   6 **
 Title : Single Nuclide DCGL for Cs-137
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs137DCGL.bld



 Source:  5
        Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     CS-137    1.000E+02   2.252E-05   1.437E-05   1.437E-03
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/08/04 14:05:37 Page:   2 **
 Title      : Single Nuclide DCGL for Cs-137
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs137DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300
```

Number	Name	Distribution	Parameters		
1	BRTRATE(1)	TRIANGULAR	12	33.6	46
2	INGE2(1)	LOGUNIFORM	.000028	.00029	
3	AIRFR(1)	TRIANGULAR	.000001	.07	1
4	RF0(2, 1)	TRIANGULAR	1000	10000	100000
5	AIRFR(3)	TRIANGULAR	.000001	.07	1
6	RF0(3, 1)	TRIANGULAR	1000	10000	100000
7	AIRFR(4)	TRIANGULAR	.000001	.07	1
8	RF0(4, 1)	TRIANGULAR	1000	10000	100000
9	AIRFR(5)	TRIANGULAR	.000001	.07	1
10	RF0(5, 1)	TRIANGULAR	1000	10000	100000
11	RF0(1, 1)	TRIANGULAR	1000	10000	100000

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 10:39:52  Page:   2 **
 Title : Single Nuclide DCGL for Pm-147
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pm147DCGL.bld


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             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters          ÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   3.57E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 10:39:52  Page:   3 **
 Title : Single Nuclide DCGL for Pm-147
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pm147DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


       Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 10:39:52  Page:   4 **
 Title : Single Nuclide DCGL for Pm-147
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pm147DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    SM-147    0.000E+00   8.333E-05   3.365E-02   0.000E+00
    PM-147    1.000E+02   4.730E-07   1.766E-05   3.653E-08

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    SM-147    0.000E+00   8.333E-05   3.365E-02   0.000E+00
    PM-147    1.000E+02   4.730E-07   1.766E-05   3.653E-08
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 10:39:52  Page:   5 **
 Title : Single Nuclide DCGL for Pm-147
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pm147DCGL.bld



 Source:  3
         Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
         Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    3.450E-07 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       1.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
     SM-147    0.000E+00   8.333E-05   3.365E-02   0.000E+00
     PM-147    1.000E+02   4.730E-07   1.766E-05   3.653E-08

 Source:  4
         Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
         Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
         Pathway ::
              Direct Ingestion Rate:    3.450E-07 [1/hr]
              Fraction released to air: 5.170E-01
              Removable fraction:       1.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
     SM-147    0.000E+00   8.333E-05   3.365E-02   0.000E+00
     PM-147    1.000E+02   4.730E-07   1.766E-05   3.653E-08
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 10:39:52  Page:   6 **
 Title : Single Nuclide DCGL for Pm-147
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pm147DCGL.bld


 Source:  5
        Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]


    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     SM-147    0.000E+00   8.333E-05   3.365E-02   0.000E+00
     PM-147    1.000E+02   4.730E-07   1.766E-05   3.653E-08
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 10:39:52 Page:   2 **
 Title      : Single Nuclide DCGL for Pm-147
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pm147DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300


 Number  Name                        Distribution             Parameters
 ______  __________________________  _______________________  ____________________________
    1    INGE2( 1)                   LOGUNIFORM               .000028   .00029
    2    AIRFR( 1)                   TRIANGULAR               .000001   .07       1
    3    RF0( 2, 1)                  TRIANGULAR               1000      10000     100000
    4    AIRFR( 3)                   TRIANGULAR               .000001   .07       1
    5    RF0( 3, 1)                  TRIANGULAR               1000      10000     100000
    6    RF0( 4, 1)                  TRIANGULAR               1000      10000     100000
    7    RF0( 5, 1)                  TRIANGULAR               1000      10000     100000
    8    RF0( 1, 1)                  TRIANGULAR               1000      10000     100000
    9    AIRFR( 2)                   TRIANGULAR               .000001   .07       1
 ======  ========================== ======================   ============================
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 11:06:28  Page:   2 **
 Title : Single Nuclide DCGL for Eu-152
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu152DCGL.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   3.57E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 11:06:28  Page:   3 **
 Title : Single Nuclide DCGL for Eu-152
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu152DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


       Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 11:06:28  Page:   4 **
 Title : Single Nuclide DCGL for Eu-152
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu152DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
    GD-152    0.000E+00   7.252E-05   1.095E-01   0.000E+00
    EU-152    1.000E+02   2.919E-06   9.955E-05   2.977E-03

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
    GD-152    0.000E+00   7.252E-05   1.095E-01   0.000E+00
    EU-152    1.000E+02   2.919E-06   9.955E-05   2.977E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 11:06:28  Page:   5 **
 Title : Single Nuclide DCGL for Eu-152
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu152DCGL.bld



 Source:  3
        Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                              Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     GD-152    0.000E+00   7.252E-05   1.095E-01   0.000E+00
     EU-152    1.000E+02   2.919E-06   9.955E-05   2.977E-03

 Source:  4
        Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                              Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     GD-152    0.000E+00   7.252E-05   1.095E-01   0.000E+00
     EU-152    1.000E+02   2.919E-06   9.955E-05   2.977E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 11:06:28  Page:   6 **
 Title : Single Nuclide DCGL for Eu-152
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu152DCGL.bld



 Source:  5
        Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     GD-152    0.000E+00   7.252E-05   1.095E-01   0.000E+00
     EU-152    1.000E+02   2.919E-06   9.955E-05   2.977E-03
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 11:06:28 Page:   2 **
 Title      : Single Nuclide DCGL for Eu-152
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu152DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300


 Number  Name                        Distribution             Parameters
 ______  __________________________  _______________________  ____________________________
    1    INGE2( 1)                   LOGUNIFORM               .000028   .00029
    2    AIRFR( 1)                   TRIANGULAR               .000001   .07       1
    3    AIRFR( 3)                   TRIANGULAR               .000001   .07       1
    4    RF0( 3, 1)                  TRIANGULAR               1000      10000     100000
    5    RF0( 4, 1)                  TRIANGULAR               1000      10000     100000
    6    RF0( 5, 1)                  TRIANGULAR               1000      10000     100000
    7    AIRFR( 2)                   TRIANGULAR               .000001   .07       1
 ======  ========================== ======================   ============================
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/27/04 08:26:21  Page:   2 **
 Title : Single Nuclide DCGL for Eu-154
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu154DCGL.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   3.57E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/27/04 08:26:21  Page:   3 **
 Title : Single Nuclide DCGL for Eu-154
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu154DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


       Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/27/04 08:26:21  Page:   4 **
 Title : Single Nuclide DCGL for Eu-154
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu154DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    EU-154    1.000E+02   4.302E-06   1.288E-04   3.234E-03

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    EU-154    1.000E+02   4.302E-06   1.288E-04   3.234E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/27/04 08:26:21  Page:   5 **
 Title : Single Nuclide DCGL for Eu-154
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu154DCGL.bld



 Source:  3
        Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    EU-154    1.000E+02   4.302E-06   1.288E-04   3.234E-03

 Source:  4
        Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    EU-154    1.000E+02   4.302E-06   1.288E-04   3.234E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/27/04 08:26:21  Page:   6 **
 Title : Single Nuclide DCGL for Eu-154
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu154DCGL.bld



 Source:  5
        Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     EU-154    1.000E+02   4.302E-06   1.288E-04   3.234E-03
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/27/04 08:26:21 Page:   2 **
 Title      : Single Nuclide DCGL for Eu-154
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu154DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300


 Number  Name                        Distribution             Parameters
 ______  __________________________  _______________________  ____________________________________
    1    INGE2( 1)                   LOGUNIFORM               .000028   .00029
    2    AIRFR( 1)                   TRIANGULAR               .000001   .07       1
    3    AIRFR( 3)                   TRIANGULAR               .000001   .07       1
    4    AIRFR( 2)                   TRIANGULAR               .000001   .07       1
    5    BRTRATE( 1)                 TRIANGULAR               12        33.6      46
 ======  ========================== ======================   ==============================
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 12:36:00  Page:   2 **
 Title : Single Nuclide DCGL for Eu-155
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu155DCGL.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters          ÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   3.57E+01    1.00E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 12:36:00  Page:   3 **
 Title : Single Nuclide DCGL for Eu-155
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu155DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


       Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 12:36:00  Page:   4 **
 Title : Single Nuclide DCGL for Eu-155
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu155DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    EU-155    1.000E+02   6.892E-07   1.865E-05   1.311E-04

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    EU-155    1.000E+02   6.892E-07   1.865E-05   1.311E-04
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 12:36:00  Page:   5 **
 Title : Single Nuclide DCGL for Eu-155
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu155DCGL.bld


 Source:  3
        Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    EU-155    1.000E+02   6.892E-07   1.865E-05   1.311E-04

 Source:  4
        Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    EU-155    1.000E+02   6.892E-07   1.865E-05   1.311E-04
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 12:36:00  Page:   6 **
 Title : Single Nuclide DCGL for Eu-155
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu155DCGL.bld



 Source:  5
        Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     EU-155    1.000E+02   6.892E-07   1.865E-05   1.311E-04
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 12:36:00 Page:   2 **
 Title      : Single Nuclide DCGL for Eu-155
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu155DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300


 Number  Name                        Distribution             Parameters
 ______  __________________________  _______________________  ____________________________
    1    INGE2( 1)                   LOGUNIFORM               .000028   .00029
    2    AIRFR( 1)                   TRIANGULAR               .000001   .07       1
    3    RF0( 2, 1)                  TRIANGULAR               1000      10000     100000
    4    AIRFR( 3)                   TRIANGULAR               .000001   .07       1
    5    RF0( 3, 1)                  TRIANGULAR               1000      10000     100000
    6    RF0( 4, 1)                  TRIANGULAR               1000      10000     100000
    7    AIRFR( 5)                   TRIANGULAR               .000001   .07       1
    8    RF0( 5, 1)                  TRIANGULAR               1000      10000     100000
    9    RF0( 1, 1)                  TRIANGULAR               1000      10000     100000
   10    AIRFR( 2)                   TRIANGULAR               .000001   .07       1
 ======  ========================== ======================   ============================
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 13:19:36  Page:   2 **
 Title : Single Nuclide DCGL for Np-237
 Input File : C:\Program Files\RESRAD_Family\BUILD\Np237DCGL.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   3.57E+01    1.61E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 13:19:36  Page:   3 **
 Title : Single Nuclide DCGL for Np-237
 Input File : C:\Program Files\RESRAD_Family\BUILD\Np237DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


       Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 13:19:36  Page:   4 **
 Title : Single Nuclide DCGL for Np-237
 Input File : C:\Program Files\RESRAD_Family\BUILD\Np237DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    NP-237    1.000E+02   2.000E-03   2.432E-01   5.450E-04
    U-233     0.000E+00   1.302E-04   6.081E-02   8.604E-07
    TH-229    0.000E+00   1.815E-03   9.730E-01   7.748E-04

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    NP-237    1.000E+02   2.000E-03   2.432E-01   5.450E-04
    U-233     0.000E+00   1.302E-04   6.081E-02   8.604E-07
    TH-229    0.000E+00   1.815E-03   9.730E-01   7.748E-04
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 13:19:36  Page:   5 **
 Title : Single Nuclide DCGL for Np-237
 Input File : C:\Program Files\RESRAD_Family\BUILD\Np237DCGL.bld


 Source:  3
        Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]


   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    NP-237    1.000E+02   2.000E-03   2.432E-01   5.450E-04
    U-233     0.000E+00   1.302E-04   6.081E-02   8.604E-07
    TH-229    0.000E+00   1.815E-03   9.730E-01   7.748E-04

 Source:  4
        Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]


   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    NP-237    1.000E+02   2.000E-03   2.432E-01   5.450E-04
    U-233     0.000E+00   1.302E-04   6.081E-02   8.604E-07
    TH-229    0.000E+00   1.815E-03   9.730E-01   7.748E-04
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 13:19:36  Page:   6 **
 Title : Single Nuclide DCGL for Np-237
 Input File : C:\Program Files\RESRAD_Family\BUILD\Np237DCGL.bld


 Source:  5
        Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]


    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     NP-237    1.000E+02   2.000E-03   2.432E-01   5.450E-04
     U-233     0.000E+00   1.302E-04   6.081E-02   8.604E-07
     TH-229    0.000E+00   1.815E-03   9.730E-01   7.748E-04
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 13:19:36 Page:   2 **
 Title      : Single Nuclide DCGL for Np-237
 Input File : C:\Program Files\RESRAD_Family\BUILD\Np237DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300


 Number  Name                        Distribution             Parameters
 ______  __________________________  _______________________  ____________________________
    1    AIRFR( 1)                   TRIANGULAR               .000001   .07       1
    2    RF0( 2, 1)                  TRIANGULAR               1000      10000     100000
    3    AIRFR( 3)                   TRIANGULAR               .000001   .07       1
    4    RF0( 3, 1)                  TRIANGULAR               1000      10000     100000
    5    RF0( 5, 1)                  TRIANGULAR               1000      10000     100000
    6    RF0( 1, 1)                  TRIANGULAR               1000      10000     100000
    7    AIRFR( 2)                   TRIANGULAR               .000001   .07       1
    8    INGE2( 1)                   LOGUNIFORM               .000028   .00029
 ======  ========================== ======================   ==============================
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 13:14:43  Page:   2 **
 Title : Single Nuclide DCGL for Pu-238
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu238DCGL.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters          ÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   3.57E+01    1.61E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 13:14:43  Page:   3 **
 Title : Single Nuclide DCGL for Pu-238
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu238DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


      Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                            <=Q01: 4.45E+02
    H1:   3.890      *           Room  1          *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01         *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 13:14:43  Page:   4 **
 Title : Single Nuclide DCGL for Pu-238
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu238DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]

             Radon Release Fraction:   1.000E-01



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    PU-238    1.000E+02   1.441E-03   1.766E-01   2.572E-07
    U-234     0.000E+00   1.275E-04   5.946E-02   4.023E-07
    TH-230    0.000E+00   2.468E-04   1.468E-01   9.189E-07
    RA-226    0.000E+00   5.991E-04   3.874E-03   4.685E-03
    PB-210    0.000E+00   3.275E-03   1.045E-02   4.730E-06

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]

             Radon Release Fraction:   1.000E-01



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    PU-238    1.000E+02   1.441E-03   1.766E-01   2.572E-07
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 13:14:43  Page:   5 **
 Title : Single Nuclide DCGL for Pu-238
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu238DCGL.bld


     U-234     0.000E+00   1.275E-04   5.946E-02   4.023E-07
     TH-230    0.000E+00   2.468E-04   1.468E-01   9.189E-07
     RA-226    0.000E+00   5.991E-04   3.874E-03   4.685E-03
     PB-210    0.000E+00   3.275E-03   1.045E-02   4.730E-06

 Source:  3
         Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
         Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    3.450E-07 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       1.000E-01
              Time to Remove:           3.653E+02 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     PU-238    1.000E+02   1.441E-03   1.766E-01   2.572E-07
     U-234     0.000E+00   1.275E-04   5.946E-02   4.023E-07
     TH-230    0.000E+00   2.468E-04   1.468E-01   9.189E-07
     RA-226    0.000E+00   5.991E-04   3.874E-03   4.685E-03
     PB-210    0.000E+00   3.275E-03   1.045E-02   4.730E-06

 Source:  4
         Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
         Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
         Pathway ::
              Direct Ingestion Rate:    3.450E-07 [1/hr]
              Fraction released to air: 5.170E-01
              Removable fraction:       1.000E-01
              Time to Remove:           5.280E+04 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 13:14:43  Page:   6 **
 Title : Single Nuclide DCGL for Pu-238
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu238DCGL.bld


     PU-238    1.000E+02   1.441E-03   1.766E-01   2.572E-07
     U-234     0.000E+00   1.275E-04   5.946E-02   4.023E-07
     TH-230    0.000E+00   2.468E-04   1.468E-01   9.189E-07
     RA-226    0.000E+00   5.991E-04   3.874E-03   4.685E-03
     PB-210    0.000E+00   3.275E-03   1.045E-02   4.730E-06

 Source:  5
         Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
         Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    3.450E-07 [1/hr]
              Fraction released to air: 5.170E-01
              Removable fraction:       1.000E-01
              Time to Remove:           3.653E+02 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
     PU-238    1.000E+02   1.441E-03   1.766E-01   2.572E-07
     U-234     0.000E+00   1.275E-04   5.946E-02   4.023E-07
     TH-230    0.000E+00   2.468E-04   1.468E-01   9.189E-07
     RA-226    0.000E+00   5.991E-04   3.874E-03   4.685E-03
     PB-210    0.000E+00   3.275E-03   1.045E-02   4.730E-06
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 13:14:43 Page:   2 **
 Title      : Single Nuclide DCGL for Pu-238
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu238DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300


 Number  Name                        Distribution             Parameters
 ______  __________________________  _______________________  ____________________________
    1    AIRFR( 1)                   TRIANGULAR               .000001   .07       1
    2    RF0( 2, 1)                  TRIANGULAR               1000      10000     100000
    3    AIRFR( 3)                   TRIANGULAR               .000001   .07       1
    4    RF0( 3, 1)                  TRIANGULAR               1000      10000     100000
    5    RF0( 5, 1)                  TRIANGULAR               1000      10000     100000
    6    RF0( 1, 1)                  TRIANGULAR               1000      10000     100000
    7    AIRFR( 2)                   TRIANGULAR               .000001   .07       1
 ======  ========================== ======================   ============================
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 14:01:18  Page:   2 **
 Title : Single Nuclide DCGL for Pu-239
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu239DCGL.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters          ÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   3.57E+01    1.61E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 14:01:18  Page:   3 **
 Title : Single Nuclide DCGL for Pu-239
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu239DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


       Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 14:01:18  Page:   4 **
 Title : Single Nuclide DCGL for Pu-239
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu239DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]


   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    PU-239    1.000E+02   1.595E-03   1.932E-01   2.234E-07
    U-235     0.000E+00   1.203E-04   5.541E-02   4.068E-04
    PA-231    0.000E+00   4.775E-03   5.766E-01   9.054E-05
    AC-227    0.000E+00   6.667E-03   3.027E+00   9.730E-04

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]


   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    PU-239    1.000E+02   1.595E-03   1.932E-01   2.234E-07
    U-235     0.000E+00   1.203E-04   5.541E-02   4.068E-04
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 14:01:18  Page:   5 **
 Title : Single Nuclide DCGL for Pu-239
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu239DCGL.bld


     PA-231    0.000E+00   4.775E-03   5.766E-01   9.054E-05
     AC-227    0.000E+00   6.667E-03   3.027E+00   9.730E-04

 Source:  3
         Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
         Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    3.450E-07 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       1.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     PU-239    1.000E+02   1.595E-03   1.932E-01   2.234E-07
     U-235     0.000E+00   1.203E-04   5.541E-02   4.068E-04
     PA-231    0.000E+00   4.775E-03   5.766E-01   9.054E-05
     AC-227    0.000E+00   6.667E-03   3.027E+00   9.730E-04

 Source:  4
         Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
         Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
         Pathway ::
              Direct Ingestion Rate:    3.450E-07 [1/hr]
              Fraction released to air: 5.170E-01
              Removable fraction:       1.000E-01
              Time to Remove:           5.280E+04 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     PU-239    1.000E+02   1.595E-03   1.932E-01   2.234E-07
     U-235     0.000E+00   1.203E-04   5.541E-02   4.068E-04
     PA-231    0.000E+00   4.775E-03   5.766E-01   9.054E-05
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 14:01:18  Page:   6 **
 Title : Single Nuclide DCGL for Pu-239
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu239DCGL.bld


     AC-227    0.000E+00   6.667E-03   3.027E+00   9.730E-04

 Source:  5
         Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
         Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    3.450E-07 [1/hr]
              Fraction released to air: 5.170E-01
              Removable fraction:       1.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     PU-239    1.000E+02   1.595E-03   1.932E-01   2.234E-07
     U-235     0.000E+00   1.203E-04   5.541E-02   4.068E-04
     PA-231    0.000E+00   4.775E-03   5.766E-01   9.054E-05
     AC-227    0.000E+00   6.667E-03   3.027E+00   9.730E-04
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 14:01:18 Page:   2 **
 Title      : Single Nuclide DCGL for Pu-239
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu239DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300


 Number  Name                        Distribution             Parameters
 ______  __________________________  _______________________  ____________________________
    1    AIRFR( 1)                   TRIANGULAR               .000001   .07       1
    2    RF0( 2, 1)                  TRIANGULAR               1000      10000     100000
    3    AIRFR( 3)                   TRIANGULAR               .000001   .07       1
    4    RF0( 3, 1)                  TRIANGULAR               1000      10000     100000
    5    RF0( 5, 1)                  TRIANGULAR               1000      10000     100000
    6    RF0( 1, 1)                  TRIANGULAR               1000      10000     100000
    7    AIRFR( 2)                   TRIANGULAR               .000001   .07       1
    8    INGE2( 1)                   LOGUNIFORM               .000028   .00029
 ======  ========================== ======================   ==============================
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 14:14:38  Page:   2 **
 Title : Single Nuclide DCGL for Pu-240
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu240DCGL.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters       ÍÍÍ
             ÍÍÍ                                          ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   3.57E+01    1.61E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 14:14:38  Page:   3 **
 Title : Single Nuclide DCGL for Pu-240
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu240DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


       Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 14:14:38  Page:   4 **
 Title : Single Nuclide DCGL for Pu-240
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu240DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]

             Radon Release Fraction:   1.000E-01



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    PU-240    1.000E+02   1.595E-03   1.932E-01   2.505E-07
    U-236     0.000E+00   1.212E-04   5.631E-02   2.640E-07
    TH-232    0.000E+00   1.230E-03   7.387E-01   4.595E-07
    TH-228    0.000E+00   3.640E-04   1.554E-01   4.239E-03
    RA-228    0.000E+00   6.486E-04   2.288E-03   2.518E-03

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]

             Radon Release Fraction:   1.000E-01



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    PU-240    1.000E+02   1.595E-03   1.932E-01   2.505E-07
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 14:14:38  Page:   5 **
 Title : Single Nuclide DCGL for Pu-240
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu240DCGL.bld


     U-236     0.000E+00   1.212E-04   5.631E-02   2.640E-07
     TH-232    0.000E+00   1.230E-03   7.387E-01   4.595E-07
     TH-228    0.000E+00   3.640E-04   1.554E-01   4.239E-03
     RA-228    0.000E+00   6.486E-04   2.288E-03   2.518E-03

 Source:  3
         Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
         Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    3.450E-07 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       1.000E-01
              Time to Remove:           3.653E+02 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]     [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                     (dpm/m3)]
     PU-240    1.000E+02   1.595E-03   1.932E-01   2.505E-07
     U-236     0.000E+00   1.212E-04   5.631E-02   2.640E-07
     TH-232    0.000E+00   1.230E-03   7.387E-01   4.595E-07
     TH-228    0.000E+00   3.640E-04   1.554E-01   4.239E-03
     RA-228    0.000E+00   6.486E-04   2.288E-03   2.518E-03

 Source:  4
         Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
         Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
         Pathway ::
              Direct Ingestion Rate:    3.450E-07 [1/hr]
              Fraction released to air: 5.170E-01
              Removable fraction:       1.000E-01
              Time to Remove:           5.280E+04 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]     [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                     (dpm/m3)]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 14:14:38  Page:   6 **
 Title : Single Nuclide DCGL for Pu-240
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu240DCGL.bld


     PU-240    1.000E+02   1.595E-03   1.932E-01   2.505E-07
     U-236     0.000E+00   1.212E-04   5.631E-02   2.640E-07
     TH-232    0.000E+00   1.230E-03   7.387E-01   4.595E-07
     TH-228    0.000E+00   3.640E-04   1.554E-01   4.239E-03
     RA-228    0.000E+00   6.486E-04   2.288E-03   2.518E-03

 Source:  5
         Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
         Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    3.450E-07 [1/hr]
              Fraction released to air: 5.170E-01
              Removable fraction:       1.000E-01
              Time to Remove:           3.653E+02 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
     PU-240    1.000E+02   1.595E-03   1.932E-01   2.505E-07
     U-236     0.000E+00   1.212E-04   5.631E-02   2.640E-07
     TH-232    0.000E+00   1.230E-03   7.387E-01   4.595E-07
     TH-228    0.000E+00   3.640E-04   1.554E-01   4.239E-03
     RA-228    0.000E+00   6.486E-04   2.288E-03   2.518E-03
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 14:14:38 Page:   2 **
 Title      : Single Nuclide DCGL for Pu-240
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu240DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300


 Number  Name                        Distribution             Parameters
 ______  __________________________  _______________________  ____________________________
    1    AIRFR( 1)                   TRIANGULAR               .000001   .07       1
    2    RF0( 2, 1)                  TRIANGULAR               1000      10000     100000
    3    AIRFR( 3)                   TRIANGULAR               .000001   .07       1
    4    RF0( 3, 1)                  TRIANGULAR               1000      10000     100000
    5    RF0( 5, 1)                  TRIANGULAR               1000      10000     100000
    6    RF0( 1, 1)                  TRIANGULAR               1000      10000     100000
    7    AIRFR( 2)                   TRIANGULAR               .000001   .07       1
    8    INGE2( 1)                   LOGUNIFORM               .000028   .00029
 ======  ========================== ======================   ==============================
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 14:44:25  Page:   2 **
 Title : Single Nuclide DCGL for Pu-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu241DCGL.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters          ÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   3.57E+01    1.61E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 14:44:25  Page:   3 **
 Title : Single Nuclide DCGL for Pu-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu241DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


       Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                            <=Q01: 4.45E+02
    H1:   3.890      *           Room  1          *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01         *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 14:44:25  Page:   4 **
 Title : Single Nuclide DCGL for Pu-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu241DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]


   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    PU-241    1.000E+02   3.086E-05   3.716E-03   1.153E-08
    AM-241    0.000E+00   1.640E-03   2.000E-01   4.311E-05
    NP-237    0.000E+00   2.000E-03   2.432E-01   5.450E-04
    U-233     0.000E+00   1.302E-04   6.081E-02   8.604E-07
    TH-229    0.000E+00   1.815E-03   9.730E-01   7.748E-04

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]


   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    PU-241    1.000E+02   3.086E-05   3.716E-03   1.153E-08
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 14:44:25  Page:   5 **
 Title : Single Nuclide DCGL for Pu-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu241DCGL.bld


     AM-241    0.000E+00   1.640E-03   2.000E-01   4.311E-05
     NP-237    0.000E+00   2.000E-03   2.432E-01   5.450E-04
     U-233     0.000E+00   1.302E-04   6.081E-02   8.604E-07
     TH-229    0.000E+00   1.815E-03   9.730E-01   7.748E-04

 Source:  3
         Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
         Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    3.450E-07 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       1.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     PU-241    1.000E+02   3.086E-05   3.716E-03   1.153E-08
     AM-241    0.000E+00   1.640E-03   2.000E-01   4.311E-05
     NP-237    0.000E+00   2.000E-03   2.432E-01   5.450E-04
     U-233     0.000E+00   1.302E-04   6.081E-02   8.604E-07
     TH-229    0.000E+00   1.815E-03   9.730E-01   7.748E-04

 Source:  4
         Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
         Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
         Pathway ::
              Direct Ingestion Rate:    3.450E-07 [1/hr]
              Fraction released to air: 5.170E-01
              Removable fraction:       1.000E-01
              Time to Remove:           5.280E+04 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 14:44:25  Page:   6 **
 Title : Single Nuclide DCGL for Pu-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu241DCGL.bld


     PU-241    1.000E+02   3.086E-05   3.716E-03   1.153E-08
     AM-241    0.000E+00   1.640E-03   2.000E-01   4.311E-05
     NP-237    0.000E+00   2.000E-03   2.432E-01   5.450E-04
     U-233     0.000E+00   1.302E-04   6.081E-02   8.604E-07
     TH-229    0.000E+00   1.815E-03   9.730E-01   7.748E-04

 Source:  5
         Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
         Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    3.450E-07 [1/hr]
              Fraction released to air: 5.170E-01
              Removable fraction:       1.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     PU-241    1.000E+02   3.086E-05   3.716E-03   1.153E-08
     AM-241    0.000E+00   1.640E-03   2.000E-01   4.311E-05
     NP-237    0.000E+00   2.000E-03   2.432E-01   5.450E-04
     U-233     0.000E+00   1.302E-04   6.081E-02   8.604E-07
     TH-229    0.000E+00   1.815E-03   9.730E-01   7.748E-04
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 14:44:25 Page:   2 **
 Title      : Single Nuclide DCGL for Pu-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu241DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300


 Number  Name                        Distribution             Parameters
 ______  __________________________  _______________________  ____________________________
    1    AIRFR( 1)                   TRIANGULAR               .000001   .07       1
    2    RF0( 2, 1)                  TRIANGULAR               1000      10000     100000
    3    AIRFR( 3)                   TRIANGULAR               .000001   .07       1
    4    RF0( 3, 1)                  TRIANGULAR               1000      10000     100000
    5    RF0( 5, 1)                  TRIANGULAR               1000      10000     100000
    6    RF0( 1, 1)                  TRIANGULAR               1000      10000     100000
    7    AIRFR( 2)                   TRIANGULAR               .000001   .07       1
 ======  ========================== ======================   ============================
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 15:38:24  Page:   2 **
 Title : Single Nuclide DCGL for Am-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Am241DCGL.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters          ÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   3.57E+01    1.61E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 15:38:24  Page:   3 **
 Title : Single Nuclide DCGL for Am-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Am241DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


       Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 15:38:24  Page:   4 **
 Title : Single Nuclide DCGL for Am-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Am241DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                          Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    AM-241    1.000E+02   1.640E-03   2.000E-01   4.311E-05
    NP-237    0.000E+00   2.000E-03   2.432E-01   5.450E-04
    U-233     0.000E+00   1.302E-04   6.081E-02   8.604E-07
    TH-229    0.000E+00   1.815E-03   9.730E-01   7.748E-04

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                          Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    AM-241    1.000E+02   1.640E-03   2.000E-01   4.311E-05
    NP-237    0.000E+00   2.000E-03   2.432E-01   5.450E-04
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 15:38:24  Page:   5 **
 Title : Single Nuclide DCGL for Am-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Am241DCGL.bld


     U-233     0.000E+00   1.302E-04   6.081E-02   8.604E-07
     TH-229    0.000E+00   1.815E-03   9.730E-01   7.748E-04

 Source:  3
         Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
         Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    3.450E-07 [1/hr]
              Fraction released to air: 1.000E-01
              Removable fraction:       1.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
     AM-241    1.000E+02   1.640E-03   2.000E-01   4.311E-05
     NP-237    0.000E+00   2.000E-03   2.432E-01   5.450E-04
     U-233     0.000E+00   1.302E-04   6.081E-02   8.604E-07
     TH-229    0.000E+00   1.815E-03   9.730E-01   7.748E-04

 Source:  4
         Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
         Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
         Pathway ::
              Direct Ingestion Rate:    3.450E-07 [1/hr]
              Fraction released to air: 5.170E-01
              Removable fraction:       1.000E-01
              Time to Remove:           5.280E+04 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
     AM-241    1.000E+02   1.640E-03   2.000E-01   4.311E-05
     NP-237    0.000E+00   2.000E-03   2.432E-01   5.450E-04
     U-233     0.000E+00   1.302E-04   6.081E-02   8.604E-07
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 15:38:24  Page:   6 **
 Title : Single Nuclide DCGL for Am-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Am241DCGL.bld


     TH-229    0.000E+00   1.815E-03   9.730E-01   7.748E-04

 Source:  5
         Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
         Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    3.450E-07 [1/hr]
              Fraction released to air: 5.170E-01
              Removable fraction:       1.000E-01
              Time to Remove:           3.653E+02 [day]



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                             Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     AM-241    1.000E+02   1.640E-03   2.000E-01   4.311E-05
     NP-237    0.000E+00   2.000E-03   2.432E-01   5.450E-04
     U-233     0.000E+00   1.302E-04   6.081E-02   8.604E-07
     TH-229    0.000E+00   1.815E-03   9.730E-01   7.748E-04
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 15:38:24 Page:   2 **
 Title      : Single Nuclide DCGL for Am-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Am241DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300


 Number  Name                        Distribution             Parameters
 ______  __________________________  _______________________  ______________________________
    1    AIRFR( 1)                   TRIANGULAR               .000001   .07       1
    2    RF0( 2, 1)                  TRIANGULAR               1000      10000     100000
    3    AIRFR( 3)                   TRIANGULAR               .000001   .07       1
    4    RF0( 3, 1)                  TRIANGULAR               1000      10000     100000
    5    RF0( 5, 1)                  TRIANGULAR               1000      10000     100000
    6    RF0( 1, 1)                  TRIANGULAR               1000      10000     100000
    7    AIRFR( 2)                   TRIANGULAR               .000001   .07       1
    8    INGE2( 1)                   LOGUNIFORM               .000028   .00029
 ======  ========================== ======================   ==============================
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 15:25:25  Page:   2 **
 Title : Single Nuclide DCGL for Pu-242
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu242DCGL.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters          ÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   3.57E+01    1.61E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 15:25:25  Page:   3 **
 Title : Single Nuclide DCGL for Pu-242
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu242DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


       Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 15:25:25  Page:   4 **
 Title : Single Nuclide DCGL for Pu-242
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu242DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]

             Radon Release Fraction:   1.000E-01



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    PU-242    1.000E+02   1.514E-03   1.851E-01   2.113E-07
    U-238     0.000E+00   1.212E-04   5.315E-02   7.207E-05
    U-234     0.000E+00   1.275E-04   5.946E-02   4.023E-07
    TH-230    0.000E+00   2.468E-04   1.468E-01   9.189E-07
    RA-226    0.000E+00   5.991E-04   3.874E-03   4.685E-03
    PB-210    0.000E+00   3.275E-03   1.045E-02   4.730E-06

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]

             Radon Release Fraction:   1.000E-01



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 15:25:25  Page:   5 **
 Title : Single Nuclide DCGL for Pu-242
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu242DCGL.bld


     PU-242    1.000E+02   1.514E-03   1.851E-01   2.113E-07
     U-238     0.000E+00   1.212E-04   5.315E-02   7.207E-05
     U-234     0.000E+00   1.275E-04   5.946E-02   4.023E-07
     TH-230    0.000E+00   2.468E-04   1.468E-01   9.189E-07
     RA-226    0.000E+00   5.991E-04   3.874E-03   4.685E-03
     PB-210    0.000E+00   3.275E-03   1.045E-02   4.730E-06

 Source:  3
        Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]

             Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     PU-242    1.000E+02   1.514E-03   1.851E-01   2.113E-07
     U-238     0.000E+00   1.212E-04   5.315E-02   7.207E-05
     U-234     0.000E+00   1.275E-04   5.946E-02   4.023E-07
     TH-230    0.000E+00   2.468E-04   1.468E-01   9.189E-07
     RA-226    0.000E+00   5.991E-04   3.874E-03   4.685E-03
     PB-210    0.000E+00   3.275E-03   1.045E-02   4.730E-06
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 15:25:25  Page:   6 **
 Title : Single Nuclide DCGL for Pu-242
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu242DCGL.bld



 Source:  4
        Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]

             Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     PU-242    1.000E+02   1.514E-03   1.851E-01   2.113E-07
     U-238     0.000E+00   1.212E-04   5.315E-02   7.207E-05
     U-234     0.000E+00   1.275E-04   5.946E-02   4.023E-07
     TH-230    0.000E+00   2.468E-04   1.468E-01   9.189E-07
     RA-226    0.000E+00   5.991E-04   3.874E-03   4.685E-03
     PB-210    0.000E+00   3.275E-03   1.045E-02   4.730E-06

 Source:  5
        Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]

             Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     PU-242    1.000E+02   1.514E-03   1.851E-01   2.113E-07
     U-238     0.000E+00   1.212E-04   5.315E-02   7.207E-05
     U-234     0.000E+00   1.275E-04   5.946E-02   4.023E-07
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 15:25:25  Page:   7 **
 Title : Single Nuclide DCGL for Pu-242
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu242DCGL.bld


     TH-230    0.000E+00   2.468E-04   1.468E-01   9.189E-07
     RA-226    0.000E+00   5.991E-04   3.874E-03   4.685E-03
     PB-210    0.000E+00   3.275E-03   1.045E-02   4.730E-06
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 15:25:25 Page:   2 **
 Title      : Single Nuclide DCGL for Pu-242
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu242DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300


 Number  Name                        Distribution             Parameters
 ______  __________________________  _______________________  ______________________________
    1    AIRFR( 1)                   TRIANGULAR               .000001   .07       1
    2    RF0( 2, 1)                  TRIANGULAR               1000      10000     100000
    3    AIRFR( 3)                   TRIANGULAR               .000001   .07       1
    4    RF0( 3, 1)                  TRIANGULAR               1000      10000     100000
    5    RF0( 5, 1)                  TRIANGULAR               1000      10000     100000
    6    RF0( 1, 1)                  TRIANGULAR               1000      10000     100000
    7    AIRFR( 2)                   TRIANGULAR               .000001   .07       1
    8    INGE2( 1)                   LOGUNIFORM               .000028   .00029
 ======  ========================== ======================   ==============================
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 17:06:46  Page:   2 **
 Title : Single Nuclide DCGL for Cm-244
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cm244DCGL.bld


             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍ      RESRAD-BUILD Input Parameters          ÍÍÍ
             ÍÍÍ                                             ÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ
             ÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍÍ



                       Number of Sources  :   5
                       Number of Receptors:   1
                       Total Time         :  3.652500E+02 days
                       Fraction Inside    :  2.670000E-01



             ÍÍÍÍÍÍÍÍÍÍ  Receptor Information  ÍÍÍÍÍÍÍÍÍÍ

 Receptor     Room     x       y         z  FracTime Inhalation Ingestion(Dust)
                      [m]     [m]        [m]           [m3/day]     [m2/hr]
   1            1    5.850    5.850    1.000  1.000   3.57E+01    1.61E-04



             ÍÍÍ  Receptor-Source Shielding Relationship  ÍÍÍ


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

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 17:06:46  Page:   3 **
 Title : Single Nuclide DCGL for Cm-244
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cm244DCGL.bld




              ÍÍÍÍÍÍÍÍ  Building Information  ÍÍÍÍÍÍÍÍ


      Building Air Exchange Rate: 8.35E-01 1/hr


    Height[m]         Air Exchanges [m3/hr]
    Area [m2]
                     ******************************
                     *                            *
                     *                            *
                     *                           <=Q01: 4.45E+02
    H1:   3.890      *           Room  1           *      Q10 :  4.45E+02
                     *   LAMBDA: 8.35E-01          *
   Area 137.000      *                            *
                     *                            *
                     ******************************


      Deposition velocity: 4.78E-04 [m/s]   Resuspension Rate: 1.33E-09 [1/s]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 17:06:46  Page:   4 **
 Title : Single Nuclide DCGL for Cm-244
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cm244DCGL.bld


             ÍÍÍÍÍÍÍÍ  Source Information  ÍÍÍÍÍÍÍÍ


 Source:  1
        Location::  Room :  1  x:   5.85 y:   5.85  z:   0.00[m]
        Geometry::  Type: Area        Area:1.37E+02 [m2]  Direction: z
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           5.280E+04 [day]

             Radon Release Fraction:   1.000E-01



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
    CM-244    1.000E+02   9.099E-04   1.117E-01   2.586E-07
    PU-240    0.000E+00   1.595E-03   1.932E-01   2.505E-07
    U-236     0.000E+00   1.212E-04   5.631E-02   2.640E-07
    TH-232    0.000E+00   1.230E-03   7.387E-01   4.595E-07
    TH-228    0.000E+00   3.640E-04   1.554E-01   4.239E-03
    RA-228    0.000E+00   6.486E-04   2.288E-03   2.518E-03

 Source:  2
        Location::  Room :  1  x:   0.00 y:   5.85  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 5.170E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]

             Radon Release Fraction:   1.000E-01



   Contamination::
    Nuclide Concentration       Dose Conversion Factor (Library: BUILD
   ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
               [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                   (dpm/m3)]
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 17:06:46  Page:   5 **
 Title : Single Nuclide DCGL for Cm-244
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cm244DCGL.bld


     CM-244    1.000E+02   9.099E-04   1.117E-01   2.586E-07
     PU-240    0.000E+00   1.595E-03   1.932E-01   2.505E-07
     U-236     0.000E+00   1.212E-04   5.631E-02   2.640E-07
     TH-232    0.000E+00   1.230E-03   7.387E-01   4.595E-07
     TH-228    0.000E+00   3.640E-04   1.554E-01   4.239E-03
     RA-228    0.000E+00   6.486E-04   2.288E-03   2.518E-03

 Source:  3
        Location::  Room :  1  x:   5.85 y:  11.70  z:   1.95[m]
        Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
        Pathway ::
             Direct Ingestion Rate:    3.450E-07 [1/hr]
             Fraction released to air: 1.000E-01
             Removable fraction:       1.000E-01
             Time to Remove:           3.653E+02 [day]

             Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                            Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     CM-244    1.000E+02   9.099E-04   1.117E-01   2.586E-07
     PU-240    0.000E+00   1.595E-03   1.932E-01   2.505E-07
     U-236     0.000E+00   1.212E-04   5.631E-02   2.640E-07
     TH-232    0.000E+00   1.230E-03   7.387E-01   4.595E-07
     TH-228    0.000E+00   3.640E-04   1.554E-01   4.239E-03
     RA-228    0.000E+00   6.486E-04   2.288E-03   2.518E-03
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 17:06:46  Page:   6 **
 Title : Single Nuclide DCGL for Cm-244
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cm244DCGL.bld



 Source:  4
         Location::  Room :  1  x:  11.70 y:   5.85  z:   1.95[m]
         Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: x
         Pathway ::
              Direct Ingestion Rate:    3.450E-07 [1/hr]
              Fraction released to air: 5.170E-01
              Removable fraction:       1.000E-01
              Time to Remove:           5.280E+04 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     CM-244    1.000E+02   9.099E-04   1.117E-01   2.586E-07
     PU-240    0.000E+00   1.595E-03   1.932E-01   2.505E-07
     U-236     0.000E+00   1.212E-04   5.631E-02   2.640E-07
     TH-232    0.000E+00   1.230E-03   7.387E-01   4.595E-07
     TH-228    0.000E+00   3.640E-04   1.554E-01   4.239E-03
     RA-228    0.000E+00   6.486E-04   2.288E-03   2.518E-03

 Source:  5
         Location::  Room :  1  x:   5.85 y:   0.00  z:   1.95[m]
         Geometry::  Type: Area        Area:4.55E+01 [m2]  Direction: y
         Pathway ::
              Direct Ingestion Rate:    3.450E-07 [1/hr]
              Fraction released to air: 5.170E-01
              Removable fraction:       1.000E-01
              Time to Remove:           3.653E+02 [day]

              Radon Release Fraction:   1.000E-01



    Contamination::
     Nuclide Concentration       Dose Conversion Factor (Library: BUILD
    ÄÄÄÄÄÄÄ ÄÄÄÄÄÄÄÄÄÄÄÄÄ  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                           Ingestion   Inhalation  Submersion
                [dpm/m2]    [mrem/dpm]  [mrem/dpm]  [mrem/yr/
                                                    (dpm/m3)]
     CM-244    1.000E+02   9.099E-04   1.117E-01   2.586E-07
     PU-240    0.000E+00   1.595E-03   1.932E-01   2.505E-07
     U-236     0.000E+00   1.212E-04   5.631E-02   2.640E-07
```

```
** RESRAD-BUILD Dose Program Output, Version 3.22 07/20/04 17:06:46  Page:   7 **
 Title : Single Nuclide DCGL for Cm-244
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cm244DCGL.bld


     TH-232    0.000E+00   1.230E-03   7.387E-01   4.595E-07
     TH-228    0.000E+00   3.640E-04   1.554E-01   4.239E-03
     RA-228    0.000E+00   6.486E-04   2.288E-03   2.518E-03
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 17:06:46 Page:   2 **
 Title      : Single Nuclide DCGL for Cm-244
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cm244DCGL.bld
 ____________________________________________________________________


                   Probabilistic Input

 Number of Sample Runs:  300


 Number  Name                        Distribution             Parameters
 ______  __________________________  _______________________  ____________________________
    1    AIRFR( 1)                   TRIANGULAR               .000001   .07       1
    2    RF0( 2, 1)                  TRIANGULAR               1000      10000     100000
    3    AIRFR( 3)                   TRIANGULAR               .000001   .07       1
    4    RF0( 3, 1)                  TRIANGULAR               1000      10000     100000
    5    RF0( 5, 1)                  TRIANGULAR               1000      10000     100000
    6    RF0( 1, 1)                  TRIANGULAR               1000      10000     100000
    7    AIRFR( 2)                   TRIANGULAR               .000001   .07       1
 ======  ========================== ======================   ============================
```

Attachment 8.9

RESRAD-BUILD v3.22 Probabilistic Output Report for Dose Conversion Factor Results

```
** RESRAD-BUILD Probabilistic Output 3.22 07/08/04 13:54:04 Page:   3 **
 Title      : Single Nuclide DCGL for Tritium
 Input File : C:\Program Files\RESRAD_Family\BUILD\H3DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                          Source
  Receptor       1          2          3          4          5        Total
*** 1***
 Minimum   3.19E-08   1.07E-08   1.06E-08   1.06E-08   1.06E-08   7.47E-08

 Maximum   5.88E-08   3.05E-08   2.57E-08   1.75E-08   3.36E-08   1.06E-07

 Average   3.39E-08   1.16E-08   1.13E-08   1.13E-08   1.13E-08   7.94E-08

 Std.Dev   2.83E-09   1.75E-09   1.19E-09   9.97E-10   1.54E-09   4.72E-09

 ____________________________________________________________________________
 * Total *
 Minimum   3.19E-08   1.07E-08   1.06E-08   1.06E-08   1.06E-08   7.47E-08

 Maximum   5.88E-08   3.05E-08   2.57E-08   1.75E-08   3.36E-08   1.06E-07

 Average   3.39E-08   1.16E-08   1.13E-08   1.13E-08   1.13E-08   7.94E-08

 Std.Dev   2.83E-09   1.75E-09   1.19E-09   9.97E-10   1.54E-09   4.72E-09
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/08/04 13:59:28 Page:   3 **
 Title      : Single Nuclide DCGL for C-14
 Input File : C:\Program Files\RESRAD_Family\BUILD\C14DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                         Source
  Receptor      1          2          3          4          5       Total
*** 1***
 Minimum   1.05E-06   3.54E-07   3.48E-07   3.47E-07   3.48E-07   2.48E-06

 Maximum   3.48E-06   2.23E-06   1.76E-06   1.02E-06   2.55E-06   5.48E-06

 Average   1.24E-06   4.45E-07   4.11E-07   4.11E-07   4.12E-07   2.92E-06

 Std.Dev   2.61E-07   1.67E-07   1.11E-07   9.42E-08   1.46E-07   4.50E-07

 ____________________________________________________________________________
 * Total *
 Minimum   1.05E-06   3.54E-07   3.48E-07   3.47E-07   3.48E-07   2.48E-06

 Maximum   3.48E-06   2.23E-06   1.76E-06   1.02E-06   2.55E-06   5.48E-06

 Average   1.24E-06   4.45E-07   4.11E-07   4.11E-07   4.12E-07   2.92E-06

 Std.Dev   2.61E-07   1.67E-07   1.11E-07   9.42E-08   1.46E-07   4.50E-07
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/08/04 14:25:40 Page:   3 **
 Title      : Single Nuclide DCGL for Na-22
 Input File : C:\Program Files\RESRAD_Family\BUILD\Na22DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                         Source
  Receptor      1          2          3          4          5       Total
*** 1***
 Minimum   1.07E-03   9.97E-05   9.96E-05   9.96E-05   9.96E-05   1.47E-03

 Maximum   1.08E-03   9.98E-05   9.99E-05   9.99E-05   1.02E-04   1.48E-03

 Average   1.08E-03   9.97E-05   9.97E-05   9.97E-05   9.98E-05   1.47E-03

 Std.Dev   2.31E-07   1.23E-08   7.65E-08   7.65E-08   3.27E-07   4.26E-07

 ____________________________________________________________________________
 * Total *
 Minimum   1.07E-03   9.97E-05   9.96E-05   9.96E-05   9.96E-05   1.47E-03

 Maximum   1.08E-03   9.98E-05   9.99E-05   9.99E-05   1.02E-04   1.48E-03

 Average   1.08E-03   9.97E-05   9.97E-05   9.97E-05   9.98E-05   1.47E-03

 Std.Dev   2.31E-07   1.23E-08   7.65E-08   7.65E-08   3.27E-07   4.26E-07
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/08/04 15:01:39 Page:   3 **
 Title      : Single Nuclide DCGL for Fe-55
 Input File : C:\Program Files\RESRAD_Family\BUILD\Fe55DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                          Source
  Receptor       1          2          3          4          5        Total
*** 1***
 Minimum   3.03E-07   1.01E-07   1.00E-07   1.00E-07   1.01E-07   7.08E-07

 Maximum   4.54E-07   1.84E-07   1.68E-07   1.31E-07   1.88E-07   8.67E-07

 Average   3.13E-07   1.06E-07   1.04E-07   1.04E-07   1.04E-07   7.31E-07

 Std.Dev   1.51E-08   7.15E-09   5.74E-09   4.50E-09   6.32E-09   2.03E-08

 ____________________________________________________________________________
 * Total *
 Minimum   3.03E-07   1.01E-07   1.00E-07   1.00E-07   1.01E-07   7.08E-07

 Maximum   4.54E-07   1.84E-07   1.68E-07   1.31E-07   1.88E-07   8.67E-07

 Average   3.13E-07   1.06E-07   1.04E-07   1.04E-07   1.04E-07   7.31E-07

 Std.Dev   1.51E-08   7.15E-09   5.74E-09   4.50E-09   6.32E-09   2.03E-08
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/26/04 13:09:35 Page:   3 **
 Title      : Single Nuclide DCGL for Ni-59
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni59DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                         Source
  Receptor      1          2          3          4          5       Total
*** 1***
 Minimum   1.05E-07   3.65E-08   3.48E-08   3.49E-08   3.49E-08   2.53E-07

 Maximum   4.02E-07   1.74E-07   3.12E-07   1.69E-07   1.46E-07   5.69E-07

 Average   1.31E-07   4.85E-08   4.49E-08   4.39E-08   4.42E-08   3.13E-07

 Std.Dev   3.57E-08   1.77E-08   2.12E-08   1.40E-08   1.42E-08   5.54E-08

 ____________________________________________________________________________
 * Total *
 Minimum   1.05E-07   3.65E-08   3.48E-08   3.49E-08   3.49E-08   2.53E-07

 Maximum   4.02E-07   1.74E-07   3.12E-07   1.69E-07   1.46E-07   5.69E-07

 Average   1.31E-07   4.85E-08   4.49E-08   4.39E-08   4.42E-08   3.13E-07

 Std.Dev   3.57E-08   1.77E-08   2.12E-08   1.40E-08   1.42E-08   5.54E-08
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/08/04 09:29:23 Page:   3 **
 Title      : Single Nuclide DCGL for Co-60
 Input File : C:\Program Files\RESRAD_Family\BUILD\Co60DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                          Source
  Receptor      1          2          3          4          5       Total
*** 1***
 Minimum   1.19E-03   1.12E-04   1.12E-04   1.12E-04   1.12E-04   1.64E-03

 Maximum   1.19E-03   1.23E-04   1.25E-04   1.19E-04   1.29E-04   1.66E-03

 Average   1.19E-03   1.13E-04   1.13E-04   1.13E-04   1.13E-04   1.64E-03

 Std.Dev   6.54E-07   1.19E-06   1.23E-06   9.95E-07   1.27E-06   2.40E-06

 ____________________________________________________________________________
 * Total *
 Minimum   1.19E-03   1.12E-04   1.12E-04   1.12E-04   1.12E-04   1.64E-03

 Maximum   1.19E-03   1.23E-04   1.25E-04   1.19E-04   1.29E-04   1.66E-03

 Average   1.19E-03   1.13E-04   1.13E-04   1.13E-04   1.13E-04   1.64E-03

 Std.Dev   6.54E-07   1.19E-06   1.23E-06   9.95E-07   1.27E-06   2.40E-06
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 08:03:26 Page:   3 **
 Title      : Single Nuclide DCGL for Ni-63
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ni63DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                         Source
  Receptor      1          2          3          4          5       Total
*** 1***
 Minimum   2.88E-07   9.92E-08   9.56E-08   9.57E-08   9.59E-08   6.89E-07

 Maximum   9.34E-07   3.97E-07   6.99E-07   3.88E-07   3.37E-07   1.38E-06

 Average   3.46E-07   1.25E-07   1.18E-07   1.15E-07   1.16E-07   8.20E-07

 Std.Dev   7.75E-08   3.85E-08   4.61E-08   3.04E-08   3.07E-08   1.20E-07

 ____________________________________________________________________________
 * Total *
 Minimum   2.88E-07   9.92E-08   9.56E-08   9.57E-08   9.59E-08   6.89E-07

 Maximum   9.34E-07   3.97E-07   6.99E-07   3.88E-07   3.37E-07   1.38E-06

 Average   3.46E-07   1.25E-07   1.18E-07   1.15E-07   1.16E-07   8.20E-07

 Std.Dev   7.75E-08   3.85E-08   4.61E-08   3.04E-08   3.07E-08   1.20E-07
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 08:16:25 Page:   3 **
 Title      : Single Nuclide DCGL for Sr-90
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sr90DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                        Source
  Receptor      1          2          3          4          5       Total
*** 1***
 Minimum   7.92E-05   2.61E-05   2.56E-05   2.56E-05   2.56E-05   1.84E-04

 Maximum   2.22E-04   1.17E-04   9.72E-05   5.40E-05   1.27E-04   3.35E-04

 Average   8.94E-05   3.08E-05   2.91E-05   2.90E-05   2.91E-05   2.07E-04

 Std.Dev   1.44E-05   7.91E-06   5.76E-06   4.68E-06   6.94E-06   2.16E-05

 ____________________________________________________________________________
 * Total *
 Minimum   7.92E-05   2.61E-05   2.56E-05   2.56E-05   2.56E-05   1.84E-04

 Maximum   2.22E-04   1.17E-04   9.72E-05   5.40E-05   1.27E-04   3.35E-04

 Average   8.94E-05   3.08E-05   2.91E-05   2.90E-05   2.91E-05   2.07E-04

 Std.Dev   1.44E-05   7.91E-06   5.76E-06   4.68E-06   6.94E-06   2.16E-05
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 09:06:04 Page:   3 **
 Title      : Single Nuclide DCGL for Nb-94
 Input File : C:\Program Files\RESRAD_Family\BUILD\Nb94DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                          Source
  Receptor       1          2          3          4          5        Total
*** 1***
 Minimum   7.81E-04   7.22E-05   7.22E-05   7.30E-05   7.30E-05   1.07E-03

 Maximum   7.90E-04   1.00E-04   9.46E-05   1.09E-04   1.15E-04   1.12E-03

 Average   7.84E-04   7.48E-05   7.49E-05   7.60E-05   7.61E-05   1.09E-03

 Std.Dev   2.09E-06   3.46E-06   3.40E-06   3.97E-06   4.18E-06   7.46E-06

 ____________________________________________________________________________
 * Total *
 Minimum   7.81E-04   7.22E-05   7.22E-05   7.30E-05   7.30E-05   1.07E-03

 Maximum   7.90E-04   1.00E-04   9.46E-05   1.09E-04   1.15E-04   1.12E-03

 Average   7.84E-04   7.48E-05   7.49E-05   7.60E-05   7.61E-05   1.09E-03

 Std.Dev   2.09E-06   3.46E-06   3.40E-06   3.97E-06   4.18E-06   7.46E-06
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/26/04 16:51:32 Page:   3 **
 Title      : Single Nuclide DCGL for Tc-99
 Input File : C:\Program Files\RESRAD_Family\BUILD\Tc99DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                         Source
  Receptor      1          2          3          4          5       Total
*** 1***
 Minimum   7.69E-07   2.53E-07   2.46E-07   2.46E-07   2.46E-07   1.78E-06

 Maximum   2.79E-06   1.69E-06   1.34E-06   7.31E-07   1.89E-06   4.02E-06

 Average   9.18E-07   3.23E-07   2.97E-07   2.97E-07   2.98E-07   2.13E-06

 Std.Dev   2.10E-07   1.26E-07   8.68E-08   7.23E-08   1.10E-07   3.40E-07

 ____________________________________________________________________________
 * Total *
 Minimum   7.69E-07   2.53E-07   2.46E-07   2.46E-07   2.46E-07   1.78E-06

 Maximum   2.79E-06   1.69E-06   1.34E-06   7.31E-07   1.89E-06   4.02E-06

 Average   9.18E-07   3.23E-07   2.97E-07   2.97E-07   2.98E-07   2.13E-06

 Std.Dev   2.10E-07   1.26E-07   8.68E-08   7.23E-08   1.10E-07   3.40E-07
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 09:47:52 Page:   3 **
 Title      : Single Nuclide DCGL for Ag-108m
 Input File : C:\Program Files\RESRAD_Family\BUILD\Ag108mDCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________
```

Statistics for Dose (mrem) for Time: 1

Receptor	Source 1	2	3	4	5	Total
*** 1***						
Minimum	8.15E-04	7.55E-05	7.55E-05	7.61E-05	7.61E-05	1.12E-03
Maximum	8.23E-04	9.89E-05	9.41E-05	1.06E-04	1.11E-04	1.16E-03
Average	8.18E-04	7.76E-05	7.77E-05	7.86E-05	7.86E-05	1.13E-03
Std.Dev	1.74E-06	2.89E-06	2.84E-06	3.31E-06	3.49E-06	6.22E-06
* Total *						
Minimum	8.15E-04	7.55E-05	7.55E-05	7.61E-05	7.61E-05	1.12E-03
Maximum	8.23E-04	9.89E-05	9.41E-05	1.06E-04	1.11E-04	1.16E-03
Average	8.18E-04	7.76E-05	7.77E-05	7.86E-05	7.86E-05	1.13E-03
Std.Dev	1.74E-06	2.89E-06	2.84E-06	3.31E-06	3.49E-06	6.22E-06

```
** RESRAD-BUILD Probabilistic Output 3.22 06/29/04 11:51:51 Page:   3 **
 Title      : Sensitivity Analysis for Sb-125
 Input File : C:\Program Files\RESRAD_Family\BUILD\Sb125Sens.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                         Source
  Receptor      1          2          3          4          5       Total
*** 1***
 Minimum   2.95E-06   6.59E-07   6.57E-07   6.58E-07   6.58E-07   5.79E-06

 Maximum   3.28E-06   8.66E-07   8.62E-07   8.68E-07   8.71E-07   6.38E-06

 Average   3.08E-06   7.41E-07   7.41E-07   7.41E-07   7.41E-07   6.04E-06

 Std.Dev   7.37E-08   4.73E-08   4.75E-08   4.74E-08   4.75E-08   1.20E-07

 ____________________________________________________________________________
 * Total *
 Minimum   2.95E-06   6.59E-07   6.57E-07   6.58E-07   6.58E-07   5.79E-06

 Maximum   3.28E-06   8.66E-07   8.62E-07   8.68E-07   8.71E-07   6.38E-06

 Average   3.08E-06   7.41E-07   7.41E-07   7.41E-07   7.41E-07   6.04E-06

 Std.Dev   7.37E-08   4.73E-08   4.75E-08   4.74E-08   4.75E-08   1.20E-07
```

```
** RESRAD-BUILD Probabilistic Output 3.22 12/21/04 13:14:08 Page:   3 **
 Title      : Single Nuclide DCGL for Cs-134
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs134DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                         Source
  Receptor      1          2          3          4          5       Total
*** 1***
 Minimum   8.06E-04   8.25E-05   8.24E-05   8.24E-05   8.24E-05   1.14E-03

 Maximum   8.19E-04   9.03E-05   8.94E-05   8.54E-05   9.09E-05   1.15E-03

 Average   8.07E-04   8.29E-05   8.28E-05   8.28E-05   8.28E-05   1.14E-03

 Std.Dev   1.43E-06   6.81E-07   5.61E-07   4.35E-07   6.08E-07   1.93E-06

 ____________________________________________________________________________
 * Total *
 Minimum   8.06E-04   8.25E-05   8.24E-05   8.24E-05   8.24E-05   1.14E-03

 Maximum   8.19E-04   9.03E-05   8.94E-05   8.54E-05   9.09E-05   1.15E-03

 Average   8.07E-04   8.29E-05   8.28E-05   8.28E-05   8.28E-05   1.14E-03

 Std.Dev   1.43E-06   6.81E-07   5.61E-07   4.35E-07   6.08E-07   1.93E-06
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/08/04 14:05:37 Page:   3 **
 Title      : Single Nuclide DCGL for Cs-137
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cs137DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                         Source
  Receptor      1          2          3          4          5       Total
*** 1***
 Minimum   3.06E-04   3.42E-05   3.39E-05   3.39E-05   3.40E-05   4.42E-04

 Maximum   3.52E-04   6.48E-05   5.97E-05   4.44E-05   6.84E-05   4.92E-04

 Average   3.09E-04   3.58E-05   3.52E-05   3.51E-05   3.52E-05   4.50E-04

 Std.Dev   4.94E-06   2.68E-06   2.02E-06   1.62E-06   2.37E-06   7.34E-06

 ____________________________________________________________________________
 * Total *
 Minimum   3.06E-04   3.42E-05   3.39E-05   3.39E-05   3.40E-05   4.42E-04

 Maximum   3.52E-04   6.48E-05   5.97E-05   4.44E-05   6.84E-05   4.92E-04

 Average   3.09E-04   3.58E-05   3.52E-05   3.51E-05   3.52E-05   4.50E-04

 Std.Dev   4.94E-06   2.68E-06   2.02E-06   1.62E-06   2.37E-06   7.34E-06
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 10:39:52 Page:   3 **
 Title      : Single Nuclide DCGL for Pm-147
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pm147DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                         Source
  Receptor      1          2          3          4          5       Total
*** 1***
 Minimum   5.46E-07   1.76E-07   1.76E-07   1.86E-07   1.86E-07   1.31E-06

 Maximum   1.87E-06   6.87E-07   5.15E-07   6.59E-07   7.61E-07   2.65E-06

 Average   6.41E-07   2.08E-07   2.08E-07   2.23E-07   2.23E-07   1.50E-06

 Std.Dev   1.44E-07   4.66E-08   4.17E-08   4.98E-08   5.35E-08   1.70E-07

 ____________________________________________________________________________
 * Total *
 Minimum   5.46E-07   1.76E-07   1.76E-07   1.86E-07   1.86E-07   1.31E-06

 Maximum   1.87E-06   6.87E-07   5.15E-07   6.59E-07   7.61E-07   2.65E-06

 Average   6.41E-07   2.08E-07   2.08E-07   2.23E-07   2.23E-07   1.50E-06

 Std.Dev   1.44E-07   4.66E-08   4.17E-08   4.98E-08   5.35E-08   1.70E-07
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 11:06:28 Page:   3 **
 Title      : Single Nuclide DCGL for Eu-152
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu152DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                         Source
  Receptor      1          2          3          4          5       Total
*** 1***
 Minimum   5.69E-04   5.31E-05   5.31E-05   5.33E-05   5.33E-05   7.83E-04

 Maximum   5.72E-04   5.40E-05   6.30E-05   6.43E-05   6.34E-05   7.98E-04

 Average   5.70E-04   5.34E-05   5.39E-05   5.42E-05   5.42E-05   7.86E-04

 Std.Dev   5.84E-07   1.97E-07   1.09E-06   1.15E-06   1.14E-06   2.12E-06

 ____________________________________________________________________________
 * Total *
 Minimum   5.69E-04   5.31E-05   5.31E-05   5.33E-05   5.33E-05   7.83E-04

 Maximum   5.72E-04   5.40E-05   6.30E-05   6.43E-05   6.34E-05   7.98E-04

 Average   5.70E-04   5.34E-05   5.39E-05   5.42E-05   5.42E-05   7.86E-04

 Std.Dev   5.84E-07   1.97E-07   1.09E-06   1.15E-06   1.14E-06   2.12E-06
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/27/04 08:26:21 Page:   3 **
 Title      : Single Nuclide DCGL for Eu-154
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu154DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                         Source
  Receptor      1          2          3          4          5       Total
*** 1***
 Minimum   2.83E-03   2.61E-04   2.61E-04   2.62E-04   2.62E-04   3.88E-03

 Maximum   2.84E-03   2.63E-04   2.63E-04   2.62E-04   2.62E-04   3.89E-03

 Average   2.84E-03   2.62E-04   2.62E-04   2.62E-04   2.62E-04   3.88E-03

 Std.Dev   1.67E-06   5.53E-07   5.54E-07   3.85E-08   3.85E-08   1.84E-06

 ____________________________________________________________________________
 * Total *
 Minimum   2.83E-03   2.61E-04   2.61E-04   2.62E-04   2.62E-04   3.88E-03

 Maximum   2.84E-03   2.63E-04   2.63E-04   2.62E-04   2.62E-04   3.89E-03

 Average   2.84E-03   2.62E-04   2.62E-04   2.62E-04   2.62E-04   3.88E-03

 Std.Dev   1.67E-06   5.53E-07   5.54E-07   3.85E-08   3.85E-08   1.84E-06
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 12:36:00 Page:   3 **
 Title      : Single Nuclide DCGL for Eu-155
 Input File : C:\Program Files\RESRAD_Family\BUILD\Eu155DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                          Source
  Receptor       1          2          3          4          5       Total
*** 1***
 Minimum   3.34E-05   3.49E-06   3.49E-06   3.51E-06   3.49E-06   4.74E-05

 Maximum   3.56E-05   4.61E-06   4.46E-06   4.36E-06   3.97E-06   5.00E-05

 Average   3.36E-05   3.55E-06   3.55E-06   3.57E-06   3.54E-06   4.78E-05

 Std.Dev   2.61E-07   8.69E-08   9.27E-08   8.59E-08   6.41E-08   3.05E-07

 ____________________________________________________________________________
 * Total *
 Minimum   3.34E-05   3.49E-06   3.49E-06   3.51E-06   3.49E-06   4.74E-05

 Maximum   3.56E-05   4.61E-06   4.46E-06   4.36E-06   3.97E-06   5.00E-05

 Average   3.36E-05   3.55E-06   3.55E-06   3.57E-06   3.54E-06   4.78E-05

 Std.Dev   2.61E-07   8.69E-08   9.27E-08   8.59E-08   6.41E-08   3.05E-07
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 13:19:36 Page:   3 **
 Title      : Single Nuclide DCGL for Np-237
 Input File : C:\Program Files\RESRAD_Family\BUILD\Np237DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                         Source
  Receptor      1          2          3          4          5       Total
*** 1***
 Minimum   2.38E-03   7.51E-04   7.50E-04   1.12E-03   9.58E-04   6.60E-03

 Maximum   1.88E-02   1.10E-02   1.74E-02   1.30E-03   1.10E-02   2.65E-02

 Average   4.49E-03   1.47E-03   1.52E-03   1.18E-03   1.80E-03   1.05E-02

 Std.Dev   2.58E-03   9.97E-04   1.42E-03   5.09E-05   1.10E-03   3.28E-03

 ____________________________________________________________________________
 * Total *
 Minimum   2.38E-03   7.51E-04   7.50E-04   1.12E-03   9.58E-04   6.60E-03

 Maximum   1.88E-02   1.10E-02   1.74E-02   1.30E-03   1.10E-02   2.65E-02

 Average   4.49E-03   1.47E-03   1.52E-03   1.18E-03   1.80E-03   1.05E-02

 Std.Dev   2.58E-03   9.97E-04   1.42E-03   5.09E-05   1.10E-03   3.28E-03
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 13:14:43 Page:   3 **
 Title      : Single Nuclide DCGL for Pu-238
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu238DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                          Source
  Receptor       1          2          3          4          5        Total
*** 1***
 Minimum   1.62E-03   5.38E-04   5.43E-04   8.29E-04   6.97E-04   4.66E-03

 Maximum   1.62E-02   5.30E-03   6.43E-03   8.29E-04   8.25E-03   2.03E-02

 Average   3.14E-03   1.02E-03   1.05E-03   8.29E-04   1.26E-03   7.30E-03

 Std.Dev   1.98E-03   5.79E-04   7.05E-04   0.00E+00   7.74E-04   2.38E-03

 ____________________________________________________________________________
 * Total *
 Minimum   1.62E-03   5.38E-04   5.43E-04   8.29E-04   6.97E-04   4.66E-03

 Maximum   1.62E-02   5.30E-03   6.43E-03   8.29E-04   8.25E-03   2.03E-02

 Average   3.14E-03   1.02E-03   1.05E-03   8.29E-04   1.26E-03   7.30E-03

 Std.Dev   1.98E-03   5.79E-04   7.05E-04   0.00E+00   7.74E-04   2.38E-03
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 14:01:18 Page:   3 **
 Title      : Single Nuclide DCGL for Pu-239
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu239DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                         Source
  Receptor      1          2          3          4          5       Total
*** 1***
 Minimum   1.80E-03   5.90E-04   5.89E-04   8.82E-04   7.54E-04   5.13E-03

 Maximum   1.48E-02   8.76E-03   1.38E-02   1.03E-03   8.70E-03   2.10E-02

 Average   3.48E-03   1.16E-03   1.20E-03   9.29E-04   1.42E-03   8.19E-03

 Std.Dev   2.05E-03   7.92E-04   1.13E-03   4.05E-05   8.71E-04   2.61E-03

 ____________________________________________________________________________
 * Total *
 Minimum   1.80E-03   5.90E-04   5.89E-04   8.82E-04   7.54E-04   5.13E-03

 Maximum   1.48E-02   8.76E-03   1.38E-02   1.03E-03   8.70E-03   2.10E-02

 Average   3.48E-03   1.16E-03   1.20E-03   9.29E-04   1.42E-03   8.19E-03

 Std.Dev   2.05E-03   7.92E-04   1.13E-03   4.05E-05   8.71E-04   2.61E-03
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 14:14:38 Page:   3 **
 Title      : Single Nuclide DCGL for Pu-240
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu240DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                          Source
  Receptor       1          2          3          4          5        Total
*** 1***
 Minimum   1.80E-03   5.90E-04   5.89E-04   8.82E-04   7.54E-04   5.13E-03

 Maximum   1.48E-02   8.75E-03   1.38E-02   1.03E-03   8.69E-03   2.09E-02

 Average   3.47E-03   1.16E-03   1.20E-03   9.29E-04   1.42E-03   8.19E-03

 Std.Dev   2.05E-03   7.91E-04   1.13E-03   4.04E-05   8.70E-04   2.61E-03

 ____________________________________________________________________________
 * Total *
 Minimum   1.80E-03   5.90E-04   5.89E-04   8.82E-04   7.54E-04   5.13E-03

 Maximum   1.48E-02   8.75E-03   1.38E-02   1.03E-03   8.69E-03   2.09E-02

 Average   3.47E-03   1.16E-03   1.20E-03   9.29E-04   1.42E-03   8.19E-03

 Std.Dev   2.05E-03   7.91E-04   1.13E-03   4.04E-05   8.70E-04   2.61E-03
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 14:44:25 Page:   3 **
 Title      : Single Nuclide DCGL for Pu-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu241DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                          Source
  Receptor       1          2          3          4          5       Total
*** 1***
 Minimum   3.46E-05   1.15E-05   1.15E-05   1.62E-05   1.40E-05   9.47E-05

 Maximum   2.69E-04   8.84E-05   1.07E-04   1.62E-05   1.36E-04   3.47E-04

 Average   5.90E-05   1.93E-05   1.97E-05   1.62E-05   2.32E-05   1.37E-04

 Std.Dev   3.19E-05   9.35E-06   1.14E-05   0.00E+00   1.25E-05   3.85E-05

 ____________________________________________________________________________
 * Total *
 Minimum   3.46E-05   1.15E-05   1.15E-05   1.62E-05   1.40E-05   9.47E-05

 Maximum   2.69E-04   8.84E-05   1.07E-04   1.62E-05   1.36E-04   3.47E-04

 Average   5.90E-05   1.93E-05   1.97E-05   1.62E-05   2.32E-05   1.37E-04

 Std.Dev   3.19E-05   9.35E-06   1.14E-05   0.00E+00   1.25E-05   3.85E-05
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 15:38:24 Page:   3 **
 Title      : Single Nuclide DCGL for Am-241
 Input File : C:\Program Files\RESRAD_Family\BUILD\Am241DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                          Source
  Receptor       1          2          3          4          5        Total
*** 1***
 Minimum   1.87E-03   6.09E-04   6.07E-04   9.04E-04   7.75E-04   5.28E-03

 Maximum   1.49E-02   8.88E-03   1.39E-02   1.05E-03   8.81E-03   2.11E-02

 Average   3.56E-03   1.19E-03   1.23E-03   9.50E-04   1.45E-03   8.37E-03

 Std.Dev   2.06E-03   8.00E-04   1.14E-03   3.94E-05   8.78E-04   2.62E-03

 ____________________________________________________________________________
 * Total *
 Minimum   1.87E-03   6.09E-04   6.07E-04   9.04E-04   7.75E-04   5.28E-03

 Maximum   1.49E-02   8.88E-03   1.39E-02   1.05E-03   8.81E-03   2.11E-02

 Average   3.56E-03   1.19E-03   1.23E-03   9.50E-04   1.45E-03   8.37E-03

 Std.Dev   2.06E-03   8.00E-04   1.14E-03   3.94E-05   8.78E-04   2.62E-03
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 15:25:25 Page:   3 **
 Title      : Single Nuclide DCGL for Pu-242
 Input File : C:\Program Files\RESRAD_Family\BUILD\Pu242DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________

     Statistics for Dose (mrem) for Time:  1

                         Source
  Receptor      1          2          3          4          5       Total
*** 1***
 Minimum   1.71E-03   5.60E-04   5.59E-04   8.40E-04   7.17E-04   4.88E-03

 Maximum   1.42E-02   8.38E-03   1.32E-02   9.79E-04   8.32E-03   2.00E-02

 Average   3.31E-03   1.11E-03   1.15E-03   8.85E-04   1.36E-03   7.81E-03

 Std.Dev   1.96E-03   7.58E-04   1.08E-03   3.85E-05   8.33E-04   2.50E-03

 ____________________________________________________________________________
 * Total *
 Minimum   1.71E-03   5.60E-04   5.59E-04   8.40E-04   7.17E-04   4.88E-03

 Maximum   1.42E-02   8.38E-03   1.32E-02   9.79E-04   8.32E-03   2.00E-02

 Average   3.31E-03   1.11E-03   1.15E-03   8.85E-04   1.36E-03   7.81E-03

 Std.Dev   1.96E-03   7.58E-04   1.08E-03   3.85E-05   8.33E-04   2.50E-03
```

```
** RESRAD-BUILD Probabilistic Output 3.22 07/20/04 17:06:46 Page:   3 **
 Title      : Single Nuclide DCGL for Cm-244
 Input File : C:\Program Files\RESRAD_Family\BUILD\Cm244DCGL.bld
 Evaluation Time:  0.00000000E+00  years
 ____________________________________________________________________
```

Statistics for Dose (mrem) for Time: 1

Receptor	Source 1	2	3	4	5	Total
*** 1***						
Minimum	1.02E-03	3.38E-04	3.41E-04	4.85E-04	4.18E-04	2.82E-03
Maximum	8.34E-03	2.74E-03	3.31E-03	4.85E-04	4.22E-03	1.07E-02
Average	1.78E-03	5.81E-04	5.96E-04	4.85E-04	7.04E-04	4.15E-03
Std.Dev	9.96E-04	2.92E-04	3.55E-04	0.00E+00	3.90E-04	1.20E-03
* Total *						
Minimum	1.02E-03	3.38E-04	3.41E-04	4.85E-04	4.18E-04	2.82E-03
Maximum	8.34E-03	2.74E-03	3.31E-03	4.85E-04	4.22E-03	1.07E-02
Average	1.78E-03	5.81E-04	5.96E-04	4.85E-04	7.04E-04	4.15E-03
Std.Dev	9.96E-04	2.92E-04	3.55E-04	0.00E+00	3.90E-04	1.20E-03

Attachment 8.10

Calculated Single Nuclide DCGL Values

Calculated Single Nuclide DCGL Values

Radionuclide	Dose Conversion Factor (mrem/yr per dpm/100 cm^2)	DCGL (dpm/100 cm^2)	Radionuclide	Dose Conversion Factor (mrem/yr per dpm/100 cm^2)	DCGL (dpm/100 cm^2)
*H-3	7.94E-08	3.15E+08	Cs-137	4.50E-04	5.56E+04
*C-14	2.92E-06	8.56E+06	*Pm-147	1.50E-06	1.67E+07
Na-22	1.47E-03	1.70E+04	Eu-152	7.86E-04	3.18E+04
*Fe-55	7.31E-07	3.42E+07	Eu-154	3.88E-03	6.44E+03**
*Ni-59	3.13E-07	7.99E+07	Eu-155	4.78E-05	5.23E+05
Co-60	1.64E-03	1.52E+04	*Np-237	1.05E-02	2.38E+03
*Ni-63	8.20E-07	3.05E+07	*Pu-238	7.30E-03	3.42E+03
*Sr-90	2.07E-04	1.21E+05	*Pu-239	8.19E-03	3.05E+03
Nb-94	1.09E-03	2.29E+04	*Pu-240	8.19E-03	3.05E+03
*Tc-99	2.13E-06	1.17E+07	*Pu-241	1.37E-04	1.82E+05
Ag-108m	1.13E-03	2.21E+04	Am-241	8.37E-03	2.99E+03
Sb-125	3.13E-04	7.99E+04	*Pu-242	7.81E-03	3.20E+03
Cs-134	1.14E-03	2.19E+04	*Cm-244	4.15E-03	6.02E+03

*Hard to Detect Nuclides (HTDN – radionuclides not readily detected by gamma spectroscopy, e.g., Ni-63 or Cm-244, and requiring offsite, contract laboratory analysis)

**This calculated DCGL for Eu-154 should not be used; instead, the NUREG/CR-5512, Vol 3 Table 5.19 value of 1.15E+04 for P_{crit} of 0.90 should be used until further notice. Argonne (John Arnish) has confirmed that a RESRAD-BUILD v3.22 Eu-154 coefficient that relates the FGR 13 dose conversion factor to source size and shield thickness is incorrect and results in an erroneous calculated dose conversion factor. RESRAD-BUILD v3.22 is currently being revised by Argonne and this error will be corrected with a revised RESRAD-BUILD release.